

790 ADVENTURE

ITEM NO. 3240252EN



KTM

This manual was written on the basis of the latest information for this model series. We reserve the right to make changes in the interest of technical advancement without at the same time updating this manual.

We shall not provide a description of general workshop methods. Likewise, safety rules that apply in a workshop are not specified here. It is assumed that the work will be performed by a fully trained mechanic.

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REG.NO. 12 100 6061

ISO 9001(12 100 6061)

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Issued by: TÜV SÜD Management Service GmbH

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This document is valid for the following models:

790 ADVENTURE EU (F9603Y1, F9603Y2)

790 ADVENTURE D.D. EU (F9603Y3, F9603Y4)

790 ADVENTURE UK (F9622Y3, F9622Y4)

790 ADVENTURE AR (F9642Y4, F9642Y2)

790 ADVENTURE BR (F9640Y1, F9640Y2)

790 ADVENTURE CN (F9687Y6)

790 ADVENTURE US (F9675Y5, F9675Y6)



3240252en

15.04.2025

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1.1 Symbols used

The meaning of specific symbols is described below.



Indicates an expected reaction (e.g. of a work step or a function).



Indicates an unexpected reaction (e.g. of a work step or a function).



Indicates a page reference (more information is provided on the specified page).



Indicates information with more details or tips.



Indicates the result of a testing step.



Indicates a voltage measurement.



Indicates a current measurement.



Indicates a resistance measurement.



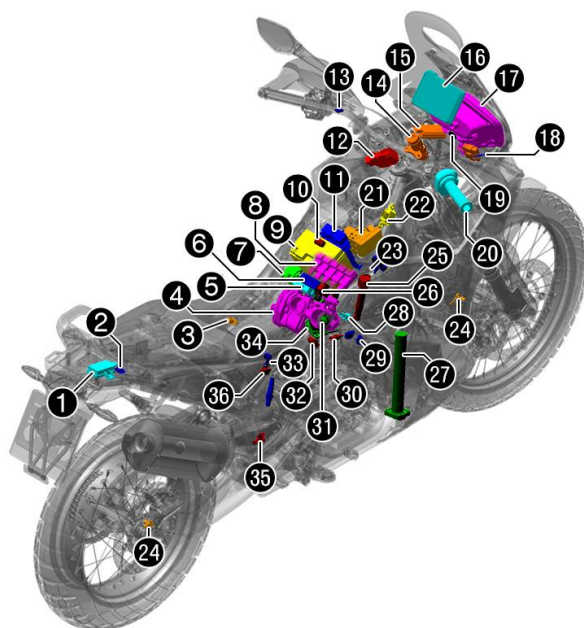
Indicates the end of an activity including potential rework.

1.2 Formats used

The typographical formats used in this document are explained below.

Proprietary name	Indicates a proprietary name.
Name®	Indicates a protected name.
Brand™	Indicates a brand available on the open market.
<u>Underlined terms</u>	Refer to technical details of the vehicle or indicate technical terms, which are explained in the glossary.

2.1 Overview of the engine management system



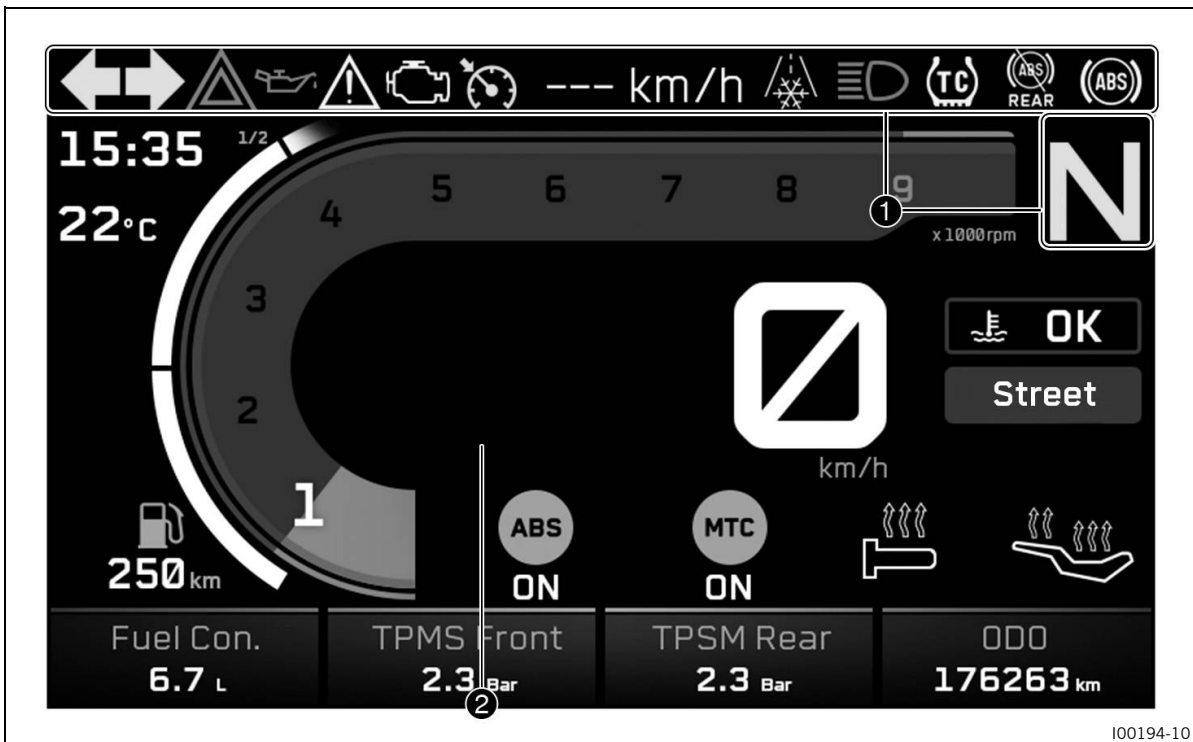
H06821-51

- ❶ Tire pressure monitor control unit (📖 p. 30)
- ❷ ACC1 and ACC2 rear (📖 p. 27)
- ❸ Intake air temperature sensor (📖 p. 17)
- ❹ Throttle valve body (📖 p. 16)
- ❹ Injection valve (📖 p. 18)
- ❹ Induction manifold pressure sensor (📖 p. 21)
- ❺ Heater control unit (📖 p. 31)
- ❻ Fuse box (📖 p. 26)
- ❼ Starter relay (📖 p. 26)
- ❽ Overview of relays (📖 p. 25)
- ❾ 12-V battery (📖 p. 27)
- ❿ Diagnostics connector
- ⓫ Engine control unit (📖 p. 15)
- ⓬ Voltage regulator (📖 p. 27)
- ⓭ Clutch switch (📖 p. 9)
- ⓮ Immobilizer control unit (📖 p. 29)
- ⓯ Connectivity Unit (📖 p. 32)
- ⓰ Combination instrument (📖 p. 7)
- ⓱ light control unit (📖 p. 30)
- ⓲ Ambient air temperature sensor (📖 p. 28)
- ⓳ Front ACC1 and ACC2 (📖 p. 27)
- ⓴ Circuit D accelerator position sensor (📖 p. 19)

2 COMPONENT OVERVIEW

- 20 Circuit E accelerator position sensor (📖 p. 19)
- 21 ABS module (📖 p. 24)
- 22 Inertial measurement unit (📖 p. 28)
- 23 Fuel vapor valve (📖 p. 11)
- 24 Wheel speed sensor (📖 p. 24)
- 25 Ignition coil (📖 p. 13)
- 26 ABS fuses (📖 p. 25)
- 27 Fuel level sensor (📖 p. 28)
- 28 Oil pressure sensor (📖 p. 14)
- 29 Lambda sensor (📖 p. 9)
- 30 Coolant temperature sensor (📖 p. 12)
- 31 Knock sensor (📖 p. 22)
- 32 Crankshaft speed sensor (📖 p. 14)
- 33 Shift shaft sensor (📖 p. 29)
- 34 Fuel pump (📖 p. 11)
- 35 Side stand sensor (📖 p. 9)
- 36 Gear position sensor (📖 p. 12)

3.1 Combination instrument



The combination instrument is attached in front of the handlebar.

The combination instrument is divided into two function areas.

① indicator lamps

Display ②



Caution

Danger of burns Parts of the combination instrument become hot in certain situations.

In particular, the display gets hot in ambient temperatures above 55 °C (131 °F), during extended stationary periods, for example, at a traffic light, or in direct sunlight.

- Do not touch the combination instrument with bare hands in the situations referred to.
- Where appropriate protective clothing.
- If you have been burned, hold the area affected under lukewarm water immediately.

3.2 Activation and test



Activation

The combination instrument is activated when the ignition is switched on.



Info

The brightness of the displays is controlled by an ambient light sensor in the combination instrument.

Test

The welcome text appears on the display and all indicator lamps are briefly activated for a function check.

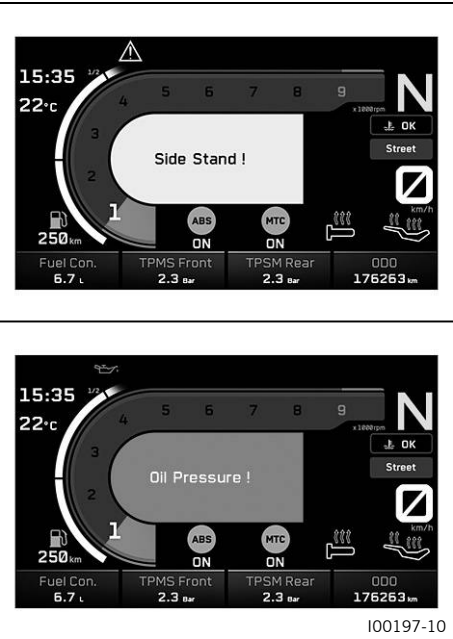
i Info

The malfunction indicator lamp  always lights up as long as the engine is not running. If the engine is running and the malfunction indicator lamp  lights up, stop (taking care not to endanger yourself or other road users in the process) and contact an authorized KTM workshop.

The oil pressure warning lamp  always lights up as long as the engine is not running. If the engine is running and the oil pressure warning lamp  lights up, stop immediately (taking care not to endanger yourself or other road users in the process) and switch off the engine.

The ABS warning lamp  and TC indicator lamp  light up until a speed of approx. 6 km/h (approx. 4 mph) or more has been reached.

3.3 Warnings

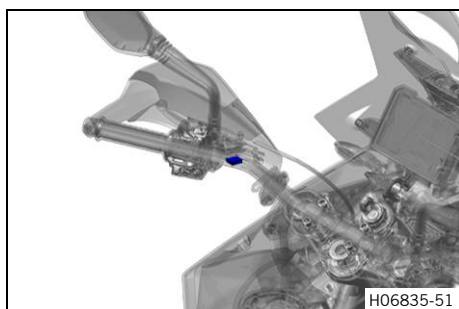


Warnings appear in the middle of the display; these are marked yellow or red depending on their relevance. Yellow warnings indicate a malfunction or information which requires prompt intervention or an adjustment to the riding style. Red warnings indicate a malfunction or information which requires immediate intervention.

i Info

Warnings can be hidden by pressing any button. All the existing warnings are displayed in the **Warning** sub-menu until they are no longer active.

4.1 Clutch switch



Installation location

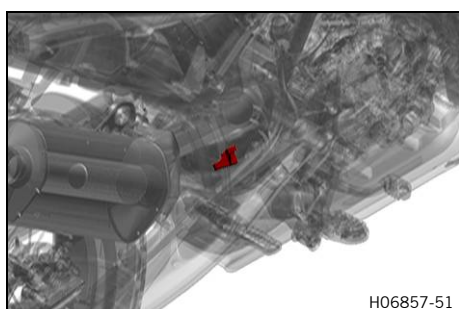
- The clutch switch is mounted on the left on the clutch assembly on the handlebar.

Component description

- The clutch switch is a tip switch which, when pressed, transmits the ground to the engine control unit. This is how the control unit recognizes a pulled clutch.

Clutch switch socket connector **AT** (📖 p. 491) pin assignment

4.2 Side stand sensor



Installation location

- The sensor of the side stand sensor is located on the mounting plate of the side stand. The magnet is mounted at the upper end of the side stand.

Component description

- The side stand sensor is a Hall sensor. The measuring voltage is generated by the movement of the magnet, which is moved past the sensor when folding and unfolding the side stand.

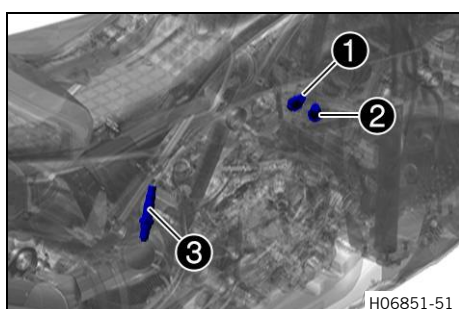
Side stand sensor connector **AR** (📖 p. 491) pin assignment

Functional description

- The side stand sensor prevents starting off with the side stand folded out.
When a gear is engaged and the side stand is folded out, the ignition is interrupted by the engine control unit and the engine stalls.

Side stand voltage	
Retracted	0.24 ... 0.44 V
Extended	3.57 ... 3.77 V

4.3 Lambda sensor



Installation location

- Lambda sensor cylinder 1 **1** and lambda sensor cylinder 2 **2** are mounted on the manifold.
Lambda sensor 3 **3** is located downstream of the catalytic converter.

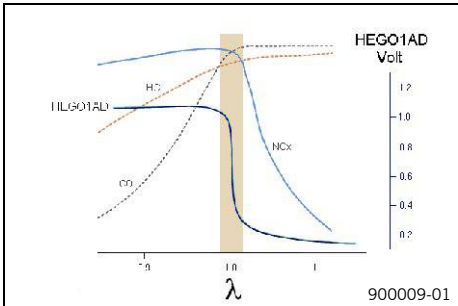
Component description

- The installed lambda sensors are sensors that produce a voltage depending on the oxygen difference between the exhaust gas and the outside air. They are called voltage jump probes. The design differentiates between finger and planar lambda sensors. The working range of a lambda sensor is between 350 and 900 degrees Celsius (660 to 1650 degrees Fahrenheit). The ceramic component becomes conductive above a certain temperature and a voltage is generated when the oxygen content of the ambient air and the exhaust gas differs. The greater the difference in oxygen content, the greater the voltage.

Cylinder 1 lambda sensor connector **OG** (📖 p. 505) pin assignment

Cylinder 2 lambda sensor connector **MB** (📖 p. 505) pin assignment

Lambda sensor 3 after catalytic converter connector **OG** (📖 p. 506) pin assignment

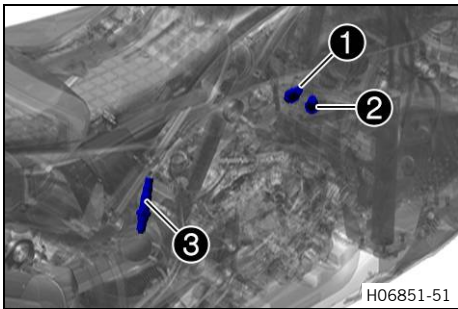


Functional description

- All lambda (O₂) sensors are open to the atmosphere, which contains approximately 21 percent oxygen (O₂). The exhaust gas of a gasoline engine contains up to 2 percent oxygen. The sensor output voltage is dependent on the oxygen content in the exhaust gas stream. When the exhaust gas contains just 2 percent oxygen, the engine is running "lean" and the sensor generates a low voltage. With a rich mixture (lack of oxygen), the oxygen level in the exhaust gas is less than two percent and the oxygen difference to the outside air is greater. With a larger oxygen difference, a larger voltage is generated.

Lambda sensor	
Voltage range within the control loop	0.2 ... 0.8 V

4.4 Lambda sensor heater



Installation location

- Lambda sensor heating cylinder 1 **1** and lambda sensor heating cylinder 2 **2** are mounted on the manifold. Lambda sensor heater 3 **3** is located downstream of the catalytic converter.

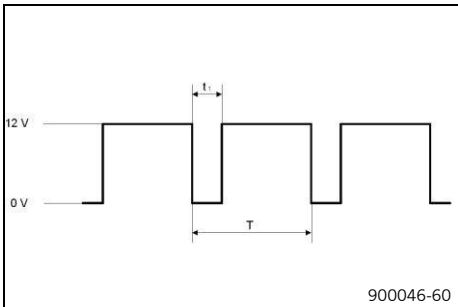
Component description

- The lambda sensor is heated from the inside by a ceramic heating element so that the temperature of the lambda sensor is kept constant regardless of the exhaust gas temperature. The connections of the heating element are completely isolated from the sensor signal voltage.

Cylinder 1 lambda sensor connector **OG** (📖 p. 505) pin assignment

Cylinder 2 lambda sensor connector **MB** (📖 p. 505) pin assignment

Lambda sensor 3 after catalytic converter connector **OG** (📖 p. 506) pin assignment

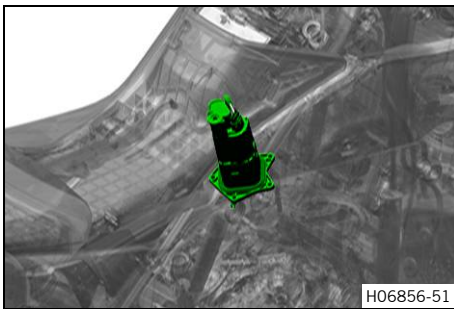


Functional description

- The lambda sensor heater is supplied with battery voltage by the power relay. After the engine is started, the engine control unit grounds the lambda sensor heater. In order to control the lambda sensor heater, the signal control is modulated. The lambda sensor heater is controlled at a modulation frequency **T** of 100 Hz. The smaller the duty cycle **t₁** set for the control, the greater the power supply of the lambda sensor heater.

Lambda sensor heater	
Resistance at: 20 °C (68 °F)	9 Ω

4.5 Fuel pump



Installation location

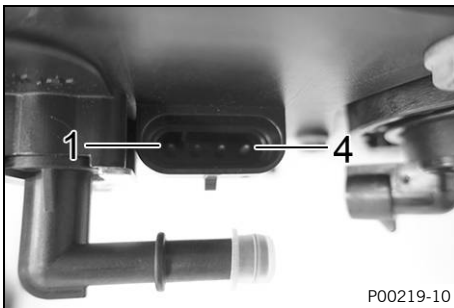
- The fuel pump is located inside the fuel tank.

Component description

- The vane pump mounted in the fuel tank is driven by an electrical motor whose rotor is bathed in fuel, which cools and lubricates it. A check valve is installed in the outlet opening, which closes after "Ignition off" and pump standstill to maintain a residual fuel pressure. This prevents vapor bubbles from being formed in the fuel system due to engine heat. Also, the fuel pump is equipped with an excess pressure valve to prevent damage to the fuel pump in the event of a defective pressure regulator.

Fuel pressure

When the fuel pump is active	3.8 ... 4.2 bar (55 ... 61 psi)



Pin overview

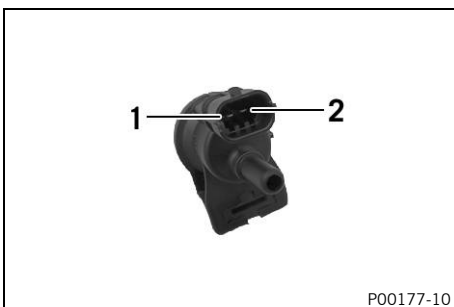
1	Ground wire
2	Not assigned
3	Power supply
4	Not assigned

4.6 Fuel vapor valve



Installation location

- The purge valve is located above the valve cover.



Pin overview

1	Power supply
2	Control wire

Fuel vapor valve

at: 20 °C (68 °F)	15.3 ... 18.7 Ω

4.7 Gear position sensor



Installation location

- The gear position sensor is located on the left section of the engine case.

Component description

- The gear position sensor comprises one sensor path.

Gear position sensor connector **JL** (p. 500) pin assignment

Functional description

- The output voltage is transmitted to the engine control unit via a signal wire.
This enables the engine control unit to identify the exact position of the shift shaft.

Gear position sensor voltage	
Gear 1	4.37 ... 4.47 V
Gear N	4.19 ... 4.29 V
Gear 2	3.59 ... 3.69 V
Gear 3	2.85 ... 2.95 V
Gear 4	2.10 ... 2.20 V
Gear 5	1.31 ... 1.41 V
Gear 6	0.58 ... 0.68 V

4.8 Coolant temperature sensor

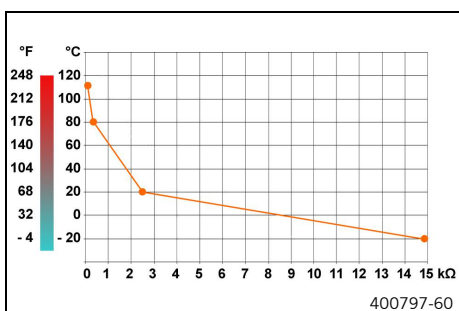


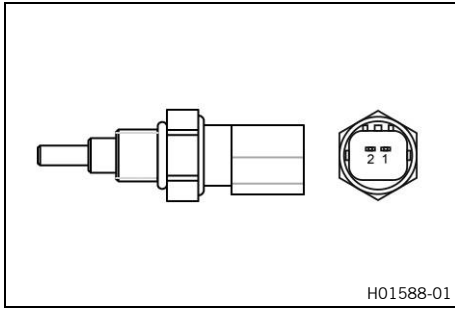
Installation location

- The coolant temperature sensor is mounted on the right side of the cylinder head below the throttle valve body.

Component description

- The coolant temperature sensor is a negative temperature coefficient thermistor (NTC resistor). In negative temperature coefficient thermistors, the resistance decreases with increasing temperature; however, the "nil" value is never reached. When the temperature decreases, the resistance increases; however, the "infinite" value is never reached.





Pin overview

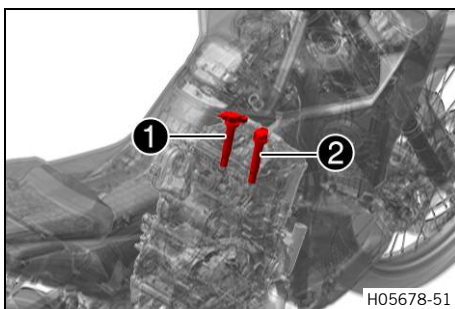
1	Signal wire
2	Sensor ground

Functional description

- The vehicle uses two temperature sensors in a single component for the engine control and for the display in the combination instrument.

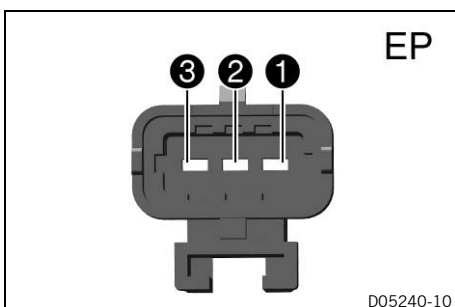
Coolant temperature sensor	
Resistance at: -20 °C (-4 °F)	18.70 kΩ
Voltage at: -20 °C (-4 °F)	4.55 V
Resistance at: 20 °C (68 °F)	2.55 kΩ
Voltage at: 20 °C (68 °F)	2.73 V
Resistance at: 80 °C (176 °F)	0.29 kΩ
Voltage at: 80 °C (176 °F)	0.57 V
Resistance at: 110 °C (230 °F)	0.11 kΩ
Voltage at: 110 °C (230 °F)	0.25 V

4.9 Ignition coil



Installation location

- The ignition coil for cylinder 1 ① is located in the left cylinder head.
- The ignition coil for cylinder 2 ② is located in the right cylinder head.



Pin overview

1	Power supply
2	Ground wire
3	Control wire

Ignition coil	
Primary winding resistance at: 20 °C (68 °F)	0.70 ... 0.90 Ω

4.10 Crankshaft speed sensor



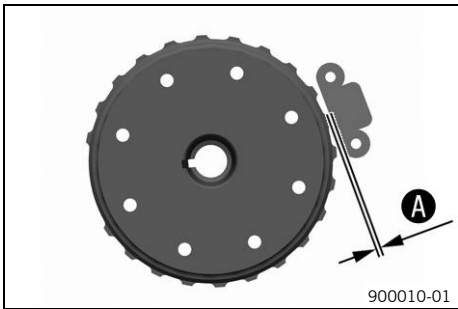
Installation location

- The crankshaft speed sensor is located on the left side of the engine below the alternator cover.

Component description

- The crankshaft speed sensor consists of a permanent magnet and an induction coil with a soft iron core. The counterpart to the crankshaft speed sensor is a trigger wheel whose 34 teeth are evenly spaced, except for one point where there is a wider gap between the teeth. The trigger wheel is attached to the alternator rotor. The rotor is connected to the crankshaft. There is a small air gap between the crankshaft speed sensor and the trigger wheel.

Crankshaft speed sensor connector **AT** (📖 p. 491) pin assignment



Functional description

- The magnetic flux through the induction coil depends on whether a gap or a tooth is opposite to the crankshaft speed sensor. A tooth bundles the magnetic leakage flux of the permanent magnet while a gap weakens it. When the rotor and thus the trigger wheel turns, a magnetic field change is caused by each tooth. The change in the magnetic field generates an alternating voltage in the induction coil. The number of pulses per time unit are a measure of the rotating speed of the rotor. The wider tooth on the trigger wheel allows the engine electronics control unit to detect the current position of the crankshaft. Distance **A** can be set.

Crankshaft speed sensor/rotor – distance	0.70 mm (0.0276 in)
Crankshaft speed sensor	
Resistance at: 20 °C (68 °F)	75 ... 125 Ω
Alternating current at starting speed and at: 20 °C (68 °F)	2 ... 4 V

4.11 Oil pressure sensor



Installation location

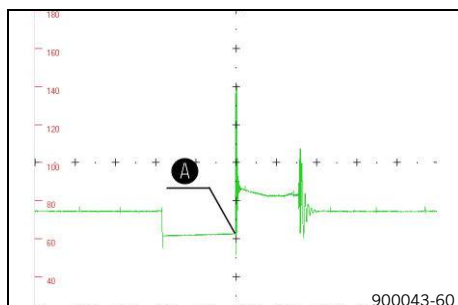
- The oil pressure sensor is mounted on the right side of the cylinder head above the throttle valve body.

Oil pressure sensor socket connector **GB** (📖 p. 497) pin assignment

Oil pressure	
Coolant temperature: ≥ 70 °C (≥ 158 °F) Engine speed: Idle speed	≥ 1.4 bar (≥ 20 psi)

Coolant temperature: $\geq 70\text{ }^{\circ}\text{C}$ ($\geq 158\text{ }^{\circ}\text{F}$) Engine speed: 6,000 rpm	$\geq 2.4\text{ bar}$ ($\geq 35\text{ psi}$)

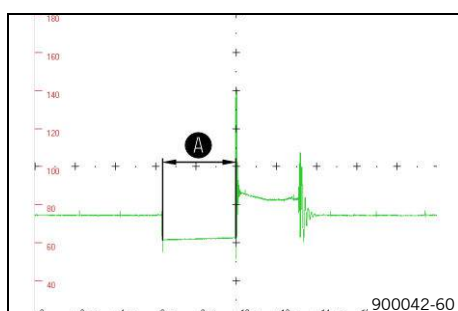
4.12 Ignition timing setting



Function description

- The ignition timing **A** is set relative to TDC and is expressed as a crankshaft angle. The spark is generated by interrupting the primary circuit.

4.13 Dwell



Function description

- The dwell angle **A** is the number of crankshaft degrees that the primary circuit is closed and the magnetic field builds up. The time is stated for which the primary circuit is closed.

4.14 Engine control unit



Installation location

- The engine control unit is located under the seat in front of the 12-V battery.

Info

When an engine control unit from the parts center is initially programmed, it is given an identity. This means that if the engine control unit is specified, for example, with the flash file KA661xxxxxxxxx, the engine control unit is defined as a version A661 and can from then on only be used on model range A661 (specifically installed control unit).

After completing programming, the vehicle identification number must be entered into the engine control unit using the **"Change VIN – new identity"** function.

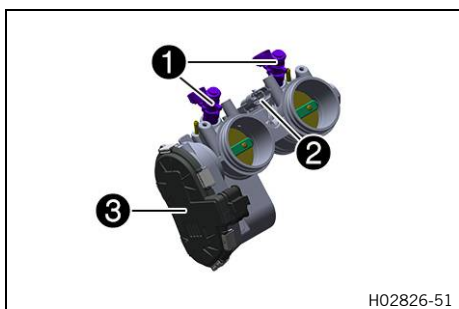
- Engine control unit connector **GK** (📖 p. 497) pin assignment
- Engine control unit connector **KQ** (📖 p. 502) pin assignment

4.15 Throttle valve body



Installation location

- The throttle valve body is located behind the cylinder head.



Structure of throttle valve body

- ① Injection valve (📖 p. 18)
- ② Induction manifold pressure sensor (📖 p. 21)
- ③ Throttle valve body locking cap

Component description

- The throttle valve body supplies the fuel-air mixture required by the engine.
- The engine electronics has a full-fledged **Ride by Wire** system. This means that no throttle cable wire connects the throttle grip and the throttle valve body. The throttle valve is now only actuated electrically. An electronically controlled throttle valve is used in the throttle valve body.
- The throttle valve position sensor continues to be located on the throttle valve body, and the accelerator position sensor is located directly on the throttle grip.
- The throttle valve position sensor and the accelerator position sensor both have sensors that work independently from each other. This ensures the function upon failure of a sensor and improves diagnostic capability.
- This system does not require any mechanical setting at the throttle valve position sensor or at the accelerator position sensor.
- Throttle valve position sensor connector **MC** (📖 p. 505) pin assignment

Functional description

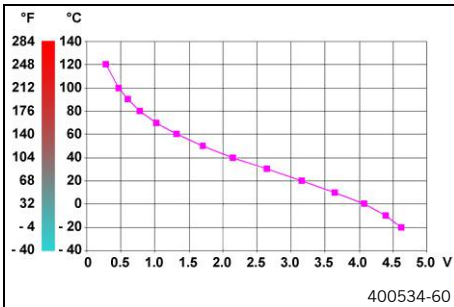
- When the ignition is switched on, the throttle valve is initialized.
The rider's acceleration command is identified by the accelerator position sensors and transmitted to the engine control unit. The engine electronics calculates the opening angle of the throttle valve using the incoming signal. If the throttle valve position sensors differ from the setpoint value, the throttle valve actuator receives the signal to adjust the position according to the setpoint value.

4.16 Intake air temperature sensor



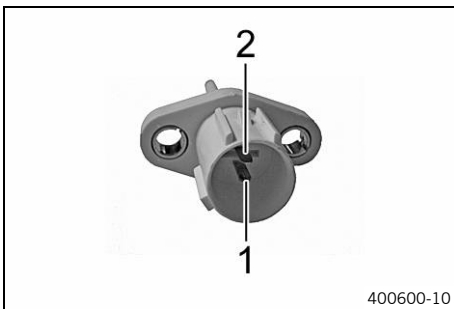
Installation location

- The intake air temperature sensor is located on the air filter box.



Component description

- The intake air temperature sensor is a negative temperature coefficient thermistor (NTC resistor). In negative temperature coefficient thermistors, the resistance decreases with increasing temperature; however, the "nil" value is never reached. When the temperature decreases, the resistance increases; however, the "infinite" value is never reached.

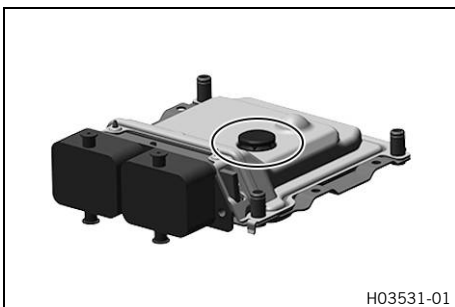


Pin overview

1	Sensor ground
2	Signal wire

Intake air temperature sensor	
Resistance at: –20 °C (–4 °F)	19 kΩ
Resistance at: –10 °C (14 °F)	11 kΩ
Resistance at: 0 °C (32 °F)	6.2 kΩ
Resistance at: 10 °C (50 °F)	4 kΩ
Resistance at: 20 °C (68 °F)	2.5 kΩ
Resistance at: 30 °C (86 °F)	1.65 kΩ
Resistance at: 40 °C (104 °F)	1.1 kΩ
Intake air temperature sensor voltage	
Voltage at: –20 °C (–4 °F)	4.4 V
Voltage at: 20 °C (68 °F)	2.7 V
Voltage at: 40 °C (104 °F)	1.8 V

4.17 Ambient air pressure sensor

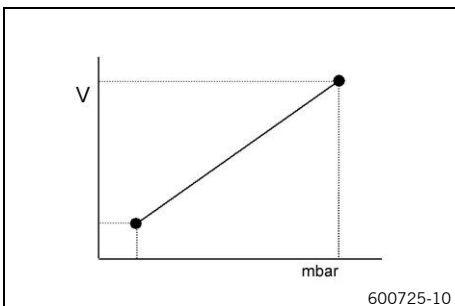


Installation location

- The ambient air pressure sensor is located on the engine control unit.

Component description

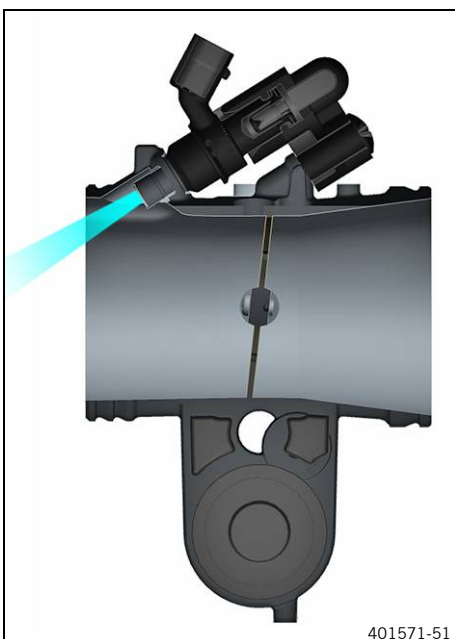
- The electronics and a measuring cell are located in the housing of the ambient air pressure sensor. In the measuring cell, a diaphragm encloses a reference pressure chamber. When the shape of the diaphragm is altered by external pressure, the conductivity of the measuring resistors and thus the measured voltage are altered. The measured voltage is processed by the electronic system and forwarded to the engine control unit.



Functional description

- The output voltage of the ambient air pressure sensor is adjusted depending on the ambient air pressure and is sent via the signal wire. The voltage signal rises when the ambient air pressure increases.

4.18 Injection valve

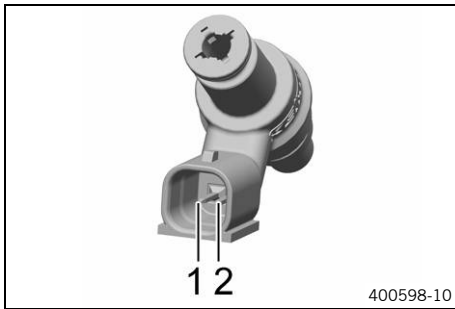


Installation location

- Injection valve cylinder 1 and injection valve cylinder 2 are located on the throttle valve body.

Component description

- The injection valve consists of a solenoid, a spring-loaded plunger, a needle valve, and a filter. When current flows through the coil in the solenoid, a magnetic field is generated which attracts the plunger, overcoming the spring force; this lifts the needle valve off its seat. Fuel is discharged through 12 holes and forms a conical jet. When the current is switched off, the magnetic field collapses and the spring closes the needle valve. The filter keeps any contamination out of the holes.



Pin overview

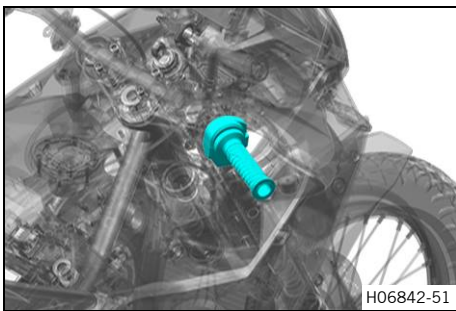
1	Control wire
2	Power supply

Functional description

- The injection valve is supplied with battery voltage by the power relay. The engine control unit calculates the injection rate required and grounds the injection valve via the amplification stage in the engine control unit. The longer the injection valve is connected to ground, the greater the fuel quantity injected.

Injector	
Resistance at: 20 °C (68 °F)	11.4 ... 12.6 Ω

4.19 Circuit D accelerator position sensor



Installation location

- The circuit D accelerator position sensor is located directly on the throttle.

Component description

- The circuit D accelerator position sensor has a linear characteristic line and functions as a potentiometer.

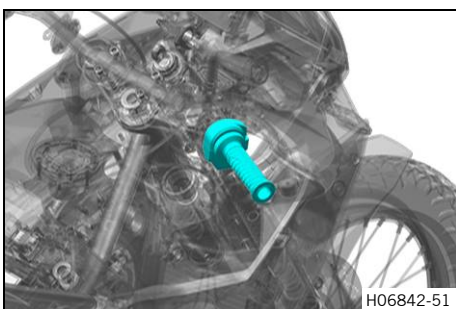
Accelerator position sensor connector **AP** (📖 p. 491) pin assignment

Functional description

- The output voltage of the circuit D accelerator position sensor is adjusted depending on the acceleration command given by the rider and is sent to the engine control unit via the signal wire.

Circuit D accelerator position sensor	
Voltage	1 ... 4.5 V
Circuit D accelerator position sensor	
Supply voltage	4.9 ... 5.1 V

4.20 Circuit E accelerator position sensor



Installation location

- The circuit E accelerator position sensor is located directly on the throttle.

Component description

- The circuit E accelerator position sensor has a linear characteristic line and functions as a potentiometer.

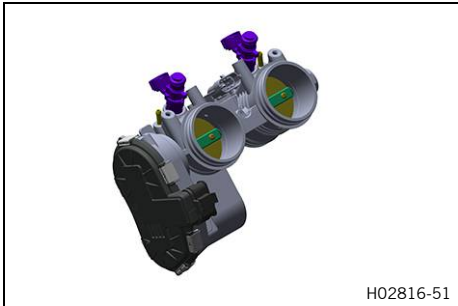
Accelerator position sensor connector **AP** (📖 p. 491) pin assignment

Functional description

- The output voltage of the circuit E accelerator position sensor is adjusted depending on the acceleration command given by the rider and is sent to the engine control unit via the signal wire.

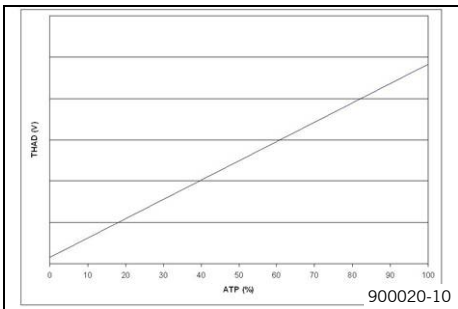
Circuit E accelerator position sensor	
Voltage	0.5 ... 2.25 V
Circuit E accelerator position sensor	
Supply voltage	4.9 ... 5.1 V

4.21 Circuit A throttle valve position sensor



Installation location

- Throttle valve position sensor circuit A is located on the left side of the throttle valve body.



Component description

- Throttle valve position sensor circuit A has a linear characteristic line and operates as a contactless sensor.
- The voltage can be assigned to a throttle valve position.

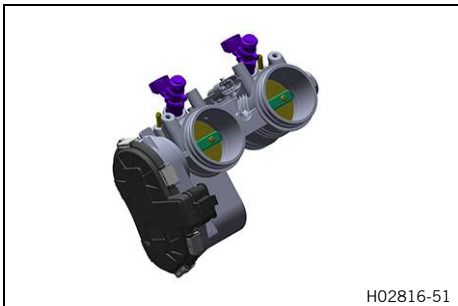
Circuit A throttle valve position sensor connector **MC** (p. 505) pin assignment

Functional description

- The output voltage of the throttle valve position sensor is adjusted depending on the opening angle of the throttle valve and is transmitted to the engine control unit via the signal wire so that the throttle valve position can be determined.

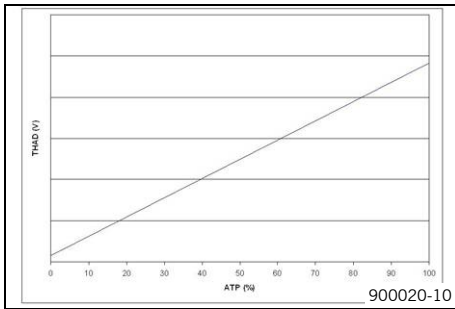
Circuit A throttle valve position sensor	
Voltage	0.5 ... 4.25 V

4.22 Circuit B throttle valve position sensor



Installation location

- Throttle valve position sensor circuit B is located on the left side of the throttle valve body.



Component description

- Throttle valve position sensor circuit B has a linear characteristic line and operates as a contactless sensor.
- The voltage can be assigned to a throttle valve position.

Circuit B throttle valve position sensor connector **MC** (p. 505) pin assignment

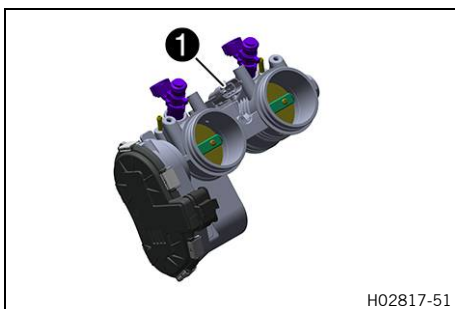
Functional description

- The output voltage of the throttle valve position sensor is adjusted depending on the opening angle of the throttle valve and is transmitted to the engine control unit via the signal wire so that the throttle valve position can be determined.

Circuit B throttle valve position sensor

Voltage	0.77 ... 4.5 V

4.23 Induction manifold pressure sensor



Installation location

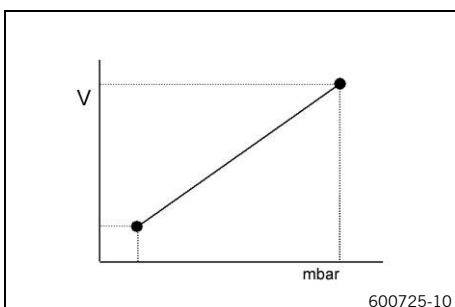
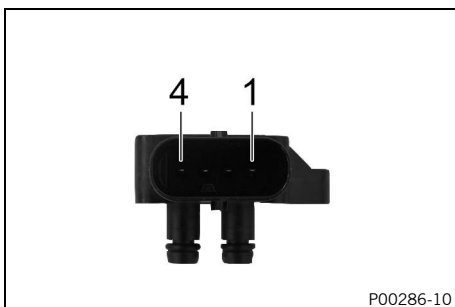
- The induction manifold pressure sensor **1** is located on the throttle valve body.

Component description

- The electronics and two measuring cells are located in the housing of the induction manifold pressure sensor. In the measuring cell, a diaphragm encloses a reference pressure chamber. When the shape of the diaphragm is altered by external pressure, the conductivity of the measuring resistors and thus the measured voltage are altered. The measured voltage is processed by the electronic system and forwarded to the engine control unit.

Pin overview

1	Sensor ground
2	Signal wire, cylinder 2
3	Signal wire, cylinder 1
4	Power supply



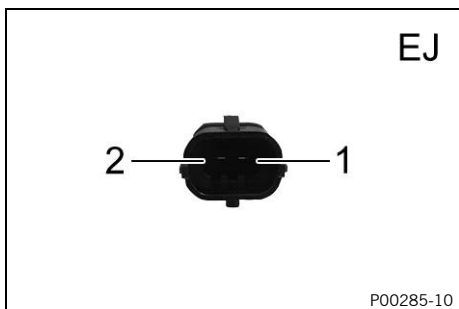
Functional description

- The output voltage of the induction manifold pressure sensor depends on the induction manifold pressure and is output via the signal wires. The voltage signal drops when pressure decreases. This means that when the throttle valve is closed with resulting low manifold pressure (due to the suction effect of the engine), a low voltage signal is emitted from the induction manifold absolute pressure sensor. When the throttle valve is fully open, the manifold pressure is roughly equal to the ambient air pressure and the voltage signal is high.

Induction manifold pressure sensor voltage

at: 950 hPa (13.78 psi)	3.8 V
at: 350 hPa (5.08 psi)	1.4 V

4.24 Knock sensor



Installation location

- The knock sensor is located on the cylinder head behind the throttle valve body.

Component description

- The knock sensor measures the structure-borne noise with a piezoelectric element; the voltage signal is transmitted to the engine control unit.

Pin overview

1	Signal wire 1
2	Signal wire 2

Functional description

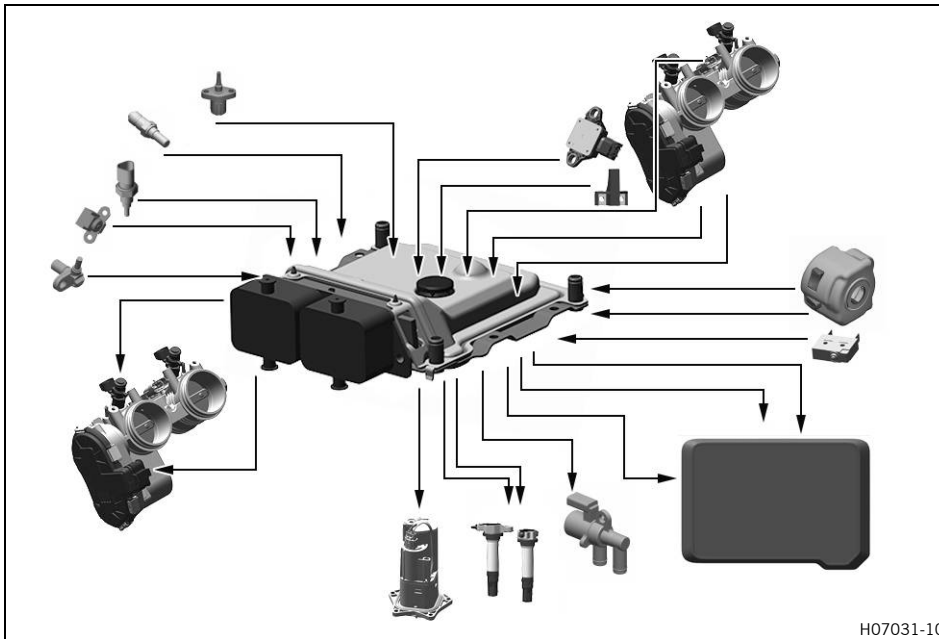
- The knock sensor is located on the outside of the cylinder head and reacts to the structure-borne noise vibrations. Its purpose is to detect knocking noises in all engine operating states in order to prevent engine damage.

In the case of knocking during combustion, higher sound frequencies are detected and transmitted to the engine control unit. The signals are filtered and evaluated and assigned to the respective cylinder.

The ignition signal is retarded until knocking combustion no longer occurs in the cylinder in question.

4.25 Mixture correction

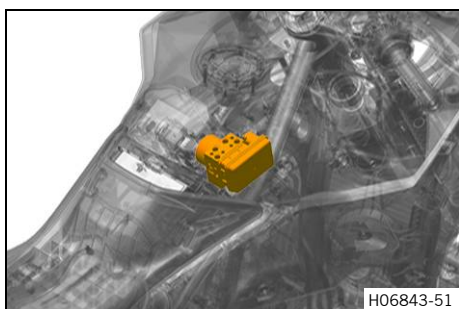
Functional description



- To compensate for deviations in the electronic fuel injection system caused by wear, aging, and component tolerances, injection trim tables are used. For example, if the electronic fuel injection system drifts toward rich or lean during operation in a closed loop, the injection trim tables counter this effect when calculating the injection rate. This system consists of two tables – the short-term injection trim and the long-term injection trim. The short-term injection trim is displayed as **"MHG"** (Short Term Fuel Trim) by the diagnostics tool and calculated by the engine control unit on the basis of the lambda values. After 10 minutes, the Short Term Fuel Trim is adopted as the Long Term Fuel Trim. This table is used to maintain a lambda value of 1. When the Short Term Fuel Trim is adopted as the Long Term Fuel Trim, the Short Term Fuel Trim values can settle back to a neutral zero value. Thus, the engine control unit is capable of "learning" and continuously adjusts the injection tables to the condition of the entire system on the basis of the marginal conditions.

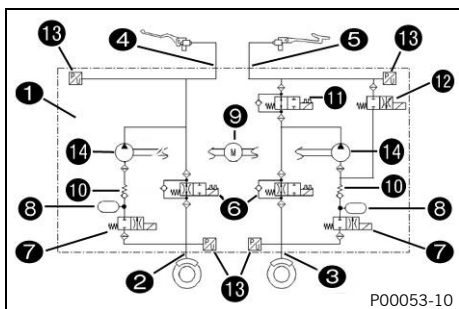
Fuel trim "MHG"	0.855 ... 1.045 %

5.1 ABS module



Installation location

- The ABS module is installed under the fuel tank.



Structure of ABS module

- ① ABS control unit
- ② Control circuit, front brake (output) **F**
- ③ Control circuit, rear brake (output) **R**
- ④ Control circuit, front brake (input) **MC1**
- ⑤ Control circuit, rear brake (input) **MC2**
- ⑥ Intake valve
- ⑦ Exhaust valve
- ⑧ Compensation chamber
- ⑨ Return pump
- ⑩ One-way valve
- ⑪ Switch valve
- ⑫ High-pressure switch valve
- ⑬ Pressure sensor
- ⑭ Pump

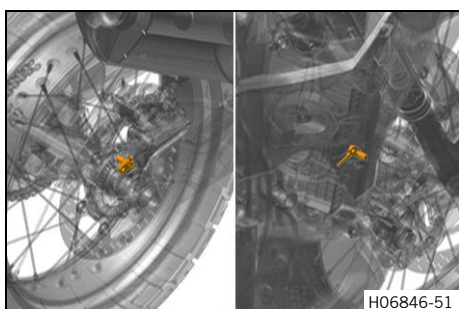
Info

If the brake lines on the hydraulic unit need to be opened, the brake system must be bled using the diagnostics tool.

Component description

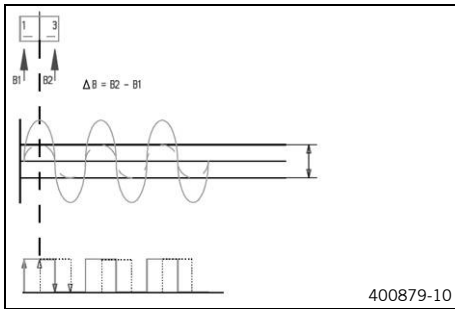
- The hydraulic unit consists of two independent brake circuits. Both circuits (front and rear wheel brakes) are separately connected with the hydraulic unit and are independently controlled and pressure regulated.

5.2 Wheel speed sensor



Installation location

- The front wheel speed sensor is located in the left axle clamp. The rear wheel speed sensor is located on the brake caliper support.



Component description

- The wheel speed sensor is a differential sensor with two Hall elements. It contains a permanent magnet so that a non-magnetic ABS sensor wheel can be used.

Wheel speed sensor socket connector **FI** (p. 497) pin assignment

Functional description

- When the ABS sensor wheel passes through the magnetic field of the wheel speed sensor, a sinusoidal voltage is generated. The frequency of the sinusoidal voltage changes in proportion to the wheel speed. The ABS control unit calculates the wheel speed based on this frequency. The sinusoidal voltage is converted to a square signal in the evaluation electronics of the wheel speed sensor.
- The vehicle uses the signal of the front wheel speed sensor for the ABS control unit and for the trip distance counter in the combination instrument.



Info

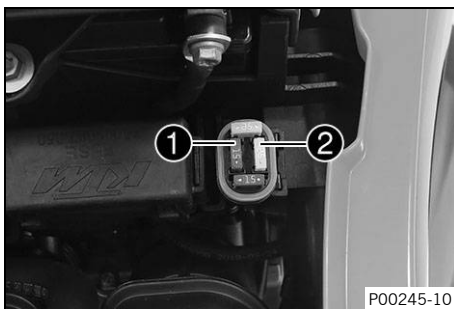
The distance of the wheel speed sensor cannot be set.

5.3 ABS fuses



Installation location

- The fuse of the ABS hydraulic unit and the ABS return pump is located to the right of the 12-V battery.



Installation location

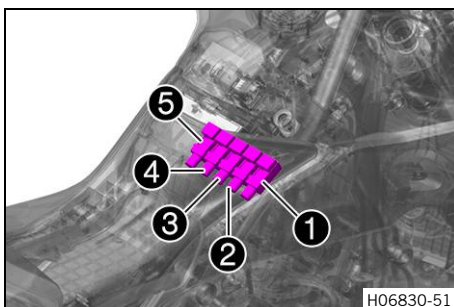
- The fuse of ABS hydraulic unit ① and ABS return pump ② is located to the right of the 12-V battery.



Info

Two fuses for the ABS are located under the passenger seat. These fuses protect the return pump and the hydraulic unit of the ABS. The third fuse, which protects the ABS control unit, is located in the fuse box.

5.4 Overview of relays



Overview of relays

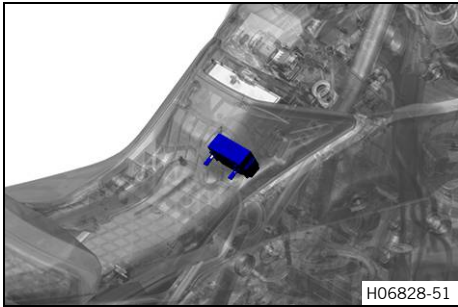
- ① Fuel pump relay
- ② Radiator fan relay
- ③ Start auxiliary relay
- ④ Power relay
- ⑤ Light relay

5.5 Starter relay

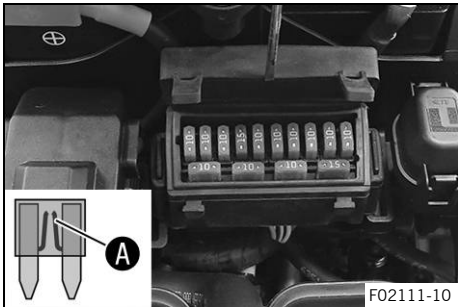


Installation location
– The starter relay is located under the seat.

5.6 Fuse box



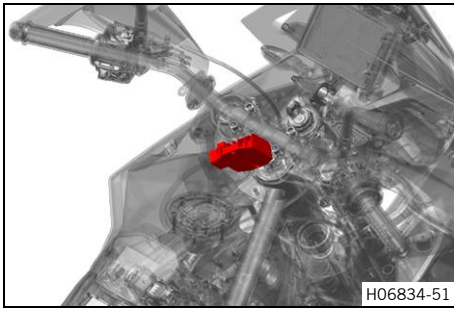
Installation location
– The fuse box is located under the seat.



Fuse res - 10 A – spare fuses
Fuse 1 - 10 A - ignition, alarm system (optional)
Fuse 2 - 10 A - ignition, engine control unit, electronic fuel injection, fuel vapor retention system, lambda sensor, immobilizer
Fuse 3 - 10 A - fuel pump
Fuse 4 - 10 A - radiator fan
Fuse 5 - 10 A - horn, combination instrument, brake light
Fuse 6 - 10 A - high beam, low beam, position light, tail light, license plate lamp
Fuse 7 - 10 A - ACC1
Fuse 8 - 15 A - ACC2, HCU (optional)
Fuse 9 - 10 A - ABS control unit, diagnostics connector, inertial measurement unit, TPMS (optional)
Fuse 10 - 10 A - light control unit

i Info
A faulty fuse has a burned-out fuse wire **A**.

5.7 Voltage regulator

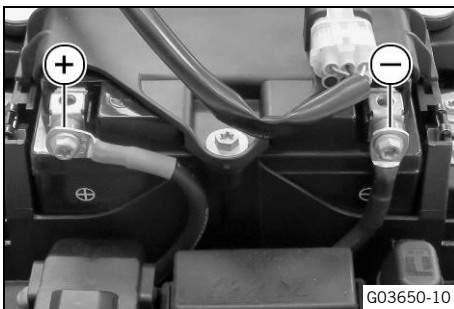


Installation location

- The voltage regulator is located behind the left-hand fuel tank guard.

Voltage regulator connector **HP** (📖 p. 500) pin assignment

5.8 12-V battery



Installation location

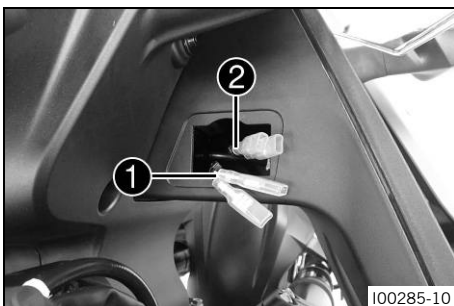
- The 12-V battery is located under the seat.

Measuring point overview

Ground (–)

plus (+)

5.9 Front ACC1 and ACC2



Installation location

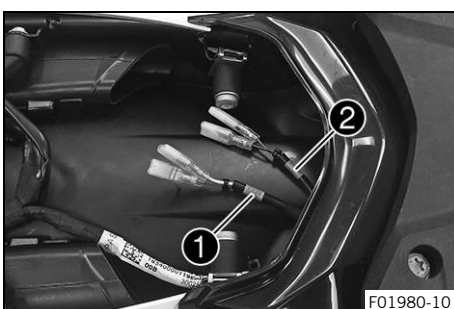
- The front power supplies ACC1 **1** and ACC2 **2** are located in the right mask support.



Info

The front power supplies ACC1 and ACC2 can be accessed behind the cover of the right mask support.

5.10 ACC1 and ACC2 rear



Installation location

- The rear power supplies ACC1 **1** and ACC2 **2** are located under the passenger seat.

5.11 Inertial measurement unit



Installation location

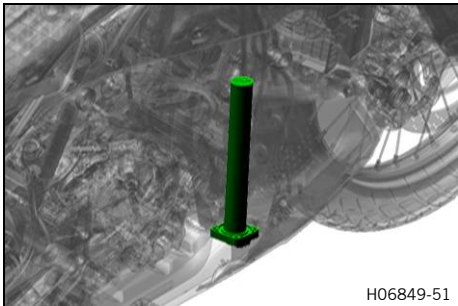
- The inertial measurement unit is located under the fuel tank behind the steering head.

Component description

- The inertial measurement unit measures the inertial signals, roll rate, yaw rate, longitudinal acceleration, transverse acceleration and vertical acceleration of the motorcycle. These signals are required for the ABS control unit to be able to calculate important parameters such as the lean angle and pitch angle. Wheel speeds and other motorcycle-specific parameters are required for this calculation. All signals are made available via CAN-Bus.

Inertial measurement unit connector **HJ** (📖 p. 499) pin assignment

5.12 Fuel level sensor



Installation location

- The fuel level sensor is located in the right half of the tank.

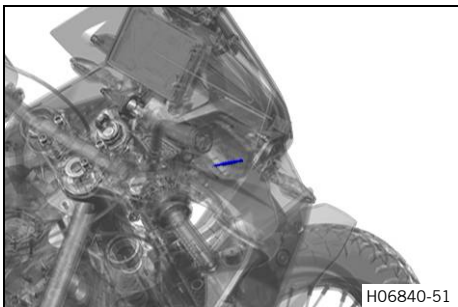
Component description

- The fuel level sensor measures the fuel level using a changeable resistance and transmits this value to the combination instrument control unit.

Fuel level sensor socket connector **DV** (📖 p. 494) pin assignment

Fuel level sensor	
The fuel tank is completely full.	107 ... 113 Ω
The fuel tank is completely empty.	8.0 ... 13 Ω

5.13 Ambient air temperature sensor



Installation location

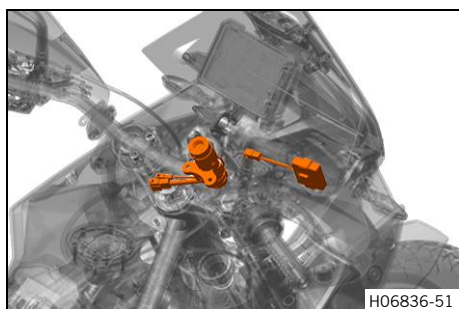
- The ambient air temperature sensor is located behind the headlight.

Ambient air temperature sensor socket connector **CW** (📖 p. 494) pin assignment

Ambient air temperature sensor	
Resistance at: 0 °C (32 °F)	28 kΩ
Voltage at: 0 °C (32 °F)	3.54 V
Resistance at: 10 °C (50 °F)	17.9 kΩ
Voltage at: 10 °C (50 °F)	3.09 V
Resistance at: 20 °C (68 °F)	11.3 kΩ

Voltage at: 20 °C (68 °F)	2.56 V
Resistance at: 30 °C (86 °F)	8 kΩ
Voltage at: 30 °C (86 °F)	2.13 V
Resistance at: 40 °C (104 °F)	5.5 kΩ
Voltage at: 40 °C (104 °F)	1.70 V

5.14 Immobilizer control unit



Installation location

- The immobilizer control unit is located behind the headlight. The immobilizer control unit antenna is located in the ignition lock.

Setup

- The immobilizer control unit consists of the antenna, the control unit, and the mechanical ignition lock.

Immobilizer control unit socket connector **DN** (📖 p. 494) pin assignment

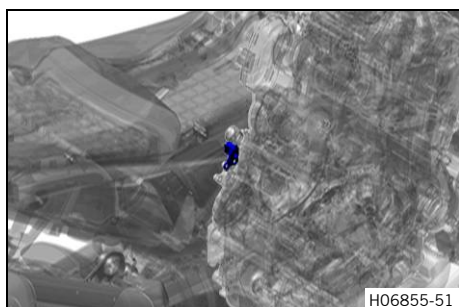
Functional description

A unique key code is stored for each engine control unit. The transponder key becomes active when it is inserted in the ignition lock and sends a code to the immobilizer control unit. If this code is identified as correct, the immobilizer control unit sends a release signal to the engine control unit, which issues the start release.

If the code is not correct, the immobilizer control unit issues an error in the form of an error message in the combination instrument and an entry in the fault memory.

The two control units communicate via the CAN bus.

5.15 Shift shaft sensor



Installation location

- The shift shaft sensor is located on the left side of the engine.

Component description

- The shift shaft sensor is a Hall sensor and is fixed to the engine case. The measurement voltage is generated by the change in the position of the magnets acting on the Hall sensor.

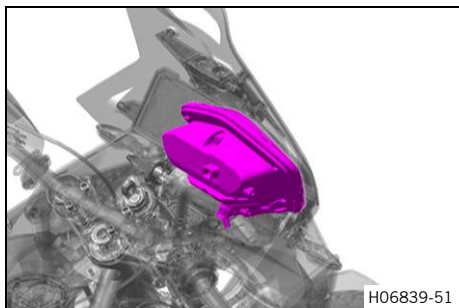
Shift shaft sensor connector **KN** (📖 p. 501) pin assignment

Operating principle

- The Hall-effect principle is based on the fact that a voltage is created in the Hall sensor when a magnetic field is applied. This very low voltage is converted to a signal voltage. The shift shaft sensor uses the shift shaft position to check whether or not a shift should be initiated, and sends a corresponding signal to the engine control. When the shift shaft sensor is in the unactuated position, the output voltage is 2.5 V. If the switch position is moved to the top, the voltage must reach 4.5 V during the switching procedure.

If the switch position is moved to the bottom, the voltage must reach 0.5 V during the switching procedure. Outside the working range of the shift switch sensor, 0.25 V is reached.

5.16 light control unit



Installation location

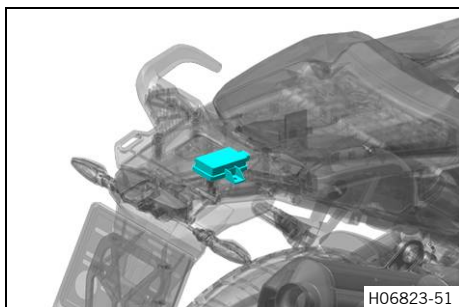
- The light control unit is integrated in the main headlight.

Component description

- The light control unit **HLU** is used to control the daytime running light, the position light, the low beam and high beam.

Light control unit, connector **LN** (📖 p. 504) pin assignment

5.17 Tire pressure monitor control unit



Installation location

- The tire pressure monitor control unit is located in the rear frame.

i Info

When a new tire pressure monitor control unit is installed, the tire pressure sensors need to be reprogrammed.

Component description

- The tire pressure sensors measure the air pressure and the air temperature of the tire and transmit these values to the tire pressure monitor control unit along with their unique identifier. This system can immediately detect pressure losses in the tires since the tire pressure is monitored directly. If a tire is experiencing pressure loss, this information is sent to the combination instrument.

Tire pressure monitor control unit socket connector **HJ** (📖 p. 499) pin assignment

Tire pressure sensor threshold values

Tire pressure threshold values	
Front sensor – not compensated, very low	1,500 mbar (21.76 psi)
Rear sensor – not compensated, very low	1,500 mbar (21.76 psi)
Front sensor – not compensated, high	3,800 mbar (55.11 psi)
Rear sensor – not compensated, high	4,000 mbar (58.02 psi)

Front sensor - temperature compensation very low (setpoint value - 25 %)	1,800 mbar (26.11 psi)
Rear sensor - temperature compensation very low (setpoint value - 25 %)	1,800 mbar (26.11 psi)
Front sensor - temperature compensation low (setpoint value -20 %)	1,900 mbar (27.56 psi)
Rear sensor - temperature compensation low (setpoint value -20 %)	1,900 mbar (27.56 psi)
Front sensor - temperature compensation high (setpoint value +40 %)	2,900 mbar (42.06 psi)
Rear sensor - temperature compensation high (setpoint value +50 %)	3,100 mbar (44.96 psi)
Hysteresis pressure reset	100 mbar (1.45 psi)

5.18 Heater control unit



Installation location

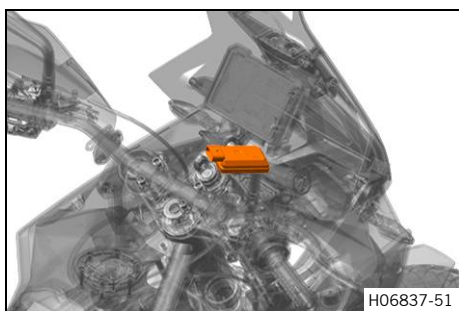
- The heater control unit is installed next to the 12-V battery.

Component description

- The heater control unit **HCU** is responsible for the heated grips, which are controlled using the combination instrument.

Heater control unit connector **OZ** (📖 p. 507) pin assignment

5.19 Connectivity Unit



Installation location

- The Connectivity Unit is located on the left next to the headlight.

Component description

- The Connectivity Unit is equipped with a Bluetooth module, which can be used to connect a smartphone to the combination instrument in order to display incoming calls or listen to music while riding.

Connectivity Unit connector **OK** (📖 p. 506) pin assignment

Blink code for malfunction indicator lamp (OBD)	 Malfunction indicator lamp lights up
Display on diagnostic tool	P003000 "Lambda sensor heater cylinder 1" "Circuit fault"
Error level condition	Reference voltage: 2.5 V Time: ≥ 0.5 s
Possible cause	Lambda sensor heater, cylinder 1 – the value is not plausible (📖 p. 33)
	Lambda sensor heater cylinder 1 – the power supply is faulty (📖 p. 33)
	Lambda sensor heater, cylinder 1 – the control wire is faulty (📖 p. 34)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Lambda sensor heater, cylinder 1 – the value is not plausible

Condition

The ignition is off.

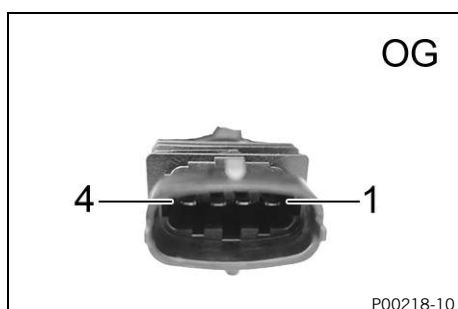
Lambda sensor for cylinder 1 is disconnected. (📖 p. 9)

Lambda sensor heater, cylinder 1 – check the resistance.

-  Measure the resistance between the specified points.
 Lambda sensor cylinder 1, connector **OG** pin 1 –
 Lambda sensor cylinder 1, connector **OG** pin 2

Lambda sensor heater	
Resistance at: 20 °C (68 °F)	9 Ω

- » If the specifications have not been met:
 - Change the lambda sensor cylinder 1.
- » If the specifications have been met:
 - Check the next possible cause:
 Lambda sensor heater cylinder 1 – the power supply is faulty (📖 p. 33)



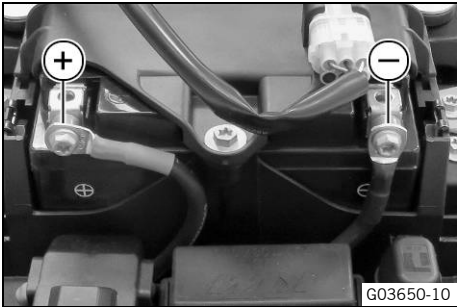
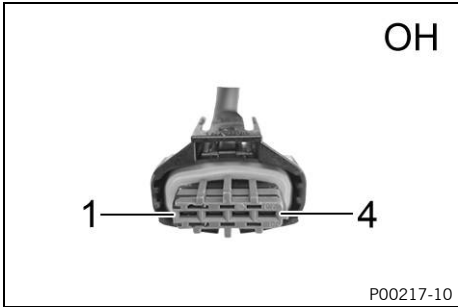
Lambda sensor heater cylinder 1 – the power supply is faulty

Condition

The ignition is on.

Engine control unit is connected. (📖 p. 15)

Lambda sensor for cylinder 1 is disconnected. (📖 p. 9)



Lambda sensor heater cylinder 1 – check the power supply.

- **V** Measure the voltage between the specified points.
Lambda sensor cylinder 1, connector **OH** pin 1 – Measuring point **Ground (–)**

i Info
For the measurement, the measuring points must be subjected to a 12 V/21 W bulb load.

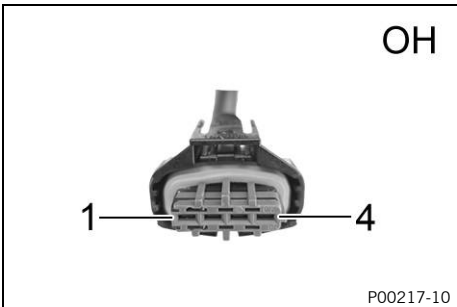
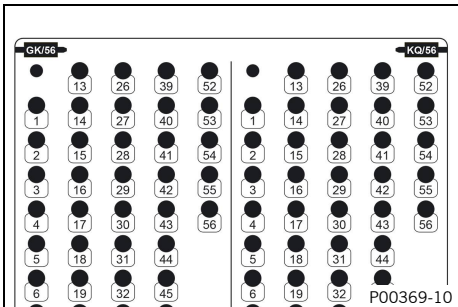
The value must not deviate from the battery voltage "**VBAT**" by more than 1 V.

- » If the specifications have not been met:
 - Check connector **OH** (p. 506) pin 1.
 - Check the cable from connector **OH** (p. 506) pin 1 to the next node in the wiring harness.
- » If the specifications have been met:
 - Check the next possible cause:
Lambda sensor heater, cylinder 1 – the control wire is faulty (p. 34)

Lambda sensor heater, cylinder 1 – the control wire is faulty

Condition

The ignition is off.
Engine control unit is disconnected. (p. 15)
The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.
Lambda sensor for cylinder 1 is disconnected. (p. 9)



Lambda sensor heater for cylinder 1 – check the control wire.

- **Ω** Measure the resistance between the specified points.
Break-out box, connector **GK** pin 15 – Lambda sensor cylinder 1, connector **OH** pin 2

Resistance	≤ 0.6 Ω

- » If the specifications have not been met:
 - Check engine control unit connector **GK** (p. 497) pin 15 and connector **OH** (p. 506) pin 2.
 - Check the cable from engine control unit connector **GK** (p. 497) pin 15 to connector **OH** (p. 506) pin 2.
- » If the specifications have been met:
 - Contact customer service.

Blink code for malfunction indicator lamp (OBD)	 Malfunction indicator lamp lights up
Display on diagnostic tool	P003100 "Lambda sensor heater cylinder 1" "Voltage too low"
Error level condition	Circuit fault Voltage: ≤ 0.2 V Time: ≥ 2 s
Possible cause	Lambda sensor heater, cylinder 1 – the value is not plausible (📖 p. 35)
	Lambda sensor heater, cylinder 1 has a short circuit to ground (terminal 31) (📖 p. 35)
	Lambda sensor heater cylinder 1 – the power supply is faulty (📖 p. 36)
	Lambda sensor heater, cylinder 1 - the control wire has a short circuit to ground (terminal 31) (📖 p. 37)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Lambda sensor heater, cylinder 1 – the value is not plausible

Condition

The ignition is off.

Lambda sensor for cylinder 1 is disconnected. (📖 p. 9)

Lambda sensor heater, cylinder 1 – check the resistance.

-  Measure the resistance between the specified points.
 Lambda sensor cylinder 1, connector **OG** pin **1** –
 Lambda sensor cylinder 1, connector **OG** pin **2**

Lambda sensor heater	
Resistance at: 20 °C (68 °F)	9 Ω

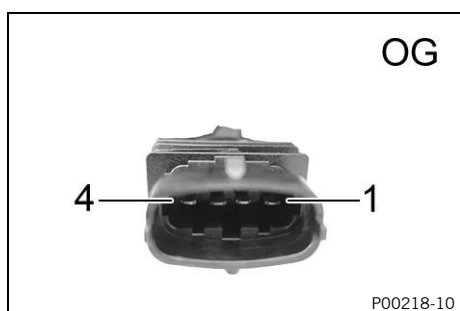
- » If the specifications have not been met:
 - Change the lambda sensor cylinder 1.
- » If the specifications have been met:
 - Check the next possible cause:
 Lambda sensor heater, cylinder 1 has a short circuit to ground (terminal 31) (📖 p. 35)

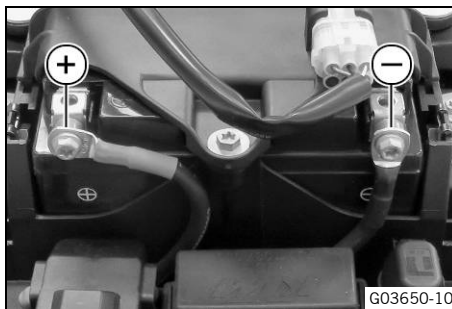
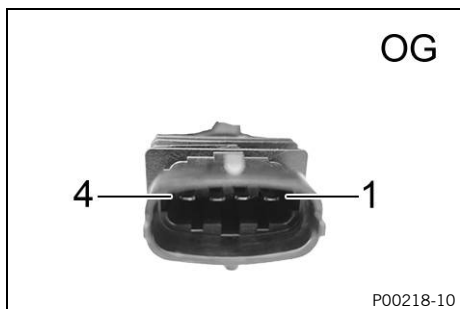
Lambda sensor heater, cylinder 1 has a short circuit to ground (terminal 31)

Condition

The ignition is off.

Lambda sensor for cylinder 1 is disconnected. (📖 p. 9)





Check lambda sensor heater, cylinder 1 for a short circuit to ground (terminal 31).

- **V** Measure the voltage between the specified points.
Lambda sensor cylinder 1, connector **OG** pin 1 – Measuring point **plus (+)**

Voltage	≤ 0.1 V

- » If the specifications have not been met:
 - Change the lambda sensor cylinder 1.
- » If the specifications have been met:
 - Check the next possible cause:
Lambda sensor heater cylinder 1 – the power supply is faulty (p. 36)

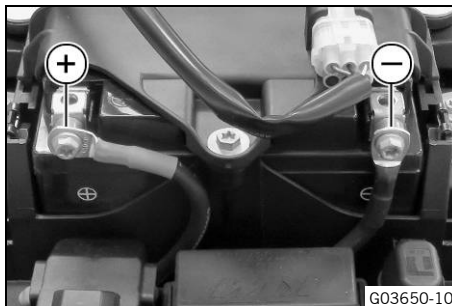
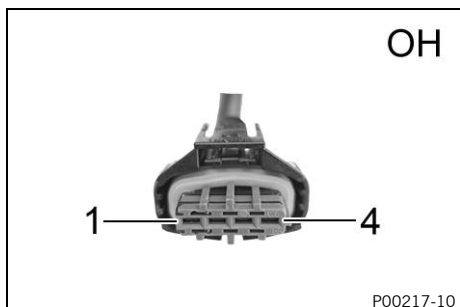
Lambda sensor heater cylinder 1 – the power supply is faulty

Condition

The ignition is on.

Engine control unit is connected. (p. 15)

Lambda sensor for cylinder 1 is disconnected. (p. 9)



Lambda sensor heater cylinder 1 – check the power supply.

- **V** Measure the voltage between the specified points.
Lambda sensor cylinder 1, connector **OH** pin 1 – Measuring point **Ground (-)**

Info

For the measurement, the measuring points must be subjected to a 12 V/21 W bulb load.

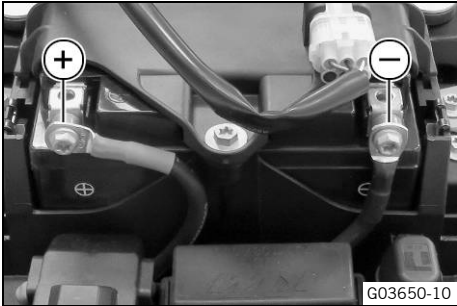
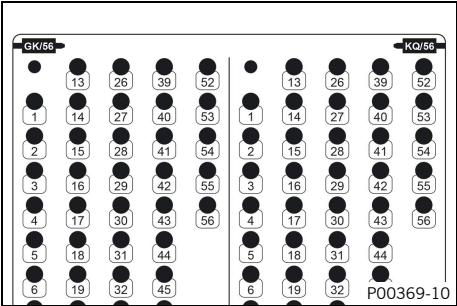
The value must not deviate from the battery voltage "VBAT" by more than 1 V.

- » If the specifications have not been met:
 - Check connector **OH** (p. 506) pin 1.
 - Check the cable from connector **OH** (p. 506) pin 1 to the next node in the wiring harness.
- » If the specifications have been met:
 - Check the next possible cause:
Lambda sensor heater, cylinder 1 - the control wire has a short circuit to ground (terminal 31) (p. 37)

Lambda sensor heater, cylinder 1 - the control wire has a short circuit to ground (terminal 31)

Condition

The ignition is off.
Engine control unit is disconnected. (📖 p. 15)
The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.
Lambda sensor for cylinder 1 is disconnected. (📖 p. 9)



Lambda sensor heater, cylinder 1 – check the control wire for a short circuit to ground (terminal 31).

- **V** Measure the voltage between the specified points.
Break-out box, connector **GK** pin **15** – Measuring point **plus (+)**

Voltage	≤ 0.1 V

- » If the specifications have not been met:
 - Check the cable from engine control unit connector **GK** (📖 p. 497) pin **15** to connector **OH** (📖 p. 506) pin **2** for a short circuit to ground (terminal 31).
- » If the specifications have been met:
 - Contact customer service.

Blink code for malfunction indicator lamp (OBD)	 Malfunction indicator lamp lights up
Display on diagnostic tool	P003200 "Lambda sensor heater cylinder 1" "Voltage too high"
Error level condition	Circuit fault Voltage: ≥ 10 V Time: ≥ 0.5 s
Possible cause	Lambda sensor heater, cylinder 1 – the value is not plausible (📖 p. 38)
	Lambda sensor heater, cylinder 1 – the control wire has a short circuit to plus (terminal 30) (📖 p. 38)
	Lambda sensor heater, cylinder 1 – the control wire has a short circuit to ignition plus (terminal 15) (📖 p. 39)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Lambda sensor heater, cylinder 1 – the value is not plausible

Condition

The ignition is off.
Lambda sensor for cylinder 1 is disconnected. (📖 p. 9)

Lambda sensor heater, cylinder 1 – check the resistance.

-  Measure the resistance between the specified points.
Lambda sensor cylinder 1, connector **OG** pin **1** –
Lambda sensor cylinder 1, connector **OG** pin **2**

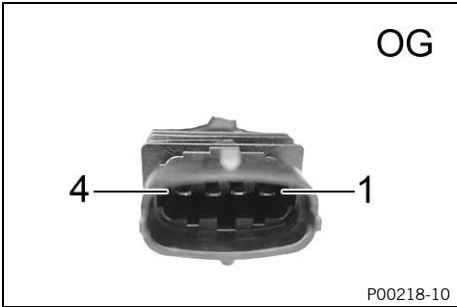
Lambda sensor heater	
Resistance at: 20 °C (68 °F)	9 Ω

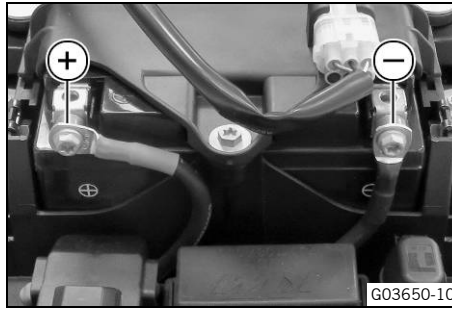
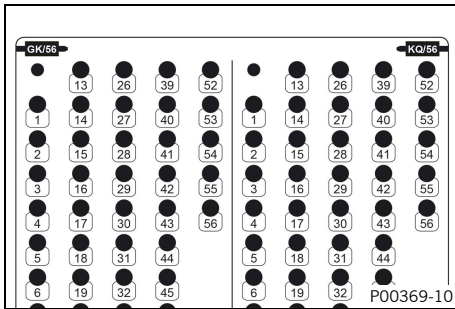
- » If the specifications have not been met:
 - Change the lambda sensor cylinder 1.
- » If the specifications have been met:
 - Check the next possible cause:
Lambda sensor heater, cylinder 1 – the control wire has a short circuit to plus (terminal 30) (📖 p. 38)

Lambda sensor heater, cylinder 1 – the control wire has a short circuit to plus (terminal 30)

Condition

The ignition is off.
Engine control unit is disconnected. (📖 p. 15)
The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.
Lambda sensor for cylinder 1 is disconnected. (📖 p. 9)





Lambda sensor heater, cylinder 1 – check the control wire for a short circuit to plus (terminal 30).

- **V** Measure the voltage between the specified points.
Break-out box, connector **GK** pin **15** – Measuring point **plus (+)**

Voltage	< 0.1 V

- » If the specifications have not been met:
 - Check the cable from engine control unit connector **GK** (p. 497) pin **15** to connector **OH** (p. 506) pin **2** for a short circuit to plus (terminal 30).
- » If the specifications have been met:
 - Check the next possible cause:
Lambda sensor heater, cylinder 1 – the control wire has a short circuit to ignition plus (terminal 15) (p. 39)

Lambda sensor heater, cylinder 1 – the control wire has a short circuit to ignition plus (terminal 15)

Condition

The ignition is off.

Engine control unit is disconnected. (p. 15)

The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.

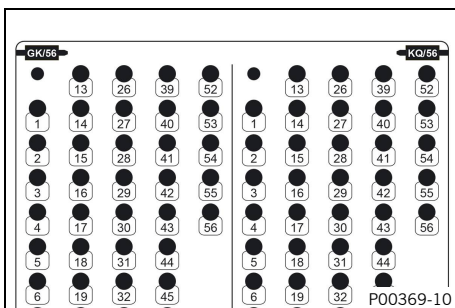
Lambda sensor for cylinder 1 is disconnected. (p. 9)

Lambda sensor heater, cylinder 1 - check the control wire for a short circuit to ignition plus (terminal 15).

- **V** Measure the voltage between the specified points.
Break-out box, connector **GK** pin **15** –
Break-out box, connector **GK** pin **44**

Voltage	≤ 0.1 V

- » If the specifications have not been met:
 - Check the cable from engine control unit connector **GK** (p. 497) pin **15** to connector **OH** (p. 506) pin **2** for a short circuit to ignition plus (terminal 15).
- » If the specifications have been met:
 - Contact customer service.

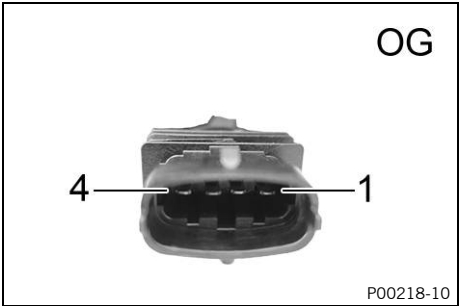


Blink code for malfunction indicator lamp (OBD)	 Malfunction indicator lamp lights up
Display on diagnostic tool	P003600 "Lambda sensor 3 after catalytic converter" "Circuit fault"
Error level condition	Lambda sensor 3 after catalytic converter – malfunction in circuit Time: ≥ 2 s
Possible cause	Lambda sensor heater 3 after catalytic converter – the value is not plausible (📖 p. 40)
	Lambda sensor heater 3 after catalytic converter – power supply is faulty (📖 p. 40)
	Lambda sensor heater 3 after catalytic converter – control wire is faulty (📖 p. 41)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Lambda sensor heater 3 after catalytic converter – the value is not plausible

Condition

The ignition is off.
Lambda sensor 3 after catalytic converter is disconnected.
(📖 p. 9)



Lambda sensor heater 3 after catalytic converter – check resistance.

-  Measure the resistance between the specified points.
Lambda sensor 3 after catalytic converter connector **OG** pin **1** – Lambda sensor 3 after catalytic converter connector **OG** pin **2**

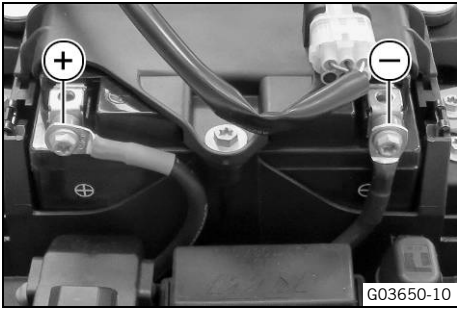
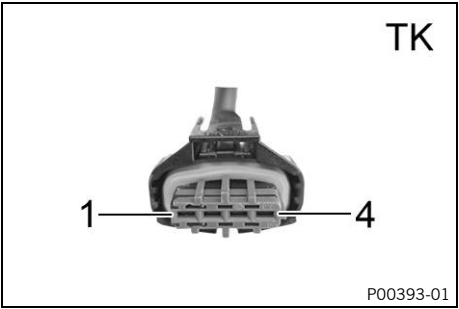
Lambda sensor heater	
Resistance at: 20 °C (68 °F)	9 Ω

- » If the specifications have not been met:
 - Change lambda sensor 3 after catalytic converter.
- » If the specifications have been met:
 - Check the next possible cause:
Lambda sensor heater 3 after catalytic converter – power supply is faulty (📖 p. 40)

Lambda sensor heater 3 after catalytic converter – power supply is faulty

Condition

The ignition is on.
Engine control unit is connected. (📖 p. 15)
Lambda sensor 3 after catalytic converter is disconnected. (📖 p. 9)



Lambda sensor heater 3 after catalytic converter – check the power supply.

- **V** Measure the voltage between the specified points.
Lambda sensor 3 after catalytic converter connector **TK** pin 1 – Measuring point **Ground (-)**



Info
For the measurement, the measuring points must be subjected to a 12 V/21 W bulb.

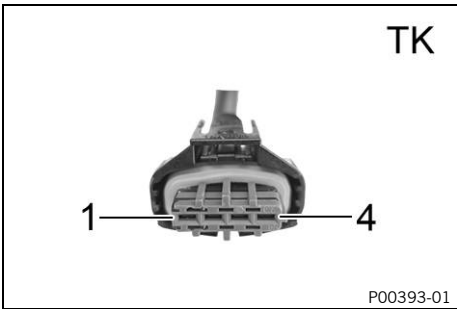
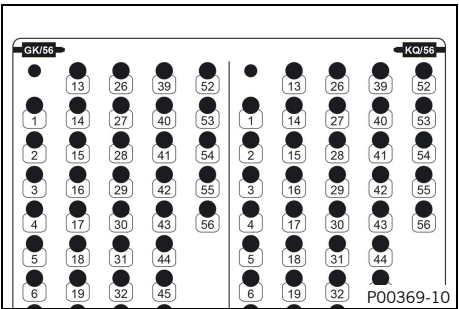
The value must not deviate from the battery voltage "**VBAT**" by more than 1 V.

- » If the specifications have not been met:
 - Check connector **TK** (📖 p. 508) pin 1.
 - Check the cable from connector **TK** (📖 p. 508) pin 1 to the next node in the wiring harness.
- » If the specifications have been met:
 - Check the next possible cause:
Lambda sensor heater 3 after catalytic converter – control wire is faulty (📖 p. 41)

Lambda sensor heater 3 after catalytic converter – control wire is faulty

Condition

The ignition is off.
Engine control unit is disconnected. (📖 p. 15)
The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.
Lambda sensor 3 after catalytic converter is disconnected. (📖 p. 9)



Lambda sensor heater 3 after catalytic converter – check control wire.

- **Ω** Measure the resistance between the specified points.
Break-out box, connector **KQ** pin 55 – Lambda sensor 3 after catalytic converter connector **TK** pin 2

Resistance	$\leq 0.6 \Omega$

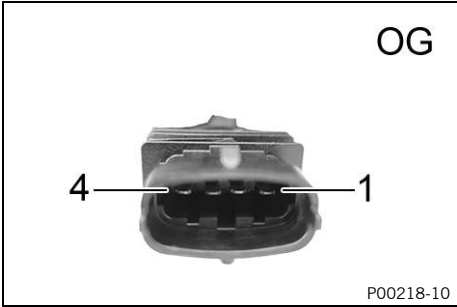
- » If the specifications have not been met:
 - Check engine control unit connector **KQ** (📖 p. 502) pin 55 and connector **TK** (📖 p. 508) pin 2.
 - Check the cable from engine control unit connector **KQ** (📖 p. 502) pin 55 to connector **TK** (📖 p. 508) pin 2.
- » If the specifications have been met:
 - Contact customer service.

Blink code for malfunction indicator lamp (OBD)	 Malfunction indicator lamp lights up
Display on diagnostic tool	P003700 "Lambda sensor 3 after catalytic converter" "Voltage too low"
Error level condition	Lambda sensor 3 after catalytic converter – voltage too low Time: ≥ 2 s
Possible cause	Lambda sensor heater 3 after catalytic converter – the value is not plausible (📖 p. 42) Lambda sensor heater 3 after catalytic converter has a short circuit to ground (terminal 31) (📖 p. 42) Lambda sensor heater 3 after catalytic converter – power supply is faulty (📖 p. 43) Lambda sensor heater 3 after catalytic converter – the control wire has a short circuit to ground (terminal 31) (📖 p. 44)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Lambda sensor heater 3 after catalytic converter – the value is not plausible

Condition

The ignition is off.
Lambda sensor 3 after catalytic converter is disconnected. (📖 p. 9)



Lambda sensor heater 3 after catalytic converter – check resistance.

-  Measure the resistance between the specified points.
Lambda sensor 3 after catalytic converter connector **OG** pin 1 – Lambda sensor 3 after catalytic converter connector **OG** pin 2

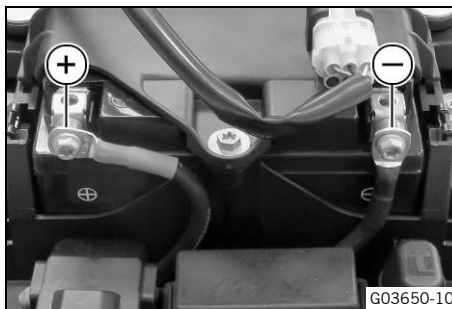
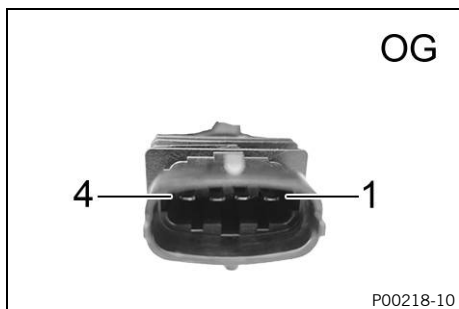
Lambda sensor heater	
Resistance at: 20 °C (68 °F)	9 Ω

- » If the specifications have not been met:
 - Change lambda sensor 3 after catalytic converter.
- » If the specifications have been met:
 - Check the next possible cause:
Lambda sensor heater 3 after catalytic converter has a short circuit to ground (terminal 31) (📖 p. 42)

Lambda sensor heater 3 after catalytic converter has a short circuit to ground (terminal 31)

Condition

The ignition is off.
Lambda sensor 3 after catalytic converter is disconnected. (📖 p. 9)



Check lambda sensor heater 3 after catalytic converter for a short circuit to ground (terminal 31).

- **V** Measure the voltage between the specified points.
 Lambda sensor 3 after catalytic converter connector **OG** pin 1 – Measuring point **plus (+)**

Voltage	< 0.1 V

- » If the specifications have not been met:
 - Change lambda sensor 3 after catalytic converter.
- » If the specifications have been met:
 - Check the next possible cause:
 Lambda sensor heater 3 after catalytic converter – power supply is faulty (p. 43)

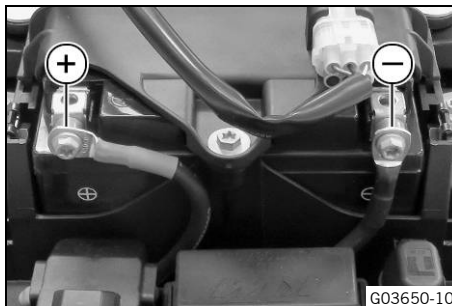
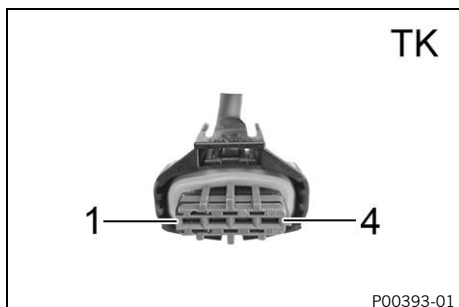
Lambda sensor heater 3 after catalytic converter – power supply is faulty

Condition

The ignition is on.

Engine control unit is connected. (p. 15)

Lambda sensor 3 after catalytic converter is disconnected. (p. 9)



Lambda sensor heater 3 after catalytic converter – check the power supply.

- **V** Measure the voltage between the specified points.
 Lambda sensor 3 after catalytic converter connector **TK** pin 1 – Measuring point **Ground (-)**



Info

For the measurement, the measuring points must be subjected to a 12 V/21 W bulb.

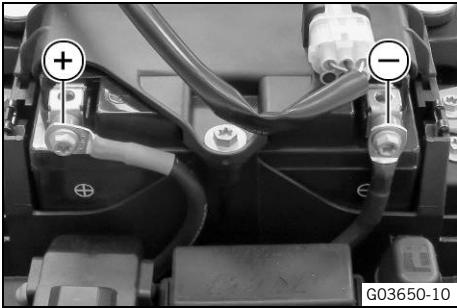
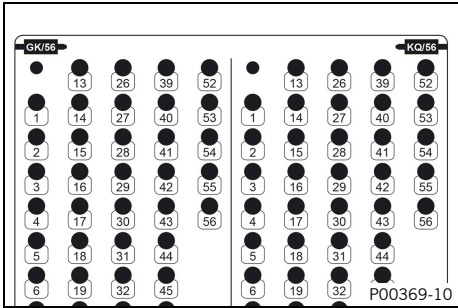
The value must not deviate from the battery voltage "VBAT" by more than 1 V.

- » If the specifications have not been met:
 - Check connector **TK** (p. 508) pin 1.
 - Check the cable from connector **TK** (p. 508) pin 1 to the next node in the wiring harness.
- » If the specifications have been met:
 - Check the next possible cause:
 Lambda sensor heater 3 after catalytic converter – the control wire has a short circuit to ground (terminal 31) (p. 44)

Lambda sensor heater 3 after catalytic converter – the control wire has a short circuit to ground (terminal 31)

Condition

The ignition is off.
Engine control unit is disconnected. (📖 p. 15)
The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.
Lambda sensor 3 after catalytic converter is disconnected. (📖 p. 9)



Lambda sensor heater 3 after catalytic converter – check the control wire for a short circuit to ground (terminal 31).

- **V** Measure the voltage between the specified points.
Break-out box, connector **KQ** pin **55** – Measuring point **plus (+)**

Voltage	≤ 0.1 V

- » If the specifications have not been met:
 - Check the cable from engine control unit connector **KQ** (📖 p. 502) pin **55** to connector **TK** (📖 p. 508) pin **2** for a short circuit to ground (terminal 31).
- » If the specifications have been met:
 - Contact customer service.

Blink code for malfunction indicator lamp (OBD)	 Malfunction indicator lamp lights up
Display on diagnostic tool	P003800 "Lambda sensor 3 after catalytic converter" "Voltage too high"
Error level condition	Lambda sensor 3 after catalytic converter – voltage too high
Possible cause	Lambda sensor heater 3 after catalytic converter – the value is not plausible (📖 p. 45) Lambda sensor heater 3 after catalytic converter – the control wire has a short circuit to plus (terminal 30) (📖 p. 45) Lambda sensor heater 3 after catalytic converter – the control wire has a short circuit to ignition plus (terminal 15) (📖 p. 46)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Lambda sensor heater 3 after catalytic converter – the value is not plausible

Condition

The ignition is off.

Lambda sensor 3 after catalytic converter is disconnected.

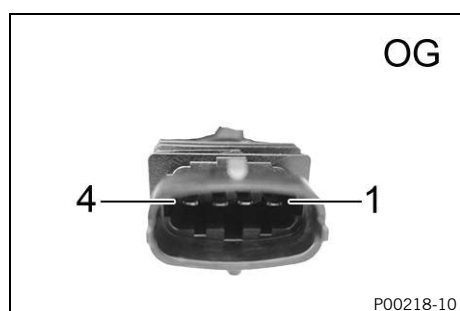
(📖 p. 9)

Lambda sensor heater 3 after catalytic converter – check resistance.

-  Measure the resistance between the specified points.
 Lambda sensor 3 after catalytic converter connector **OG** pin **1** – Lambda sensor 3 after catalytic converter connector **OG** pin **2**

Lambda sensor heater	
Resistance at: 20 °C (68 °F)	9 Ω

- » If the specifications have not been met:
 - Change lambda sensor 3 after catalytic converter.
- » If the specifications have been met:
 - Check the next possible cause:
 Lambda sensor heater 3 after catalytic converter – the control wire has a short circuit to plus (terminal 30) (📖 p. 45)



Lambda sensor heater 3 after catalytic converter – the control wire has a short circuit to plus (terminal 30)

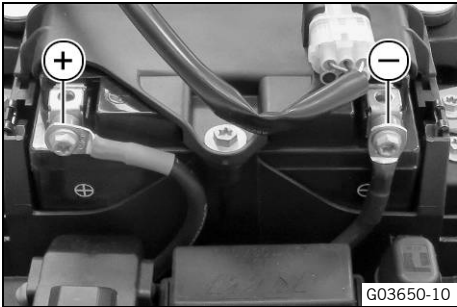
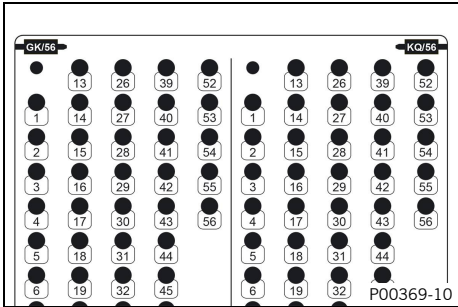
Condition

The ignition is off.

Engine control unit is disconnected. (📖 p. 15)

The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.

Lambda sensor 3 after catalytic converter is disconnected. (📖 p. 9)



Lambda sensor heater 3 after catalytic converter – check the control wire for a short circuit to plus (terminal 30).

- **V** Measure the voltage between the specified points.
Break-out box, connector **KQ** pin **55** – Measuring point **plus (+)**

Voltage	< 0.1 V

- » If the specifications have not been met:
 - Check the cable from engine control unit connector **KQ** (p. 502) pin **55** to connector **TK** (p. 508) pin **2** for a short circuit to plus (terminal 30).
- » If the specifications have been met:
 - Check the next possible cause:
Lambda sensor heater 3 after catalytic converter – the control wire has a short circuit to ignition plus (terminal 15) (p. 46)

Lambda sensor heater 3 after catalytic converter – the control wire has a short circuit to ignition plus (terminal 15)

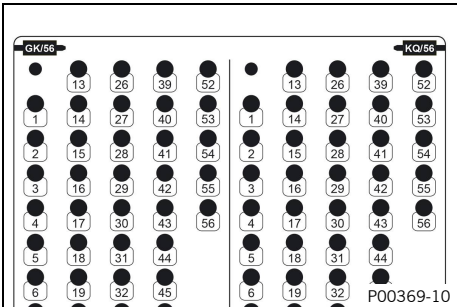
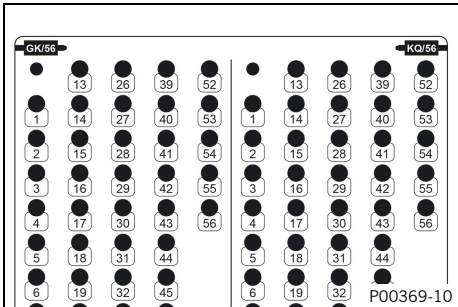
Condition

The ignition is off.

Engine control unit is disconnected. (p. 15)

The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.

Lambda sensor 3 after catalytic converter is disconnected. (p. 9)



Lambda sensor heater 3 after catalytic converter – check the control wire for a short circuit to ignition plus (terminal 15).

- **V** Measure the voltage between the specified points.
Break-out box, connector **KQ** pin **55** – Break-out box, connector **GK** pin **44**

Voltage	≤ 0.1 V

- » If the specifications have not been met:
 - Check the cable from engine control unit connector **KQ** (p. 502) pin **55** to connector **TK** (p. 508) pin **2** for a short circuit to ignition plus (terminal 15).
- » If the specifications have been met:
 - Contact customer service.

Blink code for malfunction indicator lamp (OBD)	 Malfunction indicator lamp lights up
Display on diagnostic tool	P005000 "Lambda sensor heater cylinder 2" "Circuit fault"
Error level condition	Reference voltage: 2.5 V Time: ≥ 0.5 s
Possible cause	Lambda sensor heater, cylinder 2 – the value is not plausible (📖 p. 47)
	Lambda sensor heater cylinder 2 - the power supply is faulty (📖 p. 47)
	Cylinder 2 lambda sensor heater – the control wire is faulty (📖 p. 48)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Lambda sensor heater, cylinder 2 – the value is not plausible

Condition

The ignition is off.

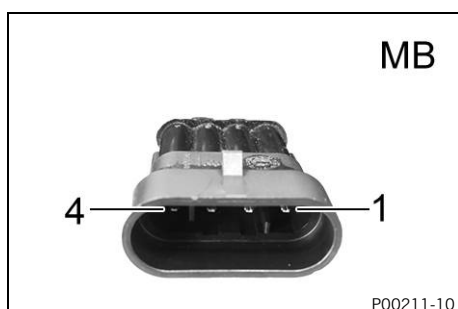
Lambda sensor for cylinder 2 is disconnected. (📖 p. 9)

Lambda sensor heater cylinder 2 – check the resistance.

-  Measure the resistance between the specified points.
 Lambda sensor cylinder 2, connector **MB** pin **3** –
 Lambda sensor cylinder 2, connector **MB** pin **4**

Lambda sensor heater	
Resistance at: 20 °C (68 °F)	9 Ω

- » If the specifications have not been met:
 - Change the lambda sensor cylinder 2.
- » If the specifications have been met:
 - Check the next possible cause:
 Lambda sensor heater cylinder 2 - the power supply is faulty (📖 p. 47)



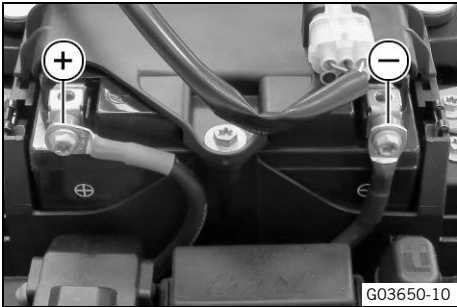
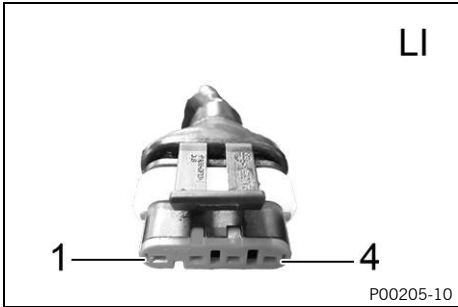
Lambda sensor heater cylinder 2 - the power supply is faulty

Condition

The ignition is on.

Engine control unit is connected. (📖 p. 15)

Lambda sensor for cylinder 2 is disconnected. (📖 p. 9)



Lambda sensor heater cylinder 2 - check the power supply.

- **V** Measure the voltage between the specified points.
Lambda sensor cylinder 2, connector **LI** pin **4** – Measuring point **Ground (-)**

i Info
For the measurement, the measuring points must be subjected to a 12 V/21 W bulb load.

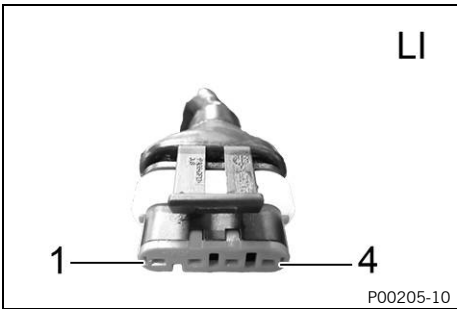
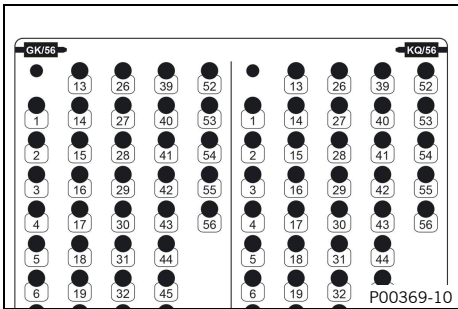
The value must not deviate from the battery voltage "VBAT" by more than 1 V.

- » If the specifications have not been met:
 - Check connector **LI** (p. 504) pin **4**.
 - Check the cable from connector **LI** (p. 504) pin **4** to the next node in the wiring harness.
- » If the specifications have been met:
 - Check the next possible cause:
Cylinder 2 lambda sensor heater – the control wire is faulty (p. 48)

Cylinder 2 lambda sensor heater – the control wire is faulty

Condition

The ignition is off.
Engine control unit is disconnected. (p. 15)
The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.
Lambda sensor for cylinder 2 is disconnected. (p. 9)



Lambda sensor heater, cylinder 2 - check the control wire.

- **Ω** Measure the resistance between the specified points.
Break-out box, connector **GK** pin **14** – Lambda sensor cylinder 2, connector **LI** pin **3**

Resistance	≤ 0.6 Ω

- » If the specifications have not been met:
 - Check engine control unit connector **GK** (p. 497) pin **14** and connector **LI** (p. 504) pin **3**.
 - Check the cable from engine control unit connector **GK** (p. 497) pin **14** to connector **LI** (p. 504) pin **3**.
- » If the specifications have been met:
 - Contact customer service.

Blink code for malfunction indicator lamp (OBD)	 Malfunction indicator lamp lights up
Display on diagnostic tool	P005100 "Lambda sensor heater cylinder 2" "Voltage too low"
Error level condition	Cylinder 2 lambda sensor heater – voltage too low Voltage: ≤ 0.2 V Time: ≥ 2 s
Possible cause	Lambda sensor heater, cylinder 2 – the value is not plausible (📖 p. 49)
	Lambda sensor heater for cylinder 2 has a short circuit to ground (terminal 31) (📖 p. 49)
	Lambda sensor heater cylinder 2 - the power supply is faulty (📖 p. 50)
	Lambda sensor heater, cylinder 2 - the control wire has a short circuit to ground (terminal 31) (📖 p. 51)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Lambda sensor heater, cylinder 2 – the value is not plausible

Condition

The ignition is off.

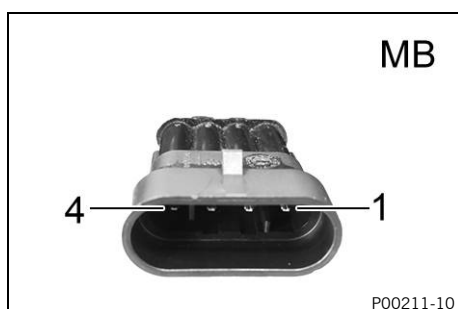
Lambda sensor for cylinder 2 is disconnected. (📖 p. 9)

Lambda sensor heater cylinder 2 – check the resistance.

-  Measure the resistance between the specified points.
 Lambda sensor cylinder 2, connector **MB** pin **3** –
 Lambda sensor cylinder 2, connector **MB** pin **4**

Lambda sensor heater	
Resistance at: 20 °C (68 °F)	9 Ω

- » If the specifications have not been met:
 - Change the lambda sensor cylinder 2.
- » If the specifications have been met:
 - Check the next possible cause:
 Lambda sensor heater for cylinder 2 has a short circuit to ground (terminal 31) (📖 p. 49)



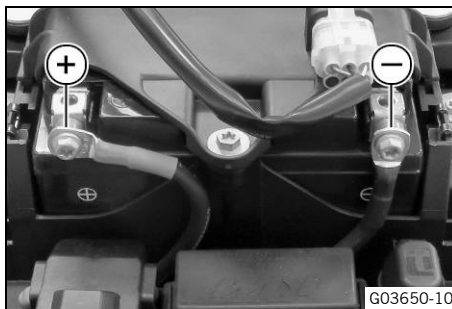
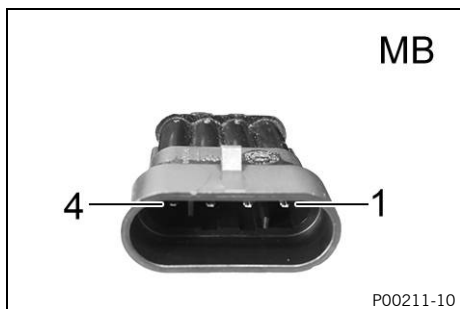
Lambda sensor heater for cylinder 2 has a short circuit to ground (terminal 31)

Condition

The ignition is off.

Lambda sensor for cylinder 2 is disconnected. (📖 p. 9)

6 ENGINE CONTROL TROUBLE CODE



Check lambda sensor heater for cylinder 2 for a short circuit to ground (terminal 31).

- **V** Measure the voltage between the specified points.
Lambda sensor cylinder 2, connector **MB** pin **4** – Measuring point **plus (+)**

Voltage	< 0.1 V

- » If the specifications have not been met:
 - Change the lambda sensor cylinder 2.
- » If the specifications have been met:
 - Check the next possible cause:
Lambda sensor heater cylinder 2 - the power supply is faulty (📖 p. 50)

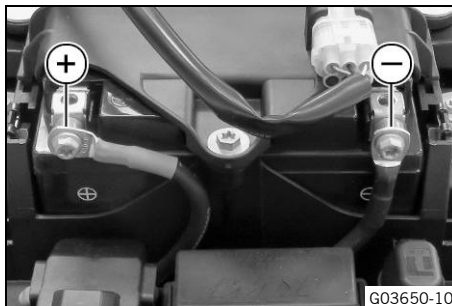
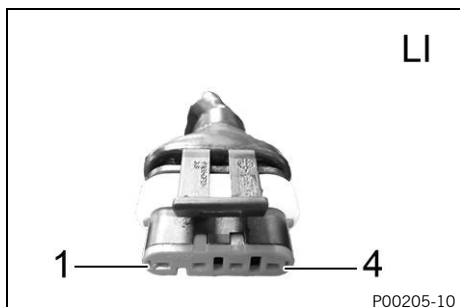
Lambda sensor heater cylinder 2 - the power supply is faulty

Condition

The ignition is on.

Engine control unit is connected. (📖 p. 15)

Lambda sensor for cylinder 2 is disconnected. (📖 p. 9)



Lambda sensor heater cylinder 2 - check the power supply.

- **V** Measure the voltage between the specified points.
Lambda sensor cylinder 2, connector **LI** pin **4** – Measuring point **Ground (-)**



Info

For the measurement, the measuring points must be subjected to a 12 V/21 W bulb load.

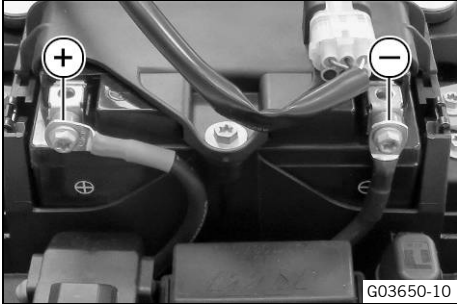
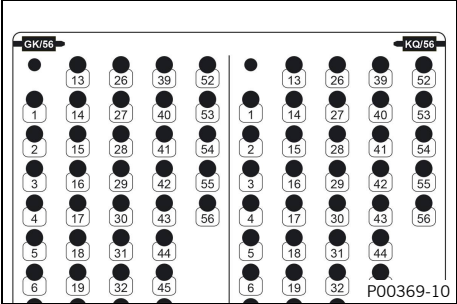
The value must not deviate from the battery voltage "**VBAT**" by more than 1 V.

- » If the specifications have not been met:
 - Check connector **LI** (📖 p. 504) pin **4**.
 - Check the cable from connector **LI** (📖 p. 504) pin **4** to the next node in the wiring harness.
- » If the specifications have been met:
 - Check the next possible cause:
Lambda sensor heater, cylinder 2 - the control wire has a short circuit to ground (terminal 31) (📖 p. 51)

Lambda sensor heater, cylinder 2 - the control wire has a short circuit to ground (terminal 31)

Condition

The ignition is off.
Engine control unit is disconnected. (📖 p. 15)
The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.
Lambda sensor for cylinder 2 is disconnected. (📖 p. 9)



Lambda sensor heater, cylinder 2 - check the control wire for a short circuit to ground (terminal 31).

- **V** Measure the voltage between the specified points.
Break-out box, connector **GK** pin **14** – Measuring point **plus (+)**

Voltage	≤ 0.1 V

- » If the specifications have not been met:
 - Check the cable from engine control unit connector **GK** (📖 p. 497) pin **14** to connector **LI** (📖 p. 504) pin **3** for a short circuit to ground (terminal 31).
- » If the specifications have been met:
 - Contact customer service.

Blink code for malfunction indicator lamp (OBD)	 Malfunction indicator lamp lights up
Display on diagnostic tool	P005200 "Lambda sensor heater cylinder 2" "Voltage too high"
Error level condition	Cylinder 2 lambda sensor heater – voltage too high
Possible cause	Lambda sensor heater, cylinder 2 – the value is not plausible (📖 p. 52) Lambda sensor heater, cylinder 2 – the control wire has a short circuit to plus (terminal 30) (📖 p. 52) Lambda sensor heater, cylinder 2 – the control wire has a short circuit to ignition plus (terminal 15) (📖 p. 53)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Lambda sensor heater, cylinder 2 – the value is not plausible

Condition

The ignition is off.
Lambda sensor for cylinder 2 is disconnected. (📖 p. 9)

Lambda sensor heater cylinder 2 – check the resistance.

-  Measure the resistance between the specified points.
Lambda sensor cylinder 2, connector **MB** pin **3** –
Lambda sensor cylinder 2, connector **MB** pin **4**

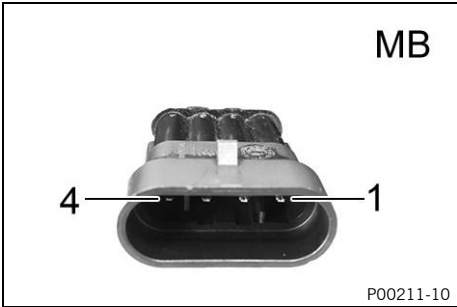
Lambda sensor heater	
Resistance at: 20 °C (68 °F)	9 Ω

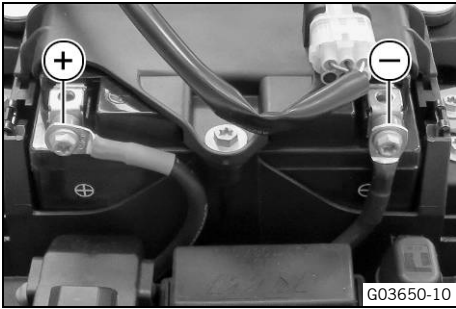
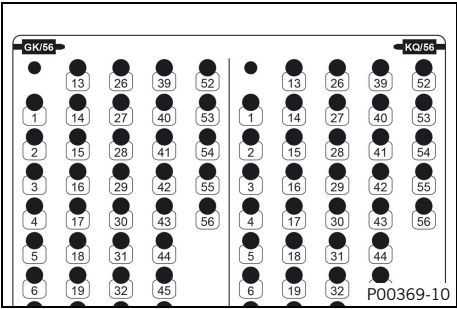
- » If the specifications have not been met:
 - Change the lambda sensor cylinder 2.
- » If the specifications have been met:
 - Check the next possible cause:
Lambda sensor heater, cylinder 2 – the control wire has a short circuit to plus (terminal 30) (📖 p. 52)

Lambda sensor heater, cylinder 2 – the control wire has a short circuit to plus (terminal 30)

Condition

The ignition is off.
Engine control unit is disconnected. (📖 p. 15)
The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.
Lambda sensor for cylinder 2 is disconnected. (📖 p. 9)





Lambda sensor heater, cylinder 2 - check the control wire for a short circuit to plus (terminal 30).

- **V** Measure the voltage between the specified points.
Break-out box, connector **GK** pin **14** – Measuring point **plus (+)**

Voltage	< 0.1 V

- » If the specifications have not been met:
 - Check the cable from engine control unit connector **GK** (p. 497) pin **14** to connector **LI** (p. 504) pin **3** for a short circuit to plus (terminal 30).
- » If the specifications have been met:
 - Check the next possible cause:
Lambda sensor heater, cylinder 2 – the control wire has a short circuit to ignition plus (terminal 15) (p. 53)

Lambda sensor heater, cylinder 2 – the control wire has a short circuit to ignition plus (terminal 15)

Condition

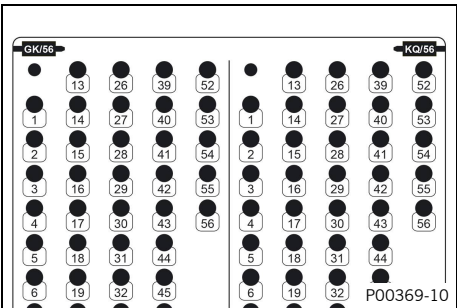
The ignition is off.
Engine control unit is disconnected. (p. 15)
The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.
Lambda sensor for cylinder 2 is disconnected. (p. 9)

Lambda sensor heater, cylinder 2 - check the control wire for a short circuit to ignition plus (terminal 15).

- **V** Measure the voltage between the specified points.
Break-out box, connector **GK** pin **14** –
Break-out box, connector **GK** pin **44**

Voltage	≤ 0.1 V

- » If the specifications have not been met:
 - Check the cable from engine control unit connector **GK** (p. 497) pin **14** to connector **LI** (p. 504) pin **3** for a short circuit to ignition plus (terminal 15).
- » If the specifications have been met:
 - Contact customer service.



Blink code for malfunction indicator lamp (OBD)	 Malfunction indicator lamp lights up
Display on diagnostic tool	P005300 "Lambda sensor heater cylinder 1" "Resistance value plausibility error"
Error level condition	Lambda sensor heater cylinder 1 – resistance value plausibility error Lambda sensor resistance: $\geq 40\ \Omega$
Possible cause	Lambda sensor heater, cylinder 1 – the value is not plausible (📖 p. 54) Lambda sensor heater, cylinder 1 – the control wire is faulty (📖 p. 54)
Last measure if none of the documented causes leads to elimination of the fault	– Change the lambda sensor.

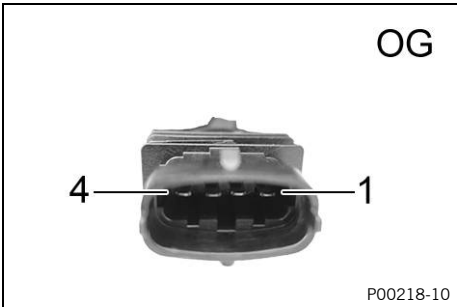
Lambda sensor heater, cylinder 1 – the value is not plausible

Condition
The ignition is off.
Lambda sensor for cylinder 1 is disconnected. (📖 p. 9)

Lambda sensor heater, cylinder 1 – check the resistance.
–  Measure the resistance between the specified points.
Lambda sensor cylinder 1, connector **OG** pin 1 –
Lambda sensor cylinder 1, connector **OG** pin 2

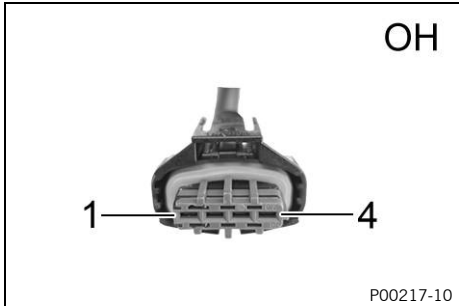
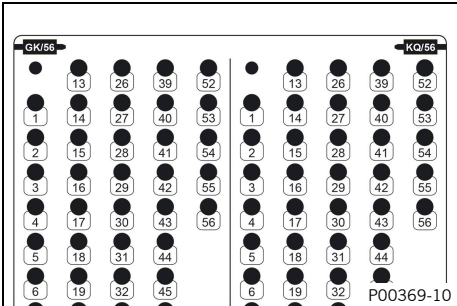
Lambda sensor heater	
Resistance at: 20 °C (68 °F)	9 Ω

- » If the specifications have not been met:
 - Change the lambda sensor cylinder 1.
- » If the specifications have been met:
 - Check the next possible cause:
Lambda sensor heater, cylinder 1 – the control wire is faulty (📖 p. 54)



Lambda sensor heater, cylinder 1 – the control wire is faulty

Condition
The ignition is off.
Engine control unit is disconnected. (📖 p. 15)
The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.
Lambda sensor for cylinder 1 is disconnected. (📖 p. 9)



Lambda sensor heater for cylinder 1 – check the control wire.
–  Measure the resistance between the specified points.
Break-out box, connector **GK** pin 15 – Lambda sensor cylinder 1, connector **OH** pin 2

Resistance	$\leq 0.6 \Omega$

- » If the specifications have not been met:
 - Check engine control unit connector **GK** (📖 p. 497) pin **15** and connector **OH** (📖 p. 506) pin **2**.
 - Check the cable from engine control unit connector **GK** (📖 p. 497) pin **15** to connector **OH** (📖 p. 506) pin **2**.
- » If the specifications have been met:
 - Change the lambda sensor.

6 ENGINE CONTROL TROUBLE CODE

Blink code for malfunction indicator lamp (OBD)	 Malfunction indicator lamp lights up
Display on diagnostic tool	P005400 "Lambda sensor heater 3 after catalytic converter" "Resistance value plausibility error"
Error level condition	Lambda sensor heater 3 after catalytic converter – resistance value plausibility error
Possible cause	Lambda sensor heater 3 after catalytic converter – the value is not plausible (📖 p. 56) Lambda sensor heater 3 after catalytic converter – control wire is faulty (📖 p. 56)
Last measure if none of the documented causes leads to elimination of the fault	– Change the lambda sensor.

Lambda sensor heater 3 after catalytic converter – the value is not plausible

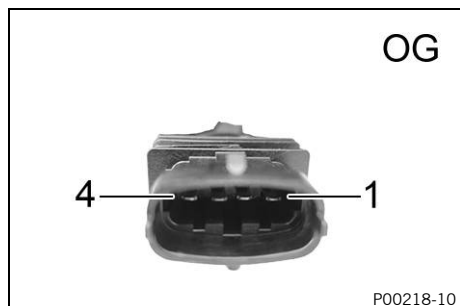
Condition

The ignition is off.

Lambda sensor 3 after catalytic converter is disconnected. (📖 p. 9)

Lambda sensor heater 3 after catalytic converter – check resistance.

-  Measure the resistance between the specified points.
Lambda sensor 3 after catalytic converter connector **OG** pin 1 – Lambda sensor 3 after catalytic converter connector **OG** pin 2



Lambda sensor heater	
Resistance at: 20 °C (68 °F)	9 Ω

- » If the specifications have not been met:
 - Change lambda sensor 3 after catalytic converter.
- » If the specifications have been met:
 - Check the next possible cause:
Lambda sensor heater 3 after catalytic converter – control wire is faulty (📖 p. 56)

Lambda sensor heater 3 after catalytic converter – control wire is faulty

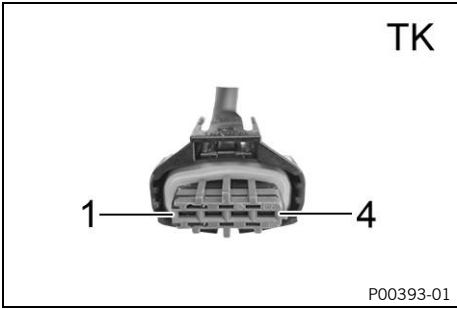
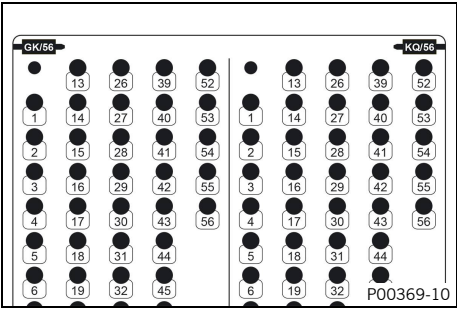
Condition

The ignition is off.

Engine control unit is disconnected. (📖 p. 15)

The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.

Lambda sensor 3 after catalytic converter is disconnected. (📖 p. 9)



Lambda sensor heater 3 after catalytic converter – check control wire.

-  Measure the resistance between the specified points.
Break-out box, connector **KQ** pin **55** – Lambda sensor 3 after catalytic converter connector **TK** pin **2**

Resistance	$\leq 0.6 \Omega$

- » If the specifications have not been met:
 - Check engine control unit connector **KQ** (📖 p. 502) pin **55** and connector **TK** (📖 p. 508) pin **2**.
 - Check the cable from engine control unit connector **KQ** (📖 p. 502) pin **55** to connector **TK** (📖 p. 508) pin **2**.
- » If the specifications have been met:
 - Change the lambda sensor.

Blink code for malfunction indicator lamp (OBD)	 Malfunction indicator lamp lights up
Display on diagnostic tool	P005900 "Lambda sensor heater cylinder 2" "Resistance value plausibility error"
Error level condition	Lambda sensor heater cylinder 2 – resistance value plausibility error
Possible cause	Lambda sensor heater, cylinder 2 – the value is not plausible (📖 p. 58) Cylinder 2 lambda sensor heater – the control wire is faulty (📖 p. 58)
Last measure if none of the documented causes leads to elimination of the fault	– Change the lambda sensor.

Lambda sensor heater, cylinder 2 – the value is not plausible

Condition

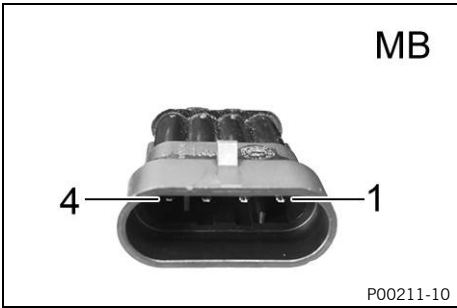
The ignition is off.
Lambda sensor for cylinder 2 is disconnected. (📖 p. 9)

Lambda sensor heater cylinder 2 – check the resistance.

-  Measure the resistance between the specified points.
Lambda sensor cylinder 2, connector **MB** pin **3** –
Lambda sensor cylinder 2, connector **MB** pin **4**

Lambda sensor heater	
Resistance at: 20 °C (68 °F)	9 Ω

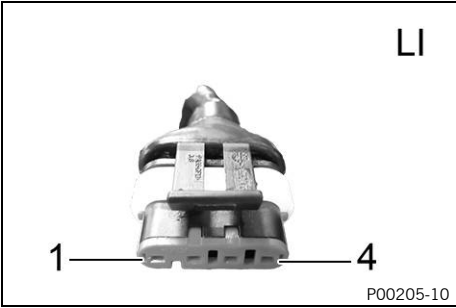
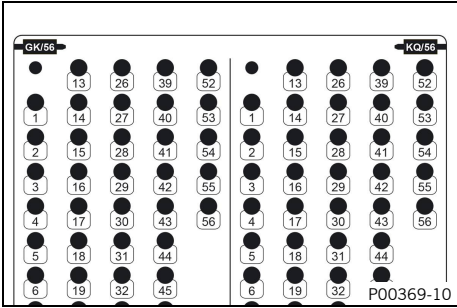
- » If the specifications have not been met:
 - Change the lambda sensor cylinder 2.
- » If the specifications have been met:
 - Check the next possible cause:
Cylinder 2 lambda sensor heater – the control wire is faulty (📖 p. 58)



Cylinder 2 lambda sensor heater – the control wire is faulty

Condition

The ignition is off.
Engine control unit is disconnected. (📖 p. 15)
The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.
Lambda sensor for cylinder 2 is disconnected. (📖 p. 9)



Lambda sensor heater, cylinder 2 - check the control wire.

-  Measure the resistance between the specified points.
Break-out box, connector **GK** pin **14** – Lambda sensor cylinder 2, connector **LI** pin **3**

Resistance	$\leq 0.6 \Omega$

- » If the specifications have not been met:
 - Check engine control unit connector **GK** (p. 497) pin **14** and connector **LI** (p. 504) pin **3**.
 - Check the cable from engine control unit connector **GK** (p. 497) pin **14** to connector **LI** (p. 504) pin **3**.
- » If the specifications have been met:
 - Change the lambda sensor.

