

INFODESK 2025

READY 
TO RACE

350 SX-F
350 XC-F

ITEM NO. 3240104EN

The KTM logo, consisting of the letters 'KTM' in a bold, italicized, black font, set against a solid orange rectangular background.

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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This document is valid for the following models:

350 SX-F EU (F8201Y5)

350 SX-F US (F8275Y5)

350 SX-F AR (F8242Y5)










350 XC-F US (F8275Y0)



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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.

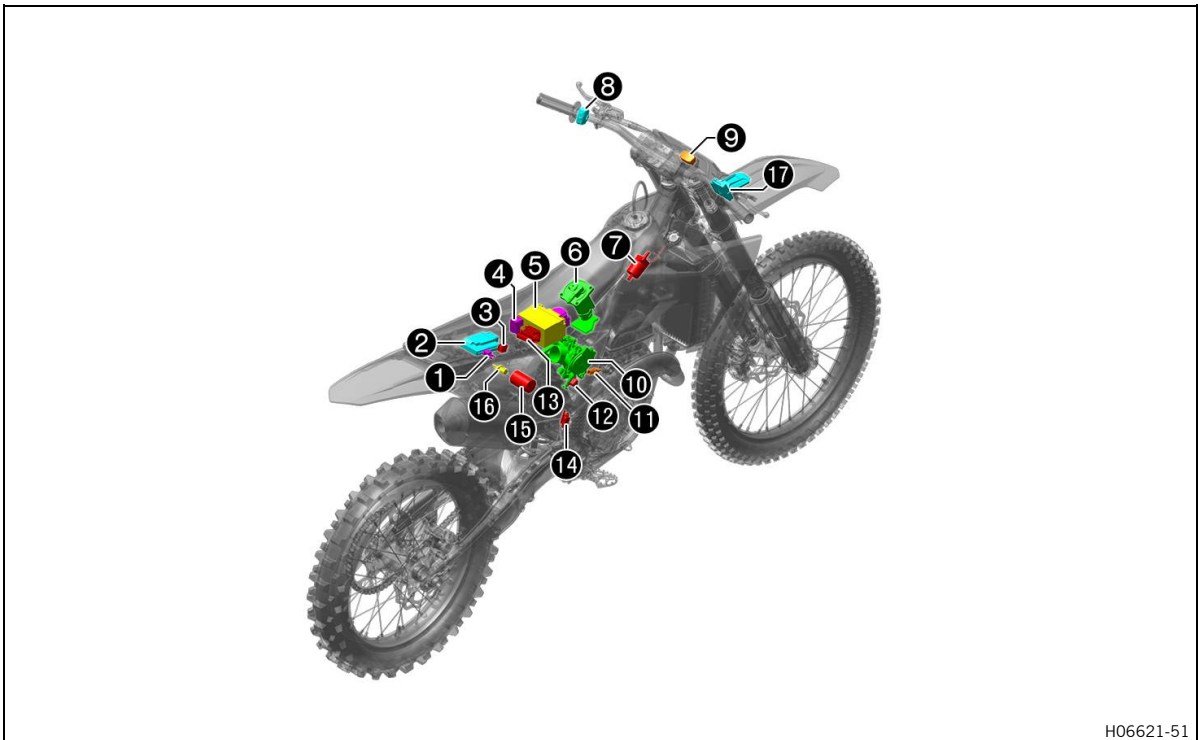
1.2 Formats used

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 ENGINE MANAGEMENT SYSTEM COMPONENTS

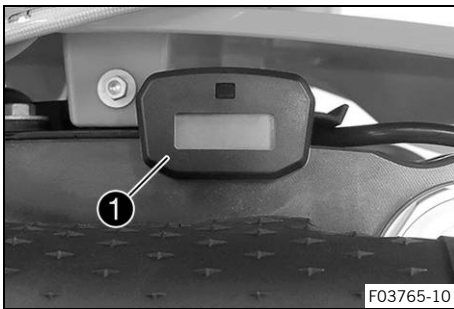
2.1 Overview of the engine management system



H06621-51

- ❶ Tilt sensor (📖 p. 16)
- ❷ Engine control unit (📖 p. 17)
- ❸ Diagnostics connector (📖 p. 17)
- ❹ Overview of relays (📖 p. 7)
- ❺ 12-V battery (📖 p. 8)
- ❻ Fuel pump (📖 p. 6) **(350 SX-F EU, 350 SX-F US, 350 SX-F AR)**
- ❼ Fuel pump (📖 p. 7) **(350 XC-F US)**
- ❼ Ignition coil (📖 p. 11)
- ❽ Combination switch, left
- ❾ Combination instrument (📖 p. 5)
- ❿ Throttle valve position sensor circuit A (📖 p. 14)
- ❿ Induction manifold pressure sensor (📖 p. 15)
- ❿ Injection valve, cylinder 1 (📖 p. 13)
- ⓫ Coolant temperature sensor (📖 p. 9)
- ⓫ Crankshaft speed sensor (📖 p. 11)
- ⓫ Voltage regulator (📖 p. 8)
- ⓫ Gear position sensor (📖 p. 17)
- ⓫ Capacitor (📖 p. 8)
- ⓫ Intake air temperature sensor (📖 p. 12)
- ⓫ Connectivity Unit (📖 p. 18)

2.2 Combination instrument



The combination instrument ① is attached in front of the handlebar.

The combination instrument shows the total number of operating hours of the engine.

The operating hour counter begins counting when the engine is started and stops when the engine is switched off.

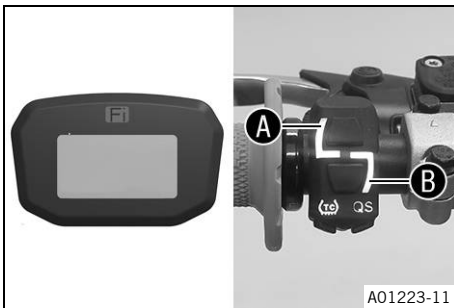
i Info

Nothing can be cleared or adjusted on the combination instrument.

As soon as the diagnostics tool is connected, the service hour counter starts running.

Before longer diagnostic sessions, unplug the service hour counter behind the start number plate.

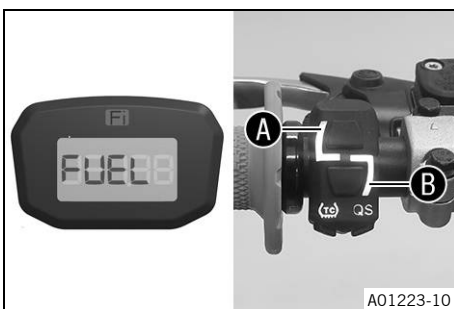
2.3 Overview of indicator lamps (350 SX-F EU, 350 SX-F US, 350 SX-F AR)



Possible states

Fi	Malfunction indicator lamp lights up/flashes orange – The <u>OBD</u> has detected a malfunction in the vehicle electronics. The malfunction indicator lamp also lights up if traction control is activated and the speed limiter intervenes.
(TC)	TC indicator lamp lights up orange – <u>TC</u> is enabled or is currently intervening. The TC indicator lamp flashes if <u>launch control</u> is activated.
QS	QS indicator lamp lights up blue – The quickshifter is activated. The QS indicator lamp flashes when the quickshifter is being programmed.
L	Indicator lamp A lights up white – <u>STANDARD</u> mapping is activated.
7	Indicator lamp B lights up green – <u>ADVANCED</u> mapping is activated.

2.4 Overview of indicator lamps (350 XC-F US)



Possible states

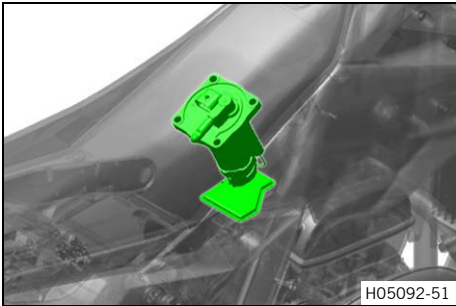
Fi	Malfunction indicator lamp lights up/flashes orange – The <u>OBD</u> has detected a malfunction in the vehicle electronics. The malfunction indicator lamp also lights up if traction control is activated and the speed limiter intervenes.
(TC)	TC indicator lamp lights up orange – <u>TC</u> is enabled or is currently intervening. The TC indicator lamp flashes if <u>launch control</u> is activated.
QS	QS indicator lamp lights up blue – The quickshifter is activated. The QS indicator lamp flashes when the quickshifter is being programmed.
L	Indicator lamp A lights up white – <u>STANDARD</u> mapping is activated.
7	Indicator lamp B lights up green – <u>ADVANCED</u> mapping is activated.

2 ENGINE MANAGEMENT SYSTEM COMPONENTS

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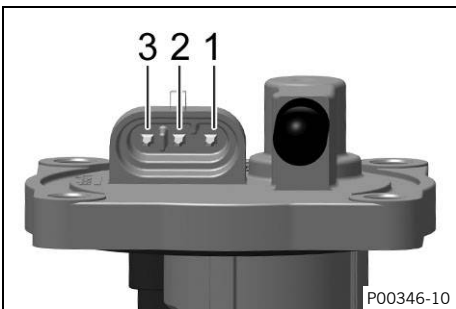
FUEL is displayed – The fuel level has reached the reserve mark.

2.5 Fuel pump (350 SX-F EU, 350 SX-F US, 350 SX-F AR)



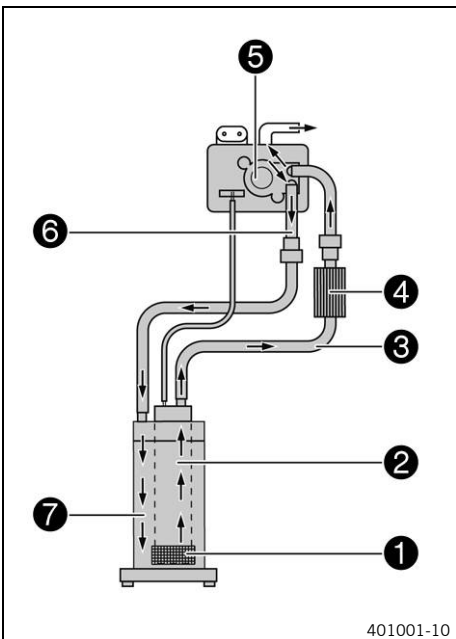
Installation location

- The fuel pump is located inside the fuel tank.



Pin overview

1	Not assigned
2	Control wire
3	Power supply



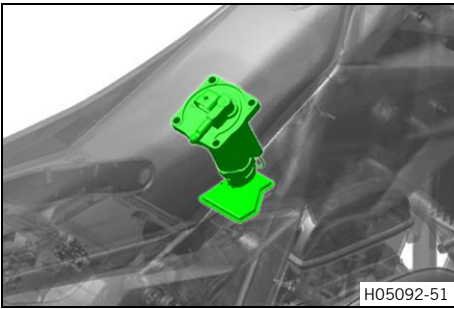
Functional description

- The fuel passes through the fuel screen **1** before entering the electrically driven vane pump **2**. This delivers the fuel via the fuel line **3** and the fuel filter **4** and on into the pressure regulator **5**. The pressure regulator ensures an even fuel pressure under all load conditions. Excess fuel flows back via hose **6** into pump housing **7**.

Fuel pressure

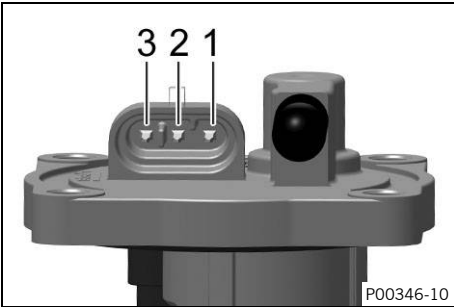
Under all load conditions	3.3 ... 3.7 bar (48 ... 54 psi)
---------------------------	---------------------------------

2.6 Fuel pump (350 XC-F US)



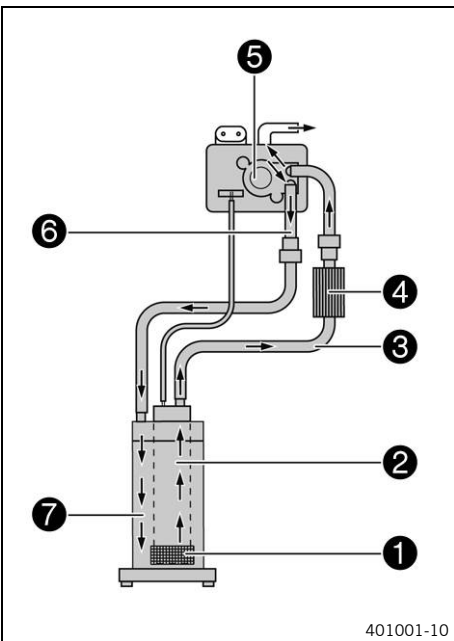
Installation location

- The fuel pump is located inside the fuel tank on the left.



Pin overview

1	Signal wire, fuel level sensor
2	Control wire
3	Power supply

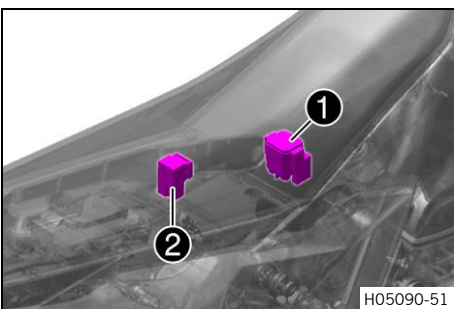


Functional description

- The fuel passes through the fuel screen **1** before entering the electrically driven vane pump **2**. This delivers the fuel via the fuel line **3** and the fuel filter **4** and on into the pressure regulator **5**. The pressure regulator ensures an even fuel pressure under all load conditions. Excess fuel flows back via hose **6** into pump housing **7**.

Fuel pressure	
Under all load conditions	3.3 ... 3.7 bar (48 ... 54 psi)

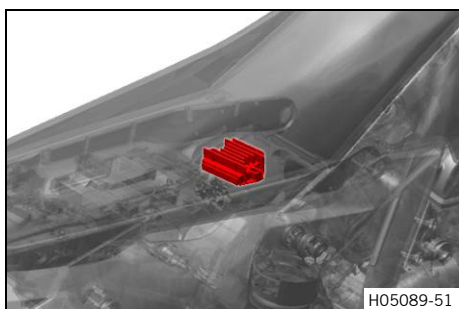
2.7 Overview of relays



Overview of relays

- 1** Starter relay with main fuse
- 2** Power relay

2.8 Voltage regulator



H05089-51

Installation location

- The voltage regulator is located under the seat.

Voltage regulator connector **EY** (📖 p. 120) pin assignment

Voltage regulator connector **EE** (📖 p. 120) pin assignment

2.9 Capacitor



H05100-51

Installation location

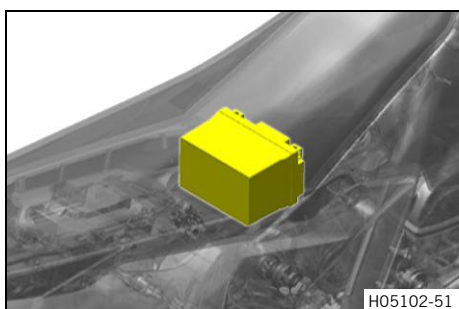
- The capacitor is located in the air filter box.

Component description

- The capacitor stabilizes the power supply of the engine control unit.

Capacitor connector **AS** (📖 p. 118) pin assignment

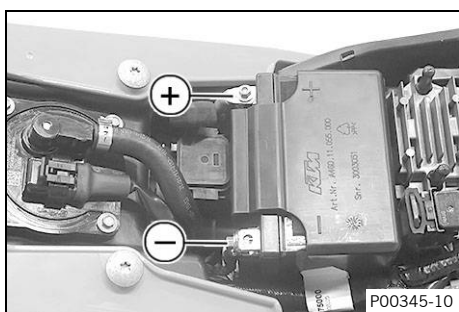
2.10 12-V battery



H05102-51

Installation location

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



P00345-10

Measuring point overview

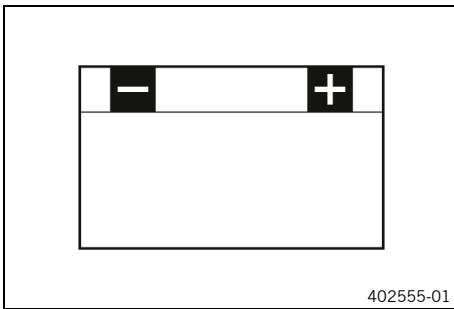
Ground (-)

plus (+)

Battery voltage "VBAT"	9.6 ... 15.4 V
---------------------------	----------------

12-V battery (HJTZ5S-FP-C)

2.11 Starting power of lithium-ion batteries at low temperatures



Lithium-ion batteries are far lighter than lead batteries, have a low self-discharge rate, and have more starting power at temperatures over 6 °C (43 °F).

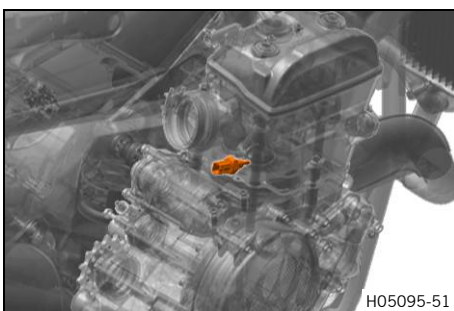
Several attempts to start may be required. Press the start button for 5 seconds, and wait 15 seconds between attempts. At low temperatures, wait for 30 seconds. The pauses are necessary so that the heat created can distribute through the lithium-ion battery and the lithium-ion battery is not damaged.

The starting power increases as the battery warms up.

Always make sure the lithium-ion battery is charged to that there is enough power to spare for starting at low temperatures.

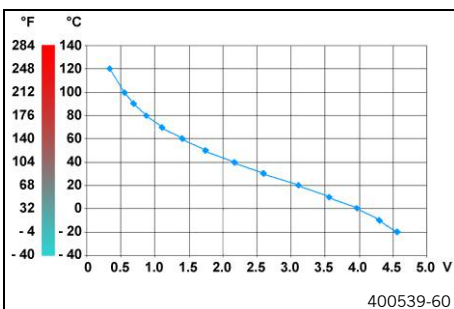
After 6 unsuccessful starting attempts, do not try again, and check the vehicle for other malfunctions instead.