6 ENGINE CONTROL TROUBLE CODE

Blink code for malfunction indicator lamp (OBD)	 Malfunction indicator lamp lights up
Display on diagnostic tool	P006900 "Cylinder 1 induction manifold pressure sensor to ambient air pressure sensor" "Plausibility error"
Error level condition	After starting the engine, there is too much deviation between the cylinder 1 induction manifold pressure sensor and ambient air pressure sensor Time: ≥ 1.25 s
Function check	Checking the cylinder 1 induction manifold pressure sensor and ambient air pressure sensor function (📖 p. 60)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Checking the cylinder 1 induction manifold pressure sensor and ambient air pressure sensor function

- Clear the fault memory using the KTM diagnostics tool.
- Read out the trouble code memory using the KTM diagnostics tool.
 - » If the error persists:
 - Check that the cylinder 1 induction manifold pressure sensor and ambient air pressure sensor are the same.
 - Check that the cylinder 1 induction manifold pressure sensor and ambient air pressure sensor are correctly wired and seated.

Last measure if none of the documented causes leads to elimination of the fault

- Contact customer service.

Blink code for malfunction indicator lamp (OBD)	 Malfunction indicator lamp lights up
Display on diagnostic tool	P010600 "Cylinder 1 induction manifold pressure sensor to ambient air pressure sensor" "Values out of tolerance"
Error level condition	When the engine is not running, there is too much deviation between the cylinder 1 manifold air pressure sensor and ambient air pressure sensor Time: ≥ 1.25 s
Function check	Checking the cylinder 1 induction manifold pressure sensor and ambient air pressure sensor function (📖 p. 61)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Checking the cylinder 1 induction manifold pressure sensor and ambient air pressure sensor function

- Clear the fault memory using the KTM diagnostics tool.
- Read out the trouble code memory using the KTM diagnostics tool.
 - » If the error persists:
 - Check that the cylinder 1 induction manifold pressure sensor and ambient air pressure sensor are the same.
 - Check that the cylinder 1 induction manifold pressure sensor and ambient air pressure sensor are correctly wired and seated.

Last measure if none of the documented causes leads to elimination of the fault

- Contact customer service.

6 ENGINE CONTROL TROUBLE CODE

Blink code for malfunction indicator lamp (OBD)	 Malfunction indicator lamp lights up
Display on diagnostic tool	P010700 "Induction manifold pressure sensor cylinder 1" "Voltage too low"
Error level condition	Induction manifold pressure sensor voltage: ≤ 0.2 V Time: ≥ 2 s
Function check	Induction manifold pressure sensor, cylinder 1 – checking the voltage (📖 p. 62)
Possible cause	Induction manifold pressure sensor – the power supply is faulty (📖 p. 62)
	Manifold air pressure sensor – the cylinder 1 signal wire is faulty (📖 p. 63)
	Induction manifold pressure sensor – the cylinder 1 signal wire has a short circuit to ground (terminal 31) (📖 p. 64)
Last measure if none of the documented causes leads to elimination of the fault	– Change the induction manifold pressure sensor.

Induction manifold pressure sensor, cylinder 1 – checking the voltage

Condition

The diagnostics tool is connected and running.

- Select **"Engine control unit" > "Measured values" > "Induction manifold pressure sensor voltage"** and **"Cylinder 1 induction manifold pressure at current altitude"**.

Induction manifold pressure sensor voltage	
at: 950 hPa (13.78 psi)	3.8 V
at: 350 hPa (5.08 psi)	1.4 V

- » If the displayed value is equal to the setpoint value:
 - Clear the fault memory using the KTM diagnostics tool.
 - Take a test ride.
 - Read out the trouble code memory using the KTM diagnostics tool.
- » If the indicated value does not correspond to the setpoint value:
 - Check the next possible cause:
Induction manifold pressure sensor – the power supply is faulty (📖 p. 62)
 - Check the next possible cause:
Manifold air pressure sensor – the cylinder 1 signal wire is faulty (📖 p. 63)
 - Check the next possible cause:
Induction manifold pressure sensor – the cylinder 1 signal wire has a short circuit to ground (terminal 31) (📖 p. 64)

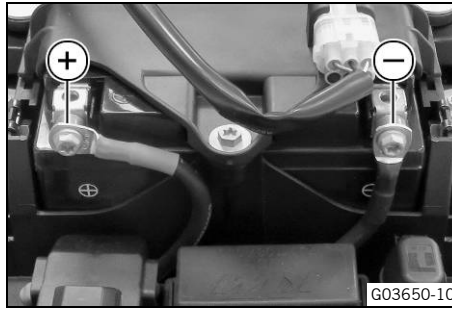
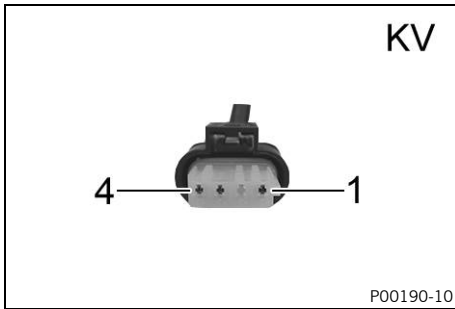
Induction manifold pressure sensor – the power supply is faulty

Condition

The ignition is on.

Engine control unit is connected. (📖 p. 15)

Induction manifold pressure sensor is connected. (📖 p. 21)



Induction manifold pressure sensor – check the power supply.

- **V** Measure the voltage between the specified points.
Induction manifold pressure sensor connector **KV** pin **4** – Measuring point **Ground (-)**

Voltage	4.8 ... 5.2 V

- » If the specifications have not been met:
 - Check the cable from engine control unit connector **KQ** (p. 502) pin **1** to connector **KV** (p. 503) pin **4**.
 - Check the power supply to the sensors on the engine control unit.
- » If the specifications have been met:
 - Check the next possible cause:
Manifold air pressure sensor – the cylinder 1 signal wire is faulty (p. 63)

Manifold air pressure sensor – the cylinder 1 signal wire is faulty

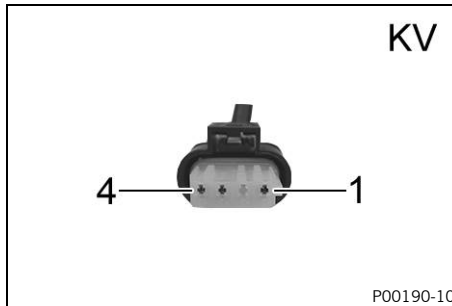
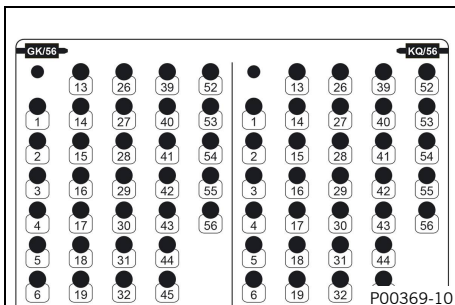
Condition

The ignition is off.

Engine control unit is disconnected. (p. 15)

The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.

Induction manifold sensor is disconnected. (p. 21)



Induction manifold pressure sensor – check the cylinder 1 signal wire.

- **Ω** Measure the resistance between the specified points.
Break-out box, connector **GK** pin **29** – Induction manifold pressure sensor connector **KV** pin **3**

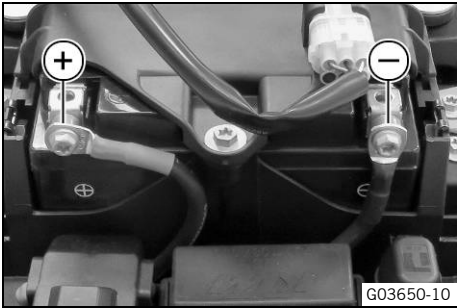
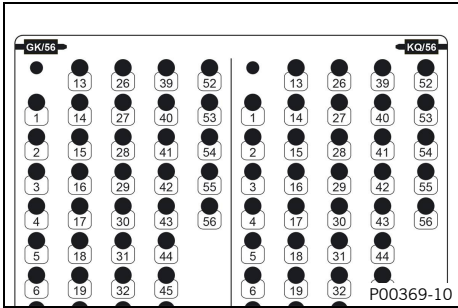
Resistance	≤ 0.6 Ω

- » If the specifications have not been met:
 - Check engine control unit connector **GK** (p. 497) pin **29** and connector **KV** (p. 503) pin **3**.
 - Check the cable from engine control unit connector **GK** (p. 497) pin **29** to connector **KV** (p. 503) pin **3**.
- » If the specifications have been met:
 - Check the next possible cause:
Induction manifold pressure sensor – the cylinder 1 signal wire has a short circuit to ground (terminal 31) (p. 64)

Induction manifold pressure sensor – the cylinder 1 signal wire has a short circuit to ground (terminal 31)

Condition

The ignition is off.
Engine control unit is disconnected. (📖 p. 15)
The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.
Induction manifold sensor is disconnected. (📖 p. 21)



Induction manifold pressure sensor – check the cylinder 1 signal wire for a short circuit to ground (terminal 31).

- **V** Measure the voltage between the specified points.
Break-out box, connector **GK** pin **29** – Measuring point **plus (+)**

Voltage	≤ 0.1 V

- » If the specifications have not been met:
 - Check the cable from engine control unit connector **GK** (📖 p. 497) pin **29** to connector **KV** (📖 p. 503) pin **3** for a short circuit to ground (terminal 31).
- » If the specifications have been met:
 - Change the induction manifold pressure sensor.

Blink code for malfunction indicator lamp (OBD)	 Malfunction indicator lamp lights up
Display on diagnostic tool	P010800 "Induction manifold pressure sensor cylinder 1" "Voltage too high"
Error level condition	Voltage: ≥ 4.87 V Time: ≥ 2 s
Function check	Induction manifold pressure sensor, cylinder 1 – checking the voltage (📖 p. 65)
Possible cause	Induction manifold pressure sensor – the cylinder 1 signal wire has a short circuit to plus (terminal 30) (📖 p. 65)
	Induction manifold pressure sensor – the cylinder 1 signal wire has a short circuit to ignition plus (terminal 15) (📖 p. 66)
	Induction manifold pressure sensor – the ground wire is faulty (📖 p. 67)
Last measure if none of the documented causes leads to elimination of the fault	– Change the induction manifold pressure sensor.

Induction manifold pressure sensor, cylinder 1 – checking the voltage

Condition

The diagnostics tool is connected and running.

- Select **"Engine control unit" > "Measured values" > "Induction manifold pressure sensor voltage" and "Cylinder 1 induction manifold pressure at current altitude"**.

Induction manifold pressure sensor voltage	
at: 950 hPa (13.78 psi)	3.8 V
at: 350 hPa (5.08 psi)	1.4 V

- » If the displayed value is equal to the setpoint value:
 - Clear the fault memory using the KTM diagnostics tool.
 - Take a test ride.
 - Read out the trouble code memory using the KTM diagnostics tool.
- » If the indicated value does not correspond to the setpoint value:
 - Check the next possible cause:
Induction manifold pressure sensor – the cylinder 1 signal wire has a short circuit to plus (terminal 30) (📖 p. 65)
 - Check the next possible cause:
Induction manifold pressure sensor – the cylinder 1 signal wire has a short circuit to ignition plus (terminal 15) (📖 p. 66)
 - Check the next possible cause:
Induction manifold pressure sensor – the ground wire is faulty (📖 p. 67)

Induction manifold pressure sensor – the cylinder 1 signal wire has a short circuit to plus (terminal 30)

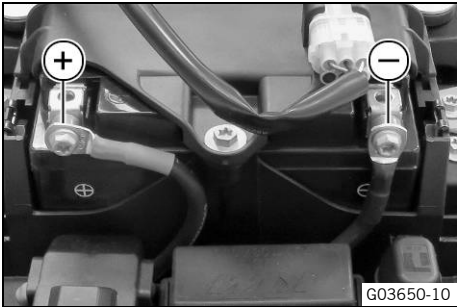
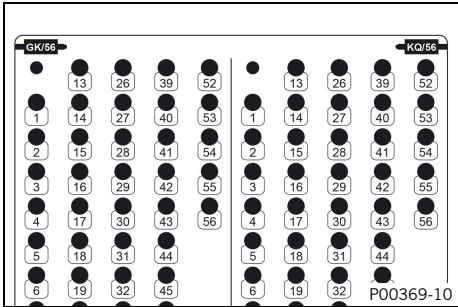
Condition

The ignition is off.

Engine control unit is disconnected. (📖 p. 15)

The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.

Induction manifold sensor is disconnected. (📖 p. 21)



Induction manifold pressure sensor – check the cylinder 1 signal wire for a short circuit to plus (terminal 30).

- **V** Measure the voltage between the specified points.
Break-out box, connector **GK** pin **29** – Measuring point **Ground (-)**

Voltage	≤ 0.1 V

- » If the specifications have not been met:
 - Check the cable from engine control unit connector **GK** (p. 497) pin **29** to connector **KV** (p. 503) pin **3** for a short circuit to plus (terminal 30).
- » If the specifications have been met:
 - Check the next possible cause:
Induction manifold pressure sensor – the cylinder 1 signal wire has a short circuit to ignition plus (terminal 15) (p. 66)

Induction manifold pressure sensor – the cylinder 1 signal wire has a short circuit to ignition plus (terminal 15)

Condition

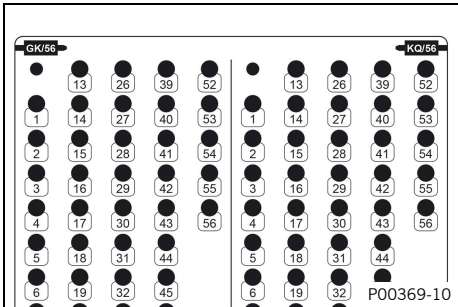
The ignition is off.
Engine control unit is disconnected. (p. 15)
The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.
Induction manifold sensor is disconnected. (p. 21)

Induction manifold pressure sensor – check the cylinder 1 signal wire for a short circuit to ignition plus (terminal 15).

- **Ω** Measure the resistance between the specified points.
Break-out box, connector **GK** pin **29** –
Break-out box, connector **GK** pin **44**

Resistance	∞ Ω

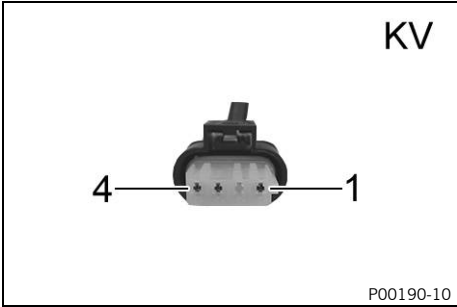
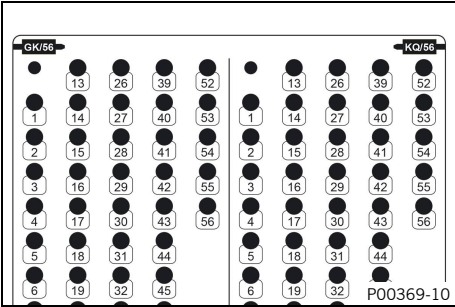
- » If the specifications have not been met:
 - Check the cable from engine control unit connector **GK** (p. 497) pin **29** to connector **KV** (p. 503) pin **3** for a short circuit to ignition plus (terminal 15).
- » If the specifications have been met:
 - Check the next possible cause:
Induction manifold pressure sensor – the ground wire is faulty (p. 67)



Induction manifold pressure sensor – the ground wire is faulty

Condition

- The ignition is off.
- Engine control unit is disconnected. (📖 p. 15)
- The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.
- Induction manifold sensor is disconnected. (📖 p. 21)
- The intake air temperature sensor is disconnected. (📖 p. 17)
- The gear position sensor is disconnected. (📖 p. 12)
- The coolant temperature sensor is disconnected. (📖 p. 12)



Induction manifold pressure sensor – check the ground wire.

-  Measure the resistance between the specified points.
Break-out box, connector **KQ** pin **16** – Induction manifold pressure sensor connector **KV** pin **1**

Resistance	≤ 0.6 Ω

- » If the specifications have not been met:
 - Check engine control unit connector **KQ** (📖 p. 502) pin **16** and connector **KV** (📖 p. 503) pin **1**.
 - Check the cable from engine control unit connector **KQ** (📖 p. 502) pin **16** to connector **KV** (📖 p. 503) pin **1**.
- » If the specifications have been met:
 - Change the induction manifold pressure sensor.

6 ENGINE CONTROL TROUBLE CODE

Blink code for malfunction indicator lamp (OBD)	 Malfunction indicator lamp lights up
Display on diagnostic tool	P011100 "Intake air temperature sensor" "Values out of tolerance"
Error level condition	Intake air temperature sensor – values out of tolerance Voltage: ≥ 4.707 V Voltage: ≤ 0.254 V Time: ≥ 3 s
Function check	Intake air temperature sensor – checking the signal (📖 p. 68)
Possible cause	Intake air temperature sensor – the value is not plausible (📖 p. 68)
	Intake air temperature sensor – the signal wire is faulty (📖 p. 69)
	Intake air temperature sensor – the ground wire is faulty (📖 p. 70)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Intake air temperature sensor – checking the signal

Condition

The diagnostics tool is connected and running.

- Select **"Engine control unit" > "Measured values" > "Intake air temperature sensor raw voltage"** and **"Intake air temperature"**.

Intake air temperature sensor voltage	
Voltage at: -20 °C (-4 °F)	4.4 V
Voltage at: 20 °C (68 °F)	2.7 V
Voltage at: 40 °C (104 °F)	1.8 V

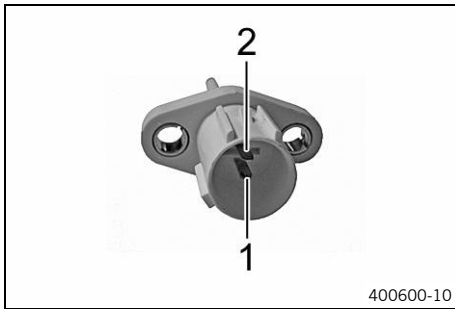
- » If the measured value is plausible:
 - Clear the fault memory using the KTM diagnostics tool.
 - Take a test ride.
 - Read out the trouble code memory using the KTM diagnostics tool.
- » If the measured value is not plausible:
 - Check the next possible cause:
Intake air temperature sensor – the value is not plausible (📖 p. 68)
 - Check the next possible cause:
Intake air temperature sensor – the signal wire is faulty (📖 p. 69)
 - Check the next possible cause:
Intake air temperature sensor – the ground wire is faulty (📖 p. 70)

Intake air temperature sensor – the value is not plausible

Condition

The ignition is off.

The intake air temperature sensor is disconnected. (📖 p. 17)



Intake air temperature sensor – check the resistance.

- Measure the resistance between the specified points.
Intake air temperature sensor pin 1 – Intake air temperature sensor pin 2

Intake air temperature sensor	
Resistance at: -20 °C (-4 °F)	19 kΩ
Resistance at: -10 °C (14 °F)	11 kΩ
Resistance at: 0 °C (32 °F)	6.2 kΩ
Resistance at: 10 °C (50 °F)	4 kΩ
Resistance at: 20 °C (68 °F)	2.5 kΩ
Resistance at: 30 °C (86 °F)	1.65 kΩ
Resistance at: 40 °C (104 °F)	1.1 kΩ

- » If the specifications have not been met:
 - Change the intake air temperature sensor.
- » If the specifications have been met:
 - Check the next possible cause:
Intake air temperature sensor – the signal wire is faulty (p. 69)

Intake air temperature sensor – the signal wire is faulty

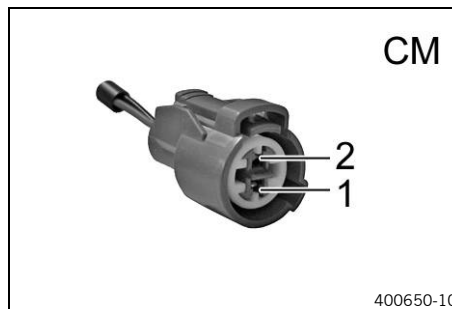
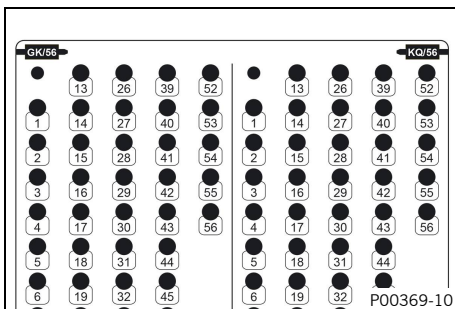
Condition

The ignition is off.

Engine control unit is disconnected. (p. 15)

The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.

The intake air temperature sensor is disconnected. (p. 17)



Intake air temperature sensor – check the signal wire.

- Measure the resistance between the specified points.
Break-out box, connector **KQ** pin 8 – Intake air temperature sensor connector **CM** pin 1

Resistance	≤ 0.6 Ω

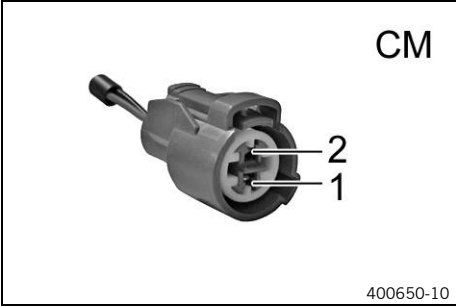
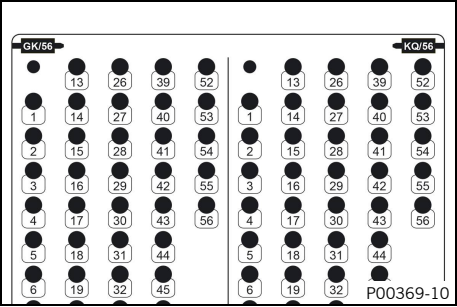
- » If the specifications have not been met:
 - Check engine control unit connector **KQ** (p. 502) pin 8 and connector **CM** (p. 492) pin 1.
 - Check the cable from engine control unit connector **KQ** (p. 502) pin 8 to connector **CM** (p. 492) pin 1.
- » If the specifications have been met:

- Check the next possible cause:
Intake air temperature sensor – the ground wire is faulty (📖 p. 70)

Intake air temperature sensor – the ground wire is faulty

Condition

The ignition is off.
Engine control unit is disconnected. (📖 p. 15)
The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.
The intake air temperature sensor is disconnected. (📖 p. 17)
Induction manifold sensor is disconnected. (📖 p. 21)
The gear position sensor is disconnected. (📖 p. 12)
The coolant temperature sensor is disconnected. (📖 p. 12)



Intake air temperature sensor – check the ground wire.

-  Measure the resistance between the specified points.
Break-out box, connector **KQ** pin **16** – Intake air temperature sensor connector **CM** pin **2**

Resistance	≤ 0.6 Ω

- » If the specifications have not been met:
 - Check engine control unit connector **KQ** (📖 p. 502) pin **16** and connector **CM** (📖 p. 492) pin **2**.
 - Check the cable from engine control unit connector **KQ** (📖 p. 502) pin **16** to connector **CM** (📖 p. 492) pin **2**.
- » If the specifications have been met:
 - Contact customer service.

Blink code for malfunction indicator lamp (OBD)	 Malfunction indicator lamp lights up
Display on diagnostic tool	P011200 "Intake air temperature sensor" "Voltage too low"
Error level condition	Intake air temperature sensor – voltage too low Voltage: ≤ 0.078 V Time: ≥ 1.5 s
Function check	Intake air temperature sensor – checking the voltage (📖 p. 71)
Possible cause	Intake air temperature sensor – the value is not plausible (📖 p. 71)
	Intake air temperature sensor – the signal wire has a short circuit to ground (terminal 31) (📖 p. 72)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Intake air temperature sensor – checking the voltage

Condition

The diagnostics tool is connected and running.

- Select **"Engine control unit" > "Measured values" > "Intake air temperature sensor raw voltage"** and **"Intake air temperature"**.

Intake air temperature sensor voltage	
Voltage at: -20 °C (-4 °F)	4.4 V
Voltage at: 20 °C (68 °F)	2.7 V
Voltage at: 40 °C (104 °F)	1.8 V

- » If the displayed value is equal to the setpoint value:
 - Clear the fault memory using the KTM diagnostics tool.
 - Take a test ride.
 - Read out the trouble code memory using the KTM diagnostics tool.
- » If the displayed value is below the setpoint value:
 - Check the next possible cause:
Intake air temperature sensor – the value is not plausible (📖 p. 71)
 - Check the next possible cause:
Intake air temperature sensor – the signal wire has a short circuit to ground (terminal 31) (📖 p. 72)

Intake air temperature sensor – the value is not plausible

Condition

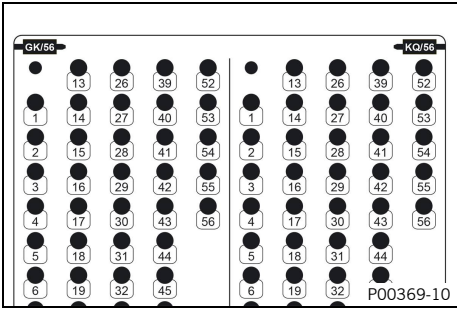
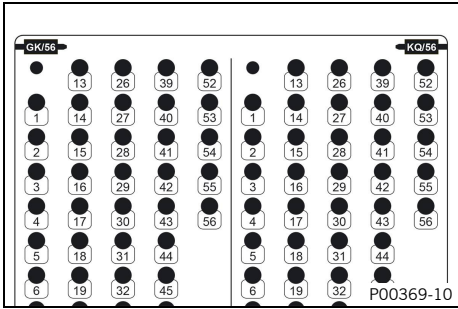
The ignition is off.

Engine control unit is disconnected. (📖 p. 15)

The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.

The intake air temperature sensor is connected. (📖 p. 17)

Induction manifold sensor is disconnected. (📖 p. 21)



Intake air temperature sensor – check the resistance.

-  Measure the resistance between the specified points.
Break-out box, connector **GK** pin **15** – Break-out box, connector **KQ** pin **8**

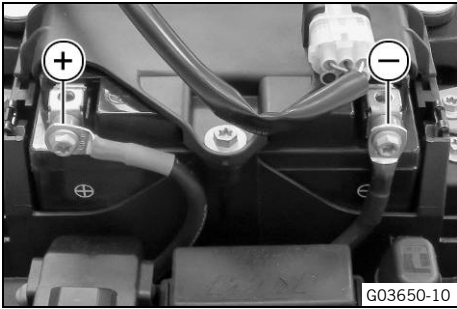
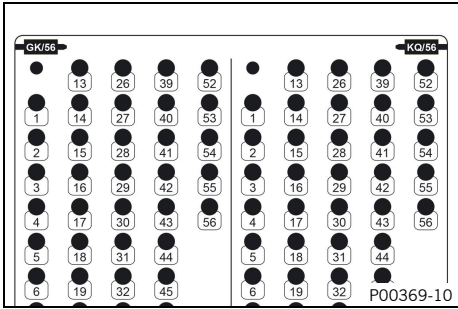
Intake air temperature sensor	
Resistance at: -20 °C (-4 °F)	19 kΩ
Resistance at: -10 °C (14 °F)	11 kΩ
Resistance at: 0 °C (32 °F)	6.2 kΩ
Resistance at: 10 °C (50 °F)	4 kΩ
Resistance at: 20 °C (68 °F)	2.5 kΩ
Resistance at: 30 °C (86 °F)	1.65 kΩ
Resistance at: 40 °C (104 °F)	1.1 kΩ

- » If the specifications have not been met:
 - Change the intake air temperature sensor.
- » If the specifications have been met:
 - Check the next possible cause:
Intake air temperature sensor – the signal wire has a short circuit to ground (terminal 31) (📖 p. 72)

Intake air temperature sensor – the signal wire has a short circuit to ground (terminal 31)

Condition

The ignition is off.
Engine control unit is disconnected. (📖 p. 15)
The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.
The intake air temperature sensor is disconnected. (📖 p. 17)



Intake air temperature sensor – check the signal wire for a short circuit to ground (terminal 31).

-  Measure the voltage between the specified points.
Break-out box, connector **KQ** pin **8** – Measuring point **plus (+)**

Voltage	≤ 0.1 V

- » If the specifications have not been met:
 - Check the cable from engine control unit connector **KQ** (📖 p. 502) pin **8** to connector **CM** (📖 p. 492) pin **1** for a short circuit to ground (terminal 31).

- » If the specifications have been met:
 - Contact customer service.

Blink code for malfunction indicator lamp (OBD)	 Malfunction indicator lamp lights up
Display on diagnostic tool	P011300 "Intake air temperature sensor" "Voltage too high"
Error level condition	Voltage too high Voltage: ≥ 4.863 V Time: ≥ 1.5 s
Function check	Intake air temperature sensor – checking the voltage (📖 p. 74)
Possible cause	Intake air temperature sensor – the value is not plausible (📖 p. 75)
	Intake air temperature sensor – the signal wire is faulty (📖 p. 75)
	Intake air temperature sensor – the ground wire is faulty (📖 p. 76)
	Intake air temperature sensor – the signal wire has a short circuit to plus (terminal 30) (📖 p. 77)
	Intake air temperature sensor – the signal wire has a short circuit to ignition plus (terminal 15) (📖 p. 77)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Intake air temperature sensor – checking the voltage

Condition

The diagnostics tool is connected and running.

- Select **"Engine control unit" > "Measured values" > "Intake air temperature sensor raw voltage"** and **"Intake air temperature"**.

Intake air temperature sensor voltage	
Voltage at: -20°C (-4°F)	4.4 V
Voltage at: 20°C (68°F)	2.7 V
Voltage at: 40°C (104°F)	1.8 V

- » If the displayed value is equal to the setpoint value:
 - Clear the fault memory using the KTM diagnostics tool.
 - Take a test ride.
 - Read out the trouble code memory using the KTM diagnostics tool.
- » If the displayed value is above the setpoint value:
 - Check the next possible cause:
Intake air temperature sensor – the value is not plausible (📖 p. 75)
 - Check the next possible cause:
Intake air temperature sensor – the signal wire is faulty (📖 p. 75)
 - Check the next possible cause:
Intake air temperature sensor – the ground wire is faulty (📖 p. 76)
 - Check the next possible cause:
Intake air temperature sensor – the signal wire has a short circuit to plus (terminal 30) (📖 p. 77)
 - Check the next possible cause:
Intake air temperature sensor – the signal wire has a short circuit to ignition plus (terminal 15) (📖 p. 77)

Intake air temperature sensor – the value is not plausible**Condition**

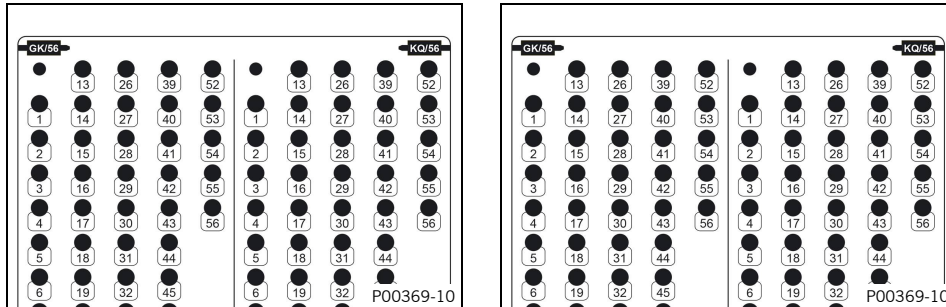
The ignition is off.

Engine control unit is disconnected. (📖 p. 15)

The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.

The intake air temperature sensor is connected. (📖 p. 17)

Induction manifold sensor is disconnected. (📖 p. 21)

**Intake air temperature sensor – check the resistance.**

-  Measure the resistance between the specified points.
Break-out box, connector **GK** pin **15** – Break-out box, connector **KQ** pin **8**

Intake air temperature sensor	
Resistance at: -20 °C (-4 °F)	19 kΩ
Resistance at: -10 °C (14 °F)	11 kΩ
Resistance at: 0 °C (32 °F)	6.2 kΩ
Resistance at: 10 °C (50 °F)	4 kΩ
Resistance at: 20 °C (68 °F)	2.5 kΩ
Resistance at: 30 °C (86 °F)	1.65 kΩ
Resistance at: 40 °C (104 °F)	1.1 kΩ

- » If the specifications have not been met:
 - Change the intake air temperature sensor.
- » If the specifications have been met:
 - Check the next possible cause:
Intake air temperature sensor – the signal wire is faulty (📖 p. 75)

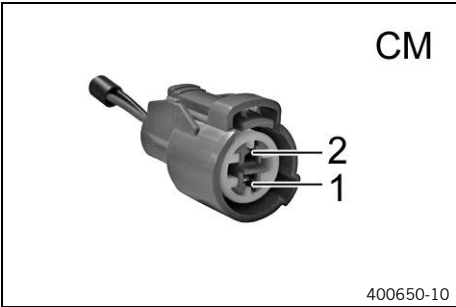
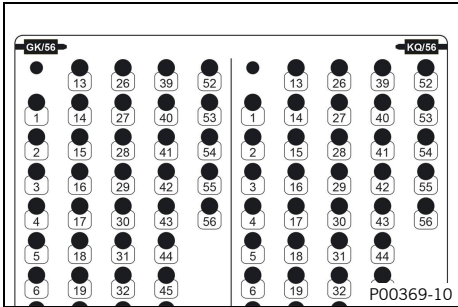
Intake air temperature sensor – the signal wire is faulty**Condition**

The ignition is off.

Engine control unit is disconnected. (📖 p. 15)

The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.

The intake air temperature sensor is disconnected. (📖 p. 17)



Intake air temperature sensor – check the signal wire.

-  Measure the resistance between the specified points.
Break-out box, connector **KQ** pin **8** – Intake air temperature sensor connector **CM** pin **1**

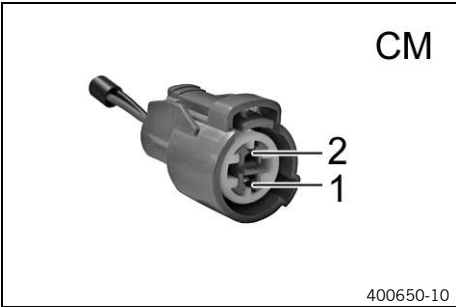
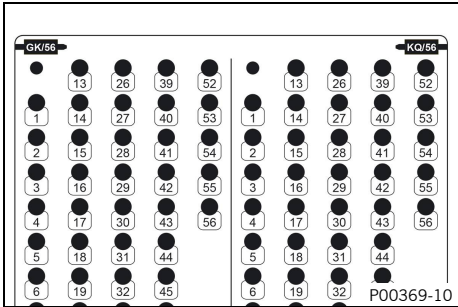
Resistance	$\leq 0.6 \Omega$

- » If the specifications have not been met:
 - Check engine control unit connector **KQ** (p. 502) pin **8** and connector **CM** (p. 492) pin **1**.
 - Check the cable from engine control unit connector **KQ** (p. 502) pin **8** to connector **CM** (p. 492) pin **1**.
- » If the specifications have been met:
 - Check the next possible cause:
Intake air temperature sensor – the ground wire is faulty (p. 76)

Intake air temperature sensor – the ground wire is faulty

Condition

The ignition is off.
Engine control unit is disconnected. (p. 15)
The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.
The intake air temperature sensor is disconnected. (p. 17)
Induction manifold sensor is disconnected. (p. 21)
The gear position sensor is disconnected. (p. 12)
The coolant temperature sensor is disconnected. (p. 12)



Intake air temperature sensor – check the ground wire.

-  Measure the resistance between the specified points.
Break-out box, connector **KQ** pin **16** – Intake air temperature sensor connector **CM** pin **2**

Resistance	$\leq 0.6 \Omega$

- » If the specifications have not been met:
 - Check engine control unit connector **KQ** (p. 502) pin **16** and connector **CM** (p. 492) pin **2**.
 - Check the cable from engine control unit connector **KQ** (p. 502) pin **16** to connector **CM** (p. 492) pin **2**.
- » If the specifications have been met:

- Check the next possible cause:
Intake air temperature sensor – the signal wire has a short circuit to plus (terminal 30) (📖 p. 77)

Intake air temperature sensor – the signal wire has a short circuit to plus (terminal 30)

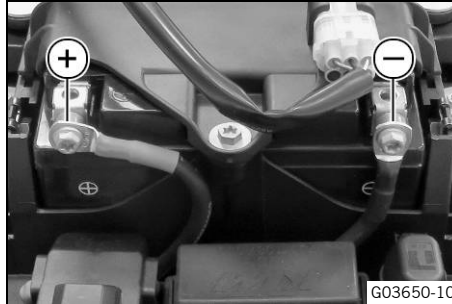
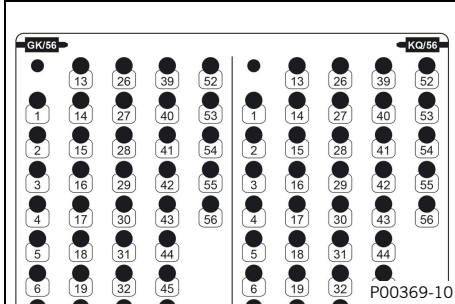
Condition

The ignition is off.

Engine control unit is disconnected. (📖 p. 15)

The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.

The intake air temperature sensor is disconnected. (📖 p. 17)



Intake air temperature sensor – check the signal wire for a short circuit to plus (terminal 30).

- Measure the resistance between the specified points.
Break-out box, connector **KQ** pin **8** – Measuring point **plus (+)**

Resistance	$\infty \Omega$

- » If the specifications have not been met:
 - Check the cable from engine control unit connector **KQ** (📖 p. 502) pin **8** to connector **CM** (📖 p. 492) pin **1** for a short circuit to plus (terminal 30).
- » If the specifications have been met:
 - Check the next possible cause:
Intake air temperature sensor – the signal wire has a short circuit to ignition plus (terminal 15) (📖 p. 77)

Intake air temperature sensor – the signal wire has a short circuit to ignition plus (terminal 15)

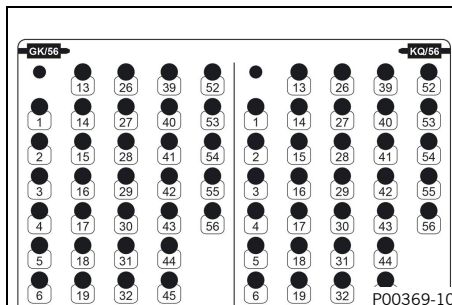
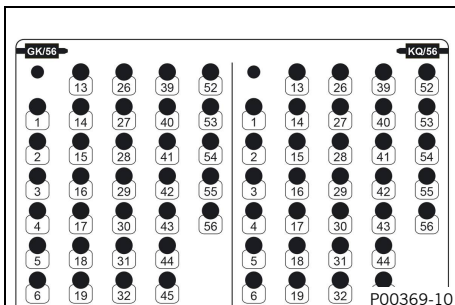
Condition

The ignition is off.

Engine control unit is disconnected. (📖 p. 15)

The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.

The intake air temperature sensor is disconnected. (📖 p. 17)



Intake air temperature sensor – check the signal wire for a short circuit to ignition plus (terminal 15).

- Measure the resistance between the specified points.
Break-out box, connector **KQ** pin **8** – Break-out box, connector **GK** pin **44**

Resistance	$\infty \Omega$

6 ENGINE CONTROL TROUBLE CODE

- » If the specifications have not been met:
 - Check the cable from engine control unit connector **KQ** (📖 p. 502) pin **8** to connector **CM** (📖 p. 492) pin **1** for a short circuit to ignition plus (terminal 15).
- » If the specifications have been met:
 - Contact customer service.

Blink code for malfunction indicator lamp (OBD)	 Malfunction indicator lamp lights up
Display on diagnostic tool	P011600 "Coolant temperature sensor" "Values out of tolerance"
Error level condition	Coolant temperature sensor – values out of tolerance Sharp increase: $\geq 10\text{ }^{\circ}\text{C}$ ($\geq 50\text{ }^{\circ}\text{F}$) Sharp increase: $\leq 10\text{ }^{\circ}\text{C}$ ($\leq 50\text{ }^{\circ}\text{F}$) No increase within 200 seconds after starting engine: $\geq 10\text{ }^{\circ}\text{C}$ ($\geq 50\text{ }^{\circ}\text{F}$)
Function check	Coolant temperature sensor – checking (📖 p. 79)
Possible cause	Coolant temperature sensor – the signal wire is faulty (📖 p. 80)
	Coolant temperature sensor – the ground wire is faulty (📖 p. 81)
	Coolant temperature sensor – the signal wire has a short circuit to plus (terminal 30) (📖 p. 81)
	Coolant temperature sensor – the signal wire has a short circuit to ignition plus (terminal 15) (📖 p. 82)
	Coolant temperature sensor – the signal wire has a short circuit to ground (terminal 31) (📖 p. 82)
	Coolant temperature sensor – the signal wire has a short circuit to sensor ground (📖 p. 83)

Coolant temperature sensor – checking

Condition

The ignition is off.

The coolant temperature sensor is disconnected. (📖 p. 12)

- Remove the coolant temperature sensor.
- Heat up the coolant temperature sensor slowly in a suitable container of cold water.



Coolant temperature sensor	
Resistance at: $-20\text{ }^{\circ}\text{C}$ ($-4\text{ }^{\circ}\text{F}$)	18.70 k Ω
Voltage at: $-20\text{ }^{\circ}\text{C}$ ($-4\text{ }^{\circ}\text{F}$)	4.55 V
Resistance at: $20\text{ }^{\circ}\text{C}$ ($68\text{ }^{\circ}\text{F}$)	2.55 k Ω
Voltage at: $20\text{ }^{\circ}\text{C}$ ($68\text{ }^{\circ}\text{F}$)	2.73 V
Resistance at: $80\text{ }^{\circ}\text{C}$ ($176\text{ }^{\circ}\text{F}$)	0.29 k Ω
Voltage at: $80\text{ }^{\circ}\text{C}$ ($176\text{ }^{\circ}\text{F}$)	0.57 V
Resistance at: $110\text{ }^{\circ}\text{C}$ ($230\text{ }^{\circ}\text{F}$)	0.11 k Ω
Voltage at: $110\text{ }^{\circ}\text{C}$ ($230\text{ }^{\circ}\text{F}$)	0.25 V

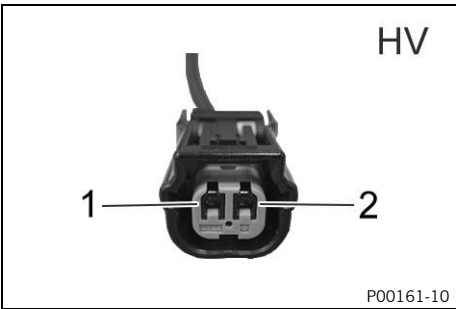
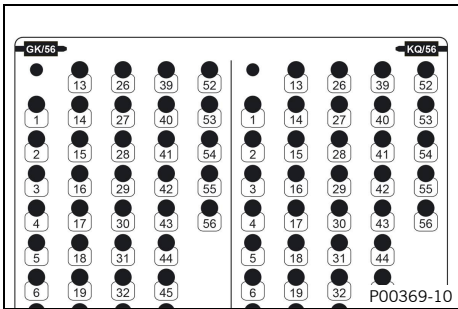
- » If the indicated value does not correspond to the setpoint value:
 - Change the coolant temperature sensor.
- » If the displayed value is equal to the setpoint value:
 - Check the next possible cause:

- Coolant temperature sensor – the signal wire is faulty (📖 p. 80)
- Check the next possible cause:
Coolant temperature sensor – the ground wire is faulty (📖 p. 81)
 - Check the next possible cause:
Coolant temperature sensor – the signal wire has a short circuit to plus (terminal 30) (📖 p. 81)
 - Check the next possible cause:
Coolant temperature sensor – the signal wire has a short circuit to ignition plus (terminal 15) (📖 p. 82)
 - Check the next possible cause:
Coolant temperature sensor – the signal wire has a short circuit to ground (terminal 31) (📖 p. 82)
 - Check the next possible cause:
Coolant temperature sensor – the signal wire has a short circuit to sensor ground (📖 p. 83)

Coolant temperature sensor – the signal wire is faulty

Condition

The ignition is off.
Engine control unit is disconnected. (📖 p. 15)
The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.
The coolant temperature sensor is disconnected. (📖 p. 12)



Coolant temperature sensor – check the signal wire.

-  Measure the resistance between the specified points.
Break-out box, connector **KQ** pin **42** – Coolant temperature sensor, connector **HV** pin **1**

Resistance	≤ 0.6 Ω

- » If the specifications have not been met:
 - Check engine control unit connector **KQ** (📖 p. 502) pin **42** and connector **HV** (📖 p. 500) pin **1**.
 - Check the cable from engine control unit connector **KQ** (📖 p. 502) pin **42** to connector **HV** (📖 p. 500) pin **1**.
- » If the specifications have been met:
 - Check the next possible cause:
Coolant temperature sensor – the ground wire is faulty (📖 p. 81)

Coolant temperature sensor – the ground wire is faulty

Condition

The ignition is off.

Engine control unit is disconnected. (p. 15)

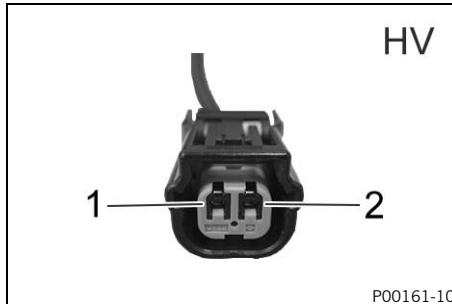
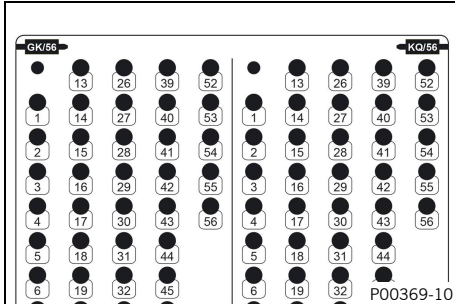
The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.

The coolant temperature sensor is disconnected. (p. 12)

The gear position sensor is disconnected. (p. 12)

Induction manifold sensor is disconnected. (p. 21)

The intake air temperature sensor is disconnected. (p. 17)



Coolant temperature sensor – check the ground wire.

-  Measure the resistance between the specified points.
Break-out box, connector **KQ** pin **16** – Coolant temperature sensor, connector **HV** pin **2**

Resistance	$\leq 0.6 \Omega$

- » If the specifications have not been met:
 - Check engine control unit connector **KQ** (p. 502) pin **16** and connector **HV** (p. 500) pin **2**.
 - Check the cable from engine control unit connector **KQ** (p. 502) pin **16** to connector **HV** (p. 500) pin **2**.
- » If the specifications have been met:
 - Check the next possible cause:
Coolant temperature sensor – the signal wire has a short circuit to plus (terminal 30) (p. 81)

Coolant temperature sensor – the signal wire has a short circuit to plus (terminal 30)

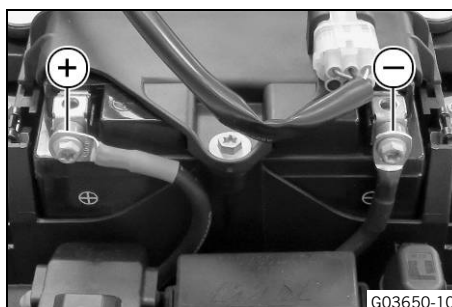
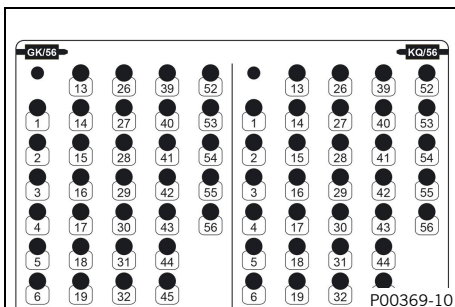
Condition

The ignition is off.

Engine control unit is disconnected. (p. 15)

The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.

The coolant temperature sensor is disconnected. (p. 12)



Coolant temperature sensor – check the signal wire for a short circuit to plus (terminal 30).

-  Measure the voltage between the specified points.
Break-out box, connector **KQ** pin **42** – Measuring point **Ground (-)**

6 ENGINE CONTROL TROUBLE CODE

Voltage	$\leq 0.1 \text{ V}$

- » If the specifications have not been met:
 - Check the cable from engine control unit connector **KQ** (📖 p. 502) pin **42** to connector **HV** (📖 p. 500) pin **1** for a short circuit to plus (terminal 30).
- » If the specifications have been met:
 - Check the next possible cause:
Coolant temperature sensor – the signal wire has a short circuit to ignition plus (terminal 15) (📖 p. 82)

Coolant temperature sensor – the signal wire has a short circuit to ignition plus (terminal 15)

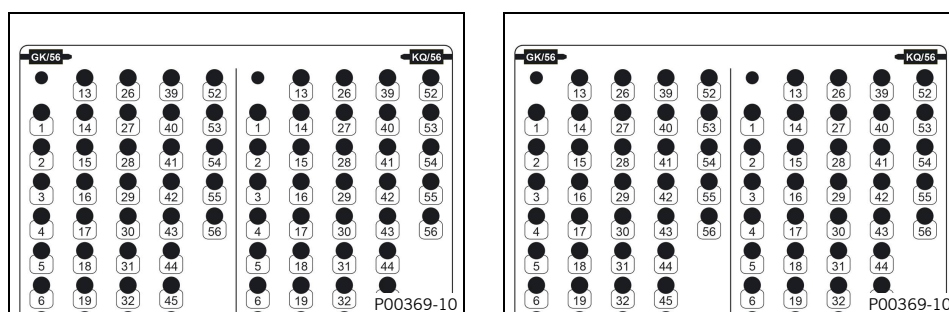
Condition

The ignition is off.

Engine control unit is disconnected. (📖 p. 15)

The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.

The coolant temperature sensor is disconnected. (📖 p. 12)



Coolant temperature sensor – check the signal wire for a short circuit to ignition plus (terminal 15).

-  Measure the resistance between the specified points.
Break-out box, connector **KQ** pin **42** – Break-out box, connector **GK** pin **44**

Resistance	$\infty \Omega$

- » If the specifications have not been met:
 - Check the cable from engine control unit connector **KQ** (📖 p. 502) pin **42** to connector **HV** (📖 p. 500) pin **1** for a short circuit to ignition plus (terminal 15).
- » If the specifications have been met:
 - Check the next possible cause:
Coolant temperature sensor – the signal wire has a short circuit to ground (terminal 31) (📖 p. 82)

Coolant temperature sensor – the signal wire has a short circuit to ground (terminal 31)

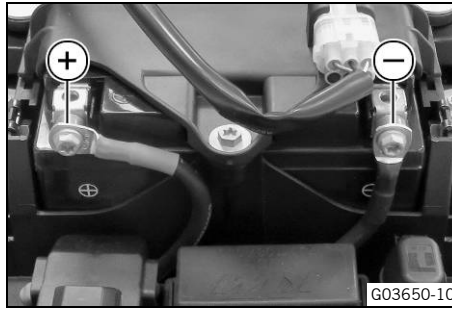
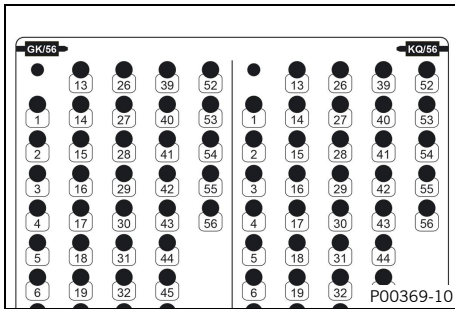
Condition

The ignition is off.

Engine control unit is disconnected. (📖 p. 15)

The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.

The coolant temperature sensor is disconnected. (📖 p. 12)



Coolant temperature sensor – check the signal wire for a short circuit to ground (terminal 31).

- **V** Measure the voltage between the specified points.
Break-out box, connector **KQ** pin **42** – Measuring point **plus (+)**

Voltage	$\leq 0.1 \text{ V}$

- » If the specifications have not been met:
 - Check the cable from engine control unit connector **KQ** (p. 502) pin **42** to connector **HV** (p. 500) pin **1** for a short circuit to ground.
- » If the specifications have been met:
 - Check the next possible cause:
Coolant temperature sensor – the signal wire has a short circuit to sensor ground (p. 83)

Coolant temperature sensor – the signal wire has a short circuit to sensor ground

Condition

The ignition is off.

Engine control unit is disconnected. (p. 15)

The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.

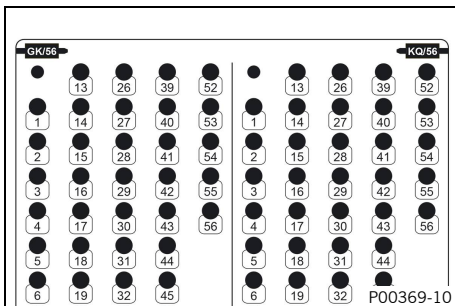
The coolant temperature sensor is disconnected. (p. 12)

Coolant temperature sensor – check the signal wire for a short circuit to sensor ground.

- **Ω** Measure the resistance between the specified points.
Break-out box, connector **KQ** pin **42** –
Break-out box, connector **KQ** pin **16**

Resistance	$\infty \Omega$

- » If the specifications have not been met:
 - Check cable from engine control unit connector **KQ** (p. 497) pin **42** to connector **HV** (p. 500) pin **1** for a short circuit to sensor ground.



Blink code for malfunction indicator lamp (OBD)	 Malfunction indicator lamp lights up
Display on diagnostic tool	P011700 "Coolant temperature sensor" "Voltage too low"
Error level condition	Voltage too low Voltage: ≤ 0.0635 V Time: ≥ 2 s
Function check	Checking the coolant temperature sensor (📖 p. 84)
Possible cause	Coolant temperature sensor – the value is not plausible (📖 p. 84) Coolant temperature sensor – the signal wire has a short circuit to ground (terminal 31) (📖 p. 85)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Checking the coolant temperature sensor

Condition

The diagnostics tool is connected and running.
The engine is at operating temperature.

- Select "Engine control unit" > "Measured values" > "Engine temperature".

Measured value is plausible.

- » If the measured value is plausible:
 - Clear the fault memory using the KTM diagnostics tool.
 - Take a test ride.
 - Read out the trouble code memory using the KTM diagnostics tool.
- » If the measured value is not plausible:
 - Check the next possible cause:
Coolant temperature sensor – the value is not plausible (📖 p. 84)
 - Check the next possible cause:
Coolant temperature sensor – the signal wire has a short circuit to ground (terminal 31) (📖 p. 85)

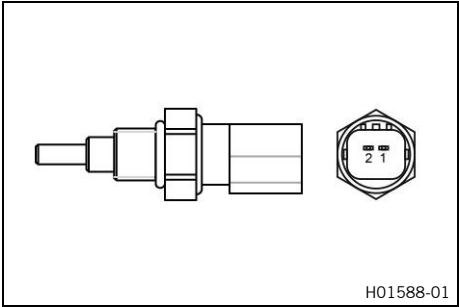
Coolant temperature sensor – the value is not plausible

Condition

The ignition is off.
The coolant temperature sensor is disconnected. (📖 p. 12)

Coolant temperature sensor – check the resistance.

-  Measure the resistance between the specified points.
Coolant temperature sensor pin 1 – Coolant temperature sensor pin 2



Coolant temperature sensor	
Resistance at: -20 °C (-4 °F)	18.70 kΩ
Voltage at: -20 °C (-4 °F)	4.55 V
Resistance at: 20 °C (68 °F)	2.55 kΩ
Voltage at: 20 °C (68 °F)	2.73 V

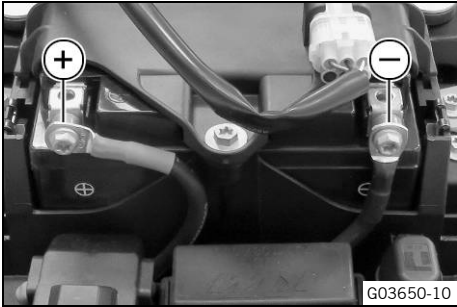
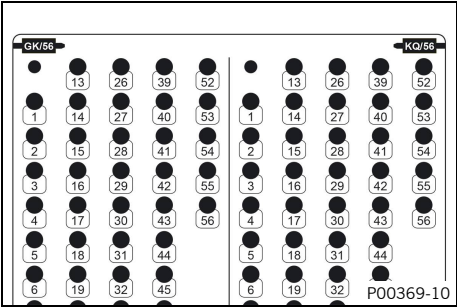
Resistance at: 80 °C (176 °F)	0.29 kΩ
Voltage at: 80 °C (176 °F)	0.57 V
Resistance at: 110 °C (230 °F)	0.11 kΩ
Voltage at: 110 °C (230 °F)	0.25 V

- » If the specifications have not been met:
 - Change the coolant temperature sensor.
- » If the specifications have been met:
 - Check the next possible cause:
Coolant temperature sensor – the signal wire has a short circuit to ground (terminal 31) (📖 p. 85)

Coolant temperature sensor – the signal wire has a short circuit to ground (terminal 31)

Condition

The ignition is off.
Engine control unit is disconnected. (📖 p. 15)
The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.
The coolant temperature sensor is disconnected. (📖 p. 12)



Coolant temperature sensor – check the signal wire for a short circuit to ground (terminal 31).

- **V** Measure the voltage between the specified points.
Break-out box, connector **KQ** pin **42** – Measuring point **plus (+)**

Voltage	≤ 0.1 V

- » If the specifications have not been met:
 - Check the cable from engine control unit connector **KQ** (📖 p. 502) pin **42** to connector **HV** (📖 p. 500) pin **1** for a short circuit to ground.
- » If the specifications have been met:
 - Contact customer service.

6 ENGINE CONTROL TROUBLE CODE

Blink code for malfunction indicator lamp (OBD)	 Malfunction indicator lamp lights up
Display on diagnostic tool	P011800 "Coolant temperature sensor" "Voltage too high"
Error level condition	Voltage too high Voltage: ≥ 4.86 V Time: ≥ 1.5 s
Function check	Checking the coolant temperature sensor (📖 p. 86)
Possible cause	Coolant temperature sensor – the value is not plausible (📖 p. 87)
	Coolant temperature sensor – the signal wire is faulty (📖 p. 87)
	Coolant temperature sensor – the ground wire is faulty (📖 p. 88)
	Coolant temperature sensor – the signal wire has a short circuit to plus (terminal 30) (📖 p. 88)
	Coolant temperature sensor – the signal wire has a short circuit to ignition plus (terminal 15) (📖 p. 89)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Checking the coolant temperature sensor

Condition

The diagnostics tool is connected and running.

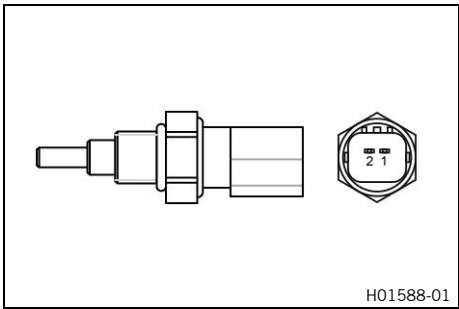
The engine is at operating temperature.

- Select **"Engine control unit" > "Measured values" > "Engine temperature"**.

Measured value is plausible.

- » If the measured value is plausible:
 - Clear the fault memory using the KTM diagnostics tool.
 - Take a test ride.
 - Read out the trouble code memory using the KTM diagnostics tool.
- » If the measured value is not plausible:
 - Check the next possible cause:
Coolant temperature sensor – the value is not plausible (📖 p. 87)
 - Check the next possible cause:
Coolant temperature sensor – the signal wire is faulty (📖 p. 87)
 - Check the next possible cause:
Coolant temperature sensor – the ground wire is faulty (📖 p. 88)
 - Check the next possible cause:
Coolant temperature sensor – the signal wire has a short circuit to plus (terminal 30) (📖 p. 88)
 - Check the next possible cause:
Coolant temperature sensor – the signal wire has a short circuit to ignition plus (terminal 15) (📖 p. 89)

Coolant temperature sensor – the value is not plausible



Condition

The ignition is off.
The coolant temperature sensor is disconnected. (📖 p. 12)

Coolant temperature sensor – check the resistance.

-  Measure the resistance between the specified points.
Coolant temperature sensor pin 1 – Coolant temperature sensor pin 2

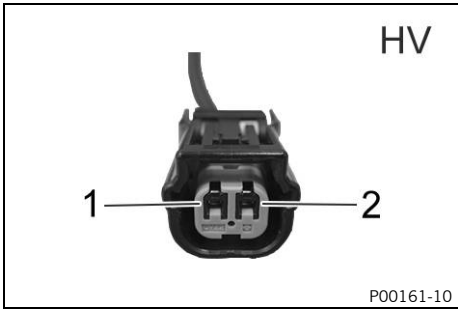
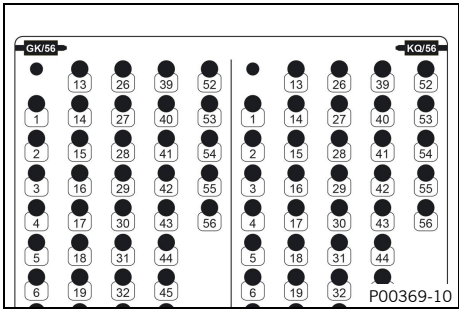
Coolant temperature sensor	
Resistance at: -20 °C (-4 °F)	18.70 kΩ
Voltage at: -20 °C (-4 °F)	4.55 V
Resistance at: 20 °C (68 °F)	2.55 kΩ
Voltage at: 20 °C (68 °F)	2.73 V
Resistance at: 80 °C (176 °F)	0.29 kΩ
Voltage at: 80 °C (176 °F)	0.57 V
Resistance at: 110 °C (230 °F)	0.11 kΩ
Voltage at: 110 °C (230 °F)	0.25 V

- » If the specifications have not been met:
 - Change the coolant temperature sensor.
- » If the specifications have been met:
 - Check the next possible cause:
Coolant temperature sensor – the signal wire is faulty (📖 p. 87)

Coolant temperature sensor – the signal wire is faulty

Condition

The ignition is off.
Engine control unit is disconnected. (📖 p. 15)
The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.
The coolant temperature sensor is disconnected. (📖 p. 12)



Coolant temperature sensor – check the signal wire.

-  Measure the resistance between the specified points.
Break-out box, connector **KQ** pin 42 – Coolant temperature sensor, connector **HV** pin 1

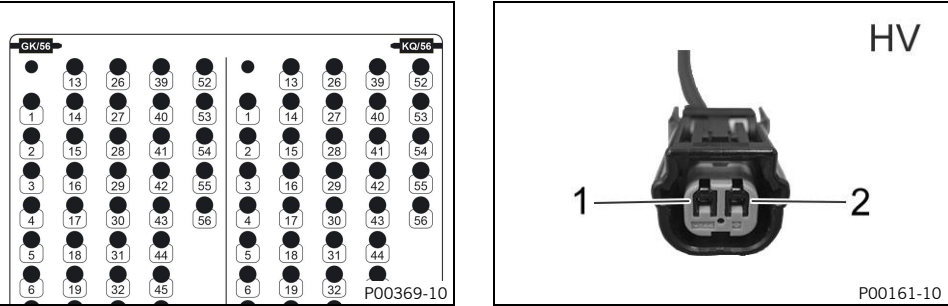
Resistance	≤ 0.6 Ω

- » If the specifications have not been met:
 - Check engine control unit connector **KQ** (p. 502) pin **42** and connector **HV** (p. 500) pin **1**.
 - Check the cable from engine control unit connector **KQ** (p. 502) pin **42** to connector **HV** (p. 500) pin **1**.
- » If the specifications have been met:
 - Check the next possible cause:
Coolant temperature sensor – the ground wire is faulty (p. 88)

Coolant temperature sensor – the ground wire is faulty

Condition

The ignition is off.
Engine control unit is disconnected. (p. 15)
The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.
The coolant temperature sensor is disconnected. (p. 12)
The gear position sensor is disconnected. (p. 12)
Induction manifold sensor is disconnected. (p. 21)
The intake air temperature sensor is disconnected. (p. 17)



Coolant temperature sensor – check the ground wire.

- Measure the resistance between the specified points.
Break-out box, connector **KQ** pin **16** – Coolant temperature sensor, connector **HV** pin **2**

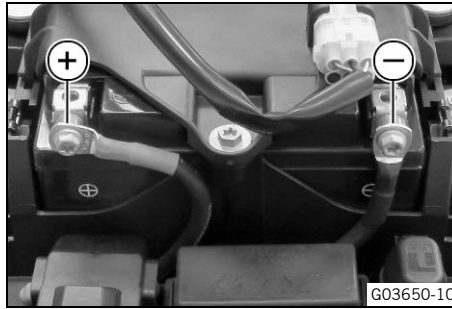
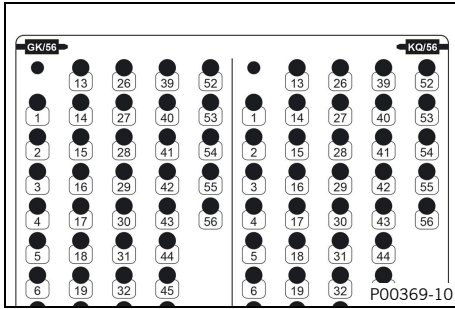
Resistance	≤ 0.6 Ω

- » If the specifications have not been met:
 - Check engine control unit connector **KQ** (p. 502) pin **16** and connector **HV** (p. 500) pin **2**.
 - Check the cable from engine control unit connector **KQ** (p. 502) pin **16** to connector **HV** (p. 500) pin **2**.
- » If the specifications have been met:
 - Check the next possible cause:
Coolant temperature sensor – the signal wire has a short circuit to plus (terminal 30) (p. 88)

Coolant temperature sensor – the signal wire has a short circuit to plus (terminal 30)

Condition

The ignition is off.
Engine control unit is disconnected. (p. 15)
The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.
The coolant temperature sensor is disconnected. (p. 12)



Coolant temperature sensor – check the signal wire for a short circuit to plus (terminal 30).

- **V** Measure the voltage between the specified points.
Break-out box, connector **KQ** pin **42** – Measuring point **Ground (-)**

Voltage	$\leq 0.1 \text{ V}$

- » If the specifications have not been met:
 - Check the cable from engine control unit connector **KQ** (p. 502) pin **42** to connector **HV** (p. 500) pin **1** for a short circuit to plus (terminal 30).
- » If the specifications have been met:
 - Check the next possible cause:
Coolant temperature sensor – the signal wire has a short circuit to ignition plus (terminal 15) (p. 89)

Coolant temperature sensor – the signal wire has a short circuit to ignition plus (terminal 15)

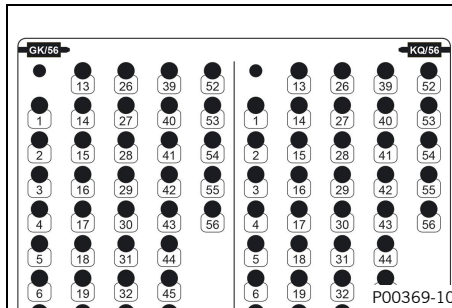
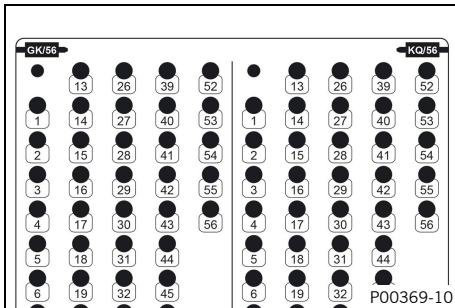
Condition

The ignition is off.

Engine control unit is disconnected. (p. 15)

The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.

The coolant temperature sensor is disconnected. (p. 12)



Coolant temperature sensor – check the signal wire for a short circuit to ignition plus (terminal 15).

- **Ω** Measure the resistance between the specified points.
Break-out box, connector **KQ** pin **42** – Break-out box, connector **GK** pin **44**

Resistance	$\infty \Omega$

- » If the specifications have not been met:
 - Check the cable from engine control unit connector **KQ** (p. 502) pin **42** to connector **HV** (p. 500) pin **1** for a short circuit to ignition plus (terminal 15).
- » If the specifications have been met:
 - Contact customer service.

6 ENGINE CONTROL TROUBLE CODE

Blink code for malfunction indicator lamp (OBD)	 Malfunction indicator lamp lights up
Display on diagnostic tool	P012200 "Throttle valve position sensor circuit A" "Voltage too low"
Error level condition	Throttle valve position sensor circuit A voltage: ≤ 0.19 V Time: ≥ 0.09 s
Function check	Throttle valve position sensor circuit A – checking the voltage (📖 p. 90)
Possible cause	Throttle valve position sensor circuit A – the power supply is faulty (📖 p. 90)
	Throttle valve position sensor circuit A – the signal wire is faulty (📖 p. 91)
	Throttle valve position sensor circuit A – the signal wire has a short circuit to ground (terminal 31) (📖 p. 92)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Throttle valve position sensor circuit A – checking the voltage

Condition

The ignition is on.

The diagnostics tool is connected and running.

- Select **"Engine control unit" > "Measured values" > "Throttle position voltage sensor 1"**.
- Slowly and evenly turn the throttle grip all the way.

Circuit A throttle valve position sensor	
Voltage (value in diagnostics tool)	0.7 ... 3.3 V

- » If the displayed value is equal to the setpoint value:
 - Clear the fault memory using the KTM diagnostics tool.
 - Take a test ride.
 - Read out the trouble code memory using the KTM diagnostics tool.
- » If the displayed value is below the setpoint value:
 - Check the next possible cause:
Throttle valve position sensor circuit A – the power supply is faulty (📖 p. 90)
 - Check the next possible cause:
Throttle valve position sensor circuit A – the signal wire is faulty (📖 p. 91)
 - Check the next possible cause:
Throttle valve position sensor circuit A – the signal wire has a short circuit to ground (terminal 31) (📖 p. 92)

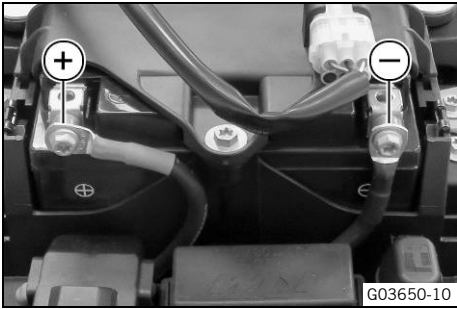
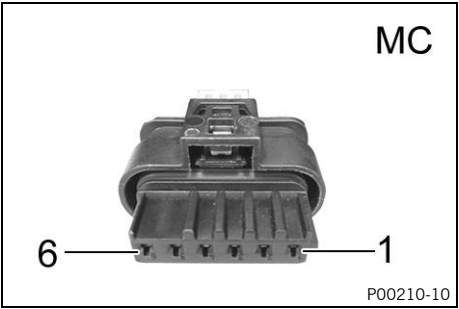
Throttle valve position sensor circuit A – the power supply is faulty

Condition

The ignition is on.

Engine control unit is connected. (📖 p. 15)

The throttle valve position sensor is connected. (📖 p. 20)



Throttle valve position sensor circuit A – check the power supply.

- **V** Measure the voltage between the specified points.
Throttle valve position sensor connector **MC** pin **6** – Measuring point **Ground (–)**

Voltage	4.8 ... 5.2 V

- » If the specifications have not been met:
 - Check the cable from engine control unit connector **GK** (p. 497) pin **10** to connector **MC** (p. 505) pin **6**.
- » If the specifications have been met:
 - Check the next possible cause:
Throttle valve position sensor circuit A – the signal wire is faulty (p. 91)

Throttle valve position sensor circuit A – the signal wire is faulty

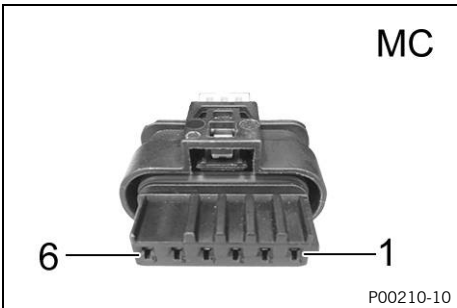
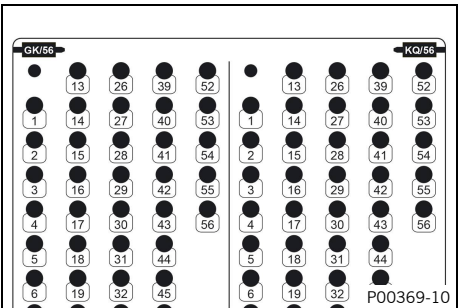
Condition

The ignition is off.

Engine control unit is disconnected. (p. 15)

The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.

The throttle valve position sensor is disconnected. (p. 20)



Throttle valve position sensor circuit A – check the signal wire.

- **Ω** Measure the resistance between the specified points.
Break-out box, connector **GK** pin **35** – Throttle valve position sensor connector **MC** pin **4**

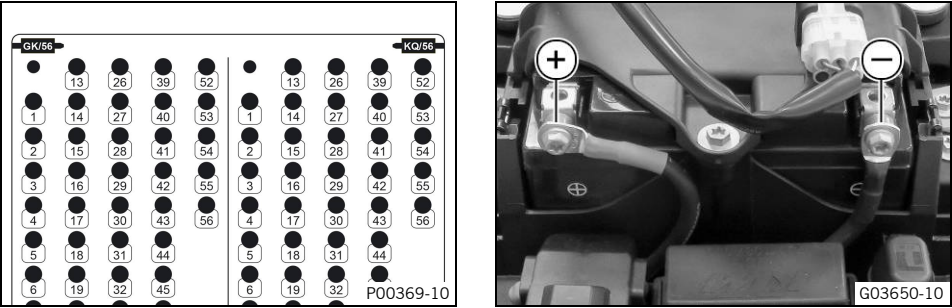
Resistance	≤ 0.6 Ω

- » If the specifications have not been met:
 - Check engine control unit connector **GK** (p. 497) pin **35** and connector **MC** (p. 505) pin **4**.
 - Check the cable from engine control unit connector **GK** (p. 497) pin **35** to connector **MC** (p. 505) pin **4**.
- » If the specifications have been met:
 - Check the next possible cause:
Throttle valve position sensor circuit A – the signal wire has a short circuit to ground (terminal 31) (p. 92)

Throttle valve position sensor circuit A – the signal wire has a short circuit to ground (terminal 31)

Condition

The ignition is off.
Engine control unit is disconnected. (📖 p. 15)
The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.
The throttle valve position sensor is disconnected. (📖 p. 20)



Throttle valve position sensor circuit A – check the signal wire for a short circuit to ground (terminal 31).

-  Measure the resistance between the specified points.
Break-out box, connector **GK** pin **35** – Measuring point **Ground (-)**

Resistance	$\infty \Omega$

- » If the specifications have not been met:
 - Check the cable from engine control unit connector **GK** (📖 p. 497) pin **35** to connector **MC** (📖 p. 505) pin **4** for a short circuit to ground (terminal 31).
- » If the specifications have been met:
 - Contact customer service.

Blink code for malfunction indicator lamp (OBD)	 Malfunction indicator lamp lights up
Display on diagnostic tool	P012300 "Throttle valve position sensor circuit A" "Voltage too high"
Error level condition	Throttle valve position sensor circuit A voltage: ≥ 4.80 V Time: ≥ 0.09 s
Function check	Throttle valve position sensor circuit A – checking the voltage (📖 p. 93)
Possible cause	Throttle valve position sensor circuit A – the signal wire has a short circuit to plus (terminal 30) (📖 p. 93)
	Throttle valve position sensor circuit A – the signal wire has a short circuit to ignition plus (terminal 15) (📖 p. 94)
	Throttle valve position sensor circuit A – ground wire is faulty (📖 p. 95)
Last measure if none of the documented causes leads to elimination of the fault	– Change the throttle valve position sensor.

Throttle valve position sensor circuit A – checking the voltage

Condition

The ignition is on.

The diagnostics tool is connected and running.

- Select **"Engine control unit" > "Measured values" > "Throttle position voltage sensor 1"**.
- Slowly and evenly turn the throttle grip all the way.

Circuit A throttle valve position sensor	
Voltage (value in diagnostics tool)	0.7 ... 3.3 V

- » If the displayed value is equal to the setpoint value:
 - Clear the fault memory using the KTM diagnostics tool.
 - Take a test ride.
 - Read out the trouble code memory using the KTM diagnostics tool.
- » If the displayed value is above the setpoint value:
 - Check the next possible cause:
Throttle valve position sensor circuit A – the signal wire has a short circuit to plus (terminal 30) (📖 p. 93)
 - Check the next possible cause:
Throttle valve position sensor circuit A – the signal wire has a short circuit to ignition plus (terminal 15) (📖 p. 94)
 - Check the next possible cause:
Throttle valve position sensor circuit A – ground wire is faulty (📖 p. 95)

Throttle valve position sensor circuit A – the signal wire has a short circuit to plus (terminal 30)

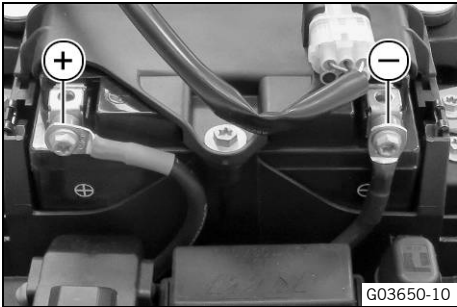
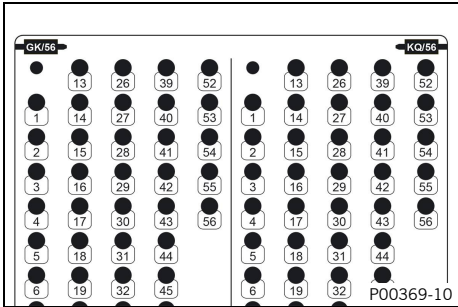
Condition

The ignition is on.

Engine control unit is disconnected. (📖 p. 15)

The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.

The throttle valve position sensor is disconnected. (📖 p. 20)



Throttle valve position sensor circuit A – check the signal wire for a short circuit to plus (terminal 30).

- **V** Measure the voltage between the specified points.
Break-out box, connector **GK** pin **35** – Measuring point **Ground (-)**

Voltage	≤ 0.1 V

- » If the specifications have not been met:
 - Check the cable from engine control unit connector **GK** (p. 497) pin **35** to connector **MC** (p. 505) pin **4** for a short circuit to plus (terminal 30).
- » If the specifications have been met:
 - Check the next possible cause:
Throttle valve position sensor circuit A – the signal wire has a short circuit to ignition plus (terminal 15) (p. 94)

Throttle valve position sensor circuit A – the signal wire has a short circuit to ignition plus (terminal 15)

Condition

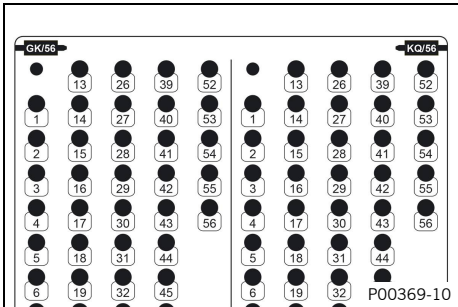
The ignition is off.
Engine control unit is disconnected. (p. 15)
The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.
The throttle valve position sensor is disconnected. (p. 20)

Throttle valve position sensor circuit A – check the signal wire for a short circuit to ignition plus (terminal 15).

- **Ω** Measure the resistance between the specified points.
Break-out box, connector **GK** pin **35** –
Break-out box, connector **GK** pin **44**

Resistance	∞ Ω

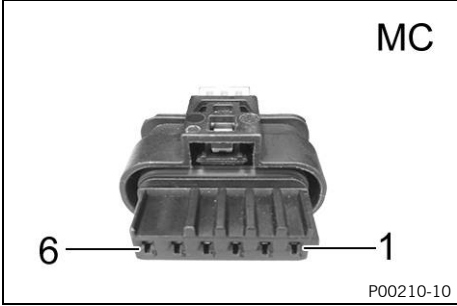
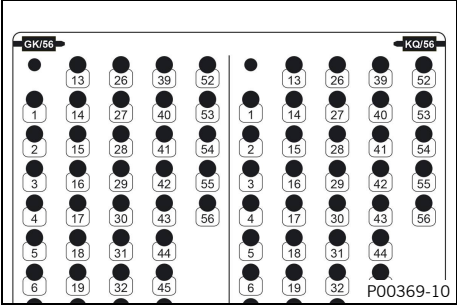
- » If the specifications have not been met:
 - Check the cable from engine control unit connector **GK** (p. 497) pin **35** to connector **MC** (p. 505) pin **4** for a short circuit to ignition plus (terminal 15).
- » If the specifications have been met:
 - Check the next possible cause:
Throttle valve position sensor circuit A – ground wire is faulty (p. 95)



Throttle valve position sensor circuit A – ground wire is faulty

Condition

The ignition is off.
Engine control unit is disconnected. (📖 p. 15)
The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.
The throttle valve position sensor is disconnected. (📖 p. 20)



Throttle valve position sensor circuit A – check the ground wire.

-  Measure the resistance between the specified points.
Break-out box, connector **GK** pin **26** – Throttle valve position sensor connector **MC** pin **3**

Resistance	$\leq 0.6 \Omega$

- » If the specifications have not been met:
 - Check engine control unit connector **GK** (📖 p. 497) pin **26** and connector **MC** (📖 p. 505) pin **3**.
 - Check the cable from engine control unit connector **GK** (📖 p. 497) pin **26** to connector **MC** (📖 p. 505) pin **3**.
- » If the specifications have been met:
 - Change the throttle valve position sensor.

6 ENGINE CONTROL TROUBLE CODE

Blink code for malfunction indicator lamp (OBD)	 Malfunction indicator lamp lights up
Display on diagnostic tool	P012600 "Coolant temperature sensor" "Insufficient coolant temperature for stable operation"
Error level condition	Coolant temperature sensor – insufficient coolant temperature for stable operation Sharp increase: $\geq 10\text{ }^{\circ}\text{C}$ ($\geq 50\text{ }^{\circ}\text{F}$) Sharp increase: $\leq 10\text{ }^{\circ}\text{C}$ ($\leq 50\text{ }^{\circ}\text{F}$)
Function check	Coolant temperature sensor – checking (📖 p. 96)
Possible cause	Coolant temperature sensor – the signal wire is faulty (📖 p. 97)
	Coolant temperature sensor – the ground wire is faulty (📖 p. 98)
	Coolant temperature sensor – the signal wire has a short circuit to plus (terminal 30) (📖 p. 98)
	Coolant temperature sensor – the signal wire has a short circuit to ignition plus (terminal 15) (📖 p. 99)
	Coolant temperature sensor – the signal wire has a short circuit to ground (terminal 31) (📖 p. 99)
	Coolant temperature sensor – the signal wire has a short circuit to sensor ground (📖 p. 100)
Last measure if none of the documented causes leads to elimination of the fault	– Check the coolant thermostat.

Coolant temperature sensor – checking

Condition

The ignition is off.

The coolant temperature sensor is disconnected. (📖 p. 12)

- Remove the coolant temperature sensor.
- Heat up the coolant temperature sensor slowly in a suitable container of cold water.



Coolant temperature sensor	
Resistance at: $-20\text{ }^{\circ}\text{C}$ ($-4\text{ }^{\circ}\text{F}$)	18.70 k Ω
Voltage at: $-20\text{ }^{\circ}\text{C}$ ($-4\text{ }^{\circ}\text{F}$)	4.55 V
Resistance at: $20\text{ }^{\circ}\text{C}$ ($68\text{ }^{\circ}\text{F}$)	2.55 k Ω
Voltage at: $20\text{ }^{\circ}\text{C}$ ($68\text{ }^{\circ}\text{F}$)	2.73 V
Resistance at: $80\text{ }^{\circ}\text{C}$ ($176\text{ }^{\circ}\text{F}$)	0.29 k Ω
Voltage at: $80\text{ }^{\circ}\text{C}$ ($176\text{ }^{\circ}\text{F}$)	0.57 V
Resistance at: $110\text{ }^{\circ}\text{C}$ ($230\text{ }^{\circ}\text{F}$)	0.11 k Ω
Voltage at: $110\text{ }^{\circ}\text{C}$ ($230\text{ }^{\circ}\text{F}$)	0.25 V

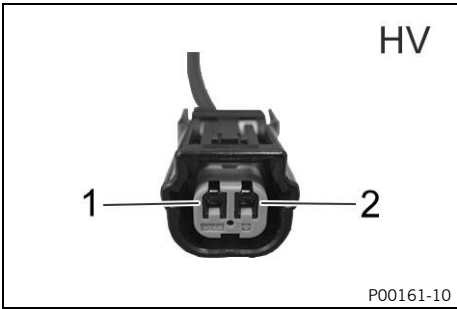
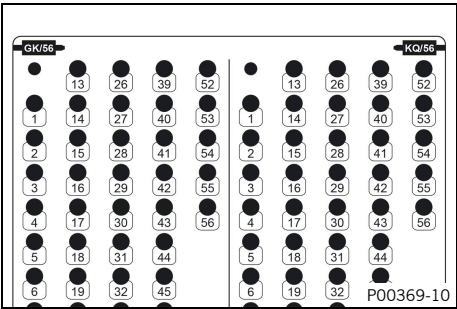
- » If the indicated value does not correspond to the setpoint value:
 - Change the coolant temperature sensor.

- » If the displayed value is equal to the setpoint value:
 - Check the next possible cause:
Coolant temperature sensor – the signal wire is faulty (📖 p. 97)
 - Check the next possible cause:
Coolant temperature sensor – the ground wire is faulty (📖 p. 98)
 - Check the next possible cause:
Coolant temperature sensor – the signal wire has a short circuit to plus (terminal 30) (📖 p. 98)
 - Check the next possible cause:
Coolant temperature sensor – the signal wire has a short circuit to ignition plus (terminal 15) (📖 p. 99)
 - Check the next possible cause:
Coolant temperature sensor – the signal wire has a short circuit to ground (terminal 31) (📖 p. 99)
 - Check the next possible cause:
Coolant temperature sensor – the signal wire has a short circuit to sensor ground (📖 p. 100)

Coolant temperature sensor – the signal wire is faulty

Condition

The ignition is off.
Engine control unit is disconnected. (📖 p. 15)
The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.
The coolant temperature sensor is disconnected. (📖 p. 12)



Coolant temperature sensor – check the signal wire.

-  Measure the resistance between the specified points.
Break-out box, connector **KQ** pin **42** – Coolant temperature sensor, connector **HV** pin **1**

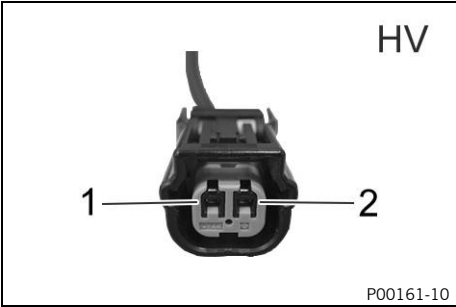
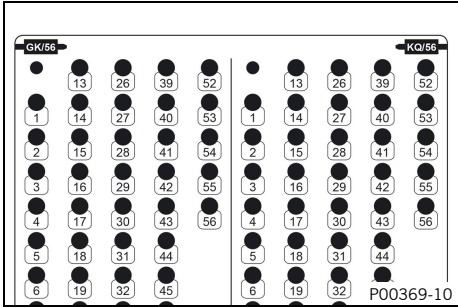
Resistance	≤ 0.6 Ω

- » If the specifications have not been met:
 - Check engine control unit connector **KQ** (📖 p. 502) pin **42** and connector **HV** (📖 p. 500) pin **1**.
 - Check the cable from engine control unit connector **KQ** (📖 p. 502) pin **42** to connector **HV** (📖 p. 500) pin **1**.
- » If the specifications have been met:
 - Check the next possible cause:
Coolant temperature sensor – the ground wire is faulty (📖 p. 98)

Coolant temperature sensor – the ground wire is faulty

Condition

- The ignition is off.
- Engine control unit is disconnected. (📖 p. 15)
- The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.
- The coolant temperature sensor is disconnected. (📖 p. 12)
- The gear position sensor is disconnected. (📖 p. 12)
- Induction manifold sensor is disconnected. (📖 p. 21)
- The intake air temperature sensor is disconnected. (📖 p. 17)



Coolant temperature sensor – check the ground wire.

-  Measure the resistance between the specified points.
Break-out box, connector **KQ** pin **16** – Coolant temperature sensor, connector **HV** pin **2**

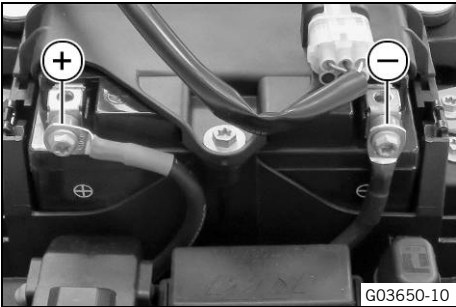
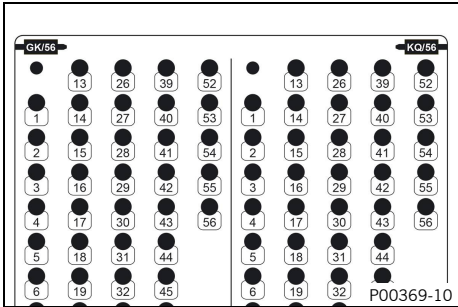
Resistance	≤ 0.6 Ω

- » If the specifications have not been met:
 - Check engine control unit connector **KQ** (📖 p. 502) pin **16** and connector **HV** (📖 p. 500) pin **2**.
 - Check the cable from engine control unit connector **KQ** (📖 p. 502) pin **16** to connector **HV** (📖 p. 500) pin **2**.
- » If the specifications have been met:
 - Check the next possible cause:
Coolant temperature sensor – the signal wire has a short circuit to plus (terminal 30) (📖 p. 98)

Coolant temperature sensor – the signal wire has a short circuit to plus (terminal 30)

Condition

- The ignition is off.
- Engine control unit is disconnected. (📖 p. 15)
- The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.
- The coolant temperature sensor is disconnected. (📖 p. 12)



Coolant temperature sensor – check the signal wire for a short circuit to plus (terminal 30).

-  Measure the voltage between the specified points.
Break-out box, connector **KQ** pin **42** – Measuring point **Ground** (–)

Voltage	$\leq 0.1 \text{ V}$

- » If the specifications have not been met:
 - Check the cable from engine control unit connector **KQ** (p. 502) pin **42** to connector **HV** (p. 500) pin **1** for a short circuit to plus (terminal 30).
- » If the specifications have been met:
 - Check the next possible cause:
Coolant temperature sensor – the signal wire has a short circuit to ignition plus (terminal 15) (p. 99)

Coolant temperature sensor – the signal wire has a short circuit to ignition plus (terminal 15)

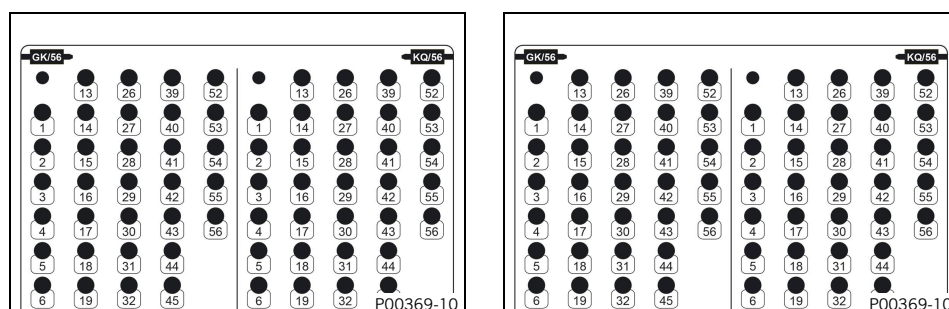
Condition

The ignition is off.

Engine control unit is disconnected. (p. 15)

The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.

The coolant temperature sensor is disconnected. (p. 12)



Coolant temperature sensor – check the signal wire for a short circuit to ignition plus (terminal 15).

- Measure the resistance between the specified points.
Break-out box, connector **KQ** pin **42** – Break-out box, connector **GK** pin **44**

Resistance	$\infty \Omega$

- » If the specifications have not been met:
 - Check the cable from engine control unit connector **KQ** (p. 502) pin **42** to connector **HV** (p. 500) pin **1** for a short circuit to ignition plus (terminal 15).
- » If the specifications have been met:
 - Check the next possible cause:
Coolant temperature sensor – the signal wire has a short circuit to ground (terminal 31) (p. 99)

Coolant temperature sensor – the signal wire has a short circuit to ground (terminal 31)

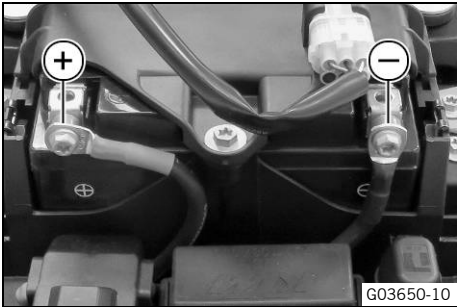
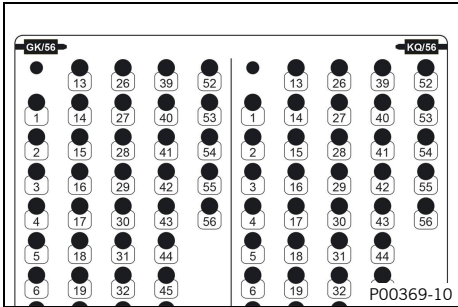
Condition

The ignition is off.

Engine control unit is disconnected. (p. 15)

The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.

The coolant temperature sensor is disconnected. (p. 12)



Coolant temperature sensor – check the signal wire for a short circuit to ground (terminal 31).

- **V** Measure the voltage between the specified points.
Break-out box, connector **KQ** pin **42** – Measuring point **plus (+)**

Voltage	≤ 0.1 V

- » If the specifications have not been met:
 - Check the cable from engine control unit connector **KQ** (p. 502) pin **42** to connector **HV** (p. 500) pin **1** for a short circuit to ground.
- » If the specifications have been met:
 - Check the next possible cause:
Coolant temperature sensor – the signal wire has a short circuit to sensor ground (p. 100)

Coolant temperature sensor – the signal wire has a short circuit to sensor ground

Condition

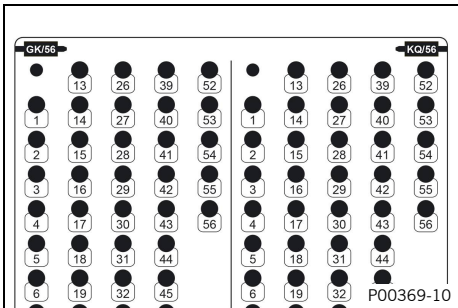
The ignition is off.
Engine control unit is disconnected. (p. 15)
The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.
The coolant temperature sensor is disconnected. (p. 12)

Coolant temperature sensor – check the signal wire for a short circuit to sensor ground.

- **Ω** Measure the resistance between the specified points.
Break-out box, connector **KQ** pin **42** –
Break-out box, connector **KQ** pin **16**

Resistance	∞ Ω

- » If the specifications have not been met:
 - Check cable from engine control unit connector **KQ** (p. 497) pin **42** to connector **HV** (p. 500) pin **1** for a short circuit to sensor ground.
- » If the specifications have been met:
 - Check the coolant thermostat.



Blink code for malfunction indicator lamp (OBD)	 Malfunction indicator lamp lights up
Display on diagnostic tool	P013000 "Lambda sensor cylinder 1" "No activity detected"
Error level condition	Cylinder 1 lambda sensor – no activity detected
Possible cause	Lambda sensor, cylinder 1 is faulty (📖 p. 101) Lambda sensor, cylinder 1 – wiring is faulty (📖 p. 101)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Lambda sensor, cylinder 1 is faulty

Condition

The engine is running at idle speed.

Lambda sensor for cylinder 1 is disconnected. (📖 p. 9)

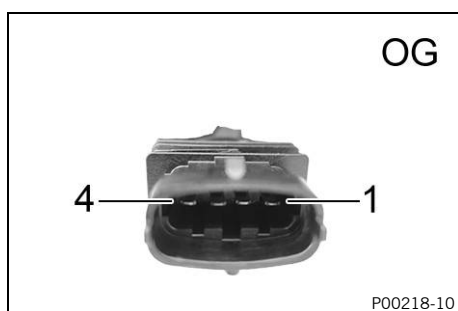
Lambda sensor is at operating temperature. (📖 p. 9)

Lambda sensor, cylinder 1 – check the voltage.

- **V** Measure the voltage between the specified points.
Lambda sensor cylinder 1, connector **OG** pin **3** –
Lambda sensor cylinder 1, connector **OG** pin **4**

Lambda sensor	
Voltage range within the control loop	0.2 ... 0.8 V

- » If the specifications have not been met:
 - Change the cylinder 1 lambda sensor.
- » If the specifications have been met:
 - Check the next possible cause:
Lambda sensor, cylinder 1 – wiring is faulty (📖 p. 101)



Lambda sensor, cylinder 1 – wiring is faulty

Condition

The engine is running at idle speed.

Lambda sensor is at operating temperature. (📖 p. 9)

The break-out box is connected to the engine control unit and the wiring harness with adapter **00029095014**.

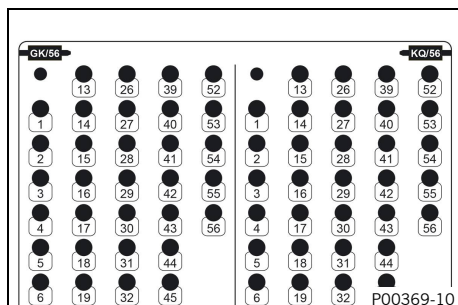
Lambda sensor for cylinder 1 is connected. (📖 p. 9)

Lambda sensor, cylinder 1 – check wiring.

- **V** Measure the voltage between the specified points.
Break-out box, connector **GK** pin **27** –
Break-out box, connector **GK** pin **40**

Lambda sensor	
Voltage range within the control loop	0.2 ... 0.8 V

- » If the specifications have not been met:
 - Check engine control unit connector **GK** (📖 p. 497) pin **27** and connector **OH** (📖 p. 506) pin **4**.
 - Check engine control unit connector **GK** (📖 p. 497) pin **40** and connector **OH** (📖 p. 506) pin **3**.



6 ENGINE CONTROL TROUBLE CODE

- Check the cable from engine control unit connector **GK** (p. 497) pin **27** to connector **OH** (p. 506) pin **4**.
- Check the cable from engine control unit connector **GK** (p. 497) pin **40** to connector **OH** (p. 506) pin **3**.
- » If the specifications have been met:
 - Contact customer service.

Blink code for malfunction indicator lamp (OBD)	 Malfunction indicator lamp lights up
Display on diagnostic tool	P013100 "Lambda sensor cylinder 1" "Signal voltage too low"
Error level condition	Lambda sensor cylinder 1 – signal voltage too low Voltage: ≤ 0.06 V Time: ≥ 10 s
Possible cause	Lambda sensor, cylinder 1 is faulty (📖 p. 103)
	Lambda sensor, cylinder 1 – the signal wire has a short circuit to ground (terminal 31) (📖 p. 103)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Lambda sensor, cylinder 1 is faulty

Condition

The engine is running at idle speed.

Lambda sensor for cylinder 1 is disconnected. (📖 p. 9)

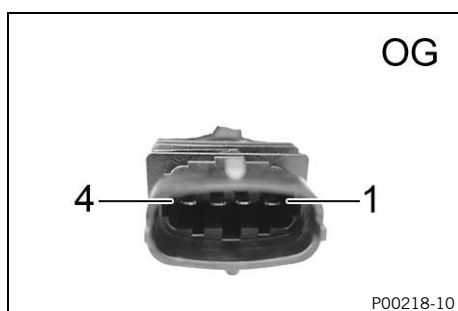
Lambda sensor is at operating temperature. (📖 p. 9)

Lambda sensor, cylinder 1 – check the voltage.

-  Measure the voltage between the specified points.
 Lambda sensor cylinder 1, connector **OG** pin **3** –
 Lambda sensor cylinder 1, connector **OG** pin **4**

Lambda sensor	
Voltage range within the control loop	0.2 ... 0.8 V

- » If the specifications have not been met:
 - Change the cylinder 1 lambda sensor.
- » If the specifications have been met:
 - Check the next possible cause:
 Lambda sensor, cylinder 1 – the signal wire has a short circuit to ground (terminal 31) (📖 p. 103)



Lambda sensor, cylinder 1 – the signal wire has a short circuit to ground (terminal 31)

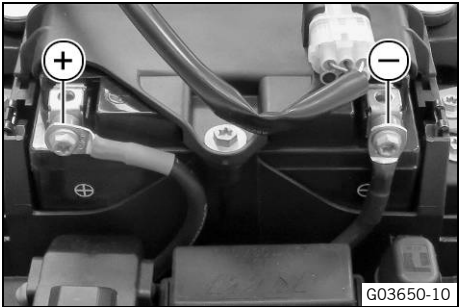
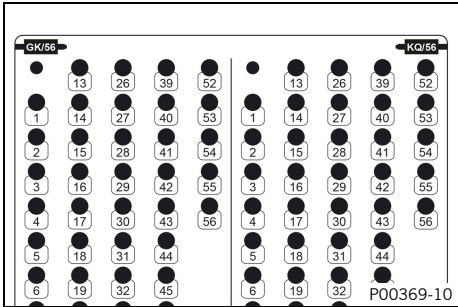
Condition

The ignition is off.

Engine control unit is disconnected. (📖 p. 15)

The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.

Lambda sensor for cylinder 1 is disconnected. (📖 p. 9)



Lambda sensor cylinder 1 – check the signal wire for a short circuit to ground (terminal 31).

-  Measure the resistance between the specified points.
Break-out box, connector **GK** pin **27** – Measuring point **Ground (–)**

Resistance	$\infty \Omega$

- » If the specifications have not been met:
 - Check the cable from engine control unit connector **GK** (📖 p. 497) pin **27** to connector **OH** (📖 p. 506) pin **4** for a short circuit to ground (terminal 31).
- » If the specifications have been met:
 - Contact customer service.

Blink code for malfunction indicator lamp (OBD)	 Malfunction indicator lamp lights up
Display on diagnostic tool	P013200 "Lambda sensor cylinder 1" "Signal voltage too high"
Error level condition	Lambda sensor, cylinder 1 – signal voltage too high Voltage: $\geq 1.08\text{ V}$ Time: $\geq 5\text{ s}$
Possible cause	Lambda sensor, cylinder 1 is faulty (📖 p. 105)
	Lambda sensor, cylinder 1 – wiring is faulty (📖 p. 105)
	Lambda sensor cylinder 1 – the signal wire has a short circuit to plus (terminal 30) (📖 p. 106)
	Lambda sensor, cylinder 1 – the signal wire has a short circuit to ignition plus (terminal 15) (📖 p. 107)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Lambda sensor, cylinder 1 is faulty

Condition

The engine is running at idle speed.

Lambda sensor for cylinder 1 is disconnected. (📖 p. 9)

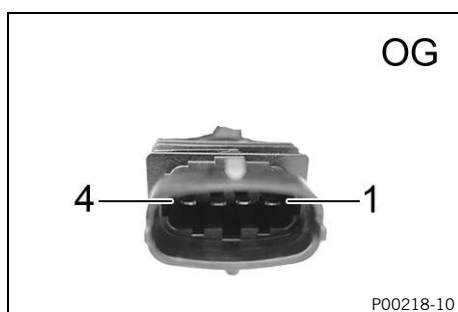
Lambda sensor is at operating temperature. (📖 p. 9)

Lambda sensor, cylinder 1 – check the voltage.

-  Measure the voltage between the specified points.
 Lambda sensor cylinder 1, connector **OG** pin **3** –
 Lambda sensor cylinder 1, connector **OG** pin **4**

Lambda sensor	
Voltage range within the control loop	0.2 ... 0.8 V

- » If the specifications have not been met:
 - Change the cylinder 1 lambda sensor.
- » If the specifications have been met:
 - Check the next possible cause:
 Lambda sensor, cylinder 1 – wiring is faulty (📖 p. 105)



Lambda sensor, cylinder 1 – wiring is faulty

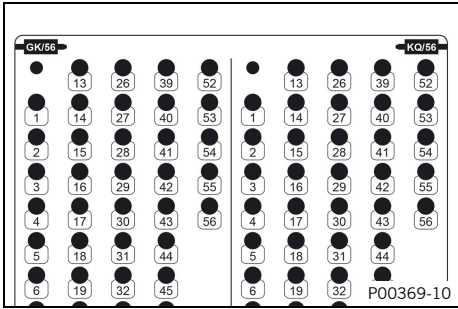
Condition

The engine is running at idle speed.

Lambda sensor is at operating temperature. (📖 p. 9)

The break-out box is connected to the engine control unit and the wiring harness with adapter **00029095014**.

Lambda sensor for cylinder 1 is connected. (📖 p. 9)



Lambda sensor, cylinder 1 – check wiring.

- **V** Measure the voltage between the specified points.
Break-out box, connector **GK** pin **27** –
Break-out box, connector **GK** pin **40**

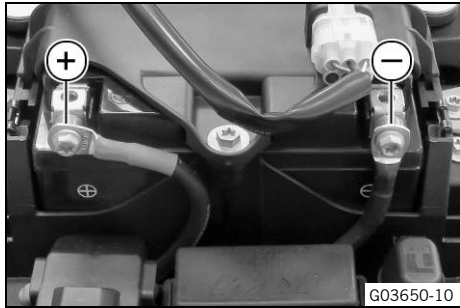
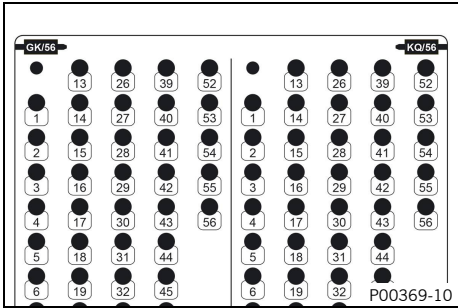
Lambda sensor	
Voltage range within the control loop	0.2 ... 0.8 V

- » If the specifications have not been met:
 - Check engine control unit connector **GK** (p. 497) pin **27** and connector **OH** (p. 506) pin **4**.
 - Check engine control unit connector **GK** (p. 497) pin **40** and connector **OH** (p. 506) pin **3**.
 - Check the cable from engine control unit connector **GK** (p. 497) pin **27** to connector **OH** (p. 506) pin **4**.
 - Check the cable from engine control unit connector **GK** (p. 497) pin **40** to connector **OH** (p. 506) pin **3**.
- » If the specifications have been met:
 - Check the next possible cause:
Lambda sensor cylinder 1 – the signal wire has a short circuit to plus (terminal 30) (p. 106)

Lambda sensor cylinder 1 – the signal wire has a short circuit to plus (terminal 30)

Condition

The ignition is off.
Engine control unit is disconnected. (p. 15)
The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.
Lambda sensor for cylinder 1 is disconnected. (p. 9)



Lambda sensor, cylinder 1 – check the signal wire for a short circuit to plus (terminal 30).

- **V** Measure the voltage between the specified points.
Break-out box, connector **GK** pin **27** – Measuring point **Ground (-)**

Voltage	< 0.1 V

- » If the specifications have not been met:
 - Check the cable from engine control unit connector **GK** (p. 497) pin **27** to connector **OH** (p. 506) pin **4** for a short circuit to plus (terminal 30).
- » If the specifications have been met:
 - Check the next possible cause:
Lambda sensor, cylinder 1 – the signal wire has a short circuit to ignition plus (terminal 15) (p. 107)

Lambda sensor, cylinder 1 – the signal wire has a short circuit to ignition plus (terminal 15)

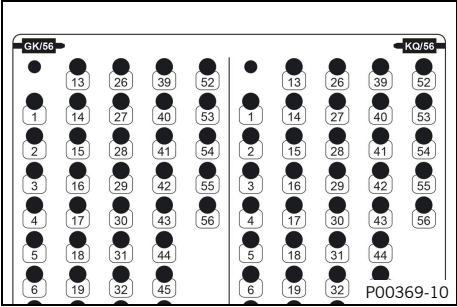
Condition
The ignition is off.
Engine control unit is disconnected. (📖 p. 15)
The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.
Lambda sensor for cylinder 1 is disconnected. (📖 p. 9)

Lambda sensor, cylinder 1 – check the signal wire for a short circuit to ignition plus (terminal 15).

-  Measure the resistance between the specified points.
Break-out box, connector **GK** pin **27** –
Break-out box, connector **GK** pin **44**

Resistance	$\infty \Omega$

- » If the specifications have not been met:
 - Check the cable from engine control unit connector **GK** (📖 p. 497) pin **27** to connector **OH** (📖 p. 506) pin **4** for a short circuit to ignition plus (terminal 15).
- » If the specifications have been met:
 - Contact customer service.



6 ENGINE CONTROL TROUBLE CODE

Blink code for malfunction indicator lamp (OBD)	 Malfunction indicator lamp lights up
Display on diagnostic tool	P013300 "Lambda sensor cylinder 1" "Deterioration"
Error level condition	The lambda sensor jump characteristic is too slow.
Function check	Checking the cylinder 1 lambda sensor (📖 p. 108)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Checking the cylinder 1 lambda sensor

- Clear the fault memory using the KTM diagnostics tool.
- Read out the error memory after the test ride using the KTM diagnostics tool.
 - » If the error persists:
 - Lambda sensor cylinder 1 – check the value. The value should change one to three times per second.
 - Check the intake and electronic fuel injection.

Last measure if none of the documented causes leads to elimination of the fault

- Contact customer service.

Blink code for malfunction indicator lamp (OBD)	 Malfunction indicator lamp lights up
Display on diagnostic tool	P013400 "Lambda sensor cylinder 1" "No activity detected"
Error level condition	Cylinder 1 lambda sensor – no activity detected Voltage: ≤ 0.6 V Voltage: ≥ 1.08 V Time: ≥ 5 s
Possible cause	Lambda sensor, cylinder 1 is faulty (📖 p. 109)
	Lambda sensor, cylinder 1 – wiring is faulty (📖 p. 109)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Lambda sensor, cylinder 1 is faulty

Condition

The engine is running at idle speed.

Lambda sensor for cylinder 1 is disconnected. (📖 p. 9)

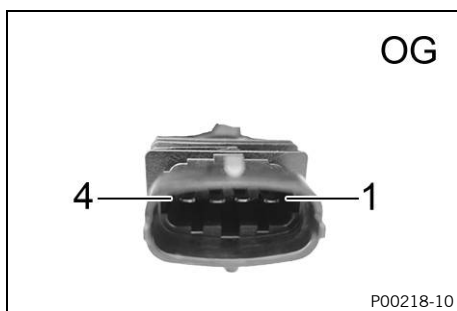
Lambda sensor is at operating temperature. (📖 p. 9)

Lambda sensor, cylinder 1 – check the voltage.

- **V** Measure the voltage between the specified points.
 Lambda sensor cylinder 1, connector **OG** pin **3** –
 Lambda sensor cylinder 1, connector **OG** pin **4**

Lambda sensor	
Voltage range within the control loop	0.2 ... 0.8 V

- » If the specifications have not been met:
 - Change the cylinder 1 lambda sensor.
- » If the specifications have been met:
 - Check the next possible cause:
 Lambda sensor, cylinder 1 – wiring is faulty (📖 p. 109)



Lambda sensor, cylinder 1 – wiring is faulty

Condition

The engine is running at idle speed.

Lambda sensor is at operating temperature. (📖 p. 9)

The break-out box is connected to the engine control unit and the wiring harness with adapter **00029095014**.

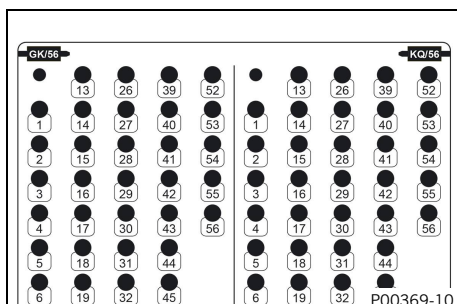
Lambda sensor for cylinder 1 is connected. (📖 p. 9)

Lambda sensor, cylinder 1 – check wiring.

- **V** Measure the voltage between the specified points.
 Break-out box, connector **GK** pin **27** –
 Break-out box, connector **GK** pin **40**

Lambda sensor	
Voltage range within the control loop	0.2 ... 0.8 V

- » If the specifications have not been met:



6 ENGINE CONTROL TROUBLE CODE

- Check engine control unit connector **GK** (p. 497) pin **27** and connector **OH** (p. 506) pin **4**.
- Check engine control unit connector **GK** (p. 497) pin **40** and connector **OH** (p. 506) pin **3**.
- Check the cable from engine control unit connector **GK** (p. 497) pin **27** to connector **OH** (p. 506) pin **4**.
- Check the cable from engine control unit connector **GK** (p. 497) pin **40** to connector **OH** (p. 506) pin **3**.
- » If the specifications have been met:
 - Contact customer service.

Blink code for malfunction indicator lamp (OBD)	 Malfunction indicator lamp lights up
Display on diagnostic tool	P013600 "Lambda sensor 3 after catalytic converter" "Circuit fault"
Error level condition	Lambda sensor 3 after catalytic converter – malfunction in circuit
Possible cause	Lambda sensor 3 after catalytic converter is faulty (📖 p. 111)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Lambda sensor 3 after catalytic converter is faulty

Condition

The engine is running at idle speed.

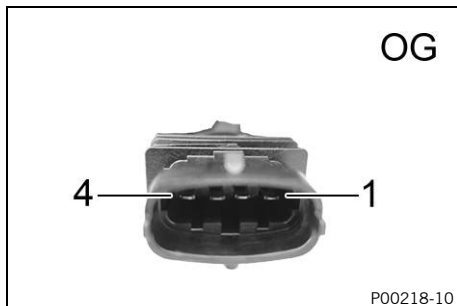
Lambda sensor 3 after catalytic converter is disconnected.

(📖 p. 9)

Lambda sensor is at operating temperature. (📖 p. 9)

Lambda sensor 3 after catalytic converter – check the voltage.

- **V** Measure the voltage between the specified points.
 Lambda sensor 3 after catalytic converter connector **OG**
 pin **3** – Lambda sensor 3 after catalytic converter con-
 nector **OG** pin **4**



Lambda sensor	
Voltage range within the control loop	0.2 ... 0.8 V

- » If the specifications have not been met:
 - Change lambda sensor 3 after catalytic converter.
- » If the specifications have been met:
 - Contact customer service.

6 ENGINE CONTROL TROUBLE CODE

Blink code for malfunction indicator lamp (OBD)	 Malfunction indicator lamp lights up
Display on diagnostic tool	P013700 "Lambda sensor 3 after catalytic converter" "Signal voltage too low"
Error level condition	Lambda sensor 3 after catalytic converter – signal voltage too low Voltage: ≤ 0.06 V Time: ≥ 10 s
Possible cause	Lambda sensor 3 after catalytic converter is faulty (🔧 p. 112) Lambda sensor 3 after catalytic converter – the signal wire has a short circuit to ground (terminal 31) (🔧 p. 112)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Lambda sensor 3 after catalytic converter is faulty

Condition

The engine is running at idle speed.

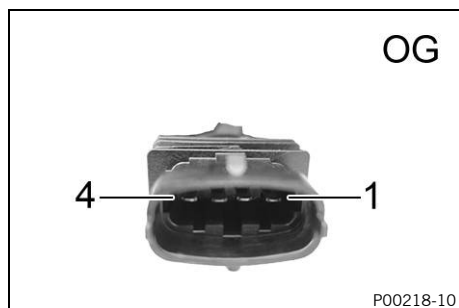
Lambda sensor 3 after catalytic converter is disconnected.

(🔧 p. 9)

Lambda sensor is at operating temperature. (🔧 p. 9)

Lambda sensor 3 after catalytic converter – check the voltage.

- **V** Measure the voltage between the specified points.
Lambda sensor 3 after catalytic converter connector **OG** pin **3** – Lambda sensor 3 after catalytic converter connector **OG** pin **4**



Lambda sensor	
Voltage range within the control loop	0.2 ... 0.8 V

- » If the specifications have not been met:
 - Change lambda sensor 3 after catalytic converter.
- » If the specifications have been met:
 - Check the next possible cause:
Lambda sensor 3 after catalytic converter – the signal wire has a short circuit to ground (terminal 31) (🔧 p. 112)

Lambda sensor 3 after catalytic converter – the signal wire has a short circuit to ground (terminal 31)

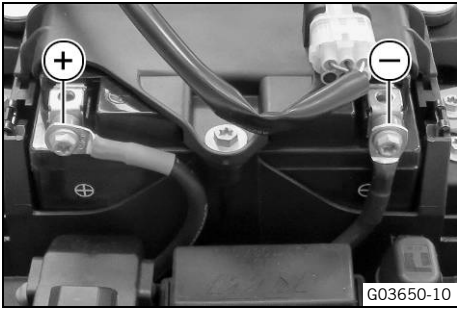
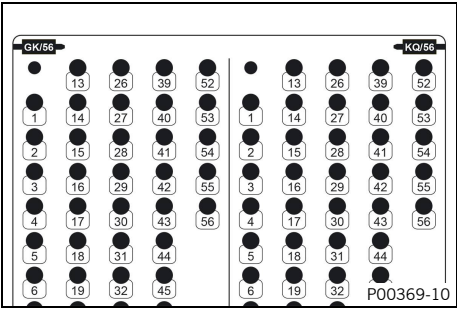
Condition

The ignition is off.

Engine control unit is disconnected. (🔧 p. 15)

The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.

Lambda sensor 3 after catalytic converter is disconnected. (🔧 p. 9)



Lambda sensor 3 after catalytic converter – check the signal wire for a short circuit to ground (terminal 31).

-  Measure the resistance between the specified points.
Break-out box, connector **GK** pin **21** – Measuring point **Ground (-)**

Resistance	$\infty \Omega$

- » If the specifications have not been met:
 - Check the cable from engine control unit connector **GK** (📖 p. 497) pin **21** to connector **TK** (📖 p. 508) pin **4** for a short circuit to ground (terminal 31).
- » If the specifications have been met:
 - Contact customer service.

Blink code for malfunction indicator lamp (OBD)	 Malfunction indicator lamp lights up
Display on diagnostic tool	P013800 "Lambda sensor 3 after catalytic converter" "Signal voltage too high"
Error level condition	Lambda sensor 3 after catalytic converter – signal voltage too high Voltage: $\geq 1.08\text{ V}$ Time: $\geq 5\text{ s}$
Possible cause	Lambda sensor 3 after catalytic converter is faulty ( p. 114)
	Lambda sensor 3 after catalytic converter – wiring is faulty ( p. 114)
	Lambda sensor 3 after catalytic converter – the signal wire has a short circuit to plus (terminal 30) ( p. 115)
	Lambda sensor 3 after catalytic converter – the signal wire has a short circuit to ignition plus (terminal 15) ( p. 116)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Lambda sensor 3 after catalytic converter is faulty

Condition

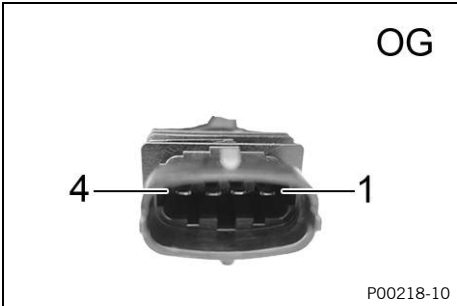
The engine is running at idle speed.
Lambda sensor 3 after catalytic converter is disconnected. ( p. 9)
Lambda sensor is at operating temperature. ( p. 9)

Lambda sensor 3 after catalytic converter – check the voltage.

-  Measure the voltage between the specified points.
Lambda sensor 3 after catalytic converter connector **OG** pin **3** – Lambda sensor 3 after catalytic converter connector **OG** pin **4**

Lambda sensor	
Voltage range within the control loop	0.2 ... 0.8 V

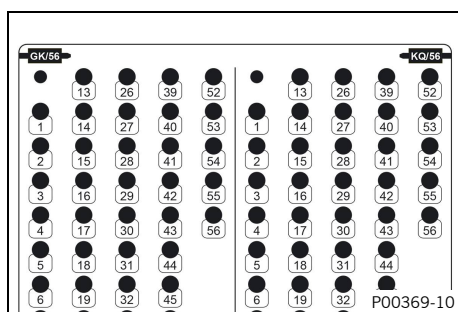
- » If the specifications have not been met:
 - Change lambda sensor 3 after catalytic converter.
- » If the specifications have been met:
 - Check the next possible cause:
Lambda sensor 3 after catalytic converter – wiring is faulty ( p. 114)



Lambda sensor 3 after catalytic converter – wiring is faulty

Condition

The engine is running at idle speed.
Lambda sensor is at operating temperature. ( p. 9)
The break-out box is connected to the engine control unit and the wiring harness with adapter **00029095014**.
Lambda sensor 3 after catalytic converter is connected. ( p. 9)



Lambda sensor, cylinder 2 – check wiring.

- **V** Measure the voltage between the specified points.
Break-out box, connector **GK** pin **21** –
Break-out box, connector **GK** pin **37**

Lambda sensor	
Voltage range within the control loop	0.2 ... 0.8 V

- » If the specifications have not been met:
 - Check engine control unit connector **GK** (p. 497) pin **21** and connector **TK** (p. 508) pin **4**.
 - Check engine control unit connector **GK** (p. 497) pin **37** and connector **TK** (p. 508) pin **3**.
 - Check the cable from engine control unit connector **GK** (p. 497) pin **21** to connector **TK** (p. 508) pin **4**.
 - Check the cable from engine control unit connector **GK** (p. 497) pin **37** to connector **TK** (p. 508) pin **3**.
- » If the specifications have been met:
 - Check the next possible cause:
Lambda sensor 3 after catalytic converter – the signal wire has a short circuit to plus (terminal 30) (p. 115)

Lambda sensor 3 after catalytic converter – the signal wire has a short circuit to plus (terminal 30)

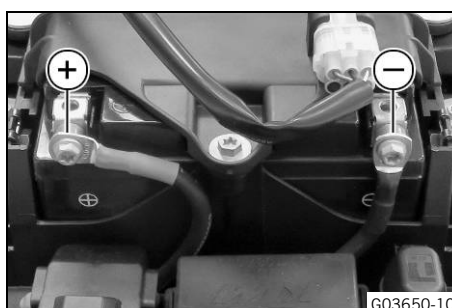
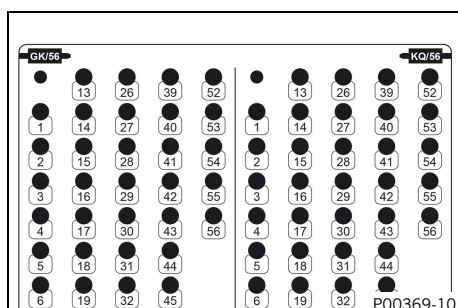
Condition

The ignition is off.

Engine control unit is disconnected. (p. 15)

The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.

Lambda sensor 3 after catalytic converter is disconnected. (p. 9)



Lambda sensor, cylinder 2 – check the signal wire for a short circuit to plus (terminal 30).

- **V** Measure the voltage between the specified points.
Break-out box, connector **GK** pin **21** – Measuring point **Ground (-)**

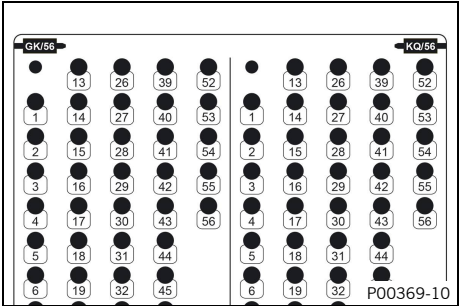
Voltage	< 0.1 V

- » If the specifications have not been met:
 - Check the cable from engine control unit connector **GK** (p. 497) pin **21** to connector **TK** (p. 508) pin **4** for a short circuit to plus (terminal 30).
- » If the specifications have been met:
 - Check the next possible cause:
Lambda sensor 3 after catalytic converter – the signal wire has a short circuit to ignition plus (terminal 15) (p. 116)

Lambda sensor 3 after catalytic converter – the signal wire has a short circuit to ignition plus (terminal 15)

Condition

The ignition is off.
Engine control unit is disconnected. (📖 p. 15)
The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.
Lambda sensor 3 after catalytic converter is disconnected. (📖 p. 9)



Lambda sensor 3 after catalytic converter – check the signal wire for a short circuit to ignition plus (terminal 15).

-  Measure the resistance between the specified points.
Break-out box, connector **GK** pin **21** –
Break-out box, connector **GK** pin **44**

Resistance	$\infty \Omega$

- » If the specifications have not been met:
 - Check the cable from engine control unit connector **GK** (📖 p. 497) pin **21** to connector **TK** (📖 p. 508) pin **4** for a short circuit to ignition plus (terminal 15).
- » If the specifications have been met:
 - Contact customer service.

Blink code for malfunction indicator lamp (OBD)	 Malfunction indicator lamp lights up
Display on diagnostic tool	P014000 "Lambda sensor 3 after catalytic converter" "No activity detected"
Error level condition	Lambda sensor 3 after catalytic converter – no activity detected
Possible cause	Lambda sensor 3 after catalytic converter is faulty (📖 p. 117) Lambda sensor 3 after catalytic converter – wiring is faulty (📖 p. 117)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Lambda sensor 3 after catalytic converter is faulty

Condition

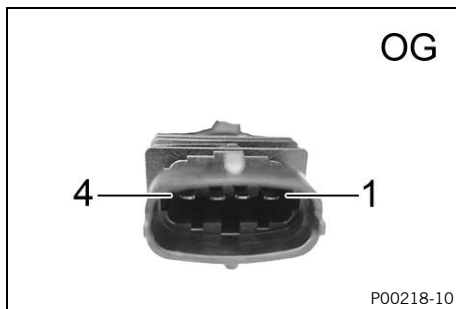
The engine is running at idle speed.

Lambda sensor 3 after catalytic converter is disconnected. (📖 p. 9)

Lambda sensor is at operating temperature. (📖 p. 9)

Lambda sensor 3 after catalytic converter – check the voltage.

- **V** Measure the voltage between the specified points.
Lambda sensor 3 after catalytic converter connector **OG** pin **3** – Lambda sensor 3 after catalytic converter connector **OG** pin **4**



Lambda sensor	
Voltage range within the control loop	0.2 ... 0.8 V

- » If the specifications have not been met:
 - Change lambda sensor 3 after catalytic converter.
- » If the specifications have been met:
 - Check the next possible cause:
Lambda sensor 3 after catalytic converter – wiring is faulty (📖 p. 117)

Lambda sensor 3 after catalytic converter – wiring is faulty

Condition

The engine is running at idle speed.

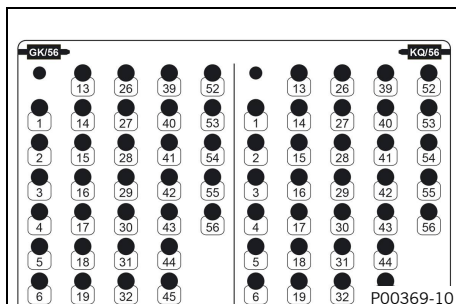
Lambda sensor is at operating temperature. (📖 p. 9)

The break-out box is connected to the engine control unit and the wiring harness with adapter **00029095014**.

Lambda sensor 3 after catalytic converter is connected. (📖 p. 9)

Lambda sensor, cylinder 2 – check wiring.

- **V** Measure the voltage between the specified points.
Break-out box, connector **GK** pin **21** –
Break-out box, connector **GK** pin **37**



Lambda sensor	
Voltage range within the control loop	0.2 ... 0.8 V

- » If the specifications have not been met:

6 ENGINE CONTROL TROUBLE CODE

- Check engine control unit connector **GK** (📖 p. 497) pin **21** and connector **TK** (📖 p. 508) pin **4**.
- Check engine control unit connector **GK** (📖 p. 497) pin **37** and connector **TK** (📖 p. 508) pin **3**.
- Check the cable from engine control unit connector **GK** (📖 p. 497) pin **21** to connector **TK** (📖 p. 508) pin **4**.
- Check the cable from engine control unit connector **GK** (📖 p. 497) pin **37** to connector **TK** (📖 p. 508) pin **3**.
- » If the specifications have been met:
 - Contact customer service.

Blink code for malfunction indicator lamp (OBD)	 Malfunction indicator lamp lights up
Display on diagnostic tool	P015000 "Lambda sensor cylinder 2" "No activity detected"
Error level condition	Lambda sensor for cylinder 2 – no activity detected
Possible cause	Lambda sensor, cylinder 2 is faulty (📖 p. 119) Lambda sensor, cylinder 2 – wiring is faulty (📖 p. 119)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Lambda sensor, cylinder 2 is faulty

Condition

The engine is running at idle speed.

Lambda sensor for cylinder 2 is disconnected. (📖 p. 9)

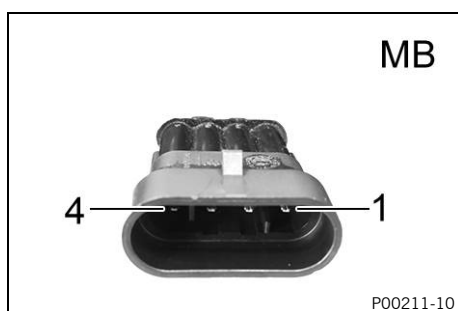
Lambda sensor is at operating temperature. (📖 p. 9)

Lambda sensor, cylinder 2 – check the voltage.

- **V** Measure the voltage between the specified points.
Lambda sensor cylinder 2, connector **MB** pin 1 –
Lambda sensor cylinder 2, connector **MB** pin 2

Lambda sensor	
Voltage range within the control loop	0.2 ... 0.8 V

- » If the specifications have not been met:
 - Change the cylinder 2 lambda sensor.
- » If the specifications have been met:
 - Check the next possible cause:
Lambda sensor, cylinder 2 – wiring is faulty (📖 p. 119)



Lambda sensor, cylinder 2 – wiring is faulty

Condition

The engine is running at idle speed.

Lambda sensor is at operating temperature. (📖 p. 9)

The break-out box is connected to the engine control unit and the wiring harness with adapter **00029095014**.

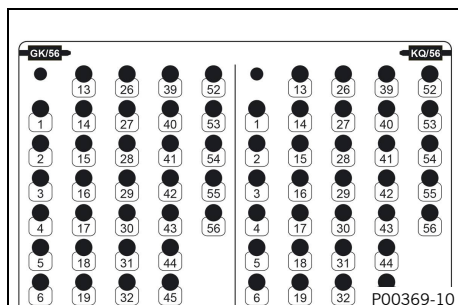
Lambda sensor for cylinder 2 is connected. (📖 p. 9)

Lambda sensor, cylinder 2 – check wiring.

- **V** Measure the voltage between the specified points.
Break-out box, connector **GK** pin 45 –
Break-out box, connector **GK** pin 28

Lambda sensor	
Voltage range within the control loop	0.2 ... 0.8 V

- » If the specifications have not been met:
 - Check engine control unit connector **GK** (📖 p. 497) pin 45 and connector **LI** (📖 p. 504) pin 1.
 - Check engine control unit connector **GK** (📖 p. 497) pin 28 and connector **LI** (📖 p. 504) pin 2.



6 ENGINE CONTROL TROUBLE CODE

- Check the cable from engine control unit connector **GK** (p. 497) pin **45** to connector **LI** (p. 504) pin **1**.
- Check the cable from engine control unit connector **GK** (p. 497) pin **28** to connector **LI** (p. 504) pin **2**.
- » If the specifications have been met:
 - Contact customer service.

Blink code for malfunction indicator lamp (OBD)	 Malfunction indicator lamp lights up
Display on diagnostic tool	P015100 "Lambda sensor cylinder 2" "Signal voltage too low"
Error level condition	Lambda sensor for cylinder 2 – signal voltage too low Voltage: $\leq 0.06\text{ V}$ Time: $\geq 10\text{ s}$
Possible cause	Lambda sensor, cylinder 2 is faulty (📖 p. 121)
	Lambda sensor for cylinder 2 – the signal wire has a short circuit to ground (terminal 31) (📖 p. 121)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Lambda sensor, cylinder 2 is faulty

Condition

The engine is running at idle speed.

Lambda sensor for cylinder 2 is disconnected. (📖 p. 9)

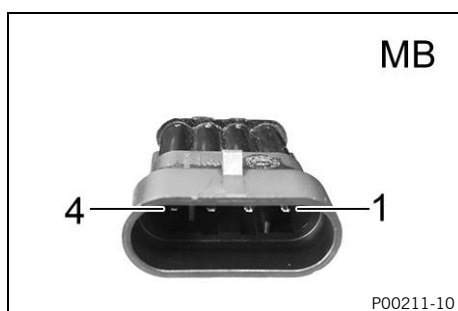
Lambda sensor is at operating temperature. (📖 p. 9)

Lambda sensor, cylinder 2 – check the voltage.

-  Measure the voltage between the specified points.
 Lambda sensor cylinder 2, connector **MB** pin 1 –
 Lambda sensor cylinder 2, connector **MB** pin 2

Lambda sensor	
Voltage range within the control loop	0.2 ... 0.8 V

- » If the specifications have not been met:
 - Change the cylinder 2 lambda sensor.
- » If the specifications have been met:
 - Check the next possible cause:
 Lambda sensor for cylinder 2 – the signal wire has a short circuit to ground (terminal 31) (📖 p. 121)



Lambda sensor for cylinder 2 – the signal wire has a short circuit to ground (terminal 31)

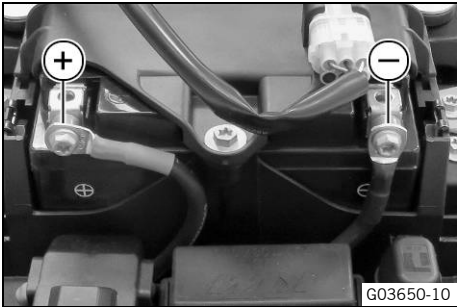
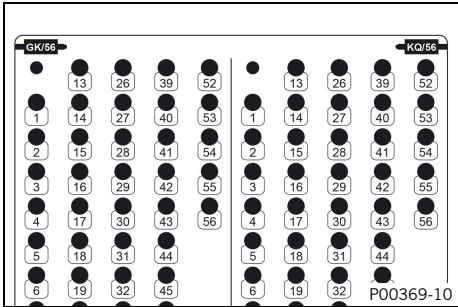
Condition

The ignition is off.

Engine control unit is disconnected. (📖 p. 15)

The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.

Lambda sensor for cylinder 2 is disconnected. (📖 p. 9)



Lambda sensor for cylinder 2 – check the signal wire for a short circuit to ground (terminal 31).

-  Measure the resistance between the specified points.
Break-out box, connector **GK** pin **45** – Measuring point **Ground (–)**

Resistance	$\infty \Omega$

- » If the specifications have not been met:
 - Check the cable from engine control unit connector **GK** (p. 497) pin **45** to connector **LI** (p. 504) pin **1** for a short circuit to ground (terminal 31).
- » If the specifications have been met:
 - Contact customer service.

Blink code for malfunction indicator lamp (OBD)	 Malfunction indicator lamp lights up
Display on diagnostic tool	P015200 "Lambda sensor cylinder 2" "Signal voltage too high"
Error level condition	Lambda sensor for cylinder 2 – signal voltage too high Voltage: $\geq 1.08\text{ V}$ Time: $\geq 5\text{ s}$
Possible cause	Lambda sensor, cylinder 2 is faulty (📖 p. 123)
	Lambda sensor, cylinder 2 – wiring is faulty (📖 p. 123)
	Lambda sensor, cylinder 2 – the signal wire has a short circuit to plus (terminal 30) (📖 p. 124)
	Lambda sensor, cylinder 2 – the signal wire has a short circuit to ignition plus (terminal 15) (📖 p. 125)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Lambda sensor, cylinder 2 is faulty

Condition

The engine is running at idle speed.

Lambda sensor for cylinder 2 is disconnected. (📖 p. 9)

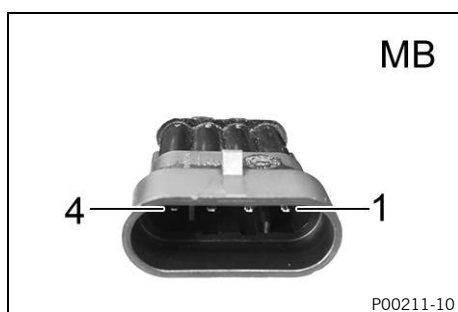
Lambda sensor is at operating temperature. (📖 p. 9)

Lambda sensor, cylinder 2 – check the voltage.

- **V** Measure the voltage between the specified points.
 Lambda sensor cylinder 2, connector **MB** pin 1 –
 Lambda sensor cylinder 2, connector **MB** pin 2

Lambda sensor	
Voltage range within the control loop	0.2 ... 0.8 V

- » If the specifications have not been met:
 - Change the cylinder 2 lambda sensor.
- » If the specifications have been met:
 - Check the next possible cause:
 Lambda sensor, cylinder 2 – wiring is faulty (📖 p. 123)



Lambda sensor, cylinder 2 – wiring is faulty

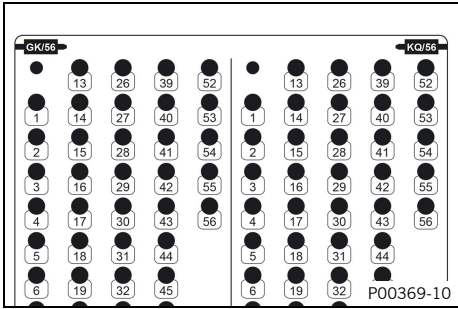
Condition

The engine is running at idle speed.

Lambda sensor is at operating temperature. (📖 p. 9)

The break-out box is connected to the engine control unit and the wiring harness with adapter **00029095014**.

Lambda sensor for cylinder 2 is connected. (📖 p. 9)



Lambda sensor, cylinder 2 – check wiring.

- **V** Measure the voltage between the specified points.
Break-out box, connector **GK** pin **45** –
Break-out box, connector **GK** pin **28**

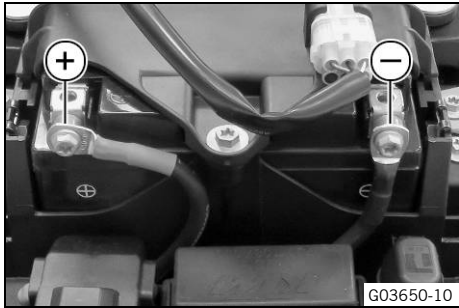
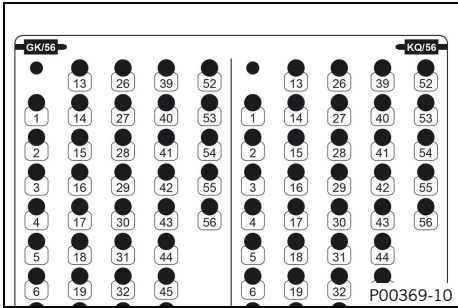
Lambda sensor	
Voltage range within the control loop	0.2 ... 0.8 V

- » If the specifications have not been met:
 - Check engine control unit connector **GK** (p. 497) pin **45** and connector **LI** (p. 504) pin **1**.
 - Check engine control unit connector **GK** (p. 497) pin **28** and connector **LI** (p. 504) pin **2**.
 - Check the cable from engine control unit connector **GK** (p. 497) pin **45** to connector **LI** (p. 504) pin **1**.
 - Check the cable from engine control unit connector **GK** (p. 497) pin **28** to connector **LI** (p. 504) pin **2**.
- » If the specifications have been met:
 - Check the next possible cause:
Lambda sensor, cylinder 2 – the signal wire has a short circuit to plus (terminal 30) (p. 124)

Lambda sensor, cylinder 2 – the signal wire has a short circuit to plus (terminal 30)

Condition

The ignition is off.
Engine control unit is disconnected. (p. 15)
The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.
Lambda sensor for cylinder 2 is disconnected. (p. 9)



Lambda sensor, cylinder 2 – check the signal wire for a short circuit to plus (terminal 30).

- **V** Measure the voltage between the specified points.
Break-out box, connector **GK** pin **45** – Measuring point **Ground (-)**

Voltage	< 0.1 V

- » If the specifications have not been met:
 - Check the cable from engine control unit connector **GK** (p. 497) pin **45** to connector **LI** (p. 504) pin **1** for a short circuit to plus (terminal 30).
- » If the specifications have been met:
 - Check the next possible cause:
Lambda sensor, cylinder 2 – the signal wire has a short circuit to ignition plus (terminal 15) (p. 125)

Lambda sensor, cylinder 2 – the signal wire has a short circuit to ignition plus (terminal 15)

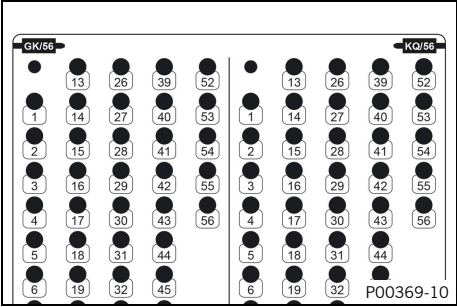
Condition
The ignition is off.
Engine control unit is disconnected. (📖 p. 15)
The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.
Lambda sensor for cylinder 2 is disconnected. (📖 p. 9)

Lambda sensor, cylinder 2 – check the signal wire for a short circuit to ignition plus (terminal 15).

-  Measure the resistance between the specified points.
Break-out box, connector **GK** pin **45** –
Break-out box, connector **GK** pin **44**

Resistance	$\infty \Omega$

- » If the specifications have not been met:
 - Check the cable from engine control unit connector **GK** (📖 p. 497) pin **45** to connector **LI** (📖 p. 504) pin **1** for a short circuit to ignition plus (terminal 15).
- » If the specifications have been met:
 - Contact customer service.



Blink code for malfunction indicator lamp (OBD)	 Malfunction indicator lamp lights up
Display on diagnostic tool	P015300 "Lambda sensor cylinder 2" "Deterioration"
Error level condition	The lambda sensor jump characteristic is too slow.
Function check	Checking the lambda sensor cylinder 2 (📖 p. 126)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Checking the lambda sensor cylinder 2

- Clear the fault memory using the KTM diagnostics tool.
- Read out the error memory after the test ride using the KTM diagnostics tool.
 - » If the error persists:
 - Lambda sensor cylinder 2 – check the value. The value should change one to three times per second.
 - Check the intake and electronic fuel injection.

Last measure if none of the documented causes leads to elimination of the fault

- Contact customer service.

Blink code for malfunction indicator lamp (OBD)	 Malfunction indicator lamp lights up
Display on diagnostic tool	P015400 "Lambda sensor cylinder 2" "No activity detected"
Error level condition	Lambda sensor for cylinder 2 – no activity detected Voltage: ≤ 0.6 V Voltage: ≥ 1.08 V Time: ≥ 5 s
Possible cause	Lambda sensor, cylinder 2 is faulty (📖 p. 127)
	Lambda sensor, cylinder 2 – wiring is faulty (📖 p. 127)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Lambda sensor, cylinder 2 is faulty

Condition

The engine is running at idle speed.

Lambda sensor for cylinder 2 is disconnected. (📖 p. 9)

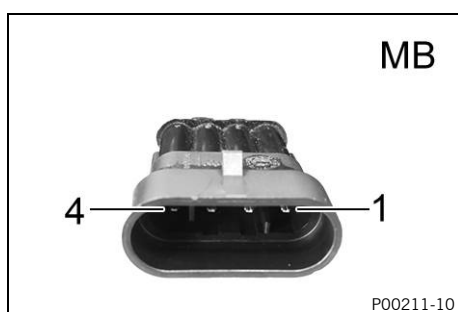
Lambda sensor is at operating temperature. (📖 p. 9)

Lambda sensor, cylinder 2 – check the voltage.

- **V** Measure the voltage between the specified points.
 Lambda sensor cylinder 2, connector **MB** pin 1 –
 Lambda sensor cylinder 2, connector **MB** pin 2

Lambda sensor	
Voltage range within the control loop	0.2 ... 0.8 V

- » If the specifications have not been met:
 - Change the cylinder 2 lambda sensor.
- » If the specifications have been met:
 - Check the next possible cause:
 Lambda sensor, cylinder 2 – wiring is faulty (📖 p. 127)



Lambda sensor, cylinder 2 – wiring is faulty

Condition

The engine is running at idle speed.

Lambda sensor is at operating temperature. (📖 p. 9)

The break-out box is connected to the engine control unit and the wiring harness with adapter **00029095014**.

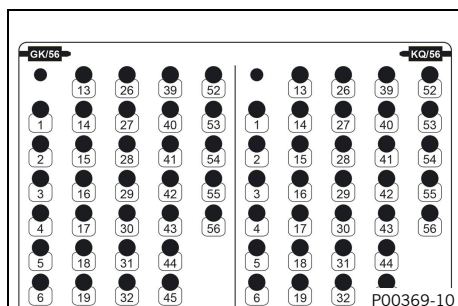
Lambda sensor for cylinder 2 is connected. (📖 p. 9)

Lambda sensor, cylinder 2 – check wiring.

- **V** Measure the voltage between the specified points.
 Break-out box, connector **GK** pin 45 –
 Break-out box, connector **GK** pin 28

Lambda sensor	
Voltage range within the control loop	0.2 ... 0.8 V

- » If the specifications have not been met:



6 ENGINE CONTROL TROUBLE CODE

- Check engine control unit connector **GK** (📖 p. 497) pin **45** and connector **LI** (📖 p. 504) pin **1**.
- Check engine control unit connector **GK** (📖 p. 497) pin **28** and connector **LI** (📖 p. 504) pin **2**.
- Check the cable from engine control unit connector **GK** (📖 p. 497) pin **45** to connector **LI** (📖 p. 504) pin **1**.
- Check the cable from engine control unit connector **GK** (📖 p. 497) pin **28** to connector **LI** (📖 p. 504) pin **2**.
- » If the specifications have been met:
 - Contact customer service.

Blink code for malfunction indicator lamp (OBD)	 Malfunction indicator lamp lights up
Display on diagnostic tool	P020100 "Injection valve cylinder 1" "Electric circuit open"
Error level condition	Electric circuit open Time: ≥ 2 s
Function check	Injection valve cylinder 1 – checking the control (📖 p. 129)
Possible cause	Injection valve cylinder 1 – the value is not plausible (📖 p. 129)
	Injection valve cylinder 1 – the power supply is faulty (📖 p. 130)
	Injection valve cylinder 1 – the control wire is faulty (📖 p. 130)
Last measure if none of the documented causes leads to elimination of the fault	– Change the engine control unit.

Injection valve cylinder 1 – checking the control

Condition

The diagnostics tool is connected and running.

- Perform **"Engine control unit" > "Actuator test" > "Injector 1 cylinder 1"**.

Injector	Operating noise

- » If the specified value is reached:
 - Clear the fault memory using the KTM diagnostics tool.
 - Take a test ride.
 - Read out the trouble code memory using the KTM diagnostics tool.
- » If the specification is not reached:
 - Check the next possible cause:
Injection valve cylinder 1 – the value is not plausible (📖 p. 129)
 - Check the next possible cause:
Injection valve cylinder 1 – the power supply is faulty (📖 p. 130)
 - Check the next possible cause:
Injection valve cylinder 1 – the control wire is faulty (📖 p. 130)

Injection valve cylinder 1 – the value is not plausible

Condition

The ignition is off.

Injection valve cylinder 1 is disconnected. (📖 p. 18)

Injection valve cylinder 1 – check the resistance.

-  Measure the resistance between the specified points.
Injection valve pin 1 – Injection valve pin 2

Injector	
Resistance at: 20 °C (68 °F)	11.4 ... 12.6 Ω

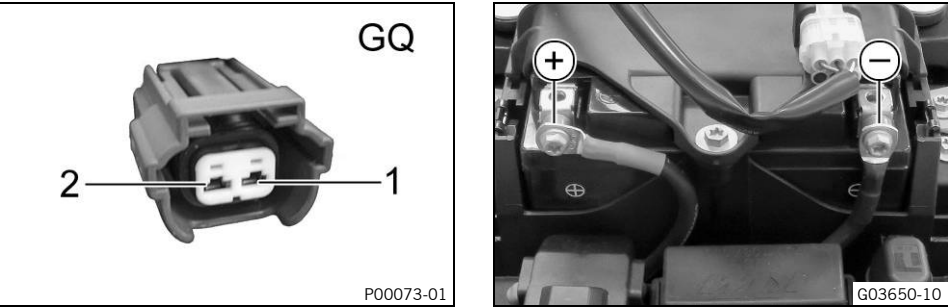
- » If the specifications have not been met:
 - Change injection valve cylinder 1.
- » If the specifications have been met:
 - Check the next possible cause:
Injection valve cylinder 1 – the power supply is faulty (📖 p. 130)



Injection valve cylinder 1 – the power supply is faulty

Condition

The ignition is on.
Injection valve cylinder 1 is disconnected. (📖 p. 18)



Injection valve, cylinder 1 – check the power supply.

- **V** Measure the voltage between the specified points.
Injection valve cylinder 1, connector **GQ** pin **2** – Measuring point **Ground (-)**

i Info
For the measurement, the measuring points must be subjected to a 12 V/21 W bulb load.

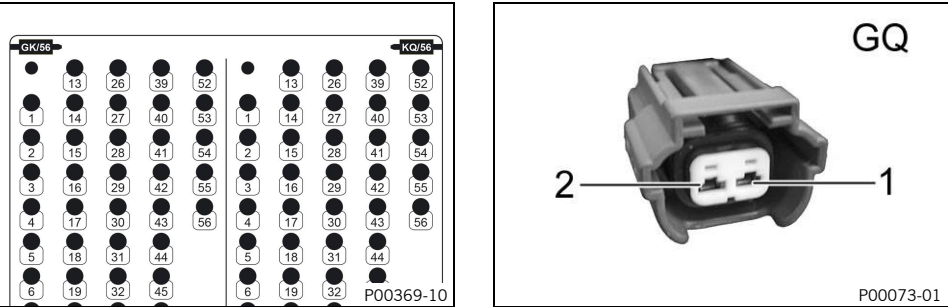
The value must not deviate from the battery voltage "VBAT" by more than 1 V.

- » If the specifications have not been met:
 - Check connector **GQ** (📖 p. 498) pin **2**.
 - Check the cable from connector **GQ** (📖 p. 498) pin **2** to the next node in the wiring harness.
- » If the specifications have been met:
 - Check the next possible cause:
Injection valve cylinder 1 – the control wire is faulty (📖 p. 130)

Injection valve cylinder 1 – the control wire is faulty

Condition

The ignition is off.
Engine control unit is disconnected. (📖 p. 15)
The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.
Injection valve cylinder 1 is disconnected. (📖 p. 18)



Injection valve cylinder 1 – check the control wire.

- **Ω** Measure the resistance between the specified points.
Break-out box, connector **GK** pin **43** – Injection valve cylinder 1, connector **GQ** pin **1**

Resistance	≤ 0.6 Ω

- » If the specifications have not been met:

- Check engine control unit connector **GK** (📖 p. 497) pin **43** and connector **GQ** (📖 p. 498) pin **1**.
- Check the cable from engine control unit connector **GK** (📖 p. 497) pin **43** to connector **GQ** (📖 p. 498) pin **1**.
- » If the specifications have been met:
 - Change the engine control unit.

Blink code for malfunction indicator lamp (OBD)	 Malfunction indicator lamp lights up
Display on diagnostic tool	P020200 "Injection valve cylinder 2" "Electric circuit open"
Error level condition	Electric circuit open Time: ≥ 2 s
Function check	Injection valve cylinder 2 – checking the control (📖 p. 132)
Possible cause	Injection valve cylinder 2 – the value is not plausible (📖 p. 132)
	Injection valve cylinder 2 – power supply is faulty (📖 p. 133)
	Injection valve, cylinder 2 – the control wire is faulty (📖 p. 133)
Last measure if none of the documented causes leads to elimination of the fault	– Change the engine control unit.

Injection valve cylinder 2 – checking the control

Condition

The diagnostics tool is connected and running.

- Perform **"Engine control unit" > "Actuator test" > "Injector 2 cylinder 2"**.

Injector	Operating noise

- » If the specified value is reached:
 - Clear the fault memory using the KTM diagnostics tool.
 - Take a test ride.
 - Read out the trouble code memory using the KTM diagnostics tool.
- » If the specification is not reached:
 - Check the next possible cause:
Injection valve cylinder 2 – the value is not plausible (📖 p. 132)
 - Check the next possible cause:
Injection valve cylinder 2 – power supply is faulty (📖 p. 133)
 - Check the next possible cause:
Injection valve, cylinder 2 – the control wire is faulty (📖 p. 133)

Injection valve cylinder 2 – the value is not plausible

Condition

The ignition is off.

Injection valve cylinder 2 is disconnected. (📖 p. 18)

Injection valve cylinder 2 – check the resistance.

-  Measure the resistance between the specified points.
Injection valve pin 1 – Injection valve pin 2

Injector	
Resistance at: 20 °C (68 °F)	11.4 ... 12.6 Ω

- » If the specifications have not been met:
 - Change injection valve cylinder 2.
- » If the specifications have been met:
 - Check the next possible cause:
Injection valve cylinder 2 – power supply is faulty (📖 p. 133)

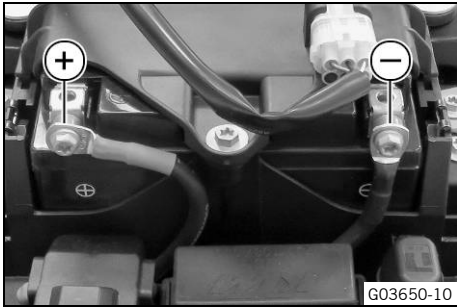
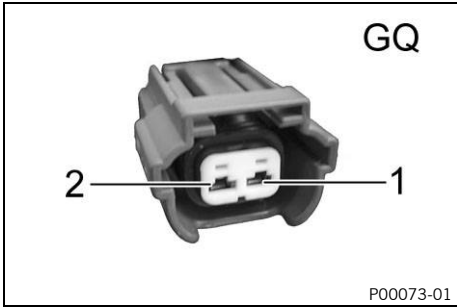


Injection valve cylinder 2 – power supply is faulty

Condition

The ignition is on.

Injection valve cylinder 2 is disconnected. (📖 p. 18)



Injection valve, cylinder 2 – check the power supply.

- **V** Measure the voltage between the specified points.
Injection valve cylinder 2, connector **GQ** pin **2** – Measuring point **Ground (-)**



Info

For the measurement, the measuring points must be subjected to a 12 V/21 W bulb load.

The value must not deviate from the battery voltage "VBAT" by more than 1 V.

- » If the specifications have not been met:
 - Check connector **GQ** (📖 p. 499) pin **2**.
 - Check the cable from connector **GQ** (📖 p. 499) pin **2** to the next node in the wiring harness.
- » If the specifications have been met:
 - Check the next possible cause:
Injection valve, cylinder 2 – the control wire is faulty (📖 p. 133)

Injection valve, cylinder 2 – the control wire is faulty

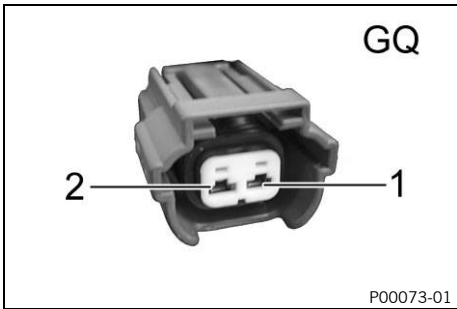
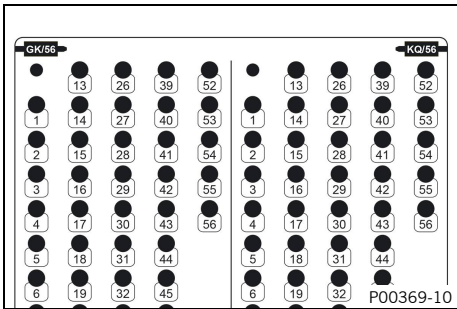
Condition

The ignition is off.

Engine control unit is disconnected. (📖 p. 15)

The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.

Injection valve cylinder 2 is disconnected. (📖 p. 18)



Injection valve cylinder 2 – check the control wire.

- **Ω** Measure the resistance between the specified points.
Break-out box, connector **GK** pin **13** – Injection valve cylinder 2, connector **GQ** pin **1**

Resistance	≤ 0.6 Ω

- » If the specifications have not been met:

6 ENGINE CONTROL TROUBLE CODE

- Check engine control unit connector **GK** (📖 p. 497) pin **13** and connector **GQ** (📖 p. 499) pin **1**.
- Check the cable from engine control unit connector **GK** (📖 p. 497) pin **13** to connector **GQ** (📖 p. 499) pin **1**.
- » If the specifications have been met:
 - Change the engine control unit.

Blink code for malfunction indicator lamp (OBD)	 Malfunction indicator lamp lights up
Display on diagnostic tool	P022200 "Throttle valve position sensor, circuit B" "Signal voltage too low"
Error level condition	Voltage: ≤ 0.19 V Time: ≥ 0.14 s
Function check	Throttle valve position sensor circuit B – checking the voltage (📖 p. 135)
Possible cause	Throttle valve position sensor circuit B – the power supply is faulty (📖 p. 135)
	Throttle valve position sensor circuit B – the signal wire is faulty (📖 p. 136)
	Throttle valve position sensor circuit B – the signal wire has a short circuit to ground (terminal 31) (📖 p. 137)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Throttle valve position sensor circuit B – checking the voltage

Condition

The ignition is on.

The diagnostics tool is connected and running.

- Select **"Engine control unit" > "Measured values" > "Throttle position voltage sensor 2"**.
- Slowly and evenly turn the throttle grip all the way.

Circuit B throttle valve position sensor	
Voltage (value in diagnostics tool)	1.7 ... 4.3 V

- » If the displayed value is equal to the setpoint value:
 - Clear the fault memory using the KTM diagnostics tool.
 - Take a test ride.
 - Read out the trouble code memory using the KTM diagnostics tool.
- » If the displayed value is below the setpoint value:
 - Check the next possible cause:
Throttle valve position sensor circuit B – the power supply is faulty (📖 p. 135)
 - Check the next possible cause:
Throttle valve position sensor circuit B – the signal wire is faulty (📖 p. 136)
 - Check the next possible cause:
Throttle valve position sensor circuit B – the signal wire has a short circuit to ground (terminal 31) (📖 p. 137)

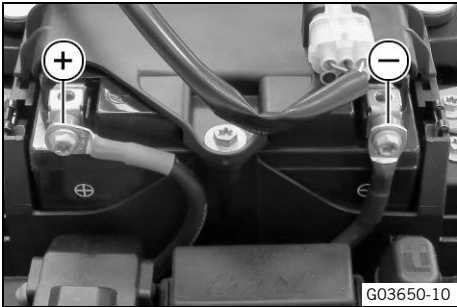
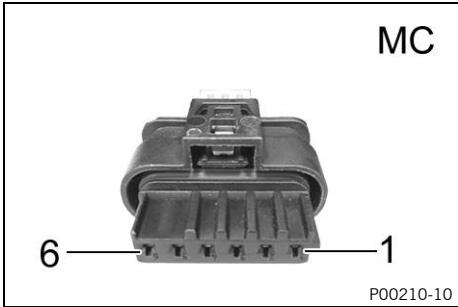
Throttle valve position sensor circuit B – the power supply is faulty

Condition

The ignition is on.

Engine control unit is connected. (📖 p. 15)

The throttle valve position sensor is connected. (📖 p. 20)



Throttle valve position sensor circuit B – check the power supply.

- **V** Measure the voltage between the specified points.
Throttle valve position sensor connector **MC** pin **6** – Measuring point **Ground (–)**

Voltage	4.8 ... 5.2 V

- » If the specifications have not been met:
 - Check the cable from engine control unit connector **GK** (p. 497) pin **10** to connector **MC** (p. 505) pin **6**.
- » If the specifications have been met:
 - Check the next possible cause:
Throttle valve position sensor circuit B – the signal wire is faulty (p. 136)

Throttle valve position sensor circuit B – the signal wire is faulty

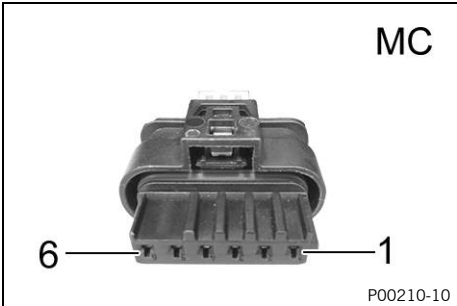
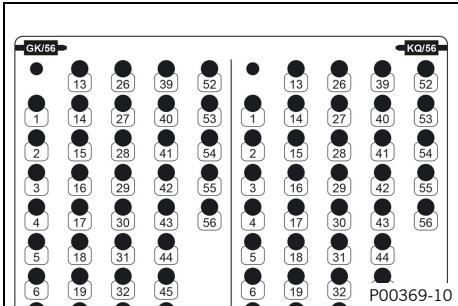
Condition

The ignition is off.

Engine control unit is disconnected. (p. 15)

The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.

The throttle valve position sensor is disconnected. (p. 20)



Throttle valve position sensor circuit B – check the signal wire.

- **Ω** Measure the resistance between the specified points.
Break-out box, connector **GK** pin **17** – Throttle valve position sensor connector **MC** pin **5**

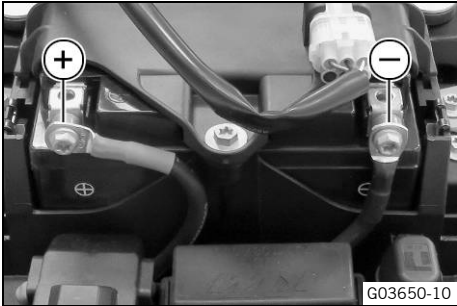
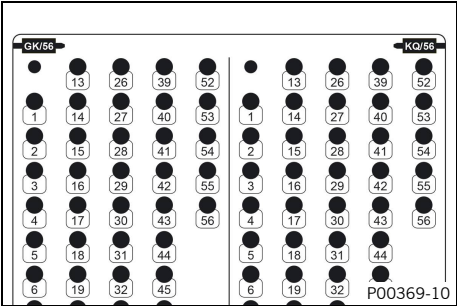
Resistance	≤ 0.6 Ω

- » If the specifications have not been met:
 - Check engine control unit connector **GK** (p. 497) pin **17** and connector **MC** (p. 505) pin **5**.
 - Check the cable from engine control unit connector **GK** (p. 497) pin **17** to connector **MC** (p. 505) pin **5**.
- » If the specifications have been met:
 - Check the next possible cause:
Throttle valve position sensor circuit B – the signal wire has a short circuit to ground (terminal 31) (p. 137)

Throttle valve position sensor circuit B – the signal wire has a short circuit to ground (terminal 31)

Condition

The ignition is off.
Engine control unit is disconnected. (📖 p. 15)
The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.
The throttle valve position sensor is disconnected. (📖 p. 20)



Throttle valve position sensor circuit B – check the signal wire for a short circuit to ground (terminal 31).

-  Measure the resistance between the specified points.
Break-out box, connector **GK** pin **17** – Measuring point **Ground (-)**

Resistance	$\infty \Omega$

- » If the specifications have not been met:
 - Check the cable from engine control unit connector **GK** (📖 p. 497) pin **17** to connector **MC** (📖 p. 505) pin **5** for a short circuit to ground (terminal 31).
- » If the specifications have been met:
 - Contact customer service.

Blink code for malfunction indicator lamp (OBD)	 Malfunction indicator lamp lights up
Display on diagnostic tool	P022300 "Throttle valve position sensor, circuit B" "Signal voltage too high"
Error level condition	Voltage: ≥ 4.80 V Time: ≥ 0.14 s
Function check	Throttle valve position sensor circuit B – checking the voltage (📖 p. 138)
Possible cause	Throttle valve position sensor circuit B – the signal wire has a short circuit to plus (terminal 30) (📖 p. 138)
	Throttle valve position sensor circuit B – the signal wire has a short circuit to ignition plus (terminal 15) (📖 p. 139)
	Throttle valve position sensor circuit B – ground wire is faulty (📖 p. 140)
Last measure if none of the documented causes leads to elimination of the fault	– Change the throttle valve position sensor.

Throttle valve position sensor circuit B – checking the voltage

Condition

The ignition is on.

The diagnostics tool is connected and running.

- Select **"Engine control unit" > "Measured values" > "Throttle position voltage sensor 2"**.
- Slowly and evenly turn the throttle grip all the way.

Circuit B throttle valve position sensor	
Voltage (value in diagnostics tool)	1.7 ... 4.3 V

- » If the displayed value is equal to the setpoint value:
 - Clear the fault memory using the KTM diagnostics tool.
 - Take a test ride.
 - Read out the trouble code memory using the KTM diagnostics tool.
- » If the displayed value is above the setpoint value:
 - Check the next possible cause:
Throttle valve position sensor circuit B – the signal wire has a short circuit to plus (terminal 30) (📖 p. 138)
 - Check the next possible cause:
Throttle valve position sensor circuit B – the signal wire has a short circuit to ignition plus (terminal 15) (📖 p. 139)
 - Check the next possible cause:
Throttle valve position sensor circuit B – ground wire is faulty (📖 p. 140)

Throttle valve position sensor circuit B – the signal wire has a short circuit to plus (terminal 30)

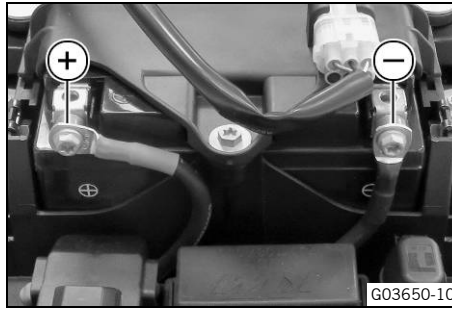
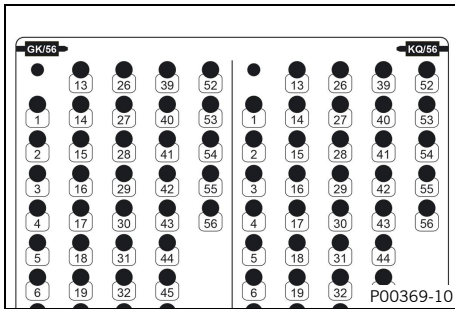
Condition

The ignition is on.

Engine control unit is disconnected. (📖 p. 15)

The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.

The throttle valve position sensor is disconnected. (📖 p. 20)



Throttle valve position sensor circuit B – check the signal wire for a short circuit to plus (terminal 30).

- **V** Measure the voltage between the specified points.
Break-out box, connector **GK** pin **17** – Measuring point **Ground (-)**

Voltage	$\leq 0.1 \text{ V}$

- » If the specifications have not been met:
 - Check the cable from engine control unit connector **GK** (p. 497) pin **17** to connector **MC** (p. 505) pin **5** for a short circuit to plus (terminal 30).
- » If the specifications have been met:
 - Check the next possible cause:
Throttle valve position sensor circuit B – the signal wire has a short circuit to ignition plus (terminal 15) (p. 139)

Throttle valve position sensor circuit B – the signal wire has a short circuit to ignition plus (terminal 15)

Condition

The ignition is off.

Engine control unit is disconnected. (p. 15)

The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.

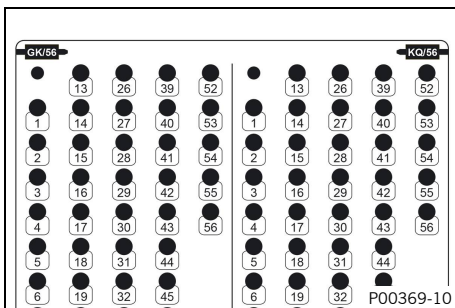
The throttle valve position sensor is disconnected. (p. 20)

Throttle valve position sensor circuit B – check the signal wire for a short circuit to ignition plus (terminal 15).

- **Ω** Measure the resistance between the specified points.
Break-out box, connector **GK** pin **17** –
Break-out box, connector **GK** pin **44**

Resistance	$\infty \Omega$

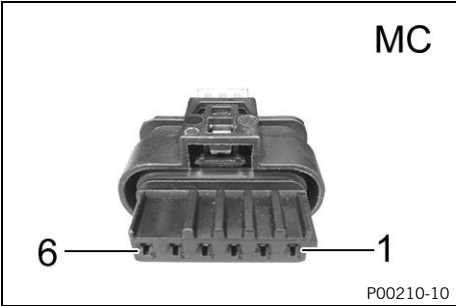
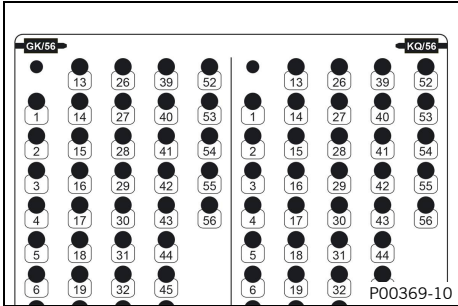
- » If the specifications have not been met:
 - Check the cable from engine control unit connector **GK** (p. 497) pin **17** to connector **MC** (p. 505) pin **5** for a short circuit to ignition plus (terminal 15).
- » If the specifications have been met:
 - Check the next possible cause:
Throttle valve position sensor circuit B – ground wire is faulty (p. 140)



Throttle valve position sensor circuit B – ground wire is faulty

Condition

The ignition is off.
Engine control unit is disconnected. (📖 p. 15)
The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.
The throttle valve position sensor is disconnected. (📖 p. 20)



Throttle valve position sensor circuit B – check the ground wire.

-  Measure the resistance between the specified points.
Break-out box, connector **GK** pin **26** – Throttle valve position sensor connector **MC** pin **3**

Resistance	≤ 0.6 Ω

- » If the specifications have not been met:
 - Check engine control unit connector **GK** (📖 p. 497) pin **26** and connector **MC** (📖 p. 505) pin **3**.
 - Check the cable from engine control unit connector **GK** (📖 p. 497) pin **26** to connector **MC** (📖 p. 505) pin **3**.
- » If the specifications have been met:
 - Change the throttle valve position sensor.

Blink code for malfunction indicator lamp (OBD)	 Malfunction indicator lamp lights up
Display on diagnostic tool	P026100 "Injection valve cylinder 1" "Signal voltage too low"
Error level condition	Injection valve cylinder 1 – signal voltage too low Time: ≥ 2 s
Function check	Injection valve cylinder 1 – checking the control (📖 p. 141)
Possible cause	Injection valve cylinder 1 – the value is not plausible (📖 p. 141)
	Injection valve cylinder 1 – the power supply is faulty (📖 p. 142)
	Injection valve cylinder 1 – the control wire is faulty (📖 p. 142)
	Injection valve, cylinder 1 – the control wire has a short circuit to ground (terminal 31) (📖 p. 143)
Last measure if none of the documented causes leads to elimination of the fault	– Change the engine control unit.

Injection valve cylinder 1 – checking the control

Condition

The diagnostics tool is connected and running.

- Perform **"Engine control unit" > "Actuator test" > "Injector 1 cylinder 1"**.

Injector	Operating noise

- » If the specified value is reached:
 - Clear the fault memory using the KTM diagnostics tool.
 - Take a test ride.
 - Read out the trouble code memory using the KTM diagnostics tool.
- » If the specification is not reached:
 - Check the next possible cause:
Injection valve cylinder 1 – the value is not plausible (📖 p. 141)
 - Check the next possible cause:
Injection valve cylinder 1 – the power supply is faulty (📖 p. 142)
 - Check the next possible cause:
Injection valve cylinder 1 – the control wire is faulty (📖 p. 142)
 - Check the next possible cause:
Injection valve, cylinder 1 – the control wire has a short circuit to ground (terminal 31) (📖 p. 143)

Injection valve cylinder 1 – the value is not plausible

Condition

The ignition is off.

Injection valve cylinder 1 is disconnected. (📖 p. 18)



Injection valve cylinder 1 – check the resistance.

-  Measure the resistance between the specified points.
Injection valve pin 1 – Injection valve pin 2

Injector	
Resistance at: 20 °C (68 °F)	11.4 ... 12.6 Ω

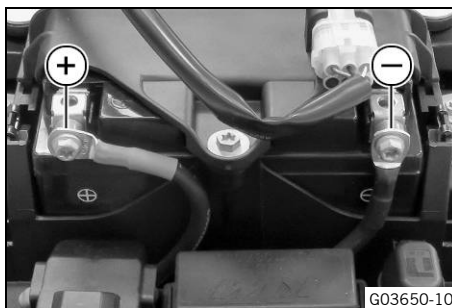
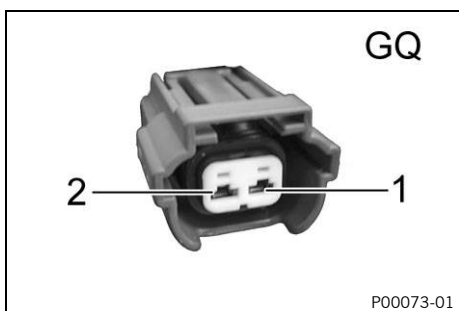
- » If the specifications have not been met:
 - Change injection valve cylinder 1.
- » If the specifications have been met:
 - Check the next possible cause:
Injection valve cylinder 1 – the power supply is faulty
( p. 142)

Injection valve cylinder 1 – the power supply is faulty

Condition

The ignition is on.

Injection valve cylinder 1 is disconnected. ( p. 18)



Injection valve, cylinder 1 – check the power supply.

-  Measure the voltage between the specified points.
Injection valve cylinder 1, connector **GQ** pin 2 – Measuring point **Ground (–)**



Info

For the measurement, the measuring points must be subjected to a 12 V/21 W bulb load.

The value must not deviate from the battery voltage "**VBAT**" by more than 1 V.

- » If the specifications have not been met:
 - Check connector **GQ** ( p. 498) pin 2.
 - Check the cable from connector **GQ** ( p. 498) pin 2 to the next node in the wiring harness.
- » If the specifications have been met:
 - Check the next possible cause:
Injection valve cylinder 1 – the control wire is faulty ( p. 142)

Injection valve cylinder 1 – the control wire is faulty

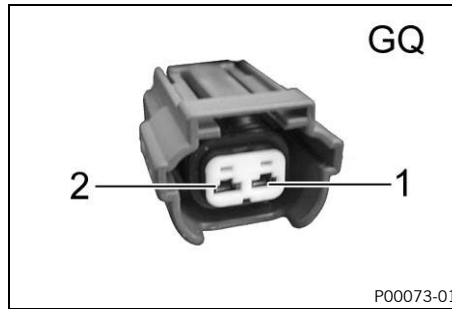
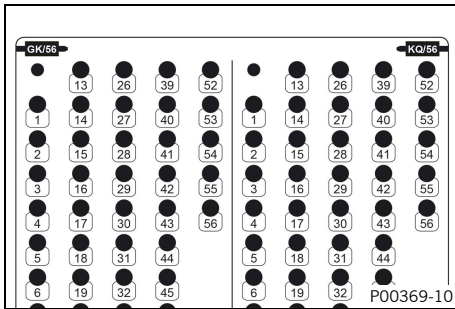
Condition

The ignition is off.

Engine control unit is disconnected. ( p. 15)

The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.

Injection valve cylinder 1 is disconnected. ( p. 18)



Injection valve cylinder 1 – check the control wire.

-  Measure the resistance between the specified points.
Break-out box, connector **GK** pin **43** – Injection valve cylinder 1, connector **GQ** pin **1**

Resistance	$\leq 0.6 \Omega$

- » If the specifications have not been met:
 - Check engine control unit connector **GK** (p. 497) pin **43** and connector **GQ** (p. 498) pin **1**.
 - Check the cable from engine control unit connector **GK** (p. 497) pin **43** to connector **GQ** (p. 498) pin **1**.
- » If the specifications have been met:
 - Check the next possible cause:
Injection valve, cylinder 1 – the control wire has a short circuit to ground (terminal 31) (p. 143)

Injection valve, cylinder 1 – the control wire has a short circuit to ground (terminal 31)

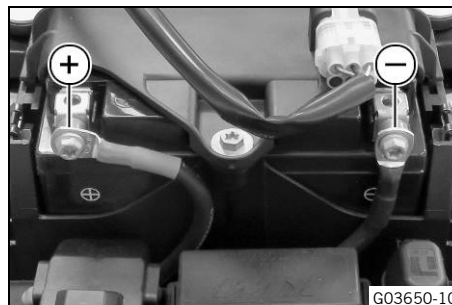
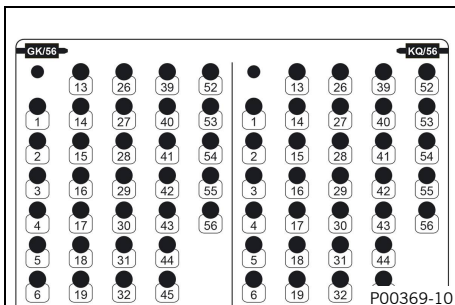
Condition

The ignition is off.

Engine control unit is disconnected. (p. 15)

The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.

Injection valve cylinder 1 is disconnected. (p. 18)



Injection valve cylinder 1 – check the control wire for a short circuit to ground (terminal 31).

-  Measure the resistance between the specified points.
Break-out box, connector **GK** pin **43** – Measuring point **Ground (-)**

Resistance	$\infty \Omega$

- » If the specifications have not been met:
 - Check the cable from engine control unit connector **GK** (p. 497) pin **43** to connector **GQ** (p. 498) pin **1** for a short circuit to ground (terminal 31).
- » If the specifications have been met:
 - Change the engine control unit.

Blink code for malfunction indicator lamp (OBD)	 Malfunction indicator lamp lights up
Display on diagnostic tool	P026200 "Injection valve cylinder 1" "Signal voltage too high"
Error level condition	Injection valve cylinder 1 – signal voltage too high Time: ≥ 2 s
Function check	Injection valve cylinder 1 – checking the control (📖 p. 144)
Possible cause	Injection valve cylinder 1 – the value is not plausible (📖 p. 144)
	Injection valve, cylinder 1 – the control wire has a short circuit to plus (terminal 30) (📖 p. 145)
	Injection valve cylinder 1 – the control wire has a short circuit to ignition plus (terminal 15) (📖 p. 145)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Injection valve cylinder 1 – checking the control

Condition

The diagnostics tool is connected and running.

- Perform **"Engine control unit" > "Actuator test" > "Injector 1 cylinder 1"**.

Injector	Operating noise

- » If the specified value is reached:
 - Clear the fault memory using the KTM diagnostics tool.
 - Take a test ride.
 - Read out the trouble code memory using the KTM diagnostics tool.
- » If the specification is not reached:
 - Check the next possible cause:
Injection valve cylinder 1 – the value is not plausible (📖 p. 144)
 - Check the next possible cause:
Injection valve, cylinder 1 – the control wire has a short circuit to plus (terminal 30) (📖 p. 145)
 - Check the next possible cause:
Injection valve cylinder 1 – the control wire has a short circuit to ignition plus (terminal 15) (📖 p. 145)

Injection valve cylinder 1 – the value is not plausible

Condition

The ignition is off.

Injection valve cylinder 1 is disconnected. (📖 p. 18)

Injection valve cylinder 1 – check the resistance.

-  Measure the resistance between the specified points.
Injection valve pin 1 – Injection valve pin 2

Injector	
Resistance at: 20 °C (68 °F)	11.4 ... 12.6 Ω

- » If the specifications have not been met:
 - Change injection valve cylinder 1.
- » If the specifications have been met:



- Check the next possible cause:
Injection valve, cylinder 1 – the control wire has a short circuit to plus (terminal 30) (📖 p. 145)

Injection valve, cylinder 1 – the control wire has a short circuit to plus (terminal 30)

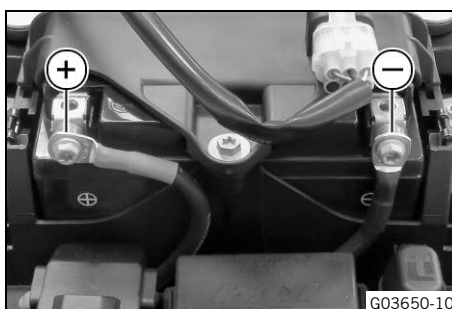
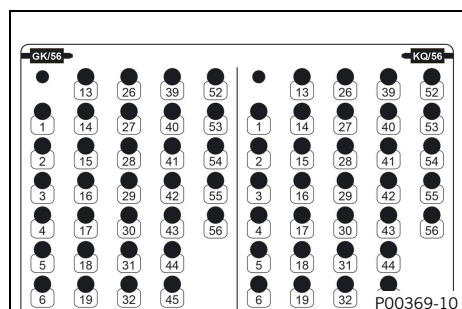
Condition

The ignition is off.

Engine control unit is disconnected. (📖 p. 15)

The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.

Injection valve cylinder 1 is disconnected. (📖 p. 18)



Injection valve cylinder 1 – check the control wire for a short circuit to plus (terminal 30).

- **V** Measure the voltage between the specified points.
Break-out box, connector **GK** pin **43** – Measuring point **Ground (-)**

Voltage	< 0.1 V

- » If the specifications have not been met:
 - Check the cable from engine control unit connector **GK** (📖 p. 497) pin **43** to connector **GQ** (📖 p. 498) pin **1** for a short circuit to plus (terminal 30).
- » If the specifications have been met:
 - Check the next possible cause:
Injection valve cylinder 1 – the control wire has a short circuit to ignition plus (terminal 15) (📖 p. 145)

Injection valve cylinder 1 – the control wire has a short circuit to ignition plus (terminal 15)

Condition

The ignition is off.

Engine control unit is disconnected. (📖 p. 15)

The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.

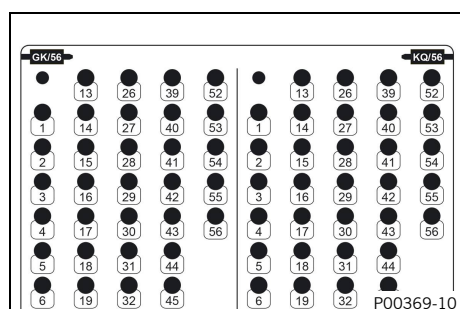
Injection valve cylinder 1 is disconnected. (📖 p. 18)

Injection valve cylinder 1 – check the control wire for a short circuit to ignition plus (terminal 15).

- **Ω** Measure the resistance between the specified points.
Break-out box, connector **GK** pin **43** –
Break-out box, connector **GK** pin **44**

Resistance	$\infty \Omega$

- » If the specifications have not been met:
 - Check the cable from engine control unit connector **GK** (📖 p. 497) pin **43** to connector **GQ** (📖 p. 498) pin **1** for a short circuit to ignition plus (terminal 15).
- » If the specifications have been met:
 - Contact customer service.



Blink code for malfunction indicator lamp (OBD)	 Malfunction indicator lamp lights up
Display on diagnostic tool	P026400 "Injection valve cylinder 2" "Signal voltage too low"
Error level condition	Injection valve cylinder 2 – signal voltage too low Time: ≥ 2 s
Function check	Injection valve cylinder 2 - checking the control (📖 p. 146)
Possible cause	Injection valve cylinder 2 – the value is not plausible (📖 p. 146)
	Injection valve cylinder 2 – power supply is faulty (📖 p. 147)
	Injection valve, cylinder 2 – the control wire is faulty (📖 p. 147)
	Injection valve, cylinder 2 – the control wire has a short circuit to ground (terminal 31) (📖 p. 148)
Last measure if none of the documented causes leads to elimination of the fault	– Change the engine control unit.

Injection valve cylinder 2 - checking the control

Condition

The diagnostics tool is connected and running.

- Perform **"Engine control unit" > "Actuator test" > "Injector 2 cylinder 2"**.

Injector	Operating noise

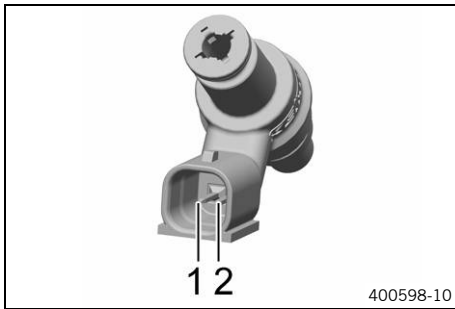
- » If the specified value is reached:
 - Clear the fault memory using the KTM diagnostics tool.
 - Take a test ride.
 - Read out the trouble code memory using the KTM diagnostics tool.
- » If the specification is not reached:
 - Check the next possible cause:
Injection valve cylinder 2 – the value is not plausible (📖 p. 146)
 - Check the next possible cause:
Injection valve cylinder 2 – power supply is faulty (📖 p. 147)
 - Check the next possible cause:
Injection valve, cylinder 2 – the control wire is faulty (📖 p. 147)
 - Check the next possible cause:
Injection valve, cylinder 2 – the control wire has a short circuit to ground (terminal 31) (📖 p. 148)

Injection valve cylinder 2 – the value is not plausible

Condition

The ignition is off.

Injection valve cylinder 2 is disconnected. (📖 p. 18)



Injection valve cylinder 2 – check the resistance.

-  Measure the resistance between the specified points.
Injection valve pin 1 – Injection valve pin 2

Injector	
Resistance at: 20 °C (68 °F)	11.4 ... 12.6 Ω

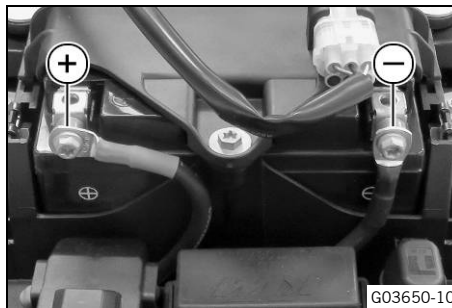
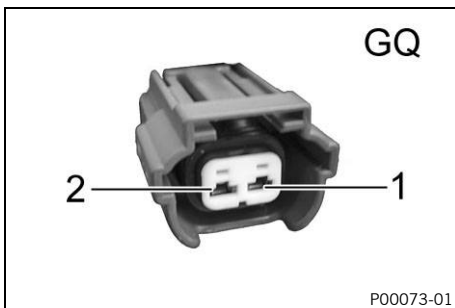
- » If the specifications have not been met:
 - Change injection valve cylinder 2.
- » If the specifications have been met:
 - Check the next possible cause:
Injection valve cylinder 2 – power supply is faulty
( p. 147)

Injection valve cylinder 2 – power supply is faulty

Condition

The ignition is on.

Injection valve cylinder 2 is disconnected. ( p. 18)



Injection valve, cylinder 2 – check the power supply.

-  Measure the voltage between the specified points.
Injection valve cylinder 2, connector **GQ** pin 2 – Measuring point **Ground (–)**



Info

For the measurement, the measuring points must be subjected to a 12 V/21 W bulb load.

The value must not deviate from the battery voltage "VBAT" by more than 1 V.

- » If the specifications have not been met:
 - Check connector **GQ** ( p. 499) pin 2.
 - Check the cable from connector **GQ** ( p. 499) pin 2 to the next node in the wiring harness.
- » If the specifications have been met:
 - Check the next possible cause:
Injection valve, cylinder 2 – the control wire is faulty ( p. 147)

Injection valve, cylinder 2 – the control wire is faulty

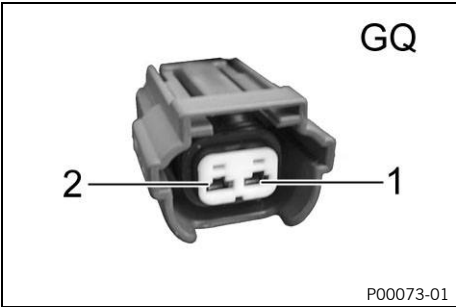
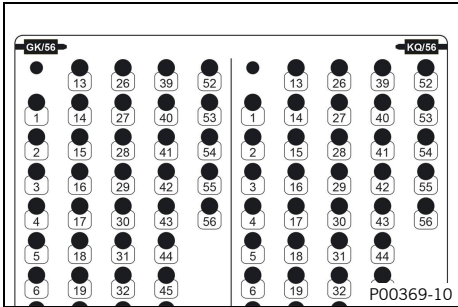
Condition

The ignition is off.

Engine control unit is disconnected. ( p. 15)

The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.

Injection valve cylinder 2 is disconnected. ( p. 18)



Injection valve cylinder 2 – check the control wire.

-  Measure the resistance between the specified points.
Break-out box, connector **GK** pin **13** – Injection valve cylinder 2, connector **GQ** pin **1**

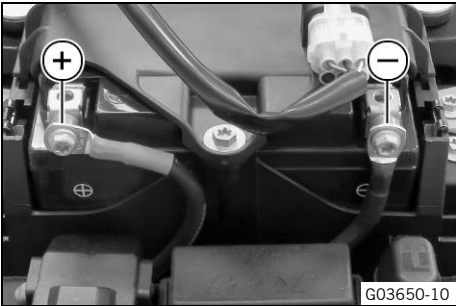
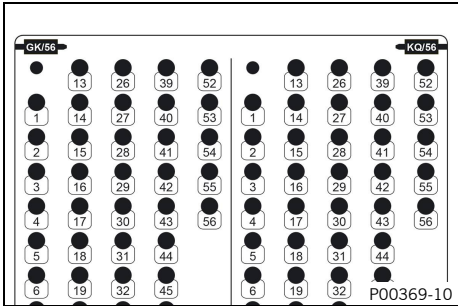
Resistance	≤ 0.6 Ω

- » If the specifications have not been met:
 - Check engine control unit connector **GK** (p. 497) pin **13** and connector **GQ** (p. 499) pin **1**.
 - Check the cable from engine control unit connector **GK** (p. 497) pin **13** to connector **GQ** (p. 499) pin **1**.
- » If the specifications have been met:
 - Check the next possible cause:
Injection valve, cylinder 2 – the control wire has a short circuit to ground (terminal 31) (p. 148)

Injection valve, cylinder 2 – the control wire has a short circuit to ground (terminal 31)

Condition

The ignition is off.
Engine control unit is disconnected. (p. 15)
The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.
Injection valve cylinder 2 is disconnected. (p. 18)



Injection valve, cylinder 2 – check the control wire for a short circuit to ground (terminal 31).

-  Measure the resistance between the specified points.
Break-out box, connector **GK** pin **13** – Measuring point **Ground (–)**

Resistance	∞ Ω

- » If the specifications have not been met:
 - Check the cable from engine control unit connector **GK** (p. 497) pin **13** to connector **GQ** (p. 499) pin **1** for a short circuit to ground (terminal 31).
- » If the specifications have been met:
 - Change the engine control unit.

Blink code for malfunction indicator lamp (OBD)	 Malfunction indicator lamp lights up
Display on diagnostic tool	P026500 "Injection valve cylinder 2" "Signal voltage too high"
Error level condition	Injection valve cylinder 2 – signal voltage too high Time: ≥ 2 s
Function check	Injection valve cylinder 2 – checking the control (📖 p. 149)
Possible cause	Injection valve cylinder 2 – the value is not plausible (📖 p. 149)
	Injection valve, cylinder 2 – the control wire has a short circuit to plus (terminal 30) (📖 p. 150)
	Injection valve, cylinder 2 – the control wire has a short circuit to ignition plus (terminal 15) (📖 p. 150)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Injection valve cylinder 2 – checking the control

Condition

The diagnostics tool is connected and running.

- Perform **"Engine control unit" > "Actuator test" > "Injector 2 cylinder 2"**.

Injector	Operating noise

- » If the specified value is reached:
 - Clear the fault memory using the KTM diagnostics tool.
 - Take a test ride.
 - Read out the trouble code memory using the KTM diagnostics tool.
- » If the specification is not reached:
 - Check the next possible cause:
Injection valve cylinder 2 – the value is not plausible (📖 p. 149)
 - Check the next possible cause:
Injection valve, cylinder 2 – the control wire has a short circuit to plus (terminal 30) (📖 p. 150)
 - Check the next possible cause:
Injection valve, cylinder 2 – the control wire has a short circuit to ignition plus (terminal 15) (📖 p. 150)

Injection valve cylinder 2 – the value is not plausible

Condition

The ignition is off.

Injection valve cylinder 2 is disconnected. (📖 p. 18)

Injection valve cylinder 2 – check the resistance.

-  Measure the resistance between the specified points.
Injection valve pin 1 – Injection valve pin 2

Injector	
Resistance at: 20 °C (68 °F)	11.4 ... 12.6 Ω

- » If the specifications have not been met:
 - Change injection valve cylinder 2.
- » If the specifications have been met:

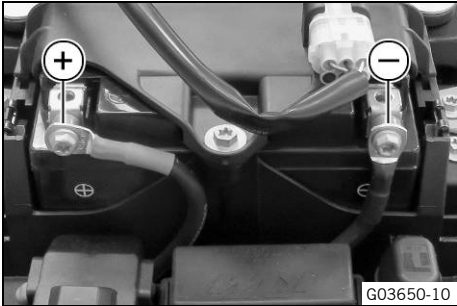
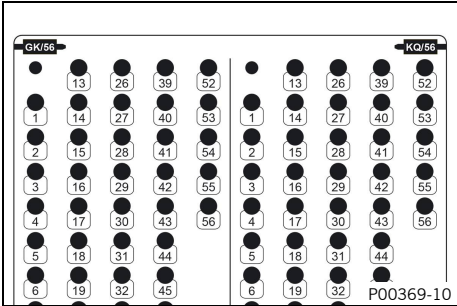


- Check the next possible cause:
Injection valve, cylinder 2 – the control wire has a short circuit to plus (terminal 30) (📖 p. 150)

Injection valve, cylinder 2 – the control wire has a short circuit to plus (terminal 30)

Condition

The ignition is off.
Engine control unit is disconnected. (📖 p. 15)
The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.
Injection valve cylinder 2 is disconnected. (📖 p. 18)



Injection valve, cylinder 2 – check the control wire for a short circuit to plus (terminal 30).

- **V** Measure the voltage between the specified points.
Break-out box, connector **GK** pin **13** – Measuring point **Ground (-)**

Voltage	< 0.1 V

- » If the specifications have not been met:
 - Check the cable from engine control unit connector **GK** (📖 p. 497) pin **13** to connector **GQ** (📖 p. 499) pin **1** for a short circuit to plus (terminal 30).
- » If the specifications have been met:
 - Check the next possible cause:
Injection valve, cylinder 2 – the control wire has a short circuit to ignition plus (terminal 15) (📖 p. 150)

Injection valve, cylinder 2 – the control wire has a short circuit to ignition plus (terminal 15)

Condition

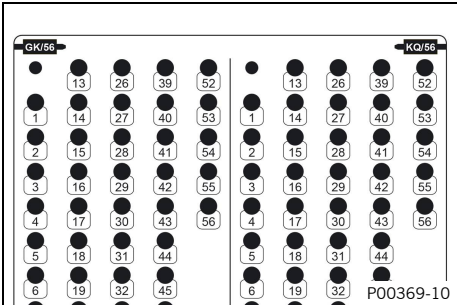
The ignition is off.
Engine control unit is disconnected. (📖 p. 15)
The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.
Injection valve cylinder 2 is disconnected. (📖 p. 18)

Injection valve, cylinder 2 – check the control wire for a short circuit to ignition plus (terminal 15).

- **Ω** Measure the resistance between the specified points.
Break-out box, connector **GK** pin **13** –
Break-out box, connector **GK** pin **44**

Resistance	∞ Ω

- » If the specifications have not been met:
 - Check the cable from engine control unit connector **GK** (📖 p. 497) pin **13** to connector **GQ** (📖 p. 499) pin **1** for a short circuit to ignition plus (terminal 15).
- » If the specifications have been met:
 - Contact customer service.



Blink code for malfunction indicator lamp (OBD)	 Malfunction indicator lamp lights up
Display on diagnostic tool	P030000 "Misfire" "Detected"
Error level condition	Fuel level too low Malfunction in the intake system or in the ignition system and fuel system
Function check	Checking the vehicle for misfire (📖 p. 151)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Checking the vehicle for misfire

- Clear the fault memory using the KTM diagnostics tool.
- Read out the trouble code memory using the KTM diagnostics tool.
 - » If the error persists:
 - Ensure that the fuel tank is filled sufficiently.
 - Check the intake system, ignition system, and fuel system.

Last measure if none of the documented causes leads to elimination of the fault

- Contact customer service.

6 ENGINE CONTROL TROUBLE CODE

Blink code for malfunction indicator lamp (OBD)	 Malfunction indicator lamp lights up
Display on diagnostic tool	P030100 "Misfire" "Cylinder 1 detected"
Error level condition	Fuel level too low
	Malfunction in the intake system or in the ignition system and fuel system
Function check	Checking the vehicle for misfire (📖 p. 152)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Checking the vehicle for misfire

- Clear the fault memory using the KTM diagnostics tool.
- Read out the trouble code memory using the KTM diagnostics tool.
 - » If the error persists:
 - Ensure that the fuel tank is filled sufficiently.
 - Check the intake system, ignition system, and fuel system.

Last measure if none of the documented causes leads to elimination of the fault

- Contact customer service.

Blink code for malfunction indicator lamp (OBD)	 Malfunction indicator lamp lights up
Display on diagnostic tool	P030200 "Misfire" "Cylinder 2 detected"
Error level condition	Fuel level too low Malfunction in the intake system or in the ignition system and fuel system
Function check	Checking the vehicle for misfire (📖 p. 153)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Checking the vehicle for misfire

- Clear the fault memory using the KTM diagnostics tool.
- Read out the trouble code memory using the KTM diagnostics tool.
 - » If the error persists:
 - Ensure that the fuel tank is filled sufficiently.
 - Check the intake system, ignition system, and fuel system.

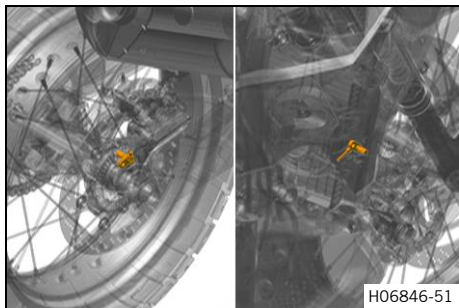
Last measure if none of the documented causes leads to elimination of the fault

- Contact customer service.

6 ENGINE CONTROL TROUBLE CODE

Blink code for malfunction indicator lamp (OBD)	 Malfunction indicator lamp lights up
Display on diagnostic tool	P031700 "Engine control unit" "Rough road hardware not installed"
Error level condition	Engine control unit – no signal from the wheel speed sensors Engine control unit – no signal from the wheel speed sensors
Function check	Check plausibility faults (📖 p. 154)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Check plausibility faults



Condition

The diagnostics tool is connected and running.

- Select **"Brake electronics" > "Measured values" > "Control unit input signals"**.
 - » Turn the wheels and check the values for plausibility.
If the values are not plausible:
- Check the sensor wheel.
- Check the wheel speed sensor is properly secured.
- Check the distance between the wheel speed sensor and the sensor wheel.
- Check the rim size.
- Check the tire size.
- Check tire pressure.

Last measure if none of the documented causes leads to elimination of the fault

- Contact customer service.

Blink code for malfunction indicator lamp (OBD)	 Malfunction indicator lamp lights up
Display on diagnostic tool	P032500 "Knock sensor" "Circuit fault"
Error level condition	Knock sensor – circuit fault
Possible cause	Knock sensor – signal wire 1 is faulty (📖 p. 155) Knock sensor – signal wire 2 is faulty (📖 p. 155)
Last measure if none of the documented causes leads to elimination of the fault	– Check the knock sensor for the specified tightening torque and replace it if necessary. – Contact customer service.

Knock sensor – signal wire 1 is faulty

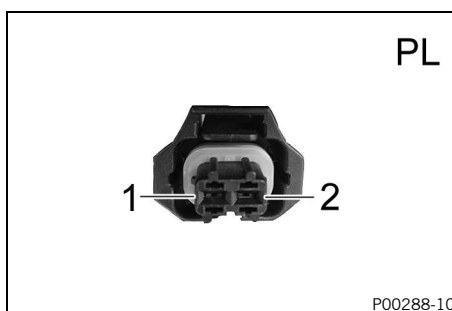
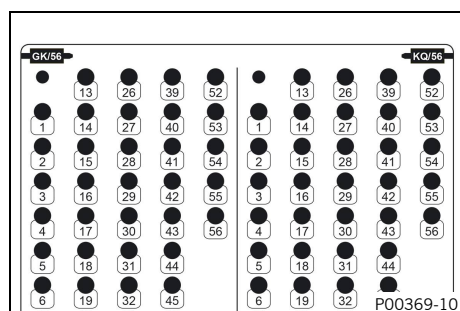
Condition

The ignition is off.

Engine control unit is disconnected. (📖 p. 15)

The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.

The knock sensor is disconnected. (📖 p. 22)



Knock sensor – check signal wire 1.

-  Measure the resistance between the specified points.
Break-out box, connector **KQ** pin **38** – Knock sensor connector **PL** pin **1**

Resistance	$\leq 0.6 \Omega$

- » If the specifications have not been met:
 - Check engine control unit connector **KQ** (📖 p. 502) pin **38** and connector **PL** (📖 p. 507) pin **1**.
 - Check the cable from engine control unit connector **KQ** (📖 p. 502) pin **38** to connector **PL** (📖 p. 507) pin **1**.
- » If the specifications have been met:
 - Check the next possible cause:
Knock sensor – signal wire 2 is faulty (📖 p. 155)

Knock sensor – signal wire 2 is faulty

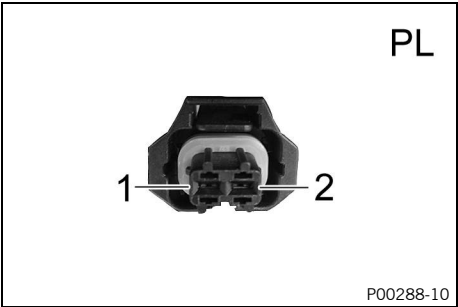
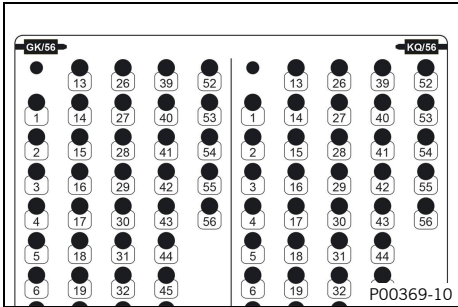
Condition

The ignition is off.

Engine control unit is disconnected. (📖 p. 15)

The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.

The knock sensor is disconnected. (📖 p. 22)



Knock sensor – check signal wire 2.

-  Measure the resistance between the specified points.
Break-out box, connector **KQ** pin **39** – Knock sensor connector **PL** pin **2**

Resistance	≤ 0.6 Ω

- » If the specifications have not been met:
 - Check engine control unit connector **KQ** (p. 502) pin **39** and connector **PL** (p. 507) pin **2**.
 - Check the cable from engine control unit connector **KQ** (p. 502) pin **39** to connector **PL** (p. 507) pin **2**.
- » If the specifications have been met:
 - Check the knock sensor for the specified tightening torque and replace it if necessary.
 - Contact customer service.

Blink code for malfunction indicator lamp (OBD)	 Malfunction indicator lamp lights up
Display on diagnostic tool	P032700 "Knock sensor" "Signal voltage too low"
Error level condition	Knock sensor – signal voltage too low
Possible cause	Knock sensor – signal wire 1 has a short circuit to ground (terminal 31) (📖 p. 157)
	Knock sensor – signal wire 2 has a short circuit to ground (terminal 31) (📖 p. 157)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Knock sensor – signal wire 1 has a short circuit to ground (terminal 31)

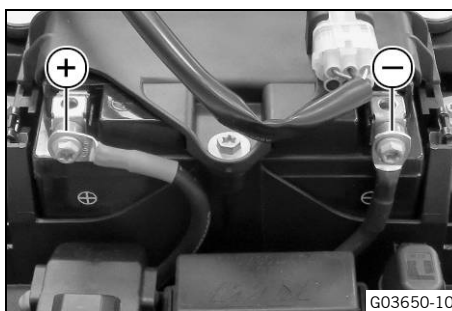
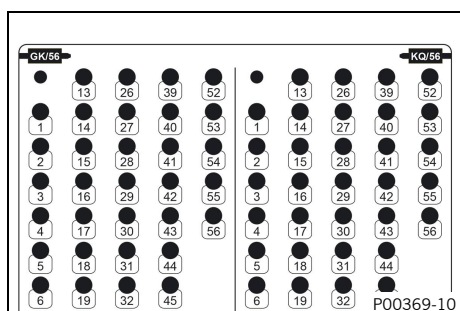
Condition

The ignition is off.

Engine control unit is disconnected. (📖 p. 15)

The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.

The knock sensor is disconnected. (📖 p. 22)



Knock sensor – check signal wire 1 for a short circuit to ground (terminal 31).

-  Measure the resistance between the specified points.
Break-out box, connector **KQ** pin **38** – Measuring point **Ground (-)**

Resistance	$\infty \Omega$

- » If the specifications have not been met:
 - Check the cable from engine control unit connector **KQ** (📖 p. 502) pin **38** to connector **PL** (📖 p. 507) pin **1** for a short circuit to ground (terminal 31).
- » If the specifications have been met:
 - Check the next possible cause:
Knock sensor – signal wire 2 has a short circuit to ground (terminal 31) (📖 p. 157)

Knock sensor – signal wire 2 has a short circuit to ground (terminal 31)

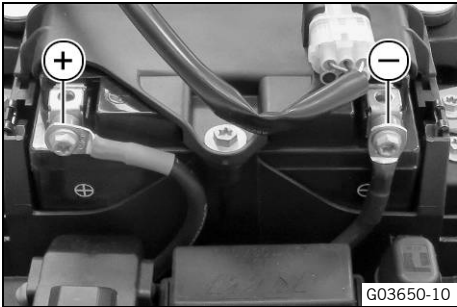
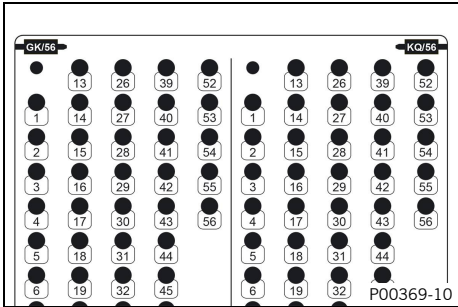
Condition

The ignition is off.

Engine control unit is disconnected. (📖 p. 15)

The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.

The knock sensor is disconnected. (📖 p. 22)



Knock sensor – check signal wire 2 for a short circuit to ground (terminal 31).

-  Measure the resistance between the specified points.
Break-out box, connector **KQ** pin **39** – Measuring point **Ground (–)**

Resistance	$\infty \Omega$

- » If the specifications have not been met:
 - Check the cable from engine control unit connector **KQ** (📖 p. 502) pin **39** to connector **PL** (📖 p. 507) pin **2** for a short circuit to ground (terminal 31).
- » If the specifications have been met:
 - Contact customer service.

Blink code for malfunction indicator lamp (OBD)	 Malfunction indicator lamp lights up
Display on diagnostic tool	P032800 "Knock sensor" "Signal voltage too high"
Error level condition	Knock sensor – signal voltage too high
Possible cause	Knock sensor – signal wire 1 has a short circuit to plus (terminal 30) (📖 p. 159)
	Knock sensor – signal wire 1 has a short circuit to ignition plus (terminal 15) (📖 p. 160)
	Knock sensor – signal wire 2 has a short circuit to plus (terminal 30) (📖 p. 160)
	Knock sensor – signal wire 2 has a short circuit to ignition plus (terminal 15) (📖 p. 161)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Knock sensor – signal wire 1 has a short circuit to plus (terminal 30)

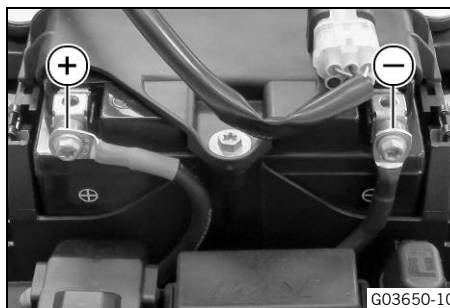
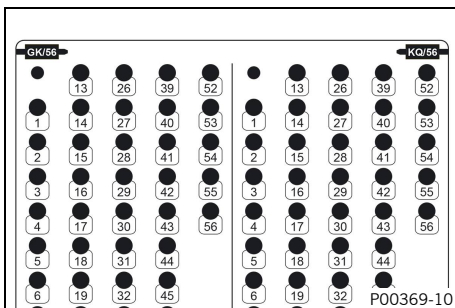
Condition

The ignition is off.

Engine control unit is disconnected. (📖 p. 15)

The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.

The knock sensor is disconnected. (📖 p. 22)



Knock sensor – check signal wire 1 for a short circuit to plus (terminal 30).

- **V** Measure the voltage between the specified points.
Break-out box, connector **KQ** pin **38** – Measuring point **Ground (-)**

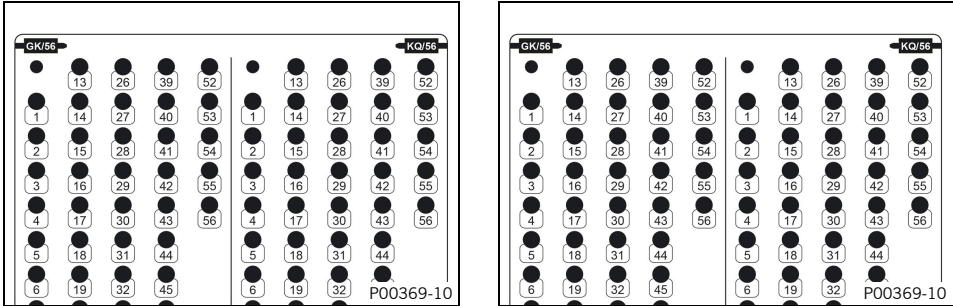
Voltage	< 0.1 V

- » If the specifications have not been met:
 - Check the cable from engine control unit connector **KQ** (📖 p. 502) pin **38** to connector **PL** (📖 p. 507) pin **1** for a short circuit to plus (terminal 30).
- » If the specifications have been met:
 - Check the next possible cause:
Knock sensor – signal wire 1 has a short circuit to ignition plus (terminal 15) (📖 p. 160)

Knock sensor – signal wire 1 has a short circuit to ignition plus (terminal 15)

Condition

The ignition is off.
Engine control unit is disconnected. (📖 p. 15)
The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.
The knock sensor is disconnected. (📖 p. 22)



Knock sensor – check signal wire 1 for a short circuit to ignition plus (terminal 15).

-  Measure the resistance between the specified points.
Break-out box, connector **KQ** pin **38** – Break-out box, connector **GK** pin **44**

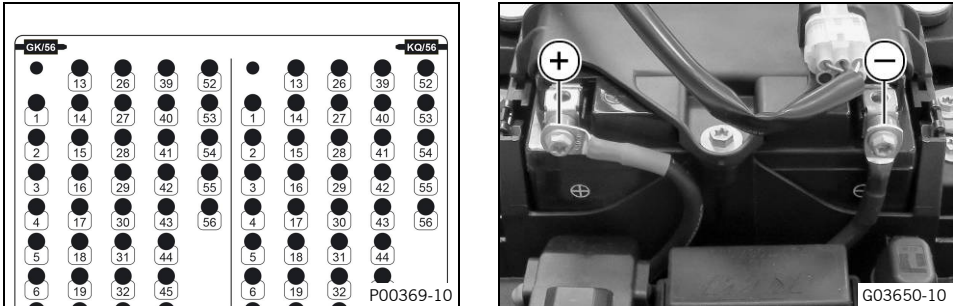
Resistance	$\infty \Omega$

- » If the specifications have not been met:
 - Check the cable from engine control unit connector **KQ** (📖 p. 502) pin **38** to connector **PL** (📖 p. 507) pin **1** for a short circuit to ignition plus (terminal 15).
- » If the specifications have been met:
 - Check the next possible cause:
Knock sensor – signal wire 2 has a short circuit to plus (terminal 30) (📖 p. 160)

Knock sensor – signal wire 2 has a short circuit to plus (terminal 30)

Condition

The ignition is off.
Engine control unit is disconnected. (📖 p. 15)
The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.
The knock sensor is disconnected. (📖 p. 22)



Knock sensor – check signal wire 2 for a short circuit to plus (terminal 30).

-  Measure the voltage between the specified points.
Break-out box, connector **KQ** pin **39** – Measuring point **Ground** (–)

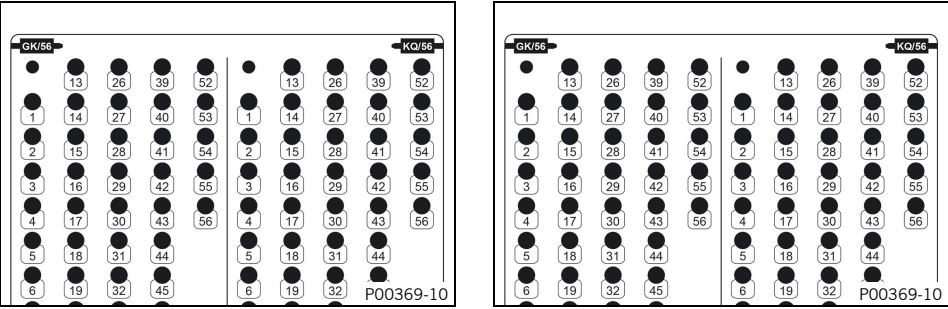
Voltage	< 0.1 V

- » If the specifications have not been met:
 - Check the cable from engine control unit connector **KQ** (📖 p. 502) pin **39** to connector **PL** (📖 p. 507) pin **2** for a short circuit to plus (terminal 30).

- » If the specifications have been met:
 - Check the next possible cause:
Knock sensor – signal wire 2 has a short circuit to ignition plus (terminal 15) (📖 p. 161)

Knock sensor – signal wire 2 has a short circuit to ignition plus (terminal 15)

Condition
The ignition is off.
Engine control unit is disconnected. (📖 p. 15)
The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.
The knock sensor is disconnected. (📖 p. 22)



Knock sensor – check signal wire 2 for a short circuit to ignition plus (terminal 15).

-  Measure the resistance between the specified points.
Break-out box, connector **KQ** pin **39** – Break-out box, connector **GK** pin **44**

Resistance	$\infty \Omega$

- » If the specifications have not been met:
 - Check the cable from engine control unit connector **GK** (📖 p. 497) pin **39** to connector **PL** (📖 p. 507) pin **2** for a short circuit to ignition plus (terminal 15).
- » If the specifications have been met:
 - Contact customer service.

6 ENGINE CONTROL TROUBLE CODE

Blink code for malfunction indicator lamp (OBD)	 Malfunction indicator lamp lights up
Display on diagnostic tool	P033500 "Crankshaft speed sensor" "Circuit fault"
Error level condition	Crankshaft speed sensor – circuit fault
Function check	Crankshaft speed sensor – checking the signal (📖 p. 162)
Possible cause	Crankshaft speed sensor – signal is faulty (📖 p. 162)
	Crankshaft speed sensor is faulty (📖 p. 163)
	Crankshaft speed sensor – the value is not plausible (📖 p. 163)
	Crankshaft speed sensor has a short circuit to ground (📖 p. 164)
Last measure if none of the documented causes leads to elimination of the fault	– Check the distance between the crankshaft speed sensor and the rotor. – Check the crankshaft speed sensor and rotor for mechanical faults.

Crankshaft speed sensor – checking the signal

Condition

The diagnostics tool is connected and running.

- Select **"Engine control unit" > "Measured values" > "Engine speed"**.
- Execute the start procedure.

"Engine speed"	Starting speed

- » If the specified value is reached:
 - Clear the fault memory using the KTM diagnostics tool.
 - Take a test ride.
 - Read out the trouble code memory using the KTM diagnostics tool.
- » If the specification is not reached:
 - Check the next possible cause:
Crankshaft speed sensor – signal is faulty (📖 p. 162)
 - Check the next possible cause:
Crankshaft speed sensor is faulty (📖 p. 163)
 - Check the next possible cause:
Crankshaft speed sensor – the value is not plausible (📖 p. 163)
 - Check the next possible cause:
Crankshaft speed sensor has a short circuit to ground (📖 p. 164)

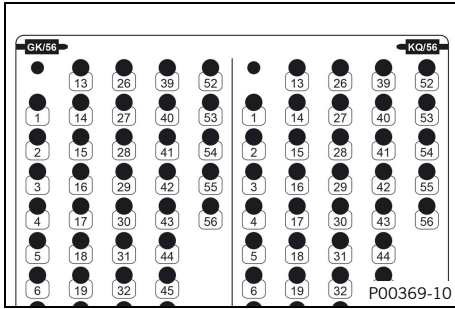
Crankshaft speed sensor – signal is faulty

Condition

The ignition is on.

The break-out box is connected to the engine control unit and the wiring harness with adapter **00029095014**.

Execute the start procedure.



Crankshaft speed sensor – checking the signal.

- **V** Measure the voltage between the specified points.
Break-out box, connector **GK** pin 1 –
Break-out box, connector **GK** pin 2

AC voltage	> 3 V

- » If the specifications have been met:
 - Change the engine control unit.
- » If the specifications have not been met:
 - Check the next possible cause:
Crankshaft speed sensor is faulty (p. 163)

Crankshaft speed sensor is faulty

Condition

The ignition is on.

Crankshaft speed sensor is disconnected. (p. 14)

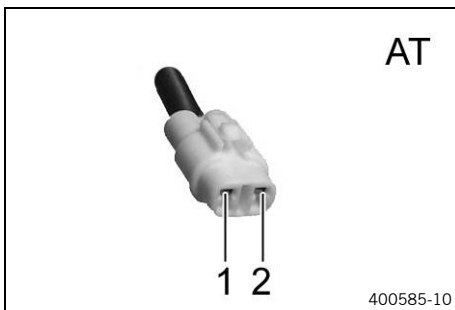
Execute the start procedure.

Crankshaft speed sensor – checking the signal.

- **V** Measure the voltage between the specified points.
Crankshaft speed sensor, connector **AT** pin 1 –
Crankshaft speed sensor, connector **AT** pin 2

AC voltage	> 3 V

- » If the specifications have been met:
 - Check engine control unit connector **GK** (p. 497) pin 2 and connector **IF** (p. 500) pin 2.
 - Check engine control unit connector **GK** (p. 497) pin 1 and connector **IF** (p. 500) pin 1.
 - Check the cable from engine control unit connector **GK** (p. 497) pin 2 to connector **IF** (p. 500) pin 2.
 - Check the cable from engine control unit connector **GK** (p. 497) pin 1 to connector **IF** (p. 500) pin 1.
- » If the specifications have not been met:
 - Check the next possible cause:
Crankshaft speed sensor – the value is not plausible (p. 163)



Crankshaft speed sensor – the value is not plausible

Condition

The ignition is off.

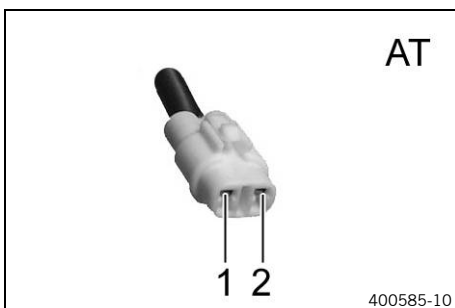
Crankshaft speed sensor is disconnected. (p. 14)

Crankshaft speed sensor – check the resistance.

- **Ω** Measure the resistance between the specified points.
Crankshaft speed sensor, connector **AT** pin 1 –
Crankshaft speed sensor, connector **AT** pin 2

Resistance	75 ... 125 Ω

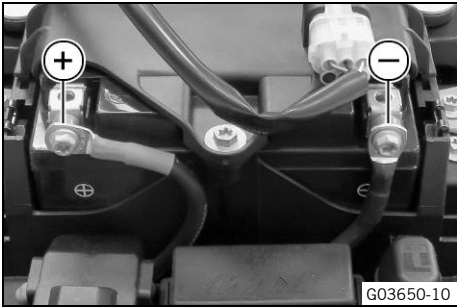
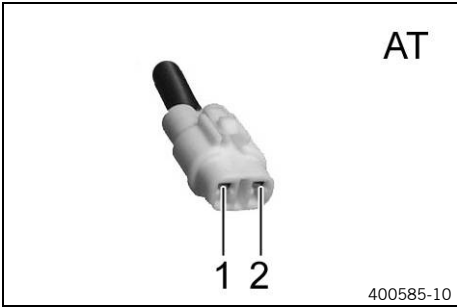
- » If the specifications have not been met:
 - Change the crankshaft speed sensor.
- » If the specifications have been met:
 - Check the next possible cause:
Crankshaft speed sensor has a short circuit to ground (p. 164)



Crankshaft speed sensor has a short circuit to ground

Condition

The ignition is off.
Crankshaft speed sensor is disconnected. (📖 p. 14)



Crankshaft speed sensor – check the resistance.

-  Measure the resistance between the specified points.
Crankshaft speed sensor, connector **AT** pin **1** – Measuring point **Ground (–)**

Resistance	$\infty \Omega$

- » If the specifications have not been met:
 - Change the crankshaft speed sensor.
- » If the specifications have been met:
 - Check the distance between the crankshaft speed sensor and the rotor.
 - Check the crankshaft speed sensor and rotor for mechanical faults.

Blink code for malfunction indicator lamp (OBD)	 Malfunction indicator lamp lights up
Display on diagnostic tool	P033900 "Crankshaft speed sensor" "Signal interrupted"
Error level condition	Crankshaft position sensor – signal interrupted
Function check	Crankshaft speed sensor – checking the signal (📖 p. 165)
Possible cause	Crankshaft speed sensor – signal is faulty (📖 p. 165)
	Crankshaft speed sensor is faulty (📖 p. 166)
	Crankshaft speed sensor – the value is not plausible (📖 p. 163)
	Crankshaft speed sensor has a short circuit to ground (📖 p. 164)
Last measure if none of the documented causes leads to elimination of the fault	– Check the distance between the crankshaft speed sensor and the rotor. – Check the crankshaft speed sensor and rotor for mechanical faults.

Crankshaft speed sensor – checking the signal

Condition

The diagnostics tool is connected and running.

- Select **"Engine control unit" > "Measured values" > "Engine speed"**.
- Execute the start procedure.

"Engine speed"	Starting speed

- » If the specified value is reached:
 - Clear the fault memory using the KTM diagnostics tool.
 - Take a test ride.
 - Read out the trouble code memory using the KTM diagnostics tool.
- » If the specification is not reached:
 - Check the next possible cause:
Crankshaft speed sensor – signal is faulty (📖 p. 165)
 - Check the next possible cause:
Crankshaft speed sensor is faulty (📖 p. 166)
 - Check the next possible cause:
Crankshaft speed sensor – the value is not plausible (📖 p. 166)
 - Check the next possible cause:
Crankshaft speed sensor has a short circuit to ground (📖 p. 164)

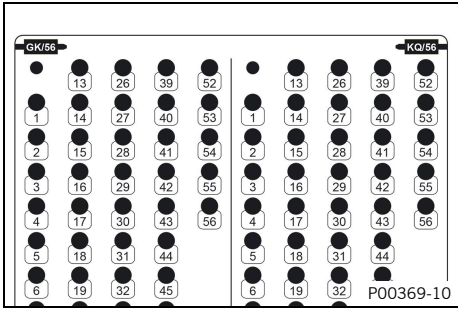
Crankshaft speed sensor – signal is faulty

Condition

The ignition is on.

The break-out box is connected to the engine control unit and the wiring harness with adapter **00029095014**.

Execute the start procedure.



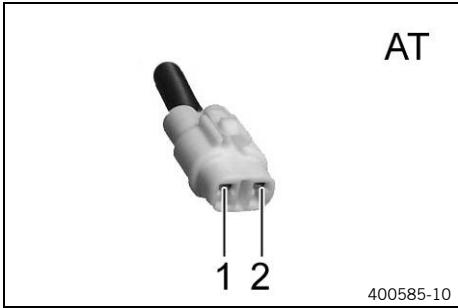
Crankshaft speed sensor – checking the signal.

- **V** Measure the voltage between the specified points.
Break-out box, connector **GK** pin 1 –
Break-out box, connector **GK** pin 2

AC voltage	> 3 V

- » If the specifications have been met:
 - Change the engine control unit.
- » If the specifications have not been met:
 - Check the next possible cause:
Crankshaft speed sensor is faulty (📖 p. 166)

Crankshaft speed sensor is faulty



Condition

The ignition is on.
Crankshaft speed sensor is disconnected. (📖 p. 14)
Execute the start procedure.

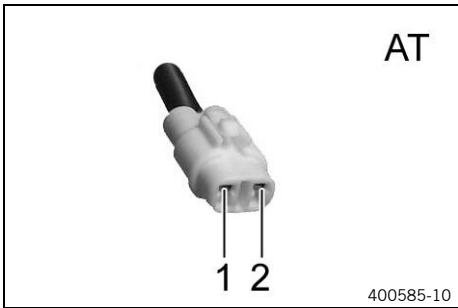
Crankshaft speed sensor – checking the signal.

- **V** Measure the voltage between the specified points.
Crankshaft speed sensor, connector **AT** pin 1 –
Crankshaft speed sensor, connector **AT** pin 2

AC voltage	> 3 V

- » If the specifications have been met:
 - Check engine control unit connector **GK** (📖 p. 497) pin 2 and connector **IF** (📖 p. 500) pin 2.
 - Check engine control unit connector **GK** (📖 p. 497) pin 1 and connector **IF** (📖 p. 500) pin 1.
 - Check the cable from engine control unit connector **GK** (📖 p. 497) pin 2 to connector **IF** (📖 p. 500) pin 2.
 - Check the cable from engine control unit connector **GK** (📖 p. 497) pin 1 to connector **IF** (📖 p. 500) pin 1.
- » If the specifications have not been met:
 - Check the next possible cause:
Crankshaft speed sensor – the value is not plausible (📖 p. 166)

Crankshaft speed sensor – the value is not plausible



Condition

The ignition is off.
Crankshaft speed sensor is disconnected. (📖 p. 14)

Crankshaft speed sensor – check the resistance.

- **Ω** Measure the resistance between the specified points.
Crankshaft speed sensor, connector **AT** pin 1 –
Crankshaft speed sensor, connector **AT** pin 2

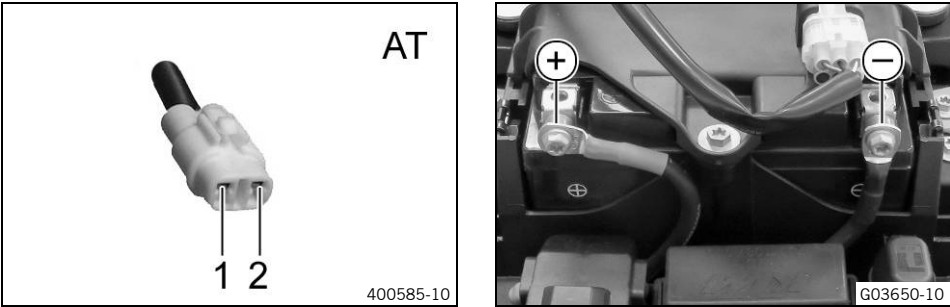
Resistance	75 ... 125 Ω

- » If the specifications have not been met:
 - Change the crankshaft speed sensor.
- » If the specifications have been met:
 - Check the next possible cause:
Crankshaft speed sensor has a short circuit to ground (📖 p. 167)

Crankshaft speed sensor has a short circuit to ground

Condition

The ignition is off.
Crankshaft speed sensor is disconnected. (📖 p. 14)



Crankshaft speed sensor – check the resistance.

- Measure the resistance between the specified points.
Crankshaft speed sensor, connector **AT** pin **1** – Measuring point **Ground (–)**

Resistance	$\infty \Omega$

- » If the specifications have not been met:
 - Change the crankshaft speed sensor.
- » If the specifications have been met:
 - Check the distance between the crankshaft speed sensor and the rotor.
 - Check the crankshaft speed sensor and rotor for mechanical faults.

6 ENGINE CONTROL TROUBLE CODE

Blink code for malfunction indicator lamp (OBD)	 Malfunction indicator lamp lights up
Display on diagnostic tool	P035100 "Ignition coil cylinder 1" "Primary/secondary circuit"
Error level condition	Ignition coil, cylinder 1 – primary/secondary circuit
Function check	Checking the ignition coil 1, cylinder 1 (📖 p. 168)
Possible cause	Ignition coil 1, cylinder 1 – the value is not plausible (📖 p. 168)
	Ignition coil 1, cylinder 1 – the control wire has a short circuit to ground (terminal 31) (📖 p. 169)
	Ignition coil 1, cylinder 1 - the control wire has a short circuit to sensor ground (📖 p. 169)
	Ignition coil 1, cylinder 1 – the control wire is faulty (📖 p. 170)
	Ignition coil 1, cylinder 1 – the power supply is faulty (📖 p. 170)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Checking the ignition coil 1, cylinder 1

Condition

The diagnostics tool is connected and running.

- Perform **"Engine control unit" > "Actuator test" > "Ignition 1 cylinder 1"**.

Spark plug	Operating noise

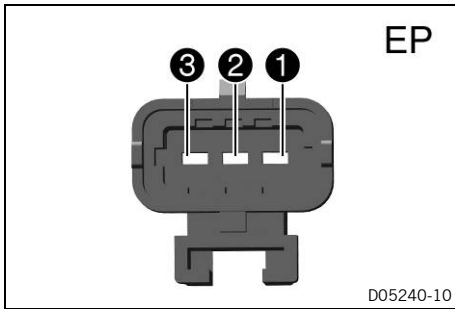
- » If the specified value is reached:
 - Clear the fault memory using the KTM diagnostics tool.
 - Take a test ride.
 - Read out the trouble code memory using the KTM diagnostics tool.
- » If the specification is not reached:
 - Check the next possible cause:
Ignition coil 1, cylinder 1 – the value is not plausible (📖 p. 168)
 - Check the next possible cause:
Ignition coil 1, cylinder 1 – the control wire has a short circuit to ground (terminal 31) (📖 p. 169)
 - Check the next possible cause:
Ignition coil 1, cylinder 1 - the control wire has a short circuit to sensor ground (📖 p. 169)
 - Check the next possible cause:
Ignition coil 1, cylinder 1 – the control wire is faulty (📖 p. 170)
 - Check the next possible cause:
Ignition coil 1, cylinder 1 – the power supply is faulty (📖 p. 170)

Ignition coil 1, cylinder 1 – the value is not plausible

Condition

The ignition is off.

Ignition coil cylinder 1 is disconnected. (📖 p. 13)



Ignition coil 1 cylinder 1 - check the resistance.

- Measure the resistance between the specified points.
Ignition coil pin 1 – Ignition coil pin 2

Ignition coil	
Primary winding resistance at: 20 °C (68 °F)	0.70 ... 0.90 Ω

- » If the specifications have not been met:
 - Change the ignition coil 1, cylinder 1.
- » If the specifications have been met:
 - Check the next possible cause:
Ignition coil 1, cylinder 1 – the control wire has a short circuit to ground (terminal 31) (📖 p. 169)

Ignition coil 1, cylinder 1 – the control wire has a short circuit to ground (terminal 31)

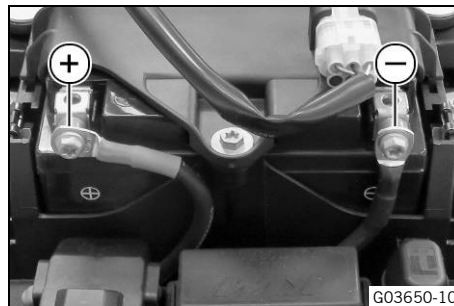
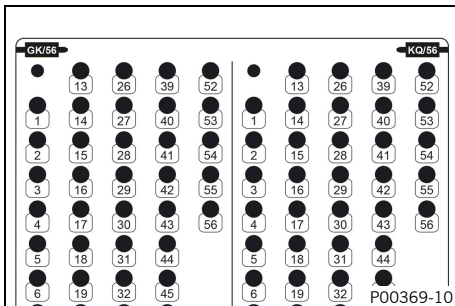
Condition

The ignition is off.

Engine control unit is disconnected. (📖 p. 15)

The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.

Ignition coil cylinder 1 is disconnected. (📖 p. 13)



Ignition coil 1, cylinder 1 – check the control wire for a short circuit to ground (terminal 31).

- Measure the resistance between the specified points.
Break-out box, connector **GK** pin **53** – Measuring point **Ground (-)**

Resistance	∞ Ω

- » If the specifications have not been met:
 - Check the cable from engine control unit connector **GK** (📖 p. 497) pin **53** to connector **LR** (📖 p. 504) pin **3** for a short circuit to ground (terminal 31).
- » If the specifications have been met:
 - Check the next possible cause:
Ignition coil 1, cylinder 1 - the control wire has a short circuit to sensor ground (📖 p. 169)

Ignition coil 1, cylinder 1 - the control wire has a short circuit to sensor ground

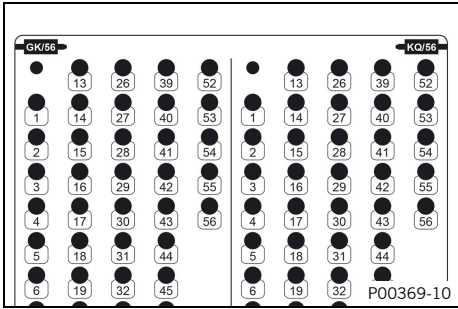
Condition

The ignition is off.

Engine control unit is disconnected. (📖 p. 15)

The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.

Ignition coil cylinder 1 is disconnected. (📖 p. 13)

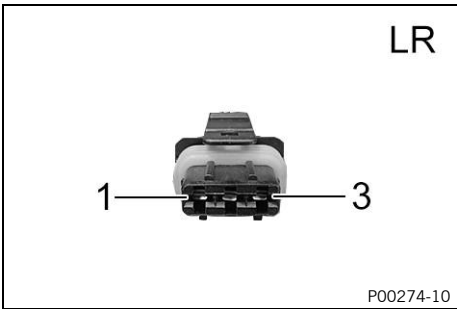
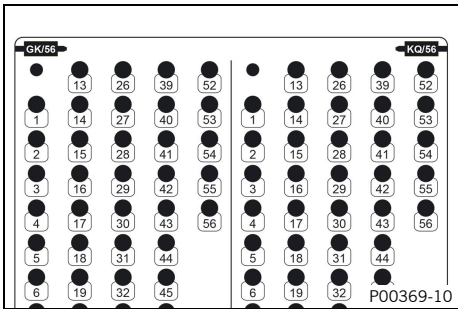


Ignition coil 1, cylinder 1 - check the control wire for a short circuit to sensor ground.

-  Measure the resistance between the specified points.
Break-out box, connector **GK** pin **53** –
Break-out box, connector **GK** pin **51**
- | | |
|------------|-----------------|
| Resistance | $\infty \Omega$ |
|------------|-----------------|
- » If the specifications have not been met:
 - Check cable from engine control unit connector **GK** (p. 497) pin **53** to connector **LR** (p. 504) pin **3** for a short circuit to sensor ground.
 - » If the specifications have been met:
 - Check the next possible cause:
Ignition coil 1, cylinder 1 – the control wire is faulty (p. 170)

Ignition coil 1, cylinder 1 – the control wire is faulty

Condition
The ignition is off.
Engine control unit is disconnected. (p. 15)
The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.
Ignition coil cylinder 1 is disconnected. (p. 13)

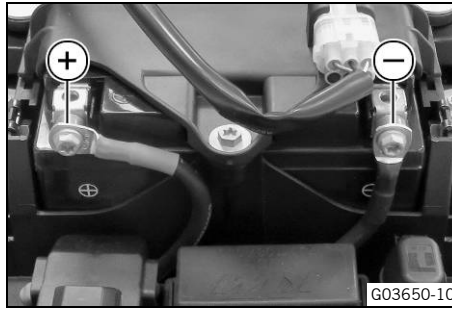
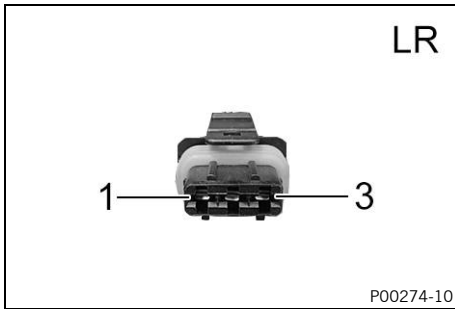


Ignition coil 1, cylinder 1 – check the control wire.

-  Measure the resistance between the specified points.
Break-out box, connector **GK** pin **53** – Ignition coil 1, cylinder 1 socket connector **LR** pin **3**
- | | |
|------------|-------------------|
| Resistance | $\leq 0.6 \Omega$ |
|------------|-------------------|
- » If the specifications have not been met:
 - Check engine control unit connector **GK** (p. 497) pin **53** and connector **LR** (p. 504) pin **3**.
 - Check the cable from engine control unit connector **GK** (p. 497) pin **53** to connector **LR** (p. 504) pin **3**.
 - » If the specifications have been met:
 - Check the next possible cause:
Ignition coil 1, cylinder 1 – the power supply is faulty (p. 170)

Ignition coil 1, cylinder 1 – the power supply is faulty

Condition
The ignition is on.
Engine control unit is disconnected. (p. 15)
Ignition coil cylinder 1 is disconnected. (p. 13)



Ignition coil 1, cylinder 1 - check the power supply.

- **V** Measure the voltage between the specified points.
Ignition coil 1, cylinder 1 socket connector **LR** pin 1 – Measuring point **Ground (-)**



Info

For the measurement, the measuring points must be subjected to a 12 V/21 W bulb.

The value must not deviate from the battery voltage "**VBAT**" by more than 1 V.

- » If the specifications have not been met:
 - Check connector **LR** (📖 p. 504) pin 1.
 - Check the cable from connector **LR** (📖 p. 504) pin 1 to the next node in the wiring harness.
- » If the specifications have been met:
 - Contact customer service.

6 ENGINE CONTROL TROUBLE CODE

Blink code for malfunction indicator lamp (OBD)	 Malfunction indicator lamp lights up
Display on diagnostic tool	P035200 "Ignition coil cylinder 2" "Primary/secondary circuit"
Error level condition	Ignition coil for cylinder 2 – primary/secondary circuit
Function check	Checking the ignition coil 1, cylinder 2 (📖 p. 172)
Possible cause	Ignition coil 1, cylinder 2 – the value is not plausible (📖 p. 172)
	Ignition coil 1, cylinder 2 – the control wire has a short circuit to ground (terminal 31) (📖 p. 173)
	Ignition coil 1, cylinder 2 - the control wire has a short circuit to sensor ground (📖 p. 173)
	Ignition coil 1, cylinder 2 – the control wire is faulty (📖 p. 174)
	Ignition coil 1, cylinder 2 – the power supply is faulty (📖 p. 174)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Checking the ignition coil 1, cylinder 2

Condition

The diagnostics tool is connected and running.

- Perform **"Engine control unit" > "Actuator test" > "Ignition 2 cylinder 2"**.

Spark plug	Operating noise

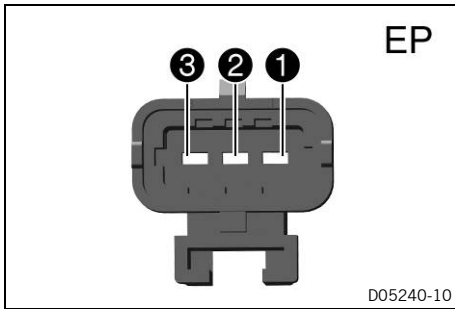
- » If the specified value is reached:
 - Clear the fault memory using the KTM diagnostics tool.
 - Take a test ride.
 - Read out the trouble code memory using the KTM diagnostics tool.
- » If the specification is not reached:
 - Check the next possible cause:
Ignition coil 1, cylinder 2 – the value is not plausible (📖 p. 172)
 - Check the next possible cause:
Ignition coil 1, cylinder 2 – the control wire has a short circuit to ground (terminal 31) (📖 p. 173)
 - Check the next possible cause:
Ignition coil 1, cylinder 2 - the control wire has a short circuit to sensor ground (📖 p. 173)
 - Check the next possible cause:
Ignition coil 1, cylinder 2 – the control wire is faulty (📖 p. 174)
 - Check the next possible cause:
Ignition coil 1, cylinder 2 – the power supply is faulty (📖 p. 174)

Ignition coil 1, cylinder 2 – the value is not plausible

Condition

The ignition is off.

Ignition coil cylinder 2 is disconnected. (📖 p. 13)



Ignition coil 1, cylinder 2 – check the resistance.

- Measure the resistance between the specified points.
Ignition coil pin 1 – Ignition coil pin 2

Ignition coil	
Primary winding resistance at: 20 °C (68 °F)	0.70 ... 0.90 Ω

- » If the specifications have not been met:
 - Change the ignition coil 1, cylinder 2.
- » If the specifications have been met:
 - Check the next possible cause:
Ignition coil 1, cylinder 2 – the control wire has a short circuit to ground (terminal 31) (p. 173)

Ignition coil 1, cylinder 2 – the control wire has a short circuit to ground (terminal 31)

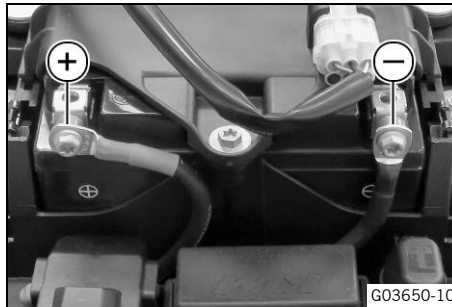
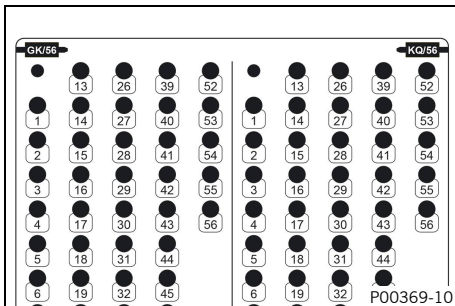
Condition

The ignition is off.

Engine control unit is disconnected. (p. 15)

The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.

Ignition coil cylinder 2 is disconnected. (p. 13)



Ignition coil 1, cylinder 2 – check the control wire for a short circuit to ground (terminal 31).

- Measure the resistance between the specified points.
Break-out box, connector **GK** pin **52** – Measuring point **Ground (-)**

Resistance	∞ Ω

- » If the specifications have not been met:
 - Check the cable from engine control unit connector **GK** (p. 497) pin **52** to connector **LR** (p. 504) pin **3** for a short circuit to ground (terminal 31).
- » If the specifications have been met:
 - Check the next possible cause:
Ignition coil 1, cylinder 2 - the control wire has a short circuit to sensor ground (p. 173)

Ignition coil 1, cylinder 2 - the control wire has a short circuit to sensor ground

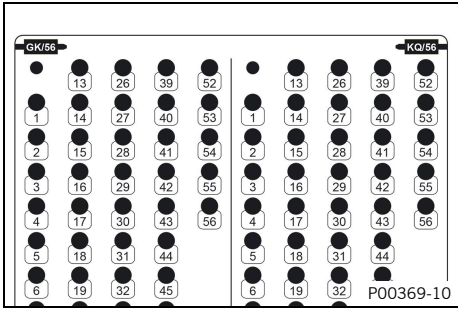
Condition

The ignition is off.

Engine control unit is disconnected. (p. 15)

The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.

Ignition coil cylinder 2 is disconnected. (p. 13)



Ignition coil 1, cylinder 2 - check the control wire for a short circuit to sensor ground.

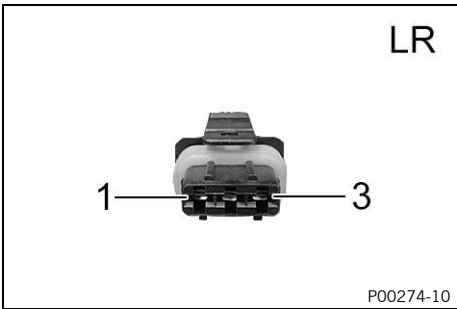
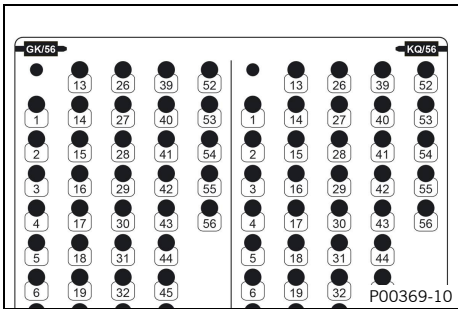
-  Measure the resistance between the specified points.
Break-out box, connector **GK** pin **52** –
Break-out box, connector **GK** pin **51**

Resistance	$\infty \Omega$

- » If the specifications have not been met:
 - Check cable from engine control unit connector **GK** (📖 p. 497) pin **52** to connector **LR** (📖 p. 504) pin **3** for a short circuit to sensor ground.
- » If the specifications have been met:
 - Check the next possible cause:
Ignition coil 1, cylinder 2 – the control wire is faulty (📖 p. 174)

Ignition coil 1, cylinder 2 – the control wire is faulty

Condition
The ignition is off.
Engine control unit is disconnected. (📖 p. 15)
The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.
Ignition coil cylinder 2 is disconnected. (📖 p. 13)



Ignition coil 1, cylinder 2 – check the control wire.

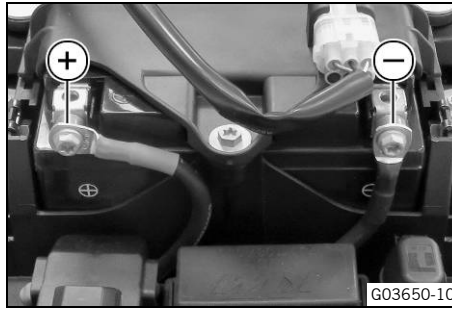
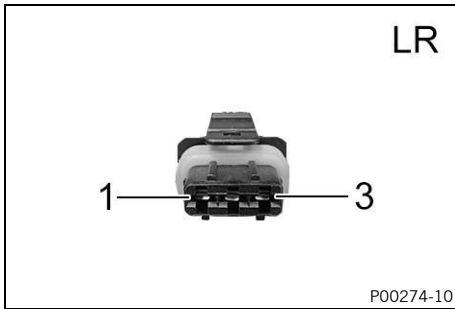
-  Measure the resistance between the specified points.
Break-out box, connector **GK** pin **52** – Ignition coil 1, cylinder 2 socket connector **LR** pin **3**

Resistance	$\leq 0.6 \Omega$

- » If the specifications have not been met:
 - Check engine control unit connector **GK** (📖 p. 497) pin **52** and connector **LR** (📖 p. 504) pin **3**.
 - Check the cable from engine control unit connector **GK** (📖 p. 497) pin **52** to connector **LR** (📖 p. 504) pin **3**.
- » If the specifications have been met:
 - Check the next possible cause:
Ignition coil 1, cylinder 2 – the power supply is faulty (📖 p. 174)

Ignition coil 1, cylinder 2 – the power supply is faulty

Condition
The ignition is on.
Engine control unit is disconnected. (📖 p. 15)
Ignition coil cylinder 2 is disconnected. (📖 p. 13)



Ignition coil 1, cylinder 2 - check the power supply.

- **V** Measure the voltage between the specified points.
Ignition coil 1, cylinder 2 socket connector **LR** pin 1 – Measuring point **Ground (-)**



Info

For the measurement, the measuring points must be subjected to a 12 V/21 W bulb.

The value must not deviate from the battery voltage "**VBAT**" by more than 1 V.

- » If the specifications have not been met:
 - Check connector **LR** (📖 p. 504) pin 1.
 - Check the cable from connector **LR** (📖 p. 504) pin 1 to the next node in the wiring harness.
- » If the specifications have been met:
 - Contact customer service.

Blink code for malfunction indicator lamp (OBD)	 Malfunction indicator lamp lights up
Display on diagnostic tool	P042000 "Engine control unit" "Catalytic converter faulty"
Error level condition	Engine control unit – catalytic converter faulty
Possible cause	Lambda sensor 3 after catalytic converter is faulty (🔧 p. 176)
Last measure if none of the documented causes leads to elimination of the fault	– Change catalytic converter.

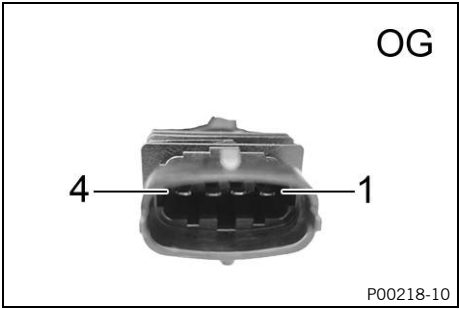
Lambda sensor 3 after catalytic converter is faulty

Condition

The engine is running at idle speed.
Lambda sensor 3 after catalytic converter is disconnected. (🔧 p. 9)
Lambda sensor is at operating temperature. (🔧 p. 9)

Lambda sensor 3 after catalytic converter – check the voltage.

- **V** Measure the voltage between the specified points.
Lambda sensor 3 after catalytic converter connector **OG** pin **3** – Lambda sensor 3 after catalytic converter connector **OG** pin **4**



Lambda sensor	
Voltage range within the control loop	0.2 ... 0.8 V

- » If the specifications have not been met:
 - Change lambda sensor 3 after catalytic converter.
- » If the specifications have been met:
 - Change catalytic converter.

Blink code for malfunction indicator lamp (OBD)	 Malfunction indicator lamp lights up
Display on diagnostic tool	P044400 "Fuel evaporation system" "Circuit fault"
Error level condition	Fuel evaporation system – circuit fault
Possible cause	Fuel vapor valve – the value is not plausible (📖 p. 177)
	Fuel vapor valve – the control wire is faulty (📖 p. 177)
	Fuel vapor valve – the power supply is faulty (📖 p. 178)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Fuel vapor valve – the value is not plausible

Condition

The ignition is off.

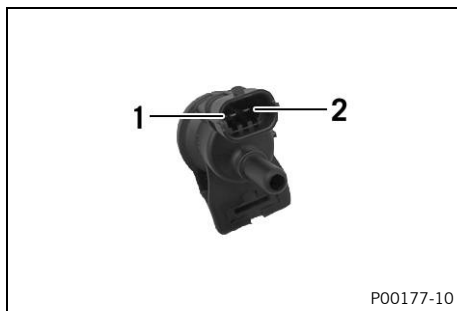
Fuel vapor valve is disconnected. (📖 p. 11)

Fuel vapor valve – check the resistance.

-  Measure the resistance between the specified points.
Fuel vapor valve pin 1 – Fuel vapor valve pin 2

Fuel vapor valve	
at: 20 °C (68 °F)	15.3 ... 18.7 Ω

- » If the specifications have not been met:
 - Change the fuel vapor valve.
- » If the specifications have been met:
 - Check the next possible cause:
Fuel vapor valve – the control wire is faulty (📖 p. 177)



Fuel vapor valve – the control wire is faulty

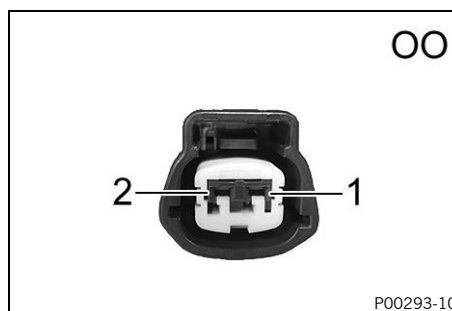
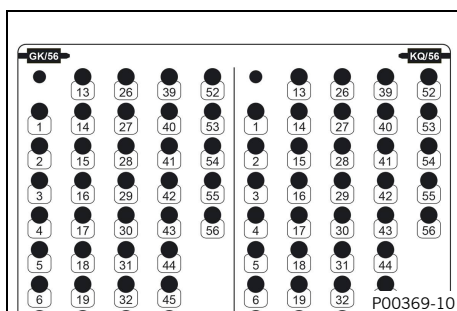
Condition

The ignition is off.

Engine control unit is disconnected. (📖 p. 15)

The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.

Fuel vapor valve is disconnected. (📖 p. 11)



Fuel vapor valve – check the control wire.

-  Measure the resistance between the specified points.
Break-out box, connector **GK** pin 20 – Purge valve connector **00** pin 2

Resistance	≤ 0.6 Ω

6 ENGINE CONTROL TROUBLE CODE

- » If the specifications have not been met:
 - Check engine control unit connector **GK** (📖 p. 497) pin **20** and connector **00** (📖 p. 507) pin **2**.
 - Check the cable from engine control unit connector **GK** (📖 p. 497) pin **20** to connector **00** (📖 p. 507) pin **2**.
- » If the specifications have been met:
 - Check the next possible cause:
Fuel vapor valve – the power supply is faulty (📖 p. 178)

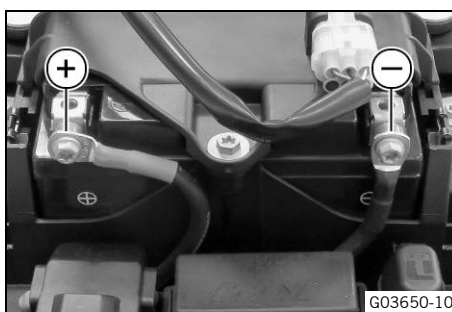
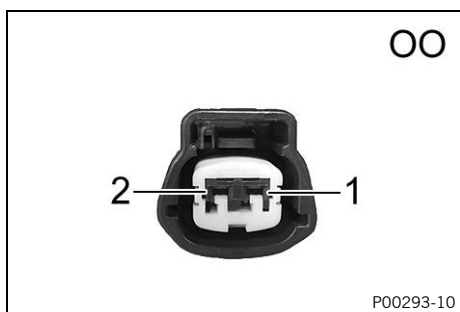
Fuel vapor valve – the power supply is faulty

Condition

The ignition is on.

Engine control unit is connected. (📖 p. 15)

Fuel vapor valve is disconnected. (📖 p. 11)



Fuel vapor valve – check the power supply.

- **V** Measure the voltage between the specified points.
Purge valve connector **00** pin **1** – Measuring point **Ground** (–)



Info

For the measurement, the measuring points must be subjected to a 12 V/21 W bulb.

The value must not deviate from the battery voltage "**VBAT**" by more than 1 V.

- » If the specifications have not been met:
 - Check connector **00** (📖 p. 507) pin **1**.
 - Check the cable from connector **00** (📖 p. 507) pin **1** to the next node in the wiring harness.
- » If the specifications have been met:
 - Contact customer service.

Blink code for malfunction indicator lamp (OBD)	 Malfunction indicator lamp lights up
Display on diagnostic tool	P045800 "Fuel evaporation system" "Signal voltage too low"
Error level condition	Fuel evaporation system – signal voltage too low
Possible cause	Fuel vapor valve – the value is not plausible (📖 p. 179)
	Fuel vapor valve – the control wire has a short circuit to ground (terminal 31) (📖 p. 179)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Fuel vapor valve – the value is not plausible

Condition

The ignition is off.

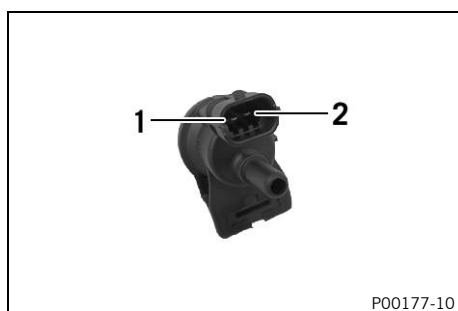
Fuel vapor valve is disconnected. (📖 p. 11)

Fuel vapor valve – check the resistance.

-  Measure the resistance between the specified points.
 Fuel vapor valve pin 1 – Fuel vapor valve pin 2

Fuel vapor valve	
at: 20 °C (68 °F)	15.3 ... 18.7 Ω

- » If the specifications have not been met:
 - Change the fuel vapor valve.
- » If the specifications have been met:
 - Check the next possible cause:
 Fuel vapor valve – the control wire has a short circuit to ground (terminal 31) (📖 p. 179)



Fuel vapor valve – the control wire has a short circuit to ground (terminal 31)

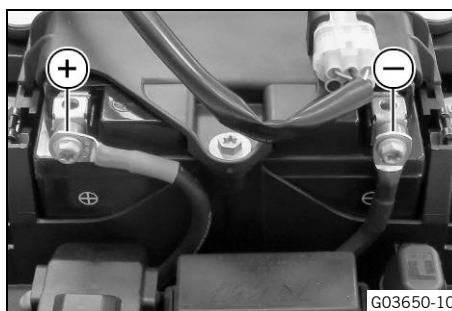
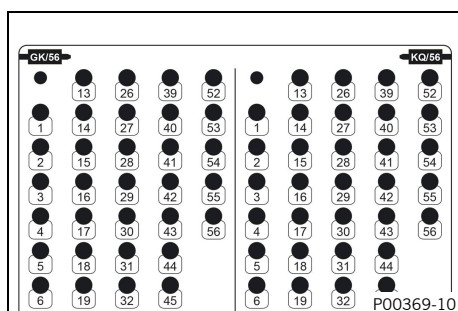
Condition

The ignition is off.

Engine control unit is disconnected. (📖 p. 15)

The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.

Fuel vapor valve is disconnected. (📖 p. 11)



Fuel vapor valve – check the control wire for a short circuit to ground (terminal 31).

-  Measure the resistance between the specified points.
 Break-out box, connector **GK** pin 20 – Measuring point **Ground** (–)

6 ENGINE CONTROL TROUBLE CODE

Resistance	$\infty \Omega$

- » If the specifications have not been met:
 - Check the cable from engine control unit connector **GK** (📖 p. 497) pin **20** to connector **00** (📖 p. 507) pin **2** for a short circuit to ground (terminal 31).
- » If the specifications have been met:
 - Contact customer service.

Blink code for malfunction indicator lamp (OBD)	 Malfunction indicator lamp lights up
Display on diagnostic tool	P045900 "Fuel evaporation system" "Signal voltage too high"
Error level condition	Fuel evaporation system – signal voltage too high
Possible cause	Fuel vapor valve – the value is not plausible (📖 p. 181)
	Fuel vapor valve – the control wire has a short circuit to plus (terminal 30) (📖 p. 181)
	Fuel vapor valve - the control wire has a short circuit to ignition plus (terminal 15) (📖 p. 182)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Fuel vapor valve – the value is not plausible

Condition

The ignition is off.

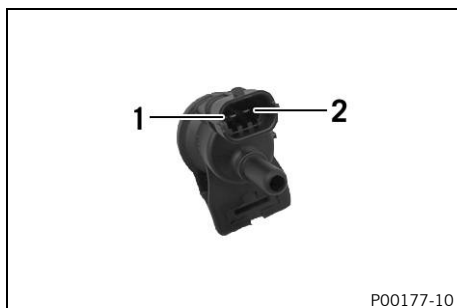
Fuel vapor valve is disconnected. (📖 p. 11)

Fuel vapor valve – check the resistance.

-  Measure the resistance between the specified points.
 Fuel vapor valve pin 1 – Fuel vapor valve pin 2

Fuel vapor valve	
at: 20 °C (68 °F)	15.3 ... 18.7 Ω

- » If the specifications have not been met:
 - Change the fuel vapor valve.
- » If the specifications have been met:
 - Check the next possible cause:
 Fuel vapor valve – the control wire has a short circuit to plus (terminal 30) (📖 p. 181)



Fuel vapor valve – the control wire has a short circuit to plus (terminal 30)

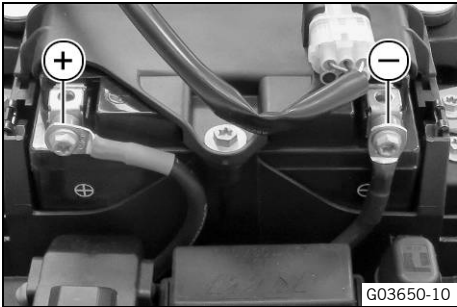
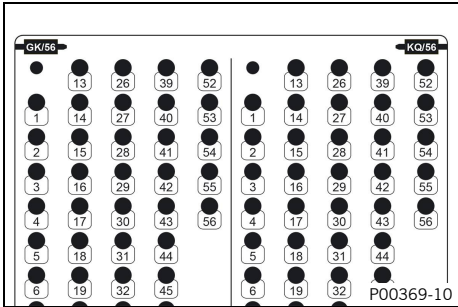
Condition

The ignition is off.

Engine control unit is disconnected. (📖 p. 15)

The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.

Fuel vapor valve is disconnected. (📖 p. 11)



Fuel vapor valve – check the control wire for a short circuit to plus (terminal 30).