2.12 Coolant temperature sensor



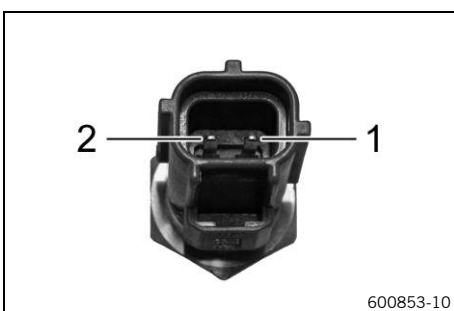
Installation location

- The coolant temperature sensor is located under the throttle valve body.



Component description

- The coolant temperature sensor is an NTC resistor. In NTC resistors, 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 |

Functional description

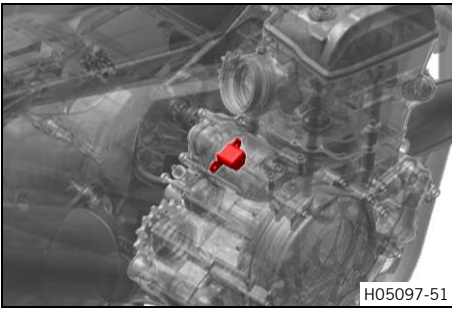
- The coolant temperature sensor is used for the engine control.

Coolant temperature sensor	
Resistance at: -20 °C (-4 °F)	13.50 ... 16.50 kΩ
Voltage at: -20 °C (-4 °F)	4.5 V
Resistance at: -10 °C (14 °F)	8.24 ... 10.08 kΩ
Voltage at: -10 °C (14 °F)	4.3 V
Resistance at: 0 °C (32 °F)	5.17 ... 6.31 kΩ

2 ENGINE MANAGEMENT SYSTEM COMPONENTS

Voltage at: 0 °C (32 °F)	3.9 V
Resistance at: 10 °C (50 °F)	3.33 ... 4.07 kΩ
Voltage at: 10 °C (50 °F)	3.5 V
Resistance at: 20 °C (68 °F)	2.21 ... 2.70 kΩ
Voltage at: 20 °C (68 °F)	3.1 V
Resistance at: 30 °C (86 °F)	1.49 ... 1.83 kΩ
Voltage at: 30 °C (86 °F)	2.5 V
Resistance at: 40 °C (104 °F)	1.04 ... 1.27 kΩ
Voltage at: 40 °C (104 °F)	2.1 V
Resistance at: 50 °C (122 °F)	730 ... 892 Ω
Voltage at: 50 °C (122 °F)	1.7 V
Resistance at: 60 °C (140 °F)	526 ... 642 Ω
Voltage at: 60 °C (140 °F)	1.4 V
Resistance at: 70 °C (158 °F)	385 ... 471 Ω
Voltage at: 70 °C (158 °F)	1.0 V
Resistance at: 80 °C (176 °F)	286 ... 350 Ω
Voltage at: 80 °C (176 °F)	0.86 V
Resistance at: 90 °C (194 °F)	216 ... 264 Ω
Voltage at: 90 °C (194 °F)	0.68 V
Resistance at: 100 °C (212 °F)	165 ... 202 Ω
Voltage at: 100 °C (212 °F)	0.6 V
Resistance at: 110 °C (230 °F)	128 ... 156 Ω
Voltage at: 110 °C (230 °F)	0.44 V
Resistance at: 120 °C (248 °F)	100 ... 122 Ω
Voltage at: 120 °C (248 °F)	0.34 V

2.13 Crankshaft speed sensor



Installation location

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

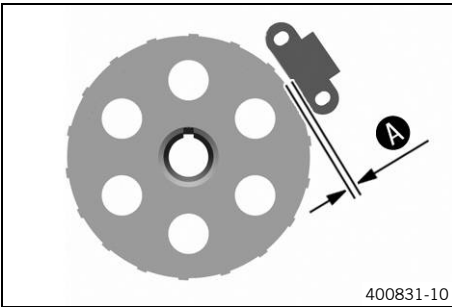
Component description

- The crankshaft speed sensor consists of a permanent magnet and an induction coil with a soft iron core. The counter piece to the crankshaft speed sensor is the sensor wheel whose 18 teeth are equidistant except in one place where one tooth is wider. The sensor 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 sensor wheel.

Crankshaft speed sensor connector **AT** (📖 p. 119) pin assignment

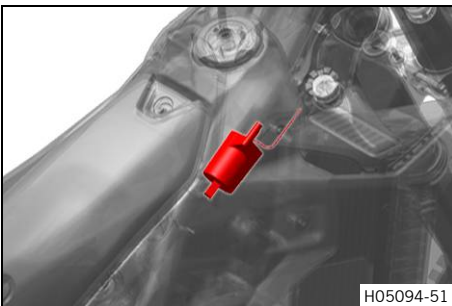
Functional description

- 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 sensor 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 sensor wheel allows the engine control unit to detect the current position of the crankshaft.



Crankshaft speed sensor/rotor – distance	0.70 mm (0.0276 in)
Crankshaft speed sensor	
Resistance at: 20 °C (68 °F)	80 ... 120 Ω
Voltage at starting engine speed	2 ... 4 V

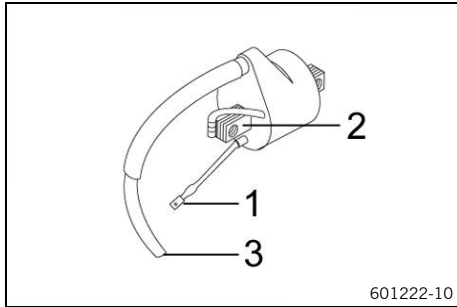
2.14 Ignition coil



Installation location

- The ignition coil is located above the valve cover in the frame.

2 ENGINE MANAGEMENT SYSTEM COMPONENTS



Pin overview

1 (+) Control wire

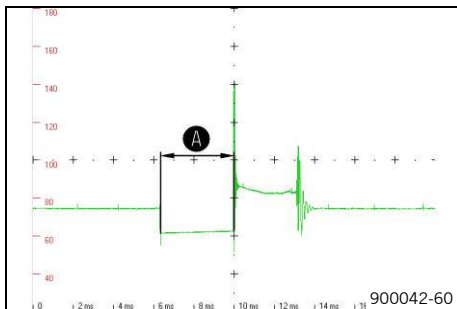
2 (-) Ground

3 Ignition wire

Ignition coil

Primary winding resistance at: 20 °C (68 °F)	0.425 ... 0.575 Ω
Secondary winding resistance at: 20 °C (68 °F)	11.075 ... 15.525 kΩ

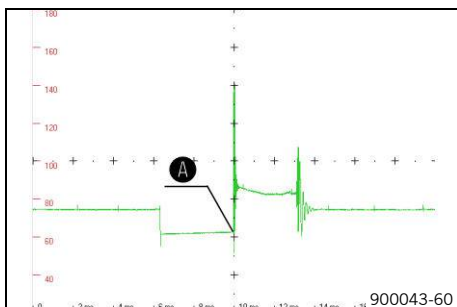
2.15 Dwell



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.

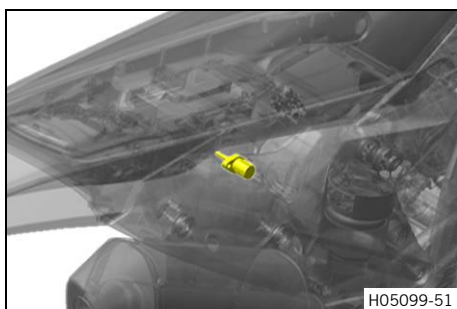
2.16 Ignition point



Function description

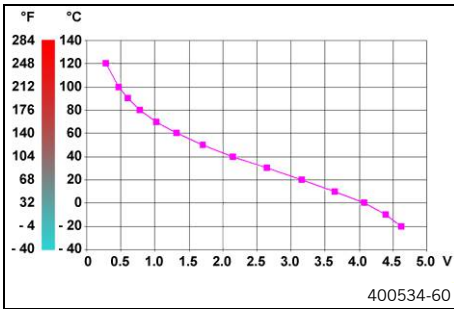
- The ignition point **A** is set relative to TDC and is expressed as a crankshaft angle. The spark is generated by interrupting the primary circuit.

2.17 Intake air temperature sensor



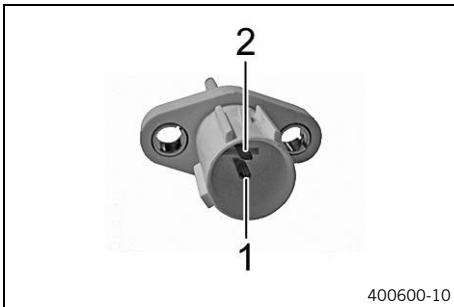
Installation location

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



Component description

- The intake air temperature sensor is an NTC resistor. In NTC resistors, 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.

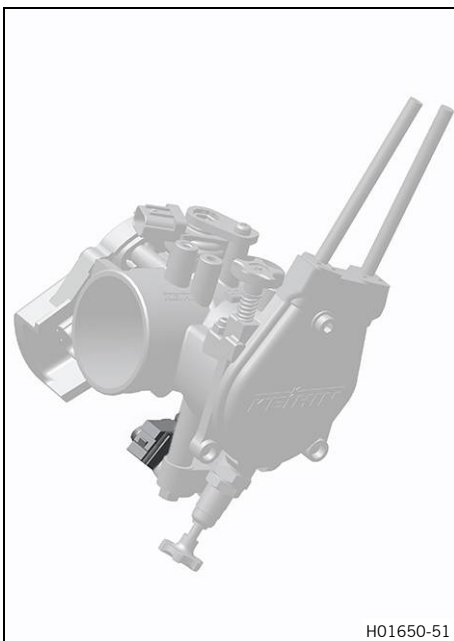


Pin overview

- | | |
|---|---------------|
| 1 | Sensor ground |
| 2 | Signal wire |

Intake air temperature sensor	
Resistance at: -20 °C (-4 °F)	18.80 kΩ
Voltage at: -20 °C (-4 °F)	4.67 V
Resistance at: 20 °C (68 °F)	2.57 kΩ
Voltage at: 20 °C (68 °F)	3.14 V
Resistance at: 40 °C (104 °F)	1.136 kΩ
Voltage at: 40 °C (104 °F)	2.15 V
Resistance at: 100 °C (212 °F)	0.1553 kΩ
Voltage at: 100 °C (212 °F)	0.46 V

2.18 Injection valve, cylinder 1



Installation location

- Injector cylinder 1 is located on the throttle valve body at the bottom.

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 valve seat. Fuel is discharged through eight injection holes and forms two conical jets. 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.

2 ENGINE MANAGEMENT SYSTEM COMPONENTS



Pin overview

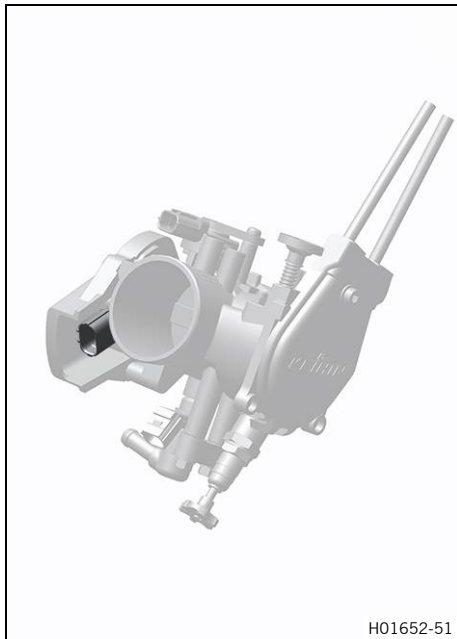
1	Power supply
2	Signal wire

Functional description

- The injection valve is supplied with power via terminal 15. 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.

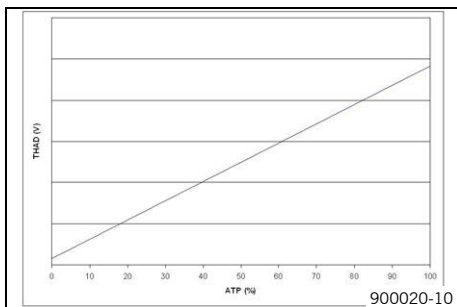
Injector	
Resistance at: 20 °C (68 °F)	9.97 ... 11.03 Ω

2.19 Throttle valve position sensor circuit A



Installation location

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



Component description

- The throttle valve position sensor circuit A has a linear characteristic line and operates as a potentiometer.

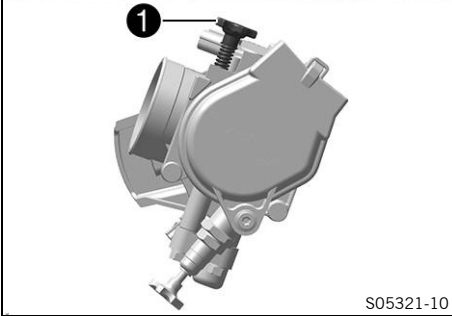
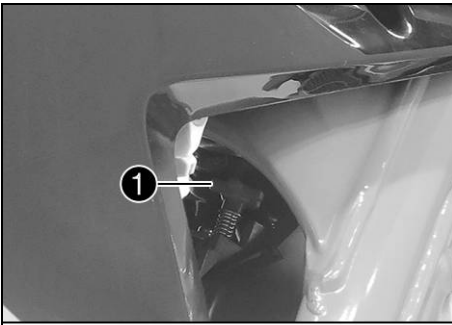
Circuit A throttle valve position sensor connector **FT** (📖 p. 120) pin assignment

Functional description

- The output voltage of the throttle valve position sensor is dependent on the opening angle of the throttle valve and is sent via the signal wire to determine the throttle valve position.

Throttle valve position sensor circuit A	
Voltage "THAD"	0.4 ... 4.58 V
Throttle valve position sensor, circuit A signal "ATP"	0 ... 100 %

2.20 Idle speed adjusting screw



The idle setting of the throttle valve body substantially influences the vehicle's starting behavior, a stable idle speed, and the vehicle's response when the throttle is opened.

An engine with a correctly set idle speed is easier to start than an engine with the idle speed set incorrectly.

The idle speed is adjusted using the idle speed adjusting screw **1**.

Increase the idle speed by turning the idle speed adjusting screw clockwise.

Decrease the idle speed by turning the idle speed adjusting screw counterclockwise.

2.21 Induction manifold pressure sensor

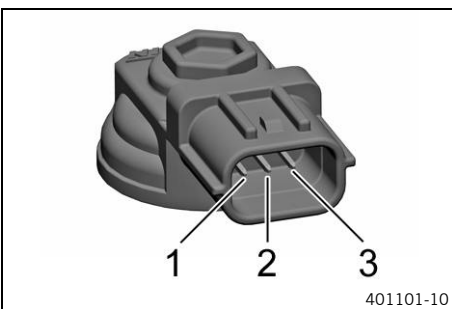


Installation location

- The induction manifold pressure sensor is located at the top left of the throttle valve body.

Component description

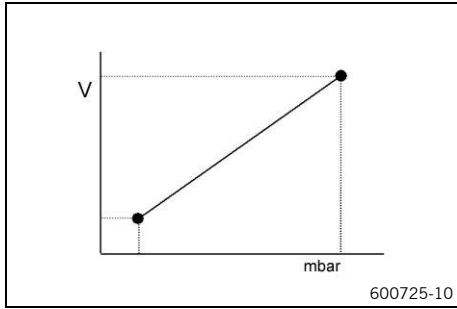
- The electronics and a measuring cell are located in the housing of the induction manifold pressure sensor. In the measuring cell a diaphragm encloses a reference pressure chamber. When the shape of the diaphragm is altered by external pressure, the conductivity of the measuring resistors, and thus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



Pin overview

1	Power supply
2	Signal wire
3	Sensor ground

2 ENGINE MANAGEMENT SYSTEM COMPONENTS

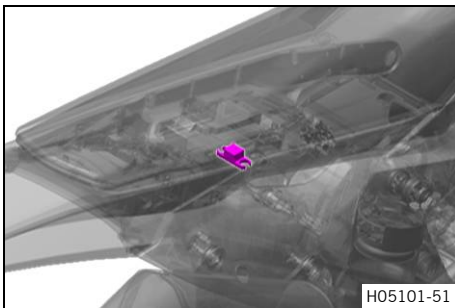


Functional description

- The output voltage of the induction manifold pressure sensor depends on the induction manifold pressure and is output via the signal wire. 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: 133 mbar (1.93 psi)	0.498 V
at: 1,200 mbar (17.4 psi)	3.408 V

2.22 Tilt sensor

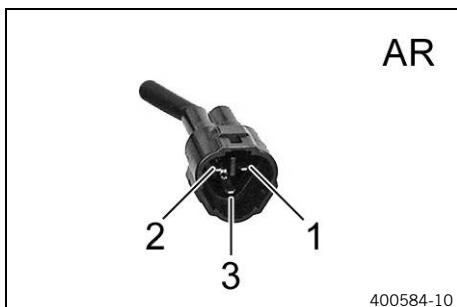


Installation location

- The tilt sensor is located under the seat.

Component description

- The sensor functions on the basis of the Hall effect. The tilt sensor contains a pendulum with a magnet. The pendulum passes over a Hall sensor. The electronics of the tilt sensor evaluate the Hall voltage and activate the signal voltage.



Pin overview

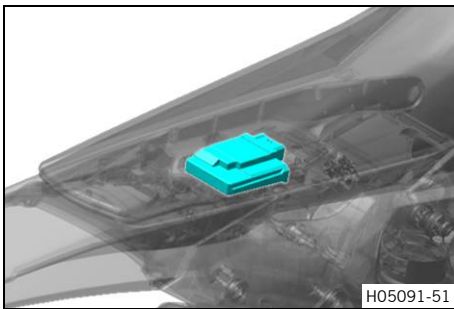
1	Sensor ground
2	Power supply
3	Signal wire

Functional description

- The tilt sensor is connected in series to measuring resistances on the voltage side and ground side, both of which are in the engine control unit. Depending on the vehicle inclination, the electronic system of the tilt sensor switches the signal voltage either toward the voltage or toward the ground using a resistor. The engine control unit detects the inclination of the vehicle on the basis of the voltage value of the signal wire.