- **V** Measure the voltage between the specified points.
Break-out box, connector **GK** pin **20** – Measuring point **Ground (-)**

Voltage	≤ 0.1 V

- » If the specifications have not been met:
 - Check the cable from engine control unit connector **GK** (p. 497) pin **20** to connector **00** (p. 507) pin **2** for a short circuit to plus (terminal 30).
- » If the specifications have been met:
 - Check the next possible cause:
Fuel vapor valve - the control wire has a short circuit to ignition plus (terminal 15) (p. 182)

Fuel vapor valve - the control wire has a short circuit to ignition plus (terminal 15)

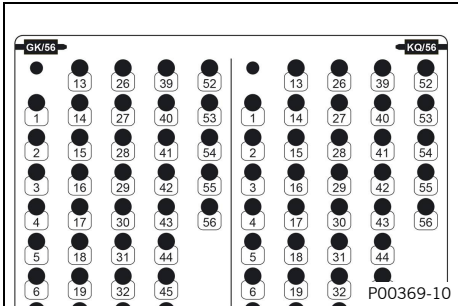
Condition
The ignition is off.
Engine control unit is disconnected. (p. 15)
The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.
Fuel vapor valve is disconnected. (p. 11)

Fuel vapor valve – check the control wire for a short circuit to ignition plus (terminal 15).

- **Ω** Measure the resistance between the specified points.
Break-out box, connector **GK** pin **20** –
Break-out box, connector **GK** pin **44**

Resistance	∞ Ω

- » If the specifications have not been met:
 - Check the cable from engine control unit connector **GK** (p. 497) pin **20** to connector **00** (p. 507) pin **2** for a short circuit to ignition plus (terminal 15).
- » If the specifications have been met:
 - Contact customer service.



Blink code for malfunction indicator lamp (OBD)	 Malfunction indicator lamp lights up
Display on diagnostic tool	P048000 "Radiator fan control" "Circuit fault"
Error level condition	Radiator fan control – circuit fault Time: ≥ 0.5 s
Function check	Checking the radiator fan relay (📖 p. 183)
Possible cause	Radiator fan relay – the control wire is faulty (📖 p. 183)
	Radiator fan relay – the power supply is faulty (📖 p. 184)
Last measure if none of the documented causes leads to elimination of the fault	– Replace the radiator fan relay.

Checking the radiator fan relay

Condition

The diagnostics tool is connected and running.

- Execute **"Engine control unit" > "Actuator test" > "Radiator fan relay"**.

Radiator fan relay	Runs and stops after 5 seconds (operating noise)

- » If the specified value is reached:
 - Clear the fault memory using the KTM diagnostics tool.
 - Take a test ride.
 - Read out the trouble code memory using the KTM diagnostics tool.
 - » If the specification is not reached:
 - Check the next possible cause:
Radiator fan relay – the control wire is faulty (📖 p. 183)
 - Check the next possible cause:
Radiator fan relay – the power supply is faulty (📖 p. 184)
- Last measure if none of the documented causes leads to elimination of the fault
- Contact customer service.

Radiator fan relay – the control wire is faulty

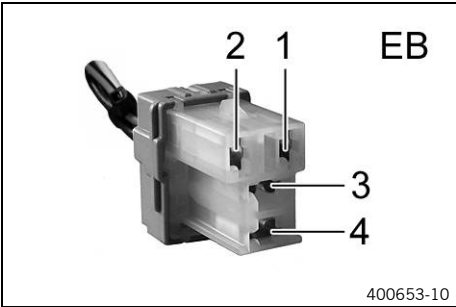
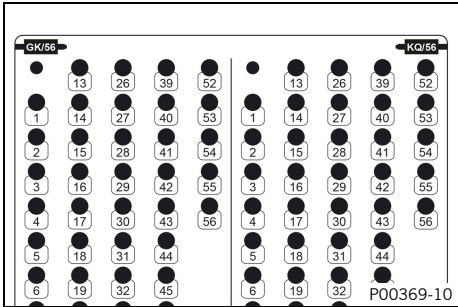
Condition

The ignition is off.

Engine control unit is disconnected. (📖 p. 15)

The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.

The radiator fan relay is disconnected. (📖 p. 495)



Radiator fan relay – check the control wire.

- Measure the resistance between the specified points.
Break-out box, connector **KQ** pin **11** – Radiator fan relay, connector **EB** pin **2**

Resistance	≤ 0.6 Ω

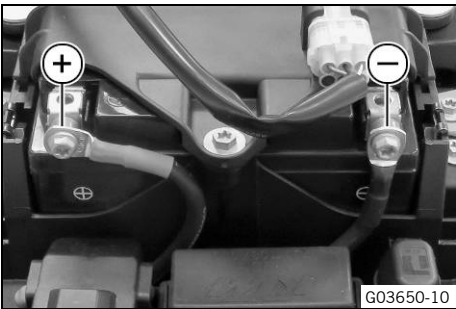
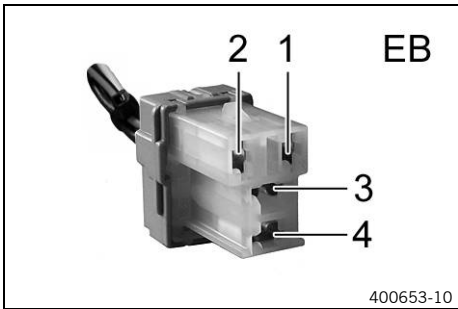
- » If the specifications have not been met:
 - Check engine control unit connector **KQ** (p. 502) pin **11** and connector **EB** (p. 495) pin **2**.
 - Check the cable from engine control unit connector **KQ** (p. 502) pin **11** to connector **EB** (p. 495) pin **2**.
- » If the specifications have been met:
 - Check the next possible cause:
Radiator fan relay – the power supply is faulty (p. 184)

Radiator fan relay – the power supply is faulty

Condition

The ignition is on.

The radiator fan relay is disconnected. (p. 495)



Radiator fan relay – check the power supply.

- Measure the voltage between the specified points.
Radiator fan relay, connector **EB** pin **1** – Measuring point **Ground (-)**

Info

For the measurement, the measuring points must be subjected to a 12 V/21 W bulb load.

The value must not deviate from the battery voltage " VBAT " by more than 1 V.

- » If the specifications have not been met:
 - Check the wire from connector **EB** (p. 495) pin **1** according to the wiring diagram.
- » If the specifications have been met:
 - Contact customer service.

Blink code for malfunction indicator lamp (OBD)	 Malfunction indicator lamp lights up
Display on diagnostic tool	P050000 "Speed signal" "Wheel speed sensor A"
Error level condition	Speed signal – wheel speed sensor A
Possible cause	Error in ABS control unit (see p. 185)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

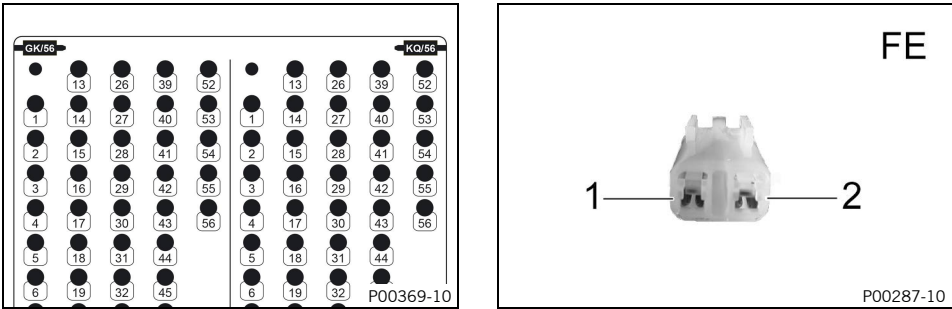
Error in ABS control unit

- Connect the diagnostics tool and start it.
 - Read out the fault memory in the ABS control unit.
- Fault memory is empty.
- » If the specifications have not been met:
 - Work through the fault memory in ABS control unit.
 - » If the specifications have been met:
 - Contact customer service.

Blink code for malfunction indicator lamp (OBD)	 Malfunction indicator lamp lights up
Display on diagnostic tool	P050400 "Engine control unit" "Plausibility check of both brake switches compared to ABS brake pressure in front"
Error level condition	Engine control unit – plausibility check of both brake switches compared to ABS brake pressure in front
Possible cause	Front brake light switch – signal wire is faulty (📖 p. 186)
Last measure if none of the documented causes leads to elimination of the fault	– Check the front brake light switch.

Front brake light switch – signal wire is faulty

Condition
The ignition is off.
Engine control unit is disconnected. (📖 p. 15)
The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.
The front brake light switch is disconnected.
The rear brake light switch is disconnected.
The rear tail light is disconnected.



Front brake light switch – check the signal wire.
–  Measure the resistance between the specified points.
Break-out box, connector **GK** pin **33** – Front brake light switch socket connector **FE** pin **2**

Resistance	≤ 0.6 Ω

- » If the specifications have not been met:
 - Check engine control unit connector **GK** (📖 p. 497) pin **33** and connector **FE** (📖 p. 496) pin **2**.
 - Check the cable from engine control unit connector **GK** (📖 p. 497) pin **33** to connector **FE** (📖 p. 496) pin **2**.
- » If the specifications have been met:
 - Check the front brake light switch.

Display on diagnostic tool	P051300 "Engine control unit" "Incorrect immobilizer key from the immobilizer control unit"
Error level condition	Incorrect immobilizer control unit installed
Function check	Programming the immobilizer control unit (📖 p. 187)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Programming the immobilizer control unit

- Connect the diagnostics tool and start it.
- Execute "Immobilizer" > "Functions" > "Immobilizer pairing".



Info

The instructions in the diagnostics tool must be followed precisely.

- » After successful execution:
 - Clear the fault memory using the KTM diagnostics tool.

Last measure if none of the documented causes leads to elimination of the fault

- Contact customer service.

Blink code for malfunction indicator lamp (OBD)	 Malfunction indicator lamp lights up
Display on diagnostic tool	P056300 "System voltage" "too high"
Error level condition	Engine control unit power supply: $\geq 15.98\text{ V}$ Time: $\geq 0.1\text{ s}$
Function check	Checking the charging voltage ( p. 188)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

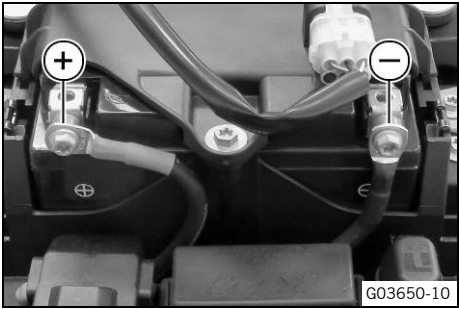
Checking the charging voltage

Condition

The 12-V battery must be fully functional and completely charged.

- Remove the battery cover.
- Take off positive terminal cover.
- Start the motorcycle to check the function.

-  Measure the voltage between the specified points.
Measuring point **plus (+)** – Measuring point **Ground (–)**



Charging voltage	
5,000 rpm	13.5 ... 15.0 V

- » If the displayed value is greater than the specified value:
 - Change voltage regulator.
- Mount the positive terminal cover.
- Install the battery cover.

Last measure if none of the documented causes leads to elimination of the fault

- Contact customer service.

Blink code for malfunction indicator lamp (OBD)	 Malfunction indicator lamp lights up
Display on diagnostic tool	P060600 "Engine control unit" "ECM/PCM processor – monitoring of injection 1"
Error level condition	Engine control unit – ECM/PCM processor – monitoring of injection 1
Possible cause	Engine control unit error (📖 p. 189)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Engine control unit error

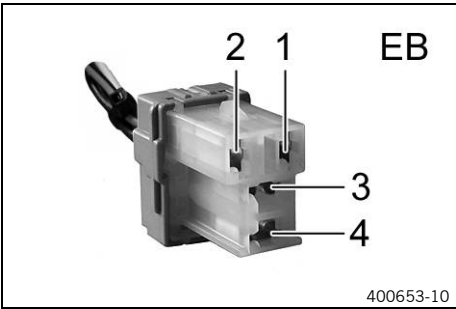
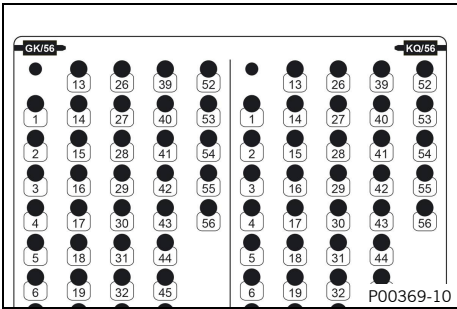
- Connect the diagnostics tool and start it.
 - Read out fault memory in the engine control unit.
- Fault memory is empty.
- » If the specifications have not been met:
 - Work through the fault memory in the engine control unit.
 - » If the specifications have been met:
 - Contact customer service.

Blink code for malfunction indicator lamp (OBD)	 Malfunction indicator lamp lights up
Display on diagnostic tool	P061500 "Starter relay" "Circuit fault"
Error level condition	Starter relay – circuit fault Time: ≥ 0.5 s
Possible cause	Starter relay – the control wire is faulty. (📖 p. 190) Starter relay – the power supply is faulty (📖 p. 190)
Last measure if none of the documented causes leads to elimination of the fault	– Change the starter relay.

Starter relay – the control wire is faulty.

Condition

The ignition is off.
Engine control unit is disconnected. (📖 p. 15)
The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.
Starter relay disconnected. (📖 p. 495)



Starter relay – check the control wire.

-  Measure the resistance between the specified points.
Break-out box, connector **GK** pin **7** – Starter relay socket connector **EB** pin **2**

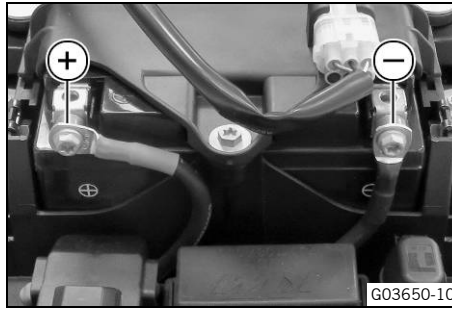
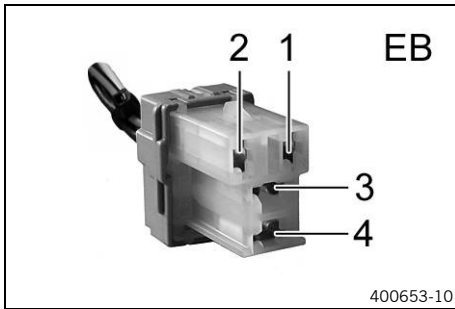
Resistance	≤ 0.6 Ω

- » If the specifications have not been met:
 - Check engine control unit connector **GK** (📖 p. 497) pin **7** and connector **EB** (📖 p. 495) pin **2**.
 - Check the cable from engine control unit connector **GK** (📖 p. 497) pin **7** to connector **EB** (📖 p. 495) pin **2**.
- » If the specifications have been met:
 - Check the next possible cause:
Starter relay – the power supply is faulty (📖 p. 190)

Starter relay – the power supply is faulty

Condition

The ignition is on.
Starter relay disconnected. (📖 p. 495)



Starter relay – check the power supply.

- **V** Measure the voltage between the specified points.
Starter relay socket connector **EB** pin **1** – Measuring point **Ground (–)**



Info

For the measurement, the measuring points must be subjected to a 12 V/21 W bulb.

The value must not deviate from the battery voltage by more than 1 V.

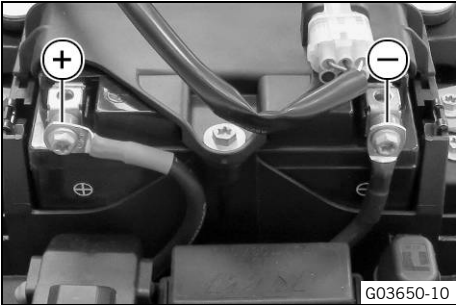
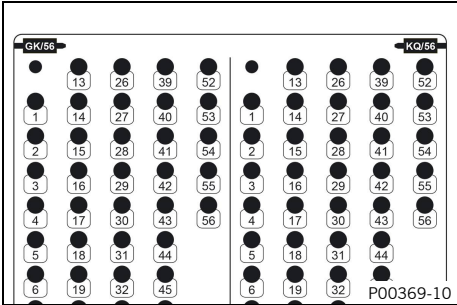
- » If the specifications have not been met:
 - Check the wire from connector **EB** (📖 p. 495) pin **1** according to the wiring diagram.
- » If the specifications have been met:
 - Change the starter relay.

Blink code for malfunction indicator lamp (OBD)	 Malfunction indicator lamp lights up
Display on diagnostic tool	P061600 "Starter relay" "Voltage too low"
Error level condition	Starter relay – voltage too low Time: ≥ 0.5 s
Possible cause	Starter relay – the control wire has a short circuit to ground (terminal 31) ( p. 192)
Last measure if none of the documented causes leads to elimination of the fault	– Change the starter relay.

Starter relay – the control wire has a short circuit to ground (terminal 31)

Condition

The ignition is off.
Engine control unit is disconnected. ( p. 15)
The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.
Starter relay disconnected. ( p. 495)



Starter relay – check the control wire for a short circuit to ground (terminal 31).

-  Measure the resistance between the specified points.
Break-out box, connector **GK** pin **7** – Measuring point **Ground (–)**

Resistance	$\infty \Omega$

- » If the specifications have not been met:
 - Check the cable from engine control unit connector **GK** ( p. 497) pin **7** to connector **EB** ( p. 495) pin **2** for a short circuit to ground (terminal 31).
- » If the specifications have been met:
 - Change the starter relay.

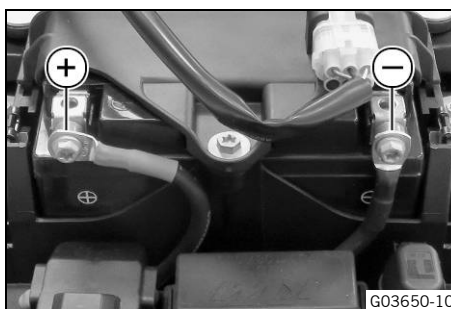
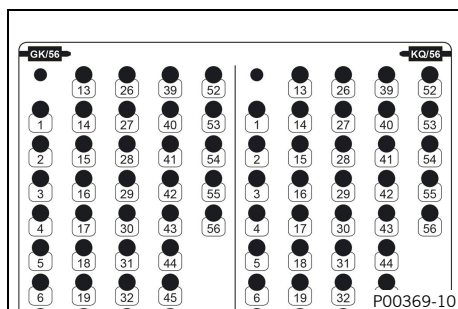
Blink code for malfunction indicator lamp (OBD)	 Malfunction indicator lamp lights up
Display on diagnostic tool	P061700 "Starter relay" "Voltage too high"
Error level condition	Starter relay – voltage too high Time: ≥ 0.5 s
Possible cause	Starter relay – the control wire has a short circuit to plus (terminal 30) (📖 p. 193) Starter relay – the control wire has a short circuit to ignition plus (terminal 15) (📖 p. 193)
Last measure if none of the documented causes leads to elimination of the fault	– Change the starter relay.

Starter relay – the control wire has a short circuit to plus (terminal 30)

Condition

The ignition is off.

The break-out box is connected to the engine control unit and the wiring harness with adapter **00029095014**.



Starter relay – check the control wire for a short circuit to plus (terminal 30).

- **V** Measure the voltage between the specified points.
Break-out box, connector **GK** pin **7** – Measuring point **Ground** (–)

Voltage	≤ 0.1 V

» If the specifications have not been met:

- Check the cable from engine control unit connector **GK** (📖 p. 497) pin **7** to connector **EB** (📖 p. 495) pin **2** for a short circuit to plus (terminal 30).

» If the specifications have been met:

- Check the next possible cause:
Starter relay – the control wire has a short circuit to ignition plus (terminal 15) (📖 p. 193)

Starter relay – the control wire has a short circuit to ignition plus (terminal 15)

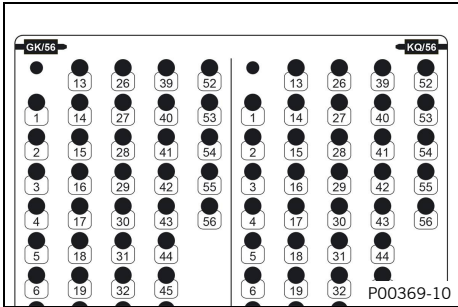
Condition

The ignition is off.

Engine control unit is disconnected. (📖 p. 15)

The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.

Starter relay disconnected. (📖 p. 495)



Starter relay – check the control wire for a short circuit to ignition plus (terminal 15).

-  Measure the resistance between the specified points.
Break-out box, connector **GK** pin **7** –
Break-out box, connector **GK** pin **44**

Resistance	$\infty \Omega$

- » If the specifications have not been met:
 - Check the cable from engine control unit connector **GK** (p. 497) pin **7** to connector **EB** (p. 495) pin **2** for a short circuit to ignition plus (terminal 15).
- » If the specifications have been met:
 - Change the starter relay.

Blink code for malfunction indicator lamp (OBD)	 Malfunction indicator lamp lights up
Display on diagnostic tool	P062700 "Fuel pump" "Circuit fault"
Error level condition	Fuel pump – circuit fault Time: ≥ 0.5 s
Function check	Checking the fuel pump relay (📖 p. 195)
Possible cause	Fuel pump – the control wire is faulty (📖 p. 195)
	Fuel pump - the power supply is faulty (📖 p. 196)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Checking the fuel pump relay

Condition

The diagnostics tool is connected and running.

- Execute **"Engine control unit" > "Actuator test" > "Fuel pump controller"**.

Fuel pump	Runs and stops after 5 seconds (operating noise)

- » If the specified value is reached:
 - Clear the fault memory using the KTM diagnostics tool.
 - Take a test ride.
 - Read out the trouble code memory using the KTM diagnostics tool.
- » If the specification is not reached:
 - Check the next possible cause:
Fuel pump – the control wire is faulty (📖 p. 195)
 - Check the next possible cause:
Fuel pump - the power supply is faulty (📖 p. 196)

Fuel pump – the control wire is faulty

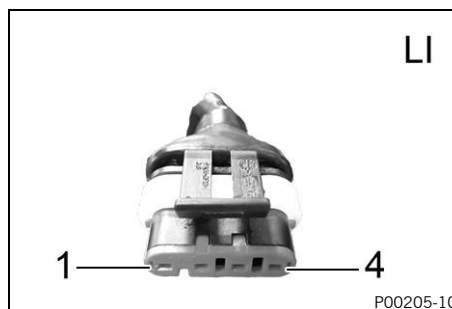
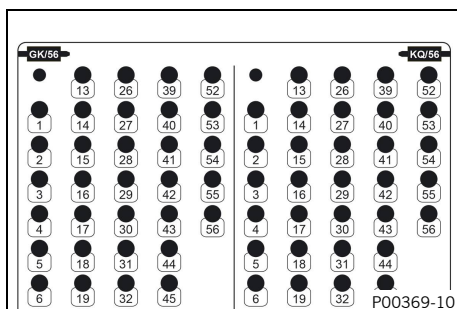
Condition

The ignition is off.

Engine control unit is disconnected. (📖 p. 15)

The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.

The fuel pump is disconnected. (📖 p. 11)



Fuel pump – check the control wire.

-  Measure the resistance between the specified points.
Break-out box, connector **KQ** pin **50** – Fuel pump, connector **LI** pin **2**

6 ENGINE CONTROL TROUBLE CODE

Resistance	$\leq 0.6 \Omega$

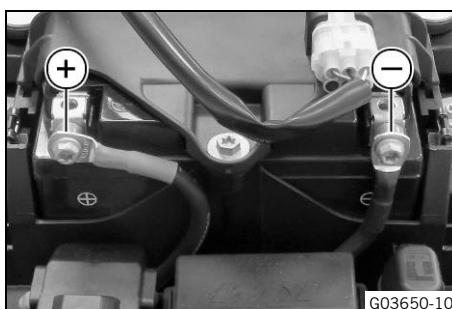
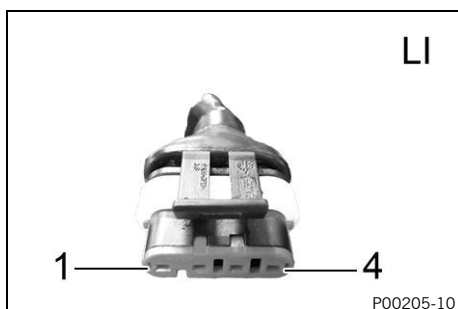
- » If the specifications have not been met:
 - Check engine control unit connector **KQ** (📖 p. 502) pin **50** and connector **LI** (📖 p. 503) pin **1**.
 - Check the cable from engine control unit connector **KQ** (📖 p. 502) pin **50** to connector **LI** (📖 p. 503) pin **1**.
- » If the specifications have been met:
 - Check the next possible cause:
Fuel pump - the power supply is faulty (📖 p. 196)

Fuel pump - the power supply is faulty

Condition

The ignition is on.

The fuel pump is disconnected. (📖 p. 11)



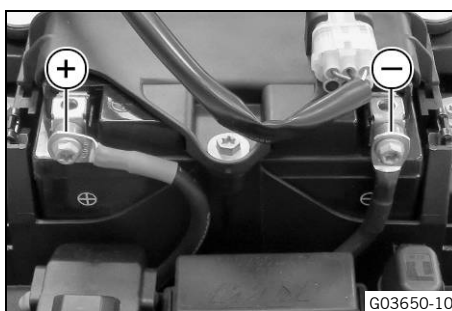
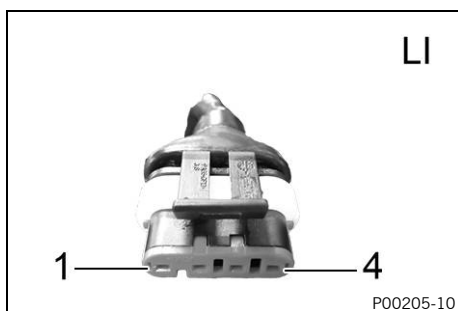
Fuel pump - check the system voltage.

- **V** Measure the voltage between the specified points.
Fuel pump, connector **LI** pin **1** – Measuring point **Ground (-)**



Info

For the measurement, the measuring points must be subjected to a 12 V/21 W bulb.



Fuel pump – check ground supply.

- **V** Measure the voltage between the specified points.
Fuel pump, connector **LI** pin **2** – Measuring point **plus (+)**



Info

For the measurement, the measuring points must be subjected to a 12 V/21 W bulb.

The value must not deviate from the battery voltage by more than 1 V.

- » If the specifications have not been met:
 - Check the wire from connector **LI** (📖 p. 503) pin **1** according to the wiring diagram.
 - Check the wire from connector **LI** (📖 p. 503) pin **2** according to the wiring diagram.

- » If the specifications have been met:
 - Contact customer service.

6 ENGINE CONTROL TROUBLE CODE

Blink code for malfunction indicator lamp (OBD)	 Malfunction indicator lamp lights up
Display on diagnostic tool	P062800 "Fuel pump" "Voltage too low"
Error level condition	Fuel pump – voltage too low Time: ≥ 0.5 s
Function check	Checking the fuel pump relay ( p. 198)
Possible cause	Fuel pump – the control wire has a short circuit to ground (terminal 31) ( p. 198)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Checking the fuel pump relay

Condition

The diagnostics tool is connected and running.

- Execute **"Engine control unit" > "Actuator test" > "Fuel pump controller"**.

Fuel pump	Runs and stops after 5 seconds (operating noise)

- » If the specified value is reached:
 - Clear the fault memory using the KTM diagnostics tool.
 - Take a test ride.
 - Read out the trouble code memory using the KTM diagnostics tool.
 - » If the specification is not reached:
 - Check the next possible cause:
Fuel pump – the control wire has a short circuit to ground (terminal 31) ( p. 198)
- Last measure if none of the documented causes leads to elimination of the fault
- Change the fuel pump relay.

Fuel pump – the control wire has a short circuit to ground (terminal 31)

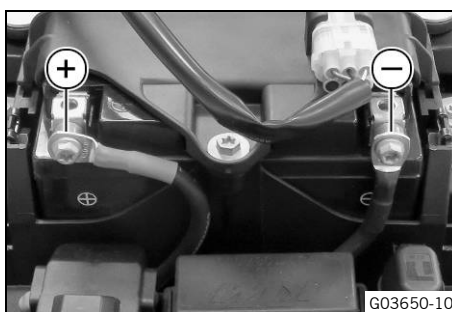
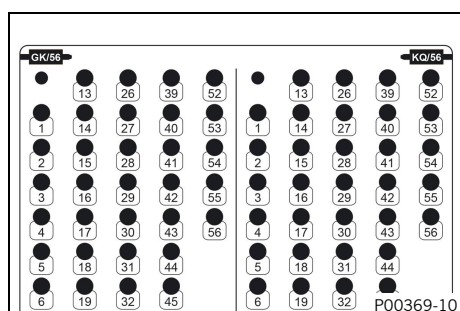
Condition

The ignition is off.

Engine control unit is disconnected. ( p. 15)

The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.

The fuel pump is disconnected. ( p. 11)



Fuel pump – check the control wire for a short circuit to ground (terminal 31).

-  Measure the resistance between the specified points.
Break-out box, connector **KQ** pin **50** – Measuring point **Ground** (–)

Resistance	$\infty \Omega$

- » If the specifications have not been met:
 - Check the cable from engine control unit connector **KQ** (🔌 p. 502) pin **50** to connector **LI** (🔌 p. 503) pin **1** for a short circuit to ground (terminal 31).
- » If the specifications have been met:
 - Change the fuel pump relay.

6 ENGINE CONTROL TROUBLE CODE

Blink code for malfunction indicator lamp (OBD)	 Malfunction indicator lamp lights up
Display on diagnostic tool	P062900 "Fuel pump" "Voltage too high"
Error level condition	Fuel pump – voltage too high Time: ≥ 0.5 s
Function check	Checking the fuel pump relay (📖 p. 200)
Possible cause	Fuel pump – the control wire has a short circuit to plus (terminal 30) (📖 p. 200)
	Fuel pump – the control wire has a short circuit to ignition plus (terminal 15) (📖 p. 201)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Checking the fuel pump relay

Condition

The diagnostics tool is connected and running.

- Execute "Engine control unit" > "Actuator test" > "Fuel pump controller".

Fuel pump	Runs and stops after 5 seconds (operating noise)

- » If the specified value is reached:
 - Clear the fault memory using the KTM diagnostics tool.
 - Take a test ride.
 - Read out the trouble code memory using the KTM diagnostics tool.
 - » If the specification is not reached:
 - Check the next possible cause:
Fuel pump – the control wire has a short circuit to plus (terminal 30) (📖 p. 200)
 - Check the next possible cause:
Fuel pump – the control wire has a short circuit to ignition plus (terminal 15) (📖 p. 201)
- Last measure if none of the documented causes leads to elimination of the fault
- Contact customer service.

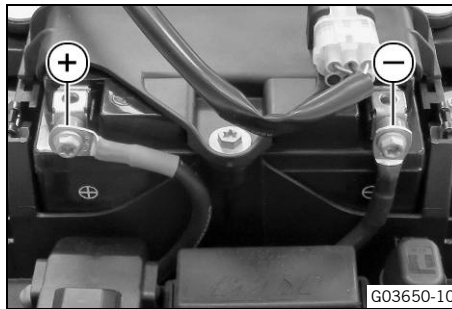
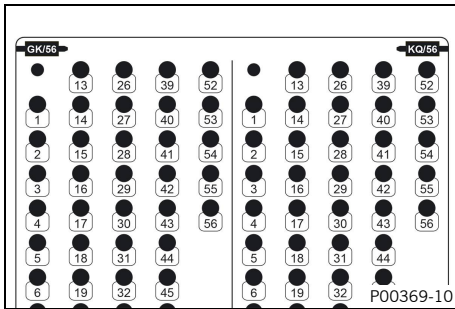
Fuel pump – the control wire has a short circuit to plus (terminal 30)

Condition

The ignition is off.

The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.

The fuel pump is disconnected. (📖 p. 11)



Fuel pump – check the control wire for a short circuit to plus (terminal 30).

- **V** Measure the voltage between the specified points.
Break-out box, connector **KQ** pin **50** – Measuring point **Ground (-)**

Voltage	$\leq 0.1 \text{ V}$

- » If the specifications have not been met:
 - Check the cable from engine control unit connector **KQ** (p. 502) pin **50** to connector **LI** (p. 503) pin **1** for a short circuit to plus (terminal 30).
- » If the specifications have been met:
 - Check the next possible cause:
Fuel pump – the control wire has a short circuit to ignition plus (terminal 15) (p. 201)

Fuel pump – the control wire has a short circuit to ignition plus (terminal 15)

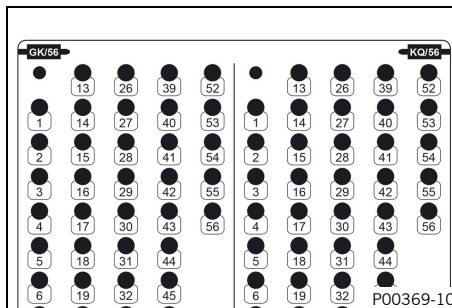
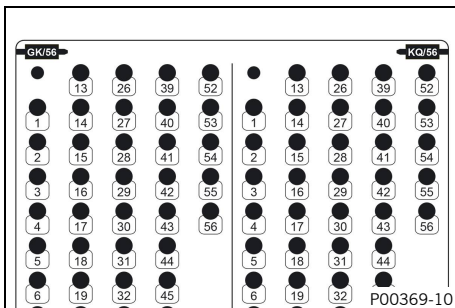
Condition

The ignition is off.

Engine control unit is disconnected. (p. 15)

The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.

The fuel pump is disconnected. (p. 11)



Fuel pump – check the control wire for a short circuit to ignition plus (terminal 15).

- **Ω** Measure the resistance between the specified points.
Break-out box, connector **KQ** pin **50** – Break-out box, connector **GK** pin **44**

Resistance	$\infty \Omega$

- » If the specifications have not been met:
 - Check the cable from engine control unit connector **KQ** (p. 502) pin **50** to connector **LI** (p. 503) pin **1** for a short circuit to ignition plus (terminal 15).
- » If the specifications have been met:
 - Contact customer service.

Blink code for malfunction indicator lamp (OBD)	 Malfunction indicator lamp lights up
Display on diagnostic tool	P063300 "Engine control unit" "Ignition key not programmed"
Error level condition	Engine control unit – ignition key not flashed
Function check	Programming the immobilizer control unit (📖 p. 202)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Programming the immobilizer control unit

- Connect the diagnostics tool and start it.
- Execute **"Immobilizer" > "Functions" > "Immobilizer pairing"**.



Info

The instructions in the diagnostics tool must be followed precisely.

- » After successful execution:
 - Clear the fault memory using the KTM diagnostics tool.

Last measure if none of the documented causes leads to elimination of the fault

- Contact customer service.

Blink code for malfunction indicator lamp (OBD)	 Malfunction indicator lamp lights up
Display on diagnostic tool	P064100 "Sensor reference voltage A" "Electric circuit open"
Error level condition	Electric circuit open
Possible cause	Throttle valve position sensor circuit A – the power supply is faulty (📖 p. 203)
	Sensors A power supply 1 has a short circuit to ground (terminal 31) (📖 p. 203)
	Sensors A power supply 1 has a short circuit to plus (terminal 30) (📖 p. 204)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

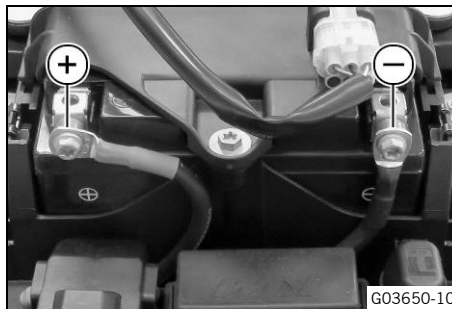
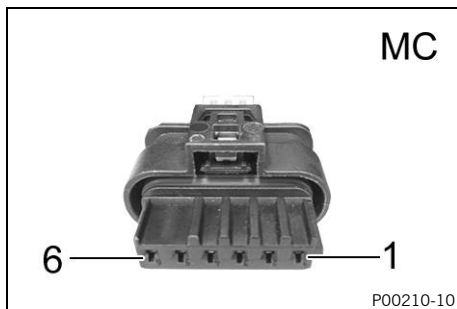
Throttle valve position sensor circuit A – the power supply is faulty

Condition

The ignition is on.

Engine control unit is connected. (📖 p. 15)

The throttle valve position sensor is connected. (📖 p. 20)



Throttle valve position sensor circuit A – check the power supply.

- **V** Measure the voltage between the specified points.
Throttle valve position sensor connector **MC** pin **6** – Measuring point **Ground (–)**

Voltage	4.8 ... 5.2 V

- » If the specifications have not been met:
 - Check the cable from engine control unit connector **GK** (📖 p. 497) pin **10** to connector **MC** (📖 p. 505) pin **6**.
- » If the specifications have been met:
 - Check the next possible cause:
Sensors A power supply 1 has a short circuit to ground (terminal 31) (📖 p. 203)

Sensors A power supply 1 has a short circuit to ground (terminal 31)

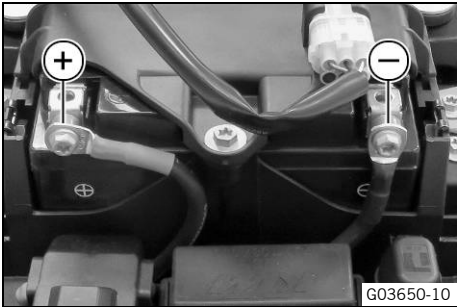
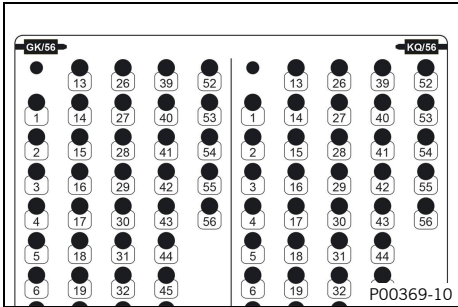
Condition

The ignition is off.

Engine control unit is disconnected. (📖 p. 15)

The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.

The throttle valve position sensor is disconnected. (📖 p. 20)



Check sensors A power supply 1 for a short circuit to ground (terminal 31).

- **V** Measure the voltage between the specified points.
Break-out box, connector **GK** pin **10** – Measuring point **plus (+)**

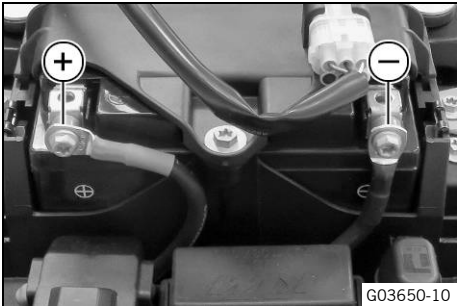
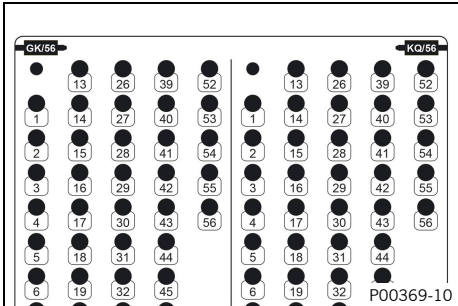
Voltage	≤ 0.1 V

- » If the specifications have not been met:
 - Check the cable from engine control unit connector **GK** (p. 497) pin **10** to connector **MC** (p. 505) pin **6** for a short circuit to ground (terminal 31).
- » If the specifications have been met:
 - Check the next possible cause:
Sensors A power supply 1 has a short circuit to plus (terminal 30) (p. 204)

Sensors A power supply 1 has a short circuit to plus (terminal 30)

Condition

The ignition is off.
Engine control unit is disconnected. (p. 15)
The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.
The throttle valve position sensor is disconnected. (p. 20)



Check sensors A power supply 1 for a short circuit to plus (terminal 30).

- **V** Measure the voltage between the specified points.
Break-out box, connector **GK** pin **10** – Measuring point **Ground (-)**

Voltage	≤ 0.1 V

- » If the specifications have not been met:
 - Check the cable from engine control unit connector **GK** (p. 497) pin **10** to connector **MC** (p. 505) pin **6** for a short circuit to plus (terminal 30).
- » If the specifications have been met:
 - Contact customer service.

Blink code for malfunction indicator lamp (OBD)	 Malfunction indicator lamp lights up
Display on diagnostic tool	P065100 "Sensor reference voltage B" "Electric circuit open"
Error level condition	Electric circuit open
Possible cause	Accelerator position sensor circuit E – power supply is faulty (📖 p. 205)
	Sensors B power supply 1 has a short circuit to ground (terminal 31) (📖 p. 205)
	Sensors B power supply 1 has a short circuit to plus (terminal 30) (📖 p. 206)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

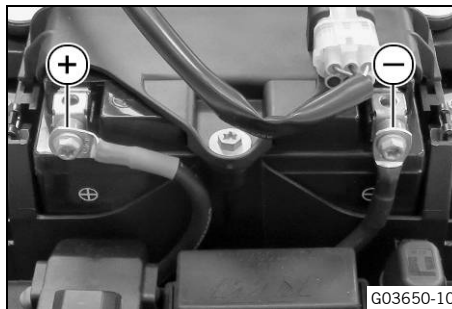
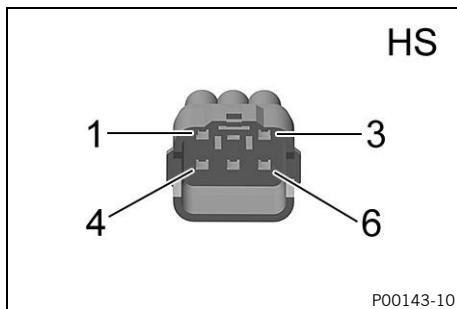
Accelerator position sensor circuit E – power supply is faulty

Condition

The ignition is on.

Engine control unit is connected. (📖 p. 15)

The accelerator position sensor is connected. (📖 p. 19)



Accelerator position sensor, circuit E - check the power supply.

- **V** Measure the voltage between the specified points.
 Accelerator position sensor connector **HS** pin **3** – Measuring point **Ground (–)**

Voltage	4.8 ... 5.2 V

- » If the specifications have not been met:
 - Check connector **HS** (📖 p. 499) pin **3** and engine control unit connector **GK** (📖 p. 497) pin **11**.
 - Check the cable from connector **HS** (📖 p. 499) pin **3** to engine control unit connector **GK** (📖 p. 497) pin **11**.
- » If the specifications have been met:
 - Check the next possible cause:
 Sensors B power supply 1 has a short circuit to ground (terminal 31) (📖 p. 205)

Sensors B power supply 1 has a short circuit to ground (terminal 31)

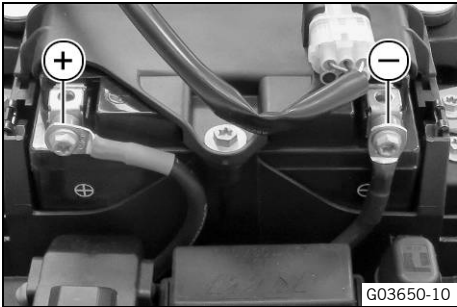
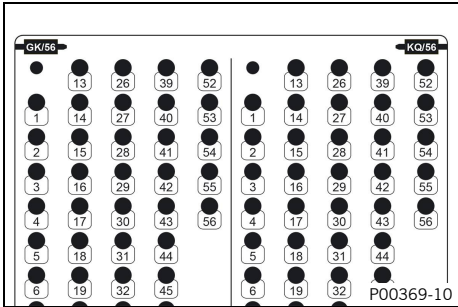
Condition

The ignition is off.

Engine control unit is disconnected. (📖 p. 15)

The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.

The accelerator position sensor is disconnected. (📖 p. 19)



Check sensors B power supply 1 for a short circuit to ground (terminal 31).

- **V** Measure the voltage between the specified points.
Break-out box, connector **GK** pin **11** – Measuring point **plus (+)**

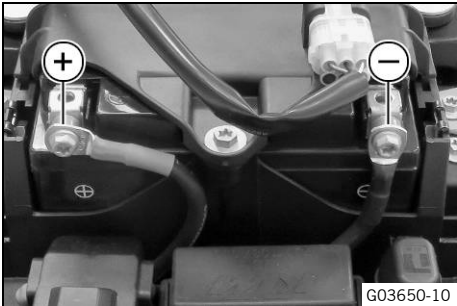
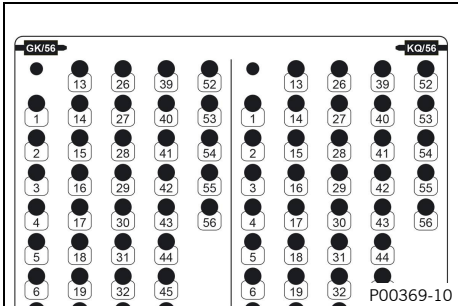
Voltage	≤ 0.1 V

- » If the specifications have not been met:
 - Check the cable from engine control unit connector **GK** (p. 497) pin **11** to connector **HS** (p. 499) pin **3** for a short circuit to ground (terminal 31).
- » If the specifications have been met:
 - Check the next possible cause:
Sensors B power supply 1 has a short circuit to plus (terminal 30) (p. 206)

Sensors B power supply 1 has a short circuit to plus (terminal 30)

Condition

The ignition is off.
Engine control unit is disconnected. (p. 15)
The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.
The accelerator position sensor is disconnected. (p. 19)



Check sensors B power supply 1 for a short circuit to plus (terminal 30).

- **V** Measure the voltage between the specified points.
Break-out box, connector **GK** pin **11** – Measuring point **Ground (-)**

Voltage	≤ 0.1 V

- » If the specifications have not been met:
 - Check the cable from engine control unit connector **GK** (p. 497) pin **11** to connector **HS** (p. 499) pin **3** for a short circuit to plus (terminal 30).
- » If the specifications have been met:
 - Contact customer service.

Blink code for malfunction indicator lamp (OBD)	 Malfunction indicator lamp lights up
Display on diagnostic tool	P069100 "Radiator fan control" "Signal voltage too low"
Error level condition	Radiator fan control – signal voltage too low Time: ≥ 0.5 s
Function check	Checking the radiator fan relay (📖 p. 207)
Possible cause	Radiator fan relay – the control wire has a short circuit to ground (terminal 31) (📖 p. 207)
Last measure if none of the documented causes leads to elimination of the fault	– Replace the radiator fan relay.

Checking the radiator fan relay

Condition

The diagnostics tool is connected and running.

- Execute **"Engine control unit" > "Actuator test" > "Radiator fan relay"**.

Radiator fan relay	Runs and stops after 5 seconds (operating noise)

- » If the specified value is reached:
 - Clear the fault memory using the KTM diagnostics tool.
 - Take a test ride.
 - Read out the trouble code memory using the KTM diagnostics tool.
 - » If the specification is not reached:
 - Check the next possible cause:
Radiator fan relay – the control wire has a short circuit to ground (terminal 31) (📖 p. 207)
- Last measure if none of the documented causes leads to elimination of the fault
- Contact customer service.

Radiator fan relay – the control wire has a short circuit to ground (terminal 31)

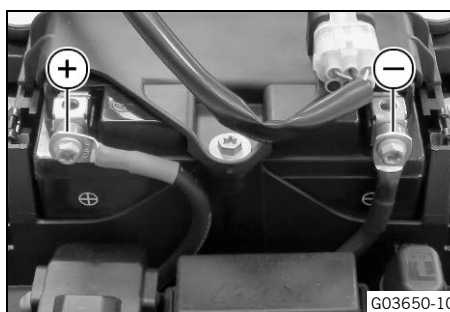
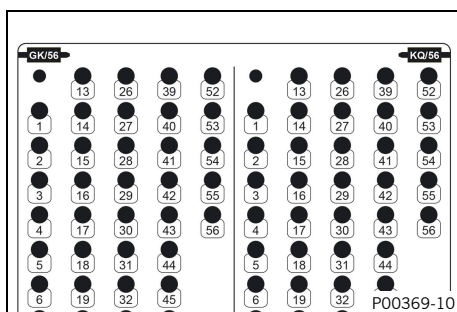
Condition

The ignition is off.

Engine control unit is disconnected. (📖 p. 15)

The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.

The radiator fan relay is disconnected. (📖 p. 495)



Radiator fan relay – check the control wire for a short circuit to ground (terminal 31).

-  Measure the resistance between the specified points.
Break-out box, connector **KQ** pin **11** – Measuring point **Ground (-)**

6 ENGINE CONTROL TROUBLE CODE

Resistance	$\infty \Omega$

- » If the specifications have not been met:
 - Check the cable from engine control unit connector **KQ** (📖 p. 502) pin **11** to connector **EB** (📖 p. 495) pin **2** for a short circuit to ground (terminal 31).
- » If the specifications have been met:
 - Contact customer service.

Blink code for malfunction indicator lamp (OBD)	 Malfunction indicator lamp lights up
Display on diagnostic tool	P069200 "Radiator fan control" "Signal voltage too high"
Error level condition	Radiator fan control – signal voltage too high Time: ≥ 0.5 s
Function check	Checking the radiator fan relay (📖 p. 209)
Possible cause	Radiator fan relay – control wire has a short circuit to plus (terminal 30) (📖 p. 209)
	Radiator fan relay – the control wire has a short circuit to ignition plus (terminal 15) (📖 p. 210)
Last measure if none of the documented causes leads to elimination of the fault	– Replace the radiator fan relay.

Checking the radiator fan relay

Condition

The diagnostics tool is connected and running.

- Execute **"Engine control unit" > "Actuator test" > "Radiator fan relay"**.

Radiator fan relay	Runs and stops after 5 seconds (operating noise)

- » If the specified value is reached:
 - Clear the fault memory using the KTM diagnostics tool.
 - Take a test ride.
 - Read out the trouble code memory using the KTM diagnostics tool.
 - » If the specification is not reached:
 - Check the next possible cause:
Radiator fan relay – control wire has a short circuit to plus (terminal 30) (📖 p. 209)
 - Check the next possible cause:
Radiator fan relay – the control wire has a short circuit to ignition plus (terminal 15) (📖 p. 210)
- Last measure if none of the documented causes leads to elimination of the fault
- Contact customer service.

Radiator fan relay – control wire has a short circuit to plus (terminal 30)

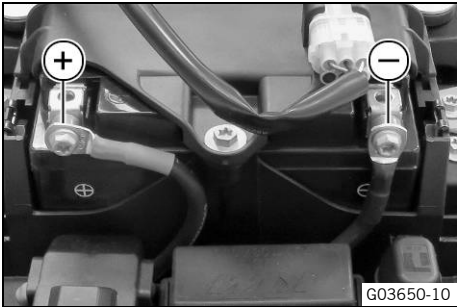
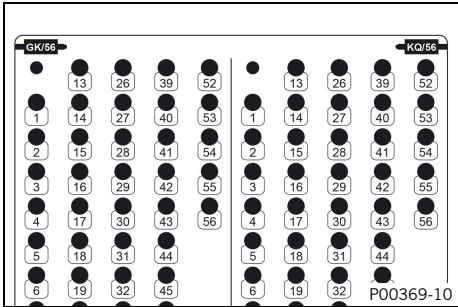
Condition

The ignition is off.

Engine control unit is disconnected. (📖 p. 15)

The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.

The radiator fan relay is disconnected. (📖 p. 495)



Radiator fan relay – check the control wire for a short circuit to plus (terminal 30).

- **V** Measure the voltage between the specified points.
Break-out box, connector **KQ** pin **11** – Measuring point **Ground (-)**

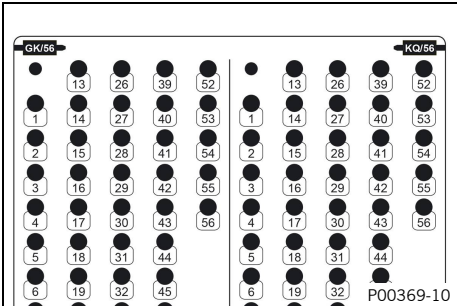
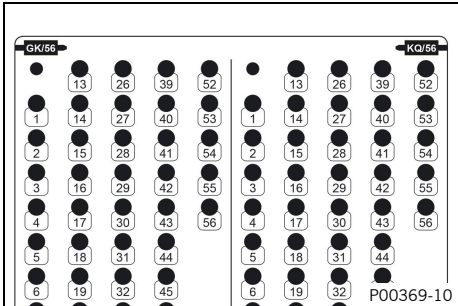
Voltage	≤ 0.1 V

- » If the specifications have not been met:
 - Check the cable from engine control unit connector **KQ** (p. 502) pin **11** to connector **EB** (p. 495) pin **2** for a short circuit to plus (terminal 30).
- » If the specifications have been met:
 - Check the next possible cause:
Radiator fan relay – the control wire has a short circuit to ignition plus (terminal 15) (p. 210)

Radiator fan relay – the control wire has a short circuit to ignition plus (terminal 15)

Condition

The ignition is off.
Engine control unit is disconnected. (p. 15)
The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.
The radiator fan relay is disconnected. (p. 495)



Radiator fan relay – check the control wire for a short circuit to ignition plus (terminal 15).

- **Ω** Measure the resistance between the specified points.
Break-out box, connector **KQ** pin **11** – Break-out box, connector **GK** pin **44**

Resistance	∞ Ω

- » If the specifications have not been met:
 - Check the cable from engine control unit connector **KQ** (p. 502) pin **11** to connector **EB** (p. 495) pin **2** for a short circuit to ignition plus (terminal 15).
- » If the specifications have been met:
 - Contact customer service.

Blink code for malfunction indicator lamp (OBD)	 Malfunction indicator lamp lights up
Display on diagnostic tool	P069700 "Sensors C power supply" "Electric circuit open"
Error level condition	Electric circuit open
Possible cause	Gear position sensor – the power supply is faulty (📖 p. 211)
	Sensors C power supply 1 has a short circuit to ground (terminal 31) (📖 p. 211)
	Sensors C power supply 1 has a short circuit to plus (terminal 30) (📖 p. 212)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

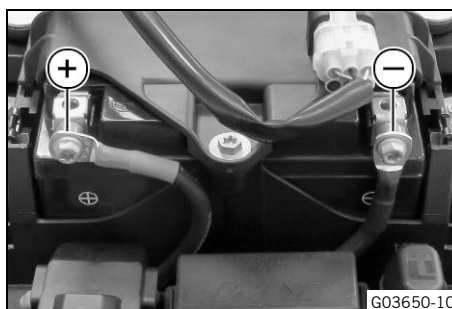
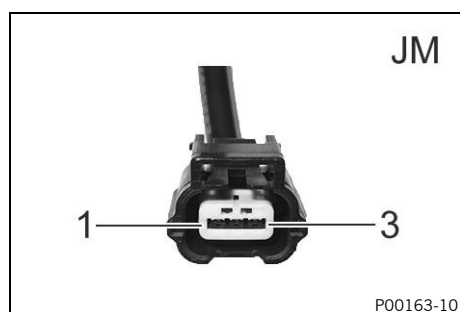
Gear position sensor – the power supply is faulty

Condition

The ignition is off.

Engine control unit is connected. (📖 p. 15)

The gear position sensor is connected. (📖 p. 12)



Gear position sensor – check the power supply.

- **V** Measure the voltage between the specified points.
 Gear position sensor, connector **JM** pin 1 – Measuring point **Ground (–)**

Voltage	4.8 ... 5.2 V

- » If the specifications have not been met:
 - Check engine control unit connector **KQ** (📖 p. 502) pin 1 and connector **JM** (📖 p. 501) pin 1.
 - Check the cable from engine control unit connector **KQ** (📖 p. 502) pin 1 to connector **JM** (📖 p. 501) pin 1.
- » If the specifications have been met:
 - Check the next possible cause:
 Sensors C power supply 1 has a short circuit to ground (terminal 31) (📖 p. 211)

Sensors C power supply 1 has a short circuit to ground (terminal 31)

Condition

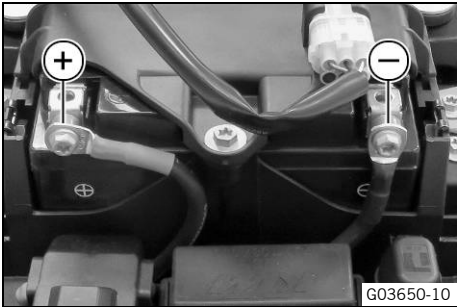
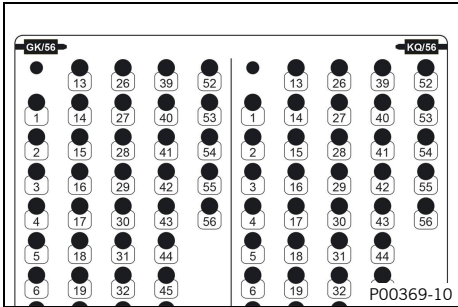
The ignition is off.

Engine control unit is disconnected. (📖 p. 15)

The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.

The gear position sensor is disconnected. (📖 p. 12)

Induction manifold sensor is disconnected. (📖 p. 21)



Check sensors C power supply 1 for a short circuit to ground (terminal 31).

- **V** Measure the voltage between the specified points.
Break-out box, connector **KQ** pin **1** – Measuring point **plus (+)**

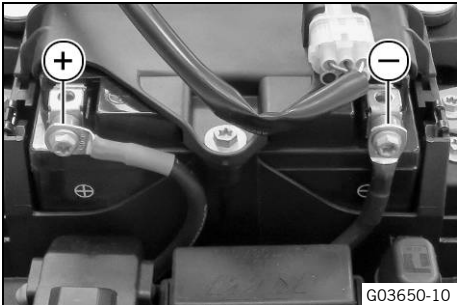
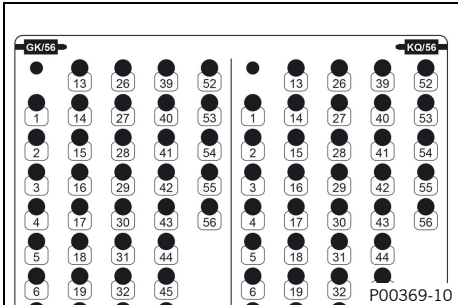
Voltage	≤ 0.1 V

- » If the specifications have not been met:
 - Check the cable of engine control unit connector **KQ** (p. 502) pin **1** against the wiring diagram for a short circuit to ground (terminal 31).
- » If the specifications have been met:
 - Check the next possible cause:
Sensors C power supply 1 has a short circuit to plus (terminal 30) (p. 212)

Sensors C power supply 1 has a short circuit to plus (terminal 30)

Condition

The ignition is off.
Engine control unit is disconnected. (p. 15)
The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.
The gear position sensor is disconnected. (p. 12)
Induction manifold sensor is disconnected. (p. 21)



Check sensors C power supply 1 for a short circuit to plus (terminal 30).

- **V** Measure the voltage between the specified points.
Break-out box, connector **KQ** pin **1** – Measuring point **Ground (-)**

Voltage	≤ 0.1 V

- » If the specifications have not been met:
 - Check the cable of engine control unit connector **KQ** (p. 502) pin **1** against the wiring diagram for a short circuit to plus (terminal 30).
- » If the specifications have been met:
 - Contact customer service.

Blink code for malfunction indicator lamp (OBD)	 Malfunction indicator lamp lights up
Display on diagnostic tool	P091600 "Gear position sensor" "Signal voltage too low"
Error level condition	Gear position sensor – signal voltage too low Voltage: ≤ 0.05 V Time: ≥ 0.1 s
Possible cause	Gear position sensor – the signal wire is faulty (📖 p. 213)
	Gear position sensor – the power supply is faulty (📖 p. 214)
	Gear position sensor – the ground wire is faulty (📖 p. 214)
	Gear position sensor – the signal wire has a short circuit to ground (terminal 31) (📖 p. 215)
Last measure if none of the documented causes leads to elimination of the fault	– Change the gear position sensor.

Gear position sensor – the signal wire is faulty

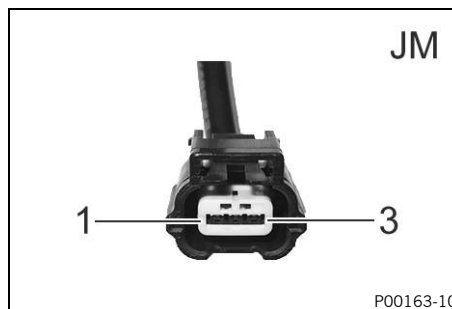
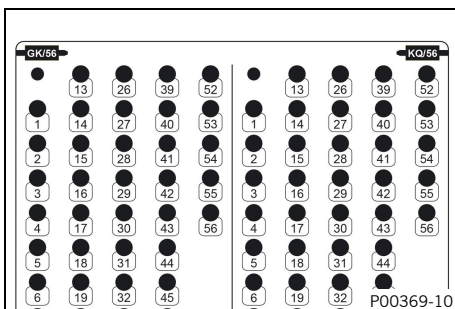
Condition

The ignition is off.

Engine control unit is disconnected. (📖 p. 15)

The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.

The gear position sensor is disconnected. (📖 p. 12)



Gear position sensor – check the signal wire.

-  Measure the resistance between the specified points.
Break-out box, connector **KQ** pin **40** – Gear position sensor, connector **JM** pin **2**

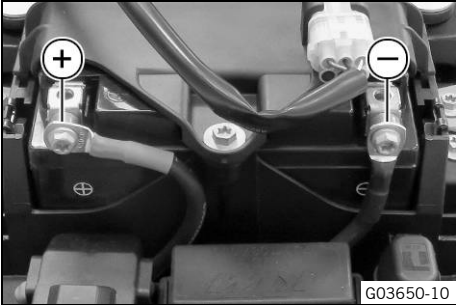
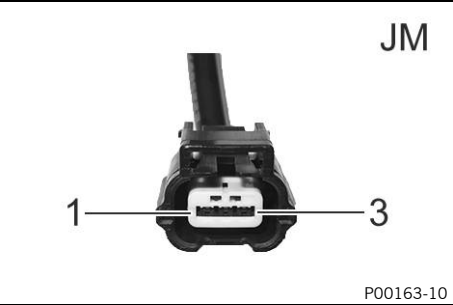
Resistance	$\leq 0.6 \Omega$

- » If the specifications have not been met:
 - Check engine control unit connector **KQ** (📖 p. 502) pin **40** and connector **JM** (📖 p. 501) pin **2**.
 - Check the cable from engine control unit connector **KQ** (📖 p. 502) pin **40** to connector **JM** (📖 p. 501) pin **2**.
- » If the specifications have been met:
 - Check the next possible cause:
Gear position sensor – the power supply is faulty (📖 p. 214)

Gear position sensor – the power supply is faulty

Condition

The ignition is off.
Engine control unit is connected. (📖 p. 15)
The gear position sensor is connected. (📖 p. 12)



Gear position sensor – check the power supply.

- **V** Measure the voltage between the specified points.
Gear position sensor, connector **JM** pin 1 – Measuring point **Ground (-)**

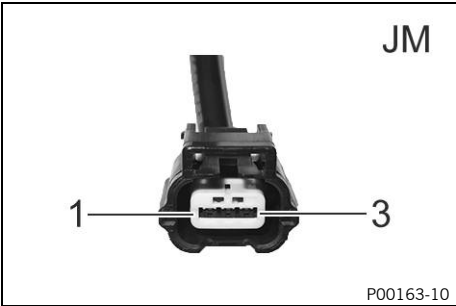
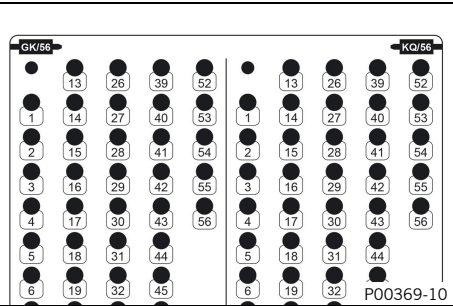
Voltage	4.8 ... 5.2 V

- » If the specifications have not been met:
 - Check engine control unit connector **KQ** (📖 p. 502) pin 1 and connector **JM** (📖 p. 501) pin 1.
 - Check the cable from engine control unit connector **KQ** (📖 p. 502) pin 1 to connector **JM** (📖 p. 501) pin 1.
- » If the specifications have been met:
 - Check the next possible cause:
Gear position sensor – the ground wire is faulty (📖 p. 214)

Gear position sensor – the ground wire is faulty

Condition

The ignition is off.
Engine control unit is disconnected. (📖 p. 15)
The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.
The gear position sensor is disconnected. (📖 p. 12)
The coolant temperature sensor is disconnected. (📖 p. 12)
The intake air temperature sensor is disconnected. (📖 p. 17)
Induction manifold sensor is disconnected. (📖 p. 21)



Gear position sensor – check the ground wire.

- **Ω** Measure the resistance between the specified points.
Break-out box, connector **KQ** pin 16 – Gear position sensor, connector **JM** pin 3

Resistance	≤ 0.6 Ω

- » If the specifications have not been met:
 - Check engine control unit connector **KQ** (📖 p. 502) pin **16** and connector **JM** (📖 p. 501) pin **3**.
 - Check the cable from engine control unit connector **KQ** (📖 p. 502) pin **16** to connector **JM** (📖 p. 501) pin **3**.
- » If the specifications have been met:
 - Check the next possible cause:
Gear position sensor – the signal wire has a short circuit to ground (terminal 31) (📖 p. 215)

Gear position sensor – the signal wire has a short circuit to ground (terminal 31)

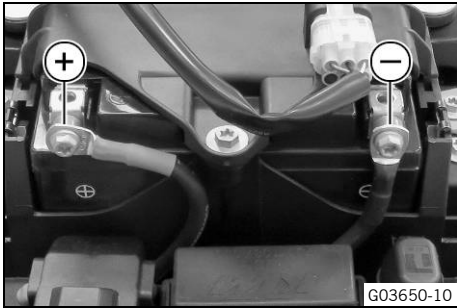
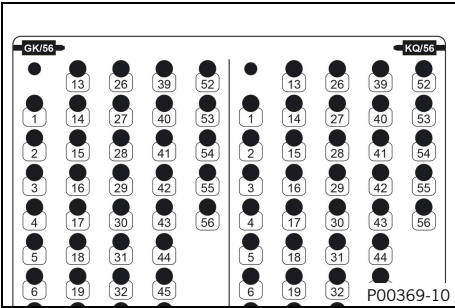
Condition

The ignition is off.

Engine control unit is disconnected. (📖 p. 15)

The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.

The gear position sensor is disconnected. (📖 p. 12)



Gear position sensor – check the signal wire for a short circuit to ground (terminal 31).

-  Measure the resistance between the specified points.
Break-out box, connector **KQ** pin **40** – Measuring point **Ground (-)**

Resistance	$\infty \Omega$

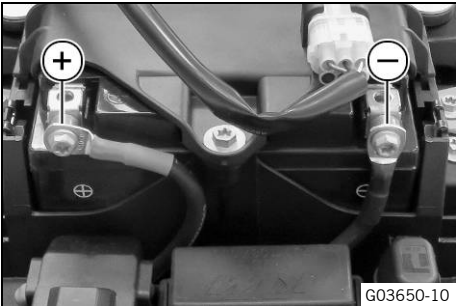
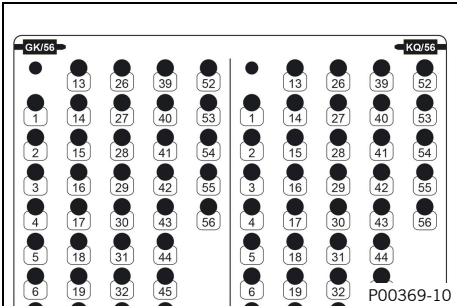
- » If the specifications have not been met:
 - Check the cable from engine control unit connector **KQ** (📖 p. 502) pin **40** to connector **JM** (📖 p. 501) pin **2** for a short circuit to ground (terminal 31).
- » If the specifications have been met:
 - Change the gear position sensor.

Blink code for malfunction indicator lamp (OBD)	 Malfunction indicator lamp lights up
Display on diagnostic tool	P091700 "Gear position sensor" "Signal voltage too high"
Error level condition	Gear position sensor – signal voltage too high Voltage: $\geq 4.9\text{ V}$ Time: $\geq 0.1\text{ s}$
Possible cause	Gear position sensor – the signal wire has a short circuit to plus (terminal 30) (📖 p. 216)
	Gear position sensor – the signal wire has a short circuit to ignition plus (terminal 15) (📖 p. 217)
	Gear position sensor – the signal wire has a short circuit to the sensor power supply (📖 p. 217)
Last measure if none of the documented causes leads to elimination of the fault	– Change the gear position sensor.

Gear position sensor – the signal wire has a short circuit to plus (terminal 30)

Condition

The ignition is off.
Engine control unit is disconnected. (📖 p. 15)
The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.
The gear position sensor is disconnected. (📖 p. 12)



Gear position sensor – check the signal wire for a short circuit to plus (terminal 30).

-  Measure the voltage between the specified points.
Break-out box, connector **KQ** pin **40** – Measuring point **Ground (–)**

Voltage	$\leq 0.1\text{ V}$

- » If the specifications have not been met:
 - Check the cable from engine control unit connector **KQ** (📖 p. 502) pin **40** to connector **JM** (📖 p. 501) pin **2** for a short circuit to plus (terminal 30).
- » If the specifications have been met:
 - Check the next possible cause:
Gear position sensor – the signal wire has a short circuit to ignition plus (terminal 15) (📖 p. 217)

Gear position sensor – the signal wire has a short circuit to ignition plus (terminal 15)

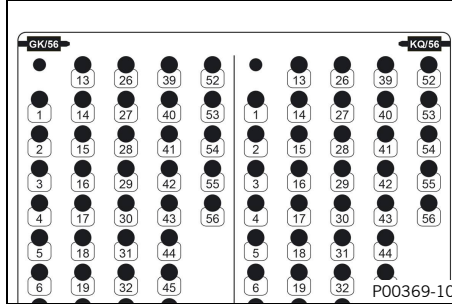
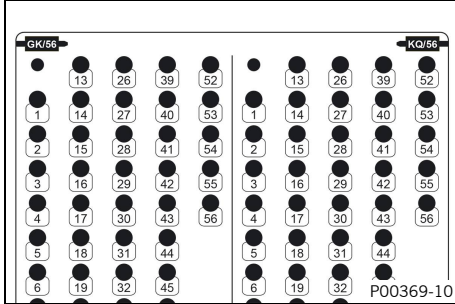
Condition

The ignition is off.

Engine control unit is disconnected. (📖 p. 15)

The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.

The gear position sensor is disconnected. (📖 p. 12)



Gear position sensor – check the signal wire for a short circuit to ignition plus (terminal 15).

-  Measure the resistance between the specified points.
Break-out box, connector **KQ** pin **40** – Break-out box, connector **GK** pin **44**

Resistance	$\infty \Omega$

- » If the specifications have not been met:
 - Check the cable from engine control unit connector **KQ** (📖 p. 502) pin **40** to connector **JM** (📖 p. 501) pin **2** for a short circuit to ignition plus (terminal 15).
- » If the specifications have been met:
 - Check the next possible cause:
Gear position sensor – the signal wire has a short circuit to the sensor power supply (📖 p. 217)

Gear position sensor – the signal wire has a short circuit to the sensor power supply

Condition

The ignition is off.

Engine control unit is disconnected. (📖 p. 15)

The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.

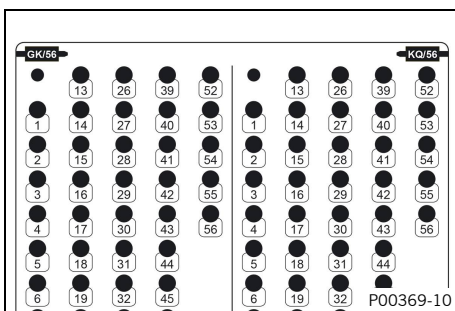
The gear position sensor is disconnected. (📖 p. 12)

Gear position sensor – check the signal wire for a short circuit to the sensor power supply.

-  Measure the resistance between the specified points.
Break-out box, connector **KQ** pin **40** –
Break-out box, connector **KQ** pin **1**

Resistance	$\infty \Omega$

- » If the specifications have not been met:
 - Check the cable from engine control unit connector **KQ** (📖 p. 502) pin **40** to connector **JM** (📖 p. 501) pin **2** for a short circuit to the sensor power supply.
- » If the specifications have been met:
 - Change the gear position sensor.



Blink code for malfunction indicator lamp (OBD)	 Malfunction indicator lamp lights up
Display on diagnostic tool	P110500 "Cylinder 2 manifold air pressure sensor to ambient air pressure sensor" "Plausibility error"
Error level condition	After starting the engine, there is too much deviation between the cylinder 2 manifold air pressure sensor and ambient air pressure sensor Time: ≥ 1.25 s
Function check	Checking the cylinder 2 induction manifold air pressure sensor and ambient air pressure sensor function (📖 p. 218)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Checking the cylinder 2 induction manifold air pressure sensor and ambient air pressure sensor function

- Clear the fault memory using the KTM diagnostics tool.
- Read out the trouble code memory using the KTM diagnostics tool.
 - » If the error persists:
 - Check that the cylinder 2 induction manifold pressure sensor and ambient air pressure sensor are the same.
 - Check that the cylinder 2 manifold air pressure sensor and ambient air pressure sensor are correctly wired and seated.

Last measure if none of the documented causes leads to elimination of the fault

- Contact customer service.

Blink code for malfunction indicator lamp (OBD)	 Malfunction indicator lamp lights up
Display on diagnostic tool	P110600 "Cylinder 2 manifold air pressure sensor to ambient air pressure sensor" "Values out of tolerance"
Error level condition	When the engine is not running, there is too much deviation between the cylinder 2 manifold air pressure sensor and ambient air pressure sensor Time: ≥ 1.25 s
Function check	Checking the cylinder 2 induction manifold air pressure sensor and ambient air pressure sensor function (📖 p. 219)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Checking the cylinder 2 induction manifold air pressure sensor and ambient air pressure sensor function

- Clear the fault memory using the KTM diagnostics tool.
- Read out the trouble code memory using the KTM diagnostics tool.
 - » If the error persists:
 - Check that the cylinder 2 induction manifold pressure sensor and ambient air pressure sensor are the same.
 - Check that the cylinder 2 manifold air pressure sensor and ambient air pressure sensor are correctly wired and seated.

Last measure if none of the documented causes leads to elimination of the fault

- Contact customer service.

Blink code for malfunction indicator lamp (OBD)	 Malfunction indicator lamp lights up
Display on diagnostic tool	P120100 "Overheating protection" "Engine speed limiter"
Error level condition	Coolant temperature too high Coolant temperature: ≥ 114 °C (≥ 237 °F) Time: ≥ 1 s
Function check	Checking the coolant temperature sensor (📖 p. 220)
Possible cause	Coolant temperature sensor – the value is not plausible (📖 p. 220)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Checking the coolant temperature sensor

Condition

The diagnostics tool is connected and running.
The engine is at operating temperature.

- Select "Engine control unit" > "Measured values" > "Engine temperature".

Measured value is plausible.

- » If the measured value is plausible:
 - Clear the fault memory using the KTM diagnostics tool.
 - Take a test ride.
 - Read out the trouble code memory using the KTM diagnostics tool.
- » If the measured value is not plausible:
 - Check the next possible cause:
Coolant temperature sensor – the value is not plausible (📖 p. 220)

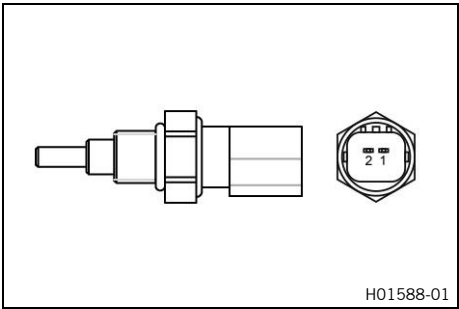
Coolant temperature sensor – the value is not plausible

Condition

The ignition is off.
The coolant temperature sensor is disconnected. (📖 p. 12)

Coolant temperature sensor – check the resistance.

-  Measure the resistance between the specified points.
Coolant temperature sensor pin 1 – Coolant temperature sensor pin 2



Coolant temperature sensor	
Resistance at: -20 °C (-4 °F)	18.70 kΩ
Voltage at: -20 °C (-4 °F)	4.55 V
Resistance at: 20 °C (68 °F)	2.55 kΩ
Voltage at: 20 °C (68 °F)	2.73 V
Resistance at: 80 °C (176 °F)	0.29 kΩ
Voltage at: 80 °C (176 °F)	0.57 V

Resistance at: 110 °C (230 °F)	0.11 kΩ
Voltage at: 110 °C (230 °F)	0.25 V

- » If the specifications have not been met:
 - Change the coolant temperature sensor.
- » If the specifications have been met:
 - Contact customer service.

Blink code for malfunction indicator lamp (OBD)	 Malfunction indicator lamp lights up
Display on diagnostic tool	P150500 "Side stand sensor" "Plausibility error"
Error level condition	Side stand sensor – plausibility error
Function check	Checking the side stand sensor (📖 p. 222)
Possible cause	Side stand sensor – the power supply is faulty (📖 p. 222)
Last measure if none of the documented causes leads to elimination of the fault	– Change the side stand sensor.

Checking the side stand sensor

Condition

The diagnostics tool is connected and running.

- Select "Engine control unit" > "Measured values" > "Side stand sensor voltage".

Side stand voltage	
Retracted	0.24 ... 0.44 V
Extended	3.57 ... 3.77 V

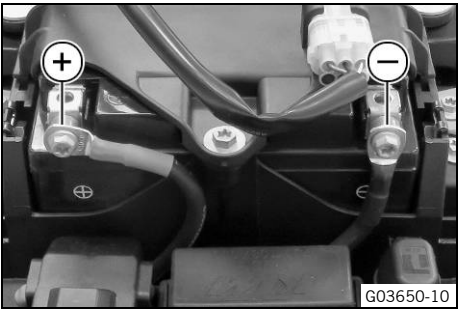
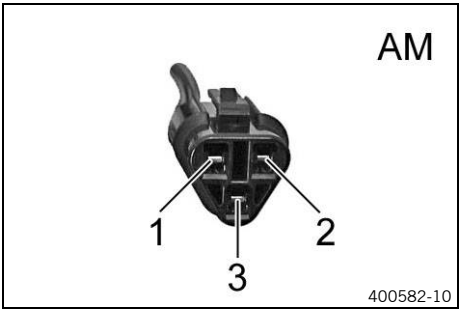
- » If the specified value is reached:
 - Clear the fault memory using the KTM diagnostics tool.
 - Take a test ride.
 - Read out the trouble code memory using the KTM diagnostics tool.
- » If the specification is not reached:
 - Check the next possible cause:
Side stand sensor – the power supply is faulty (📖 p. 222)

Side stand sensor – the power supply is faulty

Condition

The ignition is on.

Side stand sensor is connected. (📖 p. 9)



Side stand sensor – check the power supply.

-  Measure the voltage between the specified points.
Side stand sensor connector **AM** pin **1** – Measuring point **Ground (-)**

Voltage	4.8 ... 5.2 V

- » If the specifications have not been met:
 - Check the cable from engine control unit connector **GK** (📖 p. 497) pin **23** to connector **AM** (📖 p. 490) pin **1**.

- » If the specifications have been met:
 - Change the side stand sensor.

6 ENGINE CONTROL TROUBLE CODE

Blink code for malfunction indicator lamp (OBD)	 Malfunction indicator lamp lights up
Display on diagnostic tool	P150600 "Side stand sensor" "Circuit fault"
Error level condition	Side stand – circuit fault Voltage: 4.10 ... 4.73 V
Function check	Checking the side stand sensor (📖 p. 224)
Possible cause	Side stand sensor – the signal wire is faulty (📖 p. 224)
Last measure if none of the documented causes leads to elimination of the fault	– Change the side stand sensor.

Checking the side stand sensor

Condition

The diagnostics tool is connected and running.

- Select **"Engine control unit" > "Measured values" > "Side stand sensor voltage"**.

Side stand voltage	
Retracted	0.24 ... 0.44 V
Extended	3.57 ... 3.77 V

- » If the specified value is reached:
 - Clear the fault memory using the KTM diagnostics tool.
 - Take a test ride.
 - Read out the trouble code memory using the KTM diagnostics tool.
- » If the specification is not reached:
 - Check the next possible cause:
Side stand sensor – the signal wire is faulty (📖 p. 224)

Side stand sensor – the signal wire is faulty

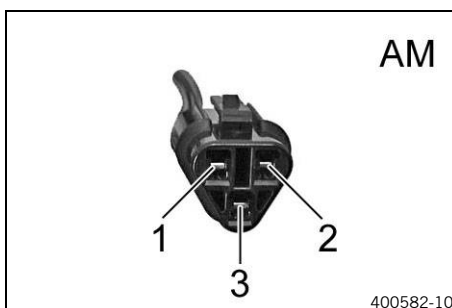
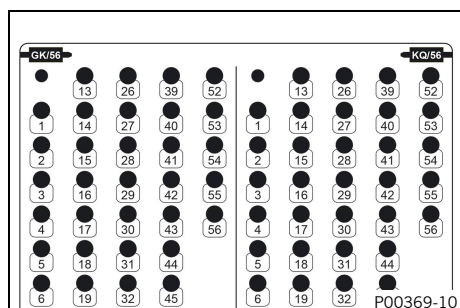
Condition

The ignition is off.

Engine control unit is disconnected. (🗨️ p. 15)

The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.

Side stand sensor is disconnected. (📖 p. 9)



Side stand sensor – check the signal wire.

-  Measure the resistance between the specified points.
Break-out box, connector **GK** pin **46** – Side stand sensor connector **AM** pin **2**

Resistance	$\leq 0.6 \, \Omega$

- » If the specifications have not been met:
 - Check engine control unit connector **GK** (📖 p. 497) pin **46** and connector **AM** (📖 p. 490) pin **2**.
 - Check the cable from engine control unit connector **GK** (📖 p. 497) pin **46** to connector **AM** (📖 p. 490) pin **2**.
- » If the specifications have been met:
 - Change the side stand sensor.

6 ENGINE CONTROL TROUBLE CODE

Blink code for malfunction indicator lamp (OBD)	 Malfunction indicator lamp lights up
Display on diagnostic tool	P150700 "Side stand sensor" "Short circuit to ground"
Error level condition	Side stand sensor – short circuit to ground Voltage: ≤ 0.2 V
Function check	Checking the side stand sensor (📖 p. 226)
Possible cause	Side stand sensor – the signal wire has a short circuit to ground (terminal 31) (📖 p. 226)
Last measure if none of the documented causes leads to elimination of the fault	– Change the side stand sensor.

Checking the side stand sensor

Condition

The diagnostics tool is connected and running.

- Select **"Engine control unit" > "Measured values" > "Side stand sensor voltage"**.

Side stand voltage	
Retracted	0.24 ... 0.44 V
Extended	3.57 ... 3.77 V

- » If the specified value is reached:
 - Clear the fault memory using the KTM diagnostics tool.
 - Take a test ride.
 - Read out the trouble code memory using the KTM diagnostics tool.
- » If the specification is not reached:
 - Check the next possible cause:
Side stand sensor – the signal wire has a short circuit to ground (terminal 31) (📖 p. 226)

Side stand sensor – the signal wire has a short circuit to ground (terminal 31)

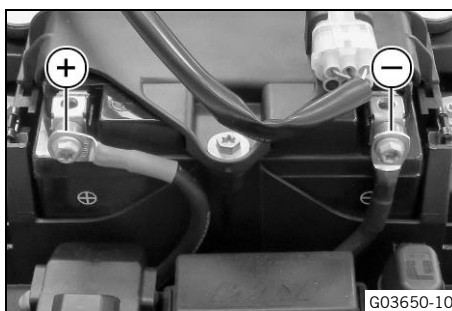
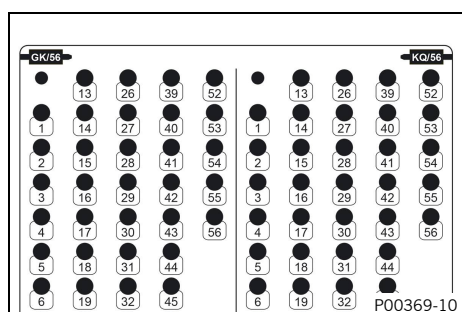
Condition

The ignition is off.

Engine control unit is disconnected. (📖 p. 15)

The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.

Side stand sensor is disconnected. (📖 p. 9)



Side stand sensor – check the signal wire for a short circuit to ground (terminal 31).

-  Measure the voltage between the specified points.
Break-out box, connector **GK** pin **46** – Measuring point **plus (+)**

Voltage	≤ 0.1 V

- » If the specifications have not been met:
 - Check the cable from engine control unit connector **GK** (🔌 p. 497) pin **46** to connector **AM** (🔌 p. 490) pin **2** for a short circuit to ground (terminal 31).
- » If the specifications have been met:
 - Change the side stand sensor.

6 ENGINE CONTROL TROUBLE CODE

Blink code for malfunction indicator lamp (OBD)	 Malfunction indicator lamp lights up
Display on diagnostic tool	P150800 "Side stand sensor" "Short circuit to plus"
Error level condition	Side stand sensor – short circuit to plus Voltage: ≥ 4.7 V
Function check	Checking the side stand sensor (📖 p. 228)
Possible cause	Side stand sensor – the signal wire has a short circuit to plus (terminal 30) (📖 p. 228)
	Side stand sensor – the signal wire has a short circuit to ignition plus (terminal 15) (📖 p. 229)
	Side stand sensor – the ground supply is faulty (📖 p. 229)
Last measure if none of the documented causes leads to elimination of the fault	– Change the side stand sensor.

Checking the side stand sensor

Condition

The diagnostics tool is connected and running.

- Select **"Engine control unit" > "Measured values" > "Side stand sensor voltage"**.

Side stand voltage	
Retracted	0.24 ... 0.44 V
Extended	3.57 ... 3.77 V

- » If the specified value is reached:
 - Clear the fault memory using the KTM diagnostics tool.
 - Take a test ride.
 - Read out the trouble code memory using the KTM diagnostics tool.
- » If the specification is not reached:
 - Check the next possible cause:
Side stand sensor – the signal wire has a short circuit to plus (terminal 30) (📖 p. 228)
 - Check the next possible cause:
Side stand sensor – the signal wire has a short circuit to ignition plus (terminal 15) (📖 p. 229)
 - Check the next possible cause:
Side stand sensor – the ground supply is faulty (📖 p. 229)

Side stand sensor – the signal wire has a short circuit to plus (terminal 30)

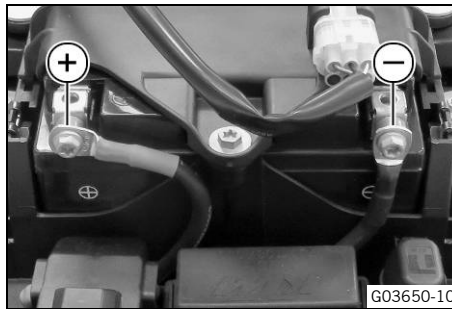
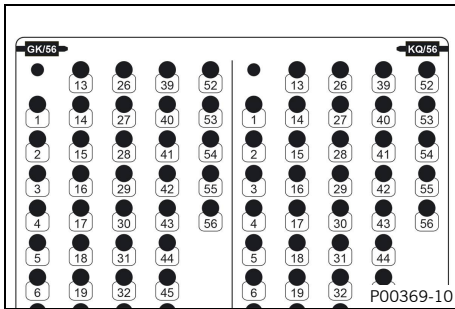
Condition

The ignition is off.

Engine control unit is disconnected. (📖 p. 15)

The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.

Side stand sensor is disconnected. (📖 p. 9)



Side stand sensor – check the signal wire for a short circuit to plus (terminal 30).

- **V** Measure the voltage between the specified points.
Break-out box, connector **GK** pin **46** – Measuring point **Ground (-)**

Voltage	$\leq 0.1 \text{ V}$

- » If the specifications have not been met:
 - Check the cable from engine control unit connector **GK** (p. 497) pin **46** to connector **AM** (p. 490) pin **2** for a short circuit to plus (terminal 30).
- » If the specifications have been met:
 - Check the next possible cause:
Side stand sensor – the signal wire has a short circuit to ignition plus (terminal 15) (p. 229)

Side stand sensor – the signal wire has a short circuit to ignition plus (terminal 15)

Condition

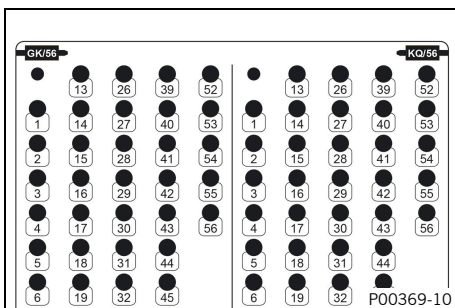
The ignition is off.
 Engine control unit is disconnected. (p. 15)
 The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.
 Side stand sensor is disconnected. (p. 9)

Side stand sensor – check the signal wire for a short circuit to ignition plus (terminal 15).

- **Ω** Measure the resistance between the specified points.
Break-out box, connector **GK** pin **46** –
Break-out box, connector **GK** pin **44**

Resistance	$\infty \Omega$

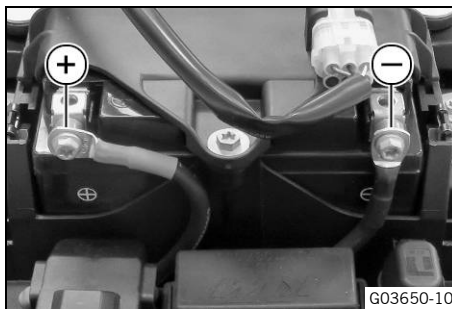
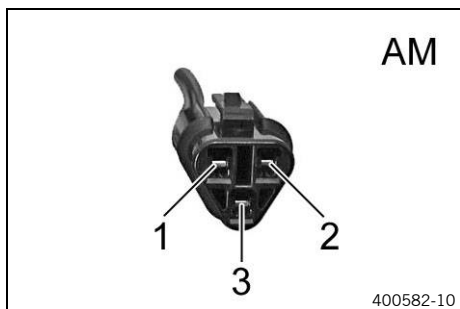
- » If the specifications have not been met:
 - Check the cable from engine control unit connector **GK** (p. 497) pin **46** to connector **AM** (p. 490) pin **2** for a short circuit to ignition plus (terminal 15).
- » If the specifications have been met:
 - Check the next possible cause:
Side stand sensor – the ground supply is faulty (p. 229)



Side stand sensor – the ground supply is faulty

Condition

The ignition is on.
 Side stand sensor is connected. (p. 9)



Side stand sensor – check the ground supply.

- **V** Measure the voltage between the specified points.
Side stand sensor connector **AM** pin **3** – Measuring point **plus (+)**

The value must not deviate from the battery voltage by more than 1 V.

- » If the specifications have not been met:
 - Check the cable from engine control unit connector **KQ** (p. 502) pin **28** to connector **AM** (p. 490) pin **3**.
- » If the specifications have been met:
 - Change the side stand sensor.

Blink code for malfunction indicator lamp (OBD)	 Malfunction indicator lamp lights up
Display on diagnostic tool	P170200 "Shift shaft sensor" "Signal voltage too low"
Error level condition	Shift shaft sensor: ≤ 0.5 V Time: ≥ 1 s
Possible cause	Shift shaft sensor – the signal wire has a short circuit to sensor ground (📖 p. 231)
	Shift shaft sensor – the signal wire has a short circuit to ground (terminal 31) (📖 p. 231)
	Shift shaft sensor – the power supply is faulty (📖 p. 232)
Last measure if none of the documented causes leads to elimination of the fault	– Change the shift shaft sensor.

Shift shaft sensor – the signal wire has a short circuit to sensor ground

Condition

The ignition is off.

Engine control unit is disconnected. (📖 p. 15)

The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.

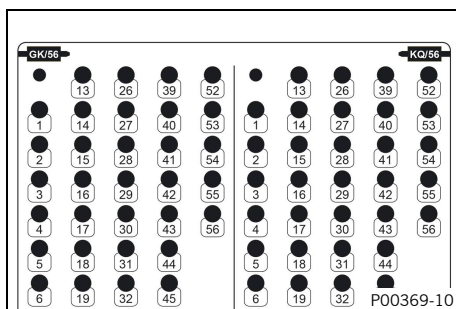
Shift shaft sensor is disconnected. (📖 p. 29)

Shift shaft sensor – check the signal wire for a short circuit to sensor ground.

-  Measure the resistance between the specified points.
 Break-out box, connector **KQ** pin **4** –
 Break-out box, connector **KQ** pin **35**

Resistance	$\infty \Omega$

- » If the specifications have not been met:
 - Check cable from engine control unit connector **KQ** (📖 p. 502) pin **4** to connector **EX** (📖 p. 496) pin **2** for a short circuit to sensor ground.
- » If the specifications have been met:
 - Check the next possible cause:
 Shift shaft sensor – the signal wire has a short circuit to ground (terminal 31) (📖 p. 231)



Shift shaft sensor – the signal wire has a short circuit to ground (terminal 31)

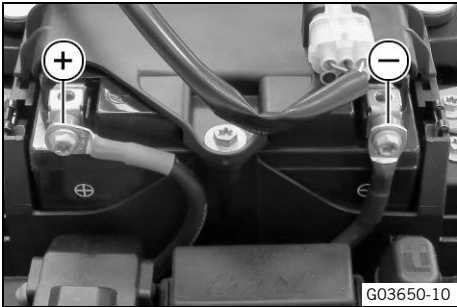
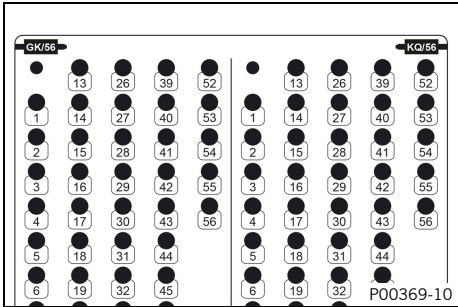
Condition

The ignition is off.

Engine control unit is disconnected. (📖 p. 15)

The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.

Shift shaft sensor is disconnected. (📖 p. 29)



Shift shaft sensor – check the signal wire for a short circuit to ground (terminal 31).

- Measure the resistance between the specified points.
Break-out box, connector **KQ** pin **4** – Measuring point **Ground (–)**

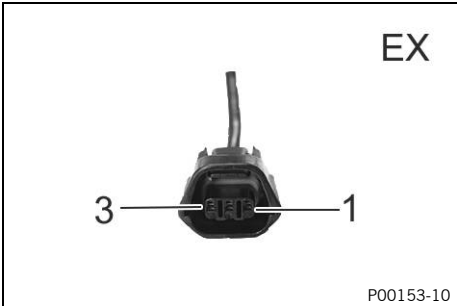
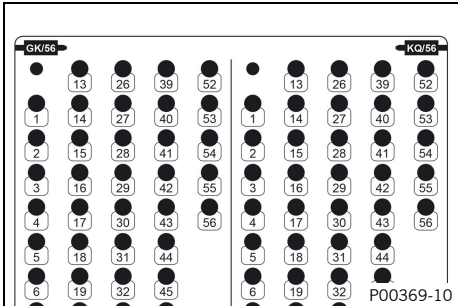
Resistance	$\infty \Omega$

- » If the specifications have not been met:
 - Check the cable from engine control unit connector **KQ** (p. 502) pin **4** to connector **EX** (p. 496) pin **2** for a short circuit to ground (terminal 31).
- » If the specifications have been met:
 - Check the next possible cause:
Shift shaft sensor – the power supply is faulty (p. 232)

Shift shaft sensor – the power supply is faulty

Condition

The ignition is off.
Engine control unit is disconnected. (p. 15)
The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.
Shift shaft sensor is disconnected. (p. 29)



Shift shaft sensor – check the power supply.

- Measure the resistance between the specified points.
Break-out box, connector **KQ** pin **13** – Shift shaft sensor connector **EX** pin **1**

Resistance	$\leq 0.6 \Omega$

- » If the specifications have not been met:
 - Check connector **EX** (p. 496) pin **1**.
 - Check the cable from connector **EX** (p. 496) pin **1** to the next node in the wiring harness.
- » If the specifications have been met:
 - Change the shift shaft sensor.

Blink code for malfunction indicator lamp (OBD)	 Malfunction indicator lamp lights up
Display on diagnostic tool	P170300 "Shift shaft sensor" "Signal voltage too high"
Error level condition	Signal voltage too high: ≥ 4.5 V Time: ≥ 1 s
Possible cause	Shift shaft sensor – the signal wire is faulty (📖 p. 233)
	Shift shaft sensor – the ground wire is faulty (📖 p. 234)
	Shift shaft sensor – the signal wire has a short circuit to plus (terminal 30) (📖 p. 234)
	Shift shaft sensor – the signal wire has a short circuit to ignition plus (terminal 15) (📖 p. 235)
	Shift shaft sensor – the signal wire has a short circuit to the sensor power supply (📖 p. 235)
Last measure if none of the documented causes leads to elimination of the fault	– Change the shift shaft sensor.

Shift shaft sensor – the signal wire is faulty

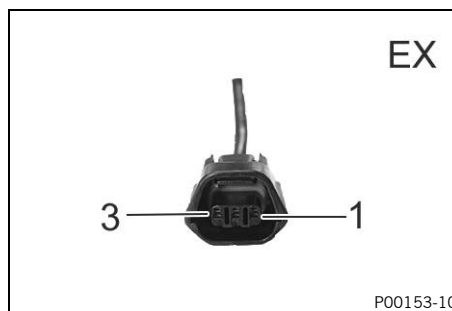
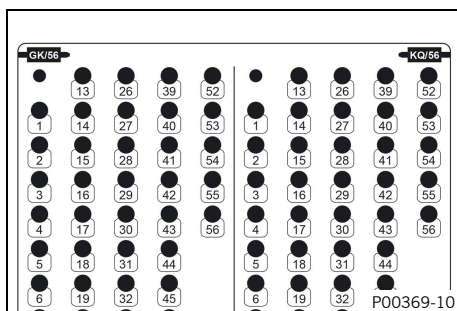
Condition

The ignition is off.

Engine control unit is disconnected. (📖 p. 15)

The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.

Shift shaft sensor is disconnected. (📖 p. 29)



Shift shaft sensor – check the signal wire.

-  Measure the resistance between the specified points.
Break-out box, connector **KQ** pin **4** – Shift shaft sensor connector **EX** pin **2**

Resistance	$\leq 0.6 \Omega$

» If the specifications have not been met:

- Check engine control unit connector **KQ** (📖 p. 502) pin **4** and connector **EX** (📖 p. 496) pin **2**.
- Check the cable from engine control unit connector **KQ** (📖 p. 502) pin **4** to connector **EX** (📖 p. 496) pin **2**.

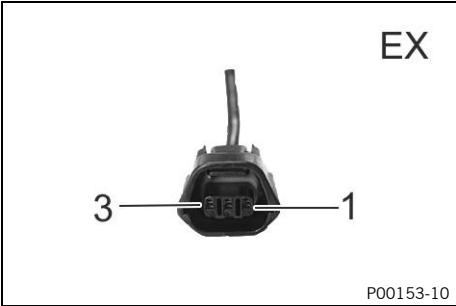
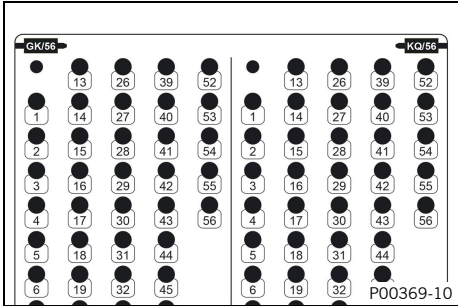
» If the specifications have been met:

- Check the next possible cause:
Shift shaft sensor – the ground wire is faulty (📖 p. 234)

Shift shaft sensor – the ground wire is faulty

Condition

The ignition is off.
Engine control unit is disconnected. (📖 p. 15)
The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.
Shift shaft sensor is disconnected. (📖 p. 29)



Shift shaft sensor – check the ground wire.

-  Measure the resistance between the specified points.
Break-out box, connector **KQ** pin **35** – Shift shaft sensor connector **EX** pin **3**

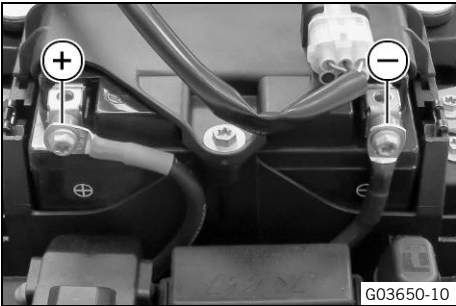
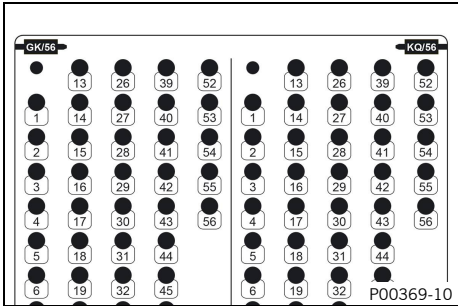
Resistance	≤ 0.6 Ω

- » If the specifications have not been met:
 - Check engine control unit connector **KQ** (📖 p. 502) pin **35** and connector **EX** (📖 p. 496) pin **3**.
 - Check the cable from engine control unit connector **KQ** (📖 p. 502) pin **35** to connector **EX** (📖 p. 496) pin **3**.
- » If the specifications have been met:
 - Check the next possible cause:
Shift shaft sensor – the signal wire has a short circuit to plus (terminal 30) (📖 p. 234)

Shift shaft sensor – the signal wire has a short circuit to plus (terminal 30)

Condition

The ignition is off.
Engine control unit is disconnected. (📖 p. 15)
The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.
Shift shaft sensor is disconnected. (📖 p. 29)



Shift shaft sensor – check the signal wire for a short circuit to plus (terminal 30).

-  Measure the voltage between the specified points.
Break-out box, connector **KQ** pin **4** – Measuring point **Ground** (–)

Voltage	< 0.1 V

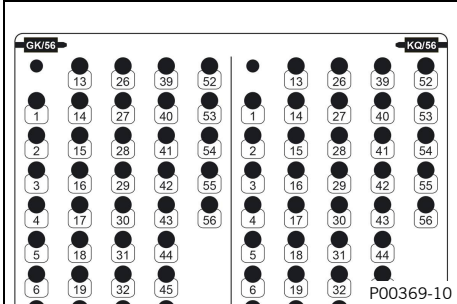
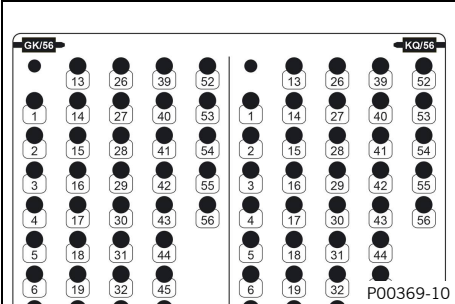
- » If the specifications have not been met:

- Check the cable from engine control unit connector **KQ** (📖 p. 502) pin **4** to connector **EX** (📖 p. 496) pin **2** for a short circuit to plus (terminal 30).
- » If the specifications have been met:
 - Check the next possible cause:
Shift shaft sensor – the signal wire has a short circuit to ignition plus (terminal 15) (📖 p. 235)

Shift shaft sensor – the signal wire has a short circuit to ignition plus (terminal 15)

Condition

The ignition is off.
Engine control unit is disconnected. (📖 p. 15)
The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.
Shift shaft sensor is disconnected. (📖 p. 29)



Shift shaft sensor – check the signal wire for a short circuit to ignition plus (terminal 15).

-  Measure the resistance between the specified points.
Break-out box, connector **KQ** pin **4** – Break-out box, connector **GK** pin **44**

Resistance	$\infty \Omega$

- » If the specifications have not been met:
 - Check the cable from engine control unit connector **KQ** (📖 p. 502) pin **4** to connector **EX** (📖 p. 496) pin **2** for a short circuit to ignition plus (terminal 15).
- » If the specifications have been met:
 - Check the next possible cause:
Shift shaft sensor – the signal wire has a short circuit to the sensor power supply (📖 p. 235)

Shift shaft sensor – the signal wire has a short circuit to the sensor power supply

Condition

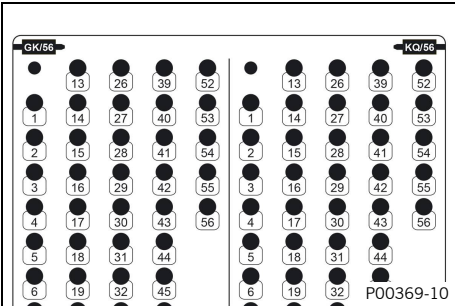
The ignition is off.
Engine control unit is disconnected. (📖 p. 15)
The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.
Shift shaft sensor is disconnected. (📖 p. 29)

Shift shaft sensor – check the signal wire for a short circuit to the sensor power supply.

-  Measure the resistance between the specified points.
Break-out box, connector **KQ** pin **4** –
Break-out box, connector **KQ** pin **13**

Resistance	$\infty \Omega$

- » If the specifications have not been met:
 - Check the cable from engine control unit connector **KQ** (📖 p. 502) pin **4** to connector **EX** (📖 p. 496) pin **2** for a short circuit to the sensor power supply.
- » If the specifications have been met:
 - Change the shift shaft sensor.



Blink code for malfunction indicator lamp (OBD)	 Malfunction indicator lamp lights up
Display on diagnostic tool	P170600 "Shift shaft sensor" "Idle signal not plausible"
Error level condition	Shift shaft input signal: $\geq 10^\circ$
Function check	Performing the shift shaft sensor teach-in procedure (📖 p. 236)
Possible cause	Incorrect installation position of shift shaft sensor (📖 p. 236)
Last measure if none of the documented causes leads to elimination of the fault	– Change the shift shaft sensor.

Performing the shift shaft sensor teach-in procedure

Condition

The diagnostics tool is connected and running.

- Select **"Engine control unit" > "Functions" > "Quickshifter calibration"**.
- Perform teach-in procedure.
 - » If the teach-in procedure is completed correctly:
 - Clear the fault memory using the KTM diagnostics tool.
 - Take a test ride.
 - Read out the trouble code memory using the KTM diagnostics tool.
 - » If the teach-in procedure is not completed correctly:
 - Check the next possible cause:
Incorrect installation position of shift shaft sensor (📖 p. 236)

Incorrect installation position of shift shaft sensor

- Check that the shift shaft sensor is seated correctly.

Sensor is correctly attached.

- » If the specifications have not been met:
 - Attach shift shaft sensor properly.
- » If the specifications have been met:
 - Change the shift shaft sensor.

Blink code for malfunction indicator lamp (OBD)	 Malfunction indicator lamp lights up
Display on diagnostic tool	P170700 "Shift shaft sensor" "Shift point not plausible"
Error level condition	Shift shaft input signal: $\geq 7^\circ$
Function check	Performing the shift shaft sensor teach-in procedure (📖 p. 237)
Possible cause	Incorrect installation position of shift shaft sensor (📖 p. 237)
Last measure if none of the documented causes leads to elimination of the fault	– Change the shift shaft sensor.

Performing the shift shaft sensor teach-in procedure

Condition

The diagnostics tool is connected and running.

- Select **"Engine control unit" > "Functions" > "Quickshifter calibration"**.
- Perform teach-in procedure.
 - » If the teach-in procedure is completed correctly:
 - Clear the fault memory using the KTM diagnostics tool.
 - Take a test ride.
 - Read out the trouble code memory using the KTM diagnostics tool.
 - » If the teach-in procedure is not completed correctly:
 - Check the next possible cause:
Incorrect installation position of shift shaft sensor (📖 p. 237)

Incorrect installation position of shift shaft sensor

- Check that the shift shaft sensor is seated correctly.

Sensor is correctly attached.

- » If the specifications have not been met:
 - Attach shift shaft sensor properly.
- » If the specifications have been met:
 - Change the shift shaft sensor.

Blink code for malfunction indicator lamp (OBD)	 Malfunction indicator lamp lights up
Display on diagnostic tool	P170800 "Shift shaft sensor" "Shift point implausible"
Error level condition	Shift shaft sensor – shift point implausible
Possible cause	Incorrect installation position of shift shaft sensor (📖 p. 238)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Incorrect installation position of shift shaft sensor

- Check that the shift shaft sensor is seated correctly.

Sensor is correctly attached.

- » If the specifications have not been met:
 - Attach shift shaft sensor properly.
- » If the specifications have been met:
 - Contact customer service.

Blink code for malfunction indicator lamp (OBD)	 Malfunction indicator lamp lights up
Display on diagnostic tool	P170900 "Engine control unit" "Internal error"
Error level condition	Engine control unit – EEPROM faulty due to Quickshift function
Possible cause	Software version/coding incorrect (📖 p. 239)
Last measure if none of the documented causes leads to elimination of the fault	– Reset the engine control unit. (📖 p. 257)

Software version/coding incorrect

- Connect the diagnostics tool and start it.
 - Read out the fault memory using the KTM diagnostics tool.
 - Clear the fault memory using the KTM diagnostics tool.
 - Switch off the ignition for 20 seconds.
 - Read out the fault memory using the KTM diagnostics tool.
- Fault memory is empty.
- » If the specifications have not been met:
 - Check that the software in the control units is up to date.
 - Check all model-specific variant coding and equipment-specific settings for all control units.
 - » If the specifications have been met:
 - Reset the engine control unit. (📖 p. 257)

Blink code for malfunction indicator lamp (OBD)	 Malfunction indicator lamp lights up
Display on diagnostic tool	P181000 "Engine control unit" "Internal error"
Error level condition	Engine control unit - EEPROM faulty due to cruise control
Possible cause	Software version/coding incorrect (📖 p. 240)
Last measure if none of the documented causes leads to elimination of the fault	– Reset the engine control unit. (📖 p. 257)

Software version/coding incorrect

- Connect the diagnostics tool and start it.
- Read out the fault memory using the KTM diagnostics tool.
- Clear the fault memory using the KTM diagnostics tool.
- Switch off the ignition for 20 seconds.
- Read out the fault memory using the KTM diagnostics tool.

Fault memory is empty.

- » If the specifications have not been met:
 - Check that the software in the control units is up to date.
 - Check all model-specific variant coding and equipment-specific settings for all control units.
- » If the specifications have been met:
 - Reset the engine control unit. (📖 p. 257)

Blink code for malfunction indicator lamp (OBD)	 Malfunction indicator lamp lights up
Display on diagnostic tool	P210000 "Throttle valve actuator" "Circuit fault"
Error level condition	Throttle valve actuator - circuit malfunction
Possible cause	Throttle valve control wire 1 is faulty (📖 p. 241) Throttle valve control wire 2 is faulty (📖 p. 241)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Throttle valve control wire 1 is faulty

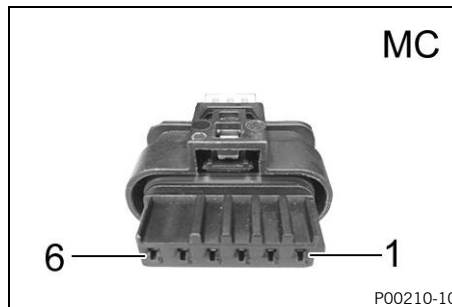
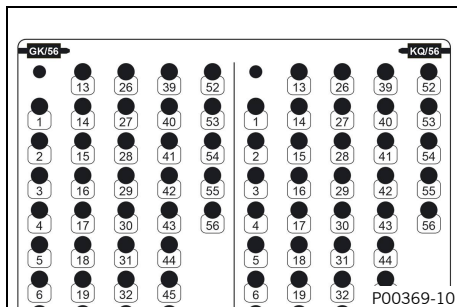
Condition

The ignition is off.

Engine control unit is disconnected. (📖 p. 15)

The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.

The throttle valve actuator is disconnected. (📖 p. 16)



Check throttle valve control wire 1.

-  Measure the resistance between the specified points.
Break-out box, connector **GK** pin **55** – Throttle valve position sensor connector **MC** pin **1**

Resistance	$\leq 0.6 \Omega$

- » If the specifications have not been met:
 - Check engine control unit connector **GK** (📖 p. 497) pin **55** and connector **MC** (📖 p. 505) pin **1**.
 - Check the cable from engine control unit connector **GK** (📖 p. 497) pin **55** to connector **MC** (📖 p. 505) pin **1**.
- » If the specifications have been met:
 - Check the next possible cause:
Throttle valve control wire 2 is faulty (📖 p. 241)

Throttle valve control wire 2 is faulty

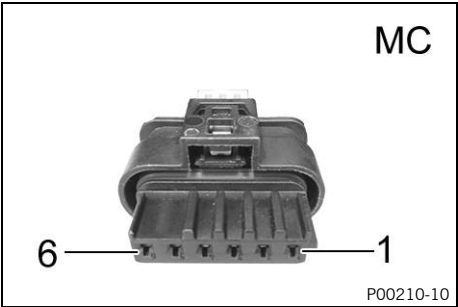
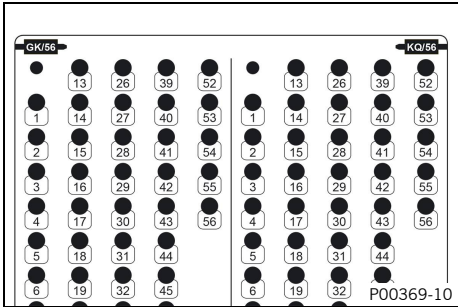
Condition

The ignition is off.

Engine control unit is disconnected. (📖 p. 15)

The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.

The throttle valve actuator is disconnected. (📖 p. 16)



Check throttle valve control wire 2.

-  Measure the resistance between the specified points.
Break-out box, connector **GK** pin **56** – Throttle valve position sensor connector **MC** pin **2**

Resistance	$\leq 0.6 \Omega$

- » If the specifications have not been met:
 - Check engine control unit connector **GK** (📖 p. 497) pin **56** and connector **MC** (📖 p. 505) pin **2**.
 - Check the cable from engine control unit connector **GK** (📖 p. 497) pin **56** to connector **MC** (📖 p. 505) pin **2**.
- » If the specifications have been met:
 - Contact customer service.

Blink code for malfunction indicator lamp (OBD)	 Malfunction indicator lamp lights up
Display on diagnostic tool	P210100 "Throttle valve actuator" "Outside tolerance"
Error level condition	Throttle valve actuator – out of tolerance
Possible cause	Throttle valve control wire 1 is faulty (📖 p. 243)
	Throttle valve control wire 2 is faulty (📖 p. 244)
	Throttle valve control wire 1 – short circuit to plus (terminal 30) (📖 p. 244)
	Throttle valve control wire 1 – short circuit to ignition plus (terminal 15) (📖 p. 245)
	Throttle valve control wire 1 – short circuit to the sensor power supply (📖 p. 245)
	Throttle valve control wire 2 – short circuit to plus (terminal 30) (📖 p. 246)
	Throttle valve control wire 2 – short circuit to ignition plus (terminal 15) (📖 p. 246)
	Throttle valve control wire 2 – short circuit to the sensor power supply (📖 p. 247)
	Throttle valve control wire 1 - short circuit to ground (terminal 31) (📖 p. 247)
	Throttle valve control wire 1 - short circuit to sensor ground (📖 p. 248)
	Throttle valve control wire 2 - short circuit to ground (terminal 31) (📖 p. 248)
	Throttle valve control wire 2 - short circuit to sensor ground (📖 p. 249)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Throttle valve control wire 1 is faulty

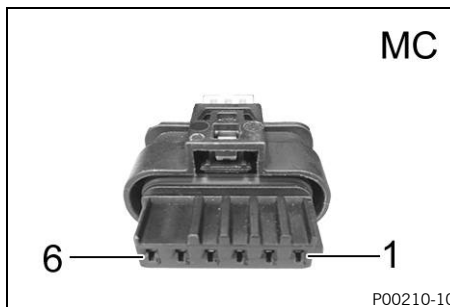
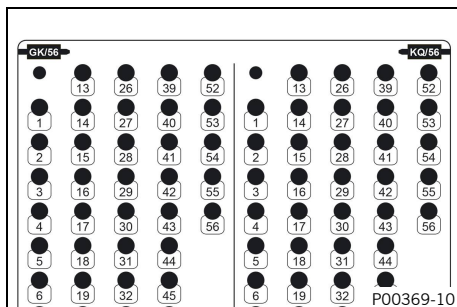
Condition

The ignition is off.

Engine control unit is disconnected. (📖 p. 15)

The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.

The throttle valve actuator is disconnected. (📖 p. 16)



Check throttle valve control wire 1.

-  Measure the resistance between the specified points.
Break-out box, connector **GK** pin **55** – Throttle valve position sensor connector **MC** pin **1**

Resistance	≤ 0.6 Ω

» If the specifications have not been met:

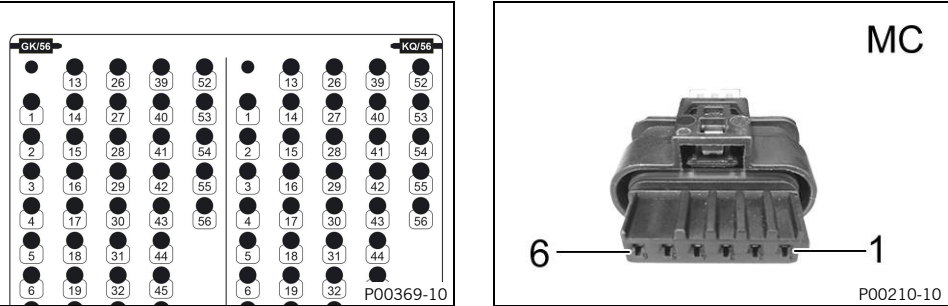
- Check engine control unit connector **GK** (📖 p. 497) pin **55** and connector **MC** (📖 p. 505) pin **1**.
- Check the cable from engine control unit connector **GK** (📖 p. 497) pin **55** to connector **MC** (📖 p. 505) pin **1**.

- » If the specifications have been met:
 - Check the next possible cause:
Throttle valve control wire 2 is faulty (📖 p. 244)

Throttle valve control wire 2 is faulty

Condition

The ignition is off.
Engine control unit is disconnected. (📖 p. 15)
The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.
The throttle valve actuator is disconnected. (📖 p. 16)



Check throttle valve control wire 2.

-  Measure the resistance between the specified points.
Break-out box, connector **GK** pin **56** – Throttle valve position sensor connector **MC** pin **2**

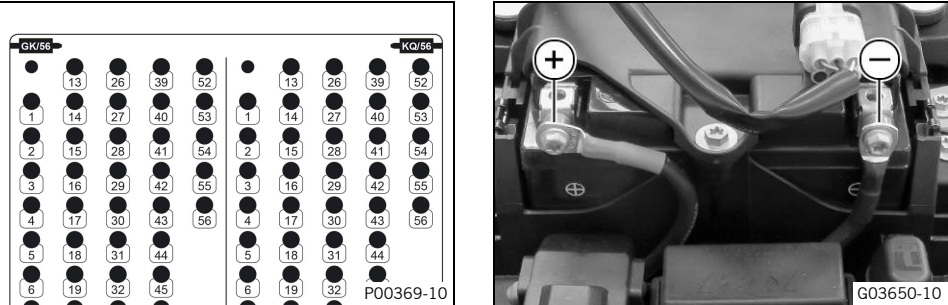
Resistance	≤ 0.6 Ω

- » If the specifications have not been met:
 - Check engine control unit connector **GK** (📖 p. 497) pin **56** and connector **MC** (📖 p. 505) pin **2**.
 - Check the cable from engine control unit connector **GK** (📖 p. 497) pin **56** to connector **MC** (📖 p. 505) pin **2**.
- » If the specifications have been met:
 - Check the next possible cause:
Throttle valve control wire 1 – short circuit to plus (terminal 30) (📖 p. 244)

Throttle valve control wire 1 – short circuit to plus (terminal 30)

Condition

The ignition is off.
Engine control unit is disconnected. (📖 p. 15)
The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.
The throttle valve actuator is disconnected. (📖 p. 16)



Throttle valve control wire 1 - check for a short circuit to plus (terminal 30).

-  Measure the voltage between the specified points.
Break-out box, connector **GK** pin **55** – Measuring point **Ground (-)**

Voltage	$\leq 0.1 \text{ V}$

- » If the specifications have not been met:
 - Check the cable from engine control unit connector **GK** (📖 p. 497) pin **55** to connector **MC** (📖 p. 505) pin **1** for a short circuit to plus (terminal 30).
- » If the specifications have been met:
 - Check the next possible cause:
Throttle valve control wire 1 – short circuit to ignition plus (terminal 15) (📖 p. 245)

Throttle valve control wire 1 – short circuit to ignition plus (terminal 15)

Condition

The ignition is off.

Engine control unit is disconnected. (📖 p. 15)

The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.

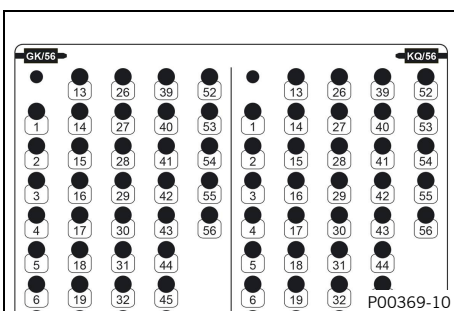
The throttle valve actuator is disconnected. (📖 p. 16)

Throttle valve control wire 1 – check for a short circuit to ignition plus (terminal 15).

-  Measure the resistance between the specified points.
Break-out box, connector **GK** pin **55** –
Break-out box, connector **GK** pin **44**

Resistance	$\infty \Omega$

- » If the specifications have not been met:
 - Check the cable from engine control unit connector **GK** (📖 p. 497) pin **55** to connector **MC** (📖 p. 505) pin **1** for a short circuit to ignition plus (terminal 15).
- » If the specifications have been met:
 - Check the next possible cause:
Throttle valve control wire 1 – short circuit to the sensor power supply (📖 p. 245)



Throttle valve control wire 1 – short circuit to the sensor power supply

Condition

The ignition is off.

Engine control unit is disconnected. (📖 p. 15)

The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.

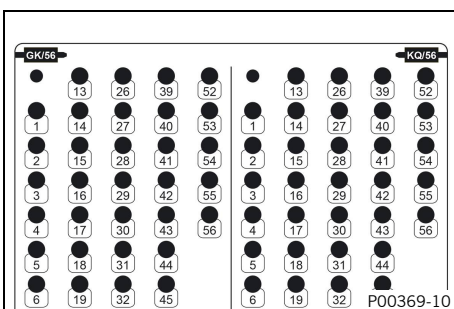
The throttle valve actuator is disconnected. (📖 p. 16)

Throttle valve control wire 1 - check for a short circuit to the sensor power supply.

-  Measure the resistance between the specified points.
Break-out box, connector **GK** pin **55** –
Break-out box, connector **GK** pin **10**

Resistance	$\infty \Omega$

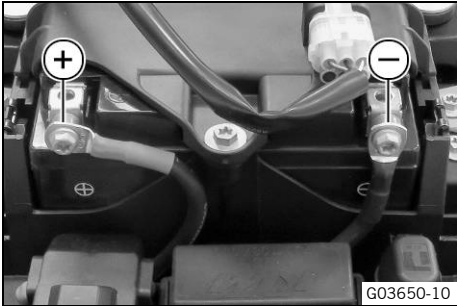
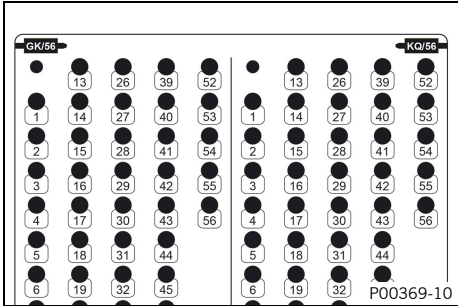
- » If the specifications have not been met:
 - Check the cable from engine control unit connector **GK** (📖 p. 497) pin **55** to connector **MC** (📖 p. 505) pin **1** for a short circuit to the sensor power supply.
- » If the specifications have been met:
 - Check the next possible cause:
Throttle valve control wire 2 – short circuit to plus (terminal 30) (📖 p. 246)



Throttle valve control wire 2 – short circuit to plus (terminal 30)

Condition

The ignition is off.
Engine control unit is disconnected. (📖 p. 15)
The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.
The throttle valve actuator is disconnected. (📖 p. 16)



Throttle valve control wire 2 – check for a short circuit to plus (terminal 30).

- **V** Measure the voltage between the specified points.
Break-out box, connector **GK** pin **56** – Measuring point **Ground (-)**

Voltage	≤ 0.1 V

- » If the specifications have not been met:
 - Check the cable from engine control unit connector **GK** (📖 p. 497) pin **56** to connector **MC** (📖 p. 505) pin **2** for a short circuit to plus (terminal 30).
- » If the specifications have been met:
 - Check the next possible cause:
Throttle valve control wire 2 – short circuit to ignition plus (terminal 15) (📖 p. 246)

Throttle valve control wire 2 – short circuit to ignition plus (terminal 15)

Condition

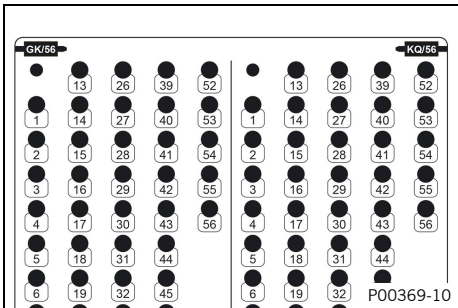
The ignition is off.
Engine control unit is disconnected. (📖 p. 15)
The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.
The throttle valve actuator is disconnected. (📖 p. 16)

Throttle valve control wire 2 – check for a short circuit to ignition plus (terminal 15).

- **Ω** Measure the resistance between the specified points.
Break-out box, connector **GK** pin **56** –
Break-out box, connector **GK** pin **44**

Resistance	∞ Ω

- » If the specifications have not been met:
 - Check the cable from engine control unit connector **GK** (📖 p. 497) pin **56** to connector **MC** (📖 p. 505) pin **2** for a short circuit to ignition plus (terminal 15).
- » If the specifications have been met:
 - Check the next possible cause:
Throttle valve control wire 2 – short circuit to the sensor power supply (📖 p. 247)



Throttle valve control wire 2 – short circuit to the sensor power supply

Condition

The ignition is off.

Engine control unit is disconnected. (p. 15)

The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.

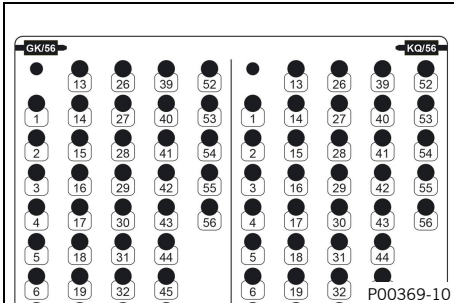
The throttle valve actuator is disconnected. (p. 16)

Throttle valve control wire 2 – check for a short circuit to the sensor power supply.

-  Measure the resistance between the specified points.
Break-out box, connector **GK** pin **56** –
Break-out box, connector **GK** pin **10**

Resistance	$\infty \Omega$

- » If the specifications have not been met:
 - Check the cable from engine control unit connector **GK** (p. 497) pin **56** to connector **MC** (p. 505) pin **2** for a short circuit to the sensor power supply.
- » If the specifications have been met:
 - Check the next possible cause:
Throttle valve control wire 1 - short circuit to ground (terminal 31) (p. 247)



Throttle valve control wire 1 - short circuit to ground (terminal 31)

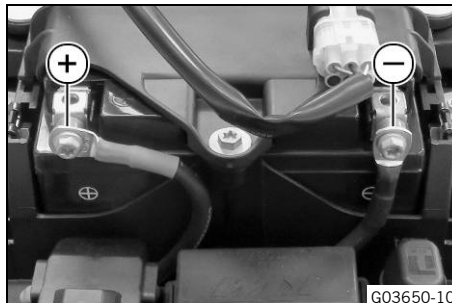
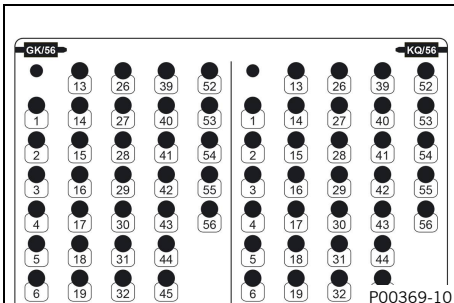
Condition

The ignition is off.

Engine control unit is disconnected. (p. 15)

The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.

The throttle valve actuator is disconnected. (p. 16)



Throttle valve control wire 1 - check for a short circuit to ground (terminal 31).

-  Measure the resistance between the specified points.
Break-out box, connector **GK** pin **55** – Measuring point **Ground (-)**

Resistance	$\infty \Omega$

- » If the specifications have not been met:
 - Check the cable from engine control unit connector **GK** (p. 497) pin **55** to connector **MC** (p. 505) pin **1** for a short circuit to ground (terminal 31).
- » If the specifications have been met:
 - Check the next possible cause:
Throttle valve control wire 1 - short circuit to sensor ground (p. 248)

Throttle valve control wire 1 - short circuit to sensor ground

Condition

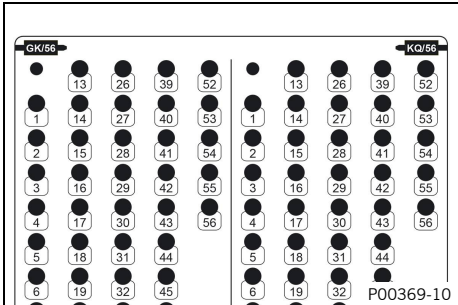
The ignition is off.
Engine control unit is disconnected. (📖 p. 15)
The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.
The throttle valve actuator is disconnected. (📖 p. 16)

Throttle valve control wire 1 - check for a short circuit to sensor ground.

-  Measure the resistance between the specified points.
Break-out box, connector **GK** pin **55** –
Break-out box, connector **GK** pin **26**

Resistance	$\infty \Omega$

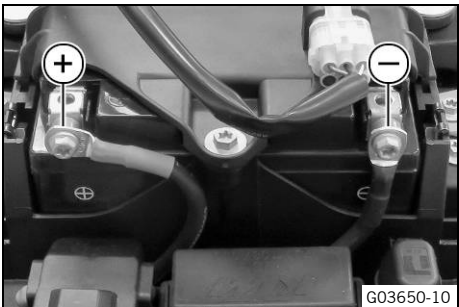
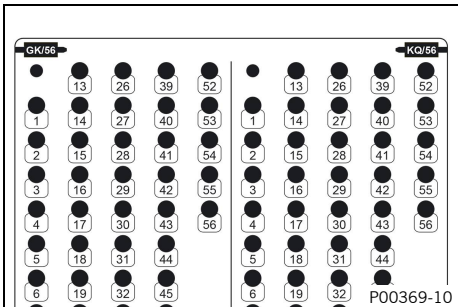
- » If the specifications have not been met:
 - Check cable from engine control unit connector **GK** (📖 p. 497) pin **55** to connector **MC** (📖 p. 505) pin **1** for a short circuit to sensor ground.
- » If the specifications have been met:
 - Check the next possible cause:
Throttle valve control wire 2 - short circuit to ground (terminal 31) (📖 p. 248)



Throttle valve control wire 2 - short circuit to ground (terminal 31)

Condition

The ignition is off.
Engine control unit is disconnected. (📖 p. 15)
The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.
The throttle valve actuator is disconnected. (📖 p. 16)



Throttle valve control wire 2 - check for a short circuit to ground (terminal 31).

-  Measure the resistance between the specified points.
Break-out box, connector **GK** pin **56** – Measuring point **Ground (-)**

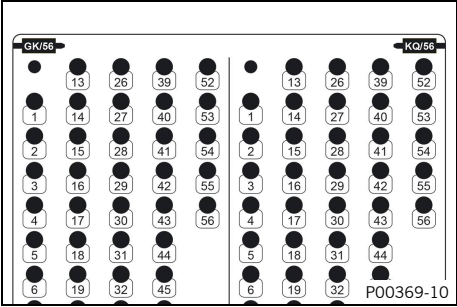
Resistance	$\infty \Omega$

- » If the specifications have not been met:
 - Check the cable from engine control unit connector **GK** (📖 p. 497) pin **56** to connector **MC** (📖 p. 505) pin **2** for a short circuit to ground (terminal 31).
- » If the specifications have been met:
 - Check the next possible cause:
Throttle valve control wire 2 - short circuit to sensor ground (📖 p. 249)

Throttle valve control wire 2 - short circuit to sensor ground

Condition
The ignition is off.
Engine control unit is disconnected. (📖 p. 15)
The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.
The throttle valve actuator is disconnected. (📖 p. 16)

Throttle valve control wire 2 - check for a short circuit to sensor ground.



-  Measure the resistance between the specified points.
Break-out box, connector **GK** pin **56** –
Break-out box, connector **GK** pin **26**

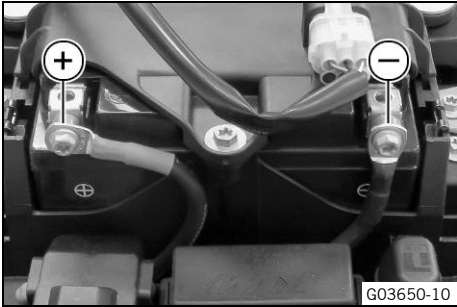
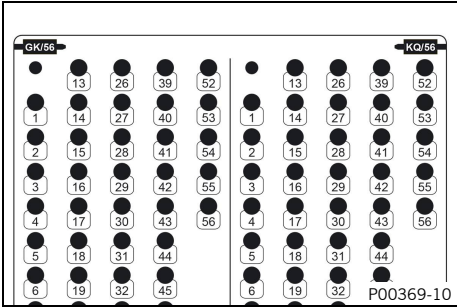
Resistance	$\infty \Omega$

- » If the specifications have not been met:
 - Check cable from engine control unit connector **GK** (📖 p. 497) pin **56** to connector **MC** (📖 p. 505) pin **2** for a short circuit to sensor ground.
- » If the specifications have been met:
 - Contact customer service.

Blink code for malfunction indicator lamp (OBD)	 Malfunction indicator lamp lights up
Display on diagnostic tool	P210200 "Throttle valve actuator" "Voltage too low"
Error level condition	Throttle valve actuator - voltage too low
Possible cause	Throttle valve control wire 1 - short circuit to ground (terminal 31) (📖 p. 250)
	Throttle valve control wire 1 - short circuit to sensor ground (📖 p. 250)
	Throttle valve control wire 2 - short circuit to ground (terminal 31) (📖 p. 251)
	Throttle valve control wire 2 - short circuit to sensor ground (📖 p. 249)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Throttle valve control wire 1 - short circuit to ground (terminal 31)

Condition
The ignition is off.
Engine control unit is disconnected. (📖 p. 15)
The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.
The throttle valve actuator is disconnected. (📖 p. 16)



Throttle valve control wire 1 - check for a short circuit to ground (terminal 31).

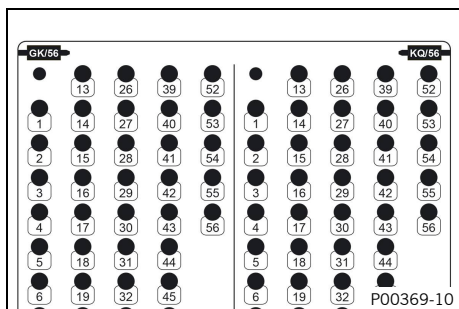
-  Measure the resistance between the specified points.
Break-out box, connector **GK** pin **55** – Measuring point **Ground (-)**

Resistance	$\infty \Omega$

- » If the specifications have not been met:
 - Check the cable from engine control unit connector **GK** (📖 p. 497) pin **55** to connector **MC** (📖 p. 505) pin **1** for a short circuit to ground (terminal 31).
- » If the specifications have been met:
 - Check the next possible cause:
Throttle valve control wire 1 - short circuit to sensor ground (📖 p. 250)

Throttle valve control wire 1 - short circuit to sensor ground

Condition
The ignition is off.
Engine control unit is disconnected. (📖 p. 15)
The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.
The throttle valve actuator is disconnected. (📖 p. 16)



Throttle valve control wire 1 - check for a short circuit to sensor ground.

-  Measure the resistance between the specified points.
Break-out box, connector **GK** pin **55** –
Break-out box, connector **GK** pin **26**

Resistance	$\infty \Omega$

- » If the specifications have not been met:
 - Check cable from engine control unit connector **GK** (p. 497) pin **55** to connector **MC** (p. 505) pin **1** for a short circuit to sensor ground.
- » If the specifications have been met:
 - Check the next possible cause:
Throttle valve control wire 2 - short circuit to ground (terminal 31) (p. 251)

Throttle valve control wire 2 - short circuit to ground (terminal 31)

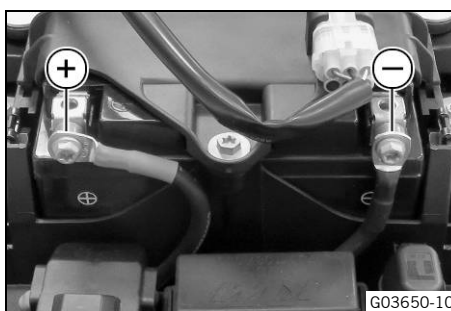
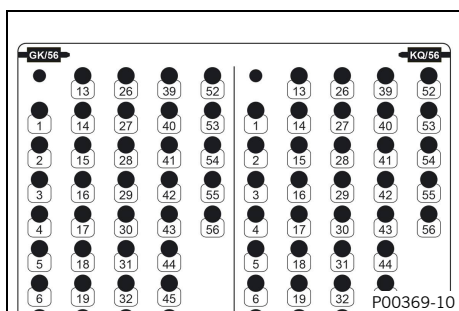
Condition

The ignition is off.

Engine control unit is disconnected. (p. 15)

The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.

The throttle valve actuator is disconnected. (p. 16)



Throttle valve control wire 2 - check for a short circuit to ground (terminal 31).

-  Measure the resistance between the specified points.
Break-out box, connector **GK** pin **56** – Measuring point **Ground (-)**

Resistance	$\infty \Omega$

- » If the specifications have not been met:
 - Check the cable from engine control unit connector **GK** (p. 497) pin **56** to connector **MC** (p. 505) pin **2** for a short circuit to ground (terminal 31).
- » If the specifications have been met:
 - Check the next possible cause:
Throttle valve control wire 2 - short circuit to sensor ground (p. 251)

Throttle valve control wire 2 - short circuit to sensor ground

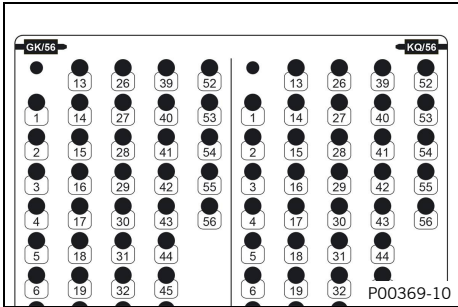
Condition

The ignition is off.

Engine control unit is disconnected. (p. 15)

The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.

The throttle valve actuator is disconnected. (p. 16)



Throttle valve control wire 2 - check for a short circuit to sensor ground.

-  Measure the resistance between the specified points.
Break-out box, connector **GK** pin **56** –
Break-out box, connector **GK** pin **26**

Resistance	$\infty \Omega$

- » If the specifications have not been met:
 - Check cable from engine control unit connector **GK** (📖 p. 497) pin **56** to connector **MC** (📖 p. 505) pin **2** for a short circuit to sensor ground.
- » If the specifications have been met:
 - Contact customer service.

Blink code for malfunction indicator lamp (OBD)	 Malfunction indicator lamp lights up
Display on diagnostic tool	P210300 "Throttle valve actuator" "Voltage too high"
Error level condition	Throttle valve actuator - voltage too high
Possible cause	Throttle valve control wire 1 – short circuit to plus (terminal 30) (📖 p. 253)
	Throttle valve control wire 1 – short circuit to ignition plus (terminal 15) (📖 p. 254)
	Throttle valve control wire 1 – short circuit to the sensor power supply (📖 p. 254)
	Throttle valve control wire 2 – short circuit to plus (terminal 30) (📖 p. 254)
	Throttle valve control wire 2 – short circuit to ignition plus (terminal 15) (📖 p. 255)
	Throttle valve control wire 2 – short circuit to the sensor power supply (📖 p. 255)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Throttle valve control wire 1 – short circuit to plus (terminal 30)

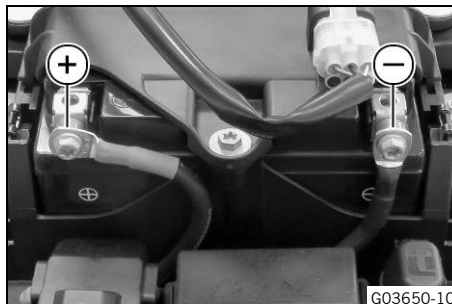
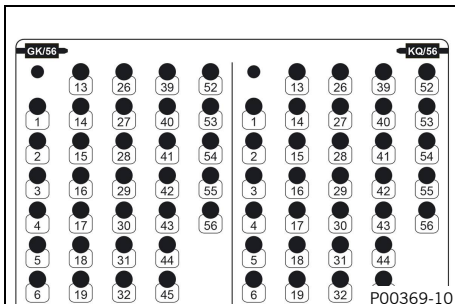
Condition

The ignition is off.

Engine control unit is disconnected. (📖 p. 15)

The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.

The throttle valve actuator is disconnected. (📖 p. 16)



Throttle valve control wire 1 - check for a short circuit to plus (terminal 30).

- **V** Measure the voltage between the specified points.
Break-out box, connector **GK** pin **55** – Measuring point **Ground (-)**

Voltage	≤ 0.1 V

- » If the specifications have not been met:
 - Check the cable from engine control unit connector **GK** (📖 p. 497) pin **55** to connector **MC** (📖 p. 505) pin **1** for a short circuit to plus (terminal 30).
- » If the specifications have been met:
 - Check the next possible cause:
Throttle valve control wire 1 – short circuit to ignition plus (terminal 15) (📖 p. 254)

Throttle valve control wire 1 – short circuit to ignition plus (terminal 15)

Condition

The ignition is off.

Engine control unit is disconnected. (📖 p. 15)

The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.

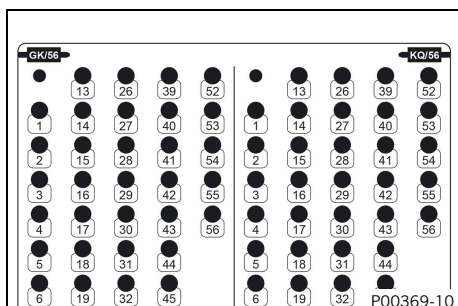
The throttle valve actuator is disconnected. (📖 p. 16)

Throttle valve control wire 1 – check for a short circuit to ignition plus (terminal 15).

-  Measure the resistance between the specified points.
Break-out box, connector **GK** pin **55** –
Break-out box, connector **GK** pin **44**

Resistance	$\infty \Omega$

- » If the specifications have not been met:
 - Check the cable from engine control unit connector **GK** (📖 p. 497) pin **55** to connector **MC** (📖 p. 505) pin **1** for a short circuit to ignition plus (terminal 15).
- » If the specifications have been met:
 - Check the next possible cause:
Throttle valve control wire 1 – short circuit to the sensor power supply (📖 p. 254)



Throttle valve control wire 1 – short circuit to the sensor power supply

Condition

The ignition is off.

Engine control unit is disconnected. (📖 p. 15)

The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.

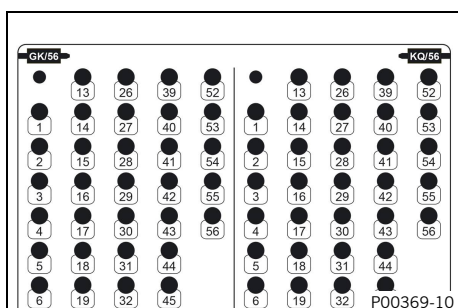
The throttle valve actuator is disconnected. (📖 p. 16)

Throttle valve control wire 1 - check for a short circuit to the sensor power supply.

-  Measure the resistance between the specified points.
Break-out box, connector **GK** pin **55** –
Break-out box, connector **GK** pin **10**

Resistance	$\infty \Omega$

- » If the specifications have not been met:
 - Check the cable from engine control unit connector **GK** (📖 p. 497) pin **55** to connector **MC** (📖 p. 505) pin **1** for a short circuit to the sensor power supply.
- » If the specifications have been met:
 - Check the next possible cause:
Throttle valve control wire 2 – short circuit to plus (terminal 30) (📖 p. 254)



Throttle valve control wire 2 – short circuit to plus (terminal 30)

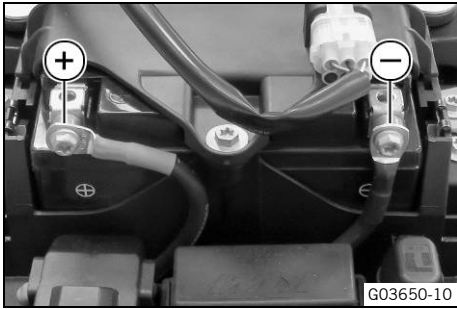
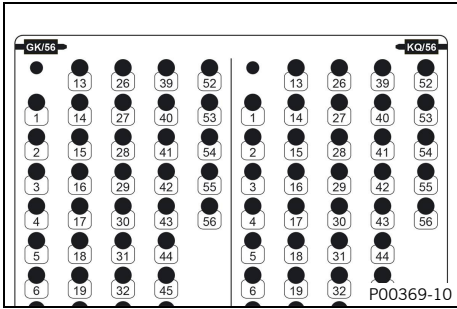
Condition

The ignition is off.

Engine control unit is disconnected. (📖 p. 15)

The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.

The throttle valve actuator is disconnected. (📖 p. 16)



Throttle valve control wire 2 – check for a short circuit to plus (terminal 30).

- **V** Measure the voltage between the specified points.
Break-out box, connector **GK** pin **56** – Measuring point **Ground (-)**

Voltage	$\leq 0.1 \text{ V}$

- » If the specifications have not been met:
 - Check the cable from engine control unit connector **GK** (p. 497) pin **56** to connector **MC** (p. 505) pin **2** for a short circuit to plus (terminal 30).
- » If the specifications have been met:
 - Check the next possible cause:
Throttle valve control wire 2 – short circuit to ignition plus (terminal 15) (p. 255)

Throttle valve control wire 2 – short circuit to ignition plus (terminal 15)

Condition

The ignition is off.
Engine control unit is disconnected. (p. 15)
The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.
The throttle valve actuator is disconnected. (p. 16)

Throttle valve control wire 2 – check for a short circuit to ignition plus (terminal 15).

- **Ω** Measure the resistance between the specified points.
Break-out box, connector **GK** pin **56** –
Break-out box, connector **GK** pin **44**

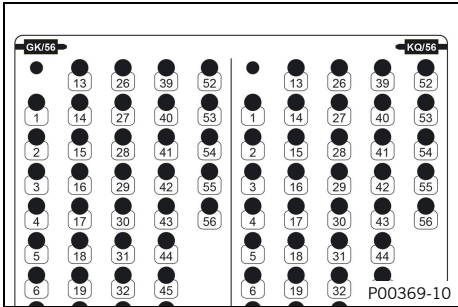
Resistance	$\infty \Omega$

- » If the specifications have not been met:
 - Check the cable from engine control unit connector **GK** (p. 497) pin **56** to connector **MC** (p. 505) pin **2** for a short circuit to ignition plus (terminal 15).
- » If the specifications have been met:
 - Check the next possible cause:
Throttle valve control wire 2 – short circuit to the sensor power supply (p. 255)

Throttle valve control wire 2 – short circuit to the sensor power supply

Condition

The ignition is off.
Engine control unit is disconnected. (p. 15)
The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.
The throttle valve actuator is disconnected. (p. 16)



Throttle valve control wire 2 – check for a short circuit to the sensor power supply.

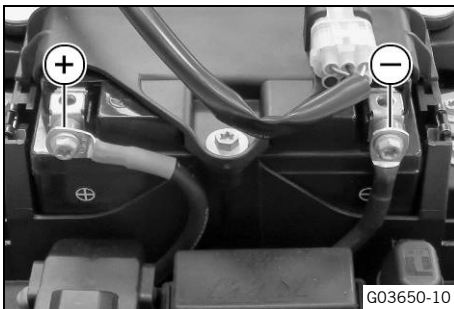
-  Measure the resistance between the specified points.
Break-out box, connector **GK** pin **56** –
Break-out box, connector **GK** pin **10**

Resistance	$\infty \Omega$

- » If the specifications have not been met:
 - Check the cable from engine control unit connector **GK** (📖 p. 497) pin **56** to connector **MC** (📖 p. 505) pin **2** for a short circuit to the sensor power supply.
- » If the specifications have been met:
 - Contact customer service.

Blink code for malfunction indicator lamp (OBD)	 Malfunction indicator lamp lights up
Display on diagnostic tool	P210600 "Throttle valve actuator" "Actuator position faulty"
Error level condition	Throttle valve actuator – actuator position faulty
Function check	Resetting the engine control unit (📖 p. 257)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Resetting the engine control unit



- Disconnect the negative terminal of the 12-V battery.
- Wait for 10 minutes.
- Connect the negative terminal of the 12-V battery.
- Clear the fault memory using the KTM diagnostics tool.
- Switch off the ignition for 20 seconds.
- Read out the trouble code memory using the KTM diagnostics tool.
 - » If the error persists:
 - Change the engine control unit.

Last measure if none of the documented causes leads to elimination of the fault

- Contact customer service.

Blink code for malfunction indicator lamp (OBD)	 Malfunction indicator lamp lights up
Display on diagnostic tool	P211100 "Throttle valve actuator" "Stuck (open)"
Error level condition	Throttle valve actuator – stuck (open)
Possible cause	The throttle valve does not close (📖 p. 258)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

The throttle valve does not close

Condition

The ignition is off.

The throttle valve actuator is disconnected. (📖 p. 16)

- Remove the throttle valve body.

The throttle valve is closed. (📖 p. 16)

- » If the specifications have been met:
 - Check the throttle valve body for damage, dirt, and smooth operation. Carefully push open the throttle valve with a finger and ensure that the throttle valve returns to the basic position after it is released. If the throttle valve gets stuck or does not return to the basic position automatically, change the throttle valve body.
- » If the specifications have not been met:
 - Contact customer service.

Blink code for malfunction indicator lamp (OBD)	 Malfunction indicator lamp lights up
Display on diagnostic tool	P211900 "Throttle valve actuator" "Outside of tolerance"
Error level condition	Throttle valve actuator – out of tolerance
Possible cause	The throttle valve does not close (📖 p. 259)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

The throttle valve does not close

Condition

The ignition is off.

The throttle valve actuator is disconnected. (📖 p. 16)

- Remove the throttle valve body.

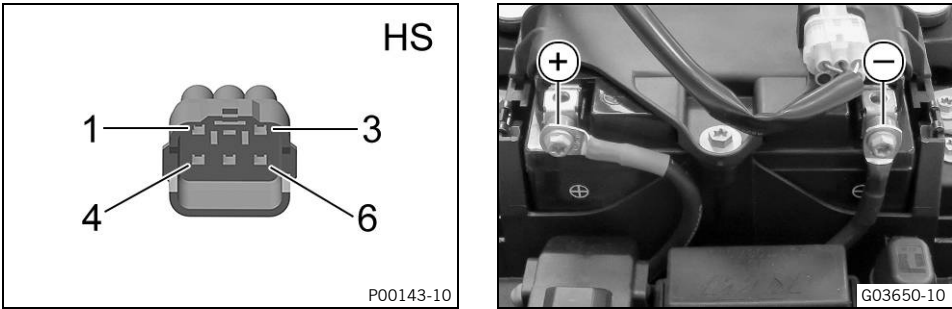
The throttle valve is closed. (📖 p. 16)

- » If the specifications have been met:
 - Check the throttle valve body for damage, dirt, and smooth operation. Carefully push open the throttle valve with a finger and ensure that the throttle valve returns to the basic position after it is released. If the throttle valve gets stuck or does not return to the basic position automatically, change the throttle valve body.
- » If the specifications have not been met:
 - Contact customer service.

Blink code for malfunction indicator lamp (OBD)	 Malfunction indicator lamp lights up
Display on diagnostic tool	P212200 "Accelerator position sensor, circuit D" "Voltage too low"
Error level condition	Voltage too low Voltage: < 0.40 V
Possible cause	Accelerator position sensor, circuit D – power supply is faulty (📖 p. 260) Accelerator position sensor, circuit D – the signal wire has a short circuit to ground (terminal 31) (📖 p. 261) Accelerator position sensor, circuit D - the signal wire has a short circuit to sensor ground (📖 p. 261) Accelerator position sensor, circuit D - signal wire is faulty (📖 p. 262)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Accelerator position sensor, circuit D – power supply is faulty

Condition
The ignition is on.
Engine control unit is connected. (📖 p. 15)
The accelerator position sensor is connected. (📖 p. 19)



Accelerator position sensor, circuit D - check the power supply.

-  Measure the voltage between the specified points.
Accelerator position sensor connector **HS** pin **6** – Measuring point **Ground (–)**

Voltage	4.8 ... 5.2 V

- » If the specifications have not been met:
 - Check connector **HS** (📖 p. 499) pin **6** and engine control unit connector **GK** (📖 p. 497) pin **23**.
 - Check the cable from connector **HS** (📖 p. 499) pin **6** to engine control unit connector **GK** (📖 p. 497) pin **23**.
- » If the specifications have been met:
 - Check the next possible cause:
Accelerator position sensor, circuit D – the signal wire has a short circuit to ground (terminal 31) (📖 p. 261)

Accelerator position sensor, circuit D – the signal wire has a short circuit to ground (terminal 31)

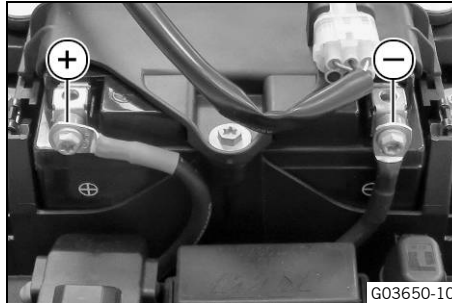
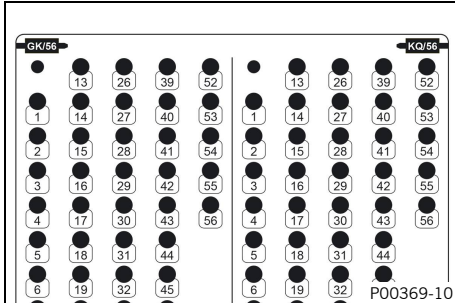
Condition

The ignition is off.

Engine control unit is disconnected. (📖 p. 15)

The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.

The accelerator position sensor is disconnected. (📖 p. 19)



Accelerator position sensor, circuit D - check the signal wire for a short circuit to ground (terminal 31).

-  Measure the resistance between the specified points.
Break-out box, connector **GK** pin **48** – Measuring point **Ground (-)**

Resistance	$\infty \Omega$

- » If the specifications have not been met:
 - Check the cable from engine control unit connector **GK** (📖 p. 497) pin **48** to connector **HS** (📖 p. 499) pin **4** for a short circuit to ground (terminal 31).
- » If the specifications have been met:
 - Check the next possible cause:
Accelerator position sensor, circuit D - the signal wire has a short circuit to sensor ground (📖 p. 261)

Accelerator position sensor, circuit D - the signal wire has a short circuit to sensor ground

Condition

The ignition is off.

Engine control unit is disconnected. (📖 p. 15)

The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.

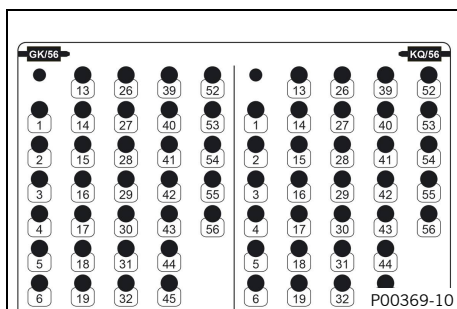
The accelerator position sensor is disconnected. (📖 p. 19)

Accelerator position sensor, circuit D - check the signal wire for a short circuit to sensor ground.

-  Measure the resistance between the specified points.
Break-out box, connector **GK** pin **48** –
Break-out box, connector **GK** pin **39**

Resistance	$\infty \Omega$

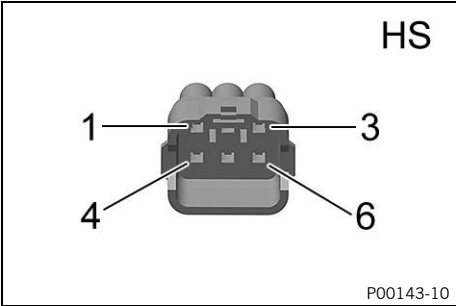
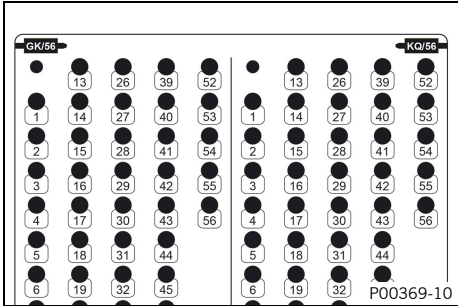
- » If the specifications have not been met:
 - Check cable from engine control unit connector **GK** (📖 p. 497) pin **48** to connector **HS** (📖 p. 499) pin **4** for a short circuit to sensor ground.
- » If the specifications have been met:
 - Check the next possible cause:
Accelerator position sensor, circuit D - signal wire is faulty (📖 p. 262)



Accelerator position sensor, circuit D - signal wire is faulty

Condition

The ignition is off.
Engine control unit is disconnected. (📖 p. 15)
The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.
The accelerator position sensor is disconnected. (📖 p. 19)



Accelerator position sensor, circuit D - check the signal wire.

-  Measure the resistance between the specified points.
Break-out box, connector **GK** pin **48** – Accelerator position sensor connector **HS** pin **4**

Resistance	≤ 0.6 Ω

- » If the specifications have not been met:
 - Check engine control unit connector **GK** (📖 p. 497) pin **48** and connector **HS** (📖 p. 499) pin **4**.
 - Check the cable from engine control unit connector **GK** (📖 p. 497) pin **48** to connector **HS** (📖 p. 499) pin **4**.
- » If the specifications have been met:
 - Contact customer service.

Blink code for malfunction indicator lamp (OBD)	 Malfunction indicator lamp lights up
Display on diagnostic tool	P212300 "Accelerator position sensor, circuit D" "Voltage too high"
Error level condition	Voltage too high Voltage: ≥ 4.840 V
Possible cause	Accelerator position sensor, circuit D - the signal wire has a short circuit to plus (terminal 30) (📖 p. 263)
	Accelerator position sensor circuit D - signal wire has a short circuit to the sensor power supply (📖 p. 264)
	Accelerator position sensor, circuit D - signal wire has a short circuit to ignition plus (terminal 15) (📖 p. 264)
	Accelerator position sensor, circuit D – ground wire is faulty (📖 p. 264)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Accelerator position sensor, circuit D - the signal wire has a short circuit to plus (terminal 30)

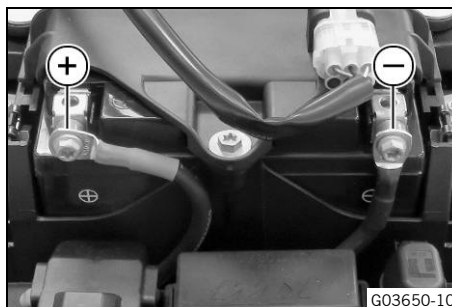
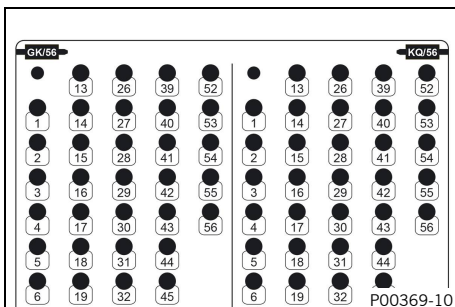
Condition

The ignition is off.

Engine control unit is disconnected. (📖 p. 15)

The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.

The accelerator position sensor is disconnected. (📖 p. 19)



Accelerator position sensor, circuit D - check the signal wire for a short circuit to plus (terminal 30).

- **V** Measure the voltage between the specified points.
Break-out box, connector **GK** pin **48** – Measuring point **Ground (-)**

Voltage	≤ 0.1 V

- » If the specifications have not been met:
 - Check the cable from engine control unit connector **GK** (📖 p. 497) pin **48** to connector **HS** (📖 p. 499) pin **4** for a short circuit to plus (terminal 30).
- » If the specifications have been met:
 - Check the next possible cause:
Accelerator position sensor circuit D - signal wire has a short circuit to the sensor power supply (📖 p. 264)

Accelerator position sensor circuit D - signal wire has a short circuit to the sensor power supply

Condition

The ignition is off.

Engine control unit is disconnected. (📖 p. 15)

The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.

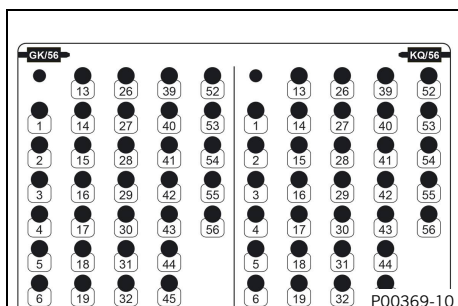
The accelerator position sensor is disconnected. (📖 p. 19)

Accelerator position sensor, circuit D - check the signal wire for a short circuit to the sensor power supply.

-  Measure the resistance between the specified points.
Break-out box, connector **GK** pin **48** –
Break-out box, connector **GK** pin **23**

Resistance	$\infty \Omega$

- » If the specifications have not been met:
 - Check the cable from engine control unit connector **GK** (📖 p. 497) pin **48** to connector **HS** (📖 p. 499) pin **4** for a short circuit to the sensor power supply.
- » If the specifications have been met:
 - Check the next possible cause:
Accelerator position sensor, circuit D - signal wire has a short circuit to ignition plus (terminal 15) (📖 p. 264)



Accelerator position sensor, circuit D - signal wire has a short circuit to ignition plus (terminal 15)

Condition

The ignition is off.

Engine control unit is disconnected. (📖 p. 15)

The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.

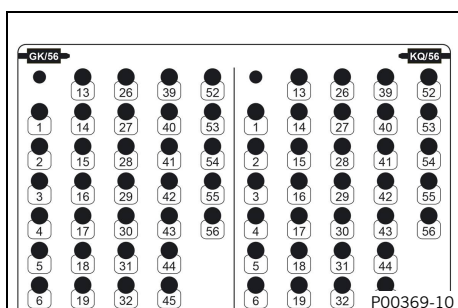
The accelerator position sensor is disconnected. (📖 p. 19)

Accelerator position sensor, circuit D - check the signal wire for a short circuit to ignition plus (terminal 15).

-  Measure the resistance between the specified points.
Break-out box, connector **GK** pin **48** –
Break-out box, connector **GK** pin **44**

Resistance	$\infty \Omega$

- » If the specifications have not been met:
 - Check the cable from engine control unit connector **GK** (📖 p. 497) pin **48** to connector **HS** (📖 p. 499) pin **4** for a short circuit to ignition plus (terminal 15).
- » If the specifications have been met:
 - Check the next possible cause:
Accelerator position sensor, circuit D – ground wire is faulty (📖 p. 264)



Accelerator position sensor, circuit D – ground wire is faulty

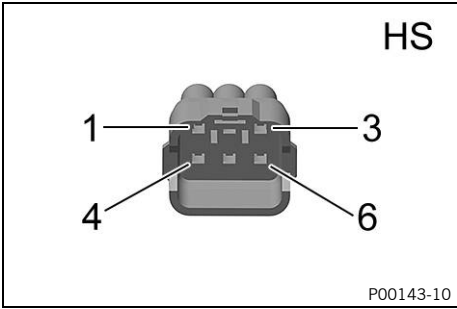
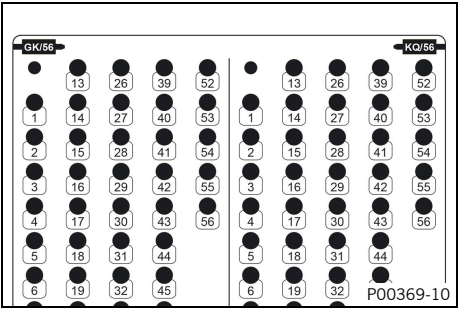
Condition

The ignition is off.

Engine control unit is disconnected. (📖 p. 15)

The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.

The accelerator position sensor is disconnected. (📖 p. 19)



Accelerator position sensor, circuit D - check the ground wire.

-  Measure the resistance between the specified points.
Break-out box, connector **GK** pin **39** – Accelerator position sensor connector **HS** pin **5**

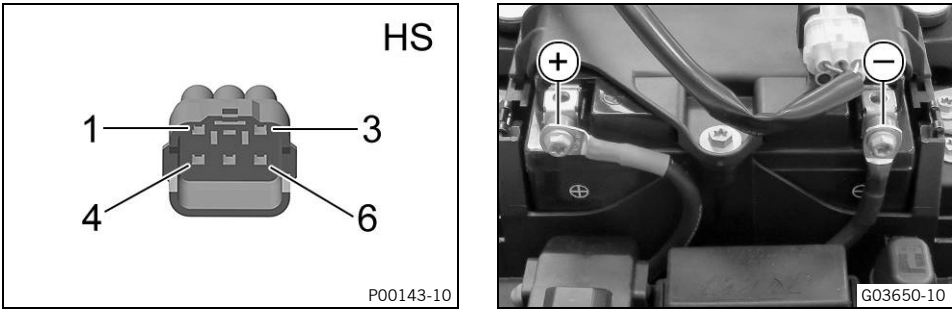
Resistance	$\leq 0.6 \Omega$

- » If the specifications have not been met:
 - Check engine control unit connector **GK** (p. 502) pin **39** and connector **HS** (p. 499) pin **5**.
 - Check the cable from engine control unit connector **GK** (p. 502) pin **39** to connector **HS** (p. 499) pin **5**.
- » If the specifications have been met:
 - Contact customer service.

Blink code for malfunction indicator lamp (OBD)	 Malfunction indicator lamp lights up
Display on diagnostic tool	P212700 "Accelerator position sensor, circuit E" "Voltage too low"
Error level condition	Voltage too low Voltage: < 0.2 V
Possible cause	Accelerator position sensor circuit E – power supply is faulty (📖 p. 266) Accelerator position sensor, circuit E – the signal wire has a short circuit to ground (terminal 31) (📖 p. 267) Accelerator position sensor, circuit E - the signal wire has a short circuit to sensor ground (📖 p. 267) Accelerator position sensor, circuit E - signal wire is faulty (📖 p. 268)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Accelerator position sensor circuit E – power supply is faulty

Condition
The ignition is on.
Engine control unit is connected. (📖 p. 15)
The accelerator position sensor is connected. (📖 p. 19)



Accelerator position sensor, circuit E - check the power supply.

-  Measure the voltage between the specified points.
Accelerator position sensor connector **HS** pin **3** – Measuring point **Ground (–)**

Voltage	4.8 ... 5.2 V

- » If the specifications have not been met:
 - Check connector **HS** (📖 p. 499) pin **3** and engine control unit connector **GK** (📖 p. 497) pin **11**.
 - Check the cable from connector **HS** (📖 p. 499) pin **3** to engine control unit connector **GK** (📖 p. 497) pin **11**.
- » If the specifications have been met:
 - Check the next possible cause:
Accelerator position sensor, circuit E – the signal wire has a short circuit to ground (terminal 31) (📖 p. 267)

Accelerator position sensor, circuit E – the signal wire has a short circuit to ground (terminal 31)

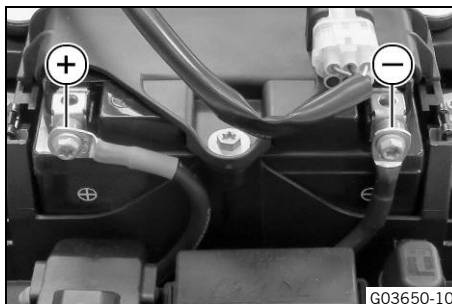
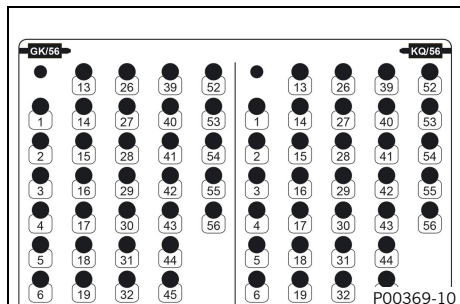
Condition

The ignition is off.

Engine control unit is disconnected. (📖 p. 15)

The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.

The accelerator position sensor is disconnected. (📖 p. 19)



Accelerator position sensor, circuit E - check the signal wire for a short circuit to ground (terminal 31).

-  Measure the resistance between the specified points.
Break-out box, connector **GK** pin **47** – Measuring point **Ground (-)**

Resistance	$\infty \Omega$

- » If the specifications have not been met:
 - Check the cable from engine control unit connector **GK** (📖 p. 497) pin **47** to connector **HS** (📖 p. 499) pin **1** for a short circuit to ground (terminal 31).
- » If the specifications have been met:
 - Check the next possible cause:
Accelerator position sensor, circuit E - the signal wire has a short circuit to sensor ground (📖 p. 267)

Accelerator position sensor, circuit E - the signal wire has a short circuit to sensor ground

Condition

The ignition is off.

Engine control unit is disconnected. (📖 p. 15)

The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.

The accelerator position sensor is disconnected. (📖 p. 19)

Accelerator position sensor, circuit E - check the signal wire for a short circuit to sensor ground.

-  Measure the resistance between the specified points.
Break-out box, connector **GK** pin **47** –
Break-out box, connector **GK** pin **25**

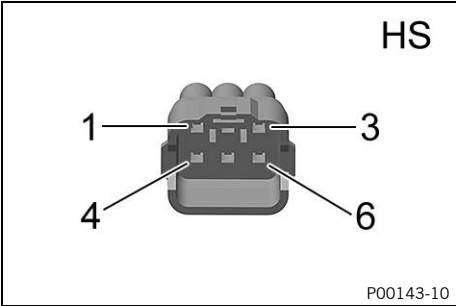
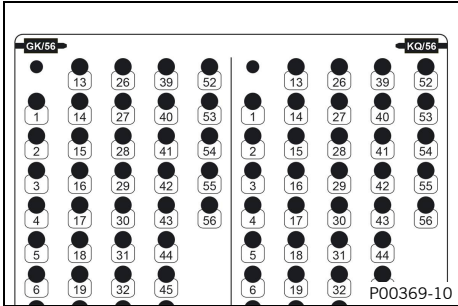
Resistance	$\infty \Omega$

- » If the specifications have not been met:
 - Check cable from engine control unit connector **GK** (📖 p. 497) pin **47** to connector **HS** (📖 p. 499) pin **1** for a short circuit to sensor ground.
- » If the specifications have been met:
 - Check the next possible cause:
Accelerator position sensor, circuit E - signal wire is faulty (📖 p. 268)

Accelerator position sensor, circuit E - signal wire is faulty

Condition

The ignition is off.
Engine control unit is disconnected. (📖 p. 15)
The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.
The accelerator position sensor is disconnected. (📖 p. 19)



Accelerator position sensor, circuit E - check the signal wire.

-  Measure the resistance between the specified points.
Break-out box, connector **GK** pin **47** – Accelerator position sensor connector **HS** pin **1**

Resistance	≤ 0.6 Ω

- » If the specifications have not been met:
 - Check engine control unit connector **GK** (📖 p. 497) pin **47** and connector **HS** (📖 p. 499) pin **1**.
 - Check the cable from engine control unit connector **GK** (📖 p. 497) pin **47** to connector **HS** (📖 p. 499) pin **1**.
- » If the specifications have been met:
 - Contact customer service.

Blink code for malfunction indicator lamp (OBD)	 Malfunction indicator lamp lights up
Display on diagnostic tool	P212800 "Accelerator position sensor, circuit E" "Voltage too high"
Error level condition	Voltage too high Voltage: ≥ 2.4 V
Possible cause	Accelerator position sensor, circuit E - the signal wire has a short circuit to plus (terminal 30) (📖 p. 269)
	Accelerator position sensor, circuit E - signal wire has a short circuit to ignition plus (terminal 15) (📖 p. 270)
	Accelerator position sensor, circuit E - signal wire has a short circuit to the sensor power supply (📖 p. 270)
	Accelerator position sensor, circuit E - ground wire is faulty (📖 p. 270)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Accelerator position sensor, circuit E - the signal wire has a short circuit to plus (terminal 30)

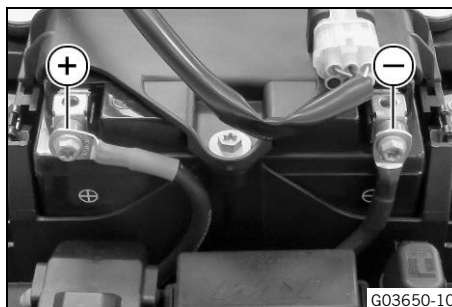
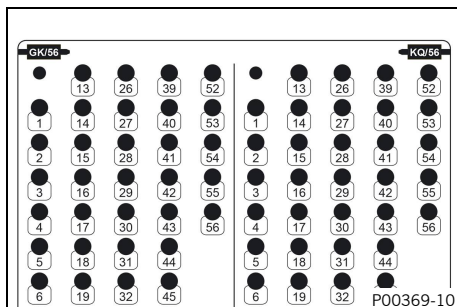
Condition

The ignition is off.

Engine control unit is disconnected. (📖 p. 15)

The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.

The accelerator position sensor is disconnected. (📖 p. 19)



Accelerator position sensor, circuit E - check the signal wire for a short circuit to plus (terminal 30).

- **V** Measure the voltage between the specified points.
Break-out box, connector **GK** pin **47** – Measuring point **Ground (-)**

Voltage	≤ 0.1 V

- » If the specifications have not been met:
 - Check the cable from engine control unit connector **GK** (📖 p. 497) pin **47** to connector **HS** (📖 p. 499) pin **1** for a short circuit to plus (terminal 30).
- » If the specifications have been met:
 - Check the next possible cause:
Accelerator position sensor, circuit E - signal wire has a short circuit to ignition plus (terminal 15) (📖 p. 270)

Accelerator position sensor, circuit E - signal wire has a short circuit to ignition plus (terminal 15)

Condition

The ignition is off.

Engine control unit is disconnected. (📖 p. 15)

The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.

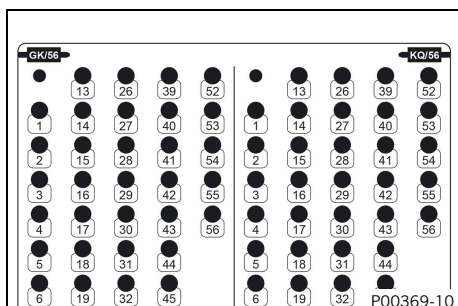
The accelerator position sensor is disconnected. (📖 p. 19)

Accelerator position sensor, circuit E - check the signal wire for a short circuit to ignition plus (terminal 15).

-  Measure the resistance between the specified points.
Break-out box, connector **GK** pin **47** –
Break-out box, connector **GK** pin **44**

Resistance	$\infty \Omega$

- » If the specifications have not been met:
 - Check the cable from engine control unit connector **GK** (📖 p. 497) pin **47** to connector **HS** (📖 p. 499) pin **1** for a short circuit to ignition plus (terminal 15).
- » If the specifications have been met:
 - Check the next possible cause:
Accelerator position sensor, circuit E - signal wire has a short circuit to the sensor power supply (📖 p. 270)



Accelerator position sensor, circuit E - signal wire has a short circuit to the sensor power supply

Condition

The ignition is off.

Engine control unit is disconnected. (📖 p. 15)

The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.

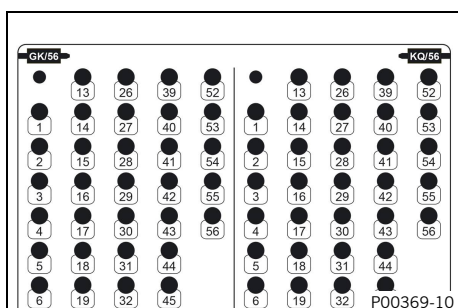
The accelerator position sensor is disconnected. (📖 p. 19)

Accelerator position sensor, circuit E - check the signal wire for a short circuit to the sensor power supply.

-  Measure the resistance between the specified points.
Break-out box, connector **GK** pin **47** –
Break-out box, connector **GK** pin **11**

Resistance	$\infty \Omega$

- » If the specifications have not been met:
 - Check the cable from engine control unit connector **GK** (📖 p. 497) pin **47** to connector **HS** (📖 p. 499) pin **1** for a short circuit to the sensor power supply.
- » If the specifications have been met:
 - Check the next possible cause:
Accelerator position sensor, circuit E - ground wire is faulty (📖 p. 270)



Accelerator position sensor, circuit E - ground wire is faulty

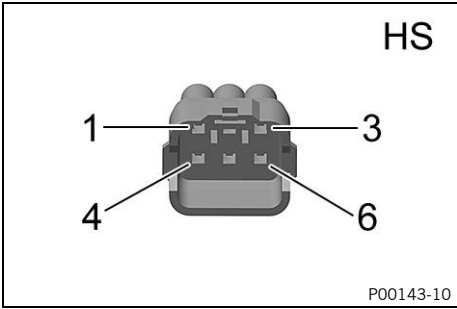
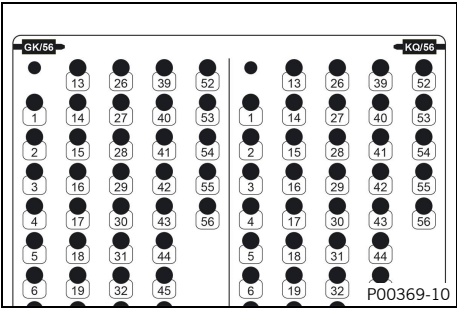
Condition

The ignition is off.

Engine control unit is disconnected. (📖 p. 15)

The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.

The accelerator position sensor is disconnected. (📖 p. 19)



Accelerator position sensor, circuit E - check the ground wire.

-  Measure the resistance between the specified points.
Break-out box, connector **GK** pin **25** – Accelerator position sensor connector **HS** pin **2**

Resistance	$\leq 0.6 \Omega$

- » If the specifications have not been met:
 - Check engine control unit connector **GK** (p. 497) pin **25** and connector **HS** (p. 499) pin **2**.
 - Check the cable from engine control unit connector **GK** (p. 497) pin **25** to connector **HS** (p. 499) pin **2**.
- » If the specifications have been met:
 - Contact customer service.

Blink code for malfunction indicator lamp (OBD)	 Malfunction indicator lamp lights up
Display on diagnostic tool	P213500 "Throttle valve position sensor, circuit A and B" "Voltage correlation"
Error level condition	Circuit A and B throttle valve position sensor – voltage correlation
Function check	Checking the throttle position sensor circuit A and B wires (📖 p. 272)
Possible cause	Throttle valve position sensor circuit A – the power supply is faulty (📖 p. 273)
	Throttle valve position sensor circuit A – the signal wire is faulty (📖 p. 274)
	Throttle valve position sensor circuit A – ground wire is faulty (📖 p. 274)
	Throttle valve position sensor circuit A – the signal wire has a short circuit to ground (terminal 31) (📖 p. 275)
	Throttle valve position sensor circuit A – the signal wire has a short circuit to plus (terminal 30) (📖 p. 275)
	Throttle valve position sensor circuit A – the signal wire has a short circuit to ignition plus (terminal 15) (📖 p. 276)
	Throttle valve position sensor circuit B – the signal wire is faulty (📖 p. 277)
	Throttle valve position sensor circuit B – the signal wire has a short circuit to ground (terminal 31) (📖 p. 277)
	Throttle valve position sensor circuit B – the signal wire has a short circuit to plus (terminal 30) (📖 p. 278)
	Throttle valve position sensor circuit B – the signal wire has a short circuit to ignition plus (terminal 15) (📖 p. 278)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Checking the throttle position sensor circuit A and B wires

Condition

The ignition is on.

The diagnostics tool is connected and running.

- Select **"Engine control unit" > "Measured values" > "Throttle position voltage sensor 1" and "Throttle position voltage sensor 2"**.
- Slowly and evenly turn the throttle grip all the way.

Circuit A throttle valve position sensor	
Voltage (value in diagnostics tool)	0.7 ... 3.3 V
Circuit B throttle valve position sensor	
Voltage (value in diagnostics tool)	1.7 ... 4.3 V

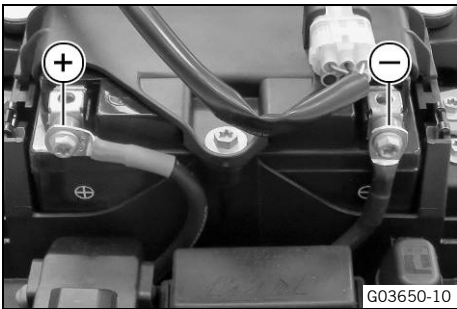
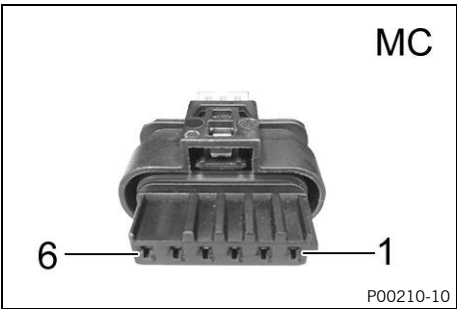
- » If the displayed value is equal to the setpoint value:
 - Clear the fault memory using the KTM diagnostics tool.
 - Take a test ride.
 - Read out the trouble code memory using the KTM diagnostics tool.
- » If the displayed value is below the setpoint value:
 - Check the next possible cause:
Throttle valve position sensor circuit A – the power supply is faulty (📖 p. 273)
 - Check the next possible cause:
Throttle valve position sensor circuit A – the signal wire is faulty (📖 p. 274)
 - Check the next possible cause:
Throttle valve position sensor circuit A – ground wire is faulty (📖 p. 274)

- Check the next possible cause:
Throttle valve position sensor circuit A – the signal wire has a short circuit to ground (terminal 31) (📖 p. 275)
- Check the next possible cause:
Throttle valve position sensor circuit A – the signal wire has a short circuit to plus (terminal 30) (📖 p. 275)
- Check the next possible cause:
Throttle valve position sensor circuit A – the signal wire has a short circuit to ignition plus (terminal 15) (📖 p. 276)
- Check the next possible cause:
Throttle valve position sensor circuit B – the signal wire is faulty (📖 p. 277)
- Check the next possible cause:
Throttle valve position sensor circuit B – the signal wire has a short circuit to ground (terminal 31) (📖 p. 277)
- Check the next possible cause:
Throttle valve position sensor circuit B – the signal wire has a short circuit to plus (terminal 30) (📖 p. 278)
- Check the next possible cause:
Throttle valve position sensor circuit B – the signal wire has a short circuit to ignition plus (terminal 15) (📖 p. 278)

Throttle valve position sensor circuit A – the power supply is faulty

Condition

The ignition is on.
Engine control unit is connected. (📖 p. 15)
The throttle valve position sensor is connected. (📖 p. 20)



Throttle valve position sensor circuit A – check the power supply.

- **V** Measure the voltage between the specified points.
Throttle valve position sensor connector **MC** pin **6** – Measuring point **Ground (-)**

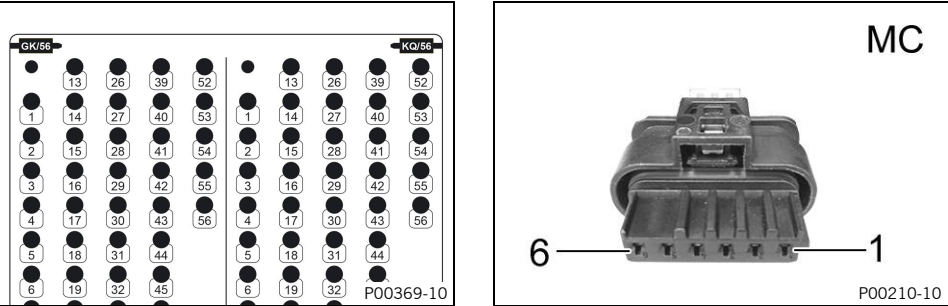
Voltage	4.8 ... 5.2 V

- » If the specifications have not been met:
 - Check the cable from engine control unit connector **GK** (📖 p. 497) pin **10** to connector **MC** (📖 p. 505) pin **6**.
- » If the specifications have been met:
 - Check the next possible cause:
Throttle valve position sensor circuit A – the signal wire is faulty (📖 p. 274)

Throttle valve position sensor circuit A – the signal wire is faulty

Condition

The ignition is off.
Engine control unit is disconnected. (📖 p. 15)
The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.
The throttle valve position sensor is disconnected. (📖 p. 20)



Throttle valve position sensor circuit A – check the signal wire.

-  Measure the resistance between the specified points.
Break-out box, connector **GK** pin **35** – Throttle valve position sensor connector **MC** pin **4**

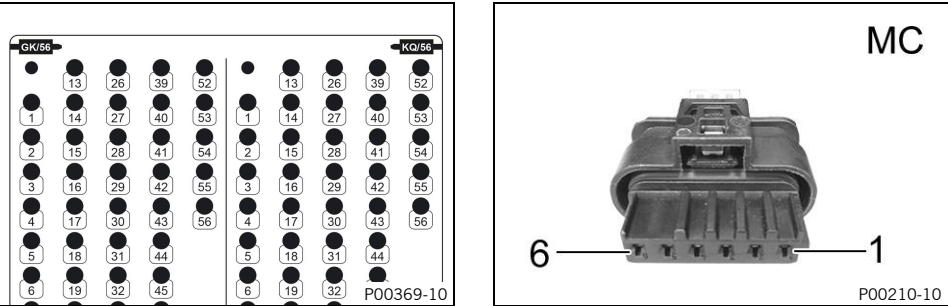
Resistance	≤ 0.6 Ω

- » If the specifications have not been met:
 - Check engine control unit connector **GK** (📖 p. 497) pin **35** and connector **MC** (📖 p. 505) pin **4**.
 - Check the cable from engine control unit connector **GK** (📖 p. 497) pin **35** to connector **MC** (📖 p. 505) pin **4**.
- » If the specifications have been met:
 - Check the next possible cause:
Throttle valve position sensor circuit A – ground wire is faulty (📖 p. 274)

Throttle valve position sensor circuit A – ground wire is faulty

Condition

The ignition is off.
Engine control unit is disconnected. (📖 p. 15)
The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.
The throttle valve position sensor is disconnected. (📖 p. 20)



Throttle valve position sensor circuit A – check the ground wire.

-  Measure the resistance between the specified points.
Break-out box, connector **GK** pin **26** – Throttle valve position sensor connector **MC** pin **3**

Resistance	≤ 0.6 Ω

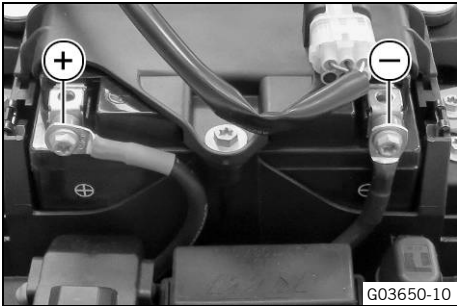
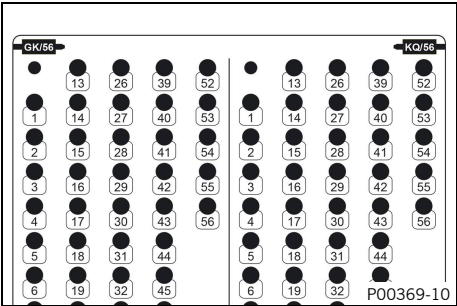
- » If the specifications have not been met:
 - Check engine control unit connector **GK** (📖 p. 497) pin **26** and connector **MC** (📖 p. 505) pin **3**.

- Check the cable from engine control unit connector **GK** (📖 p. 497) pin **26** to connector **MC** (📖 p. 505) pin **3**.
- » If the specifications have been met:
 - Check the next possible cause:
Throttle valve position sensor circuit A – the signal wire has a short circuit to ground (terminal 31)
(📖 p. 275)

Throttle valve position sensor circuit A – the signal wire has a short circuit to ground (terminal 31)

Condition

The ignition is off.
Engine control unit is disconnected. (📖 p. 15)
The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.
The throttle valve position sensor is disconnected. (📖 p. 20)



Throttle valve position sensor circuit A – check the signal wire for a short circuit to ground (terminal 31).

-  Measure the resistance between the specified points.
Break-out box, connector **GK** pin **35** – Measuring point **Ground (-)**

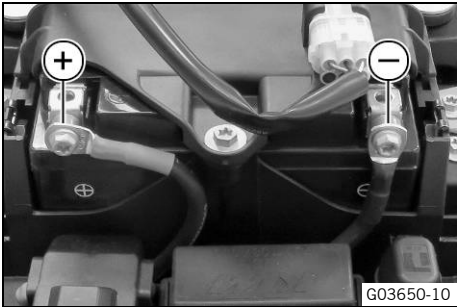
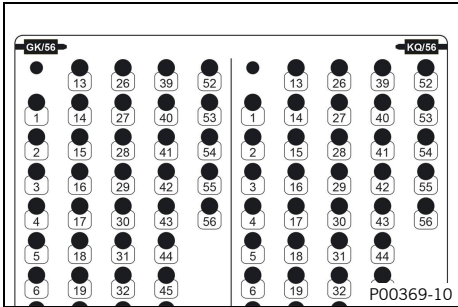
Resistance	$\infty \Omega$

- » If the specifications have not been met:
 - Check the cable from engine control unit connector **GK** (📖 p. 497) pin **35** to connector **MC** (📖 p. 505) pin **4** for a short circuit to ground (terminal 31).
- » If the specifications have been met:
 - Check the next possible cause:
Throttle valve position sensor circuit A – the signal wire has a short circuit to plus (terminal 30)
(📖 p. 275)

Throttle valve position sensor circuit A – the signal wire has a short circuit to plus (terminal 30)

Condition

The ignition is on.
Engine control unit is disconnected. (📖 p. 15)
The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.
The throttle valve position sensor is disconnected. (📖 p. 20)



Throttle valve position sensor circuit A – check the signal wire for a short circuit to plus (terminal 30).

- **V** Measure the voltage between the specified points.
Break-out box, connector **GK** pin **35** – Measuring point **Ground (-)**

Voltage	≤ 0.1 V

- » If the specifications have not been met:
 - Check the cable from engine control unit connector **GK** (p. 497) pin **35** to connector **MC** (p. 505) pin **4** for a short circuit to plus (terminal 30).
- » If the specifications have been met:
 - Check the next possible cause:
Throttle valve position sensor circuit A – the signal wire has a short circuit to ignition plus (terminal 15) (p. 276)

Throttle valve position sensor circuit A – the signal wire has a short circuit to ignition plus (terminal 15)

Condition

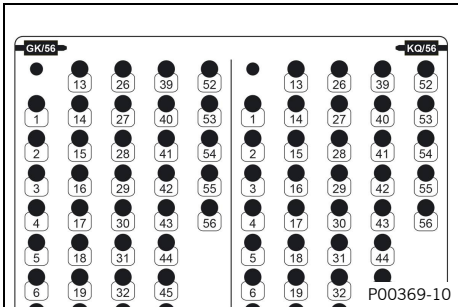
The ignition is off.
Engine control unit is disconnected. (p. 15)
The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.
The throttle valve position sensor is disconnected. (p. 20)

Throttle valve position sensor circuit A – check the signal wire for a short circuit to ignition plus (terminal 15).

- **Ω** Measure the resistance between the specified points.
Break-out box, connector **GK** pin **35** –
Break-out box, connector **GK** pin **44**

Resistance	∞ Ω

- » If the specifications have not been met:
 - Check the cable from engine control unit connector **GK** (p. 497) pin **35** to connector **MC** (p. 505) pin **4** for a short circuit to ignition plus (terminal 15).
- » If the specifications have been met:
 - Check the next possible cause:
Throttle valve position sensor circuit B – the signal wire is faulty (p. 277)



Throttle valve position sensor circuit B – the signal wire is faulty

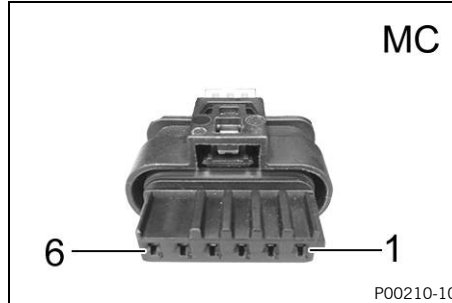
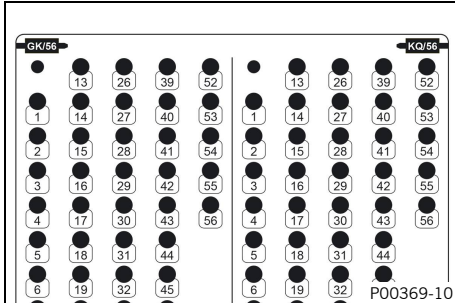
Condition

The ignition is off.

Engine control unit is disconnected. (p. 15)

The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.

The throttle valve position sensor is disconnected. (p. 20)



Throttle valve position sensor circuit B – check the signal wire.

- Measure the resistance between the specified points.
Break-out box, connector **GK** pin **17** – Throttle valve position sensor connector **MC** pin **5**

Resistance	$\leq 0.6 \Omega$

- » If the specifications have not been met:
 - Check engine control unit connector **GK** (p. 497) pin **17** and connector **MC** (p. 505) pin **5**.
 - Check the cable from engine control unit connector **GK** (p. 497) pin **17** to connector **MC** (p. 505) pin **5**.
- » If the specifications have been met:
 - Check the next possible cause:
Throttle valve position sensor circuit B – the signal wire has a short circuit to ground (terminal 31)
(p. 277)

Throttle valve position sensor circuit B – the signal wire has a short circuit to ground (terminal 31)

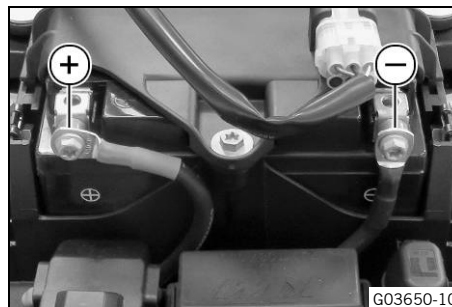
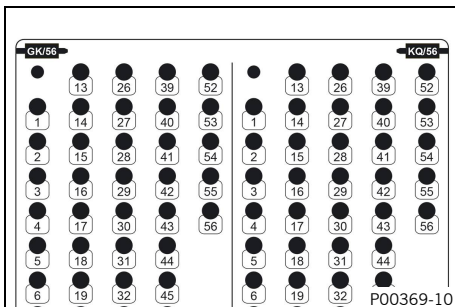
Condition

The ignition is off.

Engine control unit is disconnected. (p. 15)

The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.

The throttle valve position sensor is disconnected. (p. 20)



Throttle valve position sensor circuit B – check the signal wire for a short circuit to ground (terminal 31).

- Measure the resistance between the specified points.
Break-out box, connector **GK** pin **17** – Measuring point **Ground (-)**

Resistance	$\infty \Omega$

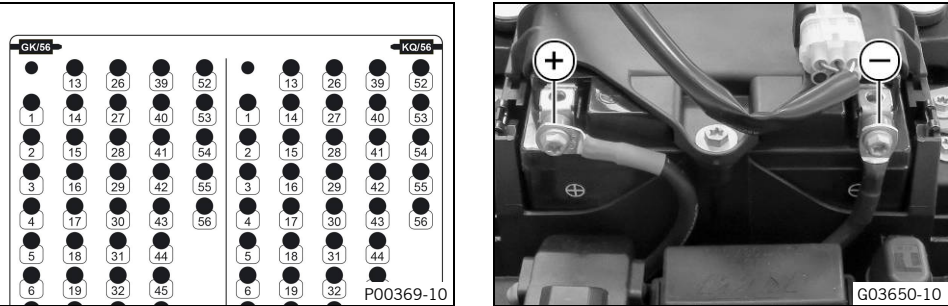
- » If the specifications have not been met:

- Check the cable from engine control unit connector **GK** (📖 p. 497) pin **17** to connector **MC** (📖 p. 505) pin **5** for a short circuit to ground (terminal 31).
- » If the specifications have been met:
 - Check the next possible cause:
Throttle valve position sensor circuit B – the signal wire has a short circuit to plus (terminal 30) (📖 p. 278)

Throttle valve position sensor circuit B – the signal wire has a short circuit to plus (terminal 30)

Condition

The ignition is on.
Engine control unit is disconnected. (📖 p. 15)
The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.
The throttle valve position sensor is disconnected. (📖 p. 20)



Throttle valve position sensor circuit B – check the signal wire for a short circuit to plus (terminal 30).

- **V** Measure the voltage between the specified points.
Break-out box, connector **GK** pin **17** – Measuring point **Ground (-)**

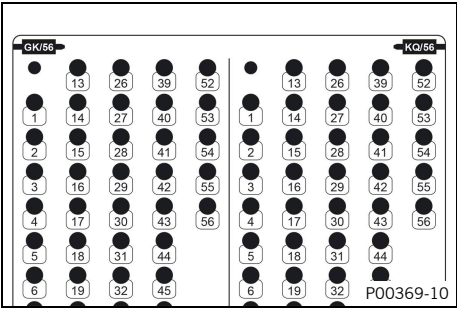
Voltage	≤ 0.1 V

- » If the specifications have not been met:
 - Check the cable from engine control unit connector **GK** (📖 p. 497) pin **17** to connector **MC** (📖 p. 505) pin **5** for a short circuit to plus (terminal 30).
- » If the specifications have been met:
 - Check the next possible cause:
Throttle valve position sensor circuit B – the signal wire has a short circuit to ignition plus (terminal 15) (📖 p. 278)

Throttle valve position sensor circuit B – the signal wire has a short circuit to ignition plus (terminal 15)

Condition

The ignition is off.
Engine control unit is disconnected. (📖 p. 15)
The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.
The throttle valve position sensor is disconnected. (📖 p. 20)



Throttle valve position sensor circuit B – check the signal wire for a short circuit to ignition plus (terminal 15).

-  Measure the resistance between the specified points.
Break-out box, connector **GK** pin **17** –
Break-out box, connector **GK** pin **44**

Resistance	$\infty \Omega$

- » If the specifications have not been met:
 - Check the cable from engine control unit connector **GK** (p. 497) pin **17** to connector **MC** (p. 505) pin **5** for a short circuit to ignition plus (terminal 15).
- » If the specifications have been met:
 - Contact customer service.

6 ENGINE CONTROL TROUBLE CODE

Blink code for malfunction indicator lamp (OBD)	 Malfunction indicator lamp lights up
Display on diagnostic tool	P213800 "Accelerator position sensor, circuit D and E" "Voltage correlation"
Error level condition	Circuit D and E accelerator position sensor – voltage correlation
Possible cause	Accelerator position sensor, circuit D – power supply is faulty (📖 p. 280)
	Accelerator position sensor, circuit D - signal wire is faulty (📖 p. 281)
	Accelerator position sensor, circuit D – ground wire is faulty (📖 p. 282)
	Accelerator position sensor, circuit D - the signal wire has a short circuit to plus (terminal 30) (📖 p. 282)
	Accelerator position sensor circuit D - signal wire has a short circuit to the sensor power supply (📖 p. 283)
	Accelerator position sensor, circuit D - signal wire has a short circuit to ignition plus (terminal 15) (📖 p. 283)
	Accelerator position sensor, circuit D – the signal wire has a short circuit to ground (terminal 31) (📖 p. 284)
	Accelerator position sensor, circuit D - the signal wire has a short circuit to sensor ground (📖 p. 284)
	Accelerator position sensor circuit E – power supply is faulty (📖 p. 285)
	Accelerator position sensor, circuit E - signal wire is faulty (📖 p. 285)
	Accelerator position sensor, circuit E - ground wire is faulty (📖 p. 286)
	Accelerator position sensor, circuit E - the signal wire has a short circuit to plus (terminal 30) (📖 p. 286)
	Accelerator position sensor, circuit E - signal wire has a short circuit to ignition plus (terminal 15) (📖 p. 287)
	Accelerator position sensor, circuit E - signal wire has a short circuit to the sensor power supply (📖 p. 287)
	Accelerator position sensor, circuit E – the signal wire has a short circuit to ground (terminal 31) (📖 p. 288)
	Accelerator position sensor, circuit E - the signal wire has a short circuit to sensor ground (📖 p. 288)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

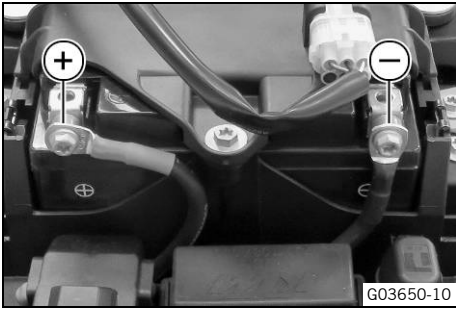
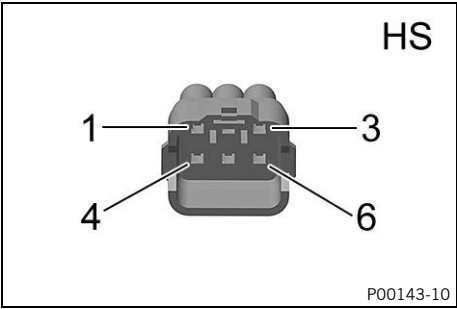
Accelerator position sensor, circuit D – power supply is faulty

Condition

The ignition is on.

Engine control unit is connected. (📖 p. 15)

The accelerator position sensor is connected. (📖 p. 19)



Accelerator position sensor, circuit D - check the power supply.

- **V** Measure the voltage between the specified points.
Accelerator position sensor connector **HS** pin **6** – Measuring point **Ground (–)**

Voltage	4.8 ... 5.2 V

- » If the specifications have not been met:
 - Check connector **HS** (p. 499) pin **6** and engine control unit connector **GK** (p. 497) pin **23**.
 - Check the cable from connector **HS** (p. 499) pin **6** to engine control unit connector **GK** (p. 497) pin **23**.
- » If the specifications have been met:
 - Check the next possible cause:
Accelerator position sensor, circuit D - signal wire is faulty (p. 281)

Accelerator position sensor, circuit D - signal wire is faulty

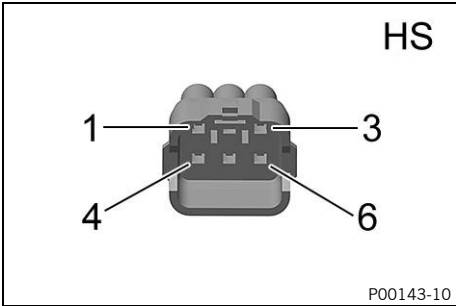
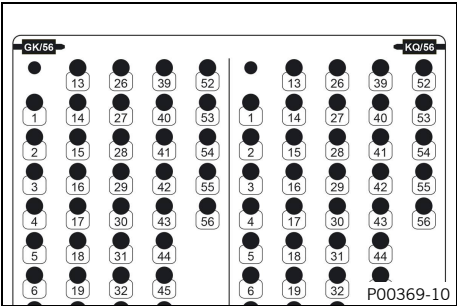
Condition

The ignition is off.

Engine control unit is disconnected. (p. 15)

The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.

The accelerator position sensor is disconnected. (p. 19)



Accelerator position sensor, circuit D - check the signal wire.

- **Ω** Measure the resistance between the specified points.
Break-out box, connector **GK** pin **48** – Accelerator position sensor connector **HS** pin **4**

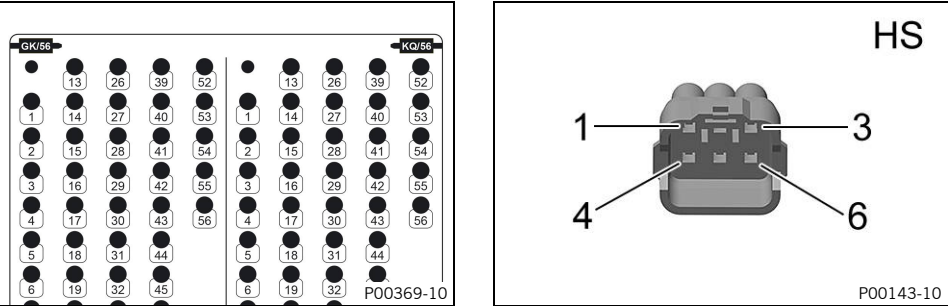
Resistance	≤ 0.6 Ω

- » If the specifications have not been met:
 - Check engine control unit connector **GK** (p. 497) pin **48** and connector **HS** (p. 499) pin **4**.
 - Check the cable from engine control unit connector **GK** (p. 497) pin **48** to connector **HS** (p. 499) pin **4**.
- » If the specifications have been met:
 - Check the next possible cause:
Accelerator position sensor, circuit D – ground wire is faulty (p. 282)

Accelerator position sensor, circuit D – ground wire is faulty

Condition

The ignition is off.
Engine control unit is disconnected. (📖 p. 15)
The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.
The accelerator position sensor is disconnected. (📖 p. 19)



Accelerator position sensor, circuit D - check the ground wire.

-  Measure the resistance between the specified points.
Break-out box, connector **GK** pin **39** – Accelerator position sensor connector **HS** pin **5**

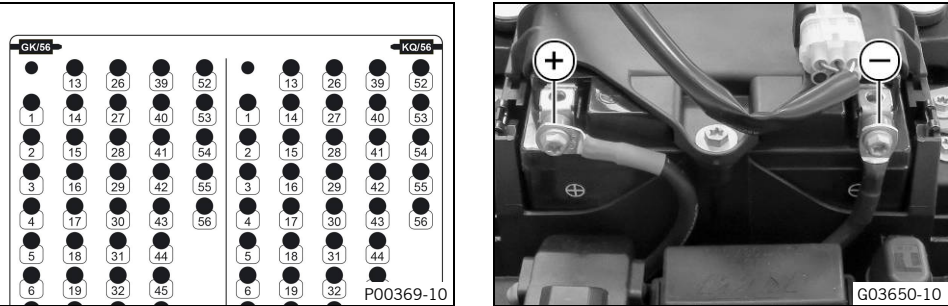
Resistance	≤ 0.6 Ω

- » If the specifications have not been met:
 - Check engine control unit connector **GK** (📖 p. 502) pin **39** and connector **HS** (📖 p. 499) pin **5**.
 - Check the cable from engine control unit connector **GK** (📖 p. 502) pin **39** to connector **HS** (📖 p. 499) pin **5**.
- » If the specifications have been met:
 - Check the next possible cause:
Accelerator position sensor, circuit D - the signal wire has a short circuit to plus (terminal 30) (📖 p. 282)

Accelerator position sensor, circuit D - the signal wire has a short circuit to plus (terminal 30)

Condition

The ignition is off.
Engine control unit is disconnected. (📖 p. 15)
The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.
The accelerator position sensor is disconnected. (📖 p. 19)



Accelerator position sensor, circuit D - check the signal wire for a short circuit to plus (terminal 30).

-  Measure the voltage between the specified points.
Break-out box, connector **GK** pin **48** – Measuring point **Ground (-)**

Voltage	≤ 0.1 V

- » If the specifications have not been met:

- Check the cable from engine control unit connector **GK** (📖 p. 497) pin **48** to connector **HS** (📖 p. 499) pin **4** for a short circuit to plus (terminal 30).
- » If the specifications have been met:
 - Check the next possible cause:
Accelerator position sensor circuit D - signal wire has a short circuit to the sensor power supply (📖 p. 283)

Accelerator position sensor circuit D - signal wire has a short circuit to the sensor power supply

Condition

The ignition is off.

Engine control unit is disconnected. (📖 p. 15)

The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.

The accelerator position sensor is disconnected. (📖 p. 19)

Accelerator position sensor, circuit D - check the signal wire for a short circuit to the sensor power supply.

-  Measure the resistance between the specified points.
Break-out box, connector **GK** pin **48** –
Break-out box, connector **GK** pin **23**

Resistance	$\infty \Omega$

- » If the specifications have not been met:
 - Check the cable from engine control unit connector **GK** (📖 p. 497) pin **48** to connector **HS** (📖 p. 499) pin **4** for a short circuit to the sensor power supply.
- » If the specifications have been met:
 - Check the next possible cause:
Accelerator position sensor, circuit D - signal wire has a short circuit to ignition plus (terminal 15) (📖 p. 283)

Accelerator position sensor, circuit D - signal wire has a short circuit to ignition plus (terminal 15)

Condition

The ignition is off.

Engine control unit is disconnected. (📖 p. 15)

The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.

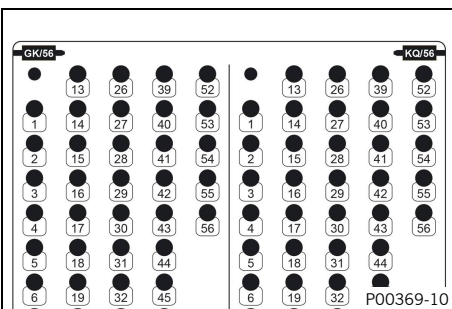
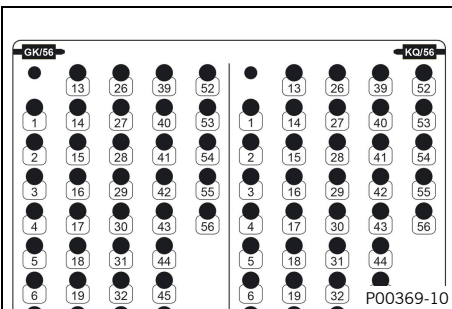
The accelerator position sensor is disconnected. (📖 p. 19)

Accelerator position sensor, circuit D - check the signal wire for a short circuit to ignition plus (terminal 15).

-  Measure the resistance between the specified points.
Break-out box, connector **GK** pin **48** –
Break-out box, connector **GK** pin **44**

Resistance	$\infty \Omega$

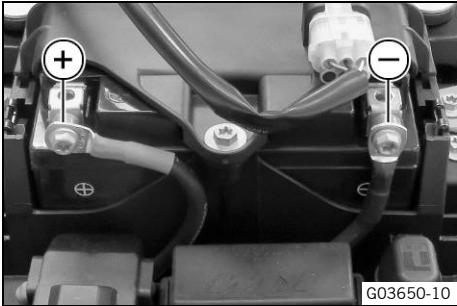
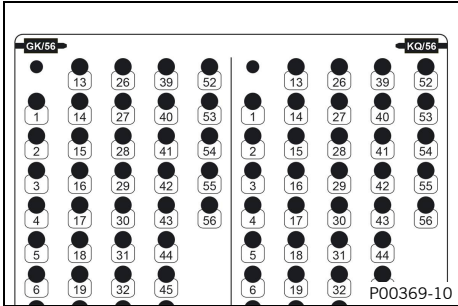
- » If the specifications have not been met:
 - Check the cable from engine control unit connector **GK** (📖 p. 497) pin **48** to connector **HS** (📖 p. 499) pin **4** for a short circuit to ignition plus (terminal 15).
- » If the specifications have been met:
 - Check the next possible cause:
Accelerator position sensor, circuit D – the signal wire has a short circuit to ground (terminal 31) (📖 p. 284)



Accelerator position sensor, circuit D – the signal wire has a short circuit to ground (terminal 31)

Condition

The ignition is off.
Engine control unit is disconnected. (📖 p. 15)
The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.
The accelerator position sensor is disconnected. (📖 p. 19)



Accelerator position sensor, circuit D - check the signal wire for a short circuit to ground (terminal 31).

- Measure the resistance between the specified points.
Break-out box, connector **GK** pin **48** – Measuring point **Ground (-)**

Resistance	$\infty \Omega$

- » If the specifications have not been met:
 - Check the cable from engine control unit connector **GK** (📖 p. 497) pin **48** to connector **HS** (📖 p. 499) pin **4** for a short circuit to ground (terminal 31).
- » If the specifications have been met:
 - Check the next possible cause:
Accelerator position sensor, circuit D - the signal wire has a short circuit to sensor ground (📖 p. 284)

Accelerator position sensor, circuit D - the signal wire has a short circuit to sensor ground

Condition

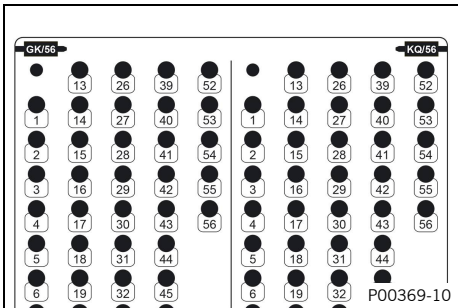
The ignition is off.
Engine control unit is disconnected. (📖 p. 15)
The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.
The accelerator position sensor is disconnected. (📖 p. 19)

Accelerator position sensor, circuit D - check the signal wire for a short circuit to sensor ground.

- Measure the resistance between the specified points.
Break-out box, connector **GK** pin **48** –
Break-out box, connector **GK** pin **39**

Resistance	$\infty \Omega$

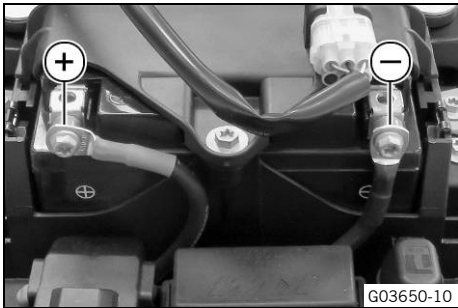
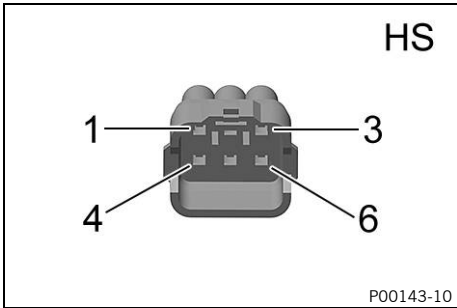
- » If the specifications have not been met:
 - Check cable from engine control unit connector **GK** (📖 p. 497) pin **48** to connector **HS** (📖 p. 499) pin **4** for a short circuit to sensor ground.
- » If the specifications have been met:
 - Check the next possible cause:
Accelerator position sensor circuit E – power supply is faulty (📖 p. 285)



Accelerator position sensor circuit E – power supply is faulty

Condition

The ignition is on.
Engine control unit is connected. (📖 p. 15)
The accelerator position sensor is connected. (📖 p. 19)



Accelerator position sensor, circuit E - check the power supply.

- **V** Measure the voltage between the specified points.
Accelerator position sensor connector **HS** pin **3** – Measuring point **Ground (–)**

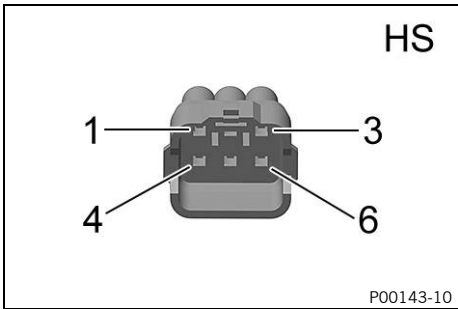
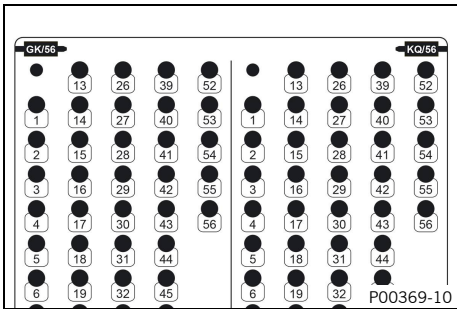
Voltage	4.8 ... 5.2 V

- » If the specifications have not been met:
 - Check connector **HS** (📖 p. 499) pin **3** and engine control unit connector **GK** (📖 p. 497) pin **11**.
 - Check the cable from connector **HS** (📖 p. 499) pin **3** to engine control unit connector **GK** (📖 p. 497) pin **11**.
- » If the specifications have been met:
 - Check the next possible cause:
Accelerator position sensor, circuit E - signal wire is faulty (📖 p. 285)

Accelerator position sensor, circuit E - signal wire is faulty

Condition

The ignition is off.
Engine control unit is disconnected. (📖 p. 15)
The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.
The accelerator position sensor is disconnected. (📖 p. 19)



Accelerator position sensor, circuit E - check the signal wire.

- **Ω** Measure the resistance between the specified points.
Break-out box, connector **GK** pin **47** – Accelerator position sensor connector **HS** pin **1**

Resistance	≤ 0.6 Ω

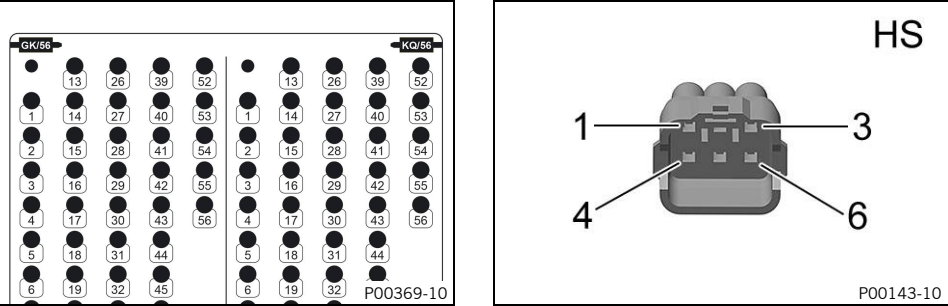
- » If the specifications have not been met:
 - Check engine control unit connector **GK** (📖 p. 497) pin **47** and connector **HS** (📖 p. 499) pin **1**.

- Check the cable from engine control unit connector **GK** (📖 p. 497) pin **47** to connector **HS** (📖 p. 499) pin **1**.
- » If the specifications have been met:
 - Check the next possible cause:
Accelerator position sensor, circuit E - ground wire is faulty (📖 p. 286)

Accelerator position sensor, circuit E - ground wire is faulty

Condition

The ignition is off.
Engine control unit is disconnected. (📖 p. 15)
The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.
The accelerator position sensor is disconnected. (📖 p. 19)



Accelerator position sensor, circuit E - check the ground wire.

-  Measure the resistance between the specified points.
Break-out box, connector **GK** pin **25** – Accelerator position sensor connector **HS** pin **2**

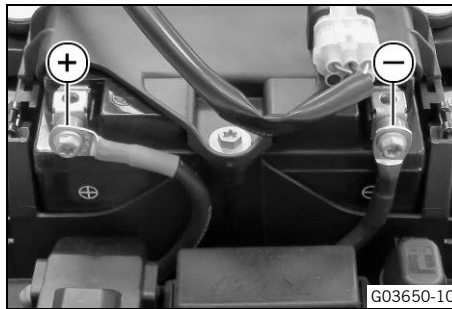
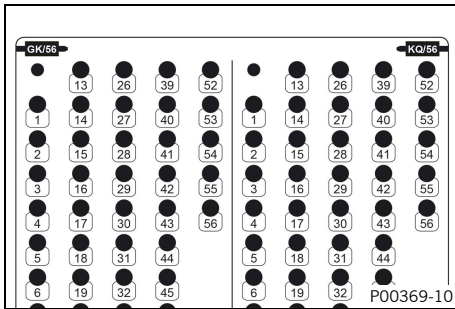
Resistance	≤ 0.6 Ω

- » If the specifications have not been met:
 - Check engine control unit connector **GK** (📖 p. 497) pin **25** and connector **HS** (📖 p. 499) pin **2**.
 - Check the cable from engine control unit connector **GK** (📖 p. 497) pin **25** to connector **HS** (📖 p. 499) pin **2**.
- » If the specifications have been met:
 - Check the next possible cause:
Accelerator position sensor, circuit E - the signal wire has a short circuit to plus (terminal 30) (📖 p. 286)

Accelerator position sensor, circuit E - the signal wire has a short circuit to plus (terminal 30)

Condition

The ignition is off.
Engine control unit is disconnected. (📖 p. 15)
The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.
The accelerator position sensor is disconnected. (📖 p. 19)



Accelerator position sensor, circuit E - check the signal wire for a short circuit to plus (terminal 30).

- **V** Measure the voltage between the specified points.
Break-out box, connector **GK** pin **47** – Measuring point **Ground (-)**

Voltage	$\leq 0.1 \text{ V}$

- » If the specifications have not been met:
 - Check the cable from engine control unit connector **GK** (p. 497) pin **47** to connector **HS** (p. 499) pin **1** for a short circuit to plus (terminal 30).
- » If the specifications have been met:
 - Check the next possible cause:
Accelerator position sensor, circuit E - signal wire has a short circuit to ignition plus (terminal 15) (p. 287)

Accelerator position sensor, circuit E - signal wire has a short circuit to ignition plus (terminal 15)

Condition

The ignition is off.

Engine control unit is disconnected. (p. 15)

The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.

The accelerator position sensor is disconnected. (p. 19)

Accelerator position sensor, circuit E - check the signal wire for a short circuit to ignition plus (terminal 15).

- **Ω** Measure the resistance between the specified points.
Break-out box, connector **GK** pin **47** –
Break-out box, connector **GK** pin **44**

Resistance	$\infty \Omega$

- » If the specifications have not been met:
 - Check the cable from engine control unit connector **GK** (p. 497) pin **47** to connector **HS** (p. 499) pin **1** for a short circuit to ignition plus (terminal 15).
- » If the specifications have been met:
 - Check the next possible cause:
Accelerator position sensor, circuit E - signal wire has a short circuit to the sensor power supply (p. 287)

Accelerator position sensor, circuit E - signal wire has a short circuit to the sensor power supply

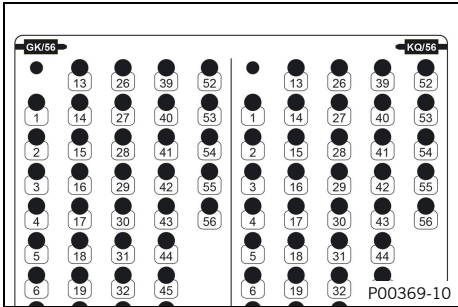
Condition

The ignition is off.

Engine control unit is disconnected. (p. 15)

The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.

The accelerator position sensor is disconnected. (p. 19)



Accelerator position sensor, circuit E - check the signal wire for a short circuit to the sensor power supply.

-  Measure the resistance between the specified points.
Break-out box, connector **GK** pin **47** –
Break-out box, connector **GK** pin **11**

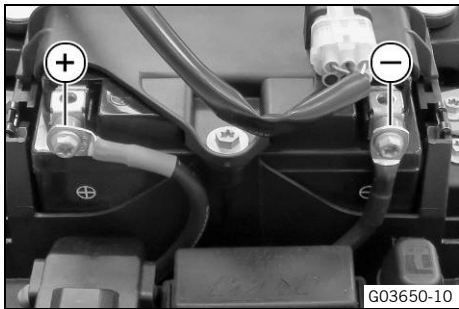
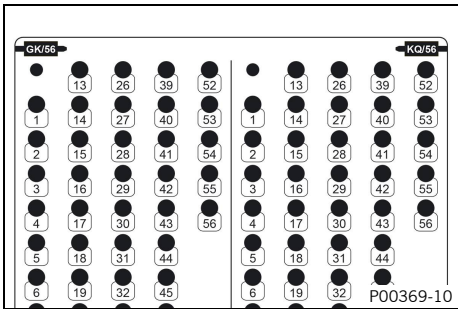
Resistance	$\infty \Omega$

- » If the specifications have not been met:
 - Check the cable from engine control unit connector **GK** (📖 p. 497) pin **47** to connector **HS** (📖 p. 499) pin **1** for a short circuit to the sensor power supply.
- » If the specifications have been met:
 - Check the next possible cause:
Accelerator position sensor, circuit E – the signal wire has a short circuit to ground (terminal 31) (📖 p. 288)

Accelerator position sensor, circuit E – the signal wire has a short circuit to ground (terminal 31)

Condition

The ignition is off.
Engine control unit is disconnected. (📖 p. 15)
The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.
The accelerator position sensor is disconnected. (📖 p. 19)



Accelerator position sensor, circuit E - check the signal wire for a short circuit to ground (terminal 31).

-  Measure the resistance between the specified points.
Break-out box, connector **GK** pin **47** – Measuring point **Ground (-)**

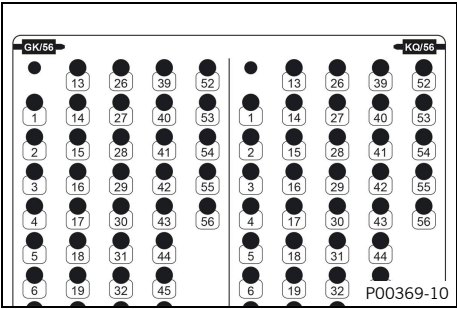
Resistance	$\infty \Omega$

- » If the specifications have not been met:
 - Check the cable from engine control unit connector **GK** (📖 p. 497) pin **47** to connector **HS** (📖 p. 499) pin **1** for a short circuit to ground (terminal 31).
- » If the specifications have been met:
 - Check the next possible cause:
Accelerator position sensor, circuit E - the signal wire has a short circuit to sensor ground (📖 p. 288)

Accelerator position sensor, circuit E - the signal wire has a short circuit to sensor ground

Condition

The ignition is off.
Engine control unit is disconnected. (📖 p. 15)
The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.
The accelerator position sensor is disconnected. (📖 p. 19)



Accelerator position sensor, circuit E - check the signal wire for a short circuit to sensor ground.

-  Measure the resistance between the specified points.
Break-out box, connector **GK** pin **47** –
Break-out box, connector **GK** pin **25**

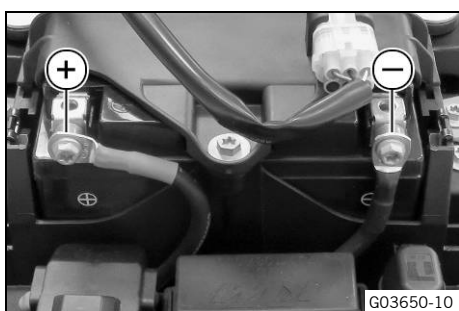
Resistance	$\infty \Omega$

- » If the specifications have not been met:
 - Check cable from engine control unit connector **GK** (p. 497) pin **47** to connector **HS** (p. 499) pin **1** for a short circuit to sensor ground.
- » If the specifications have been met:
 - Contact customer service.

6 ENGINE CONTROL TROUBLE CODE

Blink code for malfunction indicator lamp (OBD)	 Malfunction indicator lamp lights up
Display on diagnostic tool	P217600 "Throttle valve actuator" "Idle position not programmed"
Error level condition	Throttle valve actuator – idle position not programmed Voltage: ≤ 0.50 V Voltage: ≥ 4.57 V
Function check	Resetting the engine control unit ( p. 290)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Resetting the engine control unit



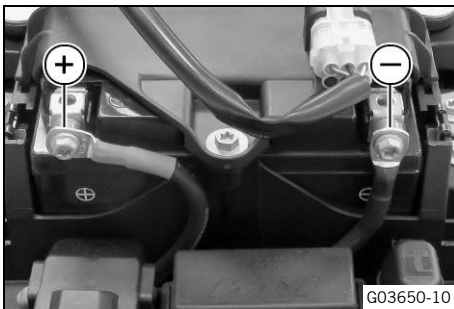
- Disconnect the negative terminal of the 12-V battery.
- Wait for 10 minutes.
- Connect the negative terminal of the 12-V battery.
- Clear the fault memory using the KTM diagnostics tool.
- Switch off the ignition for 20 seconds.
- Read out the trouble code memory using the KTM diagnostics tool.
 - » If the error persists:
 - Change the engine control unit.

Last measure if none of the documented causes leads to elimination of the fault

- Contact customer service.

Blink code for malfunction indicator lamp (OBD)	 Malfunction indicator lamp lights up
Display on diagnostic tool	P222700 "Ambient air pressure sensor" "Values out of tolerance"
Error level condition	Ambient air pressure sensor – values out of tolerance
Function check	Resetting the engine control unit (📖 p. 291)
Last measure if none of the documented causes leads to elimination of the fault	– Change the engine control unit.

Resetting the engine control unit



- Disconnect the negative terminal of the 12-V battery.
- Wait for 10 minutes.
- Connect the negative terminal of the 12-V battery.
- Clear the fault memory using the KTM diagnostics tool.
- Switch off the ignition for 20 seconds.
- Read out the trouble code memory using the KTM diagnostics tool.
 - » If the error persists:
 - Change the engine control unit.

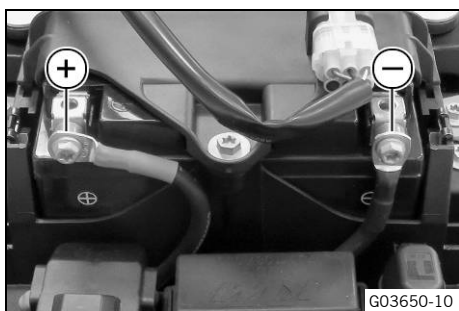
Last measure if none of the documented causes leads to elimination of the fault

- Change the engine control unit.

6 ENGINE CONTROL TROUBLE CODE

Blink code for malfunction indicator lamp (OBD)	 Malfunction indicator lamp lights up
Display on diagnostic tool	P222800 "Ambient air pressure sensor" "Voltage too low"
Error level condition	Ambient air pressure sensor – voltage too low
Function check	Resetting the engine control unit (📖 p. 292)
Last measure if none of the documented causes leads to elimination of the fault	– Change the engine control unit.

Resetting the engine control unit



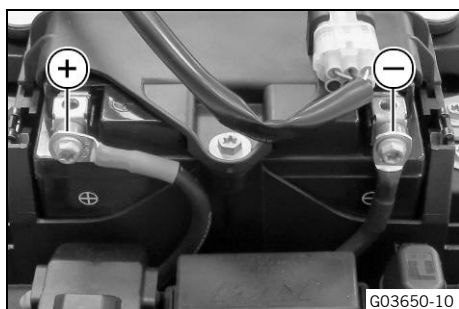
- Disconnect the negative terminal of the 12-V battery.
- Wait for 10 minutes.
- Connect the negative terminal of the 12-V battery.
- Clear the fault memory using the KTM diagnostics tool.
- Switch off the ignition for 20 seconds.
- Read out the trouble code memory using the KTM diagnostics tool.
 - » If the error persists:
 - Change the engine control unit.

Last measure if none of the documented causes leads to elimination of the fault

- Change the engine control unit.

Blink code for malfunction indicator lamp (OBD)	 Malfunction indicator lamp lights up
Display on diagnostic tool	P222900 "Ambient air pressure sensor" "Voltage too high"
Error level condition	Ambient air pressure sensor – voltage too high
Function check	Resetting the engine control unit (📖 p. 293)
Last measure if none of the documented causes leads to elimination of the fault	– Change the engine control unit.

Resetting the engine control unit



- Disconnect the negative terminal of the 12-V battery.
- Wait for 10 minutes.
- Connect the negative terminal of the 12-V battery.
- Clear the fault memory using the KTM diagnostics tool.
- Switch off the ignition for 20 seconds.
- Read out the trouble code memory using the KTM diagnostics tool.
 - » If the error persists:
 - Change the engine control unit.

Last measure if none of the documented causes leads to elimination of the fault

- Change the engine control unit.

Blink code for malfunction indicator lamp (OBD)	 Malfunction indicator lamp lights up
Display on diagnostic tool	P227000 "Lambda sensor 3 after catalytic converter" "Signal faulty"
Error level condition	Lambda sensor 3 after catalytic converter – signal too lean/faulty
Possible cause	Lambda sensor 3 after catalytic converter is faulty (🔧 p. 294) Lambda sensor 3 after catalytic converter – the signal wire has a short circuit to ground (terminal 31) (🔧 p. 294)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Lambda sensor 3 after catalytic converter is faulty

Condition

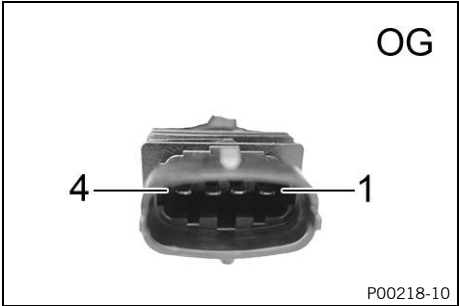
The engine is running at idle speed.
Lambda sensor 3 after catalytic converter is disconnected. (🔧 p. 9)
Lambda sensor is at operating temperature. (🔧 p. 9)

Lambda sensor 3 after catalytic converter – check the voltage.

-  Measure the voltage between the specified points.
Lambda sensor 3 after catalytic converter connector **OG** pin **3** – Lambda sensor 3 after catalytic converter connector **OG** pin **4**

Lambda sensor	
Voltage range within the control loop	0.2 ... 0.8 V

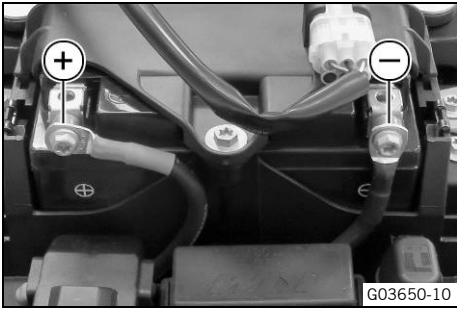
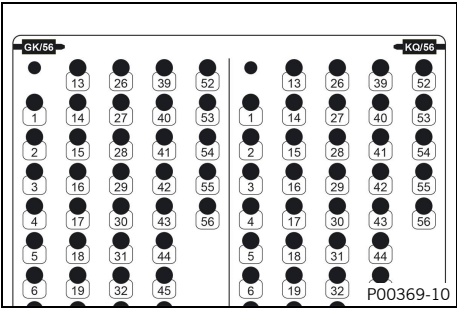
- » If the specifications have not been met:
 - Change lambda sensor 3 after catalytic converter.
- » If the specifications have been met:
 - Check the next possible cause:
Lambda sensor 3 after catalytic converter – the signal wire has a short circuit to ground (terminal 31) (🔧 p. 294)



Lambda sensor 3 after catalytic converter – the signal wire has a short circuit to ground (terminal 31)

Condition

The ignition is off.
Engine control unit is disconnected. (🔧 p. 15)
The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.
Lambda sensor 3 after catalytic converter is disconnected. (🔧 p. 9)



Lambda sensor 3 after catalytic converter – check the signal wire for a short circuit to ground (terminal 31).

-  Measure the resistance between the specified points.
Break-out box, connector **GK** pin **21** – Measuring point **Ground (-)**

Resistance	$\infty \Omega$

- » If the specifications have not been met:
 - Check the cable from engine electronics control unit connector **GK** (📖 p. 497) pin **21** to connector **TK** (📖 p. 508) pin **4** for a short circuit to ground (terminal 31).
- » If the specifications have been met:
 - Contact customer service.

Blink code for malfunction indicator lamp (OBD)	 Malfunction indicator lamp lights up
Display on diagnostic tool	P227100 "Lambda sensor 3 after catalytic converter" "Signal faulty"
Error level condition	Lambda sensor 3 after catalytic converter – signal too rich/faulty
Possible cause	Lambda sensor 3 after catalytic converter is faulty (🔧 p. 296) Lambda sensor 3 after catalytic converter – the signal wire has a short circuit to ground (terminal 31) (🔧 p. 296)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Lambda sensor 3 after catalytic converter is faulty

Condition

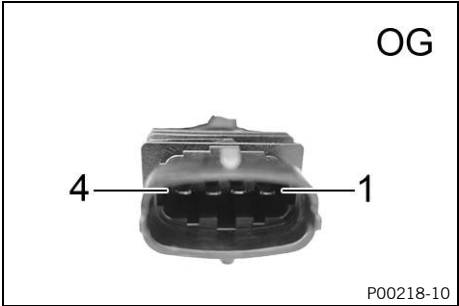
The engine is running at idle speed.
Lambda sensor 3 after catalytic converter is disconnected. (🔧 p. 9)
Lambda sensor is at operating temperature. (🔧 p. 9)

Lambda sensor 3 after catalytic converter – check the voltage.

- **V** Measure the voltage between the specified points.
Lambda sensor 3 after catalytic converter connector **OG** pin **3** – Lambda sensor 3 after catalytic converter connector **OG** pin **4**

Lambda sensor	
Voltage range within the control loop	0.2 ... 0.8 V

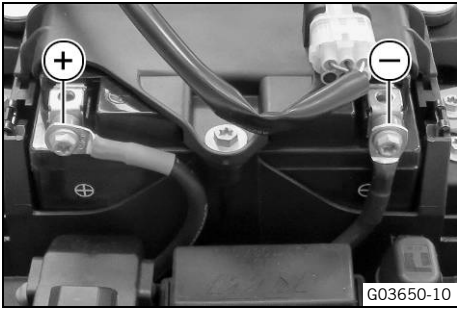
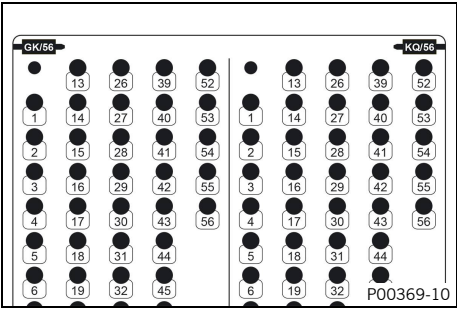
- » If the specifications have not been met:
 - Change lambda sensor 3 after catalytic converter.
- » If the specifications have been met:
 - Check the next possible cause:
Lambda sensor 3 after catalytic converter – the signal wire has a short circuit to ground (terminal 31) (🔧 p. 296)



Lambda sensor 3 after catalytic converter – the signal wire has a short circuit to ground (terminal 31)

Condition

The ignition is off.
Engine control unit is disconnected. (🔧 p. 15)
The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.
Lambda sensor 3 after catalytic converter is disconnected. (🔧 p. 9)



Lambda sensor 3 after catalytic converter – check the signal wire for a short circuit to ground (terminal 31).

-  Measure the resistance between the specified points.
Break-out box, connector **GK** pin **21** – Measuring point **Ground (-)**

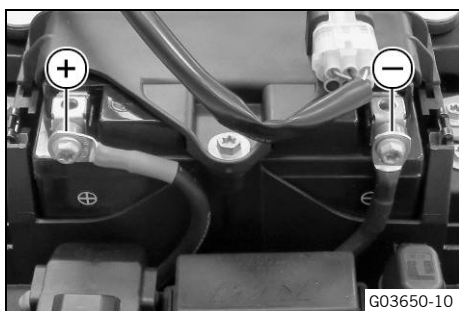
Resistance	$\infty \Omega$

- » If the specifications have not been met:
 - Check the cable from engine electronics control unit connector **GK** (📖 p. 497) pin **21** to connector **TK** (📖 p. 508) pin **4** for a short circuit to ground (terminal 31).
- » If the specifications have been met:
 - Contact customer service.

6 ENGINE CONTROL TROUBLE CODE

Blink code for malfunction indicator lamp (OBD)	 Malfunction indicator lamp lights up
Display on diagnostic tool	P060A00 "Engine control unit" "Internal error"
Error level condition	Engine control unit – internal error
Function check	Resetting the engine control unit (📖 p. 298)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Resetting the engine control unit



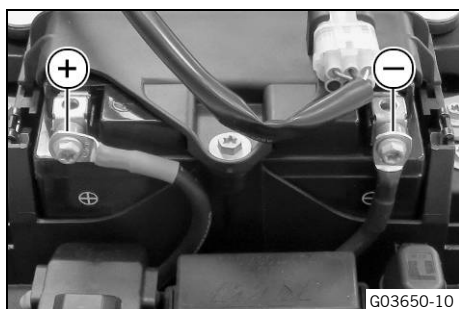
- Disconnect the negative terminal of the 12-V battery.
- Wait for 10 minutes.
- Connect the negative terminal of the 12-V battery.
- Clear the fault memory using the KTM diagnostics tool.
- Switch off the ignition for 20 seconds.
- Read out the trouble code memory using the KTM diagnostics tool.
 - » If the error persists:
 - Change the engine control unit.

Last measure if none of the documented causes leads to elimination of the fault

- Contact customer service.

Blink code for malfunction indicator lamp (OBD)	 Malfunction indicator lamp lights up
Display on diagnostic tool	P060B00 "Engine control unit" "Internal error"
Error level condition	Engine control unit – internal error
Function check	Resetting the engine control unit (📖 p. 299)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Resetting the engine control unit



- Disconnect the negative terminal of the 12-V battery.
- Wait for 10 minutes.
- Connect the negative terminal of the 12-V battery.
- Clear the fault memory using the KTM diagnostics tool.
- Switch off the ignition for 20 seconds.
- Read out the trouble code memory using the KTM diagnostics tool.
 - » If the error persists:
 - Change the engine control unit.

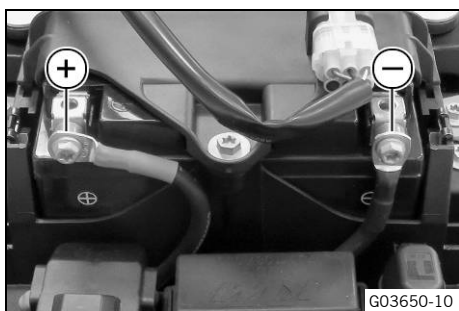
Last measure if none of the documented causes leads to elimination of the fault

- Contact customer service.

6 ENGINE CONTROL TROUBLE CODE

Blink code for malfunction indicator lamp (OBD)	 Malfunction indicator lamp lights up
Display on diagnostic tool	P060D00 "Engine control unit" "Accelerator position sensor internal error"
Error level condition	Engine control unit – accelerator position sensor internal error
Function check	Resetting the engine control unit (🔧 p. 300)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Resetting the engine control unit



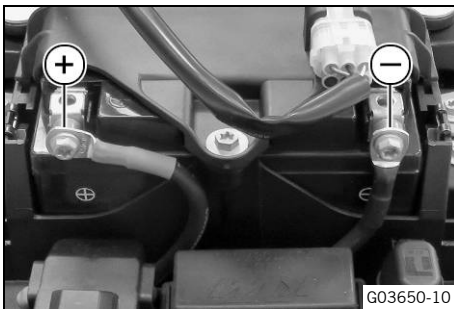
- Disconnect the negative terminal of the 12-V battery.
- Wait for 10 minutes.
- Connect the negative terminal of the 12-V battery.
- Clear the fault memory using the KTM diagnostics tool.
- Switch off the ignition for 20 seconds.
- Read out the trouble code memory using the KTM diagnostics tool.
 - » If the error persists:
 - Change the engine control unit.

Last measure if none of the documented causes leads to elimination of the fault

- Contact customer service.

Blink code for malfunction indicator lamp (OBD)	 Malfunction indicator lamp lights up
Display on diagnostic tool	P060E00 "Engine control unit" "Throttle valve actuator internal error"
Error level condition	Engine control unit – throttle valve actuator internal error
Function check	Resetting the engine control unit (📖 p. 301)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Resetting the engine control unit



- Disconnect the negative terminal of the 12-V battery.
- Wait for 10 minutes.
- Connect the negative terminal of the 12-V battery.
- Clear the fault memory using the KTM diagnostics tool.
- Switch off the ignition for 20 seconds.
- Read out the trouble code memory using the KTM diagnostics tool.
 - » If the error persists:
 - Change the engine control unit.

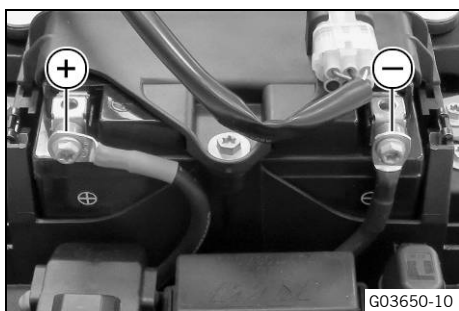
Last measure if none of the documented causes leads to elimination of the fault

- Contact customer service.

6 ENGINE CONTROL TROUBLE CODE

Blink code for malfunction indicator lamp (OBD)	 Malfunction indicator lamp lights up
Display on diagnostic tool	P061B00 "Engine control unit" "Internal control unit torque calculation"
Error level condition	Engine control unit – internal control unit torque calculation
Function check	Resetting the engine control unit (📖 p. 302)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Resetting the engine control unit



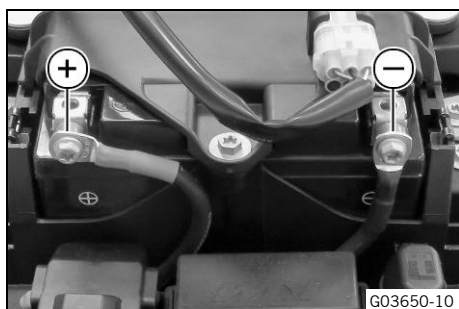
- Disconnect the negative terminal of the 12-V battery.
- Wait for 10 minutes.
- Connect the negative terminal of the 12-V battery.
- Clear the fault memory using the KTM diagnostics tool.
- Switch off the ignition for 20 seconds.
- Read out the trouble code memory using the KTM diagnostics tool.
 - » If the error persists:
 - Change the engine control unit.

Last measure if none of the documented causes leads to elimination of the fault

- Contact customer service.

Blink code for malfunction indicator lamp (OBD)	 Malfunction indicator lamp lights up
Display on diagnostic tool	P061C00 "Engine control unit" "Internal error"
Error level condition	Engine control unit – internal error
Function check	Resetting the engine control unit (📖 p. 303)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Resetting the engine control unit



- Disconnect the negative terminal of the 12-V battery.
- Wait for 10 minutes.
- Connect the negative terminal of the 12-V battery.
- Clear the fault memory using the KTM diagnostics tool.
- Switch off the ignition for 20 seconds.
- Read out the trouble code memory using the KTM diagnostics tool.
 - » If the error persists:
 - Change the engine control unit.

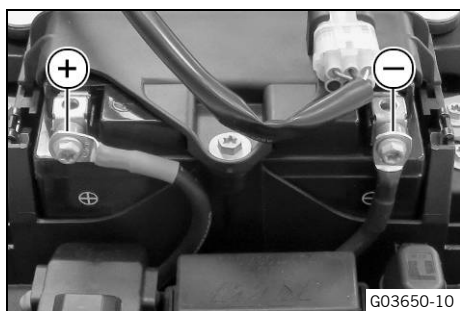
Last measure if none of the documented causes leads to elimination of the fault

- Contact customer service.

6 ENGINE CONTROL TROUBLE CODE

Blink code for malfunction indicator lamp (OBD)	 Malfunction indicator lamp lights up
Display on diagnostic tool	P061F00 "Engine control unit" "Throttle valve actuator internal error"
Error level condition	Engine control unit – throttle valve actuator internal error
Function check	Resetting the engine control unit (📖 p. 304)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Resetting the engine control unit



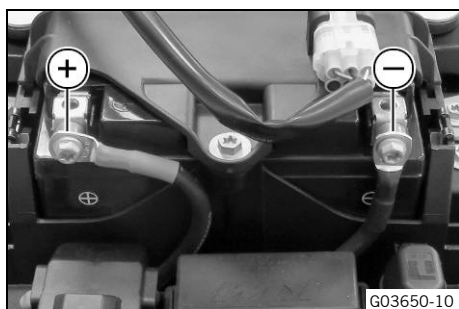
- Disconnect the negative terminal of the 12-V battery.
- Wait for 10 minutes.
- Connect the negative terminal of the 12-V battery.
- Clear the fault memory using the KTM diagnostics tool.
- Switch off the ignition for 20 seconds.
- Read out the trouble code memory using the KTM diagnostics tool.
 - » If the error persists:
 - Change the engine control unit.

Last measure if none of the documented causes leads to elimination of the fault

- Contact customer service.

Blink code for malfunction indicator lamp (OBD)	 Malfunction indicator lamp lights up
Display on diagnostic tool	P062F00 "Engine control unit" "EEPROM faulty for immobilizer control unit"
Error level condition	Engine control unit – EEPROM faulty for immobilizer control unit
Function check	Resetting the engine control unit (📖 p. 305)
Last measure if none of the documented causes leads to elimination of the fault	– Change the engine control unit.

Resetting the engine control unit



- Disconnect the negative terminal of the 12-V battery.
- Wait for 10 minutes.
- Connect the negative terminal of the 12-V battery.
- Clear the fault memory using the KTM diagnostics tool.
- Switch off the ignition for 20 seconds.
- Read out the trouble code memory using the KTM diagnostics tool.
 - » If the error persists:
 - Change the engine control unit.

Last measure if none of the documented causes leads to elimination of the fault

- Change the engine control unit.

6 ENGINE CONTROL TROUBLE CODE

Blink code for malfunction indicator lamp (OBD)	 Malfunction indicator lamp lights up
Display on diagnostic tool	P2A0B00 "Cylinder 2 manifold air pressure sensor to ambient air pressure sensor" "Values out of tolerance"
Error level condition	When the engine is not running, there is too much deviation between the cylinder 2 manifold air pressure sensor and ambient air pressure sensor Time: ≥ 1.25 s
Function check	Checking the cylinder 2 induction manifold air pressure sensor and ambient air pressure sensor function (📖 p. 306)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Checking the cylinder 2 induction manifold air pressure sensor and ambient air pressure sensor function

- Clear the fault memory using the KTM diagnostics tool.
- Read out the trouble code memory using the KTM diagnostics tool.
 - » If the error persists:
 - Check that the cylinder 2 induction manifold pressure sensor and ambient air pressure sensor are the same.
 - Check that the cylinder 2 manifold air pressure sensor and ambient air pressure sensor are correctly wired and seated.

Last measure if none of the documented causes leads to elimination of the fault

- Contact customer service.

Blink code for malfunction indicator lamp (OBD)	 Malfunction indicator lamp lights up
Display on diagnostic tool	P2A0C00 "Manifold air pressure sensor cylinder 2" "Voltage too low"
Error level condition	Induction manifold pressure sensor voltage: ≤ 0.2 V Time: ≥ 2 s
Function check	Induction manifold pressure sensor, cylinder 2 – checking the voltage (📖 p. 307)
Possible cause	Induction manifold pressure sensor – the power supply is faulty (📖 p. 307)
	Induction manifold pressure sensor – the cylinder 2 signal wire is faulty (📖 p. 308)
	Manifold air pressure sensor – the cylinder 2 signal wire has a short circuit to ground (terminal 31) (📖 p. 309)
Last measure if none of the documented causes leads to elimination of the fault	– Change the induction manifold pressure sensor.

Induction manifold pressure sensor, cylinder 2 – checking the voltage

Condition

The diagnostics tool is connected and running.

- Select **"Engine control unit" > "Measured values" > "Induction manifold pressure sensor voltage" and "Cylinder 2 induction manifold pressure at current altitude".**

Induction manifold pressure sensor voltage	
at: 950 hPa (13.78 psi)	3.8 V
at: 350 hPa (5.08 psi)	1.4 V

- » If the displayed value is equal to the setpoint value:
 - Clear the fault memory using the KTM diagnostics tool.
 - Take a test ride.
 - Read out the trouble code memory using the KTM diagnostics tool.
- » If the indicated value does not correspond to the setpoint value:
 - Check the next possible cause:
Induction manifold pressure sensor – the power supply is faulty (📖 p. 307)
 - Check the next possible cause:
Induction manifold pressure sensor – the cylinder 2 signal wire is faulty (📖 p. 308)
 - Check the next possible cause:
Manifold air pressure sensor – the cylinder 2 signal wire has a short circuit to ground (terminal 31) (📖 p. 309)

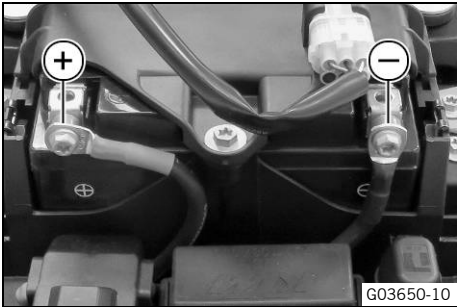
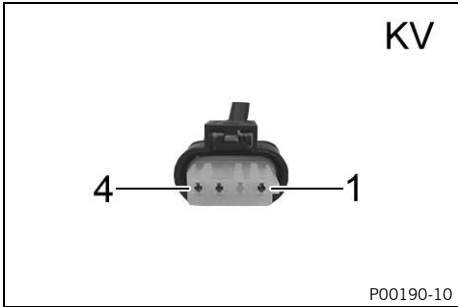
Induction manifold pressure sensor – the power supply is faulty

Condition

The ignition is on.

Engine control unit is connected. (📖 p. 15)

Induction manifold pressure sensor is connected. (📖 p. 21)



Induction manifold pressure sensor – check the power supply.

- **V** Measure the voltage between the specified points.
Induction manifold pressure sensor connector **KV** pin **4** – Measuring point **Ground (-)**

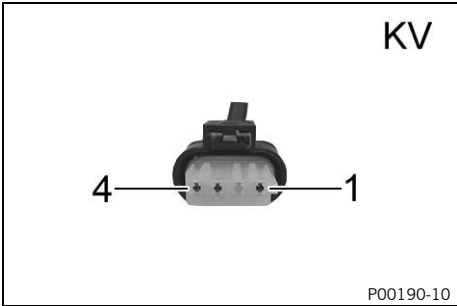
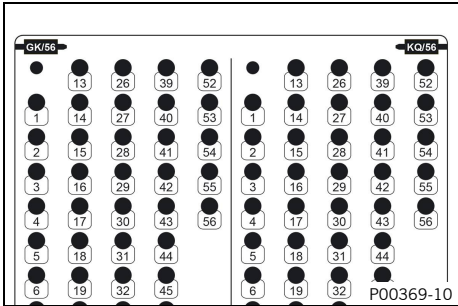
Voltage	4.8 ... 5.2 V

- » If the specifications have not been met:
 - Check the cable from engine control unit connector **KQ** (p. 502) pin **1** to connector **KV** (p. 503) pin **4**.
 - Check the power supply to the sensors on the engine control unit.
- » If the specifications have been met:
 - Check the next possible cause:
Induction manifold pressure sensor – the cylinder 2 signal wire is faulty (p. 308)

Induction manifold pressure sensor – the cylinder 2 signal wire is faulty

Condition

The ignition is off.
Engine control unit is disconnected. (p. 15)
The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.
Induction manifold sensor is disconnected. (p. 21)



Manifold air pressure sensor – check the cylinder 2 signal wire.

- **Ω** Measure the resistance between the specified points.
Break-out box, connector **KQ** pin **30** – Induction manifold pressure sensor connector **KV** pin **2**

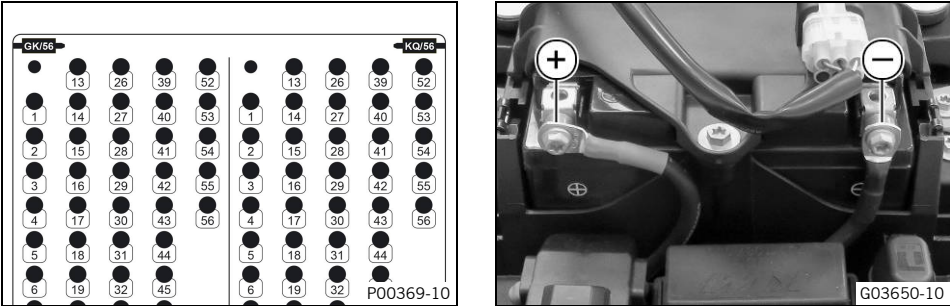
Resistance	≤ 0.6 Ω

- » If the specifications have not been met:
 - Check engine control unit connector **KQ** (p. 502) pin **30** and connector **KV** (p. 503) pin **2**.
 - Check the cable from engine control unit connector **KQ** (p. 502) pin **30** to connector **KV** (p. 503) pin **2**.
- » If the specifications have been met:
 - Check the next possible cause:
Manifold air pressure sensor – the cylinder 2 signal wire has a short circuit to ground (terminal 31) (p. 309)

Manifold air pressure sensor – the cylinder 2 signal wire has a short circuit to ground (terminal 31)

Condition

The ignition is off.
Engine control unit is disconnected. (📖 p. 15)
The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.
Induction manifold sensor is disconnected. (📖 p. 21)



Manifold air pressure sensor – check the cylinder 2 signal wire for a short circuit to ground (terminal 31).

- **V** Measure the voltage between the specified points.
Break-out box, connector **KQ** pin **30** – Measuring point **plus (+)**

Voltage	≤ 0.1 V

- » If the specifications have not been met:
 - Check the cable from engine control unit connector **KQ** (📖 p. 502) pin **30** to connector **KV** (📖 p. 503) pin **2** for a short circuit to ground (terminal 31).
- » If the specifications have been met:
 - Change the induction manifold pressure sensor.

6 ENGINE CONTROL TROUBLE CODE

Blink code for malfunction indicator lamp (OBD)	 Malfunction indicator lamp lights up
Display on diagnostic tool	P2A0D00 "Manifold air pressure sensor cylinder 2" "Voltage too high"
Error level condition	Voltage: ≥ 4.87 V Time: ≥ 2 s
Function check	Induction manifold pressure sensor, cylinder 2 – checking the voltage (📖 p. 310)
Possible cause	Manifold air pressure sensor – the cylinder 2 signal wire has a short circuit to plus (terminal 30) (📖 p. 310)
	Manifold air pressure sensor – the cylinder 2 signal wire has a short circuit to ignition plus (terminal 15) (📖 p. 311)
	Induction manifold pressure sensor – the ground wire is faulty (📖 p. 312)
Last measure if none of the documented causes leads to elimination of the fault	– Change the induction manifold pressure sensor.

Induction manifold pressure sensor, cylinder 2 – checking the voltage

Condition

The diagnostics tool is connected and running.

- Select **"Engine control unit" > "Measured values" > "Induction manifold pressure sensor voltage" and "Cylinder 2 induction manifold pressure at current altitude"**.

Induction manifold pressure sensor voltage	
at: 950 hPa (13.78 psi)	3.8 V
at: 350 hPa (5.08 psi)	1.4 V

- » If the displayed value is equal to the setpoint value:
 - Clear the fault memory using the KTM diagnostics tool.
 - Take a test ride.
 - Read out the trouble code memory using the KTM diagnostics tool.
- » If the indicated value does not correspond to the setpoint value:
 - Check the next possible cause:
Manifold air pressure sensor – the cylinder 2 signal wire has a short circuit to plus (terminal 30) (📖 p. 310)
 - Check the next possible cause:
Manifold air pressure sensor – the cylinder 2 signal wire has a short circuit to ignition plus (terminal 15) (📖 p. 311)
 - Check the next possible cause:
Induction manifold pressure sensor – the ground wire is faulty (📖 p. 312)

Manifold air pressure sensor – the cylinder 2 signal wire has a short circuit to plus (terminal 30)

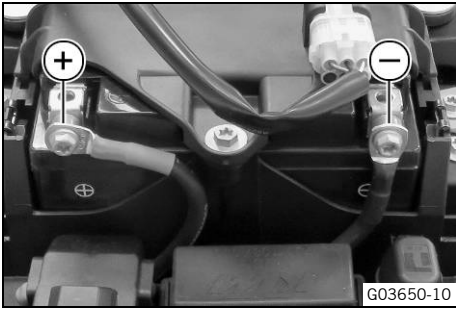
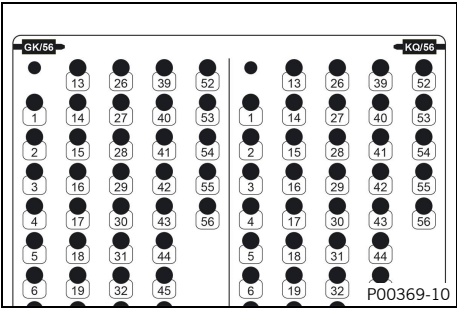
Condition

The ignition is off.

Engine control unit is disconnected. (📖 p. 15)

The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.

Induction manifold sensor is disconnected. (📖 p. 21)



Manifold air pressure sensor – check the cylinder 2 signal wire for a short circuit to plus (terminal 30).