Tilt sensor	
Voltage (rollover AD) "no fall detected"	0.4 ... 1.4 V
Voltage (RolloverAD) "fall detected"	3.7 ... 4.1 V

2.23 Engine control unit



Installation location

- The engine control unit is located under the seat.

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, e.g. with the flash container KA470xxxxxx (350 SX-F series), the engine control unit is defined as a version A470 and can from this point on only be used on model series A470 (specifically installed control unit).

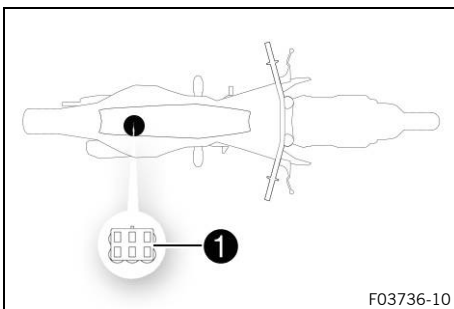
After completing programming, the vehicle identification number must be entered into the engine control unit using the "Coding" function.

As soon as the diagnostics tool is connected, the service hour counter starts running.

Before longer diagnostic sessions, unplug the service hour counter behind the start number plate.

Engine control unit connector **HY** (📖 p. 122) pin assignment

2.24 Diagnostics connector



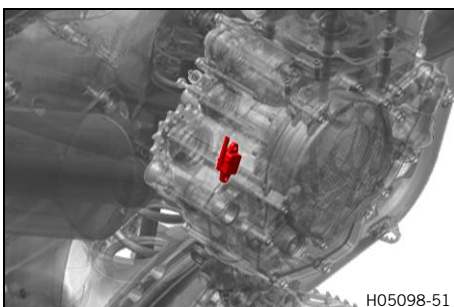
Diagnostics connector **1** is located under the seat.

Info

As soon as the diagnostics tool is connected, the service hour counter starts running.

Before longer diagnostic sessions, unplug the service hour counter behind the start number plate.

2.25 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. 123) pin assignment

Functional description

- The sensor path output voltage is transmitted to the engine control unit via a signal wire.

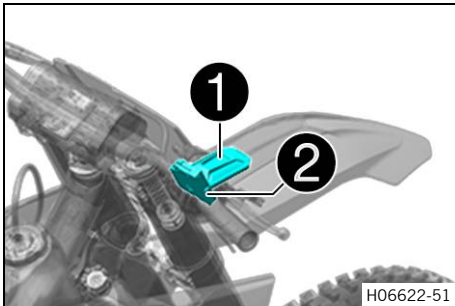
This enables the engine control unit to identify the exact position of the shift shaft.

Gear position sensor voltage (350 XC-F US)	
Gear 1	0.525 ... 0.725 V
Gear N	0.910 ... 1.090 V
Gear 2	1.275 ... 1.475 V
Gear 3	2.025 ... 2.225 V

2 ENGINE MANAGEMENT SYSTEM COMPONENTS

Gear 4	2.775 ... 2.975 V
Gear 5	3.525 ... 3.725 V
Gear 6	4.275 ... 4.475 V
Gear position sensor voltage (350 SX-F EU, 350 SX-F US, 350 SX-F AR)	
Gear 1	0.525 ... 0.725 V
Gear N	0.910 ... 1.090 V
Gear 2	1.275 ... 1.475 V
Gear 3	2.025 ... 2.225 V
Gear 4	2.775 ... 2.975 V
Gear 5	3.525 ... 3.725 V

2.26 Connectivity Unit



Installation location

- The Connectivity Unit is located behind the start number plate.

Setup

- The Connectivity consists of the **1** aerial and the **2** control unit.

Component description

- The Connectivity Unit is equipped with a Bluetooth module, which allows it to be paired with a smartphone, and it offers a wide range of functions and setting options.

Connectivity Unit connector **OJ** (📖 p. 123) pin assignment

Blink code for malfunction indicator lamp	Fi 09 Malfunction indicator lamp flashes 9x short
Display on diagnostic tool	P0105 "Induction manifold pressure sensor" "Input signal too high"
Error level condition	Induction manifold pressure sensor – input signal too high Voltage: ≥ 4.121 V Time: ≥ 3 s
Function check	Induction manifold pressure sensor – checking the voltage (📖 p. 19)
Possible cause	Induction manifold pressure sensor – the signal wire is faulty (📖 p. 19)
	Induction manifold pressure sensor – the ground wire is faulty (📖 p. 20)
	Induction manifold pressure sensor – the signal wire has a short circuit to ignition plus (terminal 15) (📖 p. 21)
	Induction manifold pressure sensor – the signal wire has a short circuit to the sensor power supply (📖 p. 21)

Induction manifold pressure sensor – checking the voltage

Condition

The diagnostics tool is connected and running.

- Select **"Engine control unit" > "Measured value" > "Induction manifold pressure sensor for cylinder 1 voltage (PM1AD)"** and **"Induction manifold pressure sensor for cylinder 1 signal (PM1M)"**.

Induction manifold pressure sensor voltage	
at: 133 mbar (1.93 psi)	0.498 V
at: 1,200 mbar (17.4 psi)	3.408 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 fault memory using the KTM diagnostics tool.
- » If the displayed value is above the setpoint value:
 - Check the next possible cause:
Induction manifold pressure sensor – the signal wire is faulty (📖 p. 19)
 - Check the next possible cause:
Induction manifold pressure sensor – the ground wire is faulty (📖 p. 20)
 - Check the next possible cause:
Induction manifold pressure sensor – the signal wire has a short circuit to ignition plus (terminal 15) (📖 p. 21)
 - Check the next possible cause:
Induction manifold pressure sensor – the signal wire has a short circuit to the sensor power supply (📖 p. 21)

Induction manifold pressure sensor – the signal wire is faulty

Condition

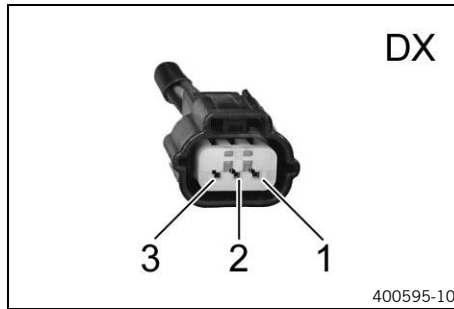
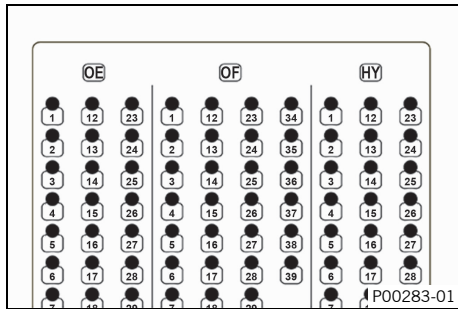
The diagnostics tool is disconnected.

Engine control unit is disconnected. (📖 p. 17)

The break-out box is connected to the engine control unit wiring harness with adapter **00029095015**.

Induction manifold sensor is disconnected. (📖 p. 15)

3 ENGINE CONTROL TROUBLE CODE



Induction manifold pressure sensor – check the signal wire.

- Measure the resistance between the specified points.
Break out box connector **HY** pin **27** – Induction manifold pressure sensor, connector **DX** pin **2**

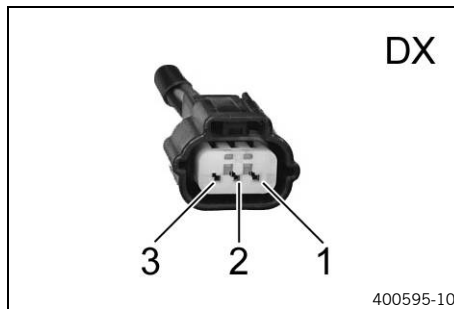
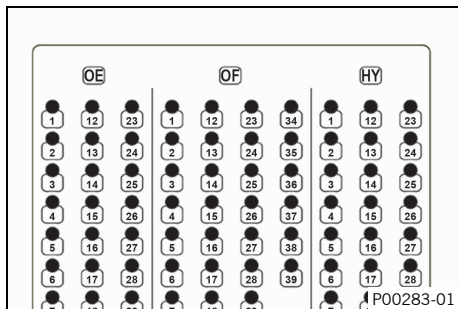
Resistance	≤ 0.6 Ω
------------	---------

- » If the specifications have not been met:
 - Check engine control unit connector **HY** (p. 122) pin **27** and connector **DX** (p. 119) pin **2**.
 - Check the cable from engine control unit connector **HY** (p. 122) pin **27** to connector **DX** (p. 119) pin **2**.
- » If the specifications have been met:
 - Check the next possible cause:
Induction manifold pressure sensor – the ground wire is faulty (p. 20)

Induction manifold pressure sensor – the ground wire is faulty

Condition

- The diagnostics tool is disconnected.
- Engine control unit is disconnected. (p. 17)
- The break-out box is connected to the engine control unit wiring harness with adapter **00029095015**.
- Induction manifold sensor is disconnected. (p. 15)
- Throttle valve position sensor circuit A is disconnected. (p. 14)
- The coolant temperature sensor is disconnected. (p. 9)
- The tilt sensor is disconnected. (p. 16)
- The intake air temperature sensor is disconnected. (p. 12)
- The gear position sensor is disconnected. (p. 17)



Induction manifold pressure sensor – check the ground wire.

- Measure the resistance between the specified points.
Break out box connector **HY** pin **17** – Induction manifold pressure sensor, connector **DX** pin **3**

Resistance	≤ 0.6 Ω
------------	---------

- » If the specifications have not been met:
 - Check engine control unit connector **HY** (p. 122) pin **17** and connector **DX** (p. 119) pin **3**.
 - Check the cable from engine control unit connector **HY** (p. 122) pin **17** to connector **DX** (p. 119) pin **3**.

- » If the specifications have been met:
 - Check the next possible cause:
Induction manifold pressure sensor – the signal wire has a short circuit to ignition plus (terminal 15)
(📖 p. 21)

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

Condition

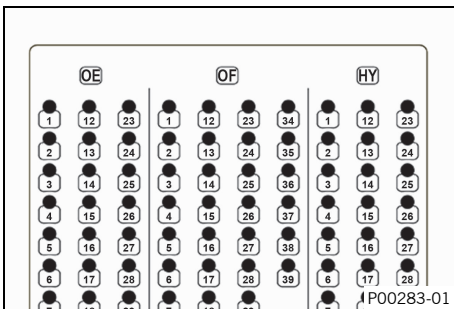
The diagnostics tool is disconnected.
 Engine control unit is disconnected. (📖 p. 17)
 The break-out box is connected to the engine control unit wiring harness with adapter **00029095015**.
 Induction manifold sensor is disconnected. (📖 p. 15)

Induction manifold pressure 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 **HY** pin **27** – Break out box connector **HY** pin **1**

Resistance	$\infty \Omega$
------------	-----------------

- » If the specifications have not been met:
 - Check the cable from engine control unit connector **HY** (📖 p. 122) pin **27** to connector **DX** (📖 p. 119) 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 signal wire has a short circuit to the sensor power supply (📖 p. 21)



Induction manifold pressure sensor – the signal wire has a short circuit to the sensor power supply

Condition

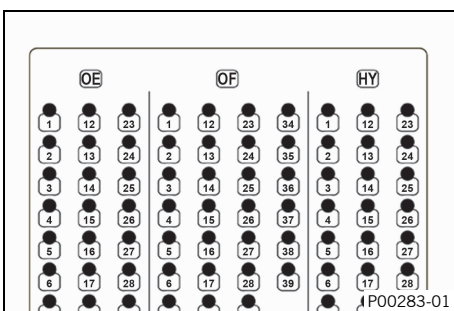
The diagnostics tool is disconnected.
 Engine control unit is disconnected. (📖 p. 17)
 The break-out box is connected to the engine control unit wiring harness with adapter **00029095015**.
 Induction manifold sensor is disconnected. (📖 p. 15)

Induction manifold pressure sensor – check the signal wire for a short circuit to sensor power supply.

- Measure the resistance between the specified points.
Break out box connector **HY** pin **27** – Break out box connector **HY** pin **12**

Resistance	$\infty \Omega$
------------	-----------------

- » If the specifications have not been met:
 - Check the cable from engine control unit connector **HY** (📖 p. 122) pin **27** to connector **DX** (📖 p. 119) pin **2** for a short circuit to the sensor power supply.



Blink code for malfunction indicator lamp	Fi 09 Malfunction indicator lamp flashes 9x short
Display on diagnostic tool	P0107 "Induction manifold pressure sensor" "Input signal too low"
Error level condition	Induction manifold pressure sensor – input signal too low Voltage: ≤ 0.215 V Time: ≥ 3 s
Function check	Induction manifold pressure sensor – checking the voltage (📖 p. 22)
Possible cause	Induction manifold pressure sensor – the signal wire has a short circuit to sensor ground (📖 p. 22)
	Induction manifold pressure sensor – the signal wire has a short circuit to ground (terminal 31) (📖 p. 23)
	Induction manifold pressure sensor – the power supply is faulty (📖 p. 23)

Induction manifold pressure sensor – checking the voltage

Condition

The diagnostics tool is connected and running.

- Select "Engine control unit" > "Measured value" > "Induction manifold pressure sensor for cylinder 1 voltage (PM1AD)" and "Induction manifold pressure sensor for cylinder 1 signal (PM1M)".

Induction manifold pressure sensor voltage	
at: 133 mbar (1.93 psi)	0.498 V
at: 1,200 mbar (17.4 psi)	3.408 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 fault memory using the KTM diagnostics tool.
- » If the displayed value is below the setpoint value:
 - Check the next possible cause:
Induction manifold pressure sensor – the signal wire has a short circuit to sensor ground (📖 p. 22)
 - Check the next possible cause:
Induction manifold pressure sensor – the signal wire has a short circuit to ground (terminal 31) (📖 p. 23)
 - Check the next possible cause:
Induction manifold pressure sensor – the power supply is faulty (📖 p. 23)

Induction manifold pressure sensor – the signal wire has a short circuit to sensor ground

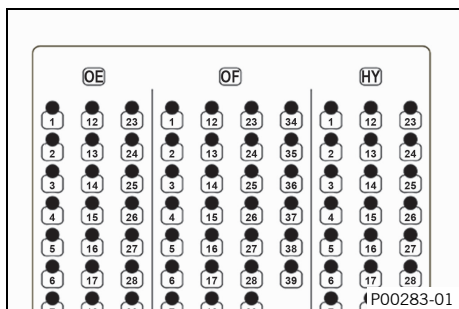
Condition

The diagnostics tool is disconnected.

Engine control unit is disconnected. (📖 p. 17)

The break-out box is connected to the engine control unit wiring harness with adapter **00029095015**.

Induction manifold sensor is disconnected. (📖 p. 15)



Induction manifold pressure sensor – check the signal wire for a short circuit to sensor ground.

- Measure the resistance between the specified points.
Break out box connector **HY** pin **27** – Break out box connector **HY** pin **17**

Resistance	$\infty \Omega$
------------	-----------------

- » If the specifications have not been met:
 - Check the cable from connector **DX** (p. 119) pin **2** to engine control unit connector **HY** (p. 122) pin **27** for a short circuit to sensor ground.
- » If the specifications have been met:
 - Check the next possible cause:
Induction manifold pressure sensor – the signal wire has a short circuit to ground (terminal 31) (p. 23)

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

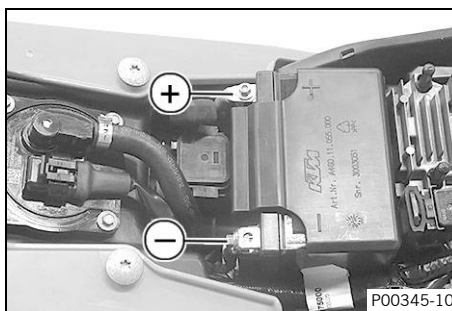
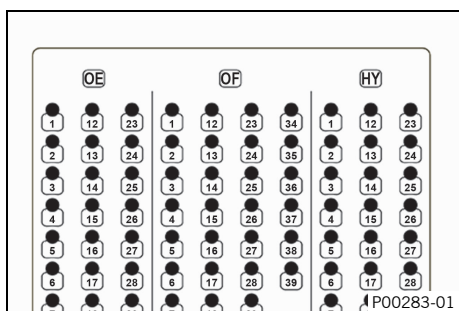
Condition

The diagnostics tool is disconnected.

Engine control unit is disconnected. (p. 17)

The break-out box is connected to the engine control unit wiring harness with adapter **00029095015**.

Induction manifold sensor is disconnected. (p. 15)



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

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

Resistance	$\infty \Omega$
------------	-----------------

- » If the specifications have not been met:
 - Check the cable of connector **DX** (p. 119) pin **2** to engine control unit connector **HY** (p. 122) pin **27** for a short circuit to ground (terminal 31).
- » If the specifications have been met:
 - Check the next possible cause:
Induction manifold pressure sensor – the power supply is faulty (p. 23)

Induction manifold pressure sensor – the power supply is faulty

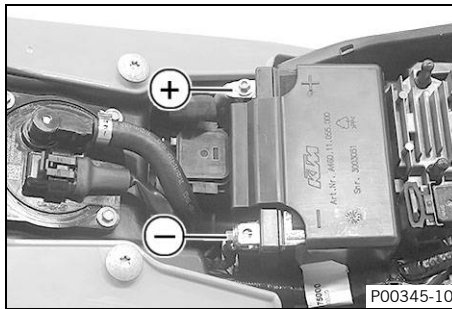
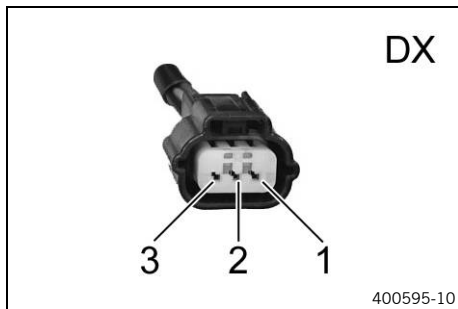
Condition

The diagnostics tool is connected and running.