- **V** Measure the voltage between the specified points.
Break-out box, connector **KQ** pin **30** – Measuring point **Ground (-)**

Voltage	$\leq 0.1 \text{ V}$

- » If the specifications have not been met:
 - Check the cable from engine control unit connector **KQ** (p. 502) pin **30** to connector **KV** (p. 503) pin **2** for a short circuit to plus (terminal 30).
- » If the specifications have been met:
 - Check the next possible cause:
Manifold air pressure sensor – the cylinder 2 signal wire has a short circuit to ignition plus (terminal 15) (p. 311)

Manifold air pressure sensor – the cylinder 2 signal wire has a short circuit to ignition plus (terminal 15)

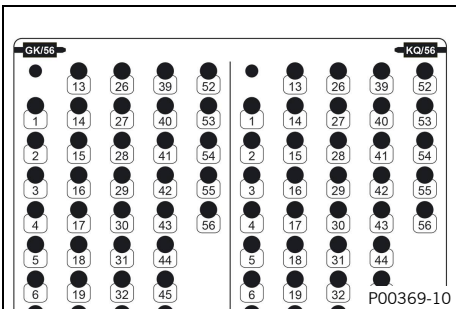
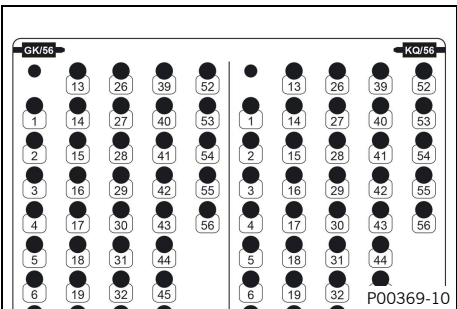
Condition

The ignition is off.

Engine control unit is disconnected. (p. 15)

The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.

Induction manifold sensor is disconnected. (p. 21)



Manifold air pressure sensor – check the cylinder 2 signal wire for a short circuit to ignition plus (terminal 15).

- **Ω** Measure the resistance between the specified points.
Break-out box, connector **KQ** pin **30** – Break-out box, connector **GK** pin **44**

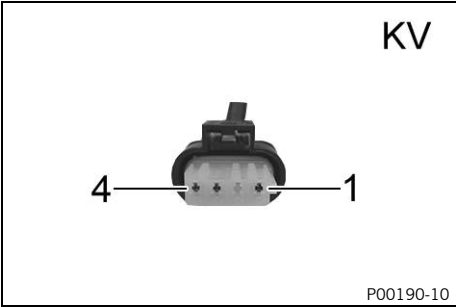
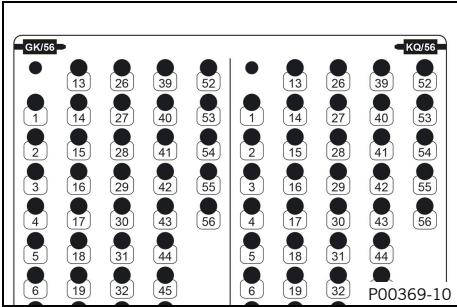
Resistance	$\infty \Omega$

- » If the specifications have not been met:
 - Check the cable from engine control unit connector **KQ** (p. 502) pin **30** to connector **KV** (p. 503) pin **2** for a short circuit to ignition plus (terminal 15).
- » If the specifications have been met:
 - Check the next possible cause:
Induction manifold pressure sensor – the ground wire is faulty (p. 312)

Induction manifold pressure sensor – the ground wire is faulty

Condition

- The ignition is off.
- Engine control unit is disconnected. (📖 p. 15)
- The break out box is connected to the engine control unit wiring harness with adapter **00029095014**.
- Induction manifold sensor is disconnected. (📖 p. 21)
- The intake air temperature sensor is disconnected. (📖 p. 17)
- The gear position sensor is disconnected. (📖 p. 12)
- The coolant temperature sensor is disconnected. (📖 p. 12)



Induction manifold pressure sensor – check the ground wire.

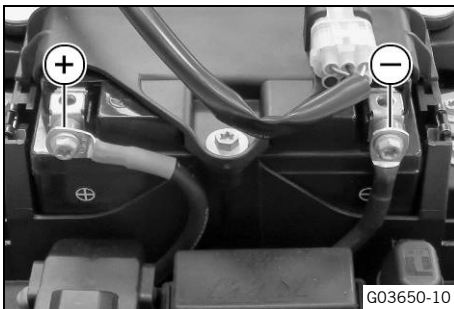
-  Measure the resistance between the specified points.
Break-out box, connector **KQ** pin **16** – Induction manifold pressure sensor connector **KV** pin **1**

Resistance	≤ 0.6 Ω

- » If the specifications have not been met:
 - Check engine control unit connector **KQ** (📖 p. 502) pin **16** and connector **KV** (📖 p. 503) pin **1**.
 - Check the cable from engine control unit connector **KQ** (📖 p. 502) pin **16** to connector **KV** (📖 p. 503) pin **1**.
- » If the specifications have been met:
 - Change the induction manifold pressure sensor.

Blink code for malfunction indicator lamp (OBD)	 Malfunction indicator lamp lights up
Display on diagnostic tool	U000100 "Engine control unit" "CAN bus malfunction"
Error level condition	Engine control unit – CAN bus malfunction
Function check	Resetting the engine control unit (📖 p. 313)
Last measure if none of the documented causes leads to elimination of the fault	– Change the engine control unit.

Resetting the engine control unit



- Disconnect the negative terminal of the 12-V battery.
- Wait for 10 minutes.
- Connect the negative terminal of the 12-V battery.
- Clear the fault memory using the KTM diagnostics tool.
- Switch off the ignition for 20 seconds.
- Read out the trouble code memory using the KTM diagnostics tool.
 - » If the error persists:
 - Change the engine control unit.

Last measure if none of the documented causes leads to elimination of the fault

- Change the engine control unit.

Blink code for malfunction indicator lamp (OBD)	 Malfunction indicator lamp lights up
Display on diagnostic tool	U016700 "Engine control unit" "Lost connection to electronic immobilizer"
Error level condition	Engine control unit – lost connection to electronic immobilizer
Function check	Programming the immobilizer control unit (📖 p. 314)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Programming the immobilizer control unit

- Connect the diagnostics tool and start it.
- Execute **"Immobilizer" > "Functions" > "Immobilizer pairing"**.



Info

The instructions in the diagnostics tool must be followed precisely.

- » After successful execution:
 - Clear the fault memory using the KTM diagnostics tool.

Last measure if none of the documented causes leads to elimination of the fault

- Contact customer service.

Blink code for malfunction indicator lamp (OBD)	 Malfunction indicator lamp lights up
Display on diagnostic tool	U041800 "CAN bus communication" "Invalid data received from ABS"
Error level condition	CAN bus communication – invalid data received from ABS
Possible cause	Software version/coding incorrect (📖 p. 315) Check the CAN bus total resistance (📖 p. 315)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Software version/coding incorrect

- Connect the diagnostics tool and start it.
- Read out the fault memory using the KTM diagnostics tool.
- Clear the fault memory using the KTM diagnostics tool.
- Switch off the ignition for 20 seconds.
- Read out the fault memory using the KTM diagnostics tool.

Fault memory is empty.

- » If the specifications have not been met:
 - Check that the software in the control units is up to date.
 - Check all model-specific variant coding and equipment-specific settings for all control units.
- » If the specifications have been met:
 - Check the next possible cause:
Check the CAN bus total resistance (📖 p. 315)

Check the CAN bus total resistance

Condition

The ignition is off.

The immobilizer control unit is disconnected. (📖 p. 29)

The combination instrument is disconnected. (📖 p. 7)

Inertial measurement unit is disconnected. (📖 p. 28)

The light control unit is disconnected. (📖 p. 30)

The tire pressure monitor control unit is disconnected. (📖 p. 30)

Heater control unit is disconnected. (📖 p. 31)

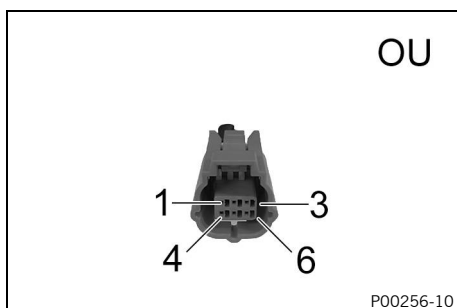
Connectivity Unit is disconnected. (📖 p. 32)

CAN bus total resistance – check the resistance.

-  Measure the resistance between the specified points.
Diagnostics connector **OU** pin **2** – Diagnostics connector **OU** pin **5**

CAN bus total resistance	
Resistance with connected engine control unit and ABS control unit: 20 °C (68 °F)	54 ... 66 Ω

- » If the specifications have not been met:
 - Check the CAN bus wires.
- » If the specifications have been met:
 - Contact customer service.



Blink code for malfunction indicator lamp (OBD)	 Malfunction indicator lamp lights up
Display on diagnostic tool	U042300 "CAN bus communication" "Invalid data received from combination instrument"
Error level condition	CAN bus communication – invalid data received from combination instrument
Possible cause	Software version/coding incorrect (📖 p. 316)
	Check the CAN bus total resistance (📖 p. 316)
	Checking the CAN bus communication with the combination instrument control unit (📖 p. 317)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Software version/coding incorrect

- Connect the diagnostics tool and start it.
- Read out the fault memory using the KTM diagnostics tool.
- Clear the fault memory using the KTM diagnostics tool.
- Switch off the ignition for 20 seconds.
- Read out the fault memory using the KTM diagnostics tool.

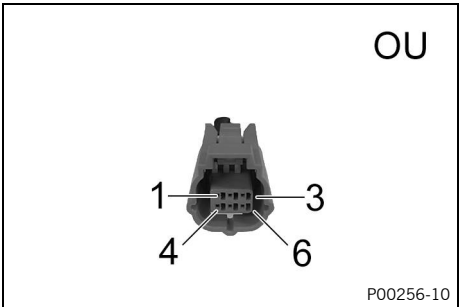
Fault memory is empty.

- » If the specifications have not been met:
 - Check that the software in the control units is up to date.
 - Check all model-specific variant coding and equipment-specific settings for all control units.
- » If the specifications have been met:
 - Check the next possible cause:
Check the CAN bus total resistance (📖 p. 316)

Check the CAN bus total resistance

Condition
The ignition is off.
The immobilizer control unit is disconnected. (📖 p. 29)
The combination instrument is disconnected. (📖 p. 7)
Inertial measurement unit is disconnected. (📖 p. 28)
The light control unit is disconnected. (📖 p. 30)
The tire pressure monitor control unit is disconnected. (📖 p. 30)
Heater control unit is disconnected. (📖 p. 31)
Connectivity Unit is disconnected. (📖 p. 32)

- CAN bus total resistance – check the resistance.**
-  Measure the resistance between the specified points.
Diagnostics connector **OU** pin **2** – Diagnostics connector **OU** pin **5**



CAN bus total resistance	
Resistance with connected engine control unit and ABS control unit: 20 °C (68 °F)	54 ... 66 Ω

- » If the specifications have not been met:
 - Check the CAN bus wires.

- » If the specifications have been met:
 - Check the next possible cause:
Checking the CAN bus communication with the combination instrument control unit (📖 p. 317)

Checking the CAN bus communication with the combination instrument control unit

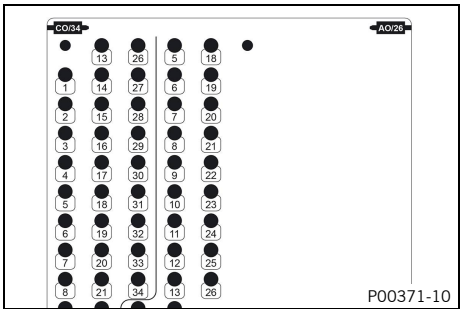
Condition

The ignition is off.
The immobilizer control unit is disconnected. (📖 p. 29)
The combination instrument is disconnected. (📖 p. 7)
Inertial measurement unit is disconnected. (📖 p. 28)
The light control unit is disconnected. (📖 p. 30)
The tire pressure monitor control unit is disconnected. (📖 p. 30)
Heater control unit is disconnected. (📖 p. 31)
Connectivity Unit is disconnected. (📖 p. 32)
The break-out box is connected to the combination instrument control unit wiring harness with adapter **00029095002**.

CAN bus combination instrument control unit – check resistance.

-  Measure the resistance between the specified points.
Break-out box socket connector **C0** pin **30** – Break-out box socket connector **C0** pin **31**

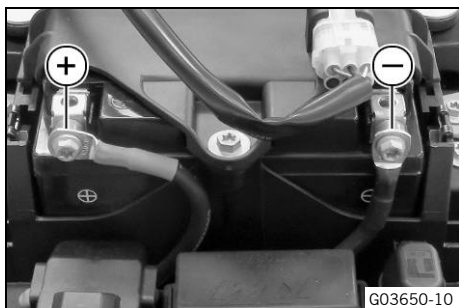
CAN bus total resistance	
Resistance with connected engine control unit and ABS control unit: 20 °C (68 °F)	54 ... 66 Ω



- » If the specifications have not been met:
 - Check the CAN bus wires.
- » If the specifications have been met:
 - Contact customer service.

Display on diagnostic tool	C210004 "Control unit error" "Internal system error"
Error level condition	Internal system error
Function check	Resetting the ABS control unit (p. 318)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Resetting the ABS control unit



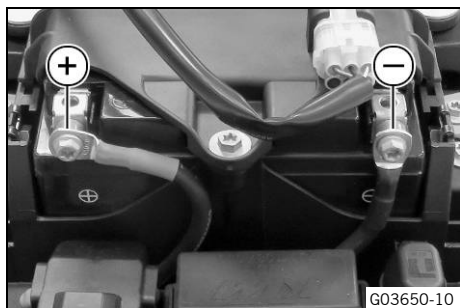
- Disconnect the negative terminal of the 12-V battery.
- Wait for 10 minutes.
- Connect the negative terminal of the 12-V battery.
- Clear the fault memory using the KTM diagnostics tool.
- Switch off the ignition for 20 seconds.
- Read out the trouble code memory using the KTM diagnostics tool.
- » If the error persists:
 - Change the ABS control unit.

Last measure if none of the documented causes leads to elimination of the fault

- Contact customer service.

Display on diagnostic tool	C210196 "Front exhaust valve" "Internal component error"
Error level condition	Malfunction of front internal exhaust valve
Function check	Resetting the ABS control unit (📖 p. 319)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Resetting the ABS control unit



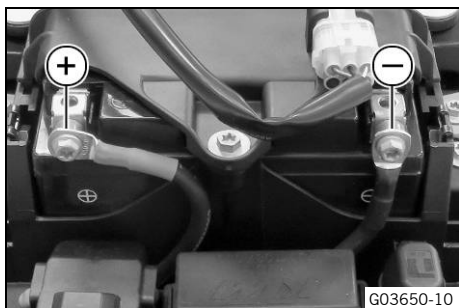
- Check the fuses.
- Disconnect negative terminal of the 12-V battery.
- Wait for 10 minutes.
- Connect the negative terminal of the 12-V battery.
- Clear the fault memory using the KTM diagnostics tool.
- Switch off the ignition for 20 seconds.
- Read out the trouble code memory using the KTM diagnostics tool.
 - » If the error persists:
 - Change the ABS control unit.

Last measure if none of the documented causes leads to elimination of the fault

- Contact customer service.

Display on diagnostic tool	C210296 "Rear exhaust valve" "Internal component error"
Error level condition	Malfunction of rear internal exhaust valve
Function check	Resetting the ABS control unit (p. 320)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Resetting the ABS control unit



- Check the fuses.
- Disconnect negative terminal of the 12-V battery.
- Wait for 10 minutes.
- Connect the negative terminal of the 12-V battery.
- Clear the fault memory using the KTM diagnostics tool.
- Switch off the ignition for 20 seconds.
- Read out the trouble code memory using the KTM diagnostics tool.

» If the error persists:

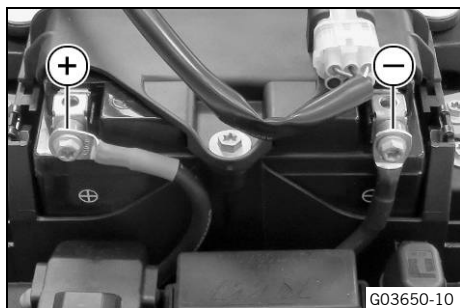
- Change the ABS control unit.

Last measure if none of the documented causes leads to elimination of the fault

- Contact customer service.

Display on diagnostic tool	C210396 "Front intake valve" "Internal component error"
Error level condition	Malfunction of front internal intake valve
Function check	Resetting the ABS control unit (📖 p. 321)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Resetting the ABS control unit



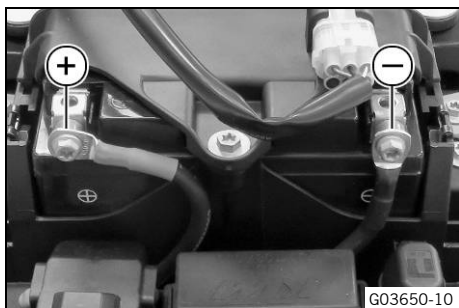
- Check the fuses.
- Disconnect negative terminal of the 12-V battery.
- Wait for 10 minutes.
- Connect the negative terminal of the 12-V battery.
- Clear the fault memory using the KTM diagnostics tool.
- Switch off the ignition for 20 seconds.
- Read out the trouble code memory using the KTM diagnostics tool.
 - » If the error persists:
 - Change the ABS control unit.

Last measure if none of the documented causes leads to elimination of the fault

- Contact customer service.

Display on diagnostic tool	C210496 "Rear intake valve" "Internal component error"
Error level condition	Malfunction of rear internal intake valve
Function check	Resetting the ABS control unit (p. 322)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Resetting the ABS control unit



- Check the fuses.
- Disconnect negative terminal of the 12-V battery.
- Wait for 10 minutes.
- Connect the negative terminal of the 12-V battery.
- Clear the fault memory using the KTM diagnostics tool.
- Switch off the ignition for 20 seconds.
- Read out the trouble code memory using the KTM diagnostics tool.

» If the error persists:

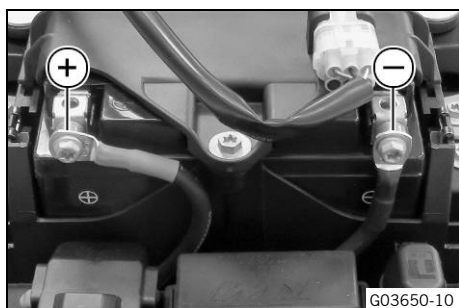
- Change the ABS control unit.

Last measure if none of the documented causes leads to elimination of the fault

- Contact customer service.

Display on diagnostic tool	C210516 "Battery voltage too low" "Voltage below threshold value"
Error level condition	Supply voltage of the ABS control unit is too low Voltage: ≤ 9.6 V Time: ≥ 1 s
Possible cause	12-V battery discharged (📖 p. 323) Power supply (terminal 30) is faulty (📖 p. 323) Power supply (terminal 15) is faulty (📖 p. 324) Ground supply (terminal 31) is faulty (📖 p. 325)
Last measure if none of the documented causes leads to elimination of the fault	– Change the ABS control unit.

12-V battery discharged



Check the battery voltage.

- **V** Measure the voltage between the specified points.
Measuring point **Ground (-)** – Measuring point **plus (+)**

Voltage	≥ 11.5 V

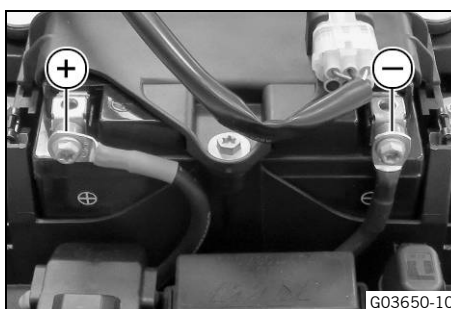
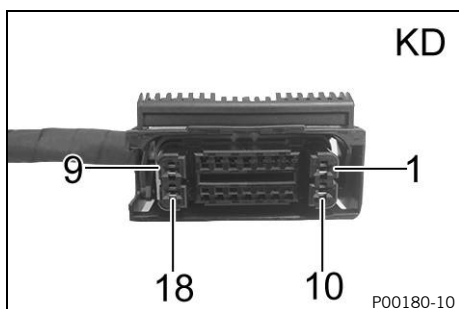
- » If the specifications have not been met:
 - Charge the 12-V battery.
 - Check the open-circuit current.
- » If the specifications have been met:
 - Check the next possible cause:
Power supply (terminal 30) is faulty (📖 p. 323)

Power supply (terminal 30) is faulty

Condition

The ignition is off.

The ABS control unit is disconnected. (📖 p. 24)



Check the power supply 1 (terminal 30).

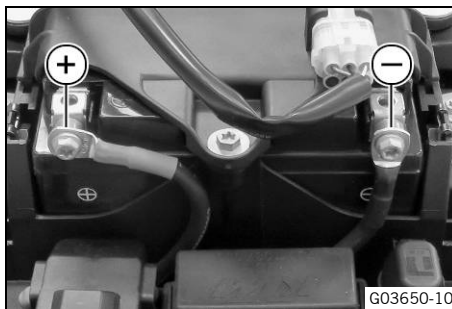
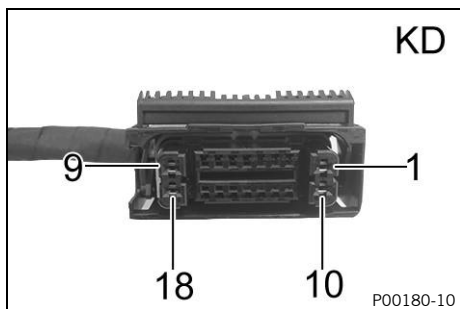
- **V** Measure the voltage between the specified points.
ABS control unit connector **KD** pin **9** – Measuring point **Ground (-)**



Info

For the measurement, the measuring points must be subjected to a 12 V/21 W bulb.

7 BRAKE ELECTRONICS TROUBLE CODE



Check the power supply 2 (terminal 30).

- **V** Measure the voltage between the specified points.
ABS control unit connector **KD** pin **18** – Measuring point **Ground (-)**



Info

For the measurement, the measuring points must be subjected to a 12 V/21 W bulb.

The value must not deviate from the battery voltage "**VBAT**" by more than 1 V.

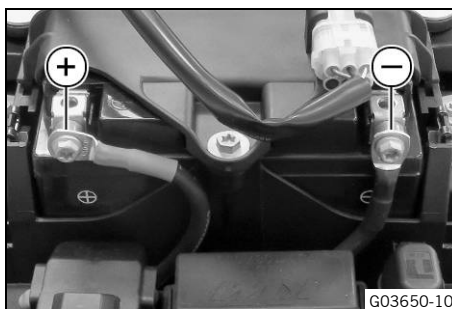
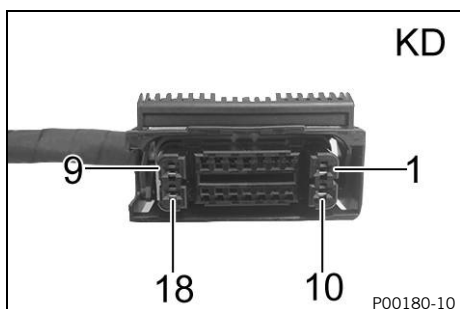
- » If the specifications have not been met:
 - Check the fuses and fuse holder for damage and corrosion.
 - Check ABS control unit connector **KD** (📖 p. 501) pin **9** and **18**.
 - Check the cable from ABS control unit connector **KD** (📖 p. 501) pin **9** to the positive terminal of the 12-V battery.
 - Check the cable from ABS control unit connector **KD** (📖 p. 501) pin **18** to the positive terminal of the 12-V battery.
- » If the specifications have been met:
 - Check the next possible cause:
Power supply (terminal 15) is faulty (📖 p. 324)

Power supply (terminal 15) is faulty

Condition

The ignition is on.

The ABS control unit is disconnected. (📖 p. 24)



Check the power supply (terminal 15).

- **V** Measure the voltage between the specified points.
ABS control unit connector **KD** pin **4** – Measuring point **Ground (-)**



Info

For the measurement, the measuring points must be subjected to a 12 V/21 W bulb.

The value must not deviate from the battery voltage "**VBAT**" by more than 1 V.

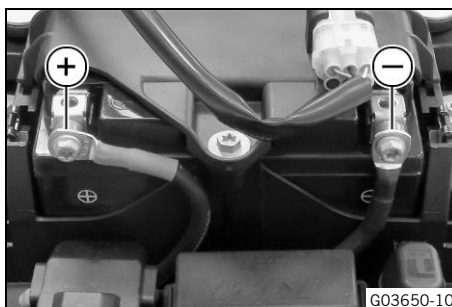
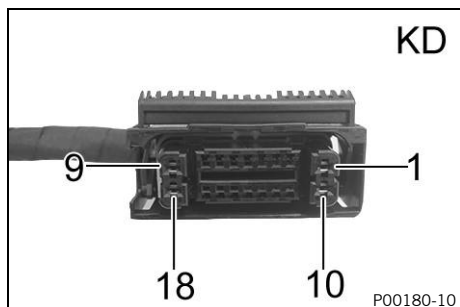
- » If the specifications have not been met:
 - Check ABS control unit connector **KD** (📖 p. 501) pin 4.
 - Check the cable from ABS control unit connector **KD** (📖 p. 501) pin 4 wiring diagram.
- » If the specifications have been met:
 - Check the next possible cause:
Ground supply (terminal 31) is faulty (📖 p. 325)

Ground supply (terminal 31) is faulty

Condition

The ignition is off.

The ABS control unit is disconnected. (📖 p. 24)



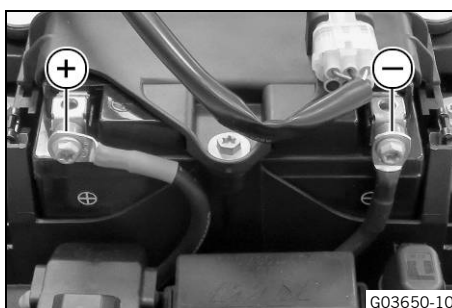
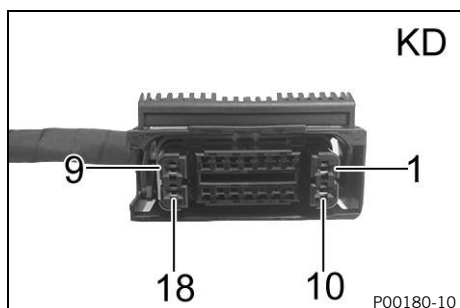
Check the ground supply 1 (terminal 31).

- **V** Measure the voltage between the specified points.
ABS control unit connector **KD** pin 1 – Measuring point **plus (+)**



Info

For the measurement, the measuring points must be subjected to a 12 V/21 W bulb.



Check the ground supply 2 (terminal 31).

- **V** Measure the voltage between the specified points.
ABS control unit connector **KD** pin 10 – Measuring point **plus (+)**



Info

For the measurement, the measuring points must be subjected to a 12 V/21 W bulb.

The value must not deviate from the battery voltage "**VBAT**" by more than 1 V.

- » If the specifications have not been met:
 - Check the cable from ABS control unit connector **KD** (📖 p. 501) pin 1 and pin 10 to ground point **X304**.
- » If the specifications have been met:
 - Change the ABS control unit.

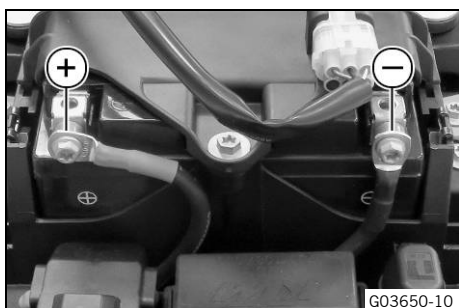
Display on diagnostic tool	C210517 "Battery voltage too high" "Voltage above threshold value"
Error level condition	Supply voltage of the ABS control unit is too high Voltage: ≥ 16.5 V Time: ≥ 1 s
Function check	Checking the charging voltage (🔌 p. 326)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Checking the charging voltage

Condition

The 12-V battery must be fully functional and completely charged.

- Remove the battery cover.
- Take off positive terminal cover.
- Start the motorcycle to check the function.
- **V** Measure the voltage between the specified points.
Measuring point **plus (+)** – Measuring point **Ground (–)**



Charging voltage	
5,000 rpm	13.5 ... 15.0 V

- » If the displayed value is greater than the specified value:
 - Change voltage regulator.
- Mount the positive terminal cover.
- Install the battery cover.

Last measure if none of the documented causes leads to elimination of the fault

- Contact customer service.

Display on diagnostic tool	C210617 "CAN network voltage too high" "Voltage above threshold value"
Error level condition	Voltage too high on CAN bus Voltage: ≥ 16.5 V Time: ≥ 0.07 s
Function check	Checking the charging voltage (📖 p. 327)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Checking the charging voltage

Condition

The 12-V battery must be fully functional and completely charged.

- Remove the battery cover.
- Take off positive terminal cover.
- Start the motorcycle to check the function.
- **V** Measure the voltage between the specified points.
Measuring point **plus (+)** – Measuring point **Ground (–)**

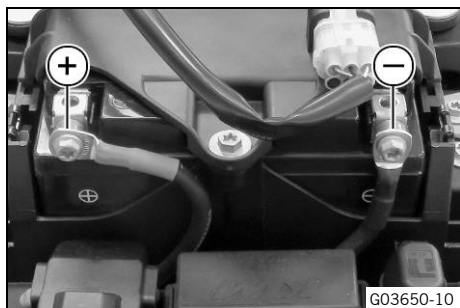
Charging voltage	
5,000 rpm	13.5 ... 15.0 V

- » If the displayed value is greater than the specified value:
 - Change voltage regulator.

- Mount the positive terminal cover.
- Install the battery cover.

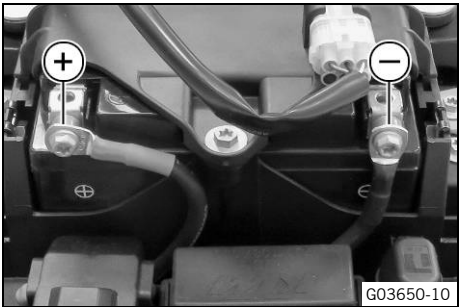
Last measure if none of the documented causes leads to elimination of the fault

- Contact customer service.



Display on diagnostic tool	C210716 "CAN network voltage too low" "Voltage below threshold value"
Error level condition	Voltage too low on CAN bus Voltage: ≤ 8.5 V Time: ≥ 0.07 s
Possible cause	12-V battery discharged (📖 p. 328) Power supply (terminal 30) is faulty (📖 p. 328) Power supply (terminal 15) is faulty (📖 p. 329) Ground supply (terminal 31) is faulty (📖 p. 330)
Last measure if none of the documented causes leads to elimination of the fault	– Change the ABS control unit.

12-V battery discharged



Check the battery voltage.

- **V** Measure the voltage between the specified points.
Measuring point **Ground (-)** – Measuring point **plus (+)**

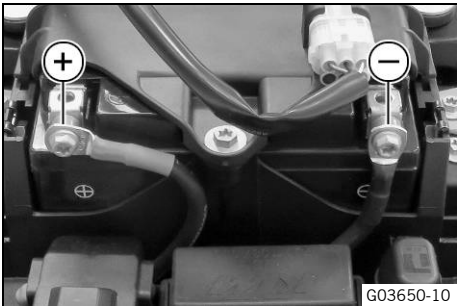
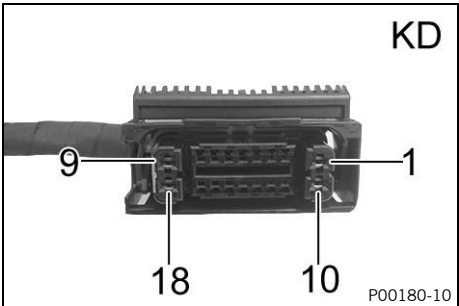
Voltage	≥ 11.5 V

 - » If the specifications have not been met:
 - Charge the 12-V battery.
 - Check the open-circuit current.
 - » If the specifications have been met:
 - Check the next possible cause:
Power supply (terminal 30) is faulty (📖 p. 328)

Power supply (terminal 30) is faulty

Condition

The ignition is off.
The ABS control unit is disconnected. (📖 p. 24)

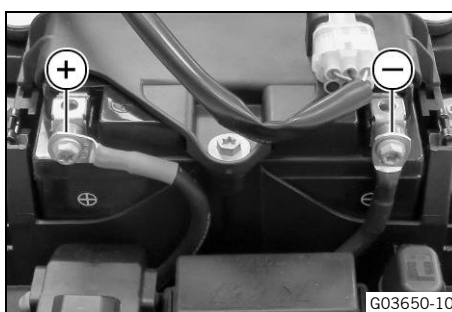
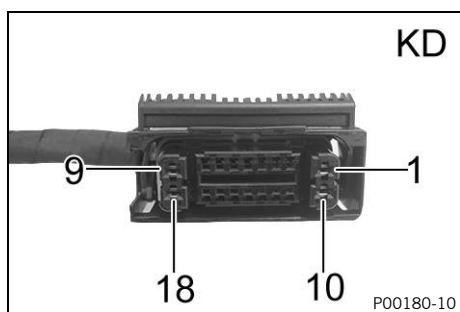


Check the power supply 1 (terminal 30).

- **V** Measure the voltage between the specified points.
ABS control unit connector **KD** pin **9** – Measuring point **Ground (-)**



Info
For the measurement, the measuring points must be subjected to a 12 V/21 W bulb.



Check the power supply 2 (terminal 30).

- **V** Measure the voltage between the specified points.
ABS control unit connector **KD** pin **18** – Measuring point **Ground (–)**



Info

For the measurement, the measuring points must be subjected to a 12 V/21 W bulb.

The value must not deviate from the battery voltage "**VBAT**" by more than 1 V.

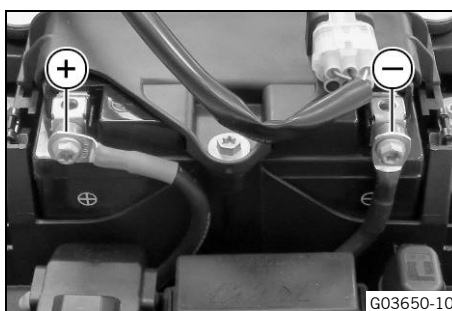
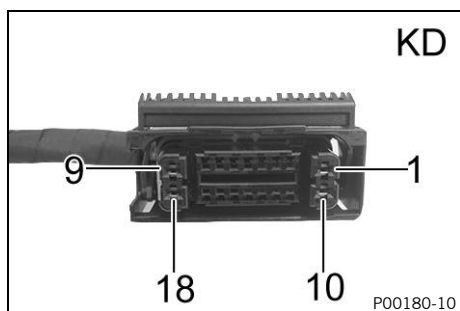
- » If the specifications have not been met:
 - Check the fuses and fuse holder for damage and corrosion.
 - Check ABS control unit connector **KD** (p. 501) pin **9** and **18**.
 - Check the cable from ABS control unit connector **KD** (p. 501) pin **9** to the positive terminal of the 12-V battery.
 - Check the cable from ABS control unit connector **KD** (p. 501) pin **18** to the positive terminal of the 12-V battery.
- » If the specifications have been met:
 - Check the next possible cause:
Power supply (terminal 15) is faulty (p. 329)

Power supply (terminal 15) is faulty

Condition

The ignition is on.

The ABS control unit is disconnected. (p. 24)



Check the power supply (terminal 15).

- **V** Measure the voltage between the specified points.
ABS control unit connector **KD** pin **4** – Measuring point **Ground (–)**



Info

For the measurement, the measuring points must be subjected to a 12 V/21 W bulb.

The value must not deviate from the battery voltage "**VBAT**" by more than 1 V.

7 BRAKE ELECTRONICS TROUBLE CODE

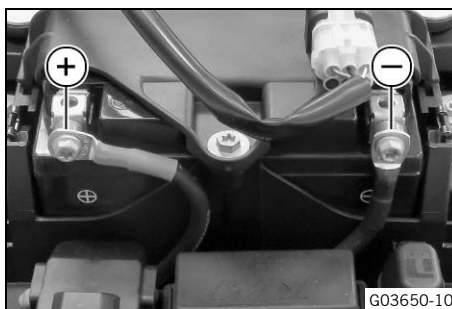
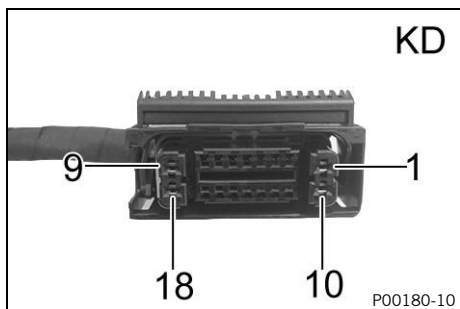
- » If the specifications have not been met:
 - Check ABS control unit connector **KD** (📖 p. 501) pin **4**.
 - Check the cable from ABS control unit connector **KD** (📖 p. 501) pin **4** wiring diagram.
- » If the specifications have been met:
 - Check the next possible cause:
Ground supply (terminal 31) is faulty (📖 p. 330)

Ground supply (terminal 31) is faulty

Condition

The ignition is off.

The ABS control unit is disconnected. (📖 p. 24)



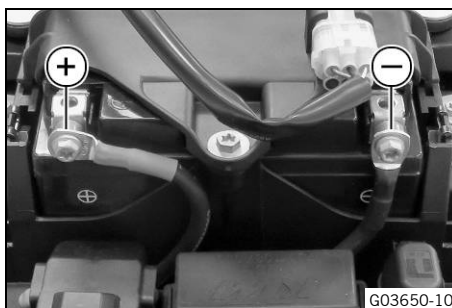
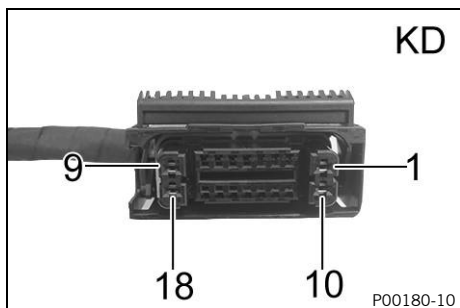
Check the ground supply 1 (terminal 31).

- **V** Measure the voltage between the specified points.
ABS control unit connector **KD** pin **1** – Measuring point **plus (+)**



Info

For the measurement, the measuring points must be subjected to a 12 V/21 W bulb.



Check the ground supply 2 (terminal 31).

- **V** Measure the voltage between the specified points.
ABS control unit connector **KD** pin **10** – Measuring point **plus (+)**



Info

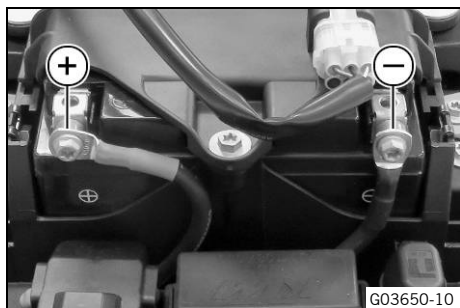
For the measurement, the measuring points must be subjected to a 12 V/21 W bulb.

The value must not deviate from the battery voltage "**VBAT**" by more than 1 V.

- » If the specifications have not been met:
 - Check the cable from ABS control unit connector **KD** (📖 p. 501) pin **1** and pin **10** to ground point **X304**.
- » If the specifications have been met:
 - Change the ABS control unit.

Display on diagnostic tool	C210896 "Valve relay malfunction" "Internal component error"
Error level condition	Malfunction of the internal valve relay
Function check	Resetting the ABS control unit (📖 p. 331)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Resetting the ABS control unit



- Check the fuses.
- Disconnect negative terminal of the 12-V battery.
- Wait for 10 minutes.
- Connect the negative terminal of the 12-V battery.
- Clear the fault memory using the KTM diagnostics tool.
- Switch off the ignition for 20 seconds.
- Read out the trouble code memory using the KTM diagnostics tool.
 - » If the error persists:
 - Change the ABS control unit.

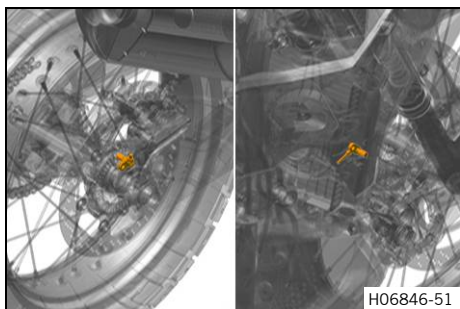
Last measure if none of the documented causes leads to elimination of the fault

- Contact customer service.

7 BRAKE ELECTRONICS TROUBLE CODE

Display on diagnostic tool	C210996 "Wheel speed sensor" "General error"
Error level condition	Difference between the wheel speeds is too large
Function check	Check plausibility faults (📖 p. 332)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Check plausibility faults



Condition

The diagnostics tool is connected and running.

- Select **"Brake electronics" > "Measured values" > "Control unit input signals"**.
 - » Turn the wheels and check the values for plausibility.
If the values are not plausible:
- Check the sensor wheel.
- Check the wheel speed sensor is properly secured.
- Check the distance between the wheel speed sensor and the sensor wheel.
- Check the rim size.
- Check the tire size.
- Check tire pressure.

Last measure if none of the documented causes leads to elimination of the fault

- Contact customer service.

Display on diagnostic tool	C211012 "Front wheel speed sensor" "Short circuit to plus"
Error level condition	Front wheel speed sensor – short circuit to plus
Function check	Front wheel speed sensor – checking the signal (📖 p. 333)
Possible cause	Front wheel speed sensor – check the wires for a short circuit (📖 p. 333)
	Front wheel speed sensor – the wires have a short circuit to plus (terminal 30) (📖 p. 334)
	Front wheel speed sensor – the wires have a short circuit to ignition plus (terminal 15) (📖 p. 335)
Last measure if none of the documented causes leads to elimination of the fault	– Change the wheel speed sensor.

Front wheel speed sensor – checking the signal

Condition

The diagnostics tool is connected and running.

- Select **"Brake electronics" > "Measured values" > "Control unit input signal 1"**.
- Turn the front wheel by hand.

Speed	≥ 1 km/h (≥ 0.6 mph)

- » If the specified value is reached:
 - Clear the fault memory using the KTM diagnostics tool.
 - Take a test ride.
 - Read out the trouble code memory using the KTM diagnostics tool.
- » If the specification is not reached:
 - Check the next possible cause:
Front wheel speed sensor – check the wires for a short circuit (📖 p. 333)
 - Check the next possible cause:
Front wheel speed sensor – the wires have a short circuit to plus (terminal 30) (📖 p. 334)
 - Check the next possible cause:
Front wheel speed sensor – the wires have a short circuit to ignition plus (terminal 15) (📖 p. 335)

Front wheel speed sensor – check the wires for a short circuit

Condition

The ignition is off.

The ABS control unit is disconnected. (📖 p. 24)

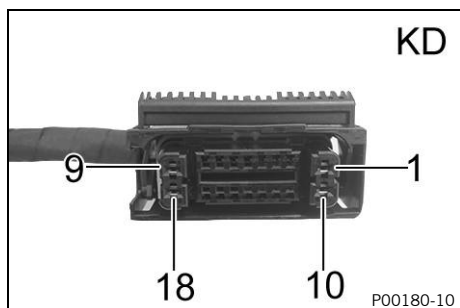
The front wheel speed sensor is disconnected. (📖 p. 24)

Front wheel speed sensor – check the wires for a short circuit.

-  Measure the resistance between the specified points.
ABS control unit connector **KD** pin **3** – ABS control unit connector **KD** pin **12**

Resistance	$\infty \Omega$

- » If the specifications have not been met:
 - Check ABS control unit connector **KD** (📖 p. 501) pin **12** and connector **DM** (📖 p. 494) pin **2**.
 - Check the cable from ABS control unit connector **KD** (📖 p. 501) pin **12** to connector **DM** (📖 p. 494) pin **2**.
 - Check ABS control unit connector **KD** (📖 p. 501) pin **3** and connector **DM** (📖 p. 494) pin **1**.

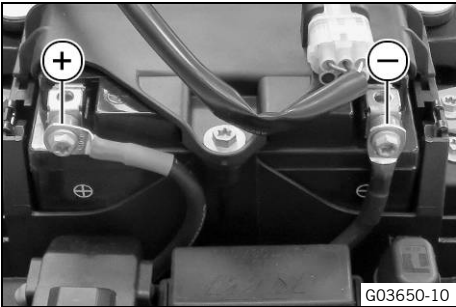
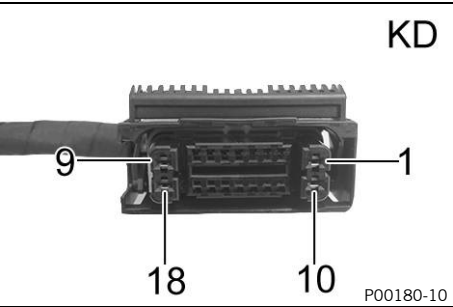


- Check the cable from ABS control unit connector **KD** (📖 p. 501) pin **3** to connector **DM** (📖 p. 494) pin **1**.
- » If the specifications have been met:
 - Check the next possible cause:
Front wheel speed sensor – the wires have a short circuit to plus (terminal 30) (📖 p. 334)

Front wheel speed sensor – the wires have a short circuit to plus (terminal 30)

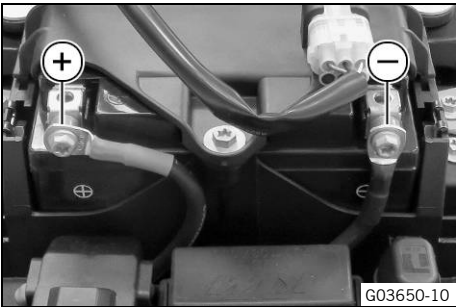
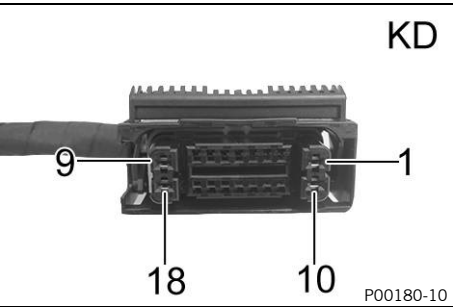
Condition

The ignition is off.
The ABS control unit is disconnected. (📖 p. 24)
The front wheel speed sensor is disconnected. (📖 p. 24)



Front wheel speed sensor – check the positive supply for a short circuit to plus (terminal 30).

- **V** Measure the voltage between the specified points.
ABS control unit connector **KD** pin **12** – Measuring point **Ground (-)**



Front wheel speed sensor – check signal wire 1 for a short circuit to plus (terminal 30).

- **V** Measure the voltage between the specified points.
ABS control unit connector **KD** pin **3** – Measuring point **Ground (-)**

Voltage	≤ 0.1 V

- » If the specifications have not been met:
 - Check cable from ABS control unit connector **KD** (📖 p. 501) pin **12** to connector **DM** (📖 p. 494) pin **2** for a short circuit to plus (terminal 30).
 - Check cable from ABS control unit connector **KD** (📖 p. 501) pin **3** to connector **DM** (📖 p. 494) pin **1** for a short circuit to plus (terminal 30).
- » If the specifications have been met:
 - Check the next possible cause:
Front wheel speed sensor – the wires have a short circuit to ignition plus (terminal 15) (📖 p. 335)

Front wheel speed sensor – the wires have a short circuit to ignition plus (terminal 15)

Condition

The ignition is off.

The ABS control unit is disconnected. (📖 p. 24)

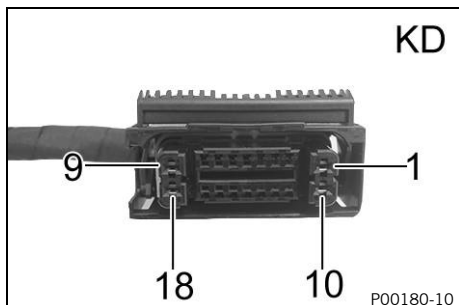
The front wheel speed sensor is disconnected. (📖 p. 24)

Front wheel speed sensor – check the positive supply for a short circuit to ignition plus (terminal 15).

-  Measure the resistance between the specified points.
ABS control unit connector **KD** pin 12 – ABS control unit connector **KD** pin 4

Front wheel speed sensor – check signal wire 1 for a short circuit to ignition plus (terminal 15).

-  Measure the resistance between the specified points.
ABS control unit connector **KD** pin 3 – ABS control unit connector **KD** pin 4



Resistance	$\infty \Omega$

- » If the specifications have not been met:
 - Check cable from ABS control unit connector **KD** (📖 p. 501) pin 12 to connector **DM** (📖 p. 494) pin 2 for a short circuit to ignition plus (terminal 15).
 - Check cable from ABS control unit connector **KD** (📖 p. 501) pin 3 to connector **DM** (📖 p. 494) pin 1 for a short circuit to ignition plus (terminal 15).
- » If the specifications have been met:
 - Change the wheel speed sensor.

7 BRAKE ELECTRONICS TROUBLE CODE

Display on diagnostic tool	C211014 "Front wheel speed sensor" "Short circuit to ground"
Error level condition	Front wheel speed sensor – short circuit to ground or open circuit
Function check	Front wheel speed sensor – checking the signal (📖 p. 336)
Possible cause	Front wheel speed sensor – the signal wires are faulty (📖 p. 336)
	Front wheel speed sensor – the signal wire has a short circuit to ground (terminal 31) (📖 p. 337)
Last measure if none of the documented causes leads to elimination of the fault	– Change the wheel speed sensor.

Front wheel speed sensor – checking the signal

Condition

The diagnostics tool is connected and running.

- Select "**Brake electronics**" > "**Measured values**" > "**Control unit input signal 1**".
- Turn the front wheel by hand.

Speed	≥ 1 km/h (≥ 0.6 mph)

- » If the specified value is reached:
 - Clear the fault memory using the KTM diagnostics tool.
 - Take a test ride.
 - Read out the trouble code memory using the KTM diagnostics tool.
- » If the specification is not reached:
 - Check the next possible cause:
Front wheel speed sensor – the signal wires are faulty (📖 p. 336)
 - Check the next possible cause:
Front wheel speed sensor – the signal wire has a short circuit to ground (terminal 31) (📖 p. 337)

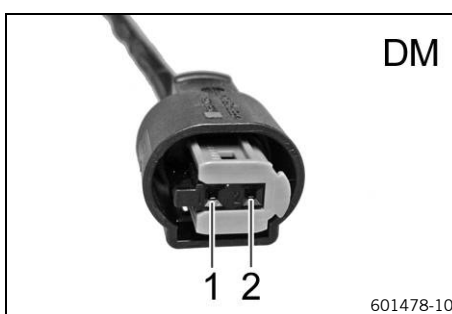
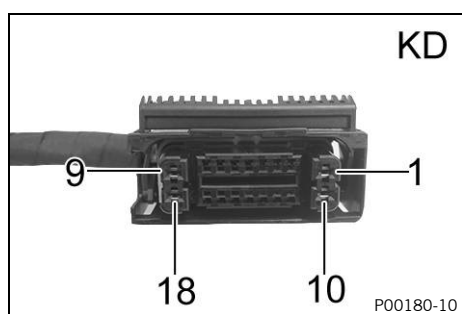
Front wheel speed sensor – the signal wires are faulty

Condition

The ignition is off.

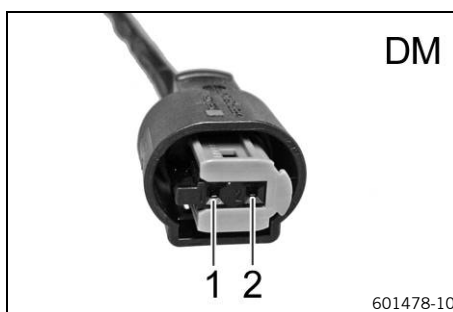
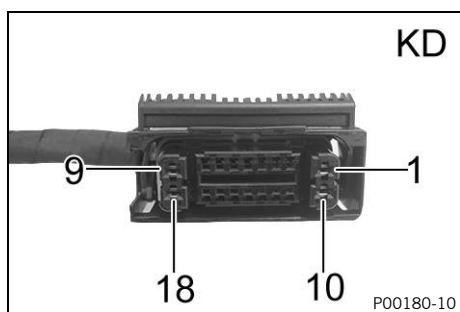
The ABS control unit is disconnected. (📖 p. 24)

The front wheel speed sensor is disconnected. (📖 p. 24)



Front wheel speed sensor – check signal wire 1.

-  Measure the resistance between the specified points.
ABS control unit connector **KD** pin **3** – Wheel speed sensor connector **DM** pin **1**



Front wheel speed sensor – check the positive supply.

-  Measure the resistance between the specified points.
ABS control unit connector **KD** pin **12** – Wheel speed sensor connector **DM** pin **2**

Resistance	$\leq 0.6 \Omega$

- » If the specifications have not been met:
 - Check ABS control unit connector **KD** (p. 501) pin **3** and connector **DM** (p. 494) pin **1**.
 - Check the cable from ABS control unit connector **KD** (p. 501) pin **3** to connector **DM** (p. 494) pin **1**.
 - Check ABS control unit connector **KD** (p. 501) pin **12** and connector **DM** (p. 494) pin **2**.
 - Check the cable from ABS control unit connector **KD** (p. 501) pin **12** to connector **DM** (p. 494) pin **2**.
- » If the specifications have been met:
 - Check the next possible cause:
Front wheel speed sensor – the signal wire has a short circuit to ground (terminal 31) (p. 337)

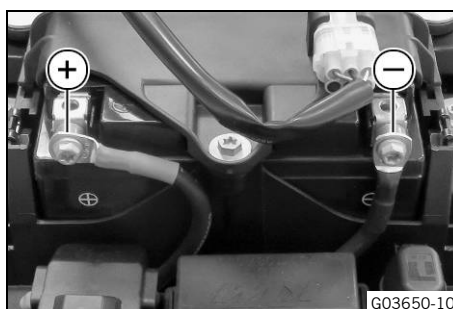
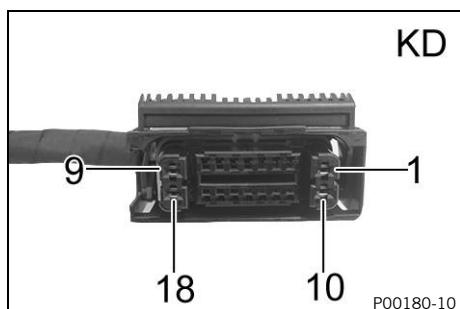
Front wheel speed sensor – the signal wire has a short circuit to ground (terminal 31)

Condition

The ignition is off.

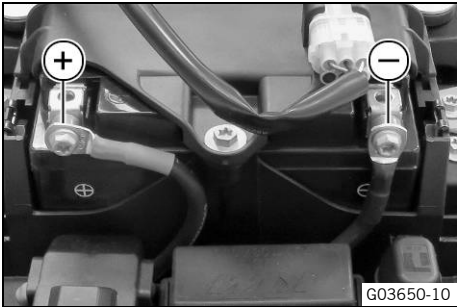
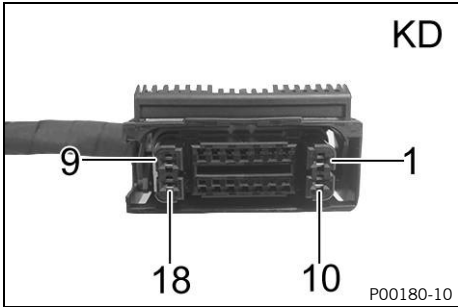
The ABS control unit is disconnected. (p. 24)

The front wheel speed sensor is disconnected. (p. 24)



Front wheel speed sensor – check signal wire 1 for a short circuit to ground (terminal 31).

-  Measure the resistance between the specified points.
ABS control unit connector **KD** pin **3** – Measuring point **Ground (-)**



Front wheel speed sensor – check the positive supply for a short circuit to ground (terminal 31).

-  Measure the resistance between the specified points.
ABS control unit connector **KD** pin **12** – Measuring point **Ground (-)**

Resistance	$\infty \Omega$

- » If the specifications have not been met:
 - Check the cable from ABS control unit connector **KD** (📖 p. 501) pin **3** to connector **DM** (📖 p. 494) pin **1** for a short circuit to ground (terminal 31).
 - Check the cable from ABS control unit connector **KD** (📖 p. 501) pin **12** to connector **DM** (📖 p. 494) pin **2** for a short circuit to ground (terminal 31).
- » If the specifications have been met:
 - Change the wheel speed sensor.

Display on diagnostic tool	C211086 "Front wheel speed sensor" "Signal fault"
Error level condition	Front wheel speed sensor – signal error
Function check	Front wheel speed sensor – checking the signal (📖 p. 339)
Possible cause	Front wheel speed sensor – the signal wires are faulty (📖 p. 339)
	Front wheel speed sensor – check the wires for a short circuit (📖 p. 340)
	Front wheel speed sensor – the signal wire has a short circuit to ground (terminal 31) (📖 p. 337)
	Front wheel speed sensor – the wires have a short circuit to plus (terminal 30) (📖 p. 342)
	Front wheel speed sensor – the wires have a short circuit to ignition plus (terminal 15) (📖 p. 335)
Last measure if none of the documented causes leads to elimination of the fault	– Change the wheel speed sensor.

Front wheel speed sensor – checking the signal

Condition

The diagnostics tool is connected and running.

- Select **"Brake electronics" > "Measured values" > "Control unit input signal 1"**.
- Turn the front wheel by hand.

Speed	≥ 1 km/h (≥ 0.6 mph)

- » If the specified value is reached:
 - Clear the fault memory using the KTM diagnostics tool.
 - Take a test ride.
 - Read out the trouble code memory using the KTM diagnostics tool.
- » If the specification is not reached:
 - Check the next possible cause:
Front wheel speed sensor – the signal wires are faulty (📖 p. 339)
 - Check the next possible cause:
Front wheel speed sensor – check the wires for a short circuit (📖 p. 340)
 - Check the next possible cause:
Front wheel speed sensor – the signal wire has a short circuit to ground (terminal 31) (📖 p. 337)
 - Check the next possible cause:
Front wheel speed sensor – the wires have a short circuit to plus (terminal 30) (📖 p. 342)
 - Check the next possible cause:
Front wheel speed sensor – the wires have a short circuit to ignition plus (terminal 15) (📖 p. 335)

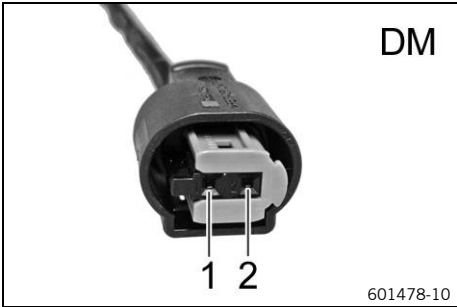
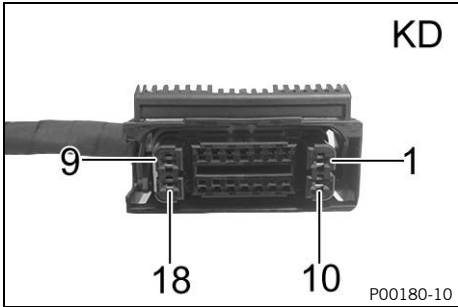
Front wheel speed sensor – the signal wires are faulty

Condition

The ignition is off.

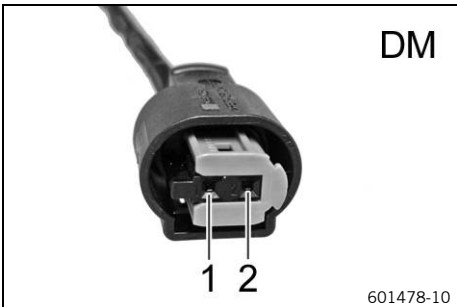
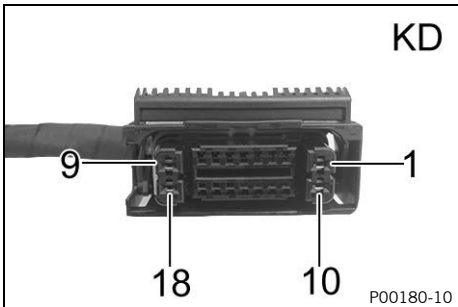
The ABS control unit is disconnected. (📖 p. 24)

The front wheel speed sensor is disconnected. (📖 p. 24)



Front wheel speed sensor – check signal wire 1.

- Measure the resistance between the specified points.
ABS control unit connector **KD** pin **3** – Wheel speed sensor connector **DM** pin **1**



Front wheel speed sensor – check the positive supply.

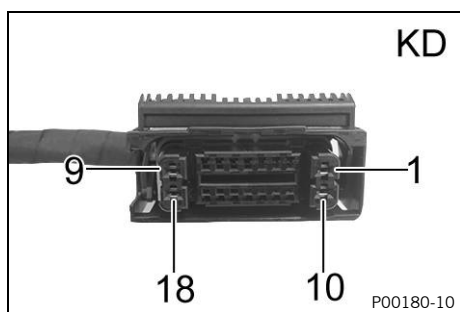
- Measure the resistance between the specified points.
ABS control unit connector **KD** pin **12** – Wheel speed sensor connector **DM** pin **2**

Resistance	≤ 0.6 Ω

- » If the specifications have not been met:
 - Check ABS control unit connector **KD** (📖 p. 501) pin **3** and connector **DM** (📖 p. 494) pin **1**.
 - Check the cable from ABS control unit connector **KD** (📖 p. 501) pin **3** to connector **DM** (📖 p. 494) pin **1**.
 - Check ABS control unit connector **KD** (📖 p. 501) pin **12** and connector **DM** (📖 p. 494) pin **2**.
 - Check the cable from ABS control unit connector **KD** (📖 p. 501) pin **12** to connector **DM** (📖 p. 494) pin **2**.
- » If the specifications have been met:
 - Check the next possible cause:
Front wheel speed sensor – check the wires for a short circuit (📖 p. 340)

Front wheel speed sensor – check the wires for a short circuit

Condition
The ignition is off.
The ABS control unit is disconnected. (📖 p. 24)
The front wheel speed sensor is disconnected. (📖 p. 24)



Front wheel speed sensor – check the wires for a short circuit.

- Ω Measure the resistance between the specified points.
ABS control unit connector **KD** pin **3** – ABS control unit connector **KD** pin **12**

Resistance	$\infty \Omega$

- » If the specifications have not been met:
 - Check ABS control unit connector **KD** (p. 501) pin **12** and connector **DM** (p. 494) pin **2**.
 - Check the cable from ABS control unit connector **KD** (p. 501) pin **12** to connector **DM** (p. 494) pin **2**.
 - Check ABS control unit connector **KD** (p. 501) pin **3** and connector **DM** (p. 494) pin **1**.
 - Check the cable from ABS control unit connector **KD** (p. 501) pin **3** to connector **DM** (p. 494) pin **1**.
- » If the specifications have been met:
 - Check the next possible cause:
Front wheel speed sensor – the signal wire has a short circuit to ground (terminal 31) (p. 341)

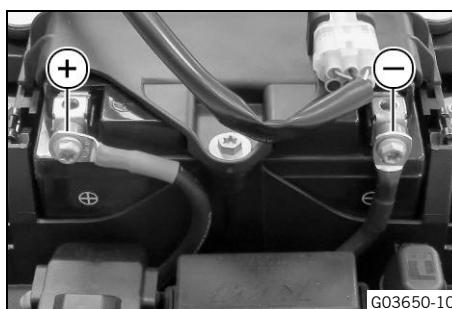
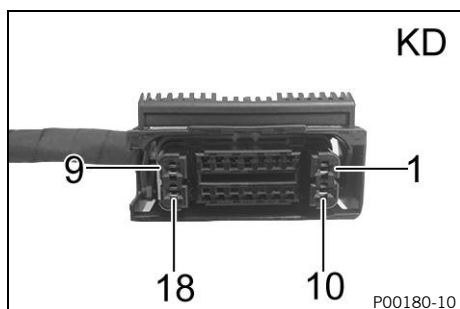
Front wheel speed sensor – the signal wire has a short circuit to ground (terminal 31)

Condition

The ignition is off.

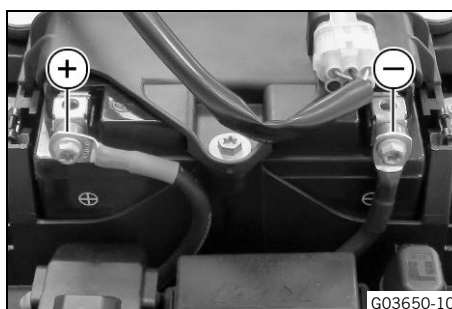
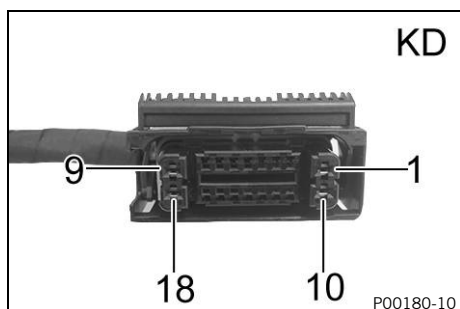
The ABS control unit is disconnected. (p. 24)

The front wheel speed sensor is disconnected. (p. 24)



Front wheel speed sensor – check signal wire 1 for a short circuit to ground (terminal 31).

- Ω Measure the resistance between the specified points.
ABS control unit connector **KD** pin **3** – Measuring point **Ground (-)**



Front wheel speed sensor – check the positive supply for a short circuit to ground (terminal 31).

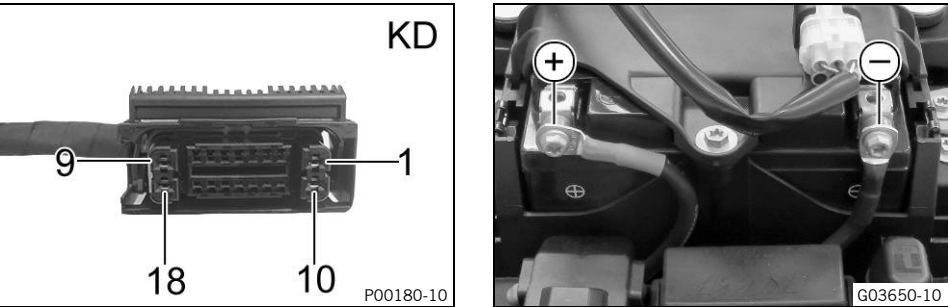
- Ω Measure the resistance between the specified points.
ABS control unit connector **KD** pin **12** – Measuring point **Ground (-)**

Resistance	$\infty \Omega$

- » If the specifications have not been met:
 - Check the cable from ABS control unit connector **KD** (📖 p. 501) pin **3** to connector **DM** (📖 p. 494) pin **1** for a short circuit to ground (terminal 31).
 - Check the cable from ABS control unit connector **KD** (📖 p. 501) pin **12** to connector **DM** (📖 p. 494) pin **2** for a short circuit to ground (terminal 31).
- » If the specifications have been met:
 - Check the next possible cause:
Front wheel speed sensor – the wires have a short circuit to plus (terminal 30) (📖 p. 342)

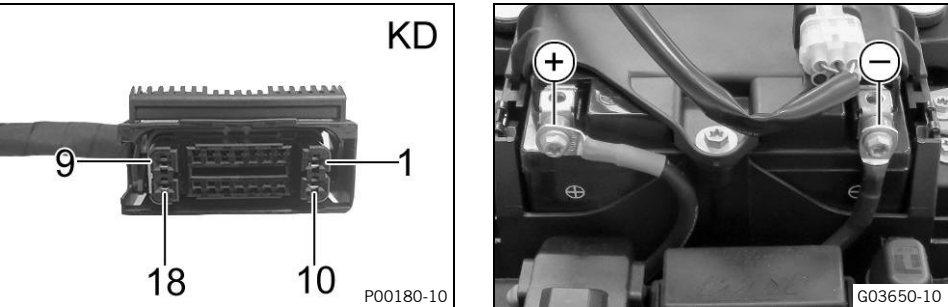
Front wheel speed sensor – the wires have a short circuit to plus (terminal 30)

Condition
The ignition is off.
The ABS control unit is disconnected. (📖 p. 24)
The front wheel speed sensor is disconnected. (📖 p. 24)



Front wheel speed sensor – check the positive supply for a short circuit to plus (terminal 30).

- **V** Measure the voltage between the specified points.
ABS control unit connector **KD** pin **12** – Measuring point **Ground (-)**



Front wheel speed sensor – check signal wire 1 for a short circuit to plus (terminal 30).

- **V** Measure the voltage between the specified points.
ABS control unit connector **KD** pin **3** – Measuring point **Ground (-)**

Voltage	≤ 0.1 V

- » If the specifications have not been met:
 - Check cable from ABS control unit connector **KD** (📖 p. 501) pin **12** to connector **DM** (📖 p. 494) pin **2** for a short circuit to plus (terminal 30).
 - Check cable from ABS control unit connector **KD** (📖 p. 501) pin **3** to connector **DM** (📖 p. 494) pin **1** for a short circuit to plus (terminal 30).
- » If the specifications have been met:
 - Check the next possible cause:
Front wheel speed sensor – the wires have a short circuit to ignition plus (terminal 15) (📖 p. 343)

Front wheel speed sensor – the wires have a short circuit to ignition plus (terminal 15)

Condition

The ignition is off.

The ABS control unit is disconnected. (📖 p. 24)

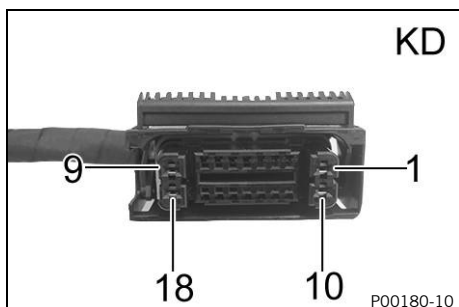
The front wheel speed sensor is disconnected. (📖 p. 24)

Front wheel speed sensor – check the positive supply for a short circuit to ignition plus (terminal 15).

-  Measure the resistance between the specified points.
ABS control unit connector **KD** pin **12** – ABS control unit connector **KD** pin **4**

Front wheel speed sensor – check signal wire 1 for a short circuit to ignition plus (terminal 15).

-  Measure the resistance between the specified points.
ABS control unit connector **KD** pin **3** – ABS control unit connector **KD** pin **4**

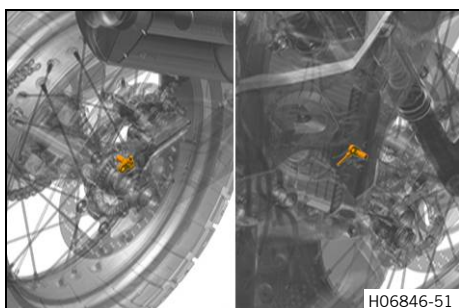


Resistance	$\infty \Omega$

- » If the specifications have not been met:
 - Check cable from ABS control unit connector **KD** (📖 p. 501) pin **12** to connector **DM** (📖 p. 494) pin **2** for a short circuit to ignition plus (terminal 15).
 - Check cable from ABS control unit connector **KD** (📖 p. 501) pin **3** to connector **DM** (📖 p. 494) pin **1** for a short circuit to ignition plus (terminal 15).
- » If the specifications have been met:
 - Change the wheel speed sensor.

Display on diagnostic tool	C211164 "Front wheel speed sensor" "Plausibility error"
Error level condition	Signal from the front wheel speed sensor is implausible
Function check	Check plausibility faults (📖 p. 344)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Check plausibility faults



Condition

The diagnostics tool is connected and running.

- Select **"Brake electronics" > "Measured values" > "Control unit input signals"**.
 - » Turn the wheels and check the values for plausibility.
If the values are not plausible:
- Check the sensor wheel.
- Check the wheel speed sensor is properly secured.
- Check the distance between the wheel speed sensor and the sensor wheel.
- Check the rim size.
- Check the tire size.
- Check tire pressure.

Last measure if none of the documented causes leads to elimination of the fault

- Contact customer service.

Display on diagnostic tool	C211212 "Rear wheel speed sensor" "Short circuit to plus"
Error level condition	Rear wheel speed sensor – short circuit to plus
Function check	Rear wheel speed sensor – checking the signal (📖 p. 345)
Possible cause	Rear wheel speed sensor – checking the wires for a short circuit (📖 p. 345)
	Rear wheel speed sensor – the wires have a short circuit to plus (terminal 30) (📖 p. 346)
	Rear wheel speed sensor – the wires have a short circuit to ignition plus (terminal 15) (📖 p. 347)
Last measure if none of the documented causes leads to elimination of the fault	– Change the rear wheel speed sensor.

Rear wheel speed sensor – checking the signal

Condition

The diagnostics tool is connected and running.

- Select **"Brake electronics" > "Measured values" > "Control unit input signal 1"**.
- Turn the rear wheel by hand.

Speed	≥ 1 km/h (≥ 0.6 mph)

- » If the specified value is reached:
 - Clear the fault memory using the KTM diagnostics tool.
 - Take a test ride.
 - Read out the trouble code memory using the KTM diagnostics tool.
- » If the specification is not reached:
 - Check the next possible cause:
Rear wheel speed sensor – checking the wires for a short circuit (📖 p. 345)
 - Check the next possible cause:
Rear wheel speed sensor – the wires have a short circuit to plus (terminal 30) (📖 p. 346)
 - Check the next possible cause:
Rear wheel speed sensor – the wires have a short circuit to ignition plus (terminal 15) (📖 p. 347)

Rear wheel speed sensor – checking the wires for a short circuit

Condition

The ignition is off.

The ABS control unit is disconnected. (📖 p. 24)

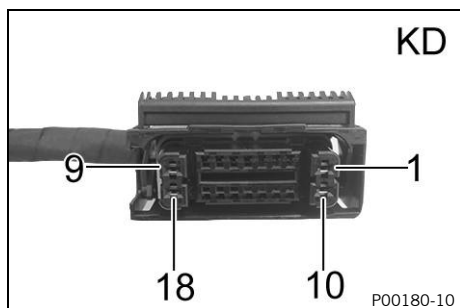
The rear wheel speed sensor is disconnected. (📖 p. 24)

Rear wheel speed sensor – check the wires for a short circuit.

-  Measure the resistance between the specified points.
ABS control unit connector **KD** pin **13** – ABS control unit connector **KD** pin **14**

Resistance	$\infty \Omega$

- » If the specifications have not been met:
 - Check ABS control unit connector **KD** (📖 p. 501) pin **13** and connector **DM** (📖 p. 494) pin **2**.
 - Check the cable from ABS control unit connector **KD** (📖 p. 501) pin **13** to connector **DM** (📖 p. 494) pin **2**.
 - Check ABS control unit connector **KD** (📖 p. 501) pin **14** and connector **DM** (📖 p. 494) pin **1**.

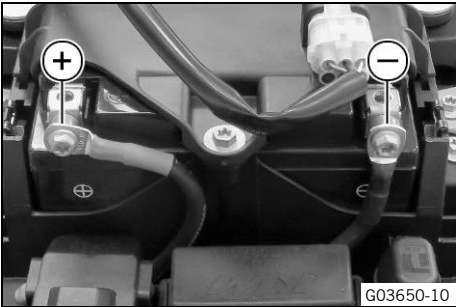
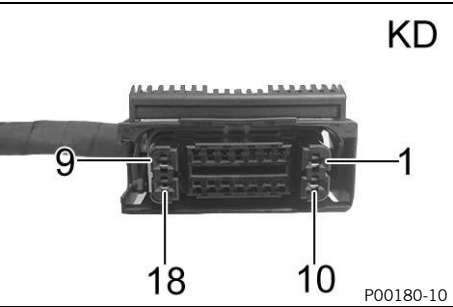


- Check the cable from ABS control unit connector **KD** (📖 p. 501) pin **14** to connector **DM** (📖 p. 494) pin **1**.
- » If the specifications have been met:
 - Check the next possible cause:
Rear wheel speed sensor – the wires have a short circuit to plus (terminal 30) (📖 p. 346)

Rear wheel speed sensor – the wires have a short circuit to plus (terminal 30)

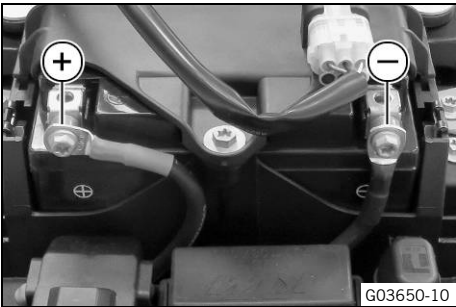
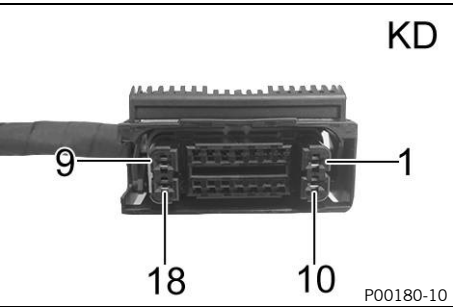
Condition

The ignition is off.
The ABS control unit is disconnected. (📖 p. 24)
The rear wheel speed sensor is disconnected. (📖 p. 24)



Rear wheel speed sensor – check the positive supply for a short circuit to plus (terminal 30).

- **V** Measure the voltage between the specified points.
ABS control unit connector **KD** pin **13** – Measuring point **Ground (-)**



Rear wheel speed sensor – check the signal wire 1 for a short circuit to plus (terminal 30).

- **V** Measure the voltage between the specified points.
ABS control unit connector **KD** pin **14** – Measuring point **Ground (-)**

Voltage	< 0.1 V

- » If the specifications have not been met:
 - Check cable from ABS control unit connector **KD** (📖 p. 501) pin **13** to connector **DM** (📖 p. 494) pin **2** for a short circuit to plus (terminal 30).
 - Check cable from ABS control unit connector **KD** (📖 p. 501) pin **14** to connector **DM** (📖 p. 494) pin **1** for a short circuit to plus (terminal 30).
- » If the specifications have been met:
 - Check the next possible cause:
Rear wheel speed sensor – the wires have a short circuit to ignition plus (terminal 15) (📖 p. 347)

Rear wheel speed sensor – the wires have a short circuit to ignition plus (terminal 15)

Condition

The ignition is off.

The ABS control unit is disconnected. (📖 p. 24)

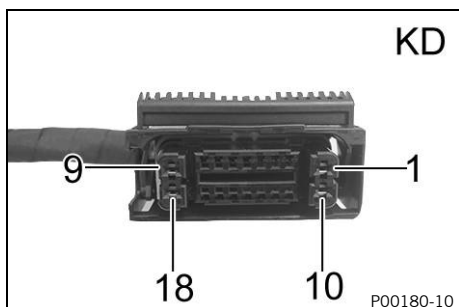
The rear wheel speed sensor is disconnected. (📖 p. 24)

Rear wheel speed sensor – check the positive supply for a short circuit to ignition plus (terminal 15).

-  Measure the resistance between the specified points.
ABS control unit connector **KD** pin **13** – ABS control unit connector **KD** pin **4**

Rear wheel speed sensor – check the signal wire 1 for a short circuit to ignition plus (terminal 15).

-  Measure the resistance between the specified points.
ABS control unit connector **KD** pin **14** – ABS control unit connector **KD** pin **4**



Resistance	$\infty \Omega$

- » If the specifications have not been met:
 - Check cable from ABS control unit connector **KD** (📖 p. 501) pin **13** to connector **DM** (📖 p. 494) pin **2** for a short circuit to ignition plus (terminal 15).
 - Check cable from ABS control unit connector **KD** (📖 p. 501) pin **14** to connector **DM** (📖 p. 494) pin **1** for a short circuit to ignition plus (terminal 15).
- » If the specifications have been met:
 - Change the rear wheel speed sensor.

Display on diagnostic tool	C211214 "Rear wheel speed sensor" "Short circuit to ground"
Error level condition	Rear wheel speed sensor – short circuit to ground or open circuit
Function check	Rear wheel speed sensor – checking the signal (📖 p. 348)
Possible cause	Rear wheel speed sensor – the signal wires are faulty (📖 p. 348) Rear wheel speed sensor – the signal wires have a short circuit to ground (terminal 31) (📖 p. 349)
Last measure if none of the documented causes leads to elimination of the fault	– Change the rear wheel speed sensor.

Rear wheel speed sensor – checking the signal

Condition

The diagnostics tool is connected and running.

- Select "**Brake electronics**" > "**Measured values**" > "**Control unit input signal 1**".
- Turn the rear wheel by hand.

Speed	≥ 1 km/h (≥ 0.6 mph)

- » If the specified value is reached:
 - Clear the fault memory using the KTM diagnostics tool.
 - Take a test ride.
 - Read out the trouble code memory using the KTM diagnostics tool.
- » If the specification is not reached:
 - Check the next possible cause:
Rear wheel speed sensor – the signal wires are faulty (📖 p. 348)
 - Check the next possible cause:
Rear wheel speed sensor – the signal wires have a short circuit to ground (terminal 31) (📖 p. 349)

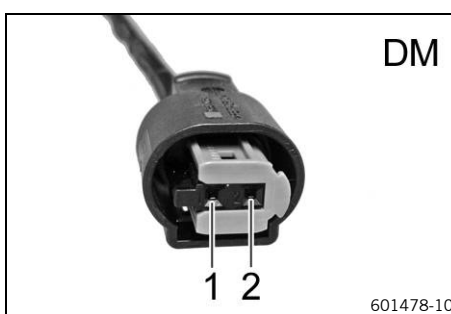
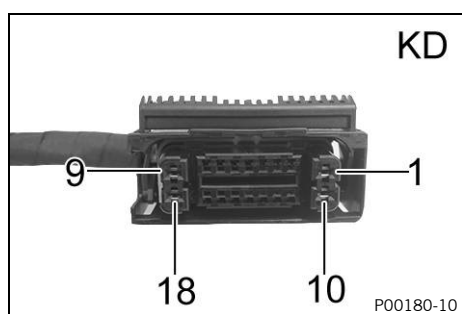
Rear wheel speed sensor – the signal wires are faulty

Condition

The ignition is off.

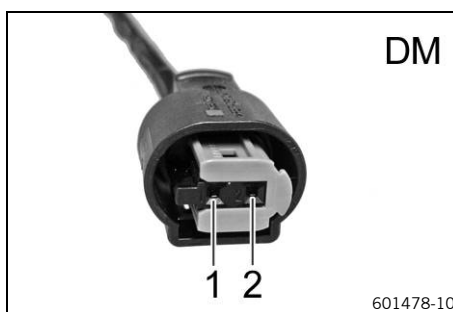
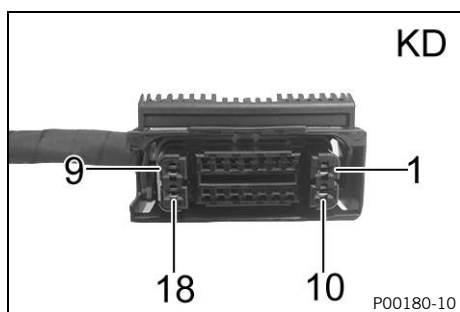
The ABS control unit is disconnected. (📖 p. 24)

The rear wheel speed sensor is disconnected. (📖 p. 24)



Rear wheel speed sensor – check signal wire 1.

-  Measure the resistance between the specified points.
ABS control unit connector **KD** pin **14** – Wheel speed sensor connector **DM** pin **1**



Rear wheel speed sensor – check the positive supply.

-  Measure the resistance between the specified points.
ABS control unit connector **KD** pin 13 – Wheel speed sensor connector **DM** pin 2

Resistance	$\leq 0.6 \Omega$

- » If the specifications have not been met:
 - Check ABS control unit connector **KD** (p. 501) pin 14 and connector **DM** (p. 494) pin 1.
 - Check the cable from ABS control unit connector **KD** (p. 501) pin 14 to connector **DM** (p. 494) pin 1.
 - Check ABS control unit connector **KD** (p. 501) pin 13 and connector **DM** (p. 494) pin 2.
 - Check the cable from ABS control unit connector **KD** (p. 501) pin 13 to connector **DM** (p. 494) pin 2.
- » If the specifications have been met:
 - Check the next possible cause:
Rear wheel speed sensor – the signal wires have a short circuit to ground (terminal 31) (p. 349)

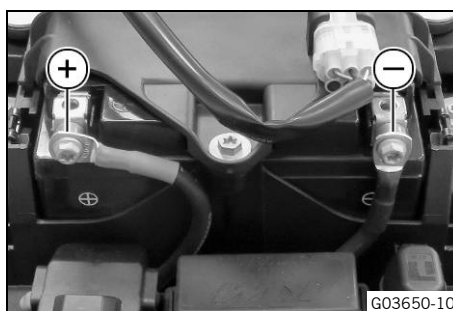
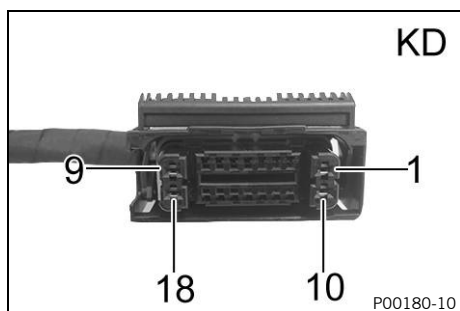
Rear wheel speed sensor – the signal wires have a short circuit to ground (terminal 31)

Condition

The ignition is off.

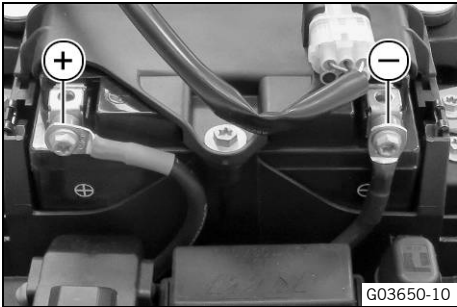
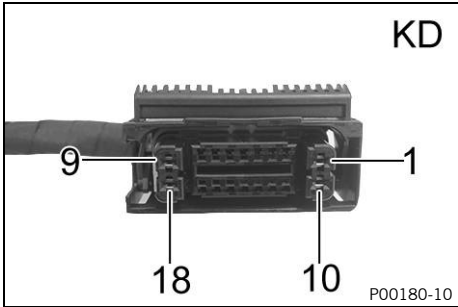
The ABS control unit is disconnected. (p. 24)

The rear wheel speed sensor is disconnected. (p. 24)



Rear wheel speed sensor – check signal wire 1 for a short circuit to ground (terminal 31).

-  Measure the resistance between the specified points.
ABS control unit connector **KD** pin 14 – Measuring point **Ground** (–)



Rear wheel speed sensor – check the plus supply for a short circuit to ground (terminal 31).

-  Measure the resistance between the specified points.
ABS control unit connector **KD** pin **13** – Measuring point **Ground (-)**

Resistance	$\infty \Omega$

- » If the specifications have not been met:
 - Check the cable from ABS control unit connector **KD** (📖 p. 501) pin **14** to connector **DM** (📖 p. 494) pin **1** for a short circuit to ground (terminal 31).
 - Check the cable from ABS control unit connector **KD** (📖 p. 501) pin **13** to connector **DM** (📖 p. 494) pin **2** for a short circuit to ground (terminal 31).
- » If the specifications have been met:
 - Change the rear wheel speed sensor.

Display on diagnostic tool	C211286 "Rear wheel speed sensor" "Signal fault"
Error level condition	Rear wheel speed sensor – signal error
Function check	Rear wheel speed sensor – checking the signal (📖 p. 351)
Possible cause	Rear wheel speed sensor – the signal wires are faulty (📖 p. 351)
	Rear wheel speed sensor – checking the wires for a short circuit (📖 p. 352)
	Rear wheel speed sensor – the signal wires have a short circuit to ground (terminal 31) (📖 p. 349)
	Rear wheel speed sensor – the wires have a short circuit to plus (terminal 30) (📖 p. 354)
	Rear wheel speed sensor – the wires have a short circuit to ignition plus (terminal 15) (📖 p. 347)
Last measure if none of the documented causes leads to elimination of the fault	– Change the rear wheel speed sensor.

Rear wheel speed sensor – checking the signal

Condition

The diagnostics tool is connected and running.

- Select **"Brake electronics" > "Measured values" > "Control unit input signal 1"**.
- Turn the rear wheel by hand.

Speed	≥ 1 km/h (≥ 0.6 mph)

- » If the specified value is reached:
 - Clear the fault memory using the KTM diagnostics tool.
 - Take a test ride.
 - Read out the trouble code memory using the KTM diagnostics tool.
- » If the specification is not reached:
 - Check the next possible cause:
Rear wheel speed sensor – the signal wires are faulty (📖 p. 351)
 - Check the next possible cause:
Rear wheel speed sensor – checking the wires for a short circuit (📖 p. 352)
 - Check the next possible cause:
Rear wheel speed sensor – the signal wires have a short circuit to ground (terminal 31) (📖 p. 349)
 - Check the next possible cause:
Rear wheel speed sensor – the wires have a short circuit to plus (terminal 30) (📖 p. 354)
 - Check the next possible cause:
Rear wheel speed sensor – the wires have a short circuit to ignition plus (terminal 15) (📖 p. 355)

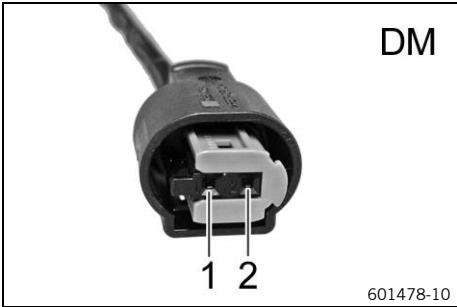
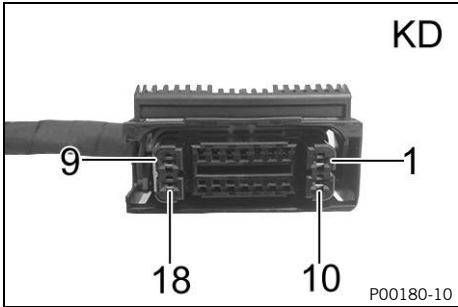
Rear wheel speed sensor – the signal wires are faulty

Condition

The ignition is off.

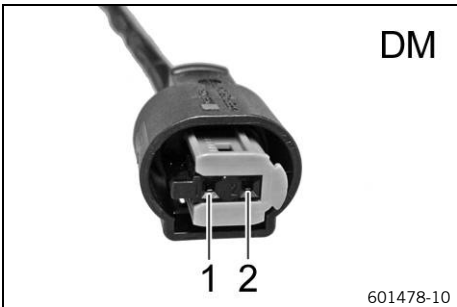
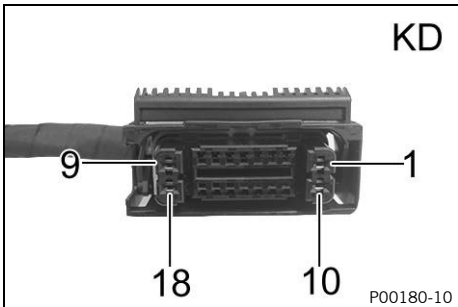
The ABS control unit is disconnected. (📖 p. 24)

The rear wheel speed sensor is disconnected. (📖 p. 24)



Rear wheel speed sensor – check signal wire 1.

- Measure the resistance between the specified points.
 ABS control unit connector **KD** pin 14 – Wheel speed sensor connector **DM** pin 1



Rear wheel speed sensor – check the positive supply.

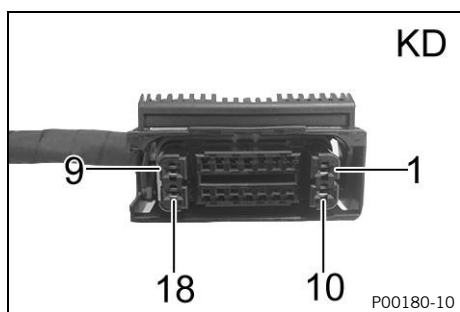
- Measure the resistance between the specified points.
 ABS control unit connector **KD** pin 13 – Wheel speed sensor connector **DM** pin 2

Resistance	≤ 0.6 Ω

- » If the specifications have not been met:
 - Check ABS control unit connector **KD** (📖 p. 501) pin 14 and connector **DM** (📖 p. 494) pin 1.
 - Check the cable from ABS control unit connector **KD** (📖 p. 501) pin 14 to connector **DM** (📖 p. 494) pin 1.
 - Check ABS control unit connector **KD** (📖 p. 501) pin 13 and connector **DM** (📖 p. 494) pin 2.
 - Check the cable from ABS control unit connector **KD** (📖 p. 501) pin 13 to connector **DM** (📖 p. 494) pin 2.
- » If the specifications have been met:
 - Check the next possible cause:
 Rear wheel speed sensor – checking the wires for a short circuit (📖 p. 352)

Rear wheel speed sensor – checking the wires for a short circuit

Condition
 The ignition is off.
 The ABS control unit is disconnected. (📖 p. 24)
 The rear wheel speed sensor is disconnected. (📖 p. 24)



Rear wheel speed sensor – check the wires for a short circuit.

-  Measure the resistance between the specified points.
ABS control unit connector **KD** pin **13** – ABS control unit connector **KD** pin **14**

Resistance	$\infty \Omega$

- » If the specifications have not been met:
 - Check ABS control unit connector **KD** (p. 501) pin **13** and connector **DM** (p. 494) pin **2**.
 - Check the cable from ABS control unit connector **KD** (p. 501) pin **13** to connector **DM** (p. 494) pin **2**.
 - Check ABS control unit connector **KD** (p. 501) pin **14** and connector **DM** (p. 494) pin **1**.
 - Check the cable from ABS control unit connector **KD** (p. 501) pin **14** to connector **DM** (p. 494) pin **1**.
- » If the specifications have been met:
 - Check the next possible cause:
Rear wheel speed sensor – the signal wires have a short circuit to ground (terminal 31) (p. 353)

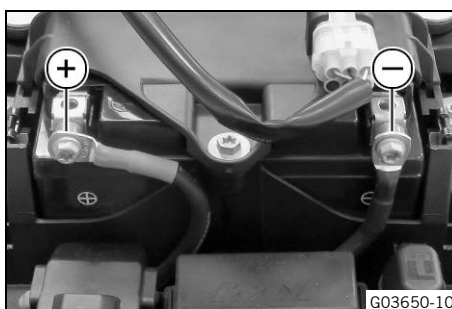
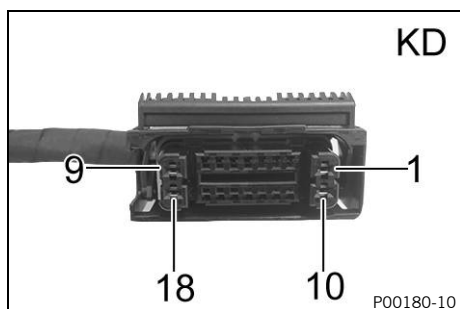
Rear wheel speed sensor – the signal wires have a short circuit to ground (terminal 31)

Condition

The ignition is off.

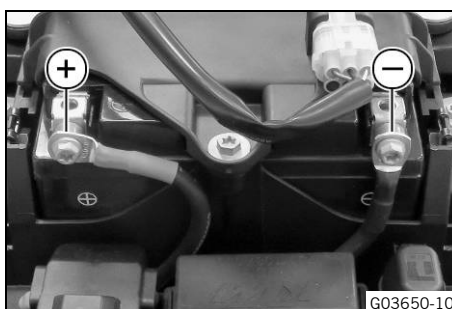
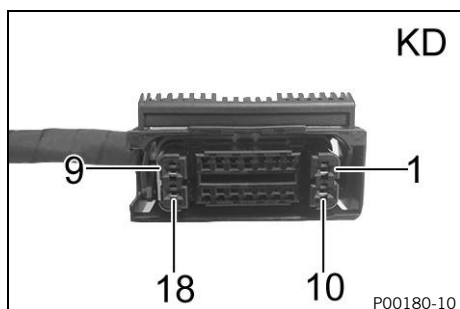
The ABS control unit is disconnected. (p. 24)

The rear wheel speed sensor is disconnected. (p. 24)



Rear wheel speed sensor – check signal wire 1 for a short circuit to ground (terminal 31).

-  Measure the resistance between the specified points.
ABS control unit connector **KD** pin **14** – Measuring point **Ground (-)**



Rear wheel speed sensor – check the plus supply for a short circuit to ground (terminal 31).

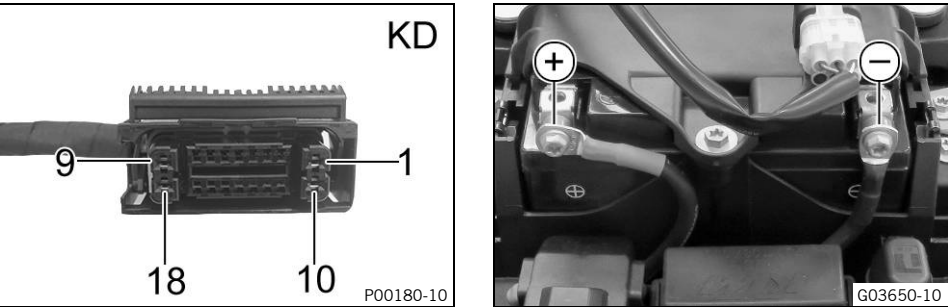
-  Measure the resistance between the specified points.
ABS control unit connector **KD** pin **13** – Measuring point **Ground (-)**

Resistance	$\infty \Omega$

- » If the specifications have not been met:
 - Check the cable from ABS control unit connector **KD** (📖 p. 501) pin **14** to connector **DM** (📖 p. 494) pin **1** for a short circuit to ground (terminal 31).
 - Check the cable from ABS control unit connector **KD** (📖 p. 501) pin **13** to connector **DM** (📖 p. 494) pin **2** for a short circuit to ground (terminal 31).
- » If the specifications have been met:
 - Check the next possible cause:
Rear wheel speed sensor – the wires have a short circuit to plus (terminal 30) (📖 p. 354)

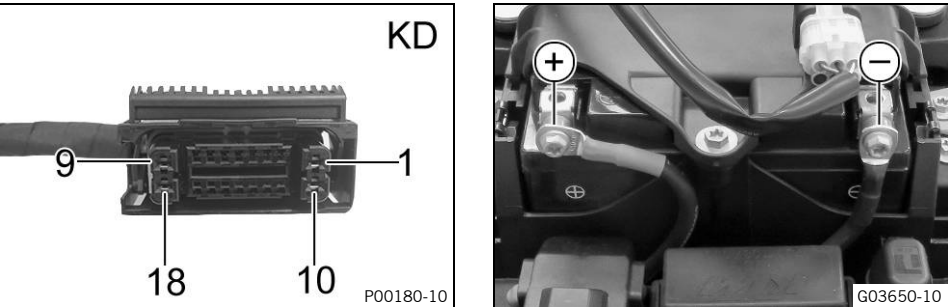
Rear wheel speed sensor – the wires have a short circuit to plus (terminal 30)

Condition
The ignition is off.
The ABS control unit is disconnected. (📖 p. 24)
The rear wheel speed sensor is disconnected. (📖 p. 24)



Rear wheel speed sensor – check the positive supply for a short circuit to plus (terminal 30).

- **V** Measure the voltage between the specified points.
ABS control unit connector **KD** pin **13** – Measuring point **Ground (–)**



Rear wheel speed sensor – check the signal wire 1 for a short circuit to plus (terminal 30).

- **V** Measure the voltage between the specified points.
ABS control unit connector **KD** pin **14** – Measuring point **Ground (–)**

Voltage	< 0.1 V

- » If the specifications have not been met:
 - Check cable from ABS control unit connector **KD** (📖 p. 501) pin **13** to connector **DM** (📖 p. 494) pin **2** for a short circuit to plus (terminal 30).
 - Check cable from ABS control unit connector **KD** (📖 p. 501) pin **14** to connector **DM** (📖 p. 494) pin **1** for a short circuit to plus (terminal 30).
- » If the specifications have been met:
 - Check the next possible cause:
Rear wheel speed sensor – the wires have a short circuit to ignition plus (terminal 15) (📖 p. 355)

Rear wheel speed sensor – the wires have a short circuit to ignition plus (terminal 15)

Condition

The ignition is off.

The ABS control unit is disconnected. (📖 p. 24)

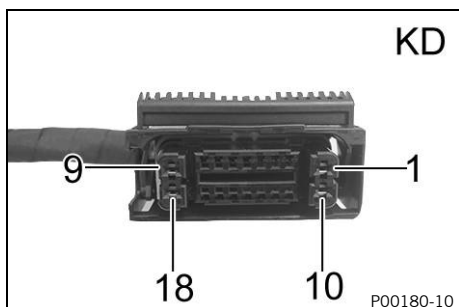
The rear wheel speed sensor is disconnected. (📖 p. 24)

Rear wheel speed sensor – check the positive supply for a short circuit to ignition plus (terminal 15).

-  Measure the resistance between the specified points.
ABS control unit connector **KD** pin **13** – ABS control unit connector **KD** pin **4**

Rear wheel speed sensor – check the signal wire 1 for a short circuit to ignition plus (terminal 15).

-  Measure the resistance between the specified points.
ABS control unit connector **KD** pin **14** – ABS control unit connector **KD** pin **4**



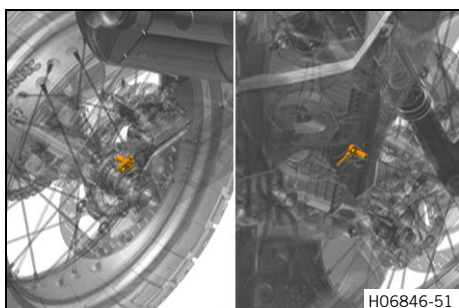
Resistance	$\infty \Omega$

- » If the specifications have not been met:
 - Check cable from ABS control unit connector **KD** (📖 p. 501) pin **13** to connector **DM** (📖 p. 494) pin **2** for a short circuit to ignition plus (terminal 15).
 - Check cable from ABS control unit connector **KD** (📖 p. 501) pin **14** to connector **DM** (📖 p. 494) pin **1** for a short circuit to ignition plus (terminal 15).
- » If the specifications have been met:
 - Change the rear wheel speed sensor.

7 BRAKE ELECTRONICS TROUBLE CODE

Display on diagnostic tool	C211364 "Rear wheel speed sensor" "Plausibility error"
Error level condition	Signal from the rear wheel speed sensor is implausible
Function check	Check plausibility faults (📖 p. 356)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Check plausibility faults



Condition

The diagnostics tool is connected and running.

- Select **"Brake electronics" > "Measured values" > "Control unit input signals"**.
 - » Turn the wheels and check the values for plausibility.
If the values are not plausible:
- Check the sensor wheel.
- Check the wheel speed sensor is properly secured.
- Check the distance between the wheel speed sensor and the sensor wheel.
- Check the rim size.
- Check the tire size.
- Check tire pressure.

Last measure if none of the documented causes leads to elimination of the fault

- Contact customer service.

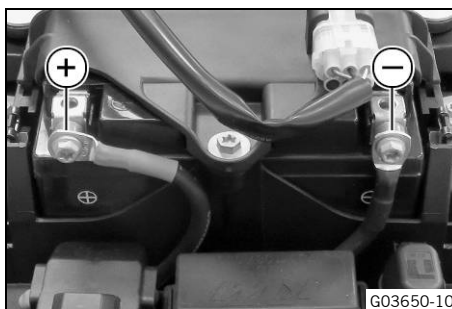
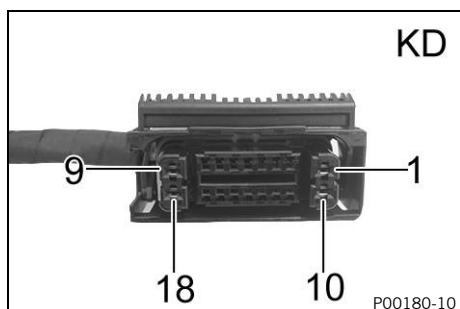
Display on diagnostic tool	C211496 "ABS control unit" "Pump malfunction"
Error level condition	ABS return pump defective
Possible cause	Power supply (terminal 30) is faulty (🔧 p. 357) Ground supply (terminal 31) is faulty (🔧 p. 358)
Last measure if none of the documented causes leads to elimination of the fault	– Change the ABS control unit.

Power supply (terminal 30) is faulty

Condition

The ignition is off.

The ABS control unit is disconnected. (🔧 p. 24)



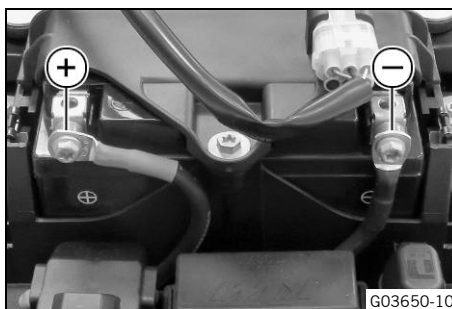
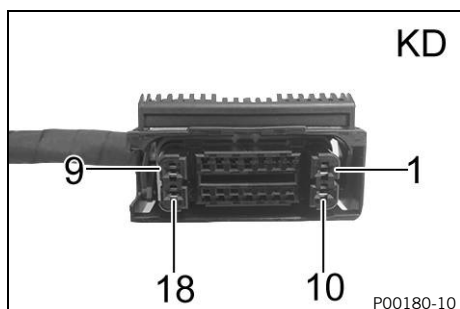
Check the power supply 1 (terminal 30).

- **V** Measure the voltage between the specified points.
ABS control unit connector **KD** pin **9** – Measuring point **Ground (-)**



Info

For the measurement, the measuring points must be subjected to a 12 V/21 W bulb.



Check the power supply 2 (terminal 30).

- **V** Measure the voltage between the specified points.
ABS control unit connector **KD** pin **18** – Measuring point **Ground (-)**



Info

For the measurement, the measuring points must be subjected to a 12 V/21 W bulb.

The value must not deviate from the battery voltage "**VBAT**" by more than 1 V.

- » If the specifications have not been met:
 - Check the fuses and fuse holder for damage and corrosion.
 - Check ABS control unit connector **KD** (🔧 p. 501) pin **9** and **18**.

7 BRAKE ELECTRONICS TROUBLE CODE

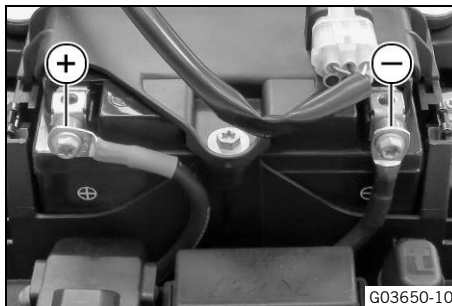
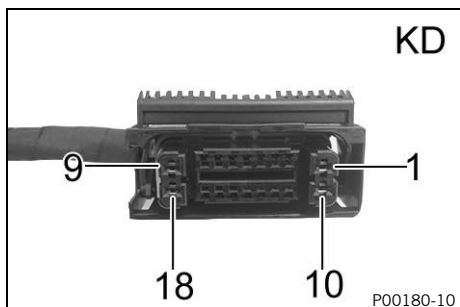
- Check the cable from ABS control unit connector **KD** (📖 p. 501) pin **9** to the positive terminal of the 12-V battery.
- Check the cable from ABS control unit connector **KD** (📖 p. 501) pin **18** to the positive terminal of the 12-V battery.
- » If the specifications have been met:
 - Check the next possible cause:
Ground supply (terminal 31) is faulty (📖 p. 358)

Ground supply (terminal 31) is faulty

Condition

The ignition is off.

The ABS control unit is disconnected. (📖 p. 24)



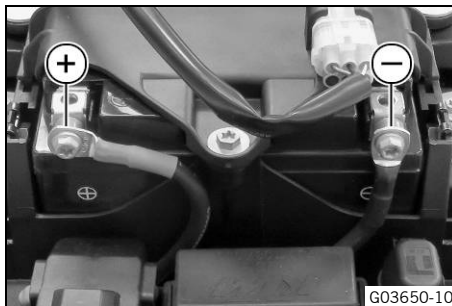
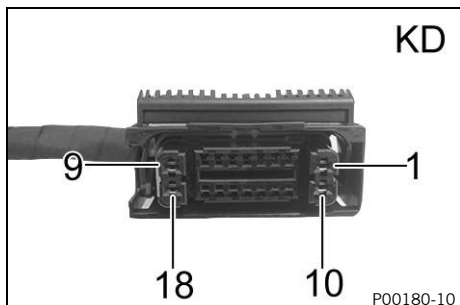
Check the ground supply 1 (terminal 31).

- **V** Measure the voltage between the specified points.
ABS control unit connector **KD** pin **1** – Measuring point **plus (+)**



Info

For the measurement, the measuring points must be subjected to a 12 V/21 W bulb.



Check the ground supply 2 (terminal 31).

- **V** Measure the voltage between the specified points.
ABS control unit connector **KD** pin **10** – Measuring point **plus (+)**



Info

For the measurement, the measuring points must be subjected to a 12 V/21 W bulb.

The value must not deviate from the battery voltage "**VBAT**" by more than 1 V.

- » If the specifications have not been met:
 - Check the cable from ABS control unit connector **KD** (📖 p. 501) pin **1** and pin **10** to ground point **X304**.
- » If the specifications have been met:
 - Change the ABS control unit.

Display on diagnostic tool	C211588 "CAN bus" "Communication error"
Error level condition	The ABS control unit receives no CAN messages
Possible cause	Software version/coding incorrect (📖 p. 359) Check the CAN bus total resistance (📖 p. 359)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Software version/coding incorrect

- Connect the diagnostics tool and start it.
- Read out the fault memory using the KTM diagnostics tool.
- Clear the fault memory using the KTM diagnostics tool.
- Switch off the ignition for 20 seconds.
- Read out the fault memory using the KTM diagnostics tool.

Fault memory is empty.

- » If the specifications have not been met:
 - Check that the software in the control units is up to date.
 - Check all model-specific variant coding and equipment-specific settings for all control units.
- » If the specifications have been met:
 - Check the next possible cause:
Check the CAN bus total resistance (📖 p. 359)

Check the CAN bus total resistance

Condition

The ignition is off.

The immobilizer control unit is disconnected. (📖 p. 29)

The combination instrument is disconnected. (📖 p. 7)

Inertial measurement unit is disconnected. (📖 p. 28)

The light control unit is disconnected. (📖 p. 30)

The tire pressure monitor control unit is disconnected. (📖 p. 30)

Heater control unit is disconnected. (📖 p. 31)

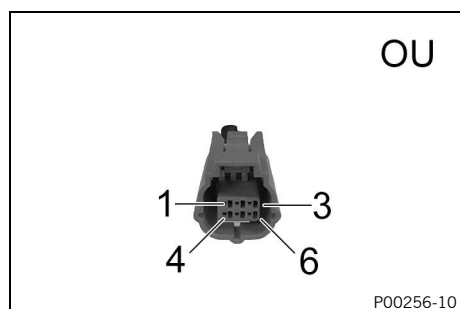
Connectivity Unit is disconnected. (📖 p. 32)

CAN bus total resistance – check the resistance.

-  Measure the resistance between the specified points.
Diagnostics connector **OU** pin **2** – Diagnostics connector **OU** pin **5**

CAN bus total resistance	
Resistance with connected engine control unit and ABS control unit: 20 °C (68 °F)	54 ... 66 Ω

- » If the specifications have not been met:
 - Check the CAN bus wires.
- » If the specifications have been met:
 - Contact customer service.



Display on diagnostic tool	C211596 "CAN bus" "General error"
Error level condition	The ABS control unit receives no CAN messages
Possible cause	Software version/coding incorrect (📖 p. 360) Check the CAN bus total resistance (📖 p. 360)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Software version/coding incorrect

- Connect the diagnostics tool and start it.
- Read out the fault memory using the KTM diagnostics tool.
- Clear the fault memory using the KTM diagnostics tool.
- Switch off the ignition for 20 seconds.
- Read out the fault memory using the KTM diagnostics tool.

Fault memory is empty.

- » If the specifications have not been met:
 - Check that the software in the control units is up to date.
 - Check all model-specific variant coding and equipment-specific settings for all control units.
- » If the specifications have been met:
 - Check the next possible cause:
Check the CAN bus total resistance (📖 p. 360)

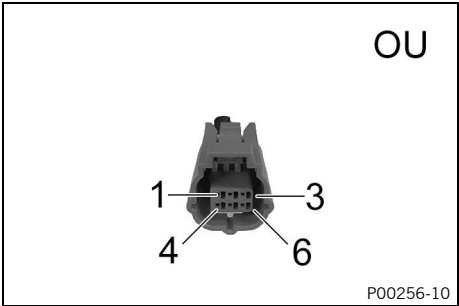
Check the CAN bus total resistance

Condition

- The ignition is off.
- The immobilizer control unit is disconnected. (📖 p. 29)
- The combination instrument is disconnected. (📖 p. 7)
- Inertial measurement unit is disconnected. (📖 p. 28)
- The light control unit is disconnected. (📖 p. 30)
- The tire pressure monitor control unit is disconnected. (📖 p. 30)
- Heater control unit is disconnected. (📖 p. 31)
- Connectivity Unit is disconnected. (📖 p. 32)

CAN bus total resistance – check the resistance.

-  Measure the resistance between the specified points.
Diagnostics connector **OU** pin **2** – Diagnostics connector **OU** pin **5**



CAN bus total resistance	
Resistance with connected engine control unit and ABS control unit: 20 °C (68 °F)	54 ... 66 Ω

- » If the specifications have not been met:
 - Check the CAN bus wires.
- » If the specifications have been met:
 - Contact customer service.

Display on diagnostic tool	C211655 "Variant outside of valid range" "Not configured"
Error level condition	Faulty variant coding
Possible cause	Software version/coding incorrect (📖 p. 361)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Software version/coding incorrect

- Connect the diagnostics tool and start it.
 - Read out the fault memory using the KTM diagnostics tool.
 - Clear the fault memory using the KTM diagnostics tool.
 - Switch off the ignition for 20 seconds.
 - Read out the fault memory using the KTM diagnostics tool.
- Fault memory is empty.
- » If the specifications have not been met:
 - Check that the software in the control units is up to date.
 - Check all model-specific variant coding and equipment-specific settings for all control units.
 - » If the specifications have been met:
 - Contact customer service.

7 BRAKE ELECTRONICS TROUBLE CODE

Display on diagnostic tool	C211686 "EEPROM variant read error" "Signal invalid"
Error level condition	Variant coding of the vehicle does not match coding of ABS control unit
Function check	Checking the variant coding in the ABS control unit (📖 p. 362)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Checking the variant coding in the ABS control unit

Condition

The diagnostics tool is connected and running.

- Select **"Brake electronics" > "Functions" > "ABS variant adaptation"**.
- Select the variant according to the vehicle variant.
 - » Then:
 - Clear the fault memory using the KTM diagnostics tool.
 - Take a test ride.
 - Read out the trouble code memory using the KTM diagnostics tool.

Last measure if none of the documented causes leads to elimination of the fault

- Contact customer service.

Display on diagnostic tool	C211787 "Combination instrument malfunction" "No message"
Error level condition	Timeout during communication with combination instrument control unit
Possible cause	Software version/coding incorrect (📖 p. 363)
	Checking the CAN bus communication with the combination instrument control unit (📖 p. 363)
	Check the CAN bus total resistance (📖 p. 364)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Software version/coding incorrect

- Connect the diagnostics tool and start it.
- Read out the fault memory using the KTM diagnostics tool.
- Clear the fault memory using the KTM diagnostics tool.
- Switch off the ignition for 20 seconds.
- Read out the fault memory using the KTM diagnostics tool.

Fault memory is empty.

- » If the specifications have not been met:
 - Check that the software in the control units is up to date.
 - Check all model-specific variant coding and equipment-specific settings for all control units.
- » If the specifications have been met:
 - Check the next possible cause:
Checking the CAN bus communication with the combination instrument control unit (📖 p. 363)

Checking the CAN bus communication with the combination instrument control unit

Condition

The ignition is off.
 The immobilizer control unit is disconnected. (📖 p. 29)
 The combination instrument is disconnected. (📖 p. 7)
 Inertial measurement unit is disconnected. (📖 p. 28)
 The light control unit is disconnected. (📖 p. 30)
 The tire pressure monitor control unit is disconnected. (📖 p. 30)
 Heater control unit is disconnected. (📖 p. 31)
 Connectivity Unit is disconnected. (📖 p. 32)
 The break-out box is connected to the combination instrument control unit wiring harness with adapter **00029095002**.

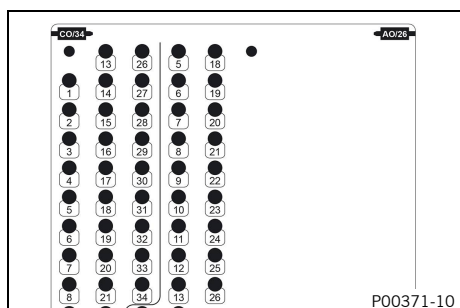
CAN bus combination instrument control unit – check resistance.

-  Measure the resistance between the specified points.
 Break-out box socket connector **C0** pin **30** – Break-out box socket connector **C0** pin **31**

CAN bus total resistance

Resistance with connected engine control unit and ABS control unit: 20 °C (68 °F)	54 ... 66 Ω

- » If the specifications have not been met:
 - Check the CAN bus wires.
- » If the specifications have been met:



- Check the next possible cause:
Check the CAN bus total resistance (📖 p. 364)

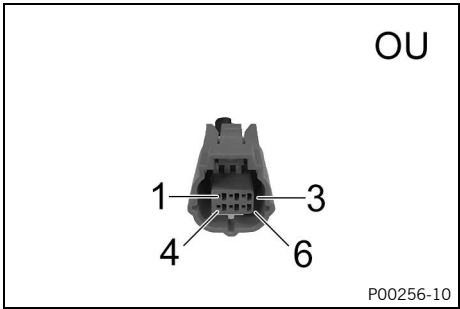
Check the CAN bus total resistance

Condition

- The ignition is off.
- The immobilizer control unit is disconnected. (📖 p. 29)
- The combination instrument is disconnected. (📖 p. 7)
- Inertial measurement unit is disconnected. (📖 p. 28)
- The light control unit is disconnected. (📖 p. 30)
- The tire pressure monitor control unit is disconnected. (📖 p. 30)
- Heater control unit is disconnected. (📖 p. 31)
- Connectivity Unit is disconnected. (📖 p. 32)

CAN bus total resistance – check the resistance.

-  Measure the resistance between the specified points.
Diagnostics connector **OU** pin **2** – Diagnostics connector **OU** pin **5**



CAN bus total resistance	
Resistance with connected engine control unit and ABS control unit: 20 °C (68 °F)	54 ... 66 Ω

- » If the specifications have not been met:
 - Check the CAN bus wires.
- » If the specifications have been met:
 - Contact customer service.

Display on diagnostic tool	C211824 "MTC switch off" "Signal stuck (high)"
Error level condition	MTC OFF was switched for 30 seconds or longer
Function check	Checking combination switch (📖 p. 365)
Last measure if none of the documented causes leads to elimination of the fault	– Reset the ABS control unit. (📖 p. 369)

Checking combination switch

- Check the function of menu button in the combination switch on the left.
 - » If the switch is not functioning properly:
 - Change combination switch.

Last measure if none of the documented causes leads to elimination of the fault

- Reset the ABS control unit. (📖 p. 369)

Display on diagnostic tool	C211987 "CAN communication with gear position sensor" "No signal"
Error level condition	Faulty communication with engine control unit
Possible cause	Software version/coding incorrect (📖 p. 366) Check the CAN bus total resistance (📖 p. 366)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Software version/coding incorrect

- Connect the diagnostics tool and start it.
- Read out the fault memory using the KTM diagnostics tool.
- Clear the fault memory using the KTM diagnostics tool.
- Switch off the ignition for 20 seconds.
- Read out the fault memory using the KTM diagnostics tool.

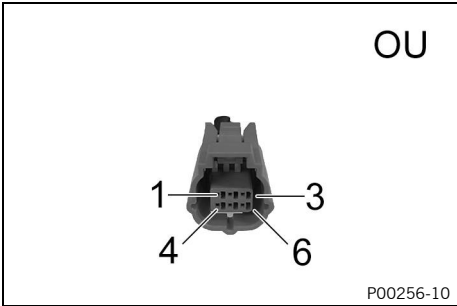
Fault memory is empty.

- » If the specifications have not been met:
 - Check that the software in the control units is up to date.
 - Check all model-specific variant coding and equipment-specific settings for all control units.
- » If the specifications have been met:
 - Check the next possible cause:
Check the CAN bus total resistance (📖 p. 366)

Check the CAN bus total resistance

Condition
The ignition is off.
The immobilizer control unit is disconnected. (📖 p. 29)
The combination instrument is disconnected. (📖 p. 7)
Inertial measurement unit is disconnected. (📖 p. 28)
The light control unit is disconnected. (📖 p. 30)
The tire pressure monitor control unit is disconnected. (📖 p. 30)
Heater control unit is disconnected. (📖 p. 31)
Connectivity Unit is disconnected. (📖 p. 32)

- CAN bus total resistance – check the resistance.**
-  Measure the resistance between the specified points.
Diagnostics connector **OU** pin **2** – Diagnostics connector **OU** pin **5**



CAN bus total resistance	
Resistance with connected engine control unit and ABS control unit: 20 °C (68 °F)	54 ... 66 Ω

- » If the specifications have not been met:
 - Check the CAN bus wires.
- » If the specifications have been met:
 - Contact customer service.

Display on diagnostic tool	C212087 "CAN communication with engine control unit" "No signal"
Error level condition	Faulty communication with engine control unit
Possible cause	Software version/coding incorrect (📖 p. 367) Check the CAN bus total resistance (📖 p. 367)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Software version/coding incorrect

- Connect the diagnostics tool and start it.
- Read out the fault memory using the KTM diagnostics tool.
- Clear the fault memory using the KTM diagnostics tool.
- Switch off the ignition for 20 seconds.
- Read out the fault memory using the KTM diagnostics tool.

Fault memory is empty.

- » If the specifications have not been met:
 - Check that the software in the control units is up to date.
 - Check all model-specific variant coding and equipment-specific settings for all control units.
- » If the specifications have been met:
 - Check the next possible cause:
Check the CAN bus total resistance (📖 p. 367)

Check the CAN bus total resistance

Condition

The ignition is off.

The immobilizer control unit is disconnected. (📖 p. 29)

The combination instrument is disconnected. (📖 p. 7)

Inertial measurement unit is disconnected. (📖 p. 28)

The light control unit is disconnected. (📖 p. 30)

The tire pressure monitor control unit is disconnected. (📖 p. 30)

Heater control unit is disconnected. (📖 p. 31)

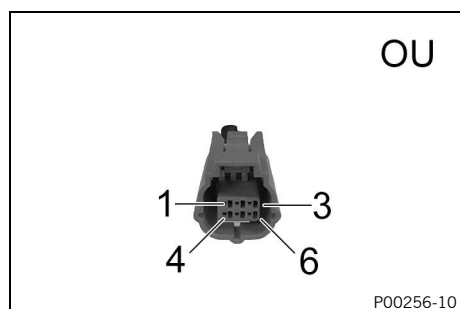
Connectivity Unit is disconnected. (📖 p. 32)

CAN bus total resistance – check the resistance.

-  Measure the resistance between the specified points.
Diagnostics connector **OU** pin **2** – Diagnostics connector **OU** pin **5**

CAN bus total resistance	
Resistance with connected engine control unit and ABS control unit: 20 °C (68 °F)	54 ... 66 Ω

- » If the specifications have not been met:
 - Check the CAN bus wires.
- » If the specifications have been met:
 - Contact customer service.



Display on diagnostic tool	C212186 "CAN communication with engine control unit" "Signal invalid"
Error level condition	Faulty communication with engine control unit
Possible cause	Software version/coding incorrect (📖 p. 368) Check the CAN bus total resistance (📖 p. 368)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Software version/coding incorrect

- Connect the diagnostics tool and start it.
- Read out the fault memory using the KTM diagnostics tool.
- Clear the fault memory using the KTM diagnostics tool.
- Switch off the ignition for 20 seconds.
- Read out the fault memory using the KTM diagnostics tool.

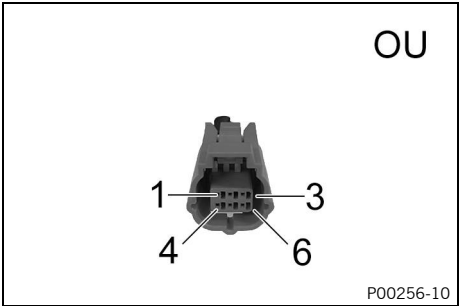
Fault memory is empty.

- » If the specifications have not been met:
 - Check that the software in the control units is up to date.
 - Check all model-specific variant coding and equipment-specific settings for all control units.
- » If the specifications have been met:
 - Check the next possible cause:
Check the CAN bus total resistance (📖 p. 368)

Check the CAN bus total resistance

- Condition**
- The ignition is off.
 - The immobilizer control unit is disconnected. (📖 p. 29)
 - The combination instrument is disconnected. (📖 p. 7)
 - Inertial measurement unit is disconnected. (📖 p. 28)
 - The light control unit is disconnected. (📖 p. 30)
 - The tire pressure monitor control unit is disconnected. (📖 p. 30)
 - Heater control unit is disconnected. (📖 p. 31)
 - Connectivity Unit is disconnected. (📖 p. 32)

- CAN bus total resistance – check the resistance.**
-  Measure the resistance between the specified points.
Diagnostics connector **OU** pin **2** – Diagnostics connector **OU** pin **5**

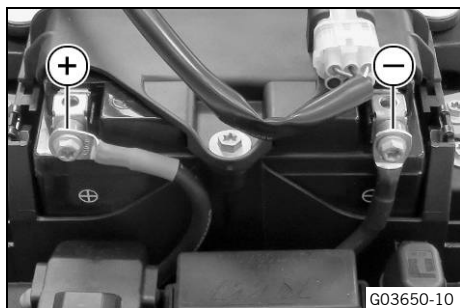


CAN bus total resistance	
Resistance with connected engine control unit and ABS control unit: 20 °C (68 °F)	54 ... 66 Ω

- » If the specifications have not been met:
 - Check the CAN bus wires.
- » If the specifications have been met:
 - Contact customer service.

Display on diagnostic tool	C212242 "EEPROM demo mode" "Read error"
Error level condition	Internal system error
Function check	Resetting the ABS control unit (p. 369)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Resetting the ABS control unit



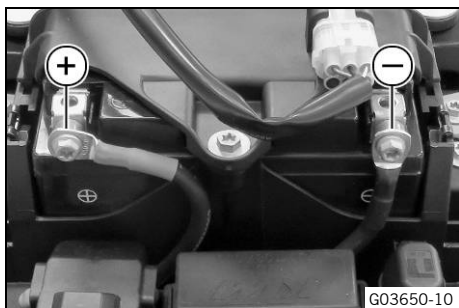
- Disconnect the negative terminal of the 12-V battery.
- Wait for 10 minutes.
- Connect the negative terminal of the 12-V battery.
- Clear the fault memory using the KTM diagnostics tool.
- Switch off the ignition for 20 seconds.
- Read out the trouble code memory using the KTM diagnostics tool.
 - » If the error persists:
 - Change the ABS control unit.

Last measure if none of the documented causes leads to elimination of the fault

- Contact customer service.

Display on diagnostic tool	C212342 "EEPROM demo mode" "Write error"
Error level condition	Activating the function without authorization
Function check	Resetting the ABS control unit (🔧 p. 370)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Resetting the ABS control unit



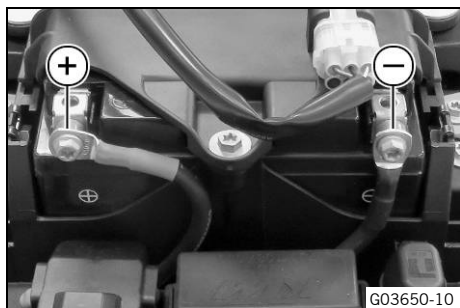
- Disconnect the negative terminal of the 12-V battery.
- Wait for 10 minutes.
- Connect the negative terminal of the 12-V battery.
- Clear the fault memory using the KTM diagnostics tool.
- Switch off the ignition for 20 seconds.
- Read out the trouble code memory using the KTM diagnostics tool.
 - » If the error persists:
 - Change the ABS control unit.

Last measure if none of the documented causes leads to elimination of the fault

- Contact customer service.

Display on diagnostic tool	C212428 "ABS control unit" "Pressure compensation not carried out"
Error level condition	Pressure compensation not possible
Function check	Resetting the ABS control unit (📖 p. 371)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Resetting the ABS control unit



- Check the fuses.
- Disconnect negative terminal of the 12-V battery.
- Wait for 10 minutes.
- Connect the negative terminal of the 12-V battery.
- Clear the fault memory using the KTM diagnostics tool.
- Switch off the ignition for 20 seconds.
- Read out the trouble code memory using the KTM diagnostics tool.
 - » If the error persists:
 - Change the ABS control unit.

Last measure if none of the documented causes leads to elimination of the fault

- Contact customer service.

Display on diagnostic tool	C212598 "Front wheel pressure sensor" "Offset error"
Error level condition	The signal is out of range -15 ... 25 bar (-218 ... 363 psi)
Possible cause	The brake system is not leak tight (📖 p. 372)
Last measure if none of the documented causes leads to elimination of the fault	– Reset the ABS control unit. (📖 p. 370)

The brake system is not leak tight

- Check the brake system for leaks.

Brake system is leak tight.

- » If the specifications have not been met:
 - Eliminate leakage.
- » If the specifications have been met:
 - Reset the ABS control unit. (📖 p. 370)

Display on diagnostic tool	C212664 "Front wheel pressure sensor" "Plausibility error"
Error level condition	Implausible signal from front pressure sensor
Possible cause	The brake system is not leak tight (📖 p. 373)
Last measure if none of the documented causes leads to elimination of the fault	– Reset the ABS control unit. (📖 p. 370)

The brake system is not leak tight

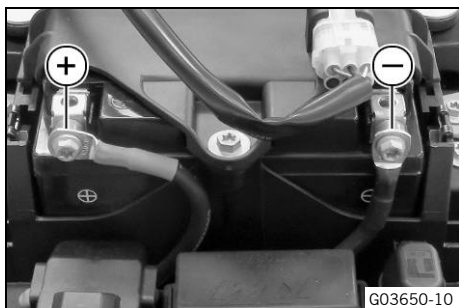
- Check the brake system for leaks.

Brake system is leak tight.

- » If the specifications have not been met:
 - Eliminate leakage.
- » If the specifications have been met:
 - Reset the ABS control unit. (📖 p. 370)

Display on diagnostic tool	C212696 "Front wheel pressure sensor" "Internal component error"
Error level condition	Malfunction of the internal pressure sensor of the front wheel
Function check	Resetting the ABS control unit (p. 374)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Resetting the ABS control unit



- Check the fuses.
- Disconnect negative terminal of the 12-V battery.
- Wait for 10 minutes.
- Connect the negative terminal of the 12-V battery.
- Clear the fault memory using the KTM diagnostics tool.
- Switch off the ignition for 20 seconds.
- Read out the trouble code memory using the KTM diagnostics tool.

» If the error persists:

- Change the ABS control unit.

Last measure if none of the documented causes leads to elimination of the fault

- Contact customer service.

Display on diagnostic tool	C212764 "Inertial measurement unit" "Plausibility error"
Error level condition	Measured values out of range
Possible cause	Incorrect installation position of the inertial measurement unit (📖 p. 375)
Last measure if none of the documented causes leads to elimination of the fault	– Initialize the inertial measurement unit. (📖 p. 467)

Incorrect installation position of the inertial measurement unit

- Check that the inertial measurement unit is seated correctly.

The inertial measurement unit is correctly attached with the bracket.

- » If the specifications have not been met:
 - Correctly attach the inertial measurement unit and the bracket.
- » If the specifications have been met:
 - Initialize the inertial measurement unit. (📖 p. 467)

Display on diagnostic tool	C212786 "Inertial measurement unit" "Signal fault"
Error level condition	Signal error
Possible cause	Incorrect installation position of the inertial measurement unit (📖 p. 376)
Last measure if none of the documented causes leads to elimination of the fault	– Initialize the inertial measurement unit. (📖 p. 467)

Incorrect installation position of the inertial measurement unit

- Check that the inertial measurement unit is seated correctly.

The inertial measurement unit is correctly attached with the bracket.

- » If the specifications have not been met:
 - Correctly attach the inertial measurement unit and the bracket.
- » If the specifications have been met:
 - Initialize the inertial measurement unit. (📖 p. 467)

Display on diagnostic tool	C212787 "IMU CAN frame error" "No CAN messages"
Error level condition	Communication with inertial measurement unit faulty
Possible cause	Software version/coding incorrect (📖 p. 377)
	Checking the CAN bus communication with inertial measurement control unit (📖 p. 377)
	Check the CAN bus total resistance (📖 p. 378)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Software version/coding incorrect

- Connect the diagnostics tool and start it.
- Read out the fault memory using the KTM diagnostics tool.
- Clear the fault memory using the KTM diagnostics tool.
- Switch off the ignition for 20 seconds.
- Read out the fault memory using the KTM diagnostics tool.

Fault memory is empty.

- » If the specifications have not been met:
 - Check that the software in the control units is up to date.
 - Check all model-specific variant coding and equipment-specific settings for all control units.
- » If the specifications have been met:
 - Check the next possible cause:
Checking the CAN bus communication with inertial measurement control unit (📖 p. 377)

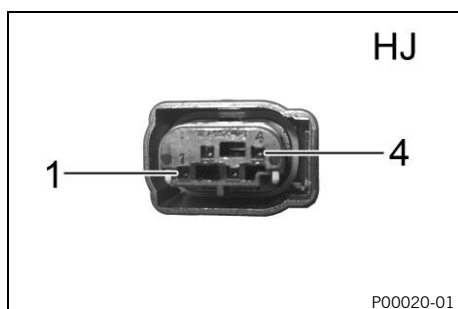
Checking the CAN bus communication with inertial measurement control unit

Condition

The ignition is off.
 The immobilizer control unit is disconnected. (📖 p. 29)
 The combination instrument is disconnected. (📖 p. 7)
 Inertial measurement unit is disconnected. (📖 p. 28)
 The light control unit is disconnected. (📖 p. 30)
 The tire pressure monitor control unit is disconnected. (📖 p. 30)
 Heater control unit is disconnected. (📖 p. 31)
 Connectivity Unit is disconnected. (📖 p. 32)

CAN bus inertial measurement unit – check the resistance.

-  Measure the resistance between the specified points.
Inertial measurement unit connector **HJ** pin **2** – Inertial measurement unit connector **HJ** pin **3**



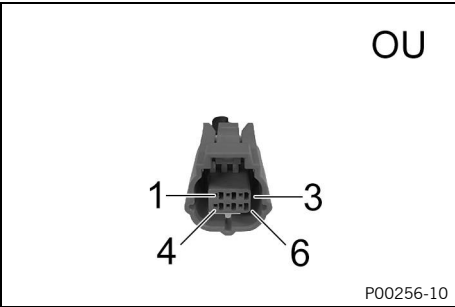
CAN bus total resistance	
Resistance with connected engine control unit and ABS control unit: 20 °C (68 °F)	54 ... 66 Ω

- » If the specifications have not been met:
 - Check the CAN bus wires.
- » If the specifications have been met:
 - Check the next possible cause:
Check the CAN bus total resistance (📖 p. 378)

Check the CAN bus total resistance

Condition

- The ignition is off.
- The immobilizer control unit is disconnected. (📖 p. 29)
- The combination instrument is disconnected. (📖 p. 7)
- Inertial measurement unit is disconnected. (📖 p. 28)
- The light control unit is disconnected. (📖 p. 30)
- The tire pressure monitor control unit is disconnected. (📖 p. 30)
- Heater control unit is disconnected. (📖 p. 31)
- Connectivity Unit is disconnected. (📖 p. 32)



CAN bus total resistance – check the resistance.

-  Measure the resistance between the specified points.
Diagnostics connector **OU** pin **2** – Diagnostics connector **OU** pin **5**

CAN bus total resistance	
Resistance with connected engine control unit and ABS control unit: 20 °C (68 °F)	54 ... 66 Ω

- » If the specifications have not been met:
 - Check the CAN bus wires.
- » If the specifications have been met:
 - Contact customer service.

Display on diagnostic tool	C212795 "Inertial measurement unit incorrectly mounted" "Incorrectly mounted"
Error level condition	If the inertial measurement unit is oriented incorrectly, detected by means of the specified roll and pitch angle ranges
Possible cause	Incorrect installation position of the inertial measurement unit (📖 p. 379)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Incorrect installation position of the inertial measurement unit

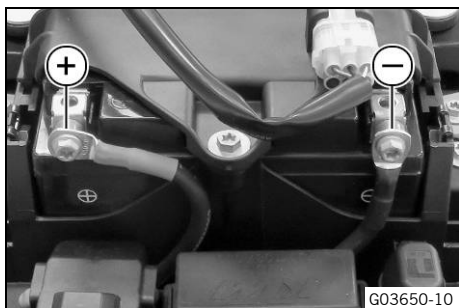
- Check that the inertial measurement unit is seated correctly.

The inertial measurement unit is correctly attached with the bracket.

- » If the specifications have not been met:
 - Correctly attach the inertial measurement unit and the bracket.
- » If the specifications have been met:
 - Contact customer service.

Display on diagnostic tool	C213016 "Pump malfunction" "Voltage too low"
Error level condition	Resistance to pump motor too high
Function check	Resetting the ABS control unit (🔧 p. 380)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Resetting the ABS control unit



- Check the fuses.
- Disconnect negative terminal of the 12-V battery.
- Wait for 10 minutes.
- Connect the negative terminal of the 12-V battery.
- Clear the fault memory using the KTM diagnostics tool.
- Switch off the ignition for 20 seconds.
- Read out the trouble code memory using the KTM diagnostics tool.

» If the error persists:

- Change the ABS control unit.

Last measure if none of the documented causes leads to elimination of the fault

- Contact customer service.

Display on diagnostic tool	B100011 "Ambient air temperature sensor" "Short circuit to ground"
Error level condition	Short circuit to ground Voltage: ≤ 0.2 V
Possible cause	Ambient air temperature sensor – the sensor is faulty (📖 p. 381) Ambient air temperature sensor – the signal wire has a short circuit to ground (terminal 31) (📖 p. 382)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Ambient air temperature sensor – the sensor is faulty

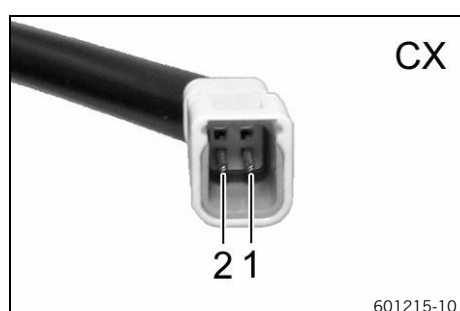
Condition

The ignition is off.

Ambient air temperature sensor is disconnected. (📖 p. 28)

Ambient air temperature sensor – check the resistance.

-  Measure the resistance between the specified points.
Ambient air temperature sensor, connector **CX** pin 1 –
Ambient air temperature sensor, connector **CX** pin 2



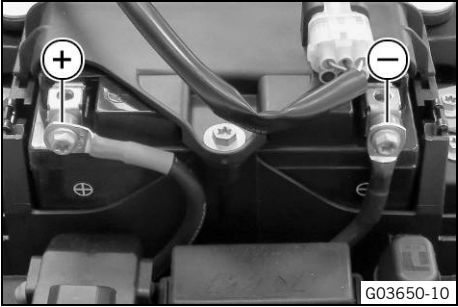
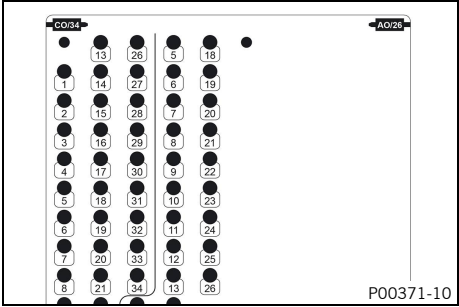
Ambient air temperature sensor	
Resistance at: 0 °C (32 °F)	28 kΩ
Voltage at: 0 °C (32 °F)	3.54 V
Resistance at: 10 °C (50 °F)	17.9 kΩ
Voltage at: 10 °C (50 °F)	3.09 V
Resistance at: 20 °C (68 °F)	11.3 kΩ
Voltage at: 20 °C (68 °F)	2.56 V
Resistance at: 30 °C (86 °F)	8 kΩ
Voltage at: 30 °C (86 °F)	2.13 V
Resistance at: 40 °C (104 °F)	5.5 kΩ
Voltage at: 40 °C (104 °F)	1.70 V

- » If the specifications have not been met:
 - Change the ambient air pressure sensor.
- » If the specifications have been met:
 - Check the next possible cause:
Ambient air temperature sensor – the signal wire has a short circuit to ground (terminal 31) (📖 p. 382)

Ambient air temperature sensor – the signal wire has a short circuit to ground (terminal 31)

Condition

The ignition is off.
The combination instrument is disconnected. (📖 p. 7)
Ambient air temperature sensor is disconnected. (📖 p. 28)
The break-out box is connected to the combination instrument control unit wiring harness with adapter 00029095002.



Ambient air temperature sensor – check the signal wire for a short-circuit to ground (terminal 31).

-  Measure the resistance between the specified points.
Break-out box socket connector **CO** pin **14** – Measuring point **Ground (-)**

Resistance	$\infty \Omega$

- » If the specifications have not been met:
 - Check the cable from combination instrument control unit **CO** (📖 p. 492) pin **14** to connector **CW** (📖 p. 494) pin **2** for a short circuit to ground (terminal 31).
- » If the specifications have been met:
 - Contact customer service.

Display on diagnostic tool	B100012 "Ambient air temperature sensor" "Short circuit to plus"
Error level condition	Short circuit to plus Voltage: ≥ 5 V
Possible cause	Ambient air temperature sensor – the sensor is faulty (p. 383) Ambient air temperature sensor – the signal wire has a short circuit to plus (terminal 30) (p. 384) Ambient air temperature sensor – the signal wire has a short circuit to ignition plus (terminal 15) (p. 384)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Ambient air temperature sensor – the sensor is faulty

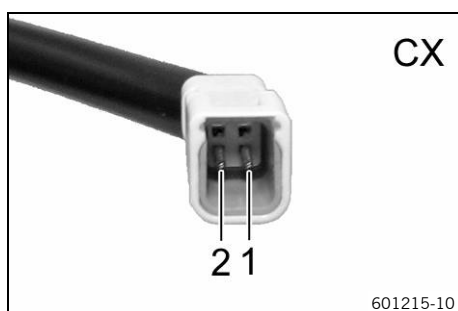
Condition

The ignition is off.

Ambient air temperature sensor is disconnected. (p. 28)

Ambient air temperature sensor – check the resistance.

-  Measure the resistance between the specified points.
Ambient air temperature sensor, connector **CX** pin 1 –
Ambient air temperature sensor, connector **CX** pin 2

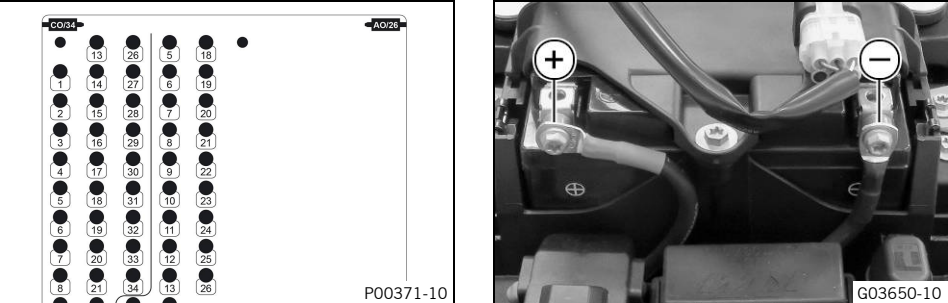


Ambient air temperature sensor	
Resistance at: 0 °C (32 °F)	28 k Ω
Voltage at: 0 °C (32 °F)	3.54 V
Resistance at: 10 °C (50 °F)	17.9 k Ω
Voltage at: 10 °C (50 °F)	3.09 V
Resistance at: 20 °C (68 °F)	11.3 k Ω
Voltage at: 20 °C (68 °F)	2.56 V
Resistance at: 30 °C (86 °F)	8 k Ω
Voltage at: 30 °C (86 °F)	2.13 V
Resistance at: 40 °C (104 °F)	5.5 k Ω
Voltage at: 40 °C (104 °F)	1.70 V

- » If the specifications have not been met:
 - Change the ambient air pressure sensor.
- » If the specifications have been met:
 - Check the next possible cause:
Ambient air temperature sensor – the signal wire has a short circuit to plus (terminal 30) (p. 384)

Ambient air temperature sensor – the signal wire has a short circuit to plus (terminal 30)

Condition
The ignition is off.
The combination instrument is disconnected. (📖 p. 7)
Ambient air temperature sensor is disconnected. (📖 p. 28)
The break-out box is connected to the combination instrument control unit wiring harness with adapter 00029095002.



Ambient air temperature sensor – check the signal wire for a short circuit to plus (terminal 30).

- Measure the resistance between the specified points.
Break-out box socket connector **CO** pin 14 – Measuring point **plus (+)**

Resistance	$\infty \Omega$

- » If the specifications have not been met:
 - Check the cable from combination instrument control unit connector **CO** (📖 p. 492) pin 14 to connector **CW** (📖 p. 494) pin 2 for a short circuit to plus (terminal 30).
- » If the specifications have been met:
 - Check the next possible cause:
Ambient air temperature sensor – the signal wire has a short circuit to ignition plus (terminal 15) (📖 p. 384)

Ambient air temperature sensor – the signal wire has a short circuit to ignition plus (terminal 15)

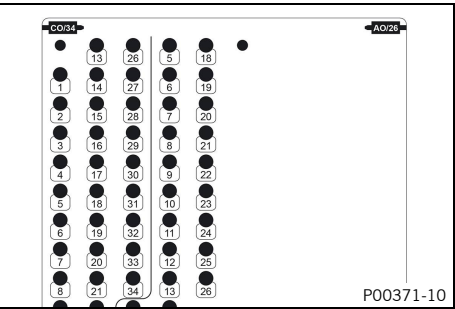
Condition
The ignition is off.
The combination instrument is disconnected. (📖 p. 7)
Ambient air temperature sensor is disconnected. (📖 p. 28)
The break-out box is connected to the combination instrument control unit wiring harness with adapter 00029095002.

Ambient air temperature sensor – check the signal wire for a short circuit to ignition plus (terminal 15).

- Measure the resistance between the specified points.
Break-out box socket connector **CO** pin 14 – Break-out box socket connector **CO** pin 34

Resistance	$\infty \Omega$

- » If the specifications have not been met:
 - Check the cable from combination instrument control unit **CO** (📖 p. 492) pin 14 to connector **CW** (📖 p. 494) pin 2 for a short circuit to ignition plus (terminal 15).
- » If the specifications have been met:
 - Contact customer service.



Display on diagnostic tool	B100013 "Ambient air temperature sensor" "Electric circuit open"
Error level condition	Electric circuit open
Possible cause	Ambient air temperature sensor – the sensor is faulty (📖 p. 385) Ambient air temperature sensor – the signal wire is faulty (📖 p. 386) Ambient air temperature sensor – the ground wire is faulty (📖 p. 386)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Ambient air temperature sensor – the sensor is faulty

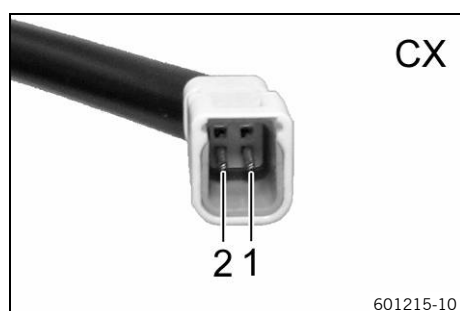
Condition

The ignition is off.

Ambient air temperature sensor is disconnected. (📖 p. 28)

Ambient air temperature sensor – check the resistance.

-  Measure the resistance between the specified points.
Ambient air temperature sensor, connector **CX** pin 1 –
Ambient air temperature sensor, connector **CX** pin 2



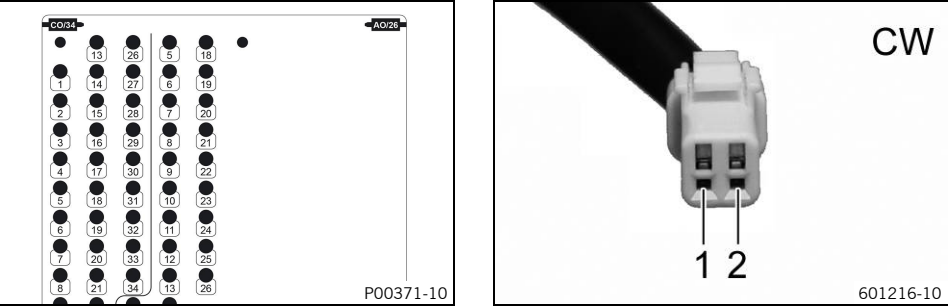
Ambient air temperature sensor	
Resistance at: 0 °C (32 °F)	28 kΩ
Voltage at: 0 °C (32 °F)	3.54 V
Resistance at: 10 °C (50 °F)	17.9 kΩ
Voltage at: 10 °C (50 °F)	3.09 V
Resistance at: 20 °C (68 °F)	11.3 kΩ
Voltage at: 20 °C (68 °F)	2.56 V
Resistance at: 30 °C (86 °F)	8 kΩ
Voltage at: 30 °C (86 °F)	2.13 V
Resistance at: 40 °C (104 °F)	5.5 kΩ
Voltage at: 40 °C (104 °F)	1.70 V

- » If the specifications have not been met:
 - Change the ambient air pressure sensor.
- » If the specifications have been met:
 - Check the next possible cause:
Ambient air temperature sensor – the signal wire is faulty (📖 p. 386)

Ambient air temperature sensor – the signal wire is faulty

Condition

The ignition is off.
The combination instrument is disconnected. (📖 p. 7)
Ambient air temperature sensor is disconnected. (📖 p. 28)
The break-out box is connected to the combination instrument control unit wiring harness with adapter 00029095002.



Ambient air temperature sensor – check the signal wire.

-  Measure the resistance between the specified points.
Break-out box socket connector **CO** pin 14 – Ambient air temperature sensor, connector **CW** pin 2

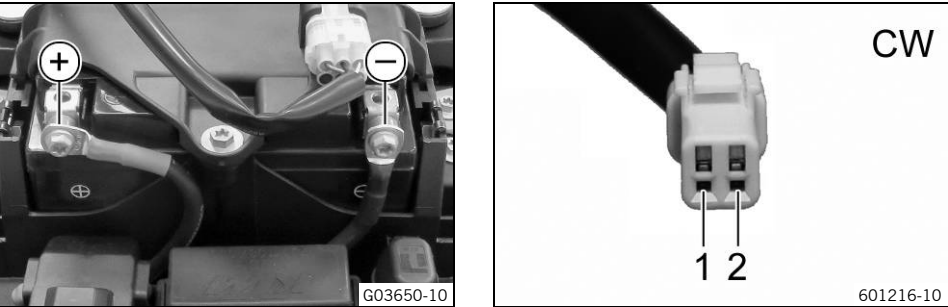
Resistance	≤ 0.6 Ω

- » If the specifications have not been met:
 - Check the cable from combination instrument control unit connector **CO** (📖 p. 492) pin 14 to connector **CW** (📖 p. 494) pin 2.
- » If the specifications have been met:
 - Check the next possible cause:
Ambient air temperature sensor – the ground wire is faulty (📖 p. 386)

Ambient air temperature sensor – the ground wire is faulty

Condition

The ignition is off.
The combination instrument is disconnected. (📖 p. 7)
Ambient air temperature sensor is disconnected. (📖 p. 28)



Ambient air temperature sensor – check the ground wire.

-  Measure the resistance between the specified points.
Measuring point **Ground (-)** – Ambient air temperature sensor, connector **CW** pin 1

Resistance	≤ 0.6 Ω

- » If the specifications have not been met:
 - Check the cable from ground point to connector **CW** (📖 p. 494) pin 1.
- » If the specifications have been met:
 - Contact customer service.

Display on diagnostic tool	B101101 "Ambient light sensor – surroundings" "Circuit fault"
Error level condition	Circuit fault
Possible cause	Checking the ambient light sensor (🔧 p. 387)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Checking the ambient light sensor

Condition

The ignition is on.

- Illuminate the combination instrument with a bulb.

Combination instrument lighting changes with increasing light.

- » If the specifications have not been met:
 - Replace the combination instrument.
- » If the specifications have been met:
 - Contact customer service.

Display on diagnostic tool	B102011 "Fuel level sensor" "Short circuit to ground"
Error level condition	Short circuit to ground Voltage: ≤ 0.2 V
Function check	Checking the fuel level sensor (📖 p. 388)
Possible cause	Fuel level sensor – the value is not plausible (📖 p. 388)
	Fuel level sensor – the signal wire has a short circuit to ground (terminal 31) (📖 p. 389)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Checking the fuel level sensor

Condition

The ignition is on.

- Compare the tank indicator in the combination instrument with the current tank filling level. It may be necessary to fill the tank with fuel and then check the indicator in the combination instrument.

Tank display is plausible.

- » If the specification is reached:
 - Clear the fault memory using the KTM diagnostics tool.
 - Take a test ride.
 - Read out the trouble code memory using the KTM diagnostics tool.
- » If the specification is not reached:
 - Check the next possible cause:
Fuel level sensor – the value is not plausible (📖 p. 388)
 - Check the next possible cause:
Fuel level sensor – the signal wire has a short circuit to ground (terminal 31) (📖 p. 389)

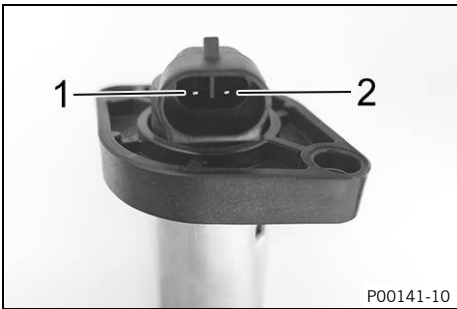
Fuel level sensor – the value is not plausible

Condition

The ignition is off.
The fuel level sensor is disconnected. (📖 p. 28)

Fuel level sensor – check the resistance.

-  Measure the resistance between the specified points.
Fuel level sensor, connector **EL** pin 1 – Fuel level sensor, connector **EL** pin 2



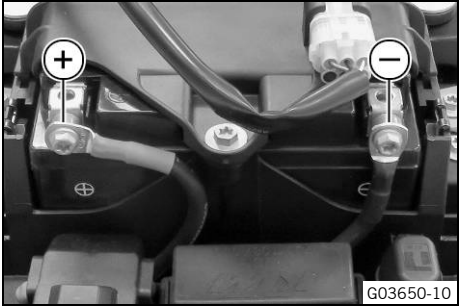
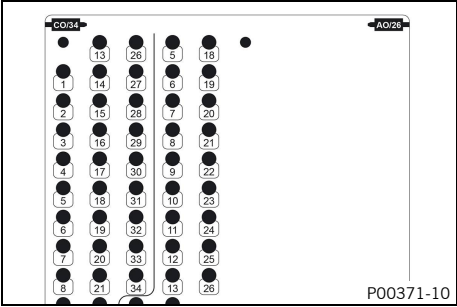
Fuel level sensor	
The fuel tank is completely full.	107 ... 113 Ω
The fuel tank is completely empty.	8.0 ... 13 Ω

- » If the specifications have not been met:
 - Change the fuel level sensor.
- » If the specifications have been met:
 - Check the next possible cause:
Fuel level sensor – the signal wire has a short circuit to ground (terminal 31) (📖 p. 389)

Fuel level sensor – the signal wire has a short circuit to ground (terminal 31)

Condition

The ignition is off.
The combination instrument is disconnected. (📖 p. 7)
The fuel level sensor is disconnected. (📖 p. 28)
The break-out box is connected to the combination instrument control unit wiring harness with adapter 00029095002.



Fuel level sensor – check the signal wire for a short circuit to ground (terminal 31).

-  Measure the resistance between the specified points.
Break-out box socket connector **C0** pin **4** – Measuring point **Ground (–)**

Resistance	$\infty \Omega$

- » If the specifications have not been met:
 - Check the cable from combination instrument control unit **C0** (📖 p. 492) pin **4** to connector **DV** (📖 p. 494) pin **2** for a short circuit to ground (terminal 31).
- » If the specifications have been met:
 - Contact customer service.

Display on diagnostic tool	B102012 "Fuel level sensor" "Short circuit to plus"
Error level condition	Short circuit to plus Voltage: ≥ 4.8 V
Function check	Checking the fuel level sensor (📖 p. 390)
Possible cause	Fuel level sensor – the value is not plausible (📖 p. 390)
	Fuel level indicator sensor – the signal wire has a short circuit to plus (terminal 30) (📖 p. 391)
	Fuel level sensor – signal wire has a short circuit to ignition plus (terminal 15) (📖 p. 391)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Checking the fuel level sensor

Condition

The ignition is on.

- Compare the tank indicator in the combination instrument with the current tank filling level. It may be necessary to fill the tank with fuel and then check the indicator in the combination instrument.

Tank display is plausible.

- » If the specification is reached:
 - Clear the fault memory using the KTM diagnostics tool.
 - Take a test ride.
 - Read out the trouble code memory using the KTM diagnostics tool.
- » If the specification is not reached:
 - Check the next possible cause:
Fuel level sensor – the value is not plausible (📖 p. 390)
 - Check the next possible cause:
Fuel level indicator sensor – the signal wire has a short circuit to plus (terminal 30) (📖 p. 391)
 - Check the next possible cause:
Fuel level sensor – signal wire has a short circuit to ignition plus (terminal 15) (📖 p. 391)

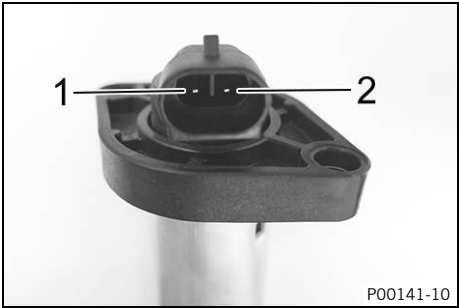
Fuel level sensor – the value is not plausible

Condition

The ignition is off.
The fuel level sensor is disconnected. (📖 p. 28)

Fuel level sensor – check the resistance.

-  Measure the resistance between the specified points.
Fuel level sensor, connector **EL** pin **1** – Fuel level sensor, connector **EL** pin **2**



Fuel level sensor	
The fuel tank is completely full.	107 ... 113 Ω
The fuel tank is completely empty.	8.0 ... 13 Ω

- » If the specifications have not been met:
 - Change the fuel level sensor.
- » If the specifications have been met:

- Check the next possible cause:
Fuel level indicator sensor – the signal wire has a short circuit to plus (terminal 30) (📖 p. 391)

Fuel level indicator sensor – the signal wire has a short circuit to plus (terminal 30)

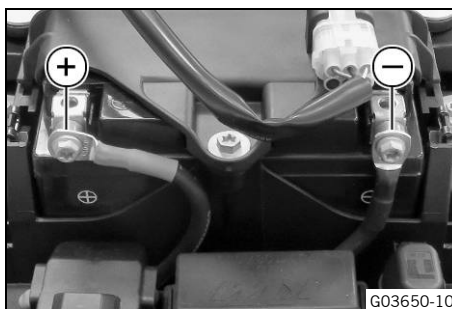
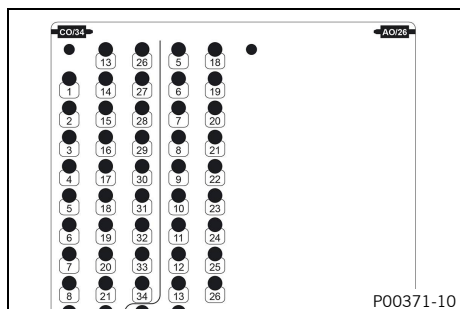
Condition

The ignition is off.

The combination instrument is disconnected. (📖 p. 7)

The fuel level sensor is disconnected. (📖 p. 28)

The break-out box is connected to the combination instrument control unit wiring harness with adapter **00029095002**.



Fuel level sensor – check the signal wire for a short circuit to plus (terminal 30).

- Measure the resistance between the specified points.
Break-out box socket connector **C0** pin **4** – Measuring point **plus (+)**

Resistance	$\infty \Omega$

- » If the specifications have not been met:
 - Check the cable from combination instrument control unit connector **C0** (📖 p. 492) pin **4** to connector **DV** (📖 p. 494) pin **2** for a short circuit to plus (terminal 30).
- » If the specifications have been met:
 - Check the next possible cause:
Fuel level sensor – signal wire has a short circuit to ignition plus (terminal 15) (📖 p. 391)

Fuel level sensor – signal wire has a short circuit to ignition plus (terminal 15)

Condition

The ignition is off.

The combination instrument is disconnected. (📖 p. 7)

The fuel level sensor is disconnected. (📖 p. 28)

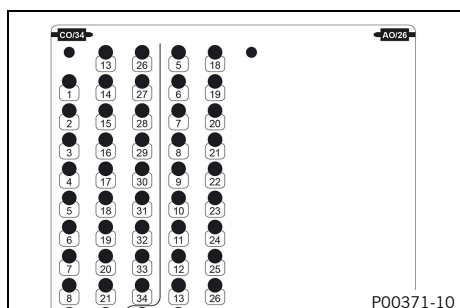
The break-out box is connected to the combination instrument control unit wiring harness with adapter **00029095002**.

Fuel level sensor – check the signal wire for a short circuit to ignition plus (terminal 15).

- Measure the resistance between the specified points.
Break-out box socket connector **C0** pin **4** – Break-out box socket connector **C0** pin **34**

Resistance	$\infty \Omega$

- » If the specifications have not been met:
 - Check the cable from combination instrument control unit **C0** (📖 p. 492) pin **4** to connector **DV** (📖 p. 494) pin **2** for a short circuit to ignition plus (terminal 15).
- » If the specifications have been met:
 - Contact customer service.



Display on diagnostic tool	B102013 "Fuel level sensor" "Electric circuit open"
Error level condition	Electric circuit open
Function check	Checking the fuel level sensor (📖 p. 392)
Possible cause	Fuel level sensor – the value is not plausible (📖 p. 392)
	Fuel level sensor – signal wire is faulty (📖 p. 393)
	Fuel level sensor – the ground wire is faulty (📖 p. 393)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Checking the fuel level sensor

Condition

The ignition is on.

- Compare the tank indicator in the combination instrument with the current tank filling level. It may be necessary to fill the tank with fuel and then check the indicator in the combination instrument.

Tank display is plausible.

- » If the specification is reached:
 - Clear the fault memory using the KTM diagnostics tool.
 - Take a test ride.
 - Read out the trouble code memory using the KTM diagnostics tool.
- » If the specification is not reached:
 - Check the next possible cause:
Fuel level sensor – the value is not plausible (📖 p. 392)
 - Check the next possible cause:
Fuel level sensor – signal wire is faulty (📖 p. 393)
 - Check the next possible cause:
Fuel level sensor – the ground wire is faulty (📖 p. 393)

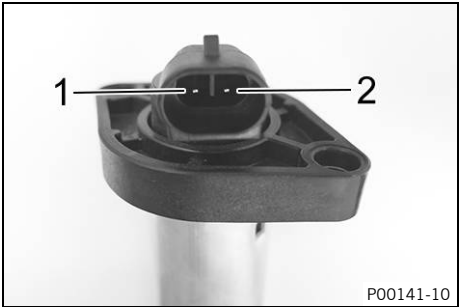
Fuel level sensor – the value is not plausible

Condition

The ignition is off.
The fuel level sensor is disconnected. (📖 p. 28)

Fuel level sensor – check the resistance.

-  Measure the resistance between the specified points.
Fuel level sensor, connector **EL** pin **1** – Fuel level sensor, connector **EL** pin **2**



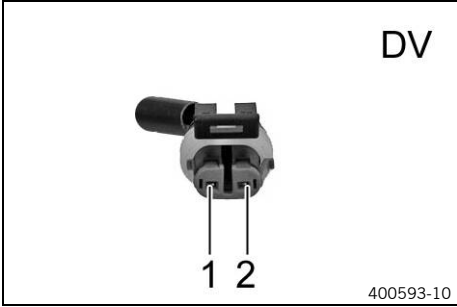
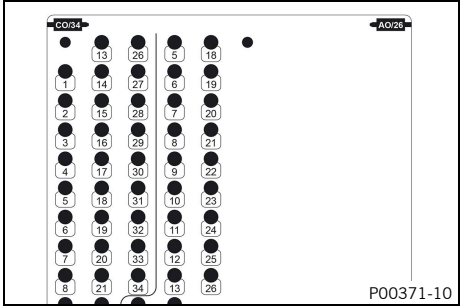
Fuel level sensor	
The fuel tank is completely full.	107 ... 113 Ω
The fuel tank is completely empty.	8.0 ... 13 Ω

- » If the specifications have not been met:
 - Change the fuel level sensor.
- » If the specifications have been met:
 - Check the next possible cause:
Fuel level sensor – signal wire is faulty (📖 p. 393)

Fuel level sensor – signal wire is faulty

Condition

The ignition is off.
The combination instrument is disconnected. (📖 p. 7)
The fuel level sensor is disconnected. (📖 p. 28)
The break-out box is connected to the combination instrument control unit wiring harness with adapter 00029095002.



Fuel level sensor – check the signal wire.

-  Measure the resistance between the specified points.
Break-out box socket connector **CO** pin 4 – Fuel level sensor, connector **DV** pin 2

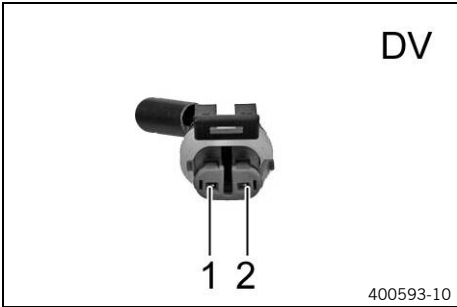
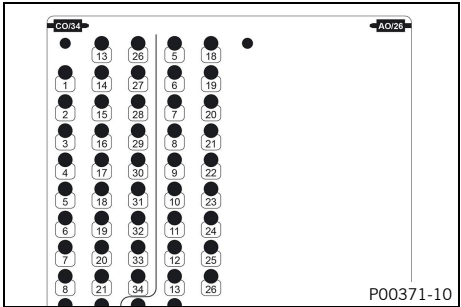
Resistance	$\leq 0.6 \Omega$

- » If the specifications have not been met:
 - Check the cable from combination instrument control unit connector **CO** (📖 p. 492) pin 4 to connector **DV** (📖 p. 494) pin 2.
- » If the specifications have been met:
 - Check the next possible cause:
Fuel level sensor – the ground wire is faulty (📖 p. 393)

Fuel level sensor – the ground wire is faulty

Condition

The ignition is off.
The combination instrument is disconnected. (📖 p. 7)
The fuel level sensor is disconnected. (📖 p. 28)
The break-out box is connected to the combination instrument control unit wiring harness with adapter 00029095002.



Fuel level sensor – check the ground wire.

-  Measure the resistance between the specified points.
Break-out box socket connector **CO** pin 23 – Fuel level sensor, connector **DV** pin 1

Resistance	$\leq 0.6 \Omega$

- » If the specifications have not been met:

8 COMBINATION INSTRUMENT TROUBLE CODE

- Check the cable from combination instrument control unit connector **CO** (📖 p. 492) pin **23** to connector **DV** (📖 p. 494) pin **1**.
- » If the specifications have been met:
 - Contact customer service.

Display on diagnostic tool	B105001 "Combination instrument control unit" "Turn signal 1 faulty"
Error level condition	Turn signal left or right has no function (current consumption too low)
Possible cause	Turn signal function – checking (📖 p. 395)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Turn signal function – checking

Condition

The ignition is on.

- Operate turn signal.

Check function of lamps.

- » If the specifications have not been met:
 - Check the next possible cause:
Turn signal - left control wire is faulty (📖 p. 395)
- » If the specifications have been met:
 - Contact customer service.

Turn signal - left control wire is faulty

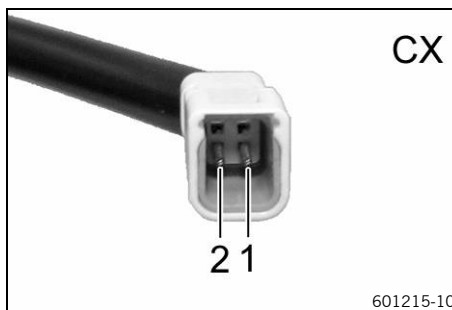
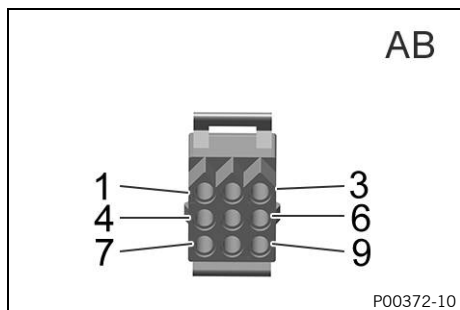
Condition

The ignition is off.

Combination switch disconnected.

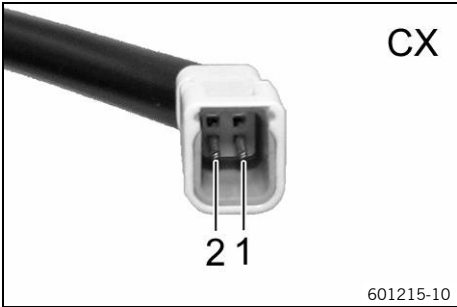
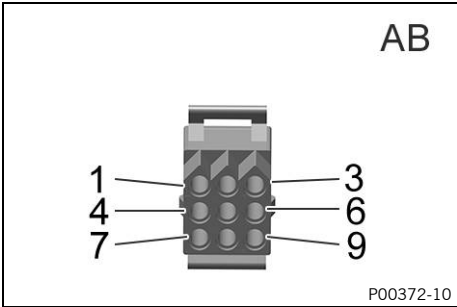
Turn signal completed.

Alarm system is disconnected.



Turn signal - check control wire left.

-  Measure the resistance between the specified points.
Combination switch left socket connector **AB** pin **9** – Front left turn signal connector **CX** pin **1**



Turn signal - check control wire left.

-  Measure the resistance between the specified points.
Combination switch left socket connector **AB** pin **9** – Rear left turn signal connector **CX** pin **1**

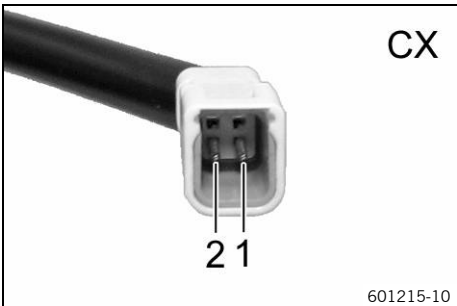
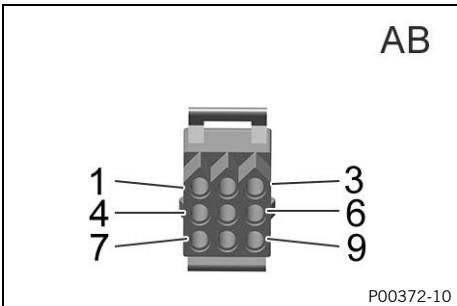
Resistance	$\leq 0.6 \Omega$

- » If the specifications have not been met:
 - Check combination switch connector **AB** (📖 p. 490) pin **9**.
 - Check the cable from combination switch connector **AB** (📖 p. 490) pin **9** to both turn signals is as according to the wiring diagram.
- » If the specifications have been met:
 - Check the next possible cause:
Turn signal - control wire right is faulty (📖 p. 396)

Turn signal - control wire right is faulty

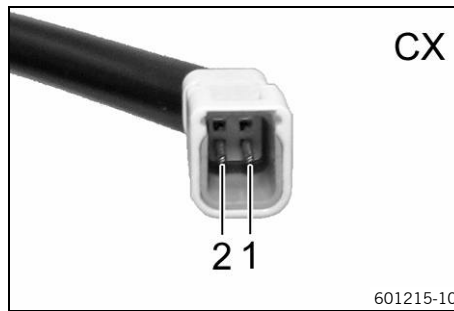
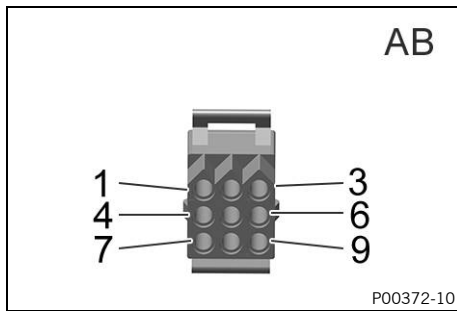
Condition

The ignition is off.
Combination switch disconnected.
Turn signal completed.
Alarm system is disconnected.



Turn signal - check control wire right.

-  Measure the resistance between the specified points.
Combination switch left socket connector **AB** pin **8** – Front right turn signal connector **CX** pin **1**



Turn signal - check control wire right.

-  Measure the resistance between the specified points.
Combination switch left socket connector **AB** pin **8** – Rear right turn signal connector **CX** pin **1**

Resistance	$\leq 0.6 \Omega$

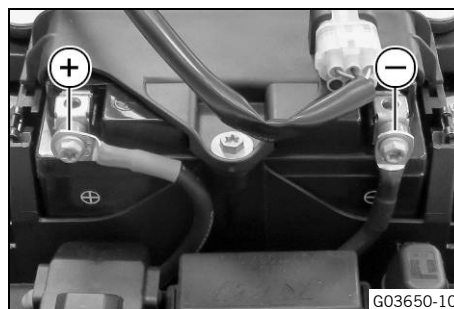
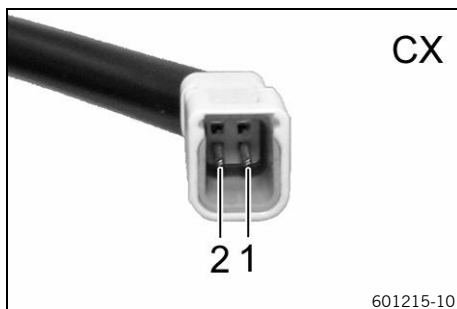
- » If the specifications have not been met:
 - Check combination switch connector **AB** (p. 490) pin **8**.
 - Check the cable from combination switch connector **AB** (p. 490) pin **8** to both turn signals is as according to the wiring diagram.
- » If the specifications have been met:
 - Check the next possible cause:
Turn signal – front left ground wire, is faulty (p. 397)

Turn signal – front left ground wire, is faulty

Condition

The ignition is off.

Turn signal completed.



Turn signal – check ground wire, front left.

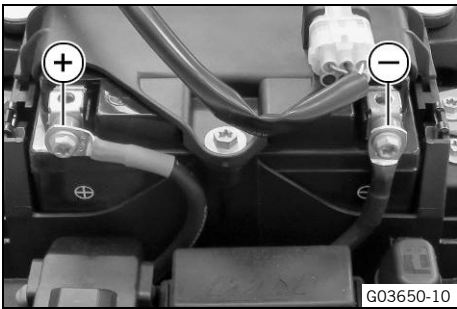
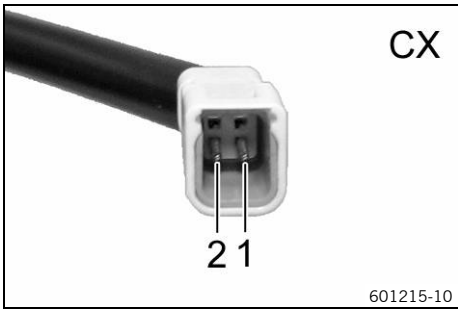
-  Measure the resistance between the specified points.
Front left turn signal connector **CX** pin **2** – Measuring point **Ground (-)**

Resistance	$\leq 0.6 \Omega$

- » If the specifications have not been met:
 - Check connector **CX** (p. 493) pin **2**.
 - Check the wire from connector **CX** (p. 493) pin **2** according to the wiring diagram.
- » If the specifications have been met:
 - Check the next possible cause:
Turn signal – ground wire, rear left, is faulty (p. 398)

Turn signal – ground wire, rear left, is faulty

Condition
The ignition is off.
Turn signal completed.



Turn signal – check ground wire, rear left.

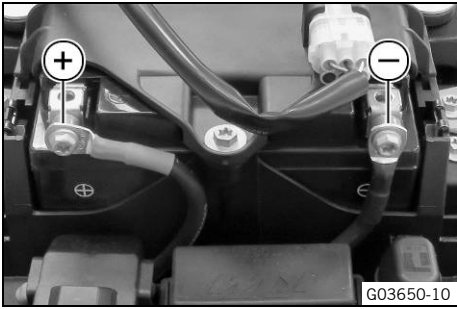
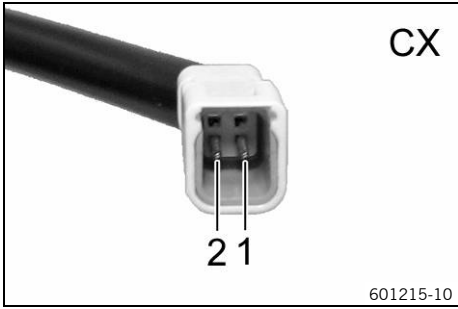
-  Measure the resistance between the specified points.
Rear left turn signal connector **CX** pin **2** – Measuring point **Ground (–)**

Resistance	≤ 0.6 Ω

- » If the specifications have not been met:
 - Check connector **CX** (p. 493) pin **2**.
 - Check the wire from connector **CX** (p. 493) pin **2** according to the wiring diagram.
- » If the specifications have been met:
 - Check the next possible cause:
Turn signal – front right ground wire is faulty (p. 398)

Turn signal – front right ground wire is faulty

Condition
The ignition is off.
Turn signal completed.



Turn signal – check ground wire, front right.

-  Measure the resistance between the specified points.
Front right turn signal connector **CX** pin **2** – Measuring point **Ground (–)**

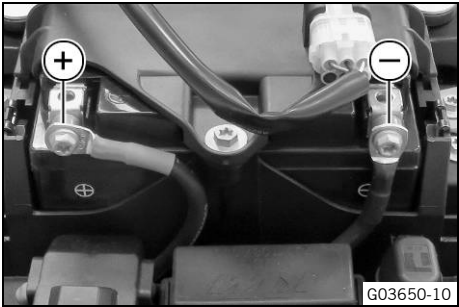
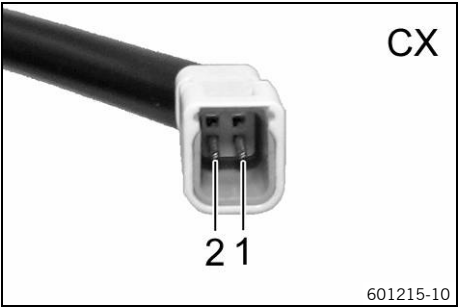
Resistance	≤ 0.6 Ω

- » If the specifications have not been met:
 - Check connector **CX** (p. 493) pin **2**.
 - Check the wire from connector **CX** (p. 493) pin **2** according to the wiring diagram.
- » If the specifications have been met:
 - Check the next possible cause:
Turn signal – rear right ground wire is faulty (p. 399)

Turn signal – rear right ground wire is faulty

Condition

The ignition is off.
Turn signal completed.



Turn signal – check rear right ground wire.

-  Measure the resistance between the specified points.
Rear right turn signal connector **CX** pin **2** – Measuring point **Ground (-)**

Resistance	$\leq 0.6 \Omega$

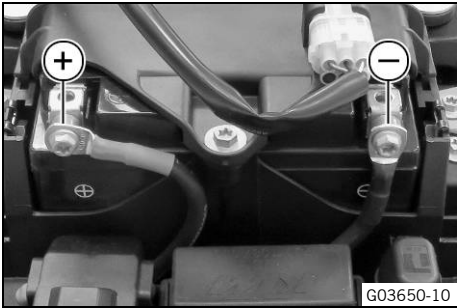
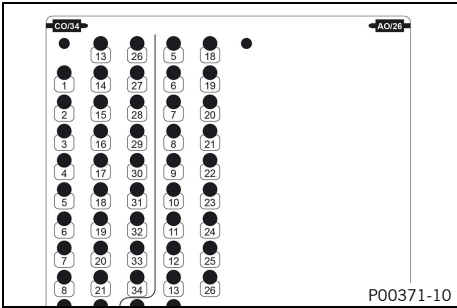
- » If the specifications have not been met:
 - Check connector **CX** (📖 p. 493) pin **2**.
 - Check the wire from connector **CX** (📖 p. 493) pin **2** according to the wiring diagram.
- » If the specifications have been met:
 - Contact customer service.

Display on diagnostic tool	B105011 "Turn signal error" "Short circuit to ground"
Error level condition	Short circuit to ground
Possible cause	Turn signal output – the control wire has a short circuit to ground (terminal 31) (📖 p. 400) Turn signal output – control wire is faulty (📖 p. 400)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Turn signal output – the control wire has a short circuit to ground (terminal 31)

Condition

The ignition is off.
The combination instrument is disconnected. (📖 p. 7)
The break-out box is connected to the combination instrument control unit wiring harness with adapter **00029095002**.
Left combination switch is disconnected.



Turn signal output – check the control wire for a short circuit to ground (terminal 31).

-  Measure the resistance between the specified points.
Break-out box socket connector **CO** pin **7** – Measuring point **Ground (-)**

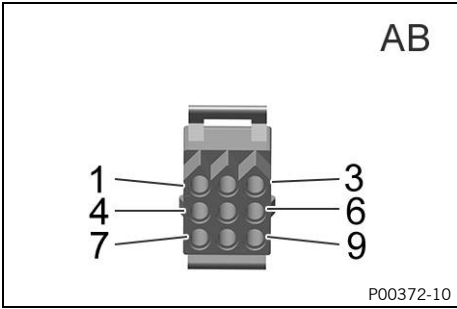
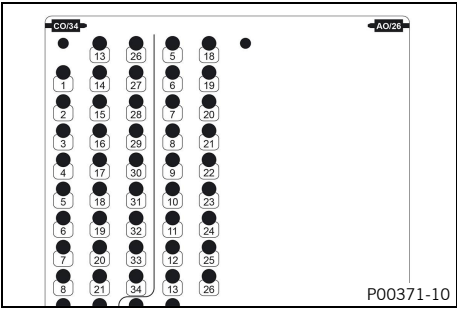
Resistance	$\infty \Omega$

- » If the specifications have not been met:
 - Check the cable from combination instrument control unit **CO** (📖 p. 492) pin **7** to connector **AB** (📖 p. 490) pin **7** for a short circuit to ground (terminal 31).
- » If the specifications have been met:
 - Check the next possible cause:
Turn signal output – control wire is faulty (📖 p. 400)

Turn signal output – control wire is faulty

Condition

The ignition is off.
The combination instrument is disconnected. (📖 p. 7)
The break-out box is connected to the combination instrument control unit wiring harness with adapter **00029095002**.
Left combination switch is disconnected.



Turn signal output – check control wire.

-  Measure the resistance between the specified points.
Break-out box socket connector **CO** pin **7** – Combination switch left socket connector **AB** pin **7**

Resistance	$\leq 0.6 \Omega$

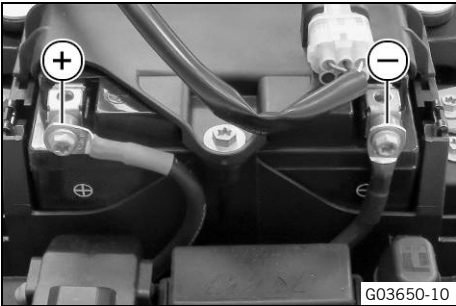
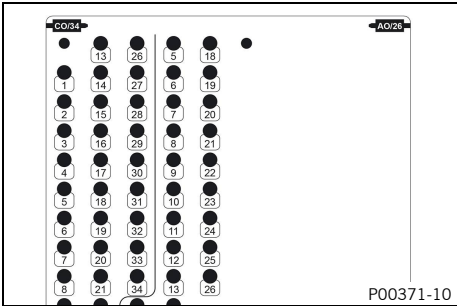
- » If the specifications have not been met:
 - Check the cable from the combination instrument control unit connector **CO** ( p. 492) pin **7** to connector **AB** ( p. 490) pin **7** for a sort circuit.
- » If the specifications have been met:
 - Contact customer service.

Display on diagnostic tool	B105012 "Turn signal error" "Short circuit to plus"
Error level condition	Short circuit to plus
Possible cause	Turn signal output – the control wire has a short circuit to plus (terminal 30) (📖 p. 402)
	Turn signal output – the control wire has a short circuit to ignition plus (terminal 15) (📖 p. 402)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Turn signal output – the control wire has a short circuit to plus (terminal 30)

Condition

The ignition is off.
The combination instrument is disconnected. (📖 p. 7)
The break-out box is connected to the combination instrument control unit wiring harness with adapter **00029095002**.
Left combination switch is disconnected.



Turn signal output – check the control wire for a short circuit to plus (terminal 30).

-  Measure the resistance between the specified points.
Break-out box socket connector **CO** pin **7** – Measuring point **plus (+)**

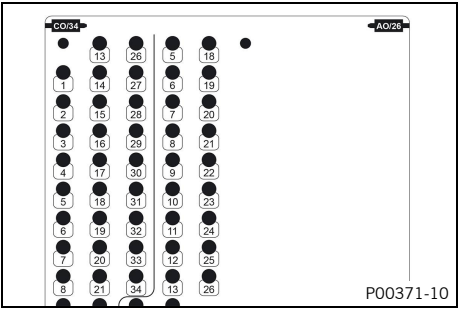
Resistance	$\infty \Omega$

- » If the specifications have not been met:
 - Check the cable from combination instrument control unit connector **CO** (📖 p. 492) pin **7** to connector **AB** (📖 p. 490) pin **7** for a short circuit to plus (terminal 30).
- » If the specifications have been met:
 - Check the next possible cause:
Turn signal output – the control wire has a short circuit to ignition plus (terminal 15) (📖 p. 402)

Turn signal output – the control wire has a short circuit to ignition plus (terminal 15)

Condition

The ignition is off.
The combination instrument is disconnected. (📖 p. 7)
The break-out box is connected to the combination instrument control unit wiring harness with adapter **00029095002**.
Left combination switch is disconnected.



Turn signal output – check the control wire for a short circuit to ignition plus (terminal 15).

-  Measure the resistance between the specified points.
Break-out box socket connector **CO** pin **7** – Break-out box socket connector **CO** pin **34**

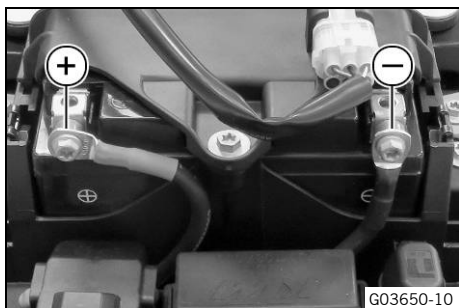
Resistance	$\infty \Omega$

- » If the specifications have not been met:
 - Check the cable from combination instrument control unit **CO** (📖 p. 492) pin **7** to connector **AB** (📖 p. 490) pin **7** for a short circuit to ignition plus (terminal 15).
- » If the specifications have been met:
 - Contact customer service.

8 COMBINATION INSTRUMENT TROUBLE CODE

Display on diagnostic tool	B110041 "Combination instrument control unit" "EEPROM malfunction"
Error level condition	Malfunction in internal EEPROM
Function check	Resetting the combination instrument control unit (🔧 p. 404)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Resetting the combination instrument control unit



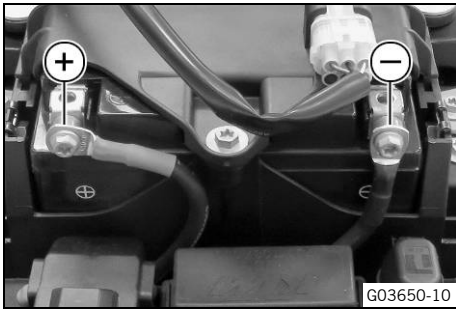
- Disconnect the negative terminal of the 12-V battery.
- Wait for 10 minutes.
- Connect the negative terminal of the 12-V battery.
- Clear the fault memory using the KTM diagnostics tool.
- Switch off the ignition for 20 seconds.
- Read out the trouble code memory using the KTM diagnostics tool.
 - » If the error persists:
 - Replace the combination instrument.

Last measure if none of the documented causes leads to elimination of the fault

- Contact customer service.

Display on diagnostic tool	B110101 "Combination instrument control unit" "TFT LEDs malfunction"
Error level condition	TFT LEDs malfunction
Function check	Resetting the combination instrument control unit (📖 p. 405)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Resetting the combination instrument control unit



- Disconnect the negative terminal of the 12-V battery.
- Wait for 10 minutes.
- Connect the negative terminal of the 12-V battery.
- Clear the fault memory using the KTM diagnostics tool.
- Switch off the ignition for 20 seconds.
- Read out the trouble code memory using the KTM diagnostics tool.
 - » If the error persists:
 - Replace the combination instrument.

Last measure if none of the documented causes leads to elimination of the fault

- Contact customer service.

Display on diagnostic tool	U100188 "CAN bus communication" "faulty"
Error level condition	CAN bus faulty
Possible cause	Software version/coding incorrect (📖 p. 406) Checking the CAN bus communication with the combination instrument control unit (📖 p. 406)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Software version/coding incorrect

- Connect the diagnostics tool and start it.
- Read out the fault memory using the KTM diagnostics tool.
- Clear the fault memory using the KTM diagnostics tool.
- Switch off the ignition for 20 seconds.
- Read out the fault memory using the KTM diagnostics tool.

Fault memory is empty.

- » If the specifications have not been met:
 - Check that the software in the control units is up to date.
 - Check all model-specific variant coding and equipment-specific settings for all control units.
- » If the specifications have been met:
 - Check the next possible cause:
Checking the CAN bus communication with the combination instrument control unit (📖 p. 406)

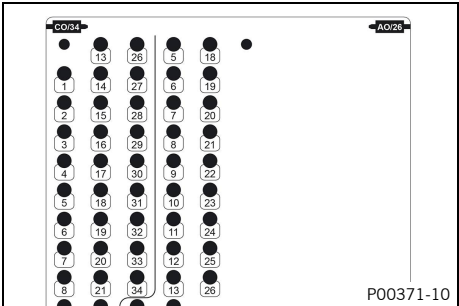
Checking the CAN bus communication with the combination instrument control unit

Condition

The ignition is off.
The immobilizer control unit is disconnected. (📖 p. 29)
The combination instrument is disconnected. (📖 p. 7)
Inertial measurement unit is disconnected. (📖 p. 28)
The light control unit is disconnected. (📖 p. 30)
The tire pressure monitor control unit is disconnected. (📖 p. 30)
Heater control unit is disconnected. (📖 p. 31)
Connectivity Unit is disconnected. (📖 p. 32)
The break-out box is connected to the combination instrument control unit wiring harness with adapter **00029095002**.

CAN bus combination instrument control unit – check resistance.

-  Measure the resistance between the specified points.
Break-out box socket connector **C0** pin **30** – Break-out box socket connector **C0** pin **31**



CAN bus total resistance	
Resistance with connected engine control unit and ABS control unit: 20 °C (68 °F)	54 ... 66 Ω

- » If the specifications have not been met:
 - Check the CAN bus wires.
- » If the specifications have been met:
 - Contact customer service.

Display on diagnostic tool	U100287 "CAN bus communication" "Communication error with ABS control unit"
Error level condition	CAN bus faulty or system error in the ABS control unit
Possible cause	Software version/coding incorrect (📖 p. 407)
	Check the CAN bus total resistance (📖 p. 407)
	Checking the CAN bus communication with the combination instrument control unit (📖 p. 406)
Last measure if none of the documented causes leads to elimination of the fault	– Change the ABS control unit.

Software version/coding incorrect

- Connect the diagnostics tool and start it.
- Read out the fault memory using the KTM diagnostics tool.
- Clear the fault memory using the KTM diagnostics tool.
- Switch off the ignition for 20 seconds.
- Read out the fault memory using the KTM diagnostics tool.

Fault memory is empty.

- » If the specifications have not been met:
 - Check that the software in the control units is up to date.
 - Check all model-specific variant coding and equipment-specific settings for all control units.
- » If the specifications have been met:
 - Check the next possible cause:
 - Check the CAN bus total resistance (📖 p. 407)

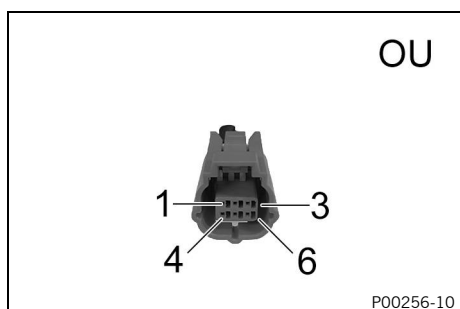
Check the CAN bus total resistance

Condition

The ignition is off.
 The immobilizer control unit is disconnected. (📖 p. 29)
 The combination instrument is disconnected. (📖 p. 7)
 Inertial measurement unit is disconnected. (📖 p. 28)
 The light control unit is disconnected. (📖 p. 30)
 The tire pressure monitor control unit is disconnected. (📖 p. 30)
 Heater control unit is disconnected. (📖 p. 31)
 Connectivity Unit is disconnected. (📖 p. 32)

CAN bus total resistance – check the resistance.

-  Measure the resistance between the specified points.
 Diagnostics connector **OU** pin **2** – Diagnostics connector **OU** pin **5**



CAN bus total resistance	
Resistance with connected engine control unit and ABS control unit: 20 °C (68 °F)	54 ... 66 Ω

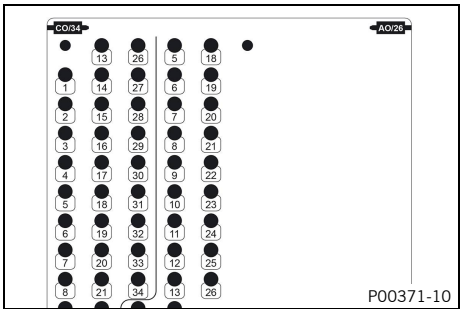
- » If the specifications have not been met:
 - Check the CAN bus wires.
- » If the specifications have been met:
 - Check the next possible cause:

Checking the CAN bus communication with the combination instrument control unit (📖 p. 408)

Checking the CAN bus communication with the combination instrument control unit

Condition

- The ignition is off.
- The immobilizer control unit is disconnected. (📖 p. 29)
- The combination instrument is disconnected. (📖 p. 7)
- Inertial measurement unit is disconnected. (📖 p. 28)
- The light control unit is disconnected. (📖 p. 30)
- The tire pressure monitor control unit is disconnected. (📖 p. 30)
- Heater control unit is disconnected. (📖 p. 31)
- Connectivity Unit is disconnected. (📖 p. 32)
- The break-out box is connected to the combination instrument control unit wiring harness with adapter **00029095002**.



CAN bus combination instrument control unit – check resistance.

- Measure the resistance between the specified points.
Break-out box socket connector **C0** pin **30** – Break-out box socket connector **C0** pin **31**

CAN bus total resistance	
Resistance with connected engine control unit and ABS control unit: 20 °C (68 °F)	54 ... 66 Ω

- » If the specifications have not been met:
 - Check the CAN bus wires.
- » If the specifications have been met:
 - Change the ABS control unit.

Display on diagnostic tool	U100387 "CAN bus communication" "Communication error with engine control unit"
Error level condition	CAN bus faulty or system error in engine control unit
Possible cause	Software version/coding incorrect (📖 p. 409)
	Check the CAN bus total resistance (📖 p. 409)
	Checking the CAN bus communication with the combination instrument control unit (📖 p. 408)
Last measure if none of the documented causes leads to elimination of the fault	– Change the engine control unit.

Software version/coding incorrect

- Connect the diagnostics tool and start it.
- Read out the fault memory using the KTM diagnostics tool.
- Clear the fault memory using the KTM diagnostics tool.
- Switch off the ignition for 20 seconds.
- Read out the fault memory using the KTM diagnostics tool.

Fault memory is empty.

- » If the specifications have not been met:
 - Check that the software in the control units is up to date.
 - Check all model-specific variant coding and equipment-specific settings for all control units.
- » If the specifications have been met:
 - Check the next possible cause:
 - Check the CAN bus total resistance (📖 p. 409)

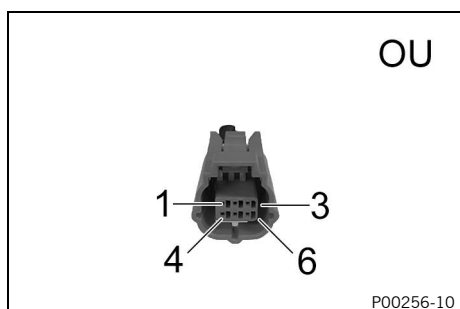
Check the CAN bus total resistance

Condition

The ignition is off.
 The immobilizer control unit is disconnected. (📖 p. 29)
 The combination instrument is disconnected. (📖 p. 7)
 Inertial measurement unit is disconnected. (📖 p. 28)
 The light control unit is disconnected. (📖 p. 30)
 The tire pressure monitor control unit is disconnected. (📖 p. 30)
 Heater control unit is disconnected. (📖 p. 31)
 Connectivity Unit is disconnected. (📖 p. 32)

CAN bus total resistance – check the resistance.

-  Measure the resistance between the specified points.
 Diagnostics connector **OU** pin **2** – Diagnostics connector **OU** pin **5**



CAN bus total resistance	
Resistance with connected engine control unit and ABS control unit: 20 °C (68 °F)	54 ... 66 Ω

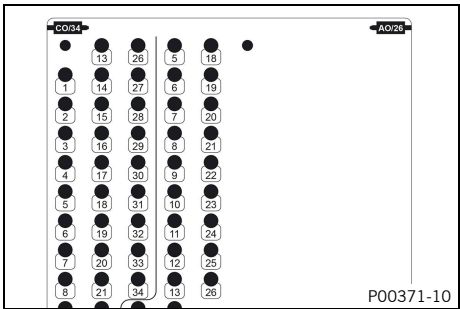
- » If the specifications have not been met:
 - Check the CAN bus wires.
- » If the specifications have been met:
 - Check the next possible cause:

Checking the CAN bus communication with the combination instrument control unit (📖 p. 410)

Checking the CAN bus communication with the combination instrument control unit

Condition

- The ignition is off.
- The immobilizer control unit is disconnected. (📖 p. 29)
- The combination instrument is disconnected. (📖 p. 7)
- Inertial measurement unit is disconnected. (📖 p. 28)
- The light control unit is disconnected. (📖 p. 30)
- The tire pressure monitor control unit is disconnected. (📖 p. 30)
- Heater control unit is disconnected. (📖 p. 31)
- Connectivity Unit is disconnected. (📖 p. 32)
- The break-out box is connected to the combination instrument control unit wiring harness with adapter **00029095002**.



CAN bus combination instrument control unit – check resistance.

-  Measure the resistance between the specified points.
Break-out box socket connector **C0** pin **30** – Break-out box socket connector **C0** pin **31**

CAN bus total resistance	
Resistance with connected engine control unit and ABS control unit: 20 °C (68 °F)	54 ... 66 Ω

- » If the specifications have not been met:
 - Check the CAN bus wires.
- » If the specifications have been met:
 - Change the engine control unit.

Display on diagnostic tool	U100587 "CAN bus communication" "Signal error during communication with tire pressure monitor control unit"
Error level condition	CAN bus faulty or system error in the tire pressure monitor control unit
Possible cause	Software version/coding incorrect (📖 p. 411)
	Checking the CAN bus communication with the tire pressure monitor control unit (📖 p. 411)
	Checking the CAN bus communication with the combination instrument control unit (📖 p. 410)
Last measure if none of the documented causes leads to elimination of the fault	– Change the tire pressure monitor control unit.

Software version/coding incorrect

- Connect the diagnostics tool and start it.
- Read out the fault memory using the KTM diagnostics tool.
- Clear the fault memory using the KTM diagnostics tool.
- Switch off the ignition for 20 seconds.
- Read out the fault memory using the KTM diagnostics tool.

Fault memory is empty.

- » If the specifications have not been met:
 - Check that the software in the control units is up to date.
 - Check all model-specific variant coding and equipment-specific settings for all control units.
- » If the specifications have been met:
 - Check the next possible cause:
Checking the CAN bus communication with the tire pressure monitor control unit (📖 p. 411)

Checking the CAN bus communication with the tire pressure monitor control unit

Condition

The ignition is off.

The immobilizer control unit is disconnected. (📖 p. 29)

The combination instrument is disconnected. (📖 p. 7)

Inertial measurement unit is disconnected. (📖 p. 28)

The light control unit is disconnected. (📖 p. 30)

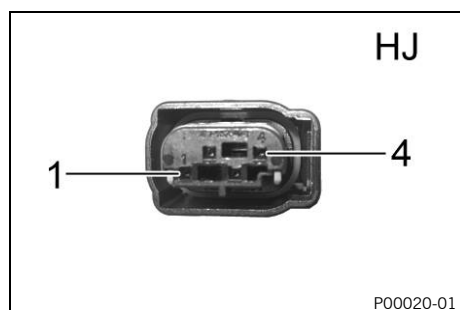
The tire pressure monitor control unit is disconnected. (📖 p. 30)

Heater control unit is disconnected. (📖 p. 31)

Connectivity Unit is disconnected. (📖 p. 32)

CAN bus tire pressure monitor control unit – check the resistance.

-  Measure the resistance between the specified points.
Control unit, tire pressure monitor, connector **HJ** pin **3**
– Control unit, tire pressure monitor, connector **HJ** pin **4**



CAN bus total resistance	
Resistance with connected engine control unit and ABS control unit: 20 °C (68 °F)	54 ... 66 Ω

- » If the specifications have not been met:
 - Check the CAN bus wires.
- » If the specifications have been met:

- Check the next possible cause:
Checking the CAN bus communication with the combination instrument control unit (📖 p. 412)

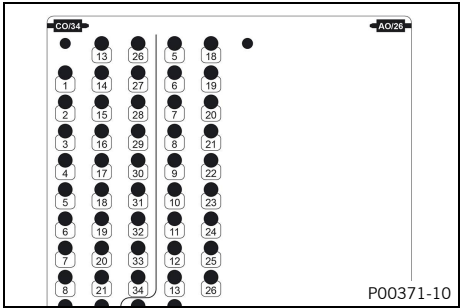
Checking the CAN bus communication with the combination instrument control unit

Condition

The ignition is off.
The immobilizer control unit is disconnected. (📖 p. 29)
The combination instrument is disconnected. (📖 p. 7)
Inertial measurement unit is disconnected. (📖 p. 28)
The light control unit is disconnected. (📖 p. 30)
The tire pressure monitor control unit is disconnected. (📖 p. 30)
Heater control unit is disconnected. (📖 p. 31)
Connectivity Unit is disconnected. (📖 p. 32)
The break-out box is connected to the combination instrument control unit wiring harness with adapter **00029095002**.

CAN bus combination instrument control unit – check resistance.

-  Measure the resistance between the specified points.
Break-out box socket connector **C0** pin **30** – Break-out box socket connector **C0** pin **31**



CAN bus total resistance	
Resistance with connected engine control unit and ABS control unit: 20 °C (68 °F)	54 ... 66 Ω

- » If the specifications have not been met:
 - Check the CAN bus wires.
- » If the specifications have been met:
 - Change the tire pressure monitor control unit.

Display on diagnostic tool	U100787 "CAN bus communication" "Signal error during communication with immobilizer control unit"
Error level condition	CAN bus faulty or system error in the immobilizer control unit
Possible cause	Software version/coding incorrect (📖 p. 413)
	Checking the CAN bus communication with the immobilizer control unit (📖 p. 413)
	Checking the CAN bus communication with the combination instrument control unit (📖 p. 412)
Last measure if none of the documented causes leads to elimination of the fault	– Change the immobilizer control unit.

Software version/coding incorrect

- Connect the diagnostics tool and start it.
- Read out the fault memory using the KTM diagnostics tool.
- Clear the fault memory using the KTM diagnostics tool.
- Switch off the ignition for 20 seconds.
- Read out the fault memory using the KTM diagnostics tool.

Fault memory is empty.

- » If the specifications have not been met:
 - Check that the software in the control units is up to date.
 - Check all model-specific variant coding and equipment-specific settings for all control units.
- » If the specifications have been met:
 - Check the next possible cause:
Checking the CAN bus communication with the immobilizer control unit (📖 p. 413)

Checking the CAN bus communication with the immobilizer control unit

Condition

The ignition is off.

The immobilizer control unit is disconnected. (📖 p. 29)

The combination instrument is disconnected. (📖 p. 7)

Inertial measurement unit is disconnected. (📖 p. 28)

The light control unit is disconnected. (📖 p. 30)

The tire pressure monitor control unit is disconnected. (📖 p. 30)

Heater control unit is disconnected. (📖 p. 31)

Connectivity Unit is disconnected. (📖 p. 32)

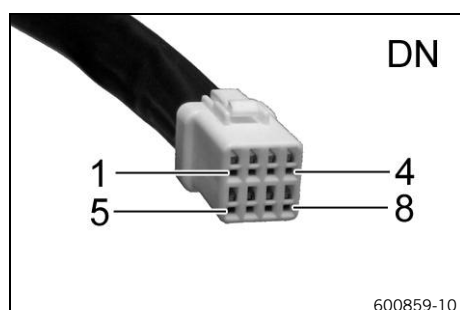
CAN bus immobilizer control unit – check the resistance.

-  Measure the resistance between the specified points.
Immobilizer control unit, connector **DN** pin 7 – Immobilizer control unit, connector **DN** pin 3

CAN bus total resistance

Resistance with connected engine control unit and ABS control unit: 20 °C (68 °F)	54 ... 66 Ω

- » If the specifications have not been met:
 - Check the CAN bus wires.
- » If the specifications have been met:



- Check the next possible cause:
Checking the CAN bus communication with the combination instrument control unit (📖 p. 414)

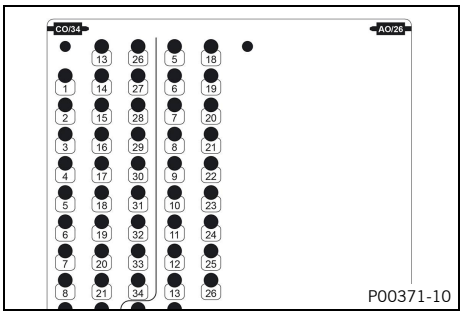
Checking the CAN bus communication with the combination instrument control unit

Condition

The ignition is off.
The immobilizer control unit is disconnected. (📖 p. 29)
The combination instrument is disconnected. (📖 p. 7)
Inertial measurement unit is disconnected. (📖 p. 28)
The light control unit is disconnected. (📖 p. 30)
The tire pressure monitor control unit is disconnected. (📖 p. 30)
Heater control unit is disconnected. (📖 p. 31)
Connectivity Unit is disconnected. (📖 p. 32)
The break-out box is connected to the combination instrument control unit wiring harness with adapter **00029095002**.

CAN bus combination instrument control unit – check resistance.

-  Measure the resistance between the specified points.
Break-out box socket connector **C0** pin **30** – Break-out box socket connector **C0** pin **31**



CAN bus total resistance	
Resistance with connected engine control unit and ABS control unit: 20 °C (68 °F)	54 ... 66 Ω

- » If the specifications have not been met:
 - Check the CAN bus wires.
- » If the specifications have been met:
 - Change the immobilizer control unit.

Display on diagnostic tool	U100987 "CAN bus communication" "Signal error during communication with Connectivity Unit"
Error level condition	CAN bus faulty or system error in the Connectivity Unit
Possible cause	Software version/coding incorrect (📖 p. 415)
	Checking the CAN bus communication with Connectivity Unit (📖 p. 415)
	Checking the CAN bus communication with the combination instrument control unit (📖 p. 414)
Last measure if none of the documented causes leads to elimination of the fault	– Change Connectivity Unit.

Software version/coding incorrect

- Connect the diagnostics tool and start it.
- Read out the fault memory using the KTM diagnostics tool.
- Clear the fault memory using the KTM diagnostics tool.
- Switch off the ignition for 20 seconds.
- Read out the fault memory using the KTM diagnostics tool.

Fault memory is empty.

- » If the specifications have not been met:
 - Check that the software in the control units is up to date.
 - Check all model-specific variant coding and equipment-specific settings for all control units.
- » If the specifications have been met:
 - Check the next possible cause:
Checking the CAN bus communication with Connectivity Unit (📖 p. 415)

Checking the CAN bus communication with Connectivity Unit

Condition

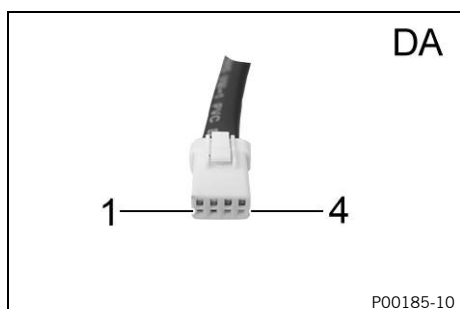
The ignition is off.
 The immobilizer control unit is disconnected. (📖 p. 29)
 The combination instrument is disconnected. (📖 p. 7)
 Inertial measurement unit is disconnected. (📖 p. 28)
 Connectivity Unit is disconnected. (📖 p. 32)
 The light control unit is disconnected. (📖 p. 30)
 The tire pressure monitor control unit is disconnected. (📖 p. 30)
 Heater control unit is disconnected. (📖 p. 31)

CAN bus Connectivity Unit – check resistance.

-  Measure the resistance between the specified points.
 Connectivity Unit connector **DA** pin **3** – Connectivity Unit connector **DA** pin **4**

CAN bus total resistance	
Resistance with connected engine control unit and ABS control unit: 20 °C (68 °F)	54 ... 66 Ω

- » If the specifications have not been met:
 - Check the CAN bus wires.
- » If the specifications have been met:
 - Check the next possible cause:

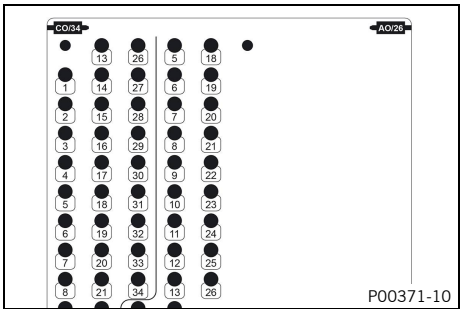


Checking the CAN bus communication with the combination instrument control unit (📖 p. 416)

Checking the CAN bus communication with the combination instrument control unit

Condition

- The ignition is off.
- The immobilizer control unit is disconnected. (📖 p. 29)
- The combination instrument is disconnected. (📖 p. 7)
- Inertial measurement unit is disconnected. (📖 p. 28)
- The light control unit is disconnected. (📖 p. 30)
- The tire pressure monitor control unit is disconnected. (📖 p. 30)
- Heater control unit is disconnected. (📖 p. 31)
- Connectivity Unit is disconnected. (📖 p. 32)
- The break-out box is connected to the combination instrument control unit wiring harness with adapter **00029095002**.



CAN bus combination instrument control unit – check resistance.

-  Measure the resistance between the specified points.
Break-out box socket connector **C0** pin **30** – Break-out box socket connector **C0** pin **31**

CAN bus total resistance	
Resistance with connected engine control unit and ABS control unit: 20 °C (68 °F)	54 ... 66 Ω

- » If the specifications have not been met:
 - Check the CAN bus wires.
- » If the specifications have been met:
 - Change Connectivity Unit.

Display on diagnostic tool	U101087 "CAN bus communication" "Signal error during communication with heater control unit"
Error level condition	CAN bus faulty or system error in heater control unit
Possible cause	Software version/coding incorrect (📖 p. 417)
	Checking the CAN bus communication with heater control unit (📖 p. 417)
	Checking the CAN bus communication with the combination instrument control unit (📖 p. 416)
Last measure if none of the documented causes leads to elimination of the fault	– Change the heater control unit.

Software version/coding incorrect

- Connect the diagnostics tool and start it.
- Read out the fault memory using the KTM diagnostics tool.
- Clear the fault memory using the KTM diagnostics tool.
- Switch off the ignition for 20 seconds.
- Read out the fault memory using the KTM diagnostics tool.

Fault memory is empty.

- » If the specifications have not been met:
 - Check that the software in the control units is up to date.
 - Check all model-specific variant coding and equipment-specific settings for all control units.
- » If the specifications have been met:
 - Check the next possible cause:
 - Checking the CAN bus communication with heater control unit (📖 p. 417)

Checking the CAN bus communication with heater control unit

Condition

The ignition is off.

The immobilizer control unit is disconnected. (📖 p. 29)

The combination instrument is disconnected. (📖 p. 7)

Inertial measurement unit is disconnected. (📖 p. 28)

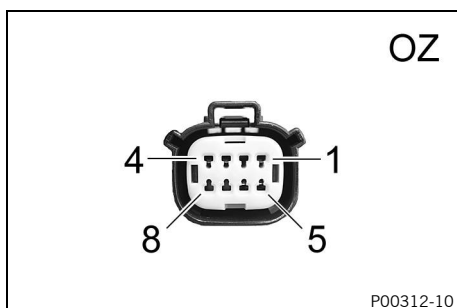
Connectivity Unit is disconnected. (📖 p. 32)

The tire pressure monitor control unit is disconnected. (📖 p. 30)

Heater control unit is disconnected. (📖 p. 31)

CAN bus heater control unit – check the resistance.

-  Measure the resistance between the specified points.
Heater control unit connector **OZ** pin **5** – Heater control unit connector **OZ** pin **6**



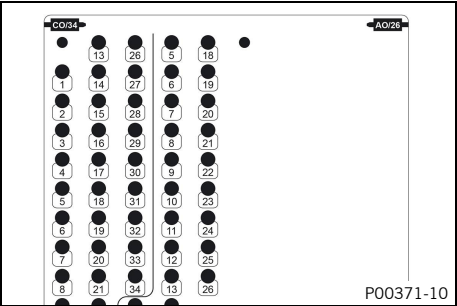
CAN bus total resistance	
Resistance with connected engine control unit and ABS control unit: 20 °C (68 °F)	54 ... 66 Ω

- » If the specifications have not been met:
 - Check the CAN bus wires.
- » If the specifications have been met:
 - Check the next possible cause:
 - Checking the CAN bus communication with the combination instrument control unit (📖 p. 418)

Checking the CAN bus communication with the combination instrument control unit

Condition

- The ignition is off.
- The immobilizer control unit is disconnected. (📖 p. 29)
- The combination instrument is disconnected. (📖 p. 7)
- Inertial measurement unit is disconnected. (📖 p. 28)
- The light control unit is disconnected. (📖 p. 30)
- The tire pressure monitor control unit is disconnected. (📖 p. 30)
- Heater control unit is disconnected. (📖 p. 31)
- Connectivity Unit is disconnected. (📖 p. 32)
- The break-out box is connected to the combination instrument control unit wiring harness with adapter **00029095002**.



CAN bus combination instrument control unit – check resistance.

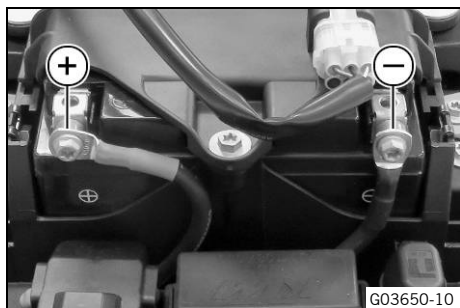
-  Measure the resistance between the specified points.
Break-out box socket connector **C0** pin **30** – Break-out box socket connector **C0** pin **31**

CAN bus total resistance	
Resistance with connected engine control unit and ABS control unit: 20 °C (68 °F)	54 ... 66 Ω

- » If the specifications have not been met:
 - Check the CAN bus wires.
- » If the specifications have been met:
 - Change the heater control unit.

Display on diagnostic tool	B10F407 "Connectivity Unit" "Bluetooth faulty"
Error level condition	Bluetooth faulty
Function check	Resetting the Connectivity Unit (🔧 p. 419)
Last measure if none of the documented causes leads to elimination of the fault	– Change Connectivity Unit.

Resetting the Connectivity Unit



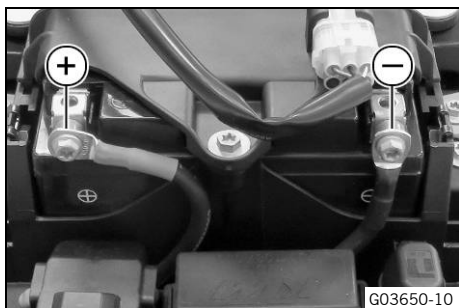
- Disconnect the negative terminal of the 12-V battery.
- Wait for 10 minutes.
- Connect the negative terminal of the 12-V battery.
- Clear the fault memory using the KTM diagnostics tool.
- Switch off the ignition for 20 seconds.
- Read out the trouble code memory using the KTM diagnostics tool.
 - » If the error persists:
 - Change Connectivity Unit.

Last measure if none of the documented causes leads to elimination of the fault

- Change Connectivity Unit.

Display on diagnostic tool	B10F842 "Connectivity Unit" "Memory faulty"
Error level condition	Memory faulty
Function check	Resetting the Connectivity Unit (📖 p. 420)
Last measure if none of the documented causes leads to elimination of the fault	– Change Connectivity Unit.

Resetting the Connectivity Unit



- Disconnect the negative terminal of the 12-V battery.
- Wait for 10 minutes.
- Connect the negative terminal of the 12-V battery.
- Clear the fault memory using the KTM diagnostics tool.
- Switch off the ignition for 20 seconds.
- Read out the trouble code memory using the KTM diagnostics tool.
 - » If the error persists:
 - Change Connectivity Unit.

Last measure if none of the documented causes leads to elimination of the fault

- Change Connectivity Unit.

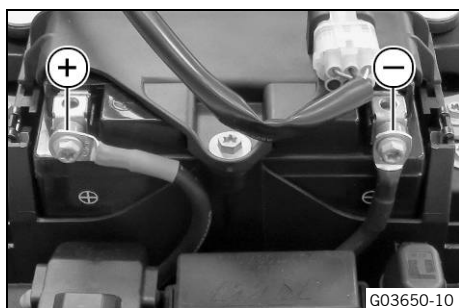
Display on diagnostic tool	B10FC17 "Connectivity Unit" "Power supply exceeded"
Error level condition	Power supply exceeded Voltage: ≥ 16 V
Function check	Checking the charging voltage (📖 p. 421)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Checking the charging voltage

Condition

The 12-V battery must be fully functional and completely charged.

- Remove the battery cover.
- Take off positive terminal cover.
- Start the motorcycle to check the function.
- **V** Measure the voltage between the specified points.
Measuring point **plus (+)** – Measuring point **Ground (–)**



Charging voltage	
5,000 rpm	13.5 ... 15.0 V

- » If the displayed value is greater than the specified value:
 - Change voltage regulator.
- Mount the positive terminal cover.
- Install the battery cover.

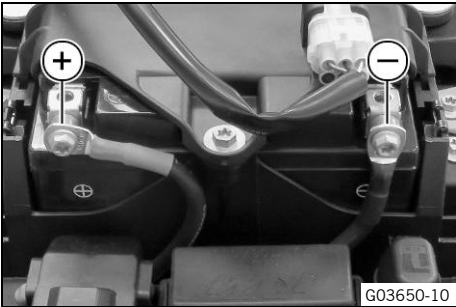
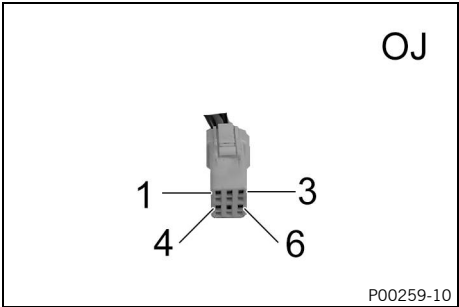
Last measure if none of the documented causes leads to elimination of the fault

- Contact customer service.

Display on diagnostic tool	B10FD05 "Connectivity Unit" "Power supply below specification"
Error level condition	Power supply below specification Voltage: ≤ 8 V
Possible cause	Connectivity Unit – power supply 1 is faulty (📖 p. 422) Connectivity Unit – power supply 2 is faulty (📖 p. 422)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Connectivity Unit – power supply 1 is faulty

Condition
The ignition is on.
Connectivity Unit is disconnected. (📖 p. 32)



- Connectivity Unit – check power supply 1.**
- **V** Measure the voltage between the specified points.
Connectivity Unit connector **OJ** pin **1** – Measuring point **Ground (-)**

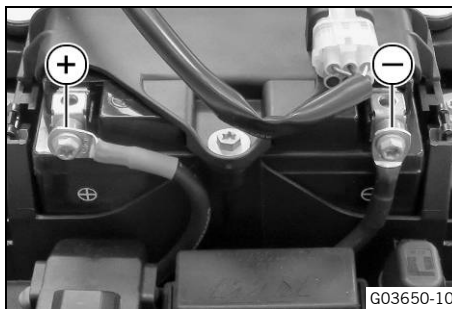
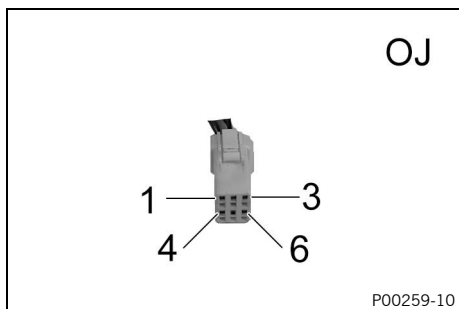
i Info
For the measurement, the measuring points must be subjected to a 12 V/21 W bulb.

The value must not deviate from the battery voltage "VBAT" by more than 1 V.

- » If the specifications have not been met:
 - Check connector **OJ** (📖 p. 506) pin **1**.
 - Check the cable from connector **OJ** (📖 p. 506) pin **1** to the next node in the wiring harness.
- » If the specifications have been met:
 - Check the next possible cause:
Connectivity Unit – power supply 2 is faulty (📖 p. 422)

Connectivity Unit – power supply 2 is faulty

Condition
The ignition is on.
Connectivity Unit is disconnected. (📖 p. 32)



Connectivity Unit – check power supply 2.

- **V** Measure the voltage between the specified points.
Connectivity Unit connector **OJ** pin **6** – Measuring point **Ground (-)**



Info

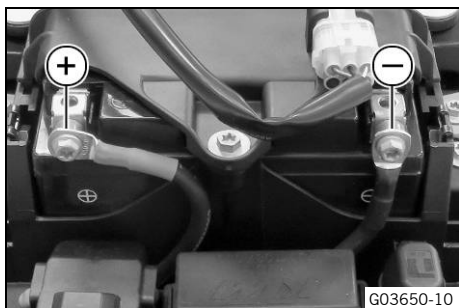
For the measurement, the measuring points must be subjected to a 12 V/21 W bulb.

The value must not deviate from the battery voltage "**VBAT**" by more than 1 V.

- » If the specifications have not been met:
 - Check connector **OJ** (📖 p. 506) pin **6**.
 - Check the cable from connector **OJ** (📖 p. 506) pin **6** to the next node in the wiring harness.
- » If the specifications have been met:
 - Contact customer service.

Display on diagnostic tool	B110005 "Connectivity Unit" "CPU overload"
Error level condition	CPU overload
Function check	Resetting the Connectivity Unit (📖 p. 424)
Last measure if none of the documented causes leads to elimination of the fault	– Change Connectivity Unit.

Resetting the Connectivity Unit



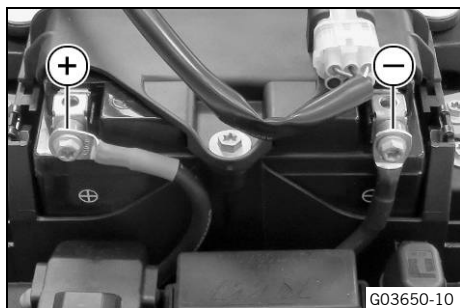
- Disconnect the negative terminal of the 12-V battery.
- Wait for 10 minutes.
- Connect the negative terminal of the 12-V battery.
- Clear the fault memory using the KTM diagnostics tool.
- Switch off the ignition for 20 seconds.
- Read out the trouble code memory using the KTM diagnostics tool.
 - » If the error persists:
 - Change Connectivity Unit.

Last measure if none of the documented causes leads to elimination of the fault

- Change Connectivity Unit.

Display on diagnostic tool	B110105 "Connectivity Unit" "RAM overload"
Error level condition	RAM overload
Function check	Resetting the Connectivity Unit (🔧 p. 425)
Last measure if none of the documented causes leads to elimination of the fault	– Change Connectivity Unit.

Resetting the Connectivity Unit



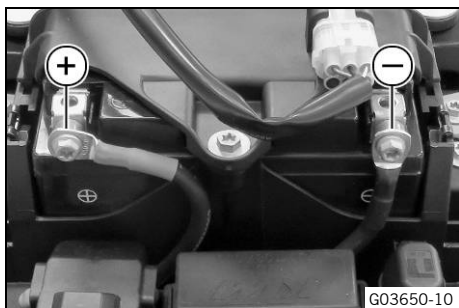
- Disconnect the negative terminal of the 12-V battery.
- Wait for 10 minutes.
- Connect the negative terminal of the 12-V battery.
- Clear the fault memory using the KTM diagnostics tool.
- Switch off the ignition for 20 seconds.
- Read out the trouble code memory using the KTM diagnostics tool.
 - » If the error persists:
 - Change Connectivity Unit.

Last measure if none of the documented causes leads to elimination of the fault

- Change Connectivity Unit.

Display on diagnostic tool	B110205 "Connectivity Unit" "ROM overload"
Error level condition	ROM overload
Function check	Resetting the Connectivity Unit (📖 p. 426)
Last measure if none of the documented causes leads to elimination of the fault	– Change Connectivity Unit.

Resetting the Connectivity Unit



- Disconnect the negative terminal of the 12-V battery.
- Wait for 10 minutes.
- Connect the negative terminal of the 12-V battery.
- Clear the fault memory using the KTM diagnostics tool.
- Switch off the ignition for 20 seconds.
- Read out the trouble code memory using the KTM diagnostics tool.
 - » If the error persists:
 - Change Connectivity Unit.

Last measure if none of the documented causes leads to elimination of the fault

- Change Connectivity Unit.

Display on diagnostic tool	U100201 "Connectivity Unit" "CAN bus communication faulty"
Error level condition	CAN bus communication faulty
Possible cause	Software version/coding incorrect (📖 p. 427)
	Checking the CAN bus communication with Connectivity Unit (📖 p. 427)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Software version/coding incorrect

- Connect the diagnostics tool and start it.
- Read out the fault memory using the KTM diagnostics tool.
- Clear the fault memory using the KTM diagnostics tool.
- Switch off the ignition for 20 seconds.
- Read out the fault memory using the KTM diagnostics tool.

Fault memory is empty.

- » If the specifications have not been met:
 - Check that the software in the control units is up to date.
 - Check all model-specific variant coding and equipment-specific settings for all control units.
- » If the specifications have been met:
 - Check the next possible cause:
Checking the CAN bus communication with Connectivity Unit (📖 p. 427)

Checking the CAN bus communication with Connectivity Unit

Condition

The ignition is off.

The immobilizer control unit is disconnected. (📖 p. 29)

The combination instrument is disconnected. (📖 p. 7)

Inertial measurement unit is disconnected. (📖 p. 28)

The tire pressure monitor control unit is disconnected. (📖 p. 30)

Connectivity Unit is disconnected. (📖 p. 32)

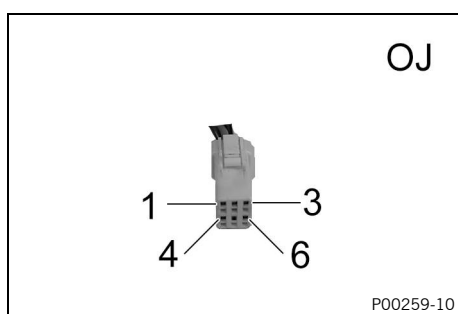
Heater control unit is disconnected. (📖 p. 31)

CAN bus Connectivity Unit – check resistance.

-  Measure the resistance between the specified points.
Connectivity Unit connector **OJ** pin **2** – Connectivity Unit connector **OJ** pin **3**

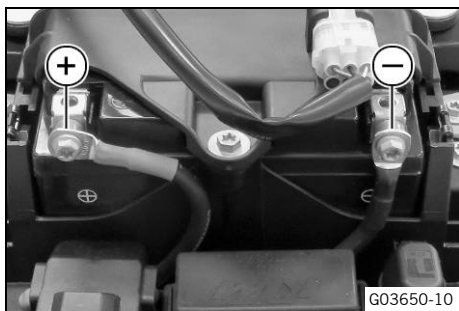
CAN bus total resistance	
Resistance with connected engine control unit and ABS control unit: 20 °C (68 °F)	54 ... 66 Ω

- » If the specifications have not been met:
 - Check the CAN bus wires.
- » If the specifications have been met:
 - Contact customer service.



Display on diagnostic tool	U101202 "Connectivity Unit" "CAN bus hardware communication faulty"
Error level condition	CAN bus hardware communication faulty
Function check	Resetting the Connectivity Unit (📖 p. 428)
Last measure if none of the documented causes leads to elimination of the fault	– Change Connectivity Unit.

Resetting the Connectivity Unit



- Disconnect the negative terminal of the 12-V battery.
- Wait for 10 minutes.
- Connect the negative terminal of the 12-V battery.
- Clear the fault memory using the KTM diagnostics tool.
- Switch off the ignition for 20 seconds.
- Read out the trouble code memory using the KTM diagnostics tool.
 - » If the error persists:
 - Change Connectivity Unit.

Last measure if none of the documented causes leads to elimination of the fault

- Change Connectivity Unit.

Display on diagnostic tool	U101305 "Connectivity Unit" "CAN bus communication with combination instrument control unit faulty"
Error level condition	CAN bus communication with combination instrument control unit faulty
Possible cause	Software version/coding incorrect (📖 p. 429)
	Checking the CAN bus communication with the combination instrument control unit (📖 p. 429)
	Checking the CAN bus communication with Connectivity Unit (📖 p. 430)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Software version/coding incorrect

- Connect the diagnostics tool and start it.
- Read out the fault memory using the KTM diagnostics tool.
- Clear the fault memory using the KTM diagnostics tool.
- Switch off the ignition for 20 seconds.
- Read out the fault memory using the KTM diagnostics tool.

Fault memory is empty.

- » If the specifications have not been met:
 - Check that the software in the control units is up to date.
 - Check all model-specific variant coding and equipment-specific settings for all control units.
- » If the specifications have been met:
 - Check the next possible cause:
Checking the CAN bus communication with the combination instrument control unit (📖 p. 429)

Checking the CAN bus communication with the combination instrument control unit

Condition

The ignition is off.
 The immobilizer control unit is disconnected. (📖 p. 29)
 The combination instrument is disconnected. (📖 p. 7)
 Inertial measurement unit is disconnected. (📖 p. 28)
 The light control unit is disconnected. (📖 p. 30)
 The tire pressure monitor control unit is disconnected. (📖 p. 30)
 Heater control unit is disconnected. (📖 p. 31)
 Connectivity Unit is disconnected. (📖 p. 32)
 The break-out box is connected to the combination instrument control unit wiring harness with adapter **00029095002**.

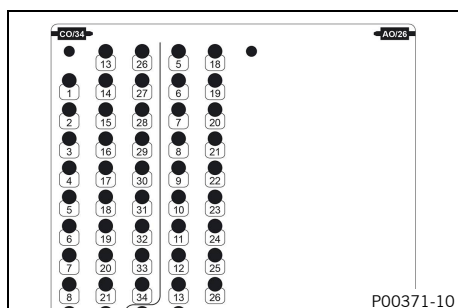
CAN bus combination instrument control unit – check resistance.

-  Measure the resistance between the specified points.
 Break-out box socket connector **C0** pin **30** – Break-out box socket connector **C0** pin **31**

CAN bus total resistance

Resistance with connected engine control unit and ABS control unit: 20 °C (68 °F)	54 ... 66 Ω

- » If the specifications have not been met:
 - Check the CAN bus wires.
- » If the specifications have been met:



- Check the next possible cause:
Checking the CAN bus communication with Connectivity Unit (📖 p. 430)

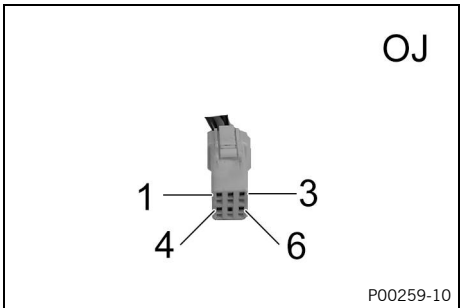
Checking the CAN bus communication with Connectivity Unit

Condition

The ignition is off.
The immobilizer control unit is disconnected. (📖 p. 29)
The combination instrument is disconnected. (📖 p. 7)
Inertial measurement unit is disconnected. (📖 p. 28)
The tire pressure monitor control unit is disconnected. (📖 p. 30)
Connectivity Unit is disconnected. (📖 p. 32)
Heater control unit is disconnected. (📖 p. 31)

CAN bus Connectivity Unit – check resistance.

-  Measure the resistance between the specified points.
Connectivity Unit connector **OJ** pin **2** – Connectivity Unit connector **OJ** pin **3**



CAN bus total resistance	
Resistance with connected engine control unit and ABS control unit: 20 °C (68 °F)	54 ... 66 Ω

- » If the specifications have not been met:
 - Check the CAN bus wires.
- » If the specifications have been met:
 - Contact customer service.

Display on diagnostic tool	C2121 "Front tire pressure sensor" "No communication"
Error level condition	No signal Time: ≥ 10 min Speed: ≥ 30 km/h (≥ 18.6 mph)
Function check	Changing the tire pressure sensor (📖 p. 431)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Changing the tire pressure sensor

- Change the tire pressure sensor.
- Program the tire pressure sensor. (📖 p. 435)
- Clear the fault memory using the KTM diagnostics tool.
 - » Take a test ride.
 - Read out the trouble code memory using the KTM diagnostics tool.

Last measure if none of the documented causes leads to elimination of the fault

- Contact customer service.

10 TIRE PRESSURE MONITOR TROUBLE CODE

Display on diagnostic tool	C2122 "Rear tire pressure sensor" "No communication"
Error level condition	No signal Time: ≥ 10 min Speed: ≥ 30 km/h (≥ 18.6 mph)
Function check	Changing the tire pressure sensor (📖 p. 432)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Changing the tire pressure sensor

- Change the tire pressure sensor.
- Program the tire pressure sensor. (📖 p. 435)
- Clear the fault memory using the KTM diagnostics tool.
 - » Take a test ride.
 - Read out the trouble code memory using the KTM diagnostics tool.

Last measure if none of the documented causes leads to elimination of the fault

- Contact customer service.

Display on diagnostic tool	C2131 "Front tire pressure sensor" "Low battery"
Error level condition	Low battery
Function check	Changing the tire pressure sensor (📖 p. 433)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Changing the tire pressure sensor

- Change the tire pressure sensor.
- Program the tire pressure sensor. (📖 p. 435)
- Clear the fault memory using the KTM diagnostics tool.
 - » Take a test ride.
 - Read out the trouble code memory using the KTM diagnostics tool.

Last measure if none of the documented causes leads to elimination of the fault

- Contact customer service.

10 TIRE PRESSURE MONITOR TROUBLE CODE

Display on diagnostic tool	C2132 "Rear tire pressure sensor" "Low battery"
Error level condition	Low battery
Function check	Changing the tire pressure sensor (📖 p. 434)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Changing the tire pressure sensor

- Change the tire pressure sensor.
- Program the tire pressure sensor. (📖 p. 435)
- Clear the fault memory using the KTM diagnostics tool.
 - » Take a test ride.
 - Read out the trouble code memory using the KTM diagnostics tool.

Last measure if none of the documented causes leads to elimination of the fault

- Contact customer service.

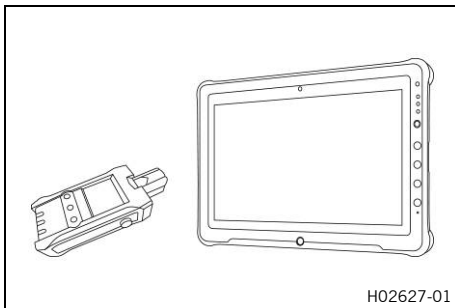
Display on diagnostic tool	C2141 "Front tire pressure sensor" "Sensor not programmed"
Error level condition	Sensor ID not programmed
Function check	Programming the tire pressure sensor (📖 p. 435)
Last measure if none of the documented causes leads to elimination of the fault	– Change the tire pressure sensor.

Programming the tire pressure sensor



Info

To use the function in the combination instrument, the tire pressure display in the combination instrument must be enabled with the KTM diagnostics tool.



Condition

The diagnostics tool is connected and running.
Software version is up to date.

Configuring the threshold value

- Execute "Tire pressure monitoring system" > "Functions" > "Threshold value configuration".



Info

The instructions must be followed precisely.

Programming the transmitter ID – wheel set

- Execute "Tire pressure monitoring system" > "Functions" > "Transmitter ID – wheel set".



Info

The instructions must be followed precisely.
The ID number is used to program the tire pressure sensor.
The tire pressure sensor ID can be found on the tire pressure sensor.

- Clear the fault memory using the KTM diagnostics tool.
 - » Perform a test ride until the air pressure is displayed in the combination instrument (max. 10 minutes, min. 20 km/h).
 - Read out the trouble code memory using the KTM diagnostics tool.

Last measure if none of the documented causes leads to elimination of the fault

- Change the tire pressure sensor.

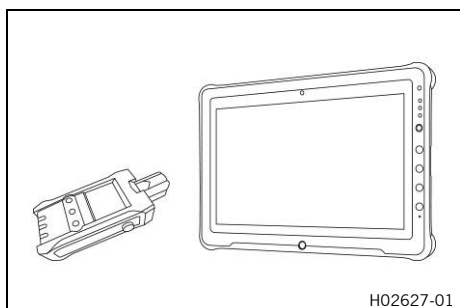
Display on diagnostic tool	C2142 "Rear tire pressure sensor" "Sensor not programmed"
Error level condition	Sensor ID not programmed
Function check	Programming the tire pressure sensor (p. 436)
Last measure if none of the documented causes leads to elimination of the fault	– Change the tire pressure sensor.

Programming the tire pressure sensor



Info

To use the function in the combination instrument, the tire pressure display in the combination instrument must be enabled with the KTM diagnostics tool.



Condition

The diagnostics tool is connected and running.
Software version is up to date.

Configuring the threshold value

- Execute "Tire pressure monitoring system" > "Functions" > "Threshold value configuration".



Info

The instructions must be followed precisely.

Programming the transmitter ID – wheel set

- Execute "Tire pressure monitoring system" > "Functions" > "Transmitter ID – wheel set".



Info

The instructions must be followed precisely.
The ID number is used to program the tire pressure sensor.
The tire pressure sensor ID can be found on the tire pressure sensor.

- Clear the fault memory using the KTM diagnostics tool.
 - » Perform a test ride until the air pressure is displayed in the combination instrument (max. 10 minutes, min. 20 km/h).
 - Read out the trouble code memory using the KTM diagnostics tool.

Last measure if none of the documented causes leads to elimination of the fault

- Change the tire pressure sensor.

Display on diagnostic tool	C2151 "Tire pressure monitor control unit" "Threshold value not programmed"
Error level condition	Threshold value not programmed For example, after flashing
Function check	Programming the tire air pressure threshold values (📖 p. 437)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Programming the tire air pressure threshold values

Condition

The diagnostics tool is connected and running.

- Execute **"Tire pressure monitor" > "Functions" > "Threshold value configuration"**.



Info

The instructions must be followed precisely.

- These values must be entered in the appropriate mask:

Guideline

Tire pressure threshold values	
Front sensor – not compensated, very low	1,500 mbar (21.76 psi)
Rear sensor – not compensated, very low	1,500 mbar (21.76 psi)
Front sensor – not compensated, high	3,800 mbar (55.11 psi)
Rear sensor – not compensated, high	4,000 mbar (58.02 psi)
Front sensor - temperature compensation very low (setpoint value -25 %)	1,800 mbar (26.11 psi)
Rear sensor - temperature compensation very low (setpoint value -25 %)	1,800 mbar (26.11 psi)
Front sensor - temperature compensation low (setpoint value -20 %)	1,900 mbar (27.56 psi)
Rear sensor - temperature compensation low (setpoint value -20 %)	1,900 mbar (27.56 psi)
Front sensor - temperature compensation high (setpoint value +40 %)	2,900 mbar (42.06 psi)
Rear sensor - temperature compensation high (setpoint value +50 %)	3,100 mbar (44.96 psi)
Hysteresis pressure reset	100 mbar (1.45 psi)

- Clear the fault memory using the KTM diagnostics tool.
 - » Take a test ride.
 - Read out the trouble code memory using the KTM diagnostics tool.

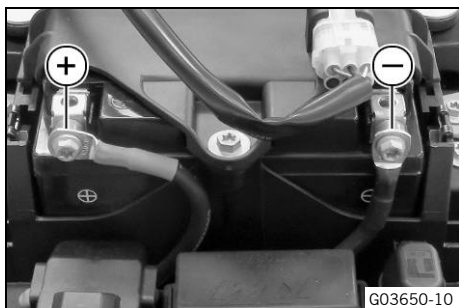
Last measure if none of the documented causes leads to elimination of the fault

- Contact customer service.

10 TIRE PRESSURE MONITOR TROUBLE CODE

Display on diagnostic tool	C2161 "Tire pressure monitor control unit" "Flash memory malfunction"
Error level condition	Internal flash memory hardware error
Function check	Resetting the tire pressure monitor control unit (📖 p. 438)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Resetting the tire pressure monitor control unit



- Disconnect the negative terminal of the 12-V battery.
- Wait for 10 minutes.
- Connect the negative terminal of the 12-V battery.
- Clear the fault memory using the KTM diagnostics tool.
- Switch off the ignition for 20 seconds.
- Read out the trouble code memory using the KTM diagnostics tool.
 - » If the error persists:
 - Change the tire pressure monitor control unit.

Last measure if none of the documented causes leads to elimination of the fault

- Contact customer service.

Display on diagnostic tool	C2171 "Tire pressure monitor control unit" "Input voltage too low"
Error level condition	Power supply below 9 V Time: ≥ 30 s
Function check	Tire pressure monitor control unit – checking the power supply for low voltage (📖 p. 439)
Possible cause	12-V battery discharged (📖 p. 439)
	Power supply – faulty (📖 p. 440)
	Ground supply – faulty (📖 p. 440)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Tire pressure monitor control unit – checking the power supply for low voltage

Condition

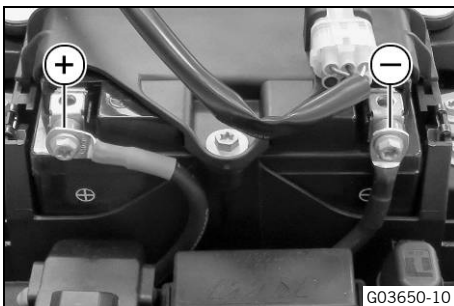
The diagnostics tool is connected and running.

- Select **"Tire pressure monitor" > "Measured values" > "Supply voltage"**.

Voltage	≥ 11.5 V

- » If the specified value is reached:
 - Clear the fault memory using the KTM diagnostics tool.
 - Take a test ride.
 - Read out the trouble code memory using the KTM diagnostics tool.
- » If the specification is not reached:
 - Check the next possible cause:
12-V battery discharged (📖 p. 439)
 - Check the next possible cause:
Power supply – faulty (📖 p. 440)
 - Check the next possible cause:
Ground supply – faulty (📖 p. 440)

12-V battery discharged



Check the battery voltage.

- **V** Measure the voltage between the specified points.
Measuring point **Ground (-)** – Measuring point **plus (+)**

Voltage	≥ 11.5 V

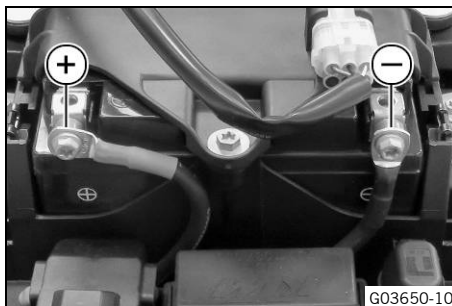
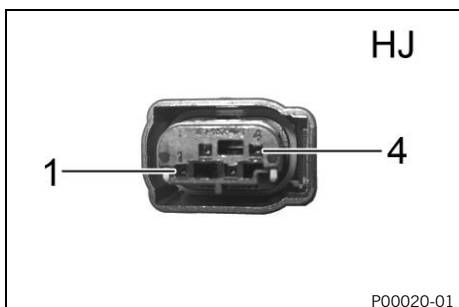
- » If the specifications have not been met:
 - Charge the 12-V battery.
 - Check the open-circuit current.
- » If the specifications have been met:
 - Check the next possible cause:
Power supply – faulty (📖 p. 440)

Power supply – faulty

Condition

The ignition is on.

The tire pressure monitor control unit is disconnected. (📖 p. 30)



Check power supply (terminal 30).

- **V** Measure the voltage between the specified points.
Control unit, tire pressure monitor, connector **HJ** pin 1 – Measuring point **Ground (-)**



Info

For the measurement, the measuring points must be subjected to a 12 V/21 W bulb.

The value must not deviate from the battery voltage "**VBAT**" by more than 1 V.

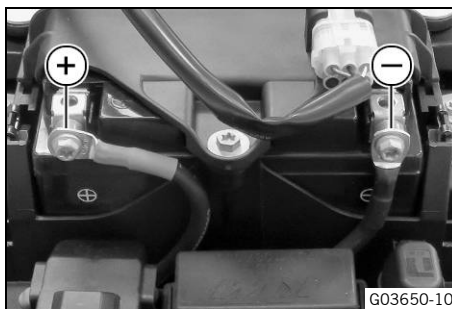
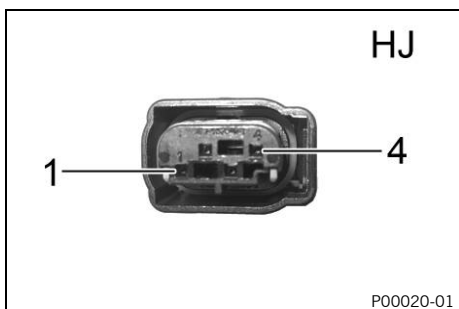
- » If the specifications have not been met:
 - Check tire pressure monitor control unit connector **HJ** (📖 p. 499) pin 1.
- » If the specifications have been met:
 - Check the next possible cause:
Ground supply – faulty (📖 p. 440)

Ground supply – faulty

Condition

The ignition is off.

The tire pressure monitor control unit is disconnected. (📖 p. 30)



Check ground supply (terminal 31).

- **V** Measure the voltage between the specified points.
Control unit, tire pressure monitor, connector **HJ** pin 2 – Measuring point **plus (+)**



Info

For the measurement, the measuring points must be subjected to a 12 V/21 W bulb.

The value must not deviate from the battery voltage "**VBAT**" by more than 1 V.

- » If the specifications have not been met:
 - Check tire pressure monitor control unit connector HJ ( p. 499) pin 2.
- » If the specifications have been met:
 - Contact customer service.

Display on diagnostic tool	C2172 "Tire pressure monitor control unit" "Input voltage too high"
Error level condition	Supply voltage over 16 V Time: ≥ 2 s
Function check	Checking the charging voltage (📖 p. 442)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Checking the charging voltage

Condition

The 12-V battery must be fully functional and completely charged.

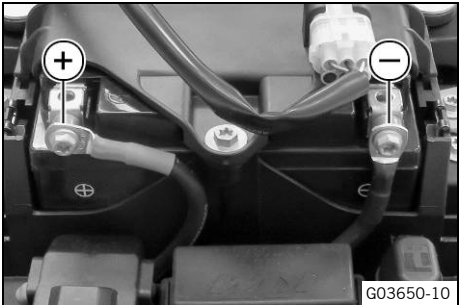
- Remove the battery cover.
- Take off positive terminal cover.
- Start the motorcycle to check the function.
- **V** Measure the voltage between the specified points.
Measuring point **plus (+)** – Measuring point **Ground (–)**

Charging voltage	
5,000 rpm	13.5 ... 15.0 V

- » If the displayed value is greater than the specified value:
 - Change voltage regulator.
- Mount the positive terminal cover.
- Install the battery cover.

Last measure if none of the documented causes leads to elimination of the fault

- Contact customer service.



Display on diagnostic tool	C2191 "CAN bus communication" "No speed signal from ABS control unit"
Error level condition	No speed signal from the ABS control unit
Possible cause	Software version/coding incorrect (📖 p. 443) Checking the CAN bus communication with the tire pressure monitor control unit (📖 p. 443)
Last measure if none of the documented causes leads to elimination of the fault	– Read out the fault memory in the ABS electronic control unit and work through if necessary.

Software version/coding incorrect

- Connect the diagnostics tool and start it.
- Read out the fault memory using the KTM diagnostics tool.
- Clear the fault memory using the KTM diagnostics tool.
- Switch off the ignition for 20 seconds.
- Read out the fault memory using the KTM diagnostics tool.

Fault memory is empty.

- » If the specifications have not been met:
 - Check that the software in the control units is up to date.
 - Check all model-specific variant coding and equipment-specific settings for all control units.
- » If the specifications have been met:
 - Check the next possible cause:
Checking the CAN bus communication with the tire pressure monitor control unit (📖 p. 443)

Checking the CAN bus communication with the tire pressure monitor control unit

Condition

The ignition is off.

The immobilizer control unit is disconnected. (📖 p. 29)

The combination instrument is disconnected. (📖 p. 7)

Inertial measurement unit is disconnected. (📖 p. 28)

The light control unit is disconnected. (📖 p. 30)

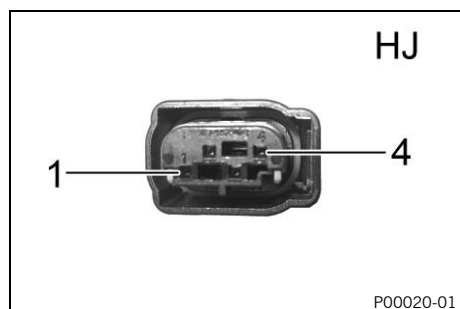
The tire pressure monitor control unit is disconnected. (📖 p. 30)

Heater control unit is disconnected. (📖 p. 31)

Connectivity Unit is disconnected. (📖 p. 32)

CAN bus tire pressure monitor control unit – check the resistance.

-  Measure the resistance between the specified points.
Control unit, tire pressure monitor, connector **HJ** pin **3**
– Control unit, tire pressure monitor, connector **HJ** pin **4**



CAN bus total resistance	
Resistance with connected engine control unit and ABS control unit: 20 °C (68 °F)	54 ... 66 Ω

- » If the specifications have not been met:
 - Check the CAN bus wires.
- » If the specifications have been met:
 - Read out the fault memory in the ABS electronic control unit and work through if necessary.

Display on diagnostic tool	P0727 "CAN bus communication" "No engine speed signal from engine control unit"
Error level condition	No engine speed signal from engine control unit
Possible cause	Software version/coding incorrect (📖 p. 444) Checking the CAN bus communication with the tire pressure monitor control unit (📖 p. 444)
Last measure if none of the documented causes leads to elimination of the fault	– Read out the fault memory in the engine control unit and work through if necessary.

Software version/coding incorrect

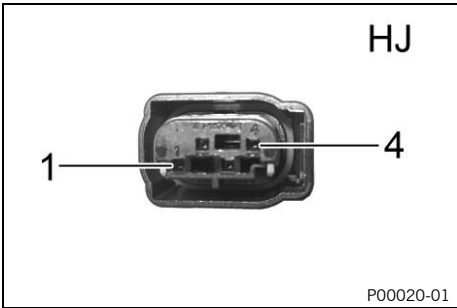
- Connect the diagnostics tool and start it.
- Read out the fault memory using the KTM diagnostics tool.
- Clear the fault memory using the KTM diagnostics tool.
- Switch off the ignition for 20 seconds.
- Read out the fault memory using the KTM diagnostics tool.

Fault memory is empty.

- » If the specifications have not been met:
 - Check that the software in the control units is up to date.
 - Check all model-specific variant coding and equipment-specific settings for all control units.
- » If the specifications have been met:
 - Check the next possible cause:
Checking the CAN bus communication with the tire pressure monitor control unit (📖 p. 444)

Checking the CAN bus communication with the tire pressure monitor control unit

Condition
The ignition is off.
The immobilizer control unit is disconnected. (📖 p. 29)
The combination instrument is disconnected. (📖 p. 7)
Inertial measurement unit is disconnected. (📖 p. 28)
The light control unit is disconnected. (📖 p. 30)
The tire pressure monitor control unit is disconnected. (📖 p. 30)
Heater control unit is disconnected. (📖 p. 31)
Connectivity Unit is disconnected. (📖 p. 32)



- CAN bus tire pressure monitor control unit – check the resistance.**
-  Measure the resistance between the specified points.
Control unit, tire pressure monitor, connector **HJ** pin **3**
– Control unit, tire pressure monitor, connector **HJ** pin **4**

CAN bus total resistance	
Resistance with connected engine control unit and ABS control unit: 20 °C (68 °F)	54 ... 66 Ω

- » If the specifications have not been met:
 - Check the CAN bus wires.
- » If the specifications have been met:
 - Read out the fault memory in the engine control unit and work through if necessary.

Display on diagnostic tool	U0028 "CAN bus communication" "CAN bus has no signal"
Error level condition	CAN bus has no signal
Possible cause	Software version/coding incorrect (📖 p. 445) Checking the CAN bus communication with the tire pressure monitor control unit (📖 p. 445)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Software version/coding incorrect

- Connect the diagnostics tool and start it.
- Read out the fault memory using the KTM diagnostics tool.
- Clear the fault memory using the KTM diagnostics tool.
- Switch off the ignition for 20 seconds.
- Read out the fault memory using the KTM diagnostics tool.

Fault memory is empty.

- » If the specifications have not been met:
 - Check that the software in the control units is up to date.
 - Check all model-specific variant coding and equipment-specific settings for all control units.
- » If the specifications have been met:
 - Check the next possible cause:
Checking the CAN bus communication with the tire pressure monitor control unit (📖 p. 445)

Checking the CAN bus communication with the tire pressure monitor control unit

Condition

The ignition is off.

The immobilizer control unit is disconnected. (📖 p. 29)

The combination instrument is disconnected. (📖 p. 7)

Inertial measurement unit is disconnected. (📖 p. 28)

The light control unit is disconnected. (📖 p. 30)

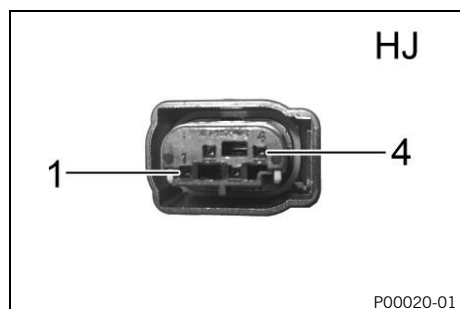
The tire pressure monitor control unit is disconnected. (📖 p. 30)

Heater control unit is disconnected. (📖 p. 31)

Connectivity Unit is disconnected. (📖 p. 32)

CAN bus tire pressure monitor control unit – check the resistance.

-  Measure the resistance between the specified points.
Control unit, tire pressure monitor, connector **HJ** pin **3**
– Control unit, tire pressure monitor, connector **HJ** pin **4**



CAN bus total resistance	
Resistance with connected engine control unit and ABS control unit: 20 °C (68 °F)	54 ... 66 Ω

- » If the specifications have not been met:
 - Check the CAN bus wires.
- » If the specifications have been met:
 - Contact customer service.

Display on diagnostic tool	U0155 "CAN bus communication" "No odometer signal from combination instrument"
Error level condition	No odometer signal from combination instrument
Possible cause	Software version/coding incorrect (📖 p. 446)
	Checking the CAN bus communication with the combination instrument control unit (📖 p. 446)
	Checking the CAN bus communication with the tire pressure monitor control unit (📖 p. 445)
Last measure if none of the documented causes leads to elimination of the fault	– Read out fault memory in the combination instrument control unit and work through if necessary. – Contact customer service.

Software version/coding incorrect

- Connect the diagnostics tool and start it.
- Read out the fault memory using the KTM diagnostics tool.
- Clear the fault memory using the KTM diagnostics tool.
- Switch off the ignition for 20 seconds.
- Read out the fault memory using the KTM diagnostics tool.

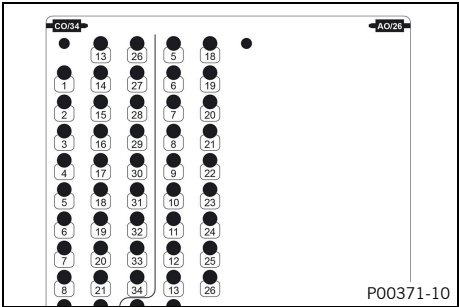
Fault memory is empty.

- » If the specifications have not been met:
 - Check that the software in the control units is up to date.
 - Check all model-specific variant coding and equipment-specific settings for all control units.
- » If the specifications have been met:
 - Check the next possible cause:
Checking the CAN bus communication with the combination instrument control unit (📖 p. 446)

Checking the CAN bus communication with the combination instrument control unit

Condition
The ignition is off.
The immobilizer control unit is disconnected. (📖 p. 29)
The combination instrument is disconnected. (📖 p. 7)
Inertial measurement unit is disconnected. (📖 p. 28)
The light control unit is disconnected. (📖 p. 30)
The tire pressure monitor control unit is disconnected. (📖 p. 30)
Heater control unit is disconnected. (📖 p. 31)
Connectivity Unit is disconnected. (📖 p. 32)
The break-out box is connected to the combination instrument control unit wiring harness with adapter **00029095002**.

- CAN bus combination instrument control unit – check resistance.**
-  Measure the resistance between the specified points.
Break-out box socket connector **C0** pin **30** – Break-out box socket connector **C0** pin **31**



CAN bus total resistance	
Resistance with connected engine control unit and ABS control unit: 20 °C (68 °F)	54 ... 66 Ω

- » If the specifications have not been met:
 - Check the CAN bus wires.

- » If the specifications have been met:
 - Check the next possible cause:
Checking the CAN bus communication with the tire pressure monitor control unit (📖 p. 447)

Checking the CAN bus communication with the tire pressure monitor control unit

Condition

The ignition is off.

The immobilizer control unit is disconnected. (📖 p. 29)

The combination instrument is disconnected. (📖 p. 7)

Inertial measurement unit is disconnected. (📖 p. 28)

The light control unit is disconnected. (📖 p. 30)

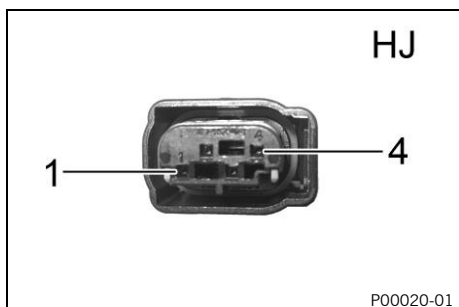
The tire pressure monitor control unit is disconnected. (📖 p. 30)

Heater control unit is disconnected. (📖 p. 31)

Connectivity Unit is disconnected. (📖 p. 32)

CAN bus tire pressure monitor control unit – check the resistance.

-  Measure the resistance between the specified points.
Control unit, tire pressure monitor, connector **HJ** pin **3**
– Control unit, tire pressure monitor, connector **HJ** pin **4**



CAN bus total resistance	
Resistance with connected engine control unit and ABS control unit: 20 °C (68 °F)	54 ... 66 Ω

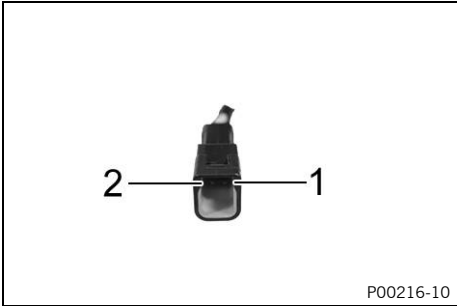
- » If the specifications have not been met:
 - Check the CAN bus wires.
- » If the specifications have been met:
 - Read out fault memory in the combination instrument control unit and work through if necessary.
 - Contact customer service.