Engine control unit is connected. (p. 17)

Induction manifold sensor is disconnected. (p. 15)

3 ENGINE CONTROL TROUBLE CODE



Induction manifold pressure sensor – check the power supply.

- **V** Measure the voltage between the specified points.
Induction manifold pressure sensor, connector **DX** pin **1** – Measuring point **Ground (-)**

i Info

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

Voltage	4.9 ... 5.1 V
---------	---------------

- » If the specifications have not been met:
 - Check connector **DX** (📖 p. 119) pin **1**.
 - Check the wire from connector **DX** (📖 p. 119) pin **1** according to the wiring diagram.

Blink code for malfunction indicator lamp	Fi 13 Malfunction indicator lamp flashes 1x long, 3x short
Display on diagnostic tool	P0110 "Intake air temperature sensor" "Input signal too high"
Error level condition	Intake air temperature sensor – input signal too high Voltage: ≥ 4.824 V Time: ≥ 3 s
Function check	Intake air temperature sensor – checking the voltage (🔧 p. 25)
Possible cause	Intake air temperature sensor – the value is not plausible (🔧 p. 26)
	Intake air temperature sensor – the signal wire is faulty (🔧 p. 26)
	Intake air temperature sensor – the ground wire is faulty (🔧 p. 27)
	Intake air temperature sensor – the signal wire has a short circuit to ignition plus (terminal 15) (🔧 p. 27)
	Intake air temperature sensor – the signal wire has a short circuit to the sensor power supply (🔧 p. 28)

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 voltage (TAAD)**" and "**Intake air temperature sensor (TA)**".

Intake air temperature sensor	
Voltage at: -20 °C (-4 °F)	4.67 V
Voltage at: 20 °C (68 °F)	3.14 V
Voltage at: 40 °C (104 °F)	2.15 V
Voltage at: 100 °C (212 °F)	0.46 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 fault 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. 26)
 - Check the next possible cause:
Intake air temperature sensor – the signal wire is faulty (🔧 p. 26)
 - Check the next possible cause:
Intake air temperature sensor – the ground wire is faulty (🔧 p. 27)
 - Check the next possible cause:
Intake air temperature sensor – the signal wire has a short circuit to ignition plus (terminal 15) (🔧 p. 27)
 - Check the next possible cause:
Intake air temperature sensor – the signal wire has a short circuit to the sensor power supply (🔧 p. 28)


Intake air temperature sensor – the value is not plausible

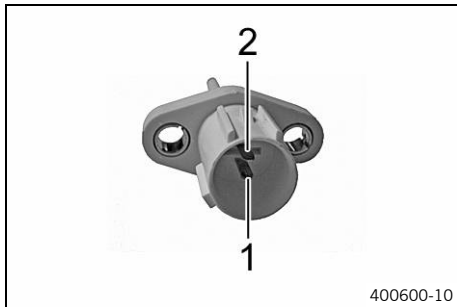
Condition

The diagnostics tool is disconnected.

The intake air temperature sensor is removed. (📖 p. 12)

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)	18.80 kΩ
Voltage at: -20 °C (-4 °F)	4.67 V
Resistance at: 20 °C (68 °F)	2.57 kΩ
Voltage at: 20 °C (68 °F)	3.14 V
Resistance at: 40 °C (104 °F)	1.136 kΩ
Voltage at: 40 °C (104 °F)	2.15 V
Resistance at: 100 °C (212 °F)	0.1553 kΩ
Voltage at: 100 °C (212 °F)	0.46 V

- › 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. 26)

Intake air temperature sensor – the signal wire is faulty

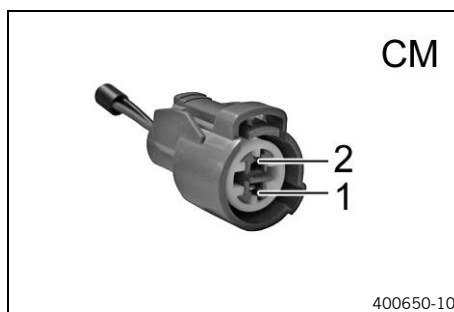
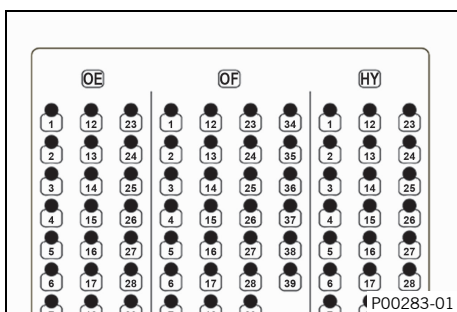
Condition

The diagnostics tool is disconnected.


Engine control unit is disconnected. (📖 p. 17)

The break-out box is connected to the engine control unit wiring harness with adapter **00029095015**.

The intake air temperature sensor is disconnected. (📖 p. 12)



Intake air temperature sensor – check the signal wire.

-  Measure the resistance between the specified points.
Break out box connector **HY** pin 19 – Intake air temperature sensor connector **CM** pin 1

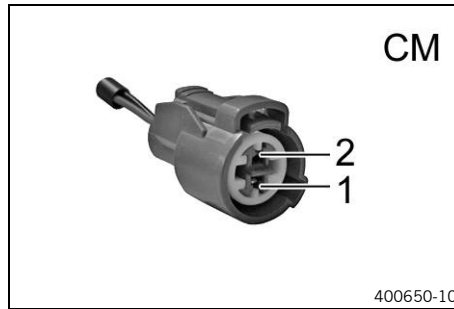
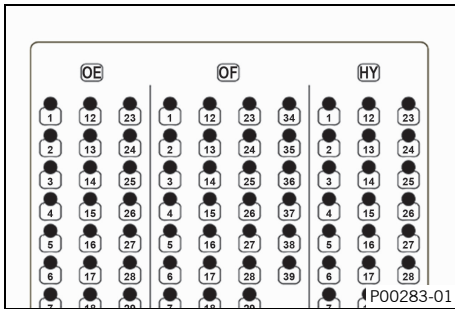
Resistance	$\leq 0.6 \Omega$
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- » If the specifications have not been met:
 - Check engine control unit connector **HY** (📖 p. 122) pin **19** and connector **CM** (📖 p. 119) pin **1**.
 - Check the cable from engine control unit connector **HY** (📖 p. 122) pin **19** to connector **CM** (📖 p. 119) pin **1**.
- » If the specifications have been met:
 - Check the next possible cause:
 - Intake air temperature sensor – the ground wire is faulty (📖 p. 27)

Intake air temperature sensor – the ground wire is faulty

Condition

The diagnostics tool is disconnected.
 Engine control unit is disconnected. (📖 p. 17)
 The break-out box is connected to the engine control unit wiring harness with adapter **00029095015**.
 The intake air temperature sensor is disconnected. (📖 p. 12)
 Induction manifold sensor is disconnected. (📖 p. 15)
 Throttle valve position sensor circuit A is disconnected. (📖 p. 14)
 The coolant temperature sensor is disconnected. (📖 p. 9)
 The tilt sensor is disconnected. (📖 p. 16)
 The gear position sensor is disconnected. (📖 p. 17)



Intake air temperature sensor – check the ground wire.

- Measure the resistance between the specified points.
 Break out box connector **HY** pin **17** – Intake air temperature sensor connector **CM** pin **2**

Resistance	$\leq 0.6 \Omega$
------------	-------------------

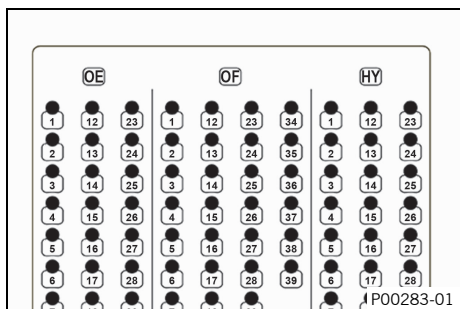
- » If the specifications have not been met:
 - Check engine control unit connector **HY** (📖 p. 122) pin **17** and connector **CM** (📖 p. 119) pin **2**.
 - Check the cable from engine control unit connector **HY** (📖 p. 122) pin **17** to connector **CM** (📖 p. 119) pin **2**.
- » If the specifications have been met:
 - Check the next possible cause:
 - Intake air temperature sensor – the signal wire has a short circuit to ignition plus (terminal 15) (📖 p. 27)

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


Condition

The diagnostics tool is disconnected.
 Engine control unit is disconnected. (📖 p. 17)
 The break-out box is connected to the engine control unit wiring harness with adapter **00029095015**.
 The intake air temperature sensor is disconnected. (📖 p. 12)

3 ENGINE CONTROL TROUBLE CODE



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 **HY** pin **19** – Break out box connector **HY** pin **1**

Resistance	$\infty \Omega$
------------	-----------------

- » If the specifications have not been met:
 - Check the cable from engine control unit connector **HY** (📖 p. 122) pin **19** to connector **CM** (📖 p. 119) pin **1** for a short circuit to ignition plus (terminal 15).
- » If the specifications have been met:
 - Check the next possible cause:
Intake air temperature sensor – the signal wire has a short circuit to the sensor power supply (📖 p. 28)

Intake air temperature sensor – the signal wire has a short circuit to the sensor power supply

Condition


The diagnostics tool is disconnected.

Engine control unit is disconnected. (📖 p. 17)

The break-out box is connected to the engine control unit wiring harness with adapter **00029095015**.

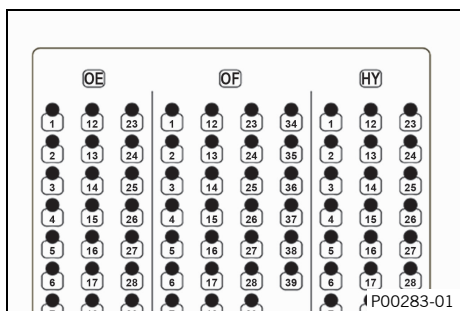
The intake air temperature sensor is disconnected. (📖 p. 12)

Intake air temperature 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 **HY** pin **19** – Break out box connector **HY** pin **12**

Resistance	$\infty \Omega$
------------	-----------------

- » If the specifications have not been met:
 - Check the cable from engine control unit connector **HY** (📖 p. 122) pin **19** to connector **CM** (📖 p. 119) pin **1** for a short circuit to the sensor power supply.



Blink code for malfunction indicator lamp	Fi 13 Malfunction indicator lamp flashes 1x long, 3x short
Display on diagnostic tool	P0112 "Intake air temperature sensor" "Input signal too low"
Error level condition	Intake air temperature sensor – input signal too low Voltage: ≤ 0.195 V Time: ≥ 3 s
Function check	Intake air temperature sensor – checking the voltage (📖 p. 29)
Possible cause	Intake air temperature sensor – the value is not plausible (📖 p. 29)
	Intake air temperature sensor – the signal wire has a short circuit to ground (terminal 31) (📖 p. 30)
	Intake air temperature sensor – the signal wire has a short circuit to sensor ground (📖 p. 31)

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 voltage (TAAD)"** and **"Intake air temperature sensor (TA)"**.

Intake air temperature sensor	
Voltage at: -20 °C (-4 °F)	4.67 V
Voltage at: 20 °C (68 °F)	3.14 V
Voltage at: 40 °C (104 °F)	2.15 V
Voltage at: 100 °C (212 °F)	0.46 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 fault 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. 29)
 - Check the next possible cause:
Intake air temperature sensor – the signal wire has a short circuit to ground (terminal 31) (📖 p. 30)
 - Check the next possible cause:
Intake air temperature sensor – the signal wire has a short circuit to sensor ground (📖 p. 31)

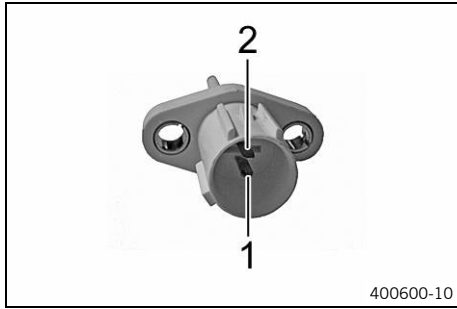
Intake air temperature sensor – the value is not plausible

Condition

The diagnostics tool is disconnected.

The intake air temperature sensor is removed. (📖 p. 12)

3 ENGINE CONTROL TROUBLE CODE



Intake air temperature sensor - check the resistance.

- Ω 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)	18.80 k Ω
Voltage at: -20 °C (-4 °F)	4.67 V
Resistance at: 20 °C (68 °F)	2.57 k Ω
Voltage at: 20 °C (68 °F)	3.14 V
Resistance at: 40 °C (104 °F)	1.136 k Ω
Voltage at: 40 °C (104 °F)	2.15 V
Resistance at: 100 °C (212 °F)	0.1553 k Ω
Voltage at: 100 °C (212 °F)	0.46 V

- » 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. 30)

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

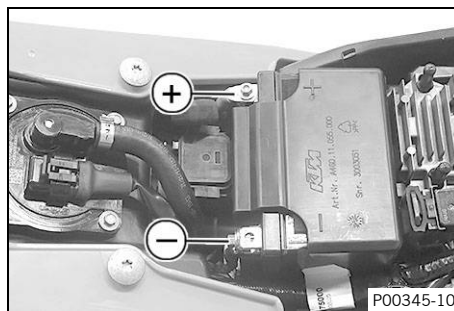
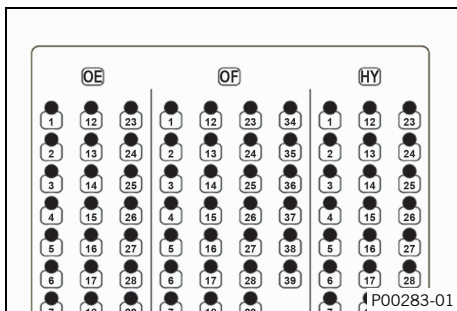
Condition

The diagnostics tool is disconnected.

Engine control unit is disconnected. (📖 p. 17)

The break-out box is connected to the engine control unit wiring harness with adapter **00029095015**.

The intake air temperature sensor is disconnected. (📖 p. 12)



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

- Ω Measure the resistance between the specified points.
Break out box connector **HY** pin 19 – Measuring point **Ground (-)**

Resistance	$\infty \Omega$
------------	-----------------

- » If the specifications have not been met:
 - Check the cable from engine control unit connector **HY** (📖 p. 122) pin 19 to connector **CM** (📖 p. 119) pin 1 for a short circuit to ground (terminal 31).
- » If the specifications have been met:

- Check the next possible cause:
Intake air temperature sensor – the signal wire has a short circuit to sensor ground (📖 p. 31)

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

Condition


The diagnostics tool is disconnected.

Engine control unit is disconnected. (📖 p. 17)

The break-out box is connected to the engine control unit wiring harness with adapter **00029095015**.

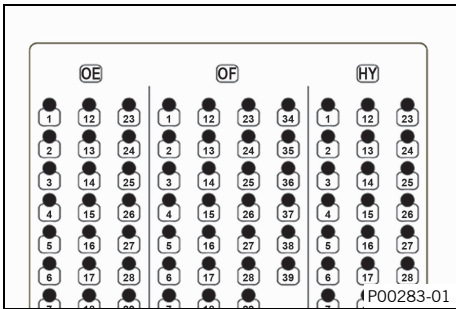
The intake air temperature sensor is disconnected. (📖 p. 12)

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

-  Measure the resistance between the specified points.
Break out box connector **HY** pin **19** – Break out box connector **HY** pin **17**

Resistance	$\infty \Omega$
------------	-----------------

- » If the specifications have not been met:
 - Check cable from engine control unit connector **HY** (📖 p. 122) pin **19** to connector **CM** (📖 p. 119) pin **1** for a short circuit to sensor ground.



3 ENGINE CONTROL TROUBLE CODE

Blink code for malfunction indicator lamp	Fi 12 Malfunction indicator lamp flashes 1x long, 2x short
Display on diagnostic tool	P0115 "Coolant temperature sensor" "Input signal too high"
Error level condition	Coolant temperature sensor – input signal too high Voltage: ≥ 4.785 V Time: ≥ 3 s
Function check	Coolant temperature sensor – checking the voltage (🔧 p. 32)
Possible cause	Coolant temperature sensor – the value is not plausible (🔧 p. 33)
	Coolant temperature sensor – the signal wire is faulty (🔧 p. 34)
	Coolant temperature sensor – the ground wire is faulty (🔧 p. 35)
	Coolant temperature sensor – the signal wire has a short circuit to ignition plus (terminal 15) (🔧 p. 35)
	Coolant temperature sensor – the signal wire has a short circuit to the sensor power supply (🔧 p. 36)

Coolant temperature sensor – checking the voltage

Condition

The diagnostics tool is connected and running.

- Select "**Engine control unit**" > "**Measured values**" > "**Coolant temperature sensor voltage cylinder 1 (TWAD)**" and "**Coolant temperature sensor cylinder 1 (TW)**".