Display on diagnostic tool	P000101 "Immobilizer control unit" "Antenna malfunction"
Error level condition	Antenna malfunction
Possible cause	Immobilizer antenna – the value is not plausible (📖 p. 448) Immobilizer antenna – signal wire 1 is faulty (📖 p. 448) Immobilizer antenna – signal wire 2 is faulty (📖 p. 449)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Immobilizer antenna – the value is not plausible

Condition
The immobilizer control unit antenna is disconnected. (📖 p. 29)

Immobilizer antenna – check the resistance.
–  Measure the resistance between the specified points.
ICU antenna, connector pin 1 – ICU antenna, connector pin 2

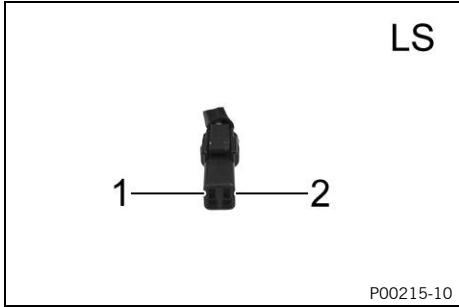
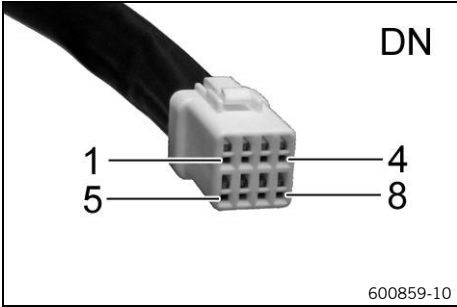


Immobilizer antenna	
Resistance at: 20 °C (68 °F)	7.1 ... 7.9 Ω

- » If the specifications have not been met:
 - Change the immobilizer antenna.
- » If the specifications have been met:
 - Check the next possible cause:
Immobilizer antenna – signal wire 1 is faulty (📖 p. 448)

Immobilizer antenna – signal wire 1 is faulty

Condition
The ignition is off.
The immobilizer control unit is disconnected. (📖 p. 29)
The immobilizer control unit antenna is disconnected. (📖 p. 29)



Immobilizer antenna – check the signal wire 1.
–  Measure the resistance between the specified points.
Immobilizer control unit, connector **DN** pin 5 – Immobilizer control unit antenna, connector **LS** pin 2

Resistance	≤ 0.6 Ω

- » If the specifications have not been met:
 - Check immobilizer control unit connector **DN** (📖 p. 494) pin 5 and connector **LS** (📖 p. 505) pin 2.

- Check the cable from the immobilizer control unit connector **DN** (📖 p. 494) pin **5** to connector **LS** (📖 p. 505) pin **2**.
- » If the specifications have been met:
 - Check the next possible cause:
 - Immobilizer antenna – signal wire 2 is faulty (📖 p. 449)

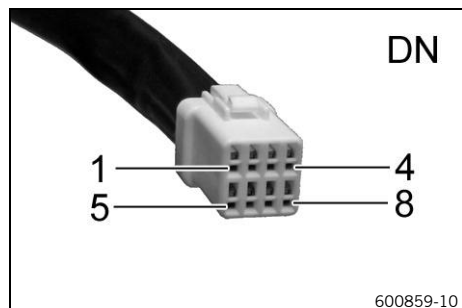
Immobilizer antenna – signal wire 2 is faulty

Condition

The ignition is off.

The immobilizer control unit is disconnected. (📖 p. 29)

The immobilizer control unit antenna is disconnected. (📖 p. 29)



Immobilizer antenna – check the signal wire 2.

-  Measure the resistance between the specified points.
 - Immobilizer control unit, connector **DN** pin **1** – Immobilizer control unit antenna, connector **LS** pin **1**

Resistance	$\leq 0.6 \Omega$

- » If the specifications have not been met:
 - Check immobilizer control unit connector **DN** (📖 p. 494) pin **1** and connector **LS** (📖 p. 505) pin **1**.
 - Check the cable from the immobilizer control unit connector **DN** (📖 p. 494) pin **1** to connector **LS** (📖 p. 505) pin **1**.
- » If the specifications have been met:
 - Contact customer service.

Display on diagnostic tool	P000231 "Immobilizer control unit" "No ignition key present"
Error level condition	No ignition key present
Function check	Programming the ignition key (📖 p. 450)
Last measure if none of the documented causes leads to elimination of the fault	– Replace ignition key.

Programming the ignition key



Info

If an ignition key is lost or replaced, all ignition keys must be reactivated. This will also prevent the vehicle from being operated without authorization with the lost ignition key.

You can activate up to four ignition keys. All ignition keys not programmed during the activation procedure are invalid, but can be reprogrammed in a further activation procedure.

Condition

The diagnostics tool is connected and running.

- Switch on the ignition by turning the ignition key to the position 0.
- "Immobilizer" > "Functions" > "Program key" > "Select".



Info

The instructions in the diagnostics tool must be followed precisely.

- Select "Start programming procedure".



Info

The instructions in the diagnostics tool must be followed precisely.

- Clear the fault memory using the KTM diagnostics tool.
- Switch off the ignition for 20 seconds.
- Read out the trouble code memory using the KTM diagnostics tool.
 - » If a malfunction is still present:
 - Repeat the procedure.

Last measure if none of the documented causes leads to elimination of the fault

- Replace ignition key.

Display on diagnostic tool	P000329 "Immobilizer control unit" "Incorrect transponder ID"
Error level condition	Incorrect transponder ID
Function check	Programming the ignition key (🔑 p. 451)
Last measure if none of the documented causes leads to elimination of the fault	– Replace ignition key.

Programming the ignition key



Info

If an ignition key is lost or replaced, all ignition keys must be reactivated. This will also prevent the vehicle from being operated without authorization with the lost ignition key.

You can activate up to four ignition keys. All ignition keys not programmed during the activation procedure are invalid, but can be reprogrammed in a further activation procedure.

Condition

The diagnostics tool is connected and running.

- Switch on the ignition by turning the ignition key to the position 0.
- "Immobilizer" > "Functions" > "Program key" > "Select".



Info

The instructions in the diagnostics tool must be followed precisely.

- Select "Start programming procedure".



Info

The instructions in the diagnostics tool must be followed precisely.

- Clear the fault memory using the KTM diagnostics tool.
- Switch off the ignition for 20 seconds.
- Read out the trouble code memory using the KTM diagnostics tool.
 - » If a malfunction is still present:
 - Repeat the procedure.

Last measure if none of the documented causes leads to elimination of the fault

- Replace ignition key.

Display on diagnostic tool	P00042F "Immobilizer control unit" "Ignition key correct, incorrect encoding"
Error level condition	Ignition key correct, incorrect encoding
Function check	Programming the ignition key (📖 p. 452)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Programming the ignition key



Info

If an ignition key is lost or replaced, all ignition keys must be reactivated. This will also prevent the vehicle from being operated without authorization with the lost ignition key.

You can activate up to four ignition keys. All ignition keys not programmed during the activation procedure are invalid, but can be reprogrammed in a further activation procedure.

Condition

The diagnostics tool is connected and running.

- Switch on the ignition by turning the ignition key to the position 0.
- "Immobilizer" > "Functions" > "Program key" > "Select".



Info

The instructions in the diagnostics tool must be followed precisely.

- Select "Start programming procedure".



Info

The instructions in the diagnostics tool must be followed precisely.

- Clear the fault memory using the KTM diagnostics tool.
- Switch off the ignition for 20 seconds.
- Read out the trouble code memory using the KTM diagnostics tool.
 - » If a malfunction is still present:
 - Repeat the procedure.

Last measure if none of the documented causes leads to elimination of the fault

- Contact customer service.

Display on diagnostic tool	P000551 "Immobilizer control unit" "No communication with engine control unit"
Error level condition	No communication with engine control unit
Function check	Programming the immobilizer control unit (📖 p. 453)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Programming the immobilizer control unit

- Connect the diagnostics tool and start it.
- Execute "Immobilizer" > "Functions" > "Immobilizer pairing".



Info

The instructions in the diagnostics tool must be followed precisely.

- » After successful execution:
 - Clear the fault memory using the KTM diagnostics tool.

Last measure if none of the documented causes leads to elimination of the fault

- Contact customer service.

Display on diagnostic tool	P00068F "Immobilizer control unit" "Invalid data from engine control unit"
Error level condition	Invalid data from engine control unit
Function check	Programming the immobilizer control unit (📖 p. 454)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Programming the immobilizer control unit

- Connect the diagnostics tool and start it.
- Execute "Immobilizer" > "Functions" > "Immobilizer pairing".



Info

The instructions in the diagnostics tool must be followed precisely.

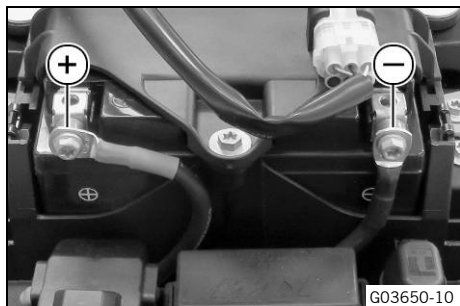
- » After successful execution:
 - Clear the fault memory using the KTM diagnostics tool.

Last measure if none of the documented causes leads to elimination of the fault

- Contact customer service.

Display on diagnostic tool	P000744 "Immobilizer control unit" "EEPROM error"
Error level condition	EEPROM error
Function check	Resetting the immobilizer control unit (📖 p. 455)

Resetting the immobilizer control unit



- Disconnect negative terminal of the 12-V battery.
- Wait for 10 minutes.
- Connect the negative terminal of the 12-V battery.
- Clear the fault memory using the KTM diagnostics tool.
- Switch off the ignition for 20 seconds.
- Read out the trouble code memory using the KTM diagnostics tool.
 - » If the error persists:
 - Contact customer service.

Display on diagnostic tool	P000888 "Immobilizer control unit" "CAN bus communication faulty"
Error level condition	CAN bus communication faulty
Possible cause	Software version/coding incorrect (📖 p. 456) Checking the CAN bus communication with the immobilizer control unit (📖 p. 456)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Software version/coding incorrect

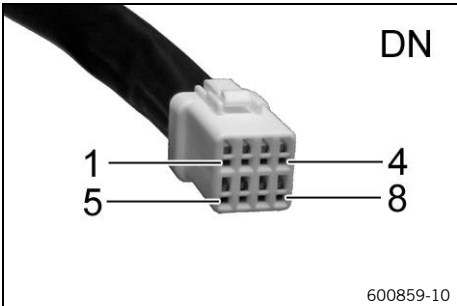
- Connect the diagnostics tool and start it.
- Read out the fault memory using the KTM diagnostics tool.
- Clear the fault memory using the KTM diagnostics tool.
- Switch off the ignition for 20 seconds.
- Read out the fault memory using the KTM diagnostics tool.

Fault memory is empty.

- » If the specifications have not been met:
 - Check that the software in the control units is up to date.
 - Check all model-specific variant coding and equipment-specific settings for all control units.
- » If the specifications have been met:
 - Check the next possible cause:
Checking the CAN bus communication with the immobilizer control unit (📖 p. 456)

Checking the CAN bus communication with the immobilizer control unit

Condition
The ignition is off.
The immobilizer control unit is disconnected. (📖 p. 29)
The combination instrument is disconnected. (📖 p. 7)
Inertial measurement unit is disconnected. (📖 p. 28)
The light control unit is disconnected. (📖 p. 30)
The tire pressure monitor control unit is disconnected. (📖 p. 30)
Heater control unit is disconnected. (📖 p. 31)
Connectivity Unit is disconnected. (📖 p. 32)



- CAN bus immobilizer control unit – check the resistance.**
-  Measure the resistance between the specified points.
Immobilizer control unit, connector **DN** pin **7** – Immobilizer control unit, connector **DN** pin **3**

CAN bus total resistance	
Resistance with connected engine control unit and ABS control unit: 20 °C (68 °F)	54 ... 66 Ω

- » If the specifications have not been met:
 - Check the CAN bus wires.
- » If the specifications have been met:
 - Contact customer service.

Display on diagnostic tool	P000967 "Immobilizer control unit" "No feedback from the immobilizer control unit"
Error level condition	No feedback from the immobilizer control unit
Possible cause	Software version/coding incorrect (📖 p. 457) Checking the CAN bus communication with the immobilizer control unit (📖 p. 457)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Software version/coding incorrect

- Connect the diagnostics tool and start it.
- Read out the fault memory using the KTM diagnostics tool.
- Clear the fault memory using the KTM diagnostics tool.
- Switch off the ignition for 20 seconds.
- Read out the fault memory using the KTM diagnostics tool.

Fault memory is empty.

- » If the specifications have not been met:
 - Check that the software in the control units is up to date.
 - Check all model-specific variant coding and equipment-specific settings for all control units.
- » If the specifications have been met:
 - Check the next possible cause:
Checking the CAN bus communication with the immobilizer control unit (📖 p. 457)

Checking the CAN bus communication with the immobilizer control unit

Condition

The ignition is off.

The immobilizer control unit is disconnected. (📖 p. 29)

The combination instrument is disconnected. (📖 p. 7)

Inertial measurement unit is disconnected. (📖 p. 28)

The light control unit is disconnected. (📖 p. 30)

The tire pressure monitor control unit is disconnected. (📖 p. 30)

Heater control unit is disconnected. (📖 p. 31)

Connectivity Unit is disconnected. (📖 p. 32)

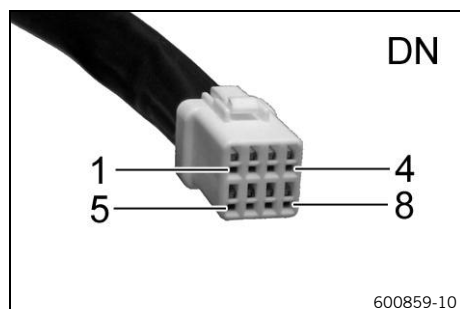
CAN bus immobilizer control unit – check the resistance.

-  Measure the resistance between the specified points.
Immobilizer control unit, connector **DN** pin 7 – Immobilizer control unit, connector **DN** pin 3

CAN bus total resistance

Resistance with connected engine control unit and ABS control unit: 20 °C (68 °F)	54 ... 66 Ω

- » If the specifications have not been met:
 - Check the CAN bus wires.
- » If the specifications have been met:
 - Contact customer service.



12 LIGHT CONTROL UNIT TROUBLE CODE

Display on diagnostic tool	B000198 "Light control unit" "Temperature value too high"
Error level condition	Overtemperature of the control unit Temperature: > 110 °C (> 230 °F)
Function check	Checking the light control unit temperature sensor (📖 p. 458)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Checking the light control unit temperature sensor

Condition

The diagnostics tool is connected and running.

- Select **"Light control unit" > "Measured values" > "Light control unit temperature"**.

Control unit temperature	< 110 °C (< 230 °F)

- » If the measured value is plausible:
 - Clear the fault memory using the KTM diagnostics tool.
 - Take a test ride.
 - Read out the trouble code memory using the KTM diagnostics tool.
- » If the measured value is not plausible:
 - Change the light control unit.

Last measure if none of the documented causes leads to elimination of the fault

- Contact customer service.

Display on diagnostic tool	B001808 "CAN bus communication" "Communication error with ABS control unit"
Error level condition	Communication error with ABS control unit
Possible cause	Software version/coding incorrect (📖 p. 459) Checking the CAN bus communication with light control unit (📖 p. 459)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Software version/coding incorrect

- Connect the diagnostics tool and start it.
- Read out the fault memory using the KTM diagnostics tool.
- Clear the fault memory using the KTM diagnostics tool.
- Switch off the ignition for 20 seconds.
- Read out the fault memory using the KTM diagnostics tool.

Fault memory is empty.

- » If the specifications have not been met:
 - Check that the software in the control units is up to date.
 - Check all model-specific variant coding and equipment-specific settings for all control units.
- » If the specifications have been met:
 - Check the next possible cause:
Checking the CAN bus communication with light control unit (📖 p. 459)

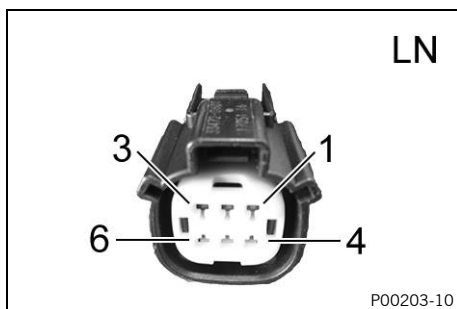
Checking the CAN bus communication with light control unit

Condition

The ignition is off.
 The immobilizer control unit is disconnected. (📖 p. 29)
 The combination instrument is disconnected. (📖 p. 7)
 Inertial measurement unit is disconnected. (📖 p. 28)
 The light control unit is disconnected. (📖 p. 30)
 The tire pressure monitor control unit is disconnected. (📖 p. 30)
 Heater control unit is disconnected. (📖 p. 31)
 Connectivity Unit is disconnected. (📖 p. 32)

CAN bus light control unit – check the resistance.

-  Measure the resistance between the specified points.
 Light control unit, connector **LN** pin **2** – Light control unit, connector **LN** pin **5**



CAN bus total resistance	
Resistance with connected engine control unit and ABS control unit: 20 °C (68 °F)	54 ... 66 Ω

- » If the specifications have not been met:
 - Check the CAN bus wires.
- » If the specifications have been met:
 - Contact customer service.

Display on diagnostic tool	B001908 "CAN bus communication" "Communication error with combination instrument control unit"
Error level condition	Communication error with combination instrument control unit
Possible cause	Software version/coding incorrect (📖 p. 460) Checking the CAN bus communication with light control unit (📖 p. 460) Checking the CAN bus communication with the combination instrument control unit (📖 p. 461)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Software version/coding incorrect

- Connect the diagnostics tool and start it.
- Read out the fault memory using the KTM diagnostics tool.
- Clear the fault memory using the KTM diagnostics tool.
- Switch off the ignition for 20 seconds.
- Read out the fault memory using the KTM diagnostics tool.

Fault memory is empty.

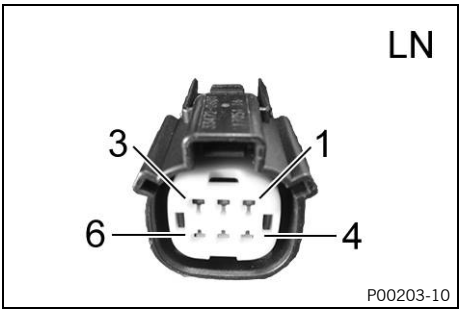
- » If the specifications have not been met:
 - Check that the software in the control units is up to date.
 - Check all model-specific variant coding and equipment-specific settings for all control units.
- » If the specifications have been met:
 - Check the next possible cause:
Checking the CAN bus communication with light control unit (📖 p. 460)

Checking the CAN bus communication with light control unit

- Condition**
- The ignition is off.
 - The immobilizer control unit is disconnected. (📖 p. 29)
 - The combination instrument is disconnected. (📖 p. 7)
 - Inertial measurement unit is disconnected. (📖 p. 28)
 - The light control unit is disconnected. (📖 p. 30)
 - The tire pressure monitor control unit is disconnected. (📖 p. 30)
 - Heater control unit is disconnected. (📖 p. 31)
 - Connectivity Unit is disconnected. (📖 p. 32)

CAN bus light control unit – check the resistance.

-  Measure the resistance between the specified points.
Light control unit, connector **LN** pin **2** – Light control unit, connector **LN** pin **5**



CAN bus total resistance	
Resistance with connected engine control unit and ABS control unit: 20 °C (68 °F)	54 ... 66 Ω

- » If the specifications have not been met:
 - Check the CAN bus wires.
- » If the specifications have been met:
 - Check the next possible cause:

Checking the CAN bus communication with the combination instrument control unit (📖 p. 461)

Checking the CAN bus communication with the combination instrument control unit

Condition

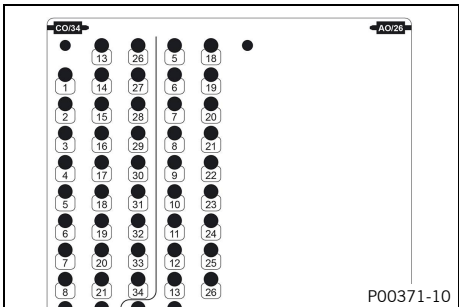
- The ignition is off.
- The immobilizer control unit is disconnected. (📖 p. 29)
- The combination instrument is disconnected. (📖 p. 7)
- Inertial measurement unit is disconnected. (📖 p. 28)
- The light control unit is disconnected. (📖 p. 30)
- The tire pressure monitor control unit is disconnected. (📖 p. 30)
- Heater control unit is disconnected. (📖 p. 31)
- Connectivity Unit is disconnected. (📖 p. 32)
- The break-out box is connected to the combination instrument control unit wiring harness with adapter **00029095002**.

CAN bus combination instrument control unit – check resistance.

-  Measure the resistance between the specified points.
Break-out box socket connector **C0** pin **30** – Break-out box socket connector **C0** pin **31**

CAN bus total resistance	
Resistance with connected engine control unit and ABS control unit: 20 °C (68 °F)	54 ... 66 Ω

- » If the specifications have not been met:
 - Check the CAN bus wires.
- » If the specifications have been met:
 - Contact customer service.



Display on diagnostic tool	B002008 "CAN bus communication" "Communication error with engine control unit"
Error level condition	Communication error with engine control unit
Possible cause	Software version/coding incorrect (📖 p. 462) Checking the CAN bus communication with light control unit (📖 p. 462)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Software version/coding incorrect

- Connect the diagnostics tool and start it.
- Read out the fault memory using the KTM diagnostics tool.
- Clear the fault memory using the KTM diagnostics tool.
- Switch off the ignition for 20 seconds.
- Read out the fault memory using the KTM diagnostics tool.

Fault memory is empty.

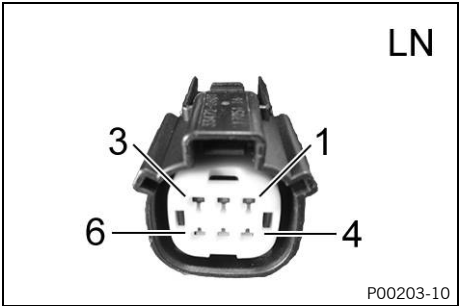
- » If the specifications have not been met:
 - Check that the software in the control units is up to date.
 - Check all model-specific variant coding and equipment-specific settings for all control units.
- » If the specifications have been met:
 - Check the next possible cause:
Checking the CAN bus communication with light control unit (📖 p. 462)

Checking the CAN bus communication with light control unit

- Condition**
- The ignition is off.
 - The immobilizer control unit is disconnected. (📖 p. 29)
 - The combination instrument is disconnected. (📖 p. 7)
 - Inertial measurement unit is disconnected. (📖 p. 28)
 - The light control unit is disconnected. (📖 p. 30)
 - The tire pressure monitor control unit is disconnected. (📖 p. 30)
 - Heater control unit is disconnected. (📖 p. 31)
 - Connectivity Unit is disconnected. (📖 p. 32)

CAN bus light control unit – check the resistance.

-  Measure the resistance between the specified points.
Light control unit, connector **LN** pin **2** – Light control unit, connector **LN** pin **5**



CAN bus total resistance	
Resistance with connected engine control unit and ABS control unit: 20 °C (68 °F)	54 ... 66 Ω

- » If the specifications have not been met:
 - Check the CAN bus wires.
- » If the specifications have been met:
 - Contact customer service.

13.1 Function test of fuel pump controller



Functional description

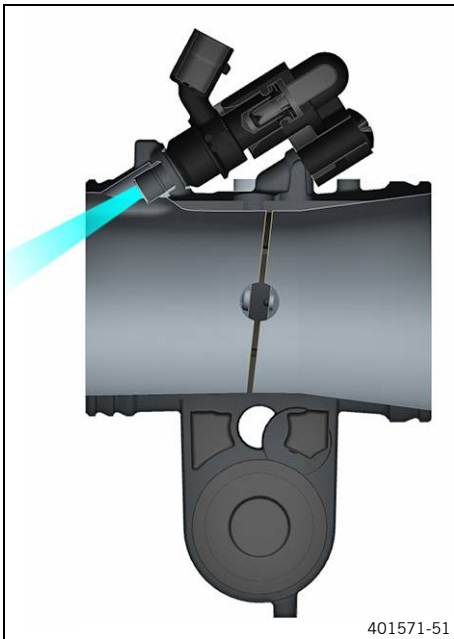
- The engine control unit activates the fuel pump controller.



Info

The test can be interrupted by pressing the "Quit" button.

13.2 Injector function



Functional description

Note

Material damage Insufficient fuel lubricant has a negative effect on the service life of the injection valve.

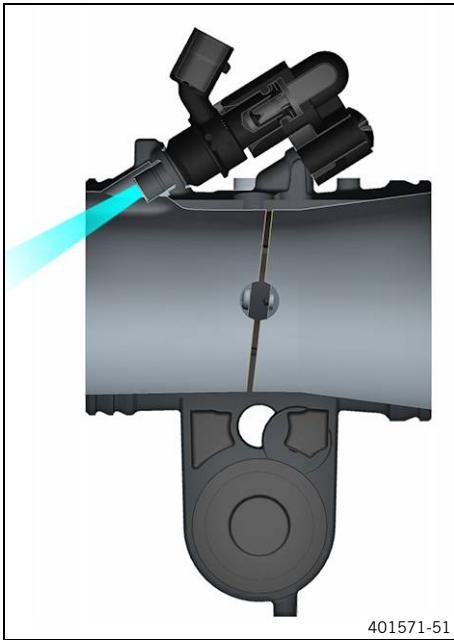
- Perform the actuator test only when the throttle valve body is connected to the fuel line.
- The injection valve cylinder 1 is supplied with voltage via clamp 15. After the actuator test has started, the engine control unit clocks the cylinder 1 injection valve to ground. An audible signal is used to check the function.



Info

The test ends automatically after ten seconds.

13.3 Injection valve 2 function



Functional description

Note

Material damage Insufficient fuel lubricant has a negative effect on the service life of the injection valve.

- Perform the actuator test only when the throttle valve body is connected to the fuel line.
- The injection valve cylinder 2 is supplied with voltage via terminal 15. After the actuator test has started, the engine control unit clocks the cylinder 2 injection valve to ground. An audible signal is used to check the function.



Info

The test ends automatically after ten seconds.

13.4 Function test, radiator fan relay

Functional description

- The engine control unit controls the radiator fan relay and the radiator fan starts working.



Info

The test can be interrupted by pressing the "Quit" button.

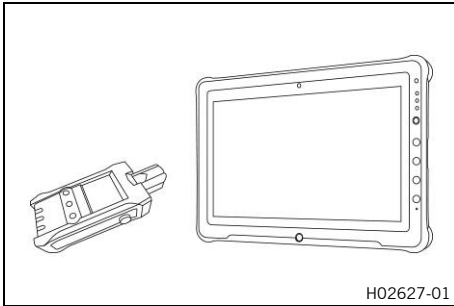
14.1 Programming the gear position sensor

Condition

The diagnostics tool is connected and running.

Main work

- Execute **"Engine control unit" > "Functions" > "Neutral gear calibration"**.
- Switch the ignition off and on again.
 - ✓ The green idle indicator lamp **N** lights up.



Final steps

- Program the shift shaft sensor. (📖 p. 465)



14.2 Programming the shift shaft sensor

Condition

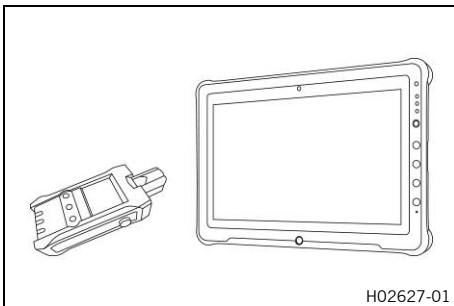
The diagnostics tool is connected and running.

Preliminary work

- Program the gear position sensor. (📖 p. 465)

Main work

- Execute **"Engine control unit" > "Functions" > "Quickshifter calibration"**.



14.3 Performing the initialization run

Condition

The diagnostics tool is connected and running.

Software version is up to date. All model-specific variant codes are correct.

The engine is cold.

- Execute **"Engine control unit" > "Functions" > "Clear specific adaptation values"**.

Guideline

All subfunctions must be executed.

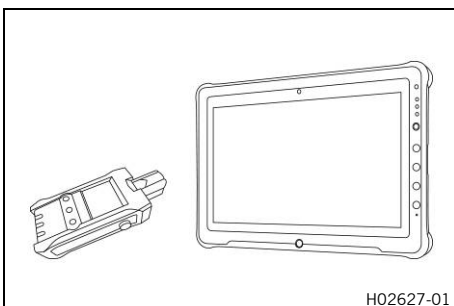
- ✓ All adaptation values are deleted.

- Switch on the ignition by turning the ignition key to the position .
- Do not operate the throttle grip and observe the waiting time.

Guideline

Waiting time without operating the throttle grip	20 s

- Program the gear position sensor. (📖 p. 465)



- Switch off the ignition for 20 seconds.
- Program the shift shaft sensor. (📖 p. 465)
- Program the cruise control system (if available).



Danger
Danger of poisoning Exhaust gases are toxic and inhaling them may result in unconsciousness and death.

- Always make sure there is sufficient ventilation when running the engine.
- Use effective exhaust extraction when starting or running the engine in an enclosed space.

- Start the engine without operating the throttle grip.
- Allow the engine to run at idle speed.

Guideline

Duration	5 fan cycles
Do not operate the throttle grip during the initialization process.	



Info
If initialization is not completed or if the initialization process was interrupted, the entire process must be restarted.

- Check adaptation values for plausibility and error memory for entries using the diagnostics tool.
- Switch off the ignition for 20 seconds.



14.4 Programming the tire pressure sensor



Info
To use the function in the combination instrument, the tire pressure display in the combination instrument must be enabled with the KTM diagnostics tool.

Condition

The diagnostics tool is connected and running.
Software version is up to date.

Configuring the threshold value

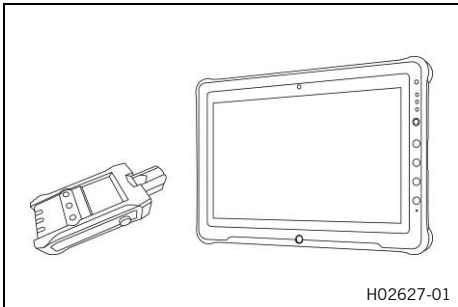
- Execute "Tire pressure monitoring system" > "Functions" > "Threshold value configuration".



Info
The instructions must be followed precisely.

Programming the transmitter ID – wheel set

- Execute "Tire pressure monitoring system" > "Functions" > "Transmitter ID – wheel set".



**Info**

The instructions must be followed precisely.
 The ID number is used to program the tire pressure sensor.
 The tire pressure sensor ID can be found on the tire pressure sensor.

- Clear the fault memory using the KTM diagnostics tool.
 - » Perform a test ride until the air pressure is displayed in the combination instrument (max. 10 minutes, min. 20 km/h).
- Read out the trouble code memory using the KTM diagnostics tool.



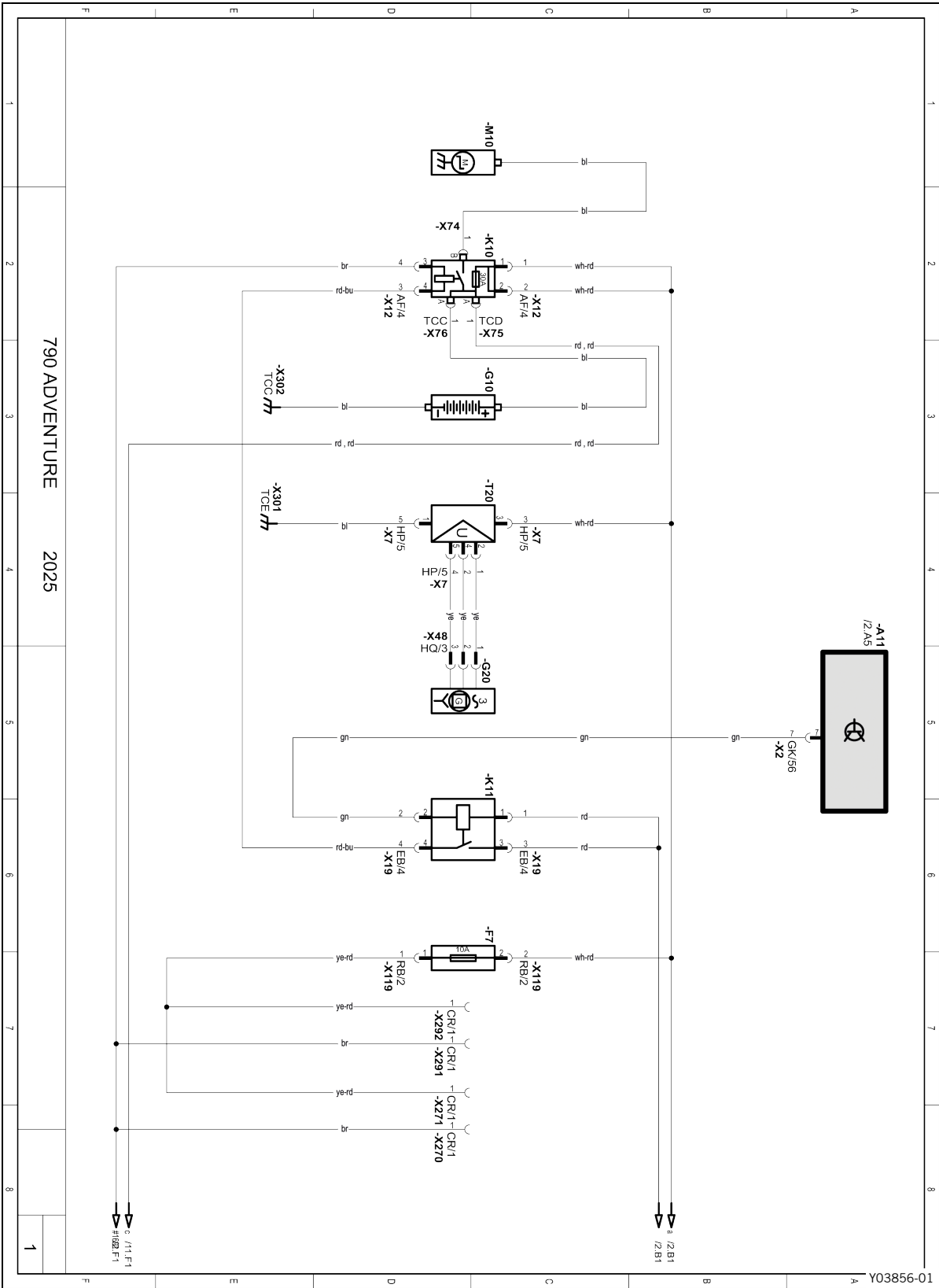
14.5 Initialize the inertial measurement unit

Condition

The diagnostics tool is connected and running.

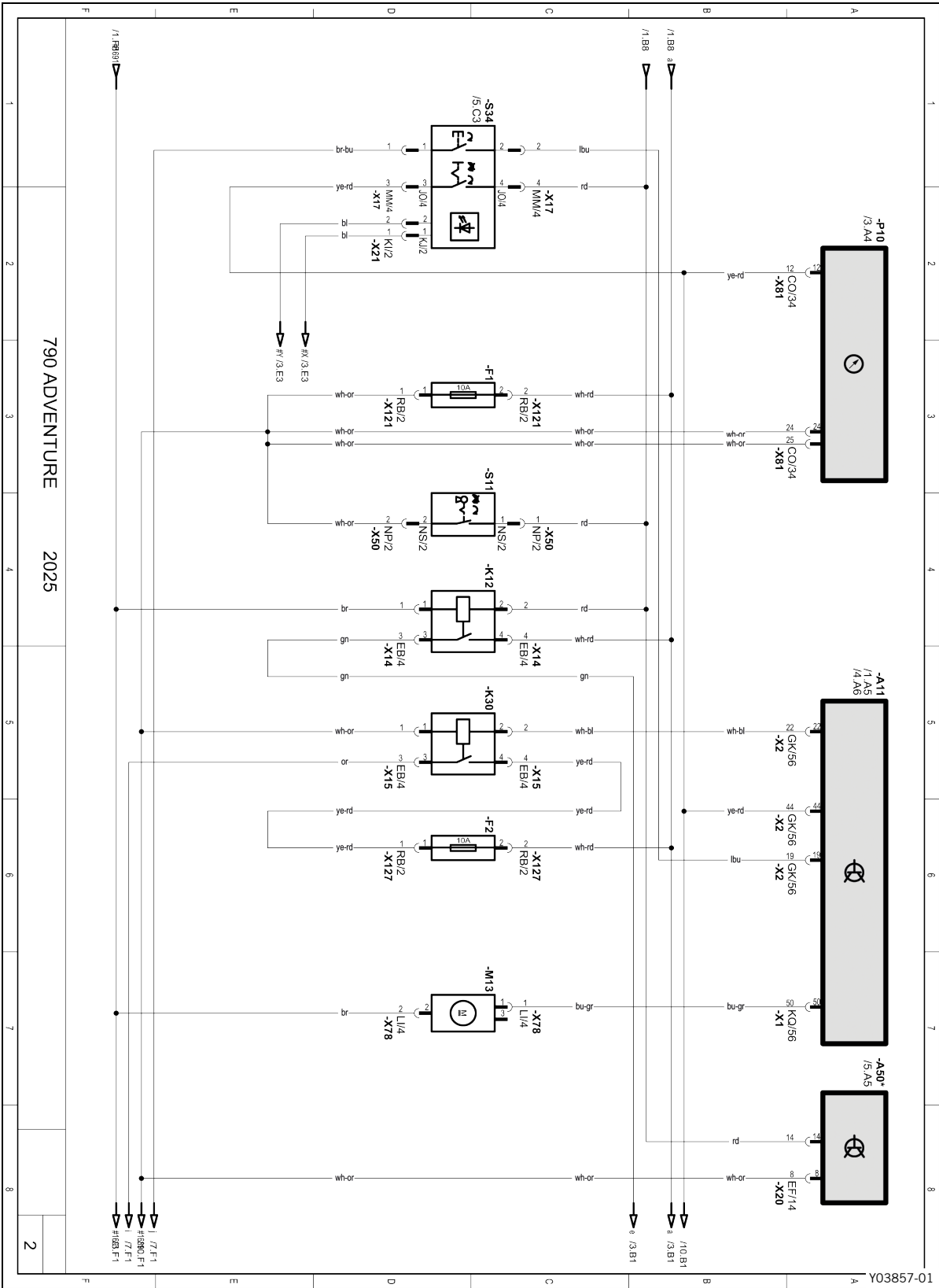
- Select **"Brake electronics" > "Functions" > "Calibrate IMU"**.
- Perform the initialization run. (📖 p. 465)
 - » If the initialization run is completed correctly:
 - Clear the fault memory using the KTM diagnostics tool.
 - Take a test ride.
 - Read out the trouble code memory using the KTM diagnostics tool.
 - » If the initialization run is not completed correctly:
 - Check the next possible cause:
 Incorrect installation position of the inertial measurement unit (📖 p. 379)





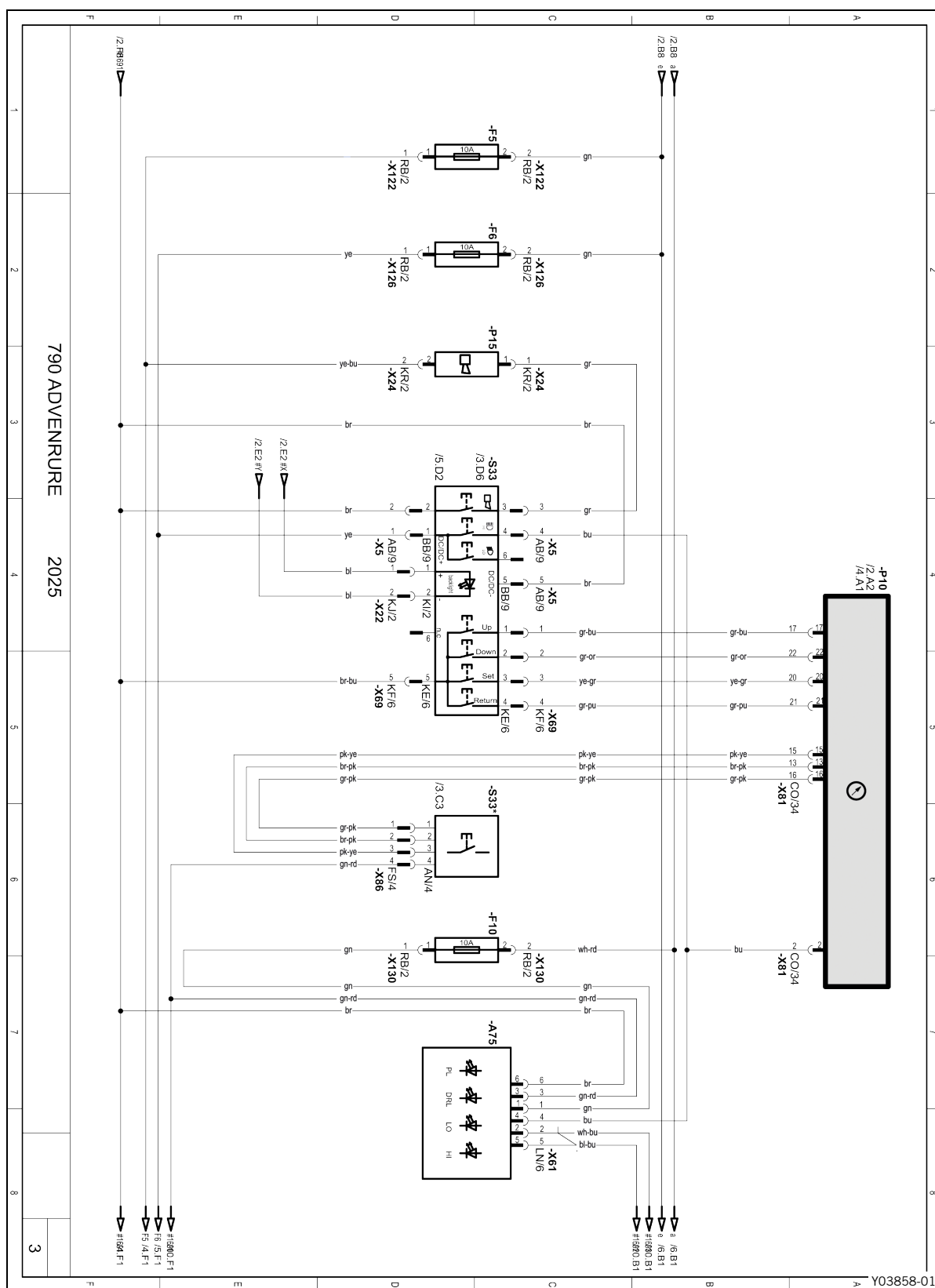
Components:

A11	Engine control unit
F7	Fuse
G10	12-V battery
G20	Alternator
K10	Starter relay with main fuse
K11	Start auxiliary relay
M10	Starter motor
T20	Voltage regulator
X270	Connector for accessories circuit, ground ACC 1
X271	Connector for accessories circuit, plus ACC 1
X291	Connector for accessories circuit, ground ACC 1
X292	Connector for accessories circuit, plus ACC 1



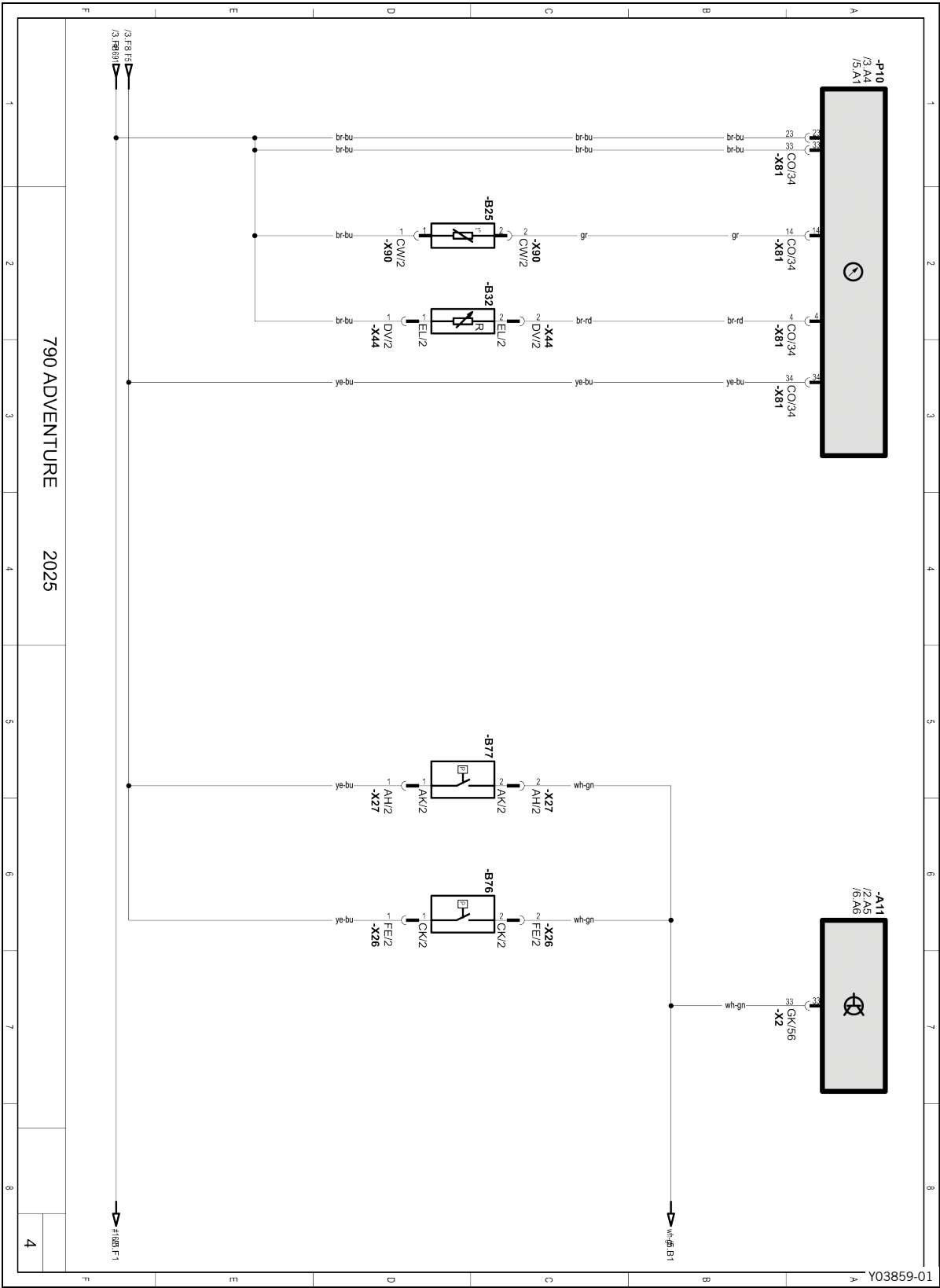
Components:

A11	Engine control unit
A50	Alarm system (if fitted)
F1	Fuse
F2	Fuse
K12	Light relay
K30	Power relay
M13	Fuel pump
P10	Combination instrument
S11	Ignition and steering lock
S34	Right combination switch



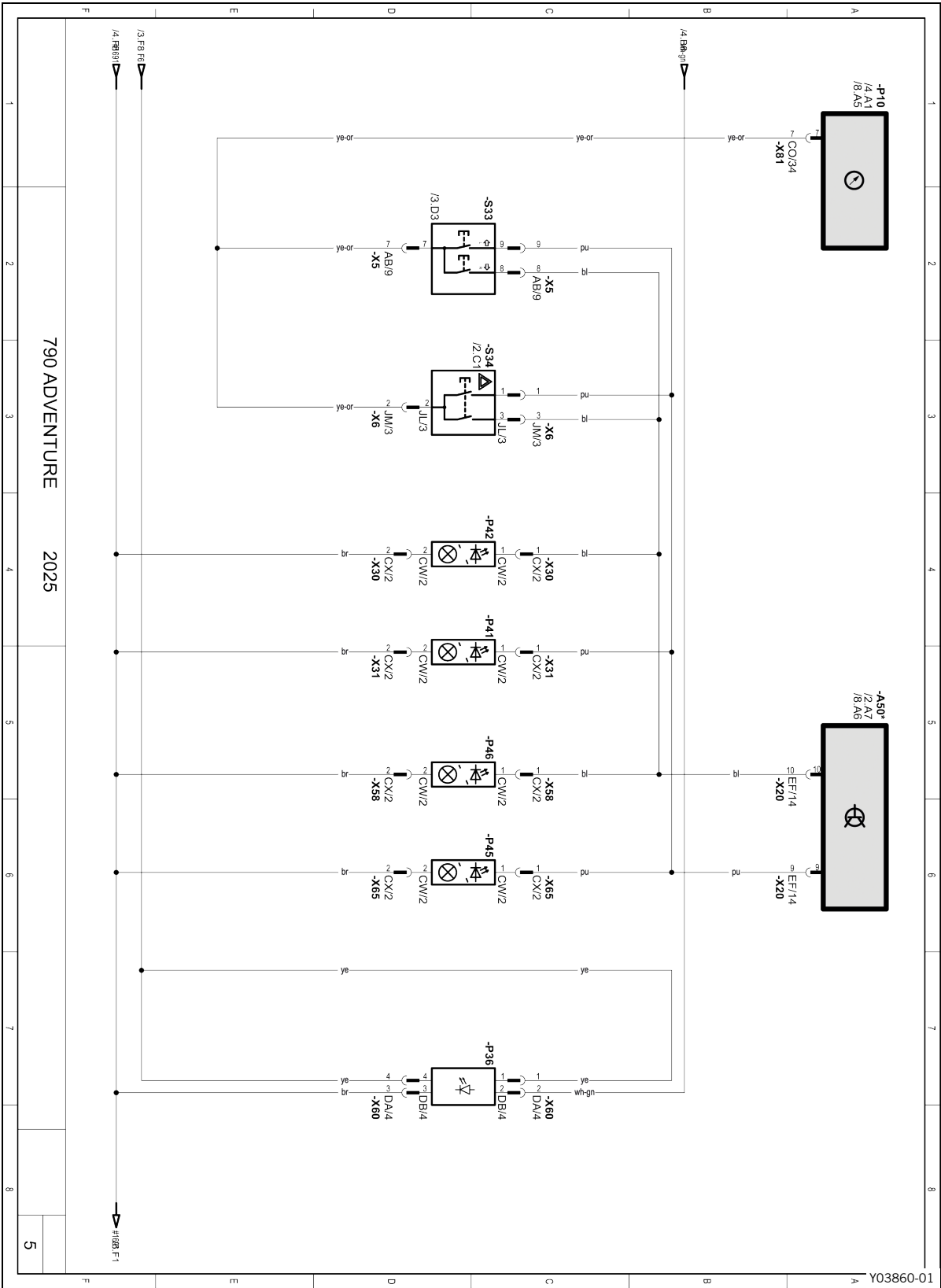
Components:

A75	Headlight unit
F5	Fuse
F6	Fuse
F10	Fuse
P10	Combination instrument
P15	Horn
S33	Left combination switch
S33*	Left combination switch cruise control system (if fitted)



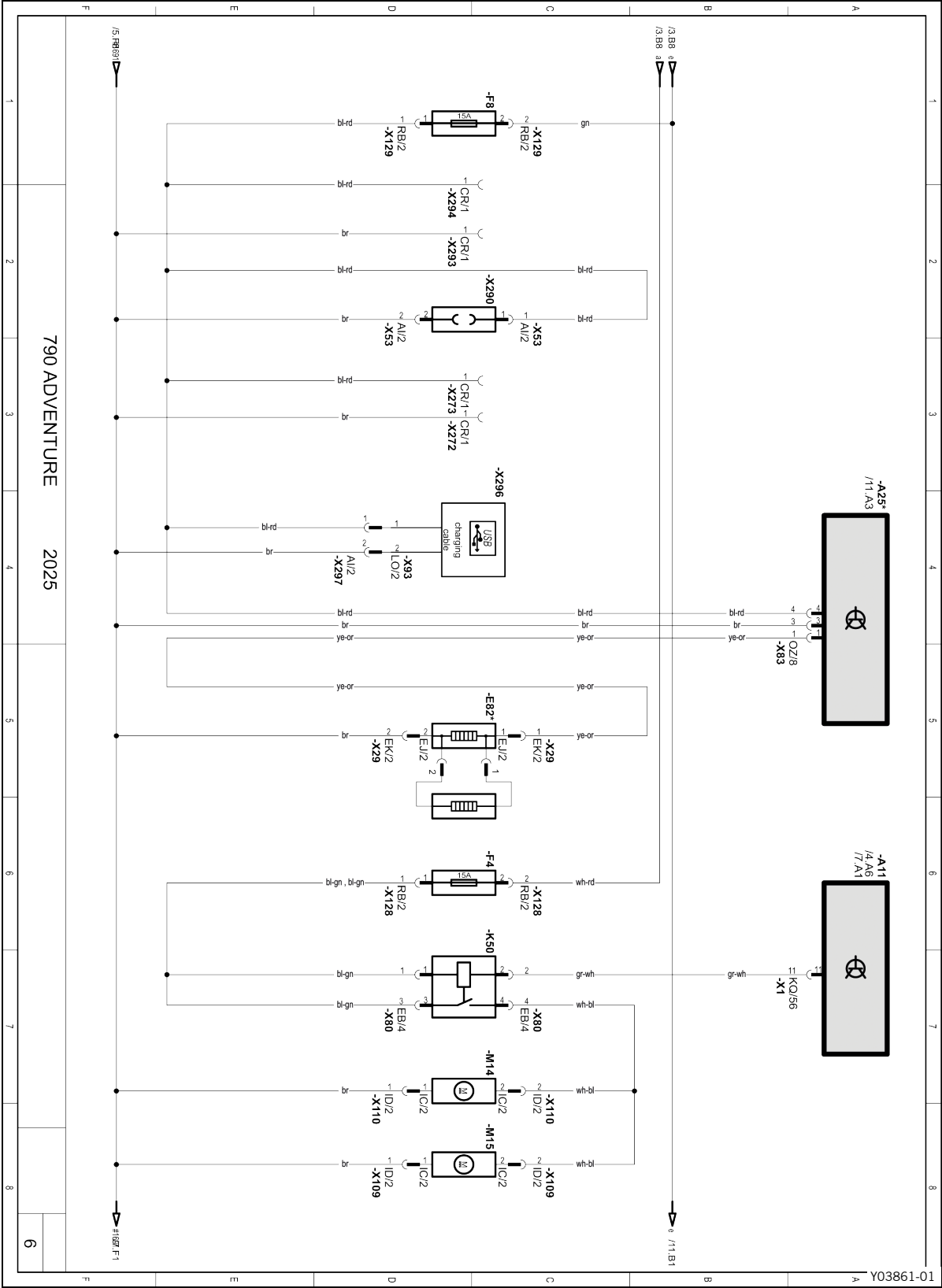
Components:

A11	Engine control unit
B25	Ambient air temperature sensor
B32	Fuel level sensor
B76	Front brake light switch
B77	Rear brake light switch
P10	Combination instrument



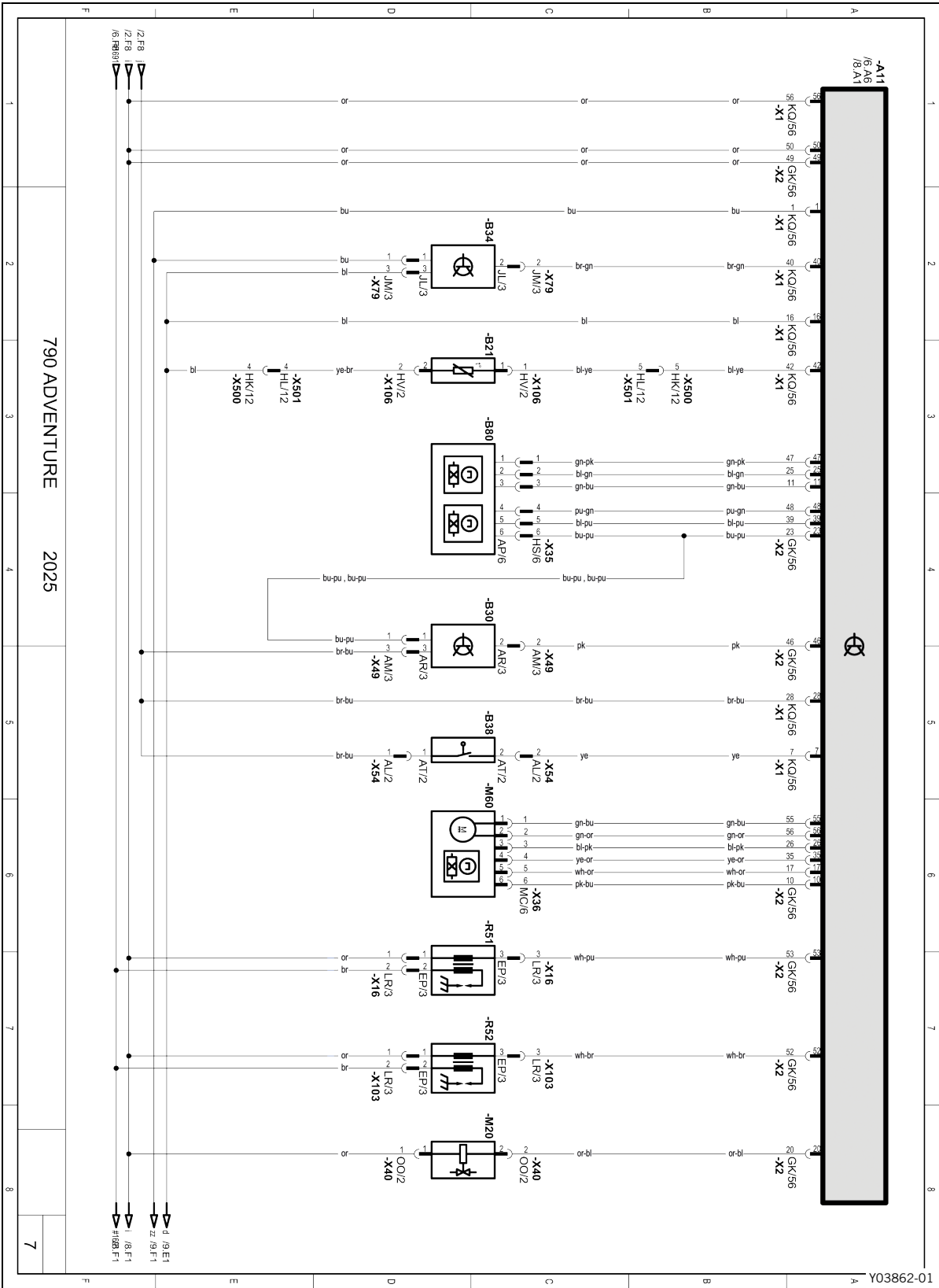
Components:

A50	Alarm system (if fitted)
P10	Combination instrument
P36	Brake/tail light
P41	Turn signal, front left
P42	Turn signal, front right
P45	Turn signal, rear left
P46	Turn signal, rear right
S33	Left combination switch
S34	Right combination switch



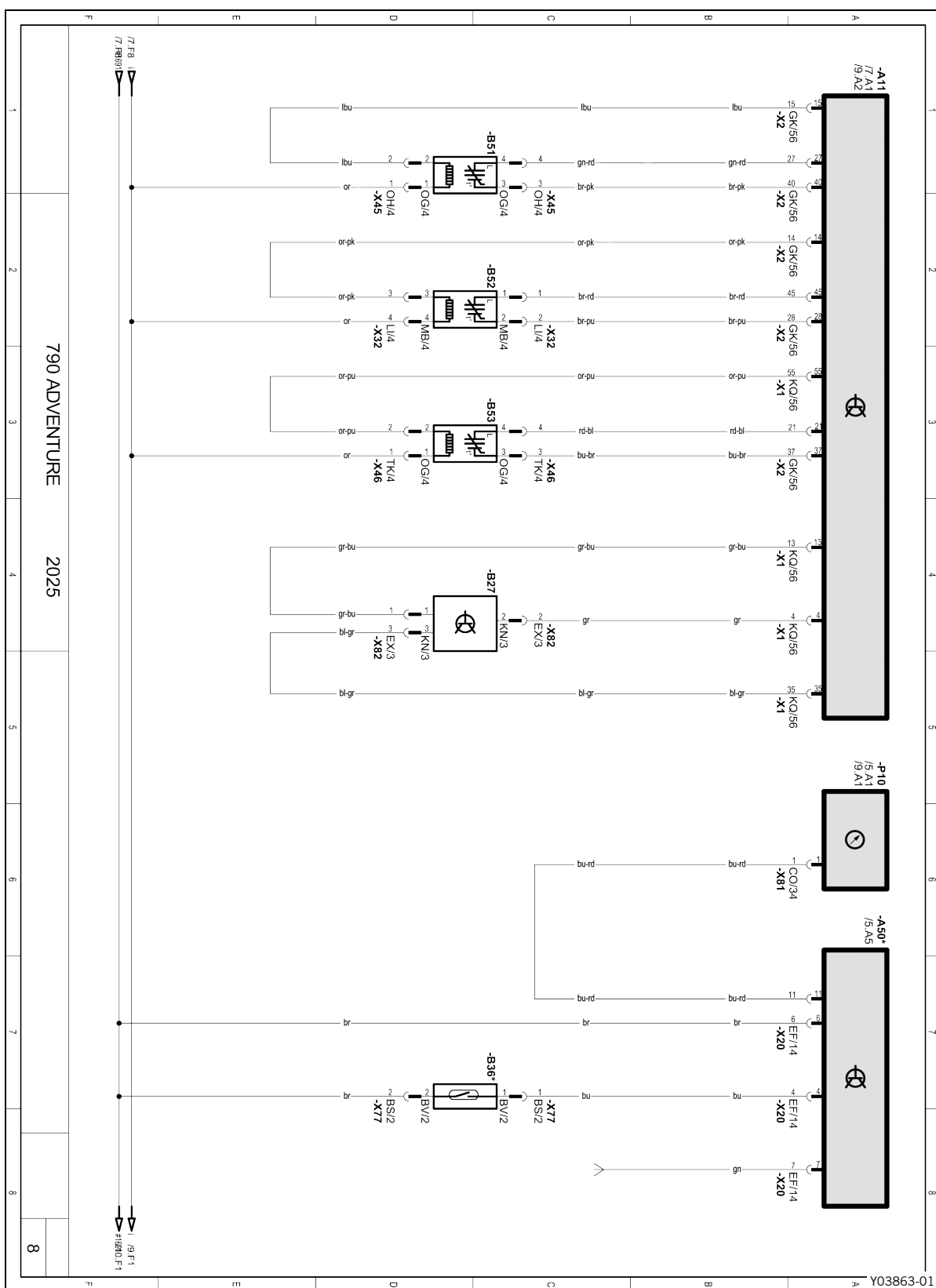
Components:

A11	Engine control unit
A25	Heater control unit (if fitted)
E82	Heated grip
F4	Fuse
F8	Fuse
K50	Radiator fan relay
M14	Radiator fan 1
M15	Radiator fan 2
X272	Connector for accessories circuit, ground ACC 2
X273	Connector for accessories circuit, plus ACC 2
X293	Connector for accessories circuit, ground ACC 2
X294	Connector for accessories circuit, plus ACC 2
X296	USB-A charging socket



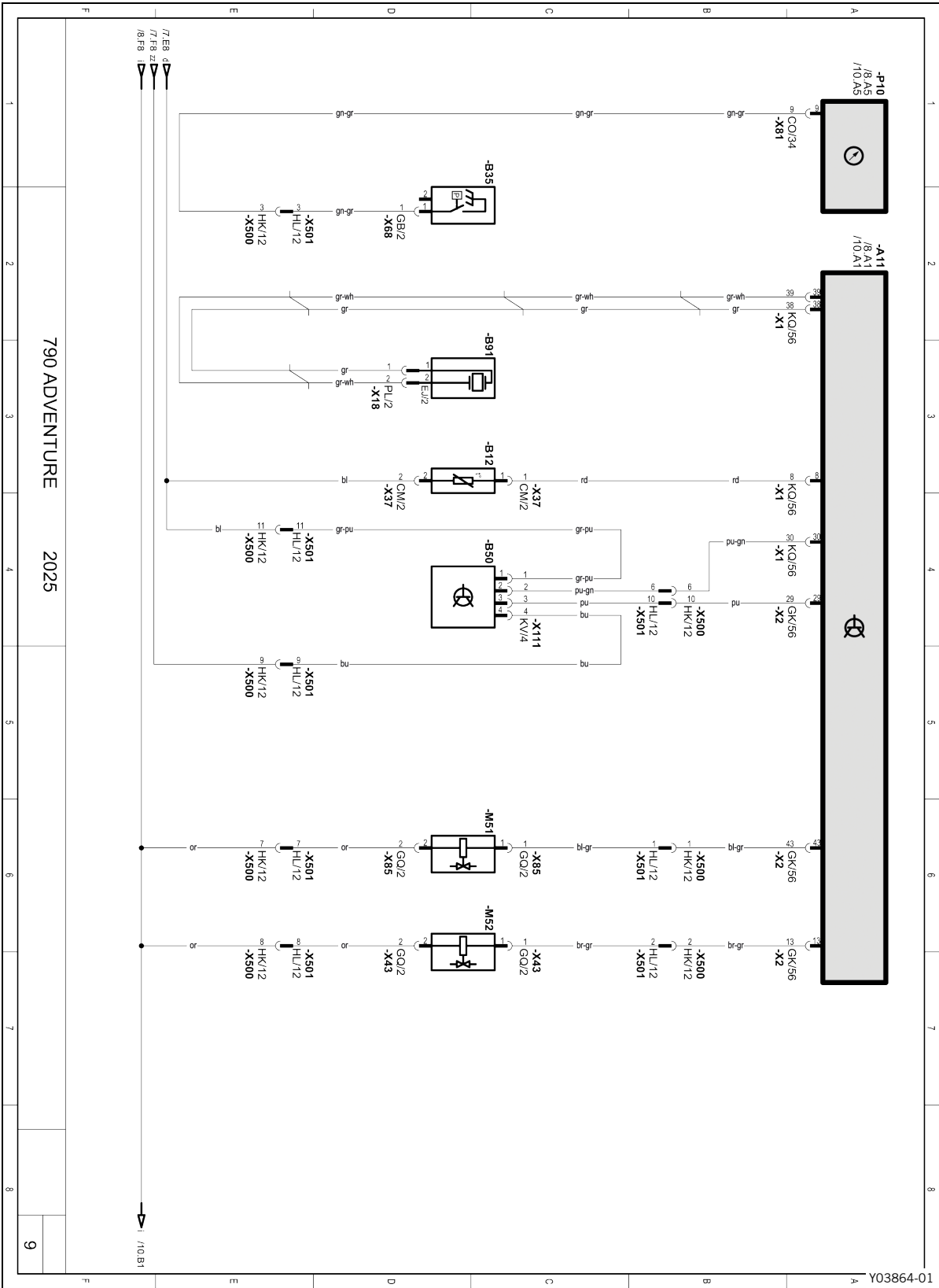
Components:

A11	Engine control unit
B21	Coolant temperature sensor, cylinder 1
B30	Side stand sensor
B34	Gear position sensor
B38	Clutch switch
B80	Accelerator position sensor
M20	Fuel vapor valve
M60	Throttle valve actuator and throttle valve position sensor
R51	Ignition coil, cylinder 1
R52	Ignition coil, cylinder 2



Components:

A11	Engine control unit
A50	Alarm system (if fitted)
B27	Shift shaft sensor
B36	Alarm system switch (if fitted)
B51	Lambda sensor, cylinder 1
B52	Lambda sensor, cylinder 2
B53	Lambda sensor after catalytic converter
P10	Combination instrument

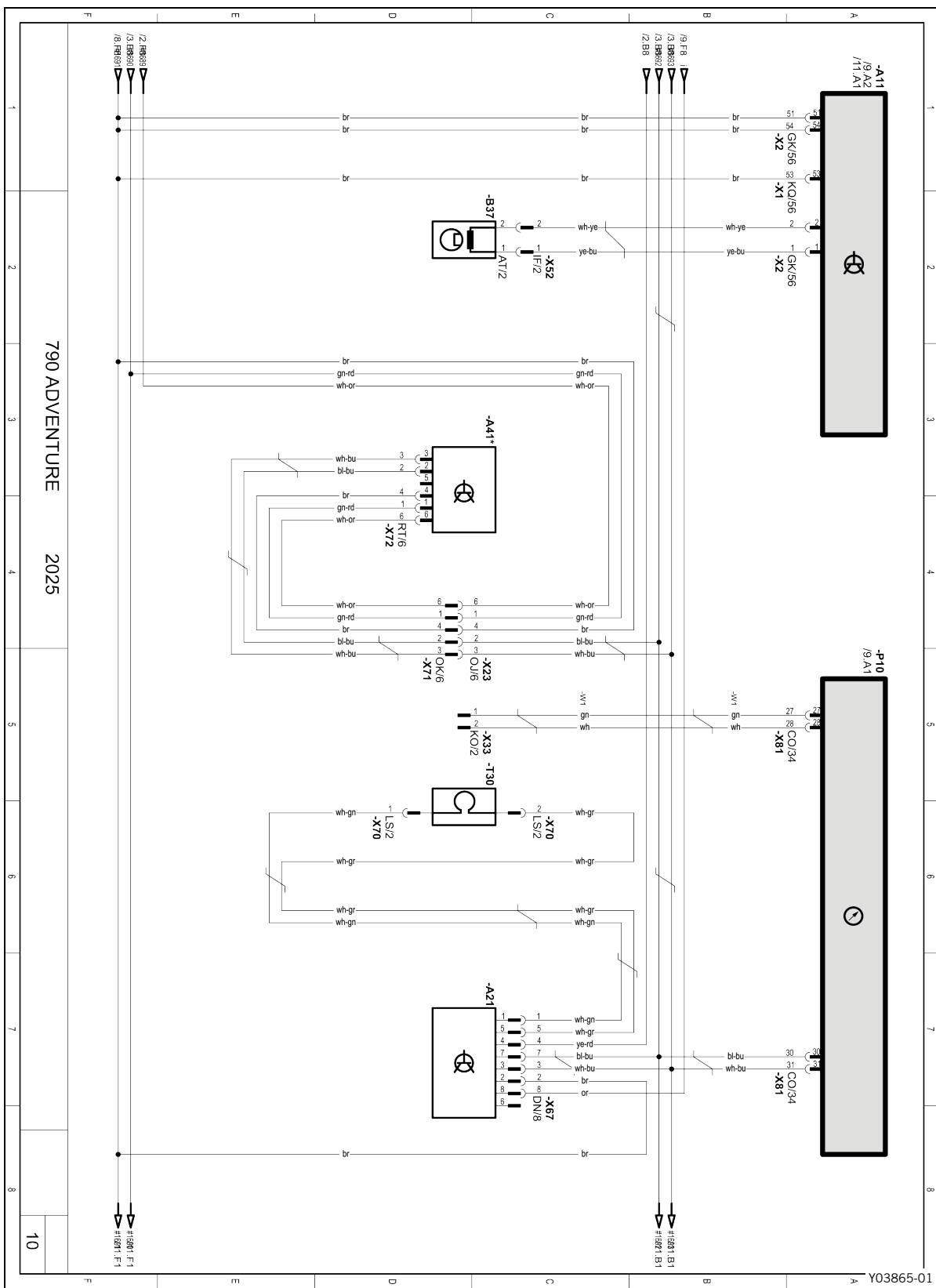


Components:

A11	Engine control unit
B12	Intake air temperature sensor
B35	Oil pressure sensor
B50	Intake manifold pressure sensor, cylinder 1 and 2
B91	Knock sensor
M51	Injection valve, cylinder 1
M52	Injection valve, cylinder 2
P10	Combination instrument

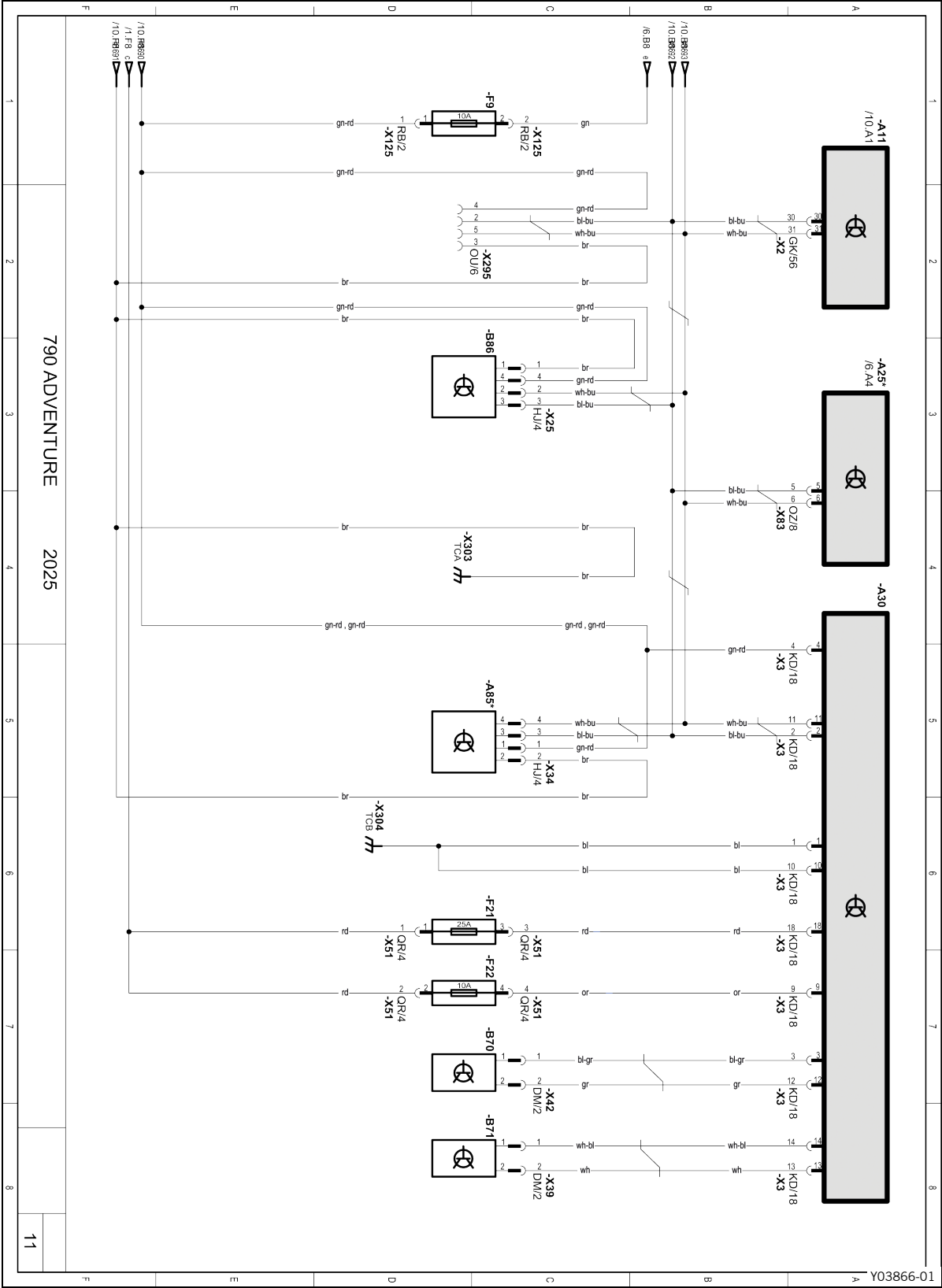
15 WIRING DIAGRAM

15.10 Page 10



Components:

A11	Engine control unit
A21	Immobilizer control unit
A41	Connectivity Unit (if installed)
B37	Crankshaft speed sensor
P10	Combination instrument
T30	Antenna of the immobilizer control unit



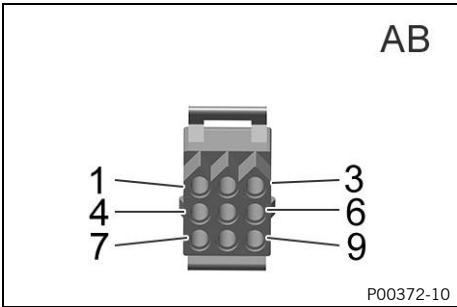
Components:

A11	Engine control unit
A25	Heater control unit (if fitted)
A30	ABS control unit
A85	Tire pressure monitoring system (if fitted)
B70	Front wheel speed sensor
B71	Rear wheel speed sensor
B86	Inertial measurement unit
F9	Fuse
F21	ABS return pump fuse
F22	ABS hydraulic unit fuse
X295	Diagnostics connector

Cable colors:

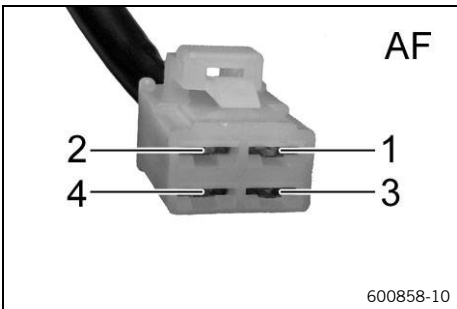
bl	Black
br	Brown
bu	Blue
gn	Green
gr	Gray
lbu	Light blue
or	Orange
pk	Pink
pu	Violet
rd	Red
wh	White
ye	Yellow

16.1 Combination switch left socket connector AB



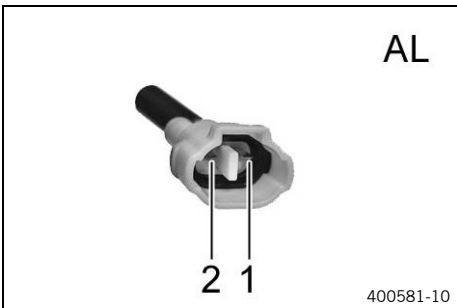
Pin overview	
1	Power supply
2	Ground
3	Control wire, horn
4	Control wire, high beam
5	Ground
6	Not assigned
7	Power supply
8	Control wire, right turn signal
9	Control wire, left turn signal

16.2 Starter relay, connector AF



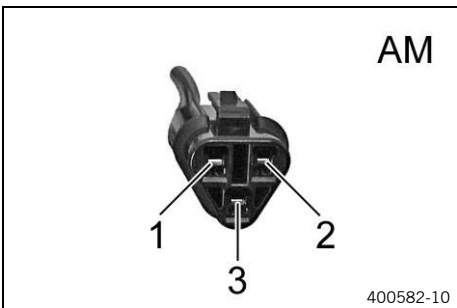
Pin overview	
1	Battery voltage (12 V)
2	Battery voltage (12 V)
3	Control wire, starter relay
4	Ground wire

16.3 Clutch switch, connector AL

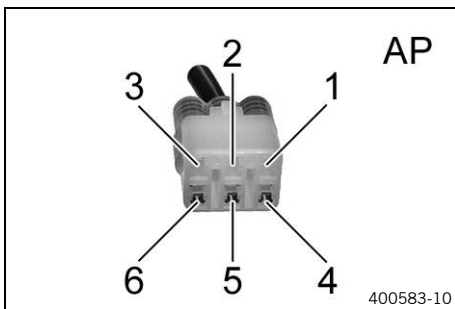


Pin overview	
1	Ground (terminal 31)
2	Signal wire

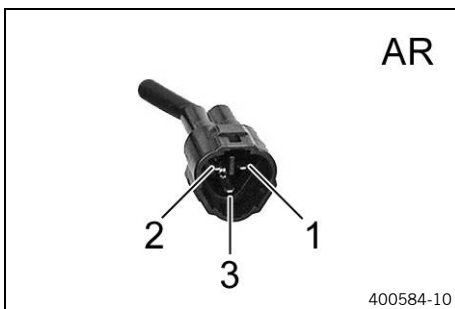
16.4 Side stand sensor connector AM



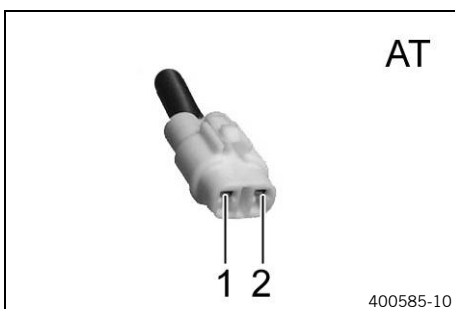
Pin overview	
1	Power supply, sensor
2	Signal wire
3	Sensor ground

16.5 Accelerator position sensor connector AP**Pin overview**

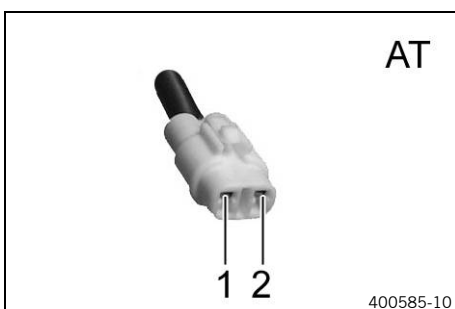
1	Circuit E accelerator position sensor signal wire
2	Sensor ground 2
3	Circuit E sensor supply voltage
4	Circuit D accelerator position sensor signal wire
5	Sensor ground 1
6	Circuit D sensor supply voltage

16.6 Side stand sensor connector AR**Pin overview**

1	Power supply, sensor
2	Signal wire
3	Sensor ground

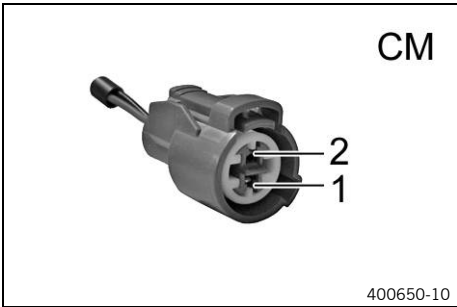
16.7 Crankshaft speed sensor, connector AT**Pin overview**

1	Crankshaft speed sensor, ground
2	Signal wire

16.8 Clutch switch, connector AT**Pin overview**

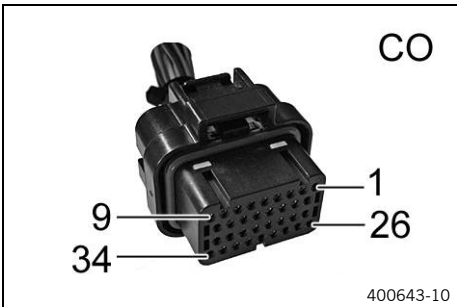
1	Ground
2	Signal wire

16.9 Intake air temperature sensor connector CM



Pin overview	
1	Signal wire
2	Ground

16.10 Combination instrument control unit connector CO

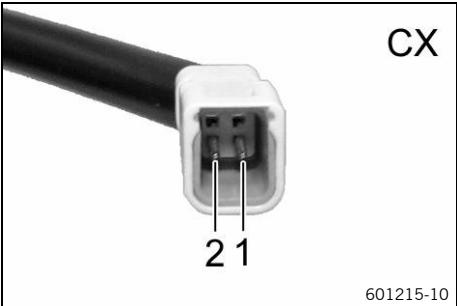


Pin overview	
1	Signal wire, LED alarm system
2	Control wire, high beam
3	Not assigned
4	Signal wire, fuel level sensor
5	Not assigned
6	Not assigned
7	Power supply, turn signal switch
8	Not assigned
9	Signal wire, oil pressure sensor
10	Not assigned
11	Not assigned
12	Signal wire, emergency OFF switch
13	Cruise control system, switch SET
14	Signal wire, ambient air temperature sensor
15	Cruise control system, switch
16	Cruise control system, switch Resume
17	Menu button UP
18	Not assigned
19	Not assigned
20	Menu button SET
21	Menu button BACK
22	Menu button DOWN
23	Ground (terminal 31)
24	Power supply (terminal 30)
25	Power supply (terminal 30)
26	Not assigned
27	BroadR-Reach, signal wire 1
28	BroadR-Reach, signal wire 2
29	Not assigned
30	CAN high
31	CAN low
32	Not assigned
33	Ground (terminal 31)

34	Power supply (terminal 15)

16.11

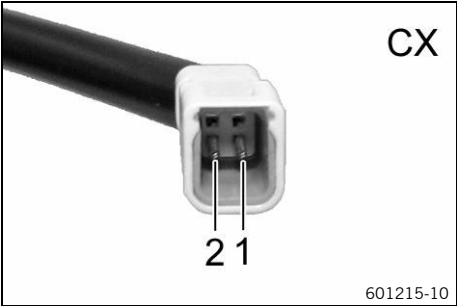
Front left turn signal connector CX



Pin overview	
1	Control wire
2	Ground

16.12

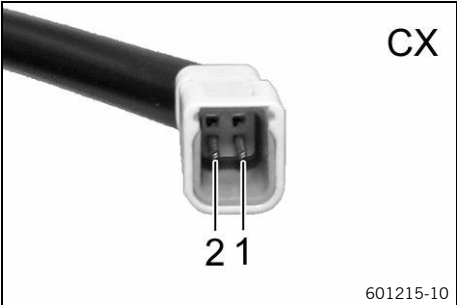
Front right turn signal connector CX



Pin overview	
1	Control wire
2	Ground

16.13

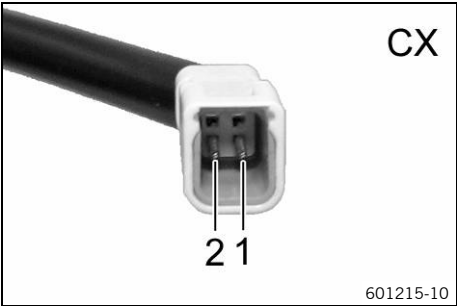
Rear left turn signal connector CX



Pin overview	
1	Control wire
2	Ground

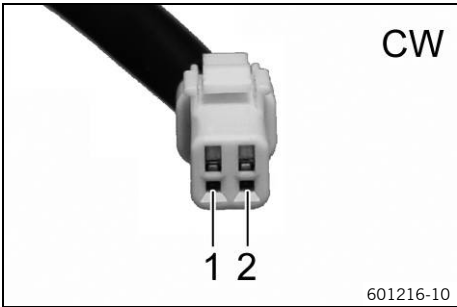
16.14

Rear right turn signal connector CX



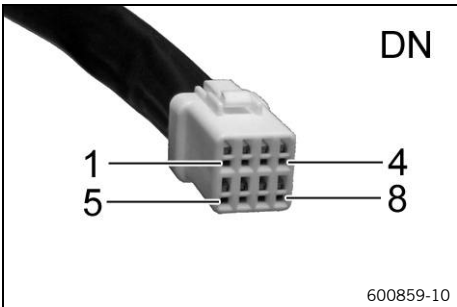
Pin overview	
1	Control wire
2	Ground

16.15 Ambient air temperature sensor, connector CW



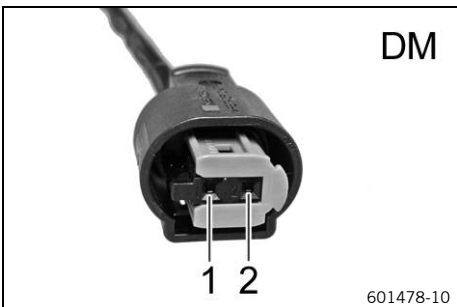
Pin overview	
1	Ground (terminal 31)
2	Signal wire

16.16 Immobilizer control unit, connector DN



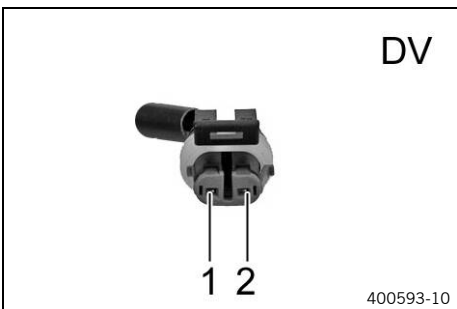
Pin overview	
1	Signal wire, antenna
2	Ground
3	CAN low
4	Power supply (terminal 15)
5	Signal wire, antenna
6	Not assigned
7	CAN high
8	Power supply (terminal 30)

16.17 Wheel speed sensor connector DM



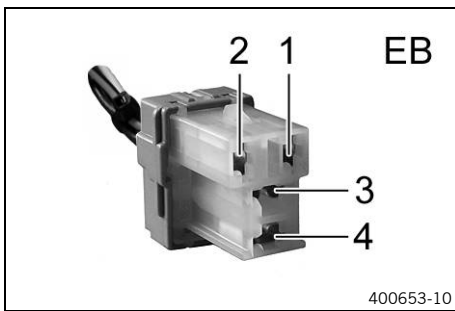
Pin overview	
1	Signal wire
2	Power supply

16.18 Fuel level sensor, connector DV



Pin overview	
1	Ground (terminal 31)
2	Signal wire

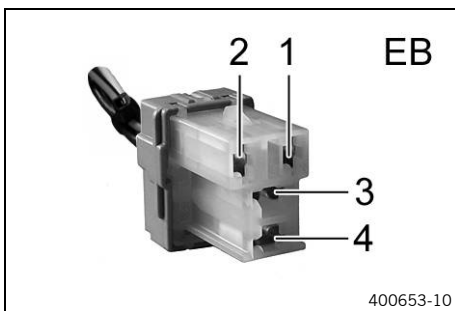
16.19 Power relay connector EB



Pin overview

1	Control wire positive
2	Control wire ground
3	Power supply, engine control unit+consumers
4	Control wire (terminal 30)

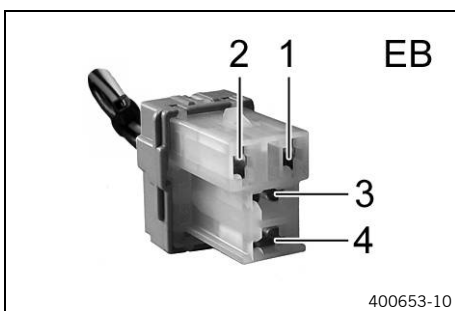
16.20 Starter relay socket connector EB



Pin overview

1	Power supply, control circuit
2	Control wire, control circuit
3	Power supply, working circuit
4	Power supply, working circuit

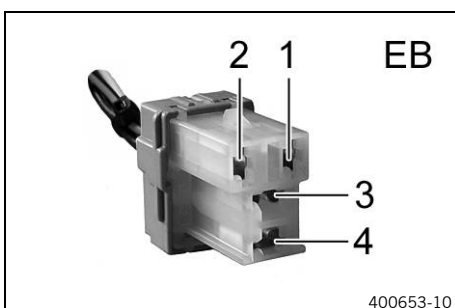
16.21 Radiator fan relay, connector EB



Pin overview

1	Power supply, control circuit
2	Control wire, control circuit
3	Power supply, working circuit
4	Power supply, working circuit

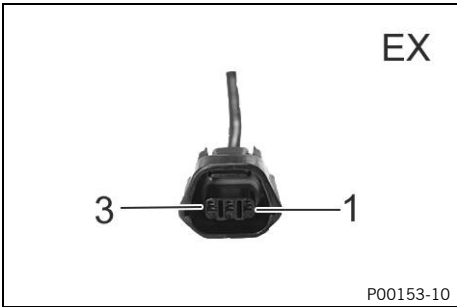
16.22 Fuel pump relay, connector EB



Pin overview

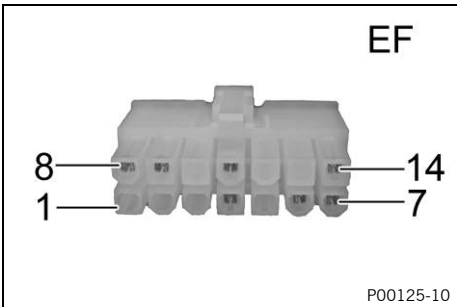
1	Power supply
2	Control wire
3	Power supply
4	Power supply

16.23 Shift shaft sensor connector EX



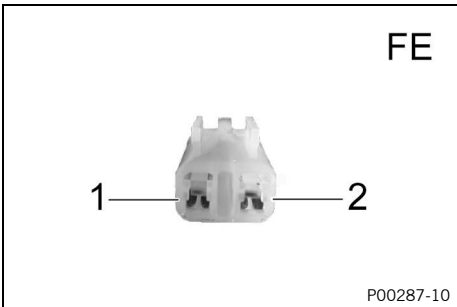
Pin overview	
1	Power supply
2	Signal wire
3	Sensor ground

16.24 Alarm system, connector EF



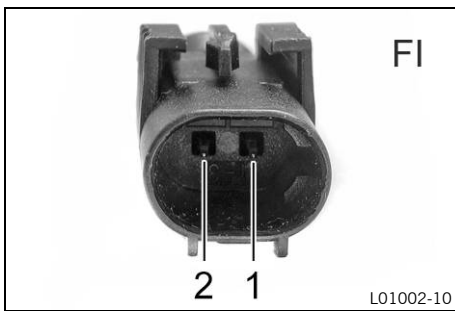
Pin overview	
1	Not assigned
2	Not assigned
3	Not assigned
4	Signal wire, alarm system switch
5	Not assigned
6	Ground
7	Antenna
8	Power supply
9	Control wire, left turn signal
10	Control wire, right turn signal
11	Signal wire, immobilizer indicator lamp
12	Not assigned
13	Not assigned
14	Power supply, ignition plus (terminal 15)

16.25 Front brake light switch socket connector FE



Pin overview	
1	Power supply (terminal 15)
2	Signal wire

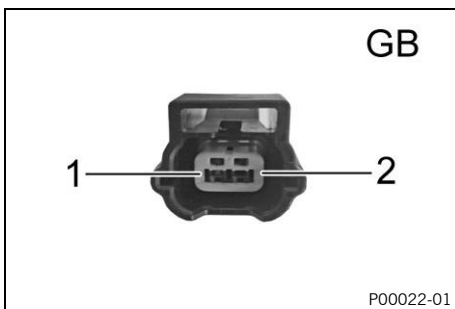
16.26 Wheel speed sensor connector FI



Pin overview

1	Signal wire
2	Power supply

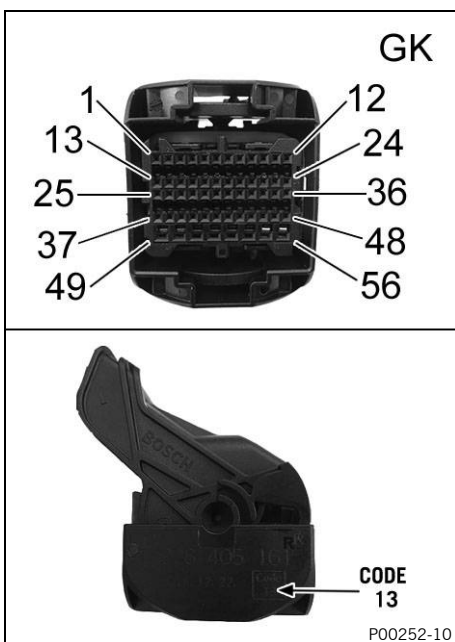
16.27 Oil pressure sensor, connector GB



Pin overview

1	Signal wire
2	Not assigned

16.28 Engine control unit connector GK

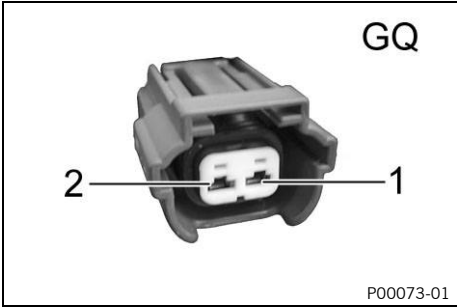


Pin overview

1	Crankshaft speed sensor, plus
2	Crankshaft speed sensor, minus
3	Not assigned
4	Not assigned
5	Not assigned
6	Not assigned
7	Control wire, starter relay
8	Not assigned
9	Not assigned
10	Power supply, throttle valve position sensor
11	Accelerator position sensor power supply circuit E
12	Not assigned
13	Control wire, injection valve cylinder 2
14	Control wire, lambda sensor heater for cylinder 2
15	Control wire, lambda sensor heater cylinder 1
16	Not assigned
17	Signal wire, throttle valve position sensor circuit B
18	Not assigned
19	Control wire, engine start
20	Control wire, fuel vapor valve
21	Signal wire, lambda sensor 3 after catalytic converter
22	Control wire, power relay

23	Accelerator position sensor power supply circuit D
24	Not assigned
25	Accelerator position sensor ground circuit E
26	Sensor ground
27	Signal wire, lambda sensor for cylinder 1
28	Sensor ground
29	Signal wire, induction manifold pressure sensor, cylinder 1
30	CAN high
31	CAN low
32	Not assigned
33	Signal wire, brake light
34	Not assigned
35	Signal wire, throttle valve position sensor circuit A
36	Not assigned
37	Sensor ground
38	Not assigned
39	Signal wire, accelerator position sensor circuit D
40	Sensor ground
41	Not assigned
42	Not assigned
43	Control wire, injection valve cylinder 1
44	Power supply (terminal 15)
45	Signal wire, lambda sensor cylinder 2
46	Signal wire, side stand sensor
47	Signal wire, accelerator position sensor circuit E
48	Signal wire, accelerator position sensor circuit D
49	Power supply (terminal 15)
50	Power supply (terminal 15)
51	Ground 1 (terminal 31)
52	Control wire, ignition coil 1, cylinder 2
53	Control wire, ignition coil 1, cylinder 1
54	Ground 2 (terminal 31)
55	Control wire 1, throttle valve actuator
56	Control wire 2, throttle valve actuator

16.29 Injection valve cylinder 1, connector GQ

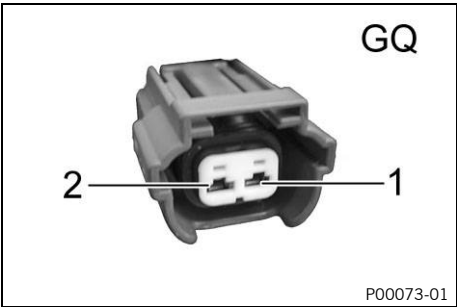


Pin overview

1	Control wire
2	Power supply

16.30

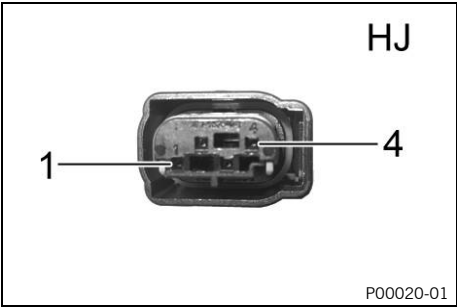
Injection valve cylinder 2, connector GQ



Pin overview	
1	Control wire
2	Power supply

16.31

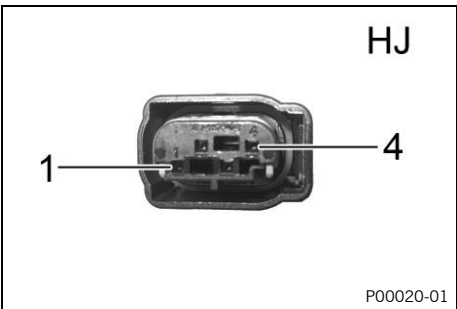
Inertial measurement unit connector HJ



Pin overview	
1	Ground (terminal 31)
2	CAN low
3	CAN high
4	Power supply

16.32

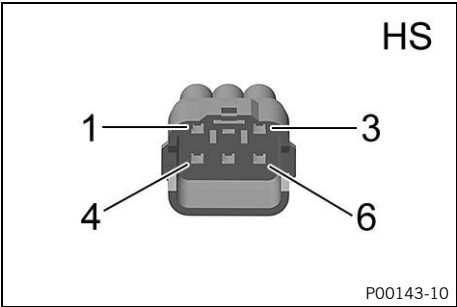
Control unit, tire pressure monitor, connector HJ



Pin overview	
1	Power supply
2	Ground (terminal 31)
3	CAN high
4	CAN low

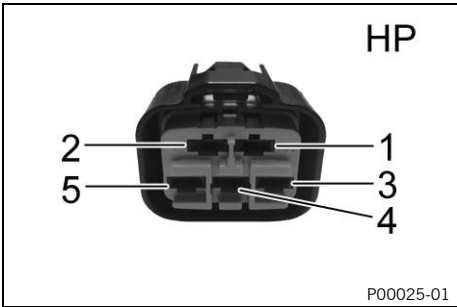
16.33

Accelerator position sensor connector HS



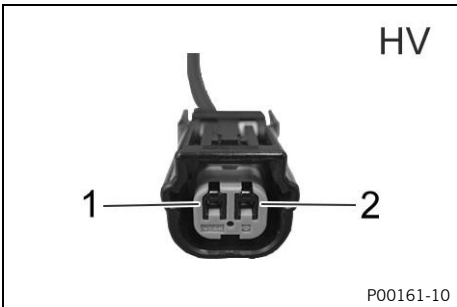
Pin overview	
1	Circuit E accelerator position sensor signal wire
2	Sensor ground E
3	Circuit E sensor supply voltage
4	Circuit D accelerator position sensor signal wire
5	Sensor ground D
6	Circuit D sensor supply voltage

16.34 Voltage regulator, connector HP



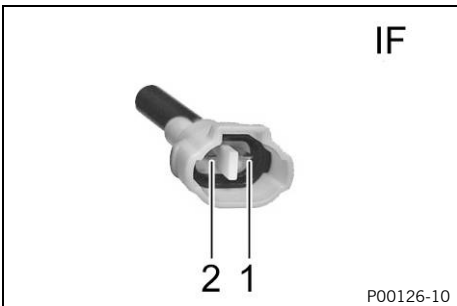
Pin overview	
1	AC voltage, phase 1
2	AC voltage, phase 2
3	Power supply (terminal 30)
4	AC voltage, phase 3
5	Ground (terminal 31)

16.35 Coolant temperature sensor, connector HV



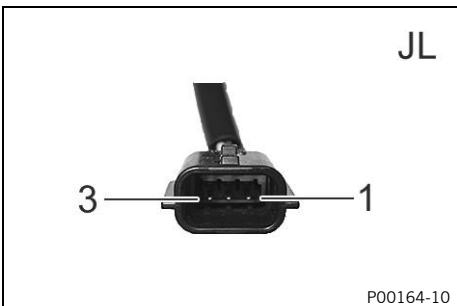
Pin overview	
1	Signal wire
2	Sensor ground

16.36 Crankshaft speed sensor, connector IF



Pin overview	
1	Crankshaft speed sensor, ground
2	Signal wire

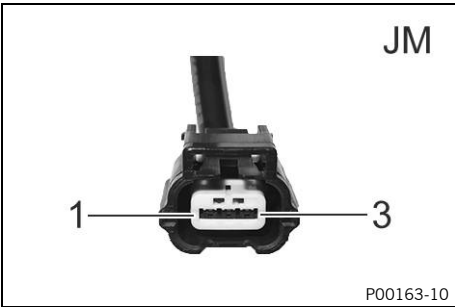
16.37 Gear position sensor, connector JL



Pin overview	
1	Power supply
2	Signal wire
3	Ground

16.38

Gear position sensor, connector JM

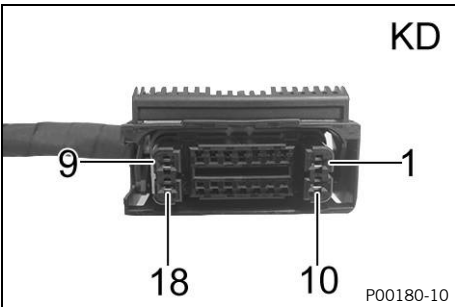


Pin overview

1	Power supply
2	Signal wire
3	Sensor ground

16.39

ABS control unit connector KD

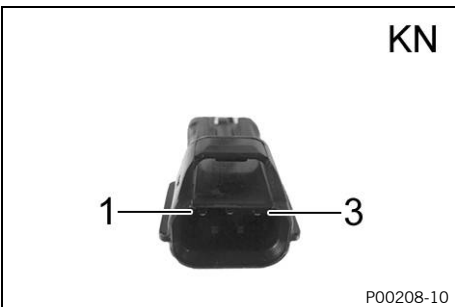


Pin overview

1	Ground (terminal 31)
2	CAN high
3	Signal wire, front wheel speed sensor
4	Power supply (terminal 15)
5	Not assigned
6	Not assigned
7	Not assigned
8	Not assigned
9	Power supply (terminal 30)
10	Ground (terminal 31)
11	CAN low
12	Signal wire, front wheel speed sensor
13	Signal wire, rear wheel speed sensor
14	Signal wire, rear wheel speed sensor
15	Not assigned
16	Not assigned
17	Not assigned
18	Power supply (terminal 30)

16.40

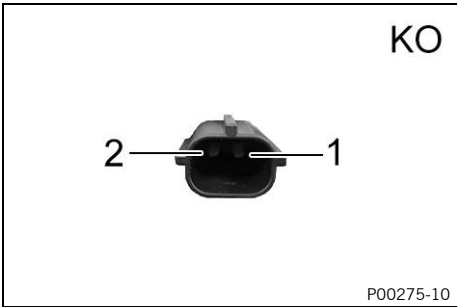
Shift shaft sensor connector KN



Pin overview

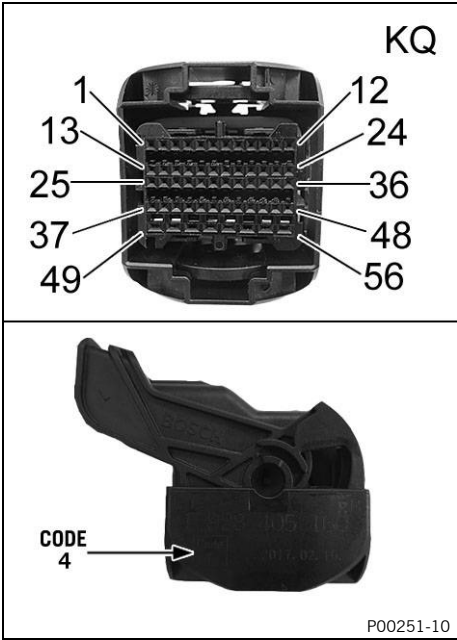
1	Power supply
2	Signal wire
3	Sensor ground

16.41 Connectivity Unit connector KO



Pin overview	
1	BroadR-Reach, signal wire 1
2	BroadR-Reach, signal wire 2

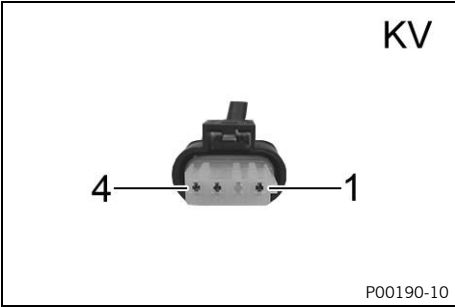
16.42 Engine control unit connector KQ



Pin overview	
1	Power supply 1 sensors
2	Not assigned
3	Not assigned
4	Signal wire, shift shaft sensor
5	Not assigned
6	Not assigned
7	Signal wire, clutch switch
8	Signal wire, intake air temperature sensor
9	Not assigned
10	Not assigned
11	Control wire, radiator fan relay
12	Not assigned
13	Power supply for shift shaft sensor
14	Not assigned
15	Not assigned
16	Sensor ground
17	Not assigned
18	Not assigned
19	Not assigned
20	Not assigned
21	Not assigned
22	Not assigned
23	Not assigned
24	Not assigned
25	Not assigned
26	Not assigned
27	Not assigned
28	Sensor ground
29	Not assigned
30	Signal wire, manifold air pressure sensor, cylinder 2
31	Not assigned
32	Not assigned
33	Not assigned

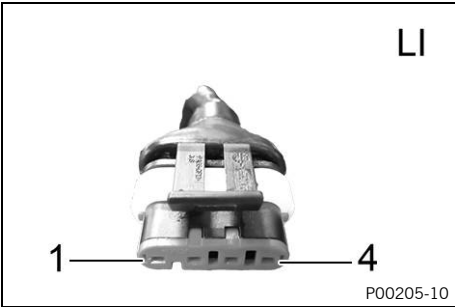
34	Not assigned
35	Sensor ground, shift shaft sensor
36	Not assigned
37	Not assigned
38	Signal wire 1, knock sensor
39	Signal wire 2, knock sensor
40	Signal wire, gear position sensor
41	Not assigned
42	Signal wire, coolant temperature sensor
43	Not assigned
44	Not assigned
45	Not assigned
46	Not assigned
47	Not assigned
48	Not assigned
49	Not assigned
50	Not assigned
51	Not assigned
52	Not assigned
53	Ground 3 (terminal 31)
54	Not assigned
55	Control wire, lambda sensor heater 3 after catalytic converter
56	Power supply (terminal 15)

16.43 Induction manifold pressure sensor connector KV



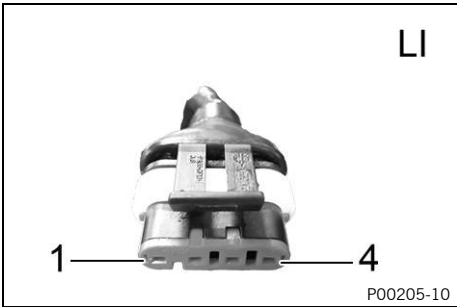
Pin overview	
1	Sensor ground
2	Signal wire, cylinder 2
3	Signal wire, cylinder 1
4	Power supply

16.44 Fuel pump, connector LI



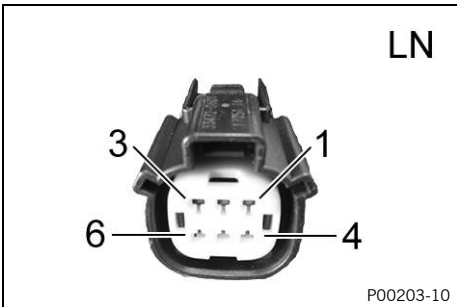
Pin overview	
1	Control wire
2	Ground

16.45 Lambda sensor cylinder 2, connector LI



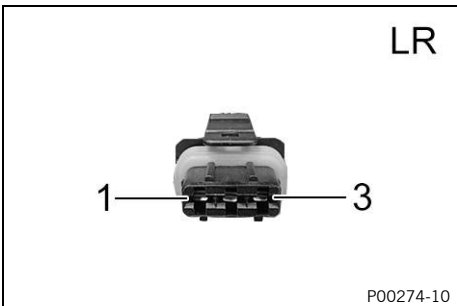
Pin overview	
1	Signal wire, lambda sensor cylinder 2
2	Sensor ground
3	Control wire, lambda sensor heater cylinder 2
4	Power supply, lambda sensor cylinder 2

16.46 Light control unit, connector LN



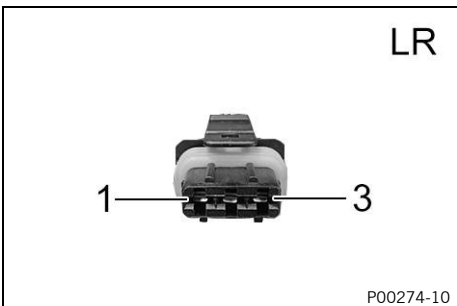
Pin overview	
1	Power supply (terminal 30)
2	CAN high
3	Power supply (terminal 15)
4	Signal wire, high beam
5	CAN low
6	Ground (terminal 31)

16.47 Ignition coil 1, cylinder 1 socket connector LR



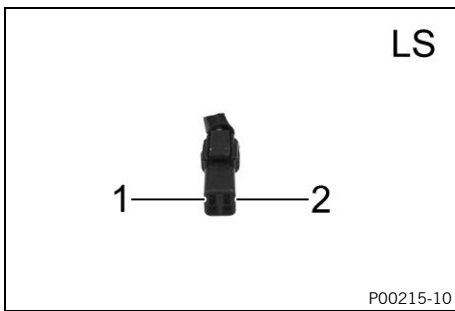
Pin overview	
1	Power supply
2	Ground
3	Control wire

16.48 Ignition coil 1, cylinder 2 socket connector LR



Pin overview	
1	Power supply
2	Ground
3	Control wire

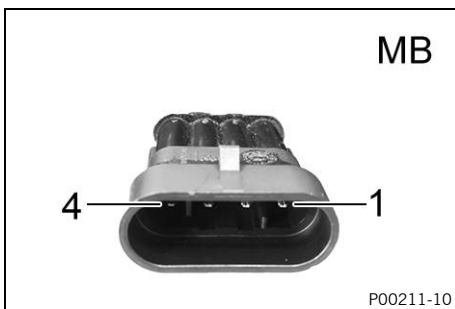
16.49 Immobilizer control unit antenna, connector LS



Pin overview

1	Signal wire, antenna
2	Signal wire, antenna

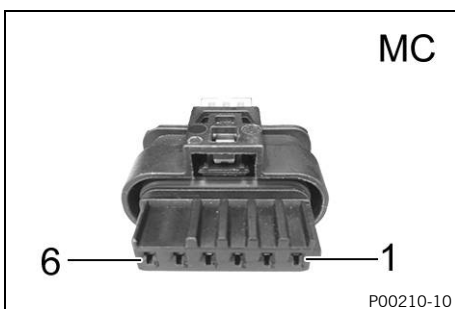
16.50 Lambda sensor cylinder 2, connector MB



Pin overview

1	Signal wire, lambda sensor cylinder 2
2	Sensor ground
3	Control wire, lambda sensor heater cylinder 2
4	Power supply, lambda sensor cylinder 2

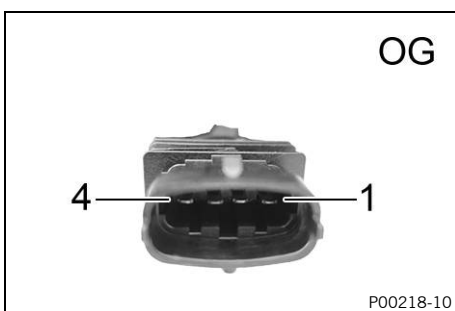
16.51 Throttle valve position sensor connector MC



Pin overview

1	Throttle valve actuator, ground supply
2	Throttle valve actuator, power supply
3	Sensor ground
4	Throttle valve position sensor signal wire A
5	Throttle valve position sensor signal wire B
6	Power supply, sensor

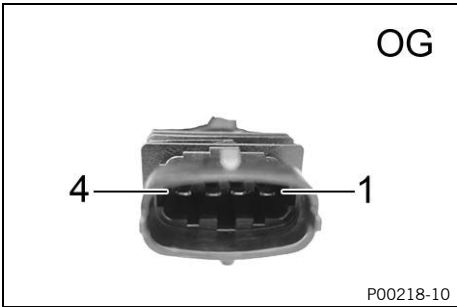
16.52 Lambda sensor cylinder 1, connector OG



Pin overview

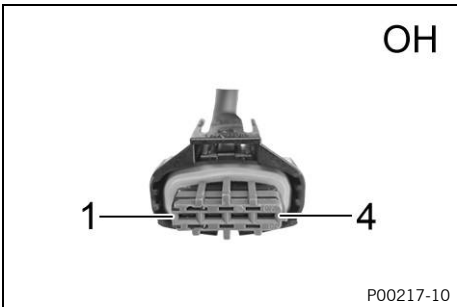
1	Power supply, lambda sensor cylinder 1
2	Control wire, lambda sensor heater cylinder 1
3	Sensor ground
4	Signal wire, lambda sensor cylinder 1

16.53 Lambda sensor 3 after catalytic converter connector OG



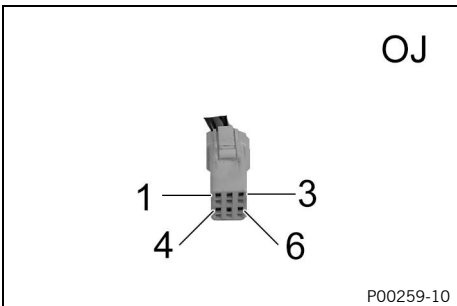
Pin overview	
1	Power supply, lambda sensor 3 after catalytic converter
2	Control wire, lambda sensor heater 3 after catalytic converter
3	Sensor ground
4	Signal wire, lambda sensor 3 after catalytic converter

16.54 Lambda sensor cylinder 1, connector OH



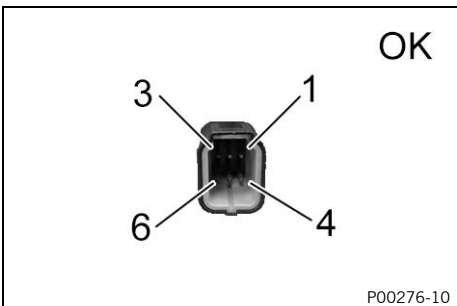
Pin overview	
1	Power supply, lambda sensor cylinder 1
2	Control wire, lambda sensor heater cylinder 1
3	Sensor ground
4	Signal wire, lambda sensor cylinder 1

16.55 Connectivity Unit connector OJ



Pin overview	
1	Power supply (terminal 15)
2	CAN high
3	CAN low
4	Ground
5	Not assigned
6	Power supply (terminal 30)

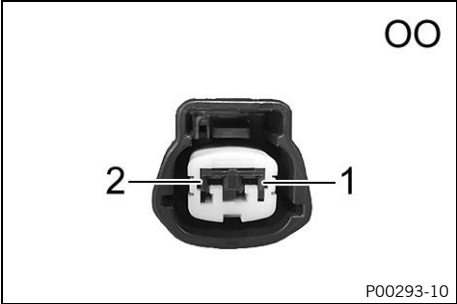
16.56 Connectivity Unit connector OK



Pin overview	
1	Power supply (terminal 15)
2	CAN high
3	CAN low
4	Ground
5	Not assigned
6	Power supply (terminal 30)

16.57

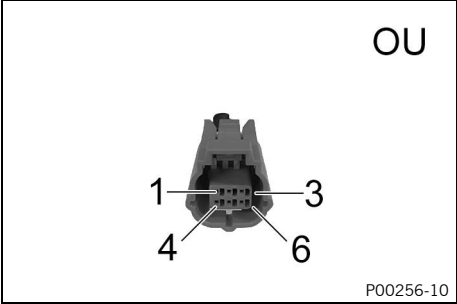
Purge valve connector OO



Pin overview	
1	Power supply
2	Control wire

16.58

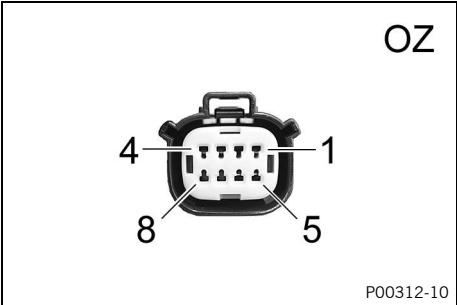
Diagnostics connector OU



Pin overview	
1	Not assigned
2	CAN high
3	Ground
4	Power supply (terminal 15)
5	CAN low
6	Not assigned

16.59

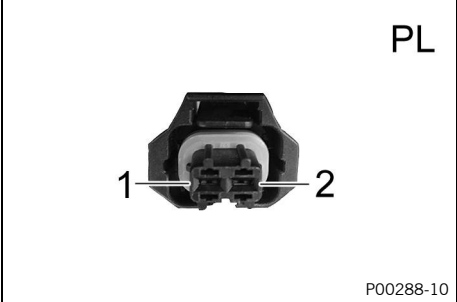
Heater control unit connector OZ



Pin overview	
1	Control wire, heated grip
2	Not assigned
3	Ground (terminal 31)
4	Power supply (terminal 15)
5	CAN high
6	CAN low
7	Not assigned
8	Not assigned

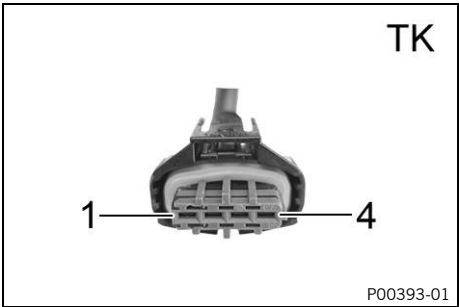
16.60

Knock sensor connector PL



Pin overview	
1	Signal wire 1
2	Signal wire 2

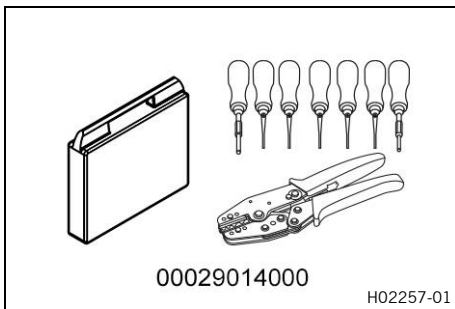
16.61 Lambda sensor 3 after catalytic converter connector TK



Pin overview	
1	Power supply, lambda sensor 3 after catalytic converter
2	Control wire, lambda sensor heater 3 after catalytic converter
3	Sensor ground
4	Signal wire, lambda sensor 3 after catalytic converter

Cable connector unlocking kit

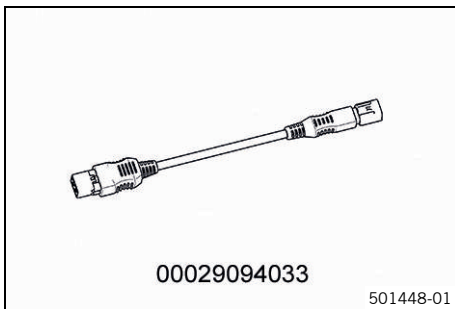
Art. no.: 00029014000

**Diagnostics adapter cable**

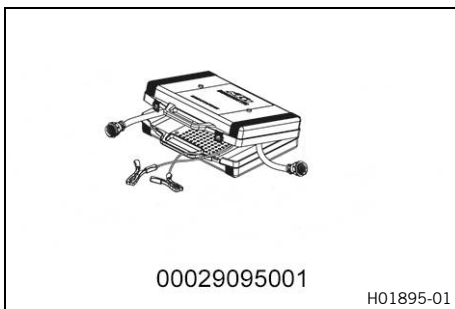
Art. no.: 00029094033

Feature

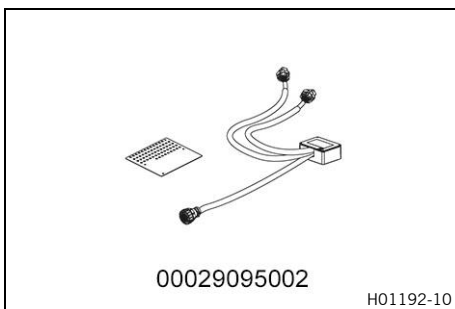
Length approx.	25.8 cm (10.16 in)

**Break out box**

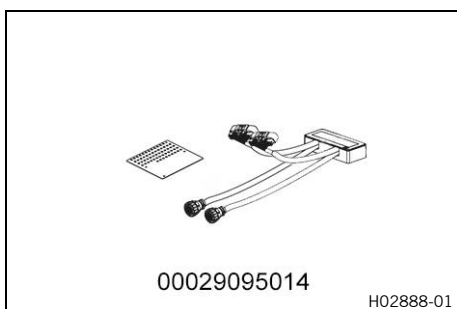
Art. no.: 00029095001

**Adapter and templates LC8 & RC8**

Art. no.: 00029095002

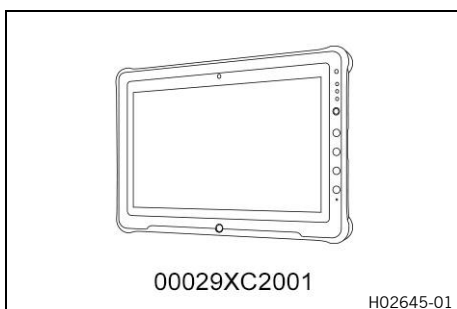


Adapter and template ME 17



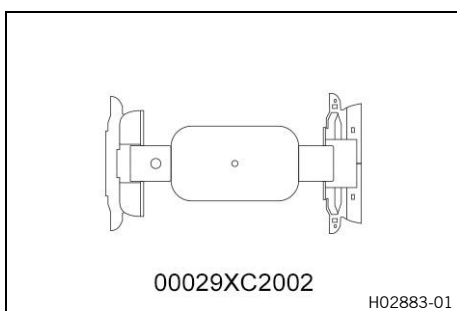
Art. no.: 00029095014

Diagnostics tablet



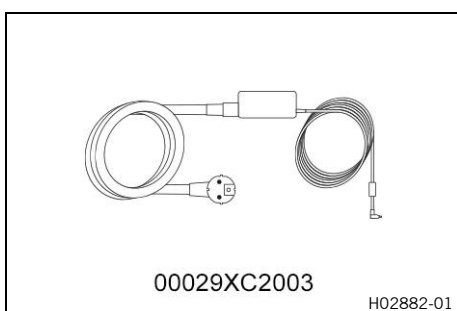
Art. no.: 00029XC2001

Hand strap



Art. no.: 00029XC2002

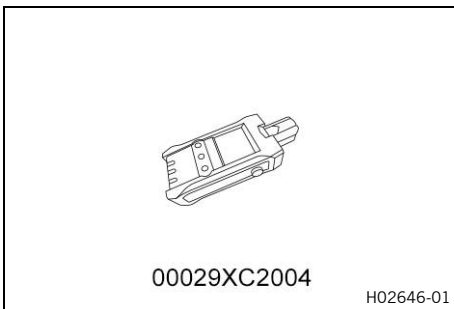
Battery charger



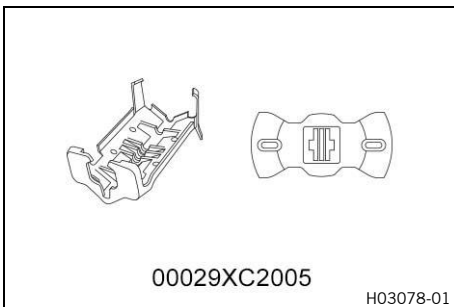
Art. no.: 00029XC2003

VCI

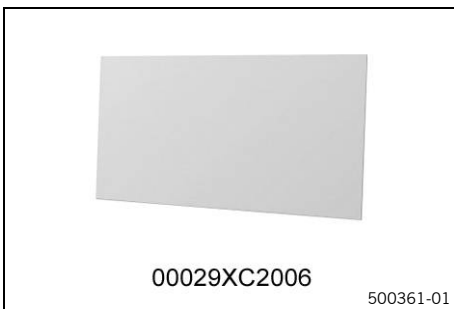
Art. no.: 00029XC2004

**VCI attachment**

Art. no.: 00029XC2005

**Protective film**

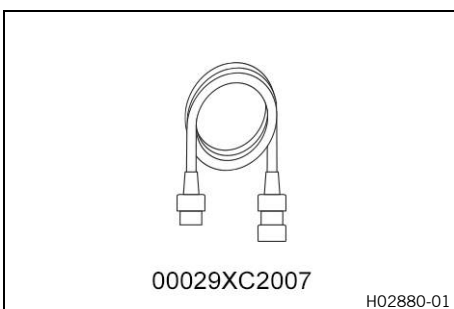
Art. no.: 00029XC2006

**Diagnostics cable extension**

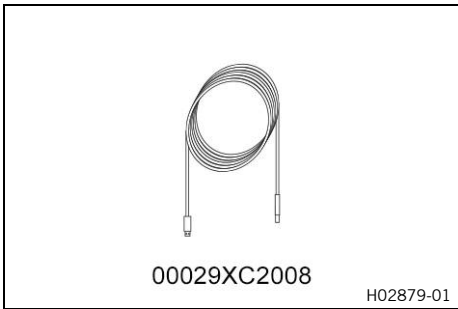
Art. no.: 00029XC2007

Feature

Length approx.	1.15 m (3.77 ft)



USB cable

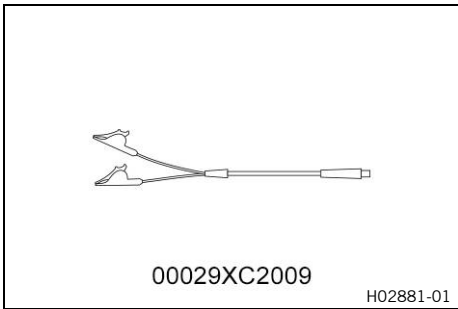


Art. no.: 00029XC2008

Feature

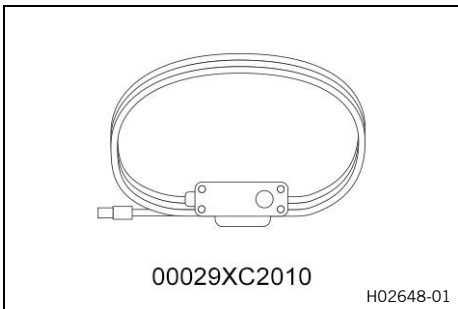
Length approx.	5 m (16 ft)

12-V power supply cable



Art. no.: 00029XC2009

RideRecorder trigger



Art. no.: 00029XC2010

Case



Art. no.: 00029XC2011

Docking station

Art. no.: 00029XC2012

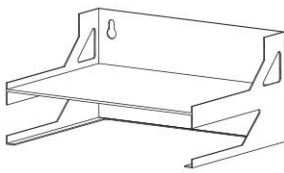


00029XC2012

H03077-01

Wall attachment

Art. no.: 00029XC2013

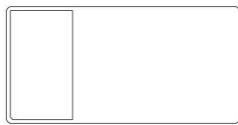


00029XC2013

H03080-01

Battery

Art. no.: 00029XC2014



00029XC2014

H03079-01

Input stylus

Art. no.: 00029XC2015



00029XC2015

H03083-01

HLU	Headlamp insert (headlight unit)	Complete headlight including control unit, bulb, CAN bus interface etc.
HCU	Heating control unit	Control unit that controls the heated grips using the combination instrument.

Art. no.	Article number
ca.	circa
cf.	compare
e.g.	for example
etc.	et cetera
i.a.	inter alia
no.	number
poss.	possibly

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ACC2	
front	27
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15.04.2025