Coolant temperature sensor	
Voltage at: -20 °C (-4 °F)	4.5 V
Voltage at: -10 °C (14 °F)	4.3 V
Voltage at: 0 °C (32 °F)	3.9 V
Voltage at: 10 °C (50 °F)	3.5 V
Voltage at: 20 °C (68 °F)	3.1 V
Voltage at: 30 °C (86 °F)	2.5 V
Voltage at: 40 °C (104 °F)	2.1 V
Voltage at: 50 °C (122 °F)	1.7 V
Voltage at: 60 °C (140 °F)	1.4 V
Voltage at: 70 °C (158 °F)	1.0 V
Voltage at: 80 °C (176 °F)	0.86 V
Voltage at: 90 °C (194 °F)	0.68 V
Voltage at: 100 °C (212 °F)	0.6 V
Voltage at: 110 °C (230 °F)	0.44 V
Voltage at: 120 °C (248 °F)	0.34 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 fault memory using the KTM diagnostics tool.
- » If the displayed value is above the setpoint value:
 - Check the next possible cause:
Coolant temperature sensor – the value is not plausible (🔧 p. 33)
 - Check the next possible cause:
Coolant temperature sensor – the signal wire is faulty (🔧 p. 34)

- Check the next possible cause:
Coolant temperature sensor – the ground wire is faulty (🔧 p. 35)
- Check the next possible cause:
Coolant temperature sensor – the signal wire has a short circuit to ignition plus (terminal 15) (🔧 p. 35)
- Check the next possible cause:
Coolant temperature sensor – the signal wire has a short circuit to the sensor power supply (🔧 p. 36)


Coolant temperature sensor – the value is not plausible

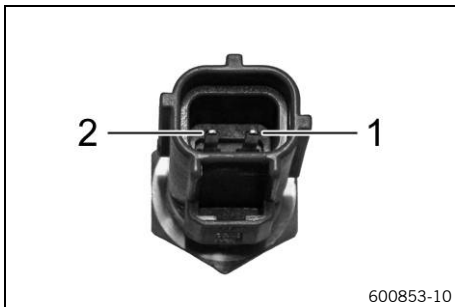
Condition

The diagnostics tool is disconnected.

The coolant temperature sensor is disconnected. (🔧 p. 9)

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)	13.50 ... 16.50 kΩ
Voltage at: -20 °C (-4 °F)	4.5 V
Resistance at: -10 °C (14 °F)	8.24 ... 10.08 kΩ
Voltage at: -10 °C (14 °F)	4.3 V
Resistance at: 0 °C (32 °F)	5.17 ... 6.31 kΩ
Voltage at: 0 °C (32 °F)	3.9 V
Resistance at: 10 °C (50 °F)	3.33 ... 4.07 kΩ
Voltage at: 10 °C (50 °F)	3.5 V
Resistance at: 20 °C (68 °F)	2.21 ... 2.70 kΩ
Voltage at: 20 °C (68 °F)	3.1 V
Resistance at: 30 °C (86 °F)	1.49 ... 1.83 kΩ
Voltage at: 30 °C (86 °F)	2.5 V
Resistance at: 40 °C (104 °F)	1.04 ... 1.27 kΩ
Voltage at: 40 °C (104 °F)	2.1 V
Resistance at: 50 °C (122 °F)	730 ... 892 Ω
Voltage at: 50 °C (122 °F)	1.7 V
Resistance at: 60 °C (140 °F)	526 ... 642 Ω
Voltage at: 60 °C (140 °F)	1.4 V
Resistance at: 70 °C (158 °F)	385 ... 471 Ω

3 ENGINE CONTROL TROUBLE CODE

Voltage at: 70 °C (158 °F)	1.0 V
Resistance at: 80 °C (176 °F)	286 ... 350 Ω
Voltage at: 80 °C (176 °F)	0.86 V
Resistance at: 90 °C (194 °F)	216 ... 264 Ω
Voltage at: 90 °C (194 °F)	0.68 V
Resistance at: 100 °C (212 °F)	165 ... 202 Ω
Voltage at: 100 °C (212 °F)	0.6 V
Resistance at: 110 °C (230 °F)	128 ... 156 Ω
Voltage at: 110 °C (230 °F)	0.44 V
Resistance at: 120 °C (248 °F)	100 ... 122 Ω
Voltage at: 120 °C (248 °F)	0.34 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. 34)

Coolant temperature sensor – the signal wire is faulty

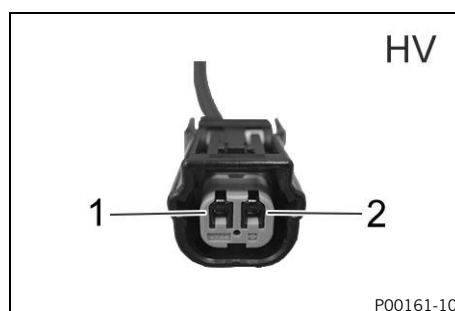
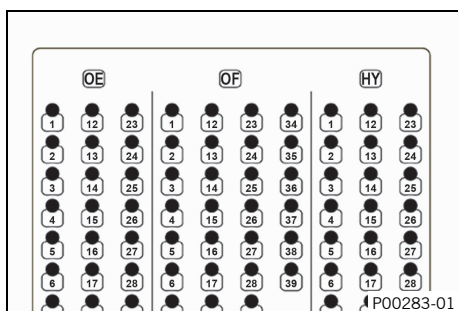
Condition

The diagnostics tool is disconnected.


Engine control unit is disconnected. (📖 p. 17)

The break-out box is connected to the engine control unit wiring harness with adapter **00029095015**.

The coolant temperature sensor is disconnected. (📖 p. 9)



Coolant temperature sensor – check the signal wire.

-  Measure the resistance between the specified points.
Break out box connector **HY** pin **21** – Coolant temperature sensor connector **HV** pin **1**

Resistance	≤ 0.6 Ω
------------	---------

- » If the specifications have not been met:
 - Check engine control unit connector **HY** (📖 p. 122) pin **21** and connector **HV** (📖 p. 121) pin **1**.

- Check the cable from engine control unit connector **HY** (📖 p. 122) pin **21** to connector **HV** (📖 p. 121) pin **1**.
- » If the specifications have been met:
 - Check the next possible cause:
Coolant temperature sensor – the ground wire is faulty (📖 p. 35)

Coolant temperature sensor – the ground wire is faulty

Condition

The diagnostics tool is disconnected.

Engine control unit is disconnected. (📖 p. 17)

The break-out box is connected to the engine control unit wiring harness with adapter **00029095015**.

The coolant temperature sensor is disconnected. (📖 p. 9)

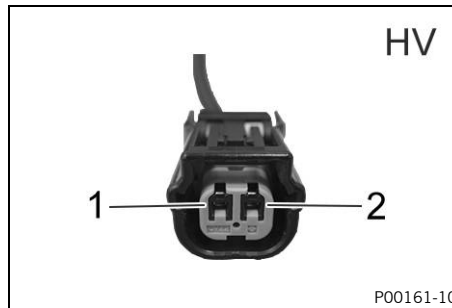
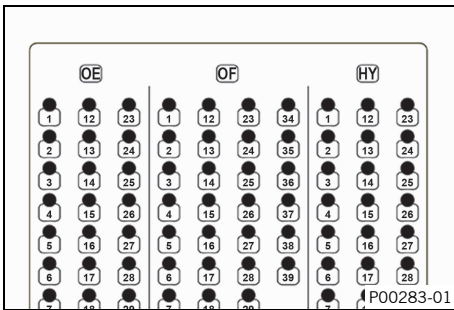
Induction manifold sensor is disconnected. (📖 p. 15)

Throttle valve position sensor circuit A is disconnected. (📖 p. 14)

The tilt sensor is disconnected. (📖 p. 16)

The intake air temperature sensor is disconnected. (📖 p. 12)

The gear position sensor is disconnected. (📖 p. 17)



Coolant temperature sensor – check the ground wire.

- Measure the resistance between the specified points.
Break out box connector **HY** pin **17** – Coolant temperature sensor connector **HV** pin **2**

Resistance	$\leq 0.6 \Omega$
------------	-------------------

- » If the specifications have not been met:
 - Check engine control unit connector **HY** (📖 p. 122) pin **17** and connector **HV** (📖 p. 121) pin **2**.
 - Check the cable from engine control unit connector **HY** (📖 p. 122) pin **17** to connector **HV** (📖 p. 121) pin **2**.
- » 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. 35)

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

Condition

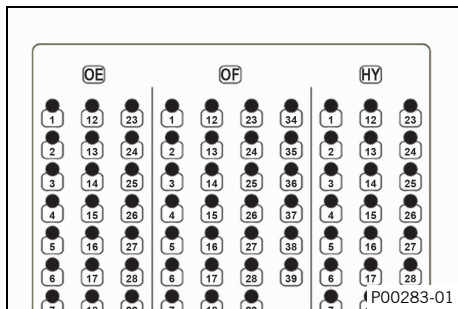
The diagnostics tool is disconnected.

Engine control unit is disconnected. (📖 p. 17)

The break-out box is connected to the engine control unit wiring harness with adapter **00029095015**.

The coolant temperature sensor is disconnected. (📖 p. 9)

3 ENGINE CONTROL TROUBLE CODE



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 **HY** pin **21** – Break out box connector **HY** pin **1**

Resistance	$\infty \Omega$
------------	-----------------

- » If the specifications have not been met:
 - Check the cable from engine control unit connector **HY** (p. 122) pin **21** to connector **HV** (p. 121) 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 the sensor power supply (p. 36)

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

Condition

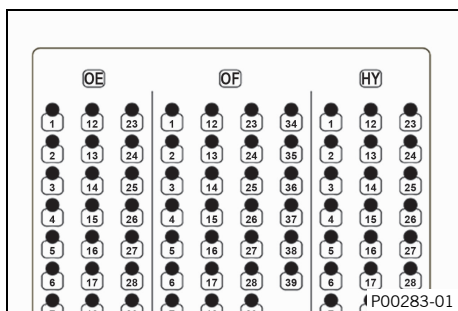
The diagnostics tool is disconnected.
 Engine control unit is disconnected. (p. 17)
 The break-out box is connected to the engine control unit wiring harness with adapter **00029095015**.
 The coolant temperature sensor is disconnected. (p. 9)

Coolant temperature 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 **HY** pin **21** – Break out box connector **HY** pin **12**

Resistance	$\infty \Omega$
------------	-----------------

- » If the specifications have not been met:
 - Check the cable from engine control unit connector **HY** (p. 122) pin **21** to connector **HV** (p. 121) pin **1** for a short circuit to the sensor power supply.



Blink code for malfunction indicator lamp	Fi 12 Malfunction indicator lamp flashes 1x long, 2x short
Display on diagnostic tool	P0117 "Coolant temperature sensor" "Input signal too low"
Error level condition	Coolant temperature sensor – input signal too low Voltage: ≤ 0.137 V Time: ≥ 3 s
Function check	Coolant temperature sensor – checking the voltage (📖 p. 37)
Possible cause	Coolant temperature sensor – the value is not plausible (📖 p. 38)
	Coolant temperature sensor – the signal wire has a short circuit to ground (terminal 31) (📖 p. 39)
	Coolant temperature sensor – the signal wire has a short circuit to sensor ground (📖 p. 40)

Coolant temperature sensor – checking the voltage

Condition

The diagnostics tool is connected and running.

- Select **"Engine control unit" > "Measured values" > "Coolant temperature sensor voltage cylinder 1 (TWAD)"** and **"Coolant temperature sensor cylinder 1 (TW)"**.

Coolant temperature sensor	
Voltage at: -20 °C (-4 °F)	4.5 V
Voltage at: -10 °C (14 °F)	4.3 V
Voltage at: 0 °C (32 °F)	3.9 V
Voltage at: 10 °C (50 °F)	3.5 V
Voltage at: 20 °C (68 °F)	3.1 V
Voltage at: 30 °C (86 °F)	2.5 V
Voltage at: 40 °C (104 °F)	2.1 V
Voltage at: 50 °C (122 °F)	1.7 V
Voltage at: 60 °C (140 °F)	1.4 V
Voltage at: 70 °C (158 °F)	1.0 V
Voltage at: 80 °C (176 °F)	0.86 V
Voltage at: 90 °C (194 °F)	0.68 V
Voltage at: 100 °C (212 °F)	0.6 V
Voltage at: 110 °C (230 °F)	0.44 V
Voltage at: 120 °C (248 °F)	0.34 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 fault memory using the KTM diagnostics tool.
- » If the displayed value is below the setpoint value:
 - Check the next possible cause:
Coolant temperature sensor – the value is not plausible (📖 p. 38)
 - Check the next possible cause:
Coolant temperature sensor – the signal wire has a short circuit to ground (terminal 31) (📖 p. 39)
 - Check the next possible cause:
Coolant temperature sensor – the signal wire has a short circuit to sensor ground (📖 p. 40)


Coolant temperature sensor – the value is not plausible

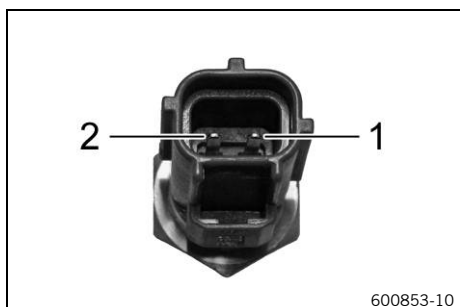
Condition

The diagnostics tool is disconnected.

The coolant temperature sensor is disconnected. (🔊 p. 9)

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)	13.50 ... 16.50 kΩ
Voltage at: -20 °C (-4 °F)	4.5 V
Resistance at: -10 °C (14 °F)	8.24 ... 10.08 kΩ
Voltage at: -10 °C (14 °F)	4.3 V
Resistance at: 0 °C (32 °F)	5.17 ... 6.31 kΩ
Voltage at: 0 °C (32 °F)	3.9 V
Resistance at: 10 °C (50 °F)	3.33 ... 4.07 kΩ
Voltage at: 10 °C (50 °F)	3.5 V
Resistance at: 20 °C (68 °F)	2.21 ... 2.70 kΩ
Voltage at: 20 °C (68 °F)	3.1 V
Resistance at: 30 °C (86 °F)	1.49 ... 1.83 kΩ
Voltage at: 30 °C (86 °F)	2.5 V
Resistance at: 40 °C (104 °F)	1.04 ... 1.27 kΩ
Voltage at: 40 °C (104 °F)	2.1 V
Resistance at: 50 °C (122 °F)	730 ... 892 Ω
Voltage at: 50 °C (122 °F)	1.7 V
Resistance at: 60 °C (140 °F)	526 ... 642 Ω
Voltage at: 60 °C (140 °F)	1.4 V
Resistance at: 70 °C (158 °F)	385 ... 471 Ω
Voltage at: 70 °C (158 °F)	1.0 V
Resistance at: 80 °C (176 °F)	286 ... 350 Ω
Voltage at: 80 °C (176 °F)	0.86 V
Resistance at: 90 °C (194 °F)	216 ... 264 Ω

Voltage at: 90 °C (194 °F)	0.68 V
Resistance at: 100 °C (212 °F)	165 ... 202 Ω
Voltage at: 100 °C (212 °F)	0.6 V
Resistance at: 110 °C (230 °F)	128 ... 156 Ω
Voltage at: 110 °C (230 °F)	0.44 V
Resistance at: 120 °C (248 °F)	100 ... 122 Ω
Voltage at: 120 °C (248 °F)	0.34 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. 39)

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

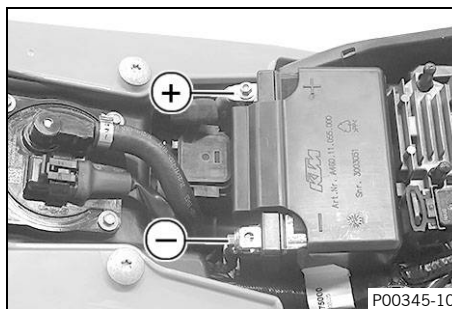
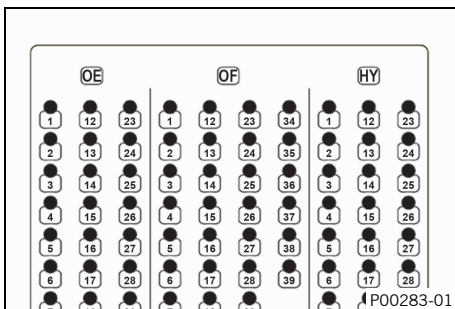
Condition

The diagnostics tool is disconnected.

Engine control unit is disconnected. (📖 p. 17)

The break-out box is connected to the engine control unit wiring harness with adapter **00029095015**.

The coolant temperature sensor is disconnected. (📖 p. 9)



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

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

Resistance	∞ Ω
------------	-----

- » If the specifications have not been met:
 - Check the cable from engine control unit connector **HY** (📖 p. 122) pin **21** to connector **HV** (📖 p. 121) pin **1** for a short circuit to ground (terminal 31).
- » 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. 40)

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

Condition


The diagnostics tool is disconnected.

Engine control unit is disconnected. (📖 p. 17)

The break-out box is connected to the engine control unit wiring harness with adapter **00029095015**.

The coolant temperature sensor is disconnected. (📖 p. 9)

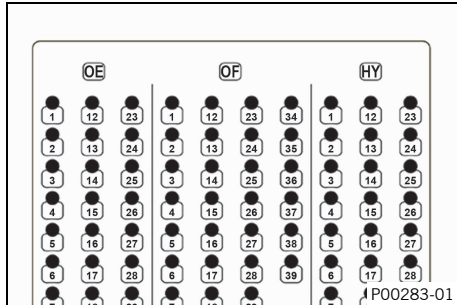
Coolant temperature sensor – check the signal wire for a short circuit to sensor ground.

-  Measure the resistance between the specified points.
Break out box connector **HY** pin **21** – Break out box connector **HY** pin **17**

Resistance	$\infty \Omega$
------------	-----------------

- » If the specifications have not been met:

- Check cable from engine control unit connector **HY** (📖 p. 122) pin **21** to connector **HV** (📖 p. 121) pin **1** for a short circuit to sensor ground.



Blink code for malfunction indicator lamp	Fi 06 Malfunction indicator lamp flashes 6x short
Display on diagnostic tool	P0120 "Circuit A throttle valve position sensor" "Input signal too low"
Error level condition	Throttle valve position sensor circuit A – input signal too low Voltage: ≤ 0.352 V Time: ≥ 3 s
Function check	Throttle valve position sensor circuit A - checking the voltage (📖 p. 41)
Possible cause	Throttle valve position sensor circuit A – signal wire is faulty (📖 p. 41)
	Throttle valve position sensor circuit A – the signal wire has a short circuit to ground (terminal 31) (📖 p. 42)
	Throttle valve position sensor circuit A – the signal wire has a short circuit to sensor ground (📖 p. 43)
	Throttle valve position sensor circuit A – the power supply is faulty (📖 p. 43)

Throttle valve position sensor circuit A - checking the voltage

Condition

The diagnostics tool is connected and running.

- Select **"Engine control unit" > "Measured values" > "Throttle position sensor circuit A voltage (THAD)"**.

Throttle valve position sensor circuit A	
Voltage "THAD"	0.4 ... 4.58 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 fault 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 – signal wire is faulty (📖 p. 41)
 - Check the next possible cause:
Throttle valve position sensor circuit A – the signal wire has a short circuit to ground (terminal 31) (📖 p. 42)
 - Check the next possible cause:
Throttle valve position sensor circuit A – the signal wire has a short circuit to sensor ground (📖 p. 43)
 - Check the next possible cause:
Throttle valve position sensor circuit A – the power supply is faulty (📖 p. 43)

Throttle valve position sensor circuit A – signal wire is faulty

Condition

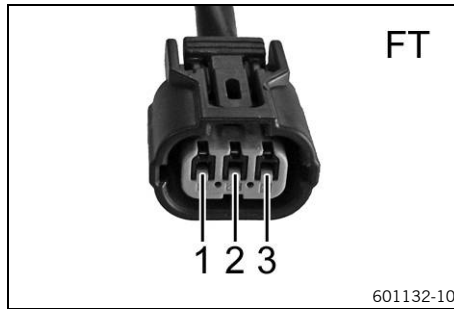
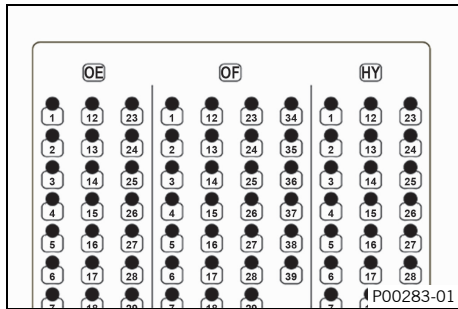
The diagnostics tool is disconnected.

Engine control unit is disconnected. (📖 p. 17)

The break-out box is connected to the engine control unit wiring harness with adapter **00029095015**.

Throttle valve position sensor circuit A is disconnected. (📖 p. 14)

3 ENGINE CONTROL TROUBLE CODE



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

- Measure the resistance between the specified points.
Break out box connector **HY** pin **15** – Throttle valve position sensor circuit A, connector **FT** pin **2**

Resistance	≤ 0.6 Ω
------------	---------

- » If the specifications have not been met:
 - Check engine control unit connector **HY** (p. 122) pin **15** and connector **FT** (p. 120) pin **2**.
 - Check the cable from engine control unit connector **HY** (p. 122) pin **15** to connector **FT** (p. 120) pin **2**.
- » 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. 42)

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

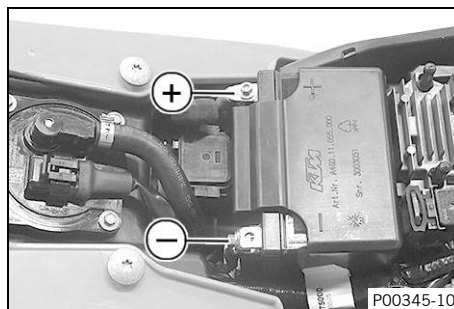
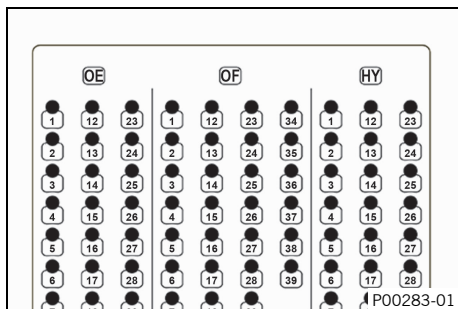
Condition

The diagnostics tool is disconnected.

Engine control unit is disconnected. (p. 17)

The break-out box is connected to the engine control unit wiring harness with adapter **00029095015**.

Throttle valve position sensor circuit A is disconnected. (p. 14)



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 **HY** pin **15** – Measuring point **Ground (-)**

Resistance	∞ Ω
------------	-----

- » If the specifications have not been met:
 - Check the cable from engine control unit connector **HY** (p. 122) pin **15** to connector **FT** (p. 120) pin **2** 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 sensor ground (p. 43)

Throttle valve position sensor circuit A – the signal wire has a short circuit to sensor ground

Condition

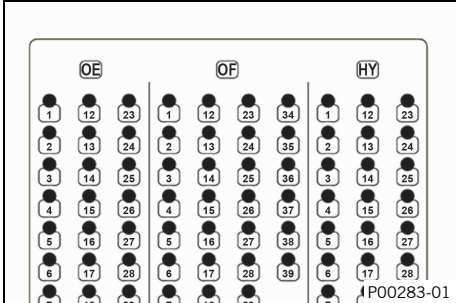
The diagnostics tool is disconnected.
 Engine control unit is disconnected. (📖 p. 17)
 The break-out box is connected to the engine control unit wiring harness with adapter **00029095015**.
 Throttle valve position sensor circuit A is disconnected. (📖 p. 14)

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

- Measure the resistance between the specified points.
 Break out box connector **HY** pin **15** – Break out box connector **HY** pin **17**

Resistance	$\infty \Omega$
------------	-----------------

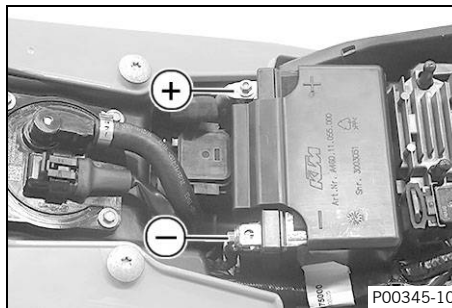
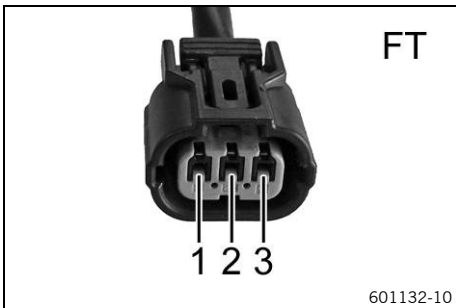
- » If the specifications have not been met:
 - Check cable from engine control unit connector **HY** (📖 p. 122) pin **15** to connector **FT** (📖 p. 120) pin **2** for a short circuit to sensor ground.
- » If the specifications have been met:
 - Check the next possible cause:
 Throttle valve position sensor circuit A – the power supply is faulty (📖 p. 43)



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

Condition

The diagnostics tool is connected and running.
 Engine control unit is connected. (📖 p. 17)
 Throttle valve position sensor circuit A is disconnected. (📖 p. 14)



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

- Measure the voltage between the specified points.
 Throttle valve position sensor circuit A, connector **FT** pin **1** – Measuring point **Ground (-)**




Info

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

Voltage	4.9 ... 5.1 V
---------	---------------

- » If the specifications have not been met:
 - Check the cable from connector **FT** (📖 p. 120) pin **1** to engine control unit connector **HY** (📖 p. 122) pin **12**.

Blink code for malfunction indicator lamp	 06 Malfunction indicator lamp flashes 6x short
Display on diagnostic tool	P0123 "Circuit A throttle valve position sensor" "Input signal too high"
Error level condition	Throttle valve position sensor circuit A – input signal too high Voltage: ≥ 4.785 V Time: ≥ 3 s
Function check	Throttle valve position sensor circuit A - checking the voltage (📖 p. 44)
Possible cause	Throttle valve position sensor circuit A – the signal wire has a short circuit to ignition plus (terminal 15) (📖 p. 44)
	Throttle valve position sensor circuit A – the signal wire has a short circuit to the sensor power supply (📖 p. 45)
	Throttle valve position sensor circuit A – ground wire is faulty (📖 p. 45)

Throttle valve position sensor circuit A - checking the voltage

Condition

The diagnostics tool is connected and running.

- Select **"Engine control unit" > "Measured values" > "Throttle position sensor circuit A voltage (THAD)"**.

Throttle valve position sensor circuit A	
Voltage "THAD"	0.4 ... 4.58 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 fault 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 ignition plus (terminal 15) (📖 p. 44)
 - Check the next possible cause:
Throttle valve position sensor circuit A – the signal wire has a short circuit to the sensor power supply (📖 p. 45)
 - Check the next possible cause:
Throttle valve position sensor circuit A – ground wire is faulty (📖 p. 45)

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

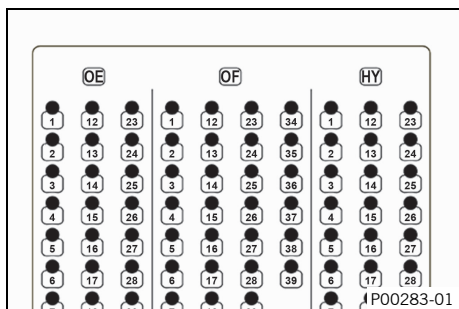
Condition

The diagnostics tool is disconnected.

Engine control unit is disconnected. (📖 p. 17)

The break-out box is connected to the engine control unit wiring harness with adapter **00029095015**.

Throttle valve position sensor circuit A is disconnected. (📖 p. 14)



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

- Measure the resistance between the specified points.
Break out box connector **HY** pin **15** – Break out box connector **HY** pin **1**

Resistance	$\infty \Omega$
------------	-----------------

- » If the specifications have not been met:
 - Check the cable from engine control unit connector **HY** (📖 p. 122) pin **15** to connector **FT** (📖 p. 120) pin **2** 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 – the signal wire has a short circuit to the sensor power supply (📖 p. 45)

Throttle valve position sensor circuit A – the signal wire has a short circuit to the sensor power supply

Condition

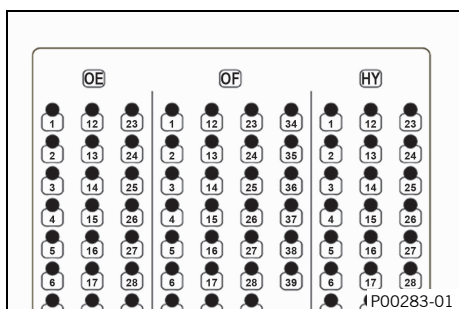
The diagnostics tool is disconnected.
 Engine control unit is disconnected. (📖 p. 17)
 The break-out box is connected to the engine control unit wiring harness with adapter **00029095015**.
 Throttle valve position sensor circuit A is disconnected. (📖 p. 14)

Throttle valve position sensor circuit A – check the signal wire for a short circuit to the sensor power supply.

- Measure the resistance between the specified points.
Break out box connector **HY** pin **15** – Break out box connector **HY** pin **12**

Resistance	$\infty \Omega$
------------	-----------------

- » If the specifications have not been met:
 - Check the cable from engine control unit connector **HY** (📖 p. 122) pin **15** to connector **FT** (📖 p. 120) pin **2** for a short circuit to the sensor power supply.
- » If the specifications have been met:
 - Check the next possible cause:
Throttle valve position sensor circuit A – ground wire is faulty (📖 p. 45)

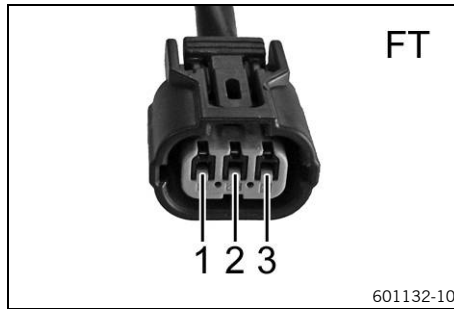
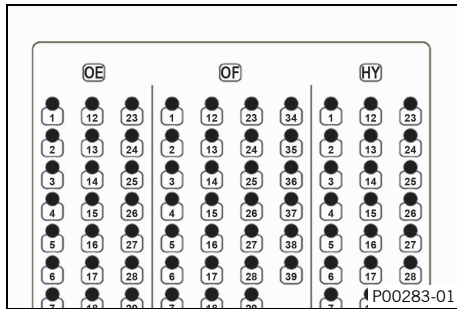


Throttle valve position sensor circuit A – ground wire is faulty

Condition

The diagnostics tool is disconnected.
 Engine control unit is disconnected. (📖 p. 17)
 The break-out box is connected to the engine control unit wiring harness with adapter **00029095015**.
 Throttle valve position sensor circuit A is disconnected. (📖 p. 14)
 The coolant temperature sensor is disconnected. (📖 p. 9)
 Induction manifold sensor is disconnected. (📖 p. 15)
 The tilt sensor is disconnected. (📖 p. 16)
 The intake air temperature sensor is disconnected. (📖 p. 12)
 The gear position sensor is disconnected. (📖 p. 17)

3 ENGINE CONTROL TROUBLE CODE



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

- Measure the resistance between the specified points.
Break out box connector **HY** pin **17** – Throttle valve position sensor circuit A, connector **FT** pin **3**

Resistance	≤ 0.6 Ω
------------	---------

- » If the specifications have not been met:
 - Check engine control unit **HY** (📖 p. 122) pin **17** and connector **FT** (📖 p. 120) pin **3**.
 - Check the cable from engine control unit connector **HY** (📖 p. 122) pin **17** to connector **FT** (📖 p. 120) pin **3**.

Blink code for malfunction indicator lamp	<div style="border: 1px solid black; padding: 2px; display: inline-block; font-weight: bold; font-size: 1.2em;">Fi</div> 33 Malfunction indicator lamp flashes 3x long, 3x short
Display on diagnostic tool	P0201 "Injection valve cylinder 1" "Circuit fault"
Error level condition	Injection valve cylinder 1 – circuit fault Time: ≥ 2.0 s
Function check	Injection valve cylinder 1 – checking the control (📖 p. 47)
Possible cause	Injection valve cylinder 1 - the value is not plausible (📖 p. 48)
	Injection valve cylinder 1 – the power supply is faulty (📖 p. 48)
	Injection valve cylinder 1 – the control wire has a short circuit to ignition plus (terminal 15) (📖 p. 49)
	Injection valve cylinder 1 – the control wire has a short circuit to the sensor power supply (📖 p. 49)
	Injection valve cylinder 1 – the control wire is faulty (📖 p. 49)
	Injection valve, cylinder 1 – the control wire has a short circuit to ground (terminal 31) (📖 p. 50)
	Injection valve cylinder 1 – the control wire has a short circuit to sensor ground (📖 p. 51)

Injection valve cylinder 1 – checking the control

Condition

The diagnostics tool is connected and running.

- Execute **"Engine control unit" > "Actuator test" > "Injection valve 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 fault 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. 48)
 - Check the next possible cause:
Injection valve cylinder 1 – the power supply is faulty (📖 p. 48)
 - Check the next possible cause:
Injection valve cylinder 1 – the control wire has a short circuit to ignition plus (terminal 15) (📖 p. 49)
 - Check the next possible cause:
Injection valve cylinder 1 – the control wire has a short circuit to the sensor power supply (📖 p. 49)
 - Check the next possible cause:
Injection valve cylinder 1 – the control wire is faulty (📖 p. 49)
 - Check the next possible cause:
Injection valve, cylinder 1 – the control wire has a short circuit to ground (terminal 31) (📖 p. 50)
 - Check the next possible cause:
Injection valve cylinder 1 – the control wire has a short circuit to sensor ground (📖 p. 51)

Injection valve cylinder 1 - the value is not plausible



Condition

Injection valve cylinder 1 is disconnected. (📖 p. 13)

Injection valve cylinder 1 - check the resistance.

- Ω Measure the resistance between the specified points.
Injection valve, cylinder 1 pin 1 – Injection valve, cylinder 1 pin 2

Injector	
Resistance at: 20 °C (68 °F)	9.97 ... 11.03 Ω

- » If the specifications have not been met:
 - Change the injector.
- » If the specifications have been met:
 - Check the next possible cause:
Injection valve cylinder 1 – the power supply is faulty (📖 p. 48)

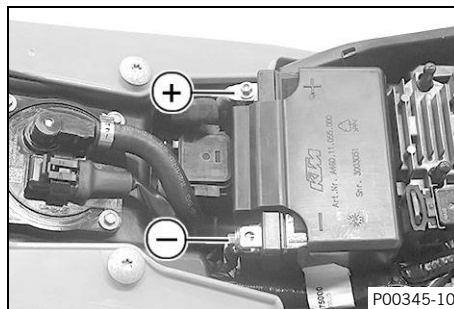
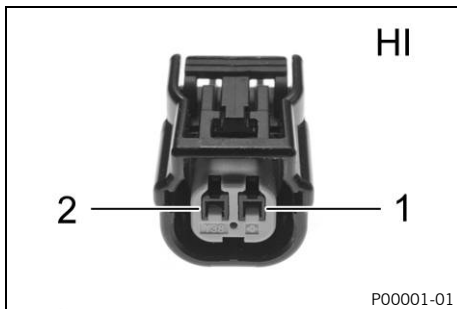
Injection valve cylinder 1 – the power supply is faulty

Condition

The diagnostics tool is connected and running.

Engine control unit is connected. (📖 p. 17)

Injection valve cylinder 1 is disconnected. (📖 p. 13)



Injection valve, cylinder 1 – check the power supply.

- **V** Measure the voltage between the specified points.
Injection valve cylinder 1, connector **HI** pin 2 – Measuring point **Ground (-)**

i Info

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

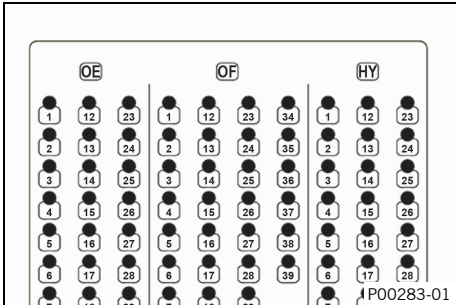
The value must not deviate from the battery voltage "VBAT" by more than 1 V.

- » If the specifications have not been met:
 - Check connector **HI** (📖 p. 121) pin 2.
 - Check the cable from connector **HI** (📖 p. 121) 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 has a short circuit to ignition plus (terminal 15) (📖 p. 49)

Injection valve cylinder 1 – the control wire has a short circuit to ignition plus (terminal 15)

Condition

The diagnostics tool is disconnected.
 Engine control unit is disconnected. (📖 p. 17)
 The break-out box is connected to the engine control unit wiring harness with adapter **00029095015**.
 Injection valve cylinder 1 is disconnected. (📖 p. 13)



Injection valve cylinder 1 – check the control wire for a short circuit to ignition plus (terminal 15).

- Measure the resistance between the specified points.
 Break out box connector **HY** pin **4** – Break out box connector **HY** pin **1**

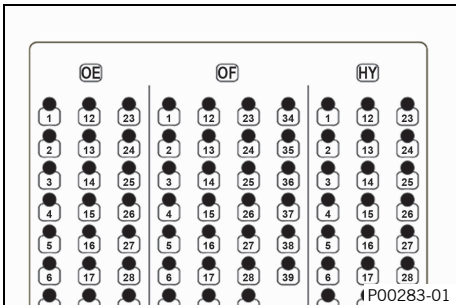
Resistance	$\infty \Omega$
------------	-----------------

- » If the specifications have not been met:
 - Check the cable from engine control unit connector **HY** (📖 p. 122) pin **4** to connector **HI** (📖 p. 121) pin **1** for a short circuit to ignition plus (terminal 15).
- » If the specifications have been met:
 - Check the next possible cause:
 Injection valve cylinder 1 – the control wire has a short circuit to the sensor power supply (📖 p. 49)

Injection valve cylinder 1 – the control wire has a short circuit to the sensor power supply

Condition

The diagnostics tool is disconnected.
 Engine control unit is disconnected. (📖 p. 17)
 The break-out box is connected to the engine control unit wiring harness with adapter **00029095015**.
 Injection valve cylinder 1 is disconnected. (📖 p. 13)



Injection valve cylinder 1 – check the control wire for a short circuit to the sensor power supply.

- Measure the resistance between the specified points.
 Break out box connector **HY** pin **4** – Break out box connector **HY** pin **12**

Resistance	$\infty \Omega$
------------	-----------------

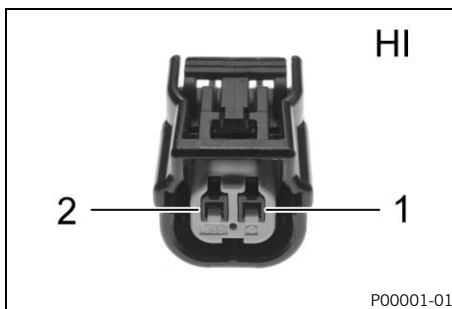
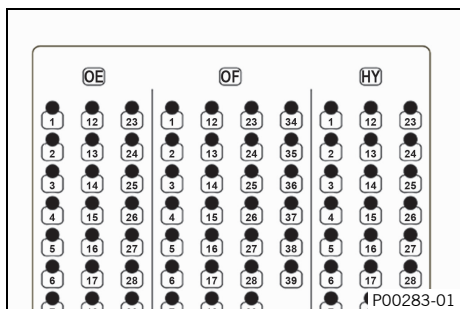
- » If the specifications have not been met:
 - Check the cable from engine control unit connector **HY** (📖 p. 122) pin **4** to connector **HI** (📖 p. 121) pin **1** for a short circuit to the sensor power supply.
- » If the specifications have been met:
 - Check the next possible cause:
 Injection valve cylinder 1 – the control wire is faulty (📖 p. 49)

Injection valve cylinder 1 – the control wire is faulty


Condition

The diagnostics tool is disconnected.
 Engine control unit is disconnected. (📖 p. 17)
 The break-out box is connected to the engine control unit wiring harness with adapter **00029095015**.
 Injection valve cylinder 1 is disconnected. (📖 p. 13)

3 ENGINE CONTROL TROUBLE CODE



Injection valve cylinder 1 – check the control wire.

-  Measure the resistance between the specified points.
Break out box connector **HY** pin 4 – Injection valve cylinder 1, connector **HI** pin 1

Resistance	≤ 0.6 Ω
------------	---------

- » If the specifications have not been met:
 - Check engine control unit connector **HY** (📖 p. 122) pin 4 and connector **HI** (📖 p. 121) pin 1.
 - Check the cable from engine control unit connector **HY** (📖 p. 122) pin 4 to connector **HI** (📖 p. 121) 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. 50)

Injection valve, cylinder 1 – the control wire has a short circuit to ground (terminal 31)

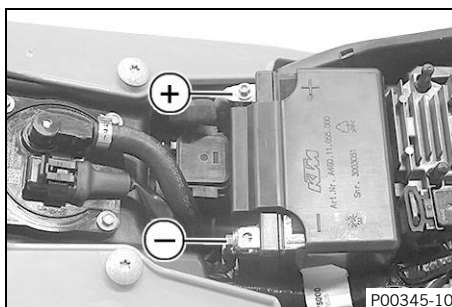
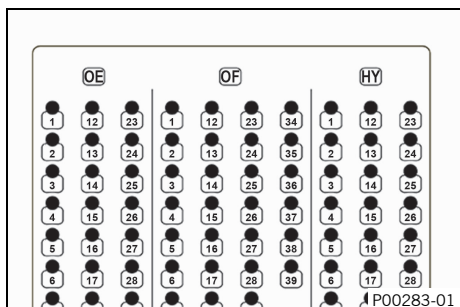
Condition

The diagnostics tool is disconnected.


Engine control unit is disconnected. (📖 p. 17)

The break-out box is connected to the engine control unit wiring harness with adapter **00029095015**.

Injection valve cylinder 1 is disconnected. (📖 p. 13)



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 **HY** pin 4 – Measuring point **Ground (-)**

Resistance	∞ Ω
------------	-----

- » If the specifications have not been met:
 - Check the cable from engine control unit connector **HY** (📖 p. 122) pin 4 to connector **HI** (📖 p. 121) pin 1 for a short circuit to ground (terminal 31).
- » If the specifications have been met:
 - Check the next possible cause:
Injection valve cylinder 1 – the control wire has a short circuit to sensor ground (📖 p. 51)

Injection valve cylinder 1 – the control wire has a short circuit to sensor ground

Condition


The diagnostics tool is disconnected.

Engine control unit is disconnected. (📖 p. 17)

The break-out box is connected to the engine control unit wiring harness with adapter **00029095015**.

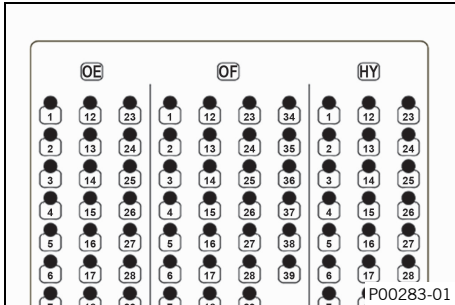
Injection valve cylinder 1 is disconnected. (📖 p. 13)

Injection valve cylinder 1 – check the control wire for a short circuit to sensor ground.

-  Measure the resistance between the specified points.
Break out box connector **HY** pin **4** – Break out box connector **HY** pin **17**

Resistance	$\infty \Omega$
------------	-----------------

- » If the specifications have not been met:
 - Check cable from engine control unit connector **HY** (📖 p. 122) pin **4** to connector **HI** (📖 p. 121) pin **1** for a short circuit to sensor ground.



3 ENGINE CONTROL TROUBLE CODE

Blink code for malfunction indicator lamp	Fi 02 Malfunction indicator lamp flashes 2x short
Display on diagnostic tool	P0335 "Crankshaft speed sensor" "Circuit fault"
Error level condition	Crankshaft speed sensor – circuit fault The induction manifold pressure sensor delivers a normal signal (engine running), while the crankshaft speed sensor does not generate any signal at all. Time: ≥ 2.0 s
Function check	Crankshaft speed sensor – checking the signal (📖 p. 52)
Possible cause	Crankshaft speed sensor - the value is not plausible (📖 p. 53) Crankshaft speed sensor – short circuit to ground (📖 p. 53) Crankshaft speed sensor – signal wires are faulty (📖 p. 53) Crankshaft speed sensor – the signal wires have a short circuit to ground (terminal 31) (📖 p. 54) Crankshaft speed sensor – the signal wires have a short circuit to sensor ground (📖 p. 55) Crankshaft speed sensor – the signal wires have a short circuit to ignition plus (terminal 15) (📖 p. 55) Crankshaft speed sensor – the signal wire has a short circuit to the sensor power supply (📖 p. 56)

Crankshaft speed sensor – checking the signal

Condition

The diagnostics tool is connected and running.

- Select "**Engine control unit**" > "**Measured values**" > "**Engine speed (NE)**".
- Execute the start procedure.

"Engine speed (NE)"	Starter speed
---------------------	---------------

- » If the specified value is reached:
 - Clear the fault memory using the KTM diagnostics tool.
 - Take a test ride.
 - Read out the fault memory using the KTM diagnostics tool.
- » If the specification is not reached:
 - Check the next possible cause:
Crankshaft speed sensor - the value is not plausible (📖 p. 53)
 - Check the next possible cause:
Crankshaft speed sensor – short circuit to ground (📖 p. 53)
 - Check the next possible cause:
Crankshaft speed sensor – signal wires are faulty (📖 p. 53)
 - Check the next possible cause:
Crankshaft speed sensor – the signal wires have a short circuit to ground (terminal 31) (📖 p. 54)
 - Check the next possible cause:
Crankshaft speed sensor – the signal wires have a short circuit to sensor ground (📖 p. 55)
 - Check the next possible cause:
Crankshaft speed sensor – the signal wires have a short circuit to ignition plus (terminal 15) (📖 p. 55)
 - Check the next possible cause:
Crankshaft speed sensor – the signal wire has a short circuit to the sensor power supply (📖 p. 56)

Crankshaft speed sensor - the value is not plausible

Condition

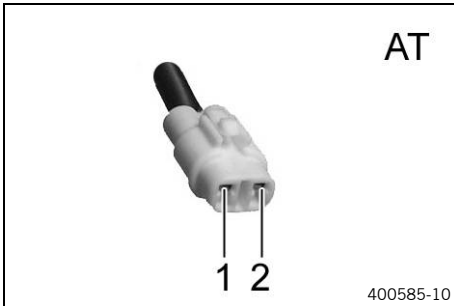
Crankshaft speed sensor is disconnected. (📖 p. 11)

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

Crankshaft speed sensor	
Resistance at: 20 °C (68 °F)	80 ... 120 Ω

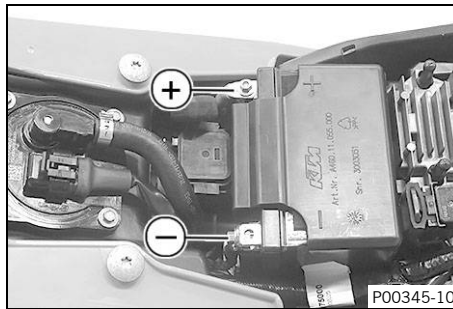
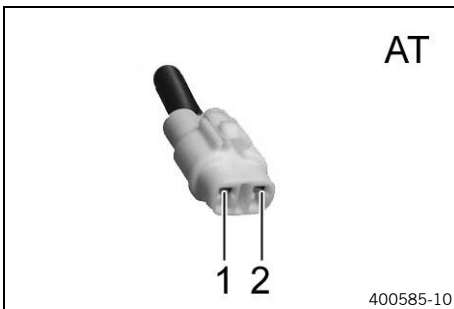
- » If the specifications have not been met:
 - Change the crankshaft speed sensor.
- » If the specifications have been met:
 - Check the next possible cause:
 - Crankshaft speed sensor – short circuit to ground (📖 p. 53)



Crankshaft speed sensor – short circuit to ground

Condition

Crankshaft speed sensor is disconnected. (📖 p. 11)



Crankshaft speed sensor – check the resistance.

- Ω 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 next possible cause:
 - Crankshaft speed sensor – signal wires are faulty (📖 p. 53)

Crankshaft speed sensor – signal wires are faulty

Condition

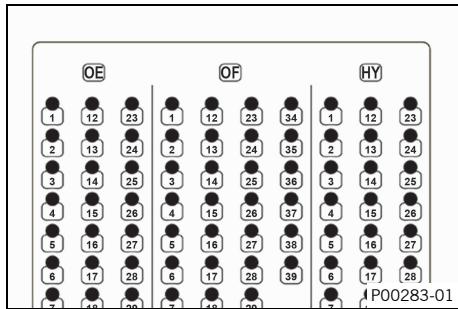
The diagnostics tool is disconnected.

Engine control unit is disconnected. (📖 p. 17)

The break-out box is connected to the engine control unit wiring harness with adapter **00029095015**.

Crankshaft speed sensor is connected. (📖 p. 11)

3 ENGINE CONTROL TROUBLE CODE



Crankshaft speed sensor – check the signal wire.

- Measure the resistance between the specified points.
Break out box connector **HY** pin **24** – Break out box connector **HY** pin **23**

Crankshaft speed sensor	
Resistance at: 20 °C (68 °F)	80 ... 120 Ω

- » If the specifications have not been met:
 - Check engine control unit connector **HY** (p. 122) pin **24** and pin **23**.
 - Check connector **IF** (p. 122) pin **2** and connector **IF** (p. 122) pin **1**.
 - Check the cable from engine control unit connector **HY** (p. 122) pin **24** to connector **IF** (p. 122) pin **2**.
 - Check the cable from engine control unit connector **HY** (p. 122) pin **23** to connector **IF** (p. 122) pin **1**.
- » If the specifications have been met:
 - Check the next possible cause:
Crankshaft speed sensor – the signal wires have a short circuit to ground (terminal 31) (p. 54)

Crankshaft speed sensor – the signal wires have a short circuit to ground (terminal 31)

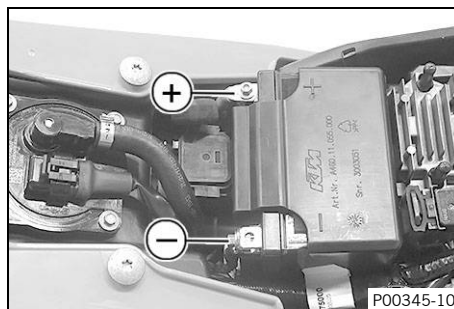
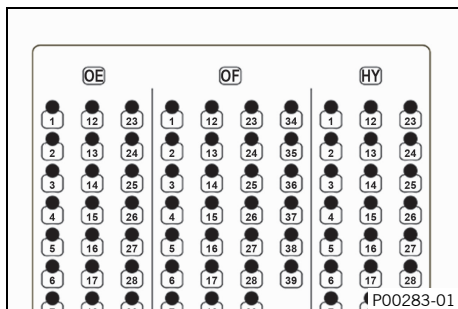
Condition

The diagnostics tool is disconnected.

Engine control unit is disconnected. (p. 17)

The break-out box is connected to the engine control unit wiring harness with adapter **00029095015**.

Crankshaft speed sensor is connected. (p. 11)



Crankshaft speed sensor – check the signal wires for a short circuit to ground (terminal 31).

- Measure the resistance between the specified points.
Break out box connector **HY** pin **24** – Measuring point **Ground (-)**

Resistance	∞ Ω
------------	-----

- » If the specifications have not been met:
 - Check the cable from engine control unit connector **HY** (p. 122) pin **24** to connector **IF** (p. 122) pin **2** for a short circuit to ground (terminal 31).
 - Check the cable from engine control unit connector **HY** (p. 122) pin **23** to connector **IF** (p. 122) pin **1** for a short circuit to ground (terminal 31).
- » If the specifications have been met:
 - Check the next possible cause:
Crankshaft speed sensor – the signal wires have a short circuit to sensor ground (p. 55)

Crankshaft speed sensor – the signal wires have a short circuit to sensor ground

Condition


The diagnostics tool is disconnected.

Engine control unit is disconnected. (📖 p. 17)

The break-out box is connected to the engine control unit wiring harness with adapter **00029095015**.

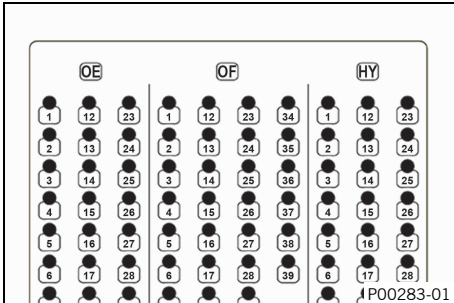
Crankshaft speed sensor is connected. (📖 p. 11)

Crankshaft speed sensor – check the signal wires for a short circuit to sensor ground.

-  Measure the resistance between the specified points.
Break out box connector **HY** pin **24** – Break out box connector **HY** pin **17**

Resistance	$\infty \Omega$
------------	-----------------

- » If the specifications have not been met:
 - Check cable from engine control unit connector **HY** (📖 p. 122) pin **24** to connector **IF** (📖 p. 122) pin **2** for a short circuit to sensor ground.
 - Check cable from engine control unit connector **HY** (📖 p. 122) pin **23** to connector **IF** (📖 p. 122) pin **1** for a short circuit to sensor ground.
- » If the specifications have been met:
 - Check the next possible cause:
Crankshaft speed sensor – the signal wires have a short circuit to ignition plus (terminal 15) (📖 p. 55)



Crankshaft speed sensor – the signal wires have a short circuit to ignition plus (terminal 15)

Condition


The diagnostics tool is disconnected.

Engine control unit is disconnected. (📖 p. 17)

The break-out box is connected to the engine control unit wiring harness with adapter **00029095015**.

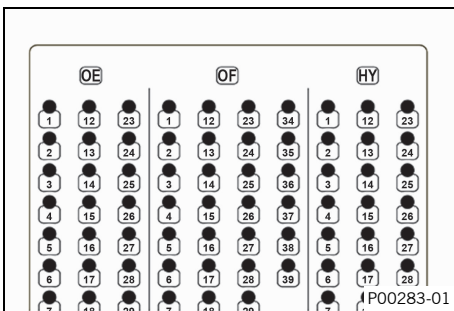
Crankshaft speed sensor is connected. (📖 p. 11)

Crankshaft speed 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 **HY** pin **24** – Break out box connector **HY** pin **1**

Resistance	$\infty \Omega$
------------	-----------------

- » If the specifications have not been met:
 - Check the cable from engine control unit connector **HY** (📖 p. 122) pin **24** to connector **IF** (📖 p. 122) pin **2** for a short circuit to ignition plus (terminal 15).
 - Check the cable from engine control unit connector **HY** (📖 p. 122) pin **23** to connector **IF** (📖 p. 122) pin **1** for a short circuit to ignition plus (terminal 15).
- » If the specifications have been met:
 - Check the next possible cause:
Crankshaft speed sensor – the signal wire has a short circuit to the sensor power supply (📖 p. 56)



Crankshaft speed sensor – the signal wire has a short circuit to the sensor power supply

Condition


The diagnostics tool is disconnected.

Engine control unit is disconnected. (📖 p. 17)

The break-out box is connected to the engine control unit wiring harness with adapter **00029095015**.

Crankshaft speed sensor is connected. (📖 p. 11)

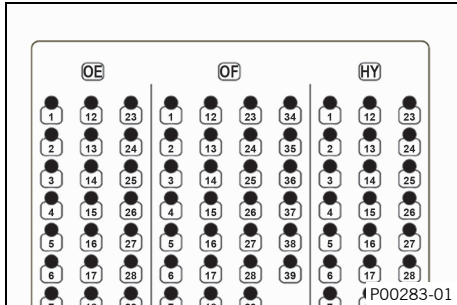
Crankshaft speed sensor – check the signal wire for a short circuit to the sensor power supply.

-  Measure the resistance between the specified points.
Break out box connector **HY** pin **24** – Break out box connector **HY** pin **12**

Resistance	$\infty \Omega$
------------	-----------------

- » If the specifications have not been met:

- Check the cable from engine control unit connector **HY** (📖 p. 122) pin **24** to connector **IF** (📖 p. 122) pin **2** for a short circuit to the sensor power supply.
- Check the cable from engine control unit connector **HY** (📖 p. 122) pin **23** to connector **IF** (📖 p. 122) pin **1** for a short circuit to the sensor power supply.



Blink code for malfunction indicator lamp	Fi 37 Malfunction indicator lamp flashes 3x long, 7x short
Display on diagnostic tool	P0351 "Ignition coil" "Circuit fault"
Error level condition	Ignition coil – circuit fault Time: ≥ 2.0 s
Function check	Checking the ignition coil (📖 p. 57)
Possible cause	Ignition coil - the value is not plausible (📖 p. 57)
	Ignition coil - the value is not plausible (📖 p. 58)
	Ignition coil – control wire is faulty (📖 p. 58)
	Ignition coil – the control wire has a short circuit to ground (terminal 31) (📖 p. 59)
	Ignition coil – the control wire has a short circuit to the sensor power supply (📖 p. 59)

Checking the ignition coil

Condition

The diagnostics tool is connected and running.

- Execute **"Engine control unit" > "Actuator test" > "Ignition cylinder 1, spark plug 1"**.

Spark plug	Operating noise
------------	-----------------

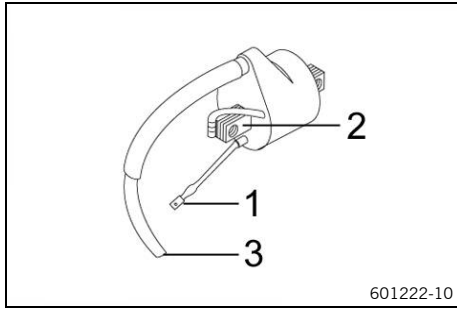
- » If the specified value is reached:
 - Clear the fault memory using the KTM diagnostics tool.
 - Take a test ride.
 - Read out the fault memory using the KTM diagnostics tool.
- » If the specification is not reached:
 - Check the next possible cause:
Ignition coil - the value is not plausible (📖 p. 57)
 - Check the next possible cause:
Ignition coil - the value is not plausible (📖 p. 58)
 - Check the next possible cause:
Ignition coil – control wire is faulty (📖 p. 58)
 - Check the next possible cause:
Ignition coil – the control wire has a short circuit to ground (terminal 31) (📖 p. 59)
 - Check the next possible cause:
Ignition coil – the control wire has a short circuit to the sensor power supply (📖 p. 59)

Ignition coil - the value is not plausible

Condition

The ignition coil is disconnected. (📖 p. 11)

3 ENGINE CONTROL TROUBLE CODE



Ignition coil - check the resistance.

- Measure the resistance between the specified points.
Ignition coil pin **1 (+)** – Ignition coil pin **2 (-)**

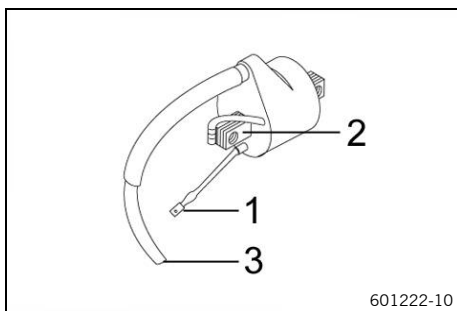
Ignition coil	
Primary winding resistance at: 20 °C (68 °F)	0.425 ... 0.575 Ω

- » If the specifications have not been met:
 - Change the ignition coil.
- » If the specifications have been met:
 - Check the next possible cause:
Ignition coil - the value is not plausible (📖 p. 58)

Ignition coil - the value is not plausible

Condition

The ignition coil is disconnected. (📖 p. 11)



Ignition coil - check the resistance.

- Measure the resistance between the specified points.
Ignition coil pin **1 (+)** – Ignition coil pin **3**

Ignition coil	
Secondary winding resistance at: 20 °C (68 °F)	11.075 ... 15.525 kΩ

- » If the specifications have not been met:
 - Change the ignition coil.
- » If the specifications have been met:
 - Check the next possible cause:
Ignition coil – control wire is faulty (📖 p. 58)

Ignition coil – control wire is faulty

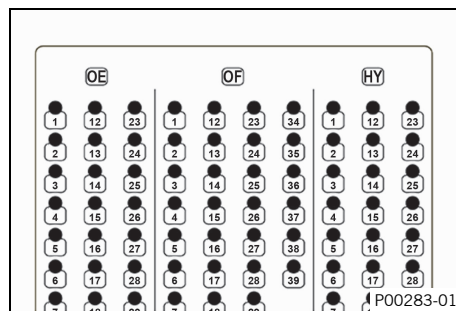
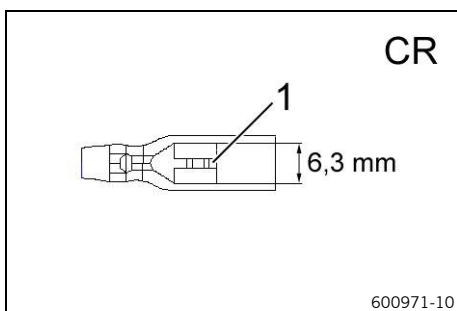
Condition

The diagnostics tool is disconnected.

Engine control unit is disconnected. (📖 p. 17)

The break-out box is connected to the engine control unit wiring harness with adapter **00029095015**.

The ignition coil is disconnected. (📖 p. 11)



Ignition coil - check the control wire.

- Measure the resistance between the specified points.
Ignition coil, connector **CR** pin **1** – Break out box connector **HY** pin **11**

Resistance	0.6 Ω
------------	-------

- » If the specifications have not been met:
 - Check engine control unit connector **HY** (📖 p. 122) pin **11** and connector **CR** (📖 p. 119) pin **1**.

- Check the cable from engine control unit connector **HY** (📖 p. 122) pin **11** to connector **CR** (📖 p. 119) pin **1**.
- » If the specifications have been met:
 - Check the next possible cause:
 - Ignition coil – the control wire has a short circuit to ground (terminal 31) (📖 p. 59)

Ignition coil – the control wire has a short circuit to ground (terminal 31)

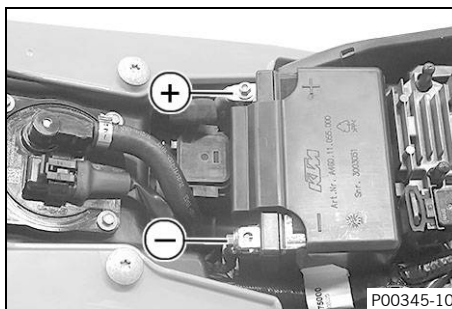
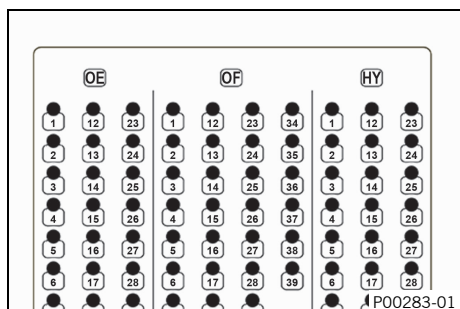
Condition

The diagnostics tool is disconnected.

Engine control unit is disconnected. (📖 p. 17)

The break-out box is connected to the engine control unit wiring harness with adapter **00029095015**.

The ignition coil is disconnected. (📖 p. 11)



Ignition coil - check the control wire for a short circuit to ground (terminal 31).

- Measure the resistance between the specified points.
 - Break out box connector **HY** pin **11** – Measuring point **Ground (-)**

Resistance	$\infty \Omega$
------------	-----------------

- » If the specifications have not been met:
 - Check the cable from engine control unit connector **HY** (📖 p. 122) pin **11** to connector **CR** (📖 p. 119) pin **1** for a short circuit to ground (terminal 31).
- » If the specifications have been met:
 - Check the next possible cause:
 - Ignition coil – the control wire has a short circuit to the sensor power supply (📖 p. 59)

Ignition coil – the control wire has a short circuit to the sensor power supply

Condition

Engine control unit is disconnected. (📖 p. 17)

The break-out box is connected to the engine control unit wiring harness with adapter **00029095015**.

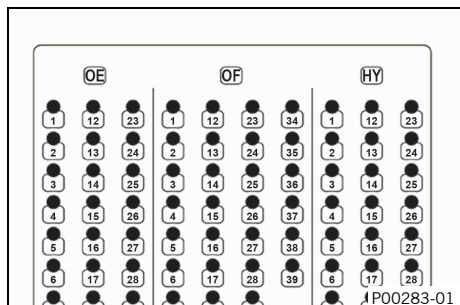
The ignition coil is disconnected. (📖 p. 11)

Ignition coil – check the control wire for a short circuit to the sensor power supply.

- Measure the resistance between the specified points.
 - Break out box connector **HY** pin **11** – Break out box connector **HY** pin **12**

Resistance	$\infty \Omega$
------------	-----------------

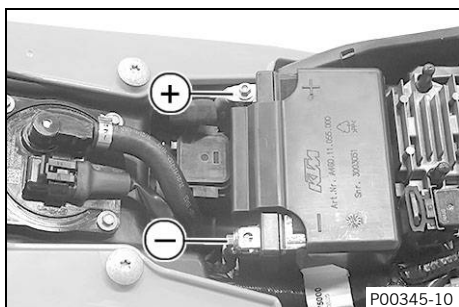
- » If the specifications have not been met:
 - Check the cable from engine control unit connector **HY** (📖 p. 122) pin **11** to connector **CR** (📖 p. 119) pin **1** for a short circuit to the sensor power supply.



3 ENGINE CONTROL TROUBLE CODE

Blink code for malfunction indicator lamp	Fi 65 Malfunction indicator lamp flashes 6x long, 5x short
Display on diagnostic tool	P0603 "EEPROM" "Malfunction"
Error level condition	EEPROM – malfunction Read data and write data are different.
Function check	Resetting the engine control unit (📖 p. 60)
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.
- Read out the fault memory using the KTM diagnostics tool.
 - » If the malfunction 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	Fi 22 Malfunction indicator lamp flashes 2x long, 2x short
Display on diagnostic tool	P0914 "Gear position sensor" "Input signal too low"
Error level condition	Gear position sensor – input signal too low Time: ≥ 0.1 s
Function check	Checking the gear position sensor (📖 p. 61)
Possible cause	Gear position sensor – the signal wire has a short circuit to ground (terminal 31) (📖 p. 62)
	Gear position sensor – the signal wire has a short circuit to sensor ground (📖 p. 62)
Last measure if none of the documented causes leads to elimination of the fault	– Change the gear position sensor.

Checking the gear position sensor

Condition

The diagnostics tool is connected and running.

- Select **"Engine control unit" > "Measured values" > "Gear position sensor voltage (GPAD)"** and **"Gear position sensor (GP)"**.

Gear position sensor voltage (350 SX-F EU, 350 SX-F US, 350 SX-F AR)	
Gear 1	0.525 ... 0.725 V
Gear N	0.910 ... 1.090 V
Gear 2	1.275 ... 1.475 V
Gear 3	2.025 ... 2.225 V
Gear 4	2.775 ... 2.975 V
Gear 5	3.525 ... 3.725 V

Gear position sensor voltage (350 XC-F US)	
Gear 1	0.525 ... 0.725 V
Gear N	0.910 ... 1.090 V
Gear 2	1.275 ... 1.475 V
Gear 3	2.025 ... 2.225 V
Gear 4	2.775 ... 2.975 V
Gear 5	3.525 ... 3.725 V
Gear 6	4.275 ... 4.475 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 fault memory using the KTM diagnostics tool.
- » If the displayed value is below the setpoint value:
 - Check the next possible cause:
Gear position sensor – the signal wire has a short circuit to ground (terminal 31) (📖 p. 62)
 - Check the next possible cause:
Gear position sensor – the signal wire has a short circuit to sensor ground (📖 p. 62)

3 ENGINE CONTROL TROUBLE CODE

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

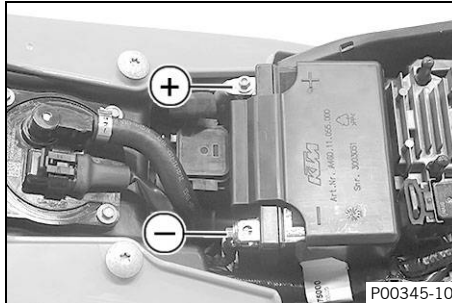
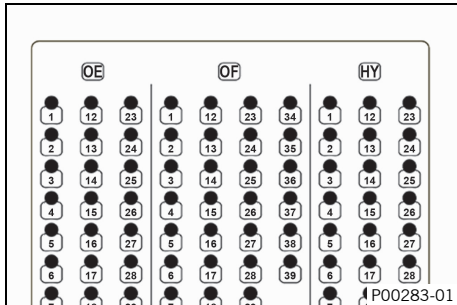
Condition

The diagnostics tool is disconnected.

Engine control unit is disconnected. (📖 p. 17)

The break-out box is connected to the engine control unit wiring harness with adapter **00029095015**.

The gear position sensor is disconnected. (📖 p. 17)



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 **HY** pin **18** – Measuring point **Ground (-)**

Resistance	$\infty \Omega$
------------	-----------------

- » If the specifications have not been met:
 - Check the cable from engine control unit connector **HY** (📖 p. 122) pin **18** to connector **JM** (📖 p. 123) pin **2** for a short circuit to ground (terminal 31).
- » If the specifications have been met:
 - Check the next possible cause:
Gear position sensor – the signal wire has a short circuit to sensor ground (📖 p. 62)

Gear position sensor – the signal wire has a short circuit to sensor ground

Condition

The diagnostics tool is disconnected.

Engine control unit is disconnected. (📖 p. 17)

The break-out box is connected to the engine control unit wiring harness with adapter **00029095015**.

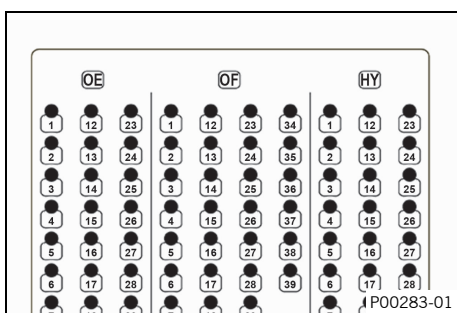
The gear position sensor is disconnected. (📖 p. 17)

Gear position sensor - check the signal wire for a short circuit to sensor ground.

- Measure the resistance between the specified points.
Break out box connector **HY** pin **18** – Break out box connector **HY** pin **17**

Resistance	$\infty \Omega$
------------	-----------------

- » If the specifications have not been met:
 - Check cable from engine control unit connector **HY** (📖 p. 122) pin **18** to connector **JM** (📖 p. 123) pin **2** for a short circuit to sensor ground.
- » If the specifications have been met:
 - Change the gear position sensor.



Blink code for malfunction indicator lamp	Fi 22 Malfunction indicator lamp flashes 2x long, 2x short
Display on diagnostic tool	P0917 "Gear position sensor" "Input signal too high"
Error level condition	Gear position sensor – input signal too high Time: ≥ 0.1 s
Function check	Checking the gear position sensor (📖 p. 63)
Possible cause	Gear position sensor – the signal wire is faulty (📖 p. 64)
	Gear position sensor – the ground wire is faulty (📖 p. 64)
	Gear position sensor – the power supply is faulty (📖 p. 65)
	Gear position sensor – the signal wire has a short circuit to plus (terminal 30) (📖 p. 66)
	Gear position sensor – the signal wire has a short circuit to ignition plus (terminal 15) (📖 p. 66)
	Gear position sensor – the signal wire has a short circuit to the sensor power supply (📖 p. 67)
Last measure if none of the documented causes leads to elimination of the fault	– Change the gear position sensor.

Checking the gear position sensor

Condition

The diagnostics tool is connected and running.

- Select **"Engine control unit" > "Measured values" > "Gear position sensor voltage (GPAD)"** and **"Gear position sensor (GP)"**.

Gear position sensor voltage (350 SX-F EU, 350 SX-F US, 350 SX-F AR)	
Gear 1	0.525 ... 0.725 V
Gear N	0.910 ... 1.090 V
Gear 2	1.275 ... 1.475 V
Gear 3	2.025 ... 2.225 V
Gear 4	2.775 ... 2.975 V
Gear 5	3.525 ... 3.725 V

Gear position sensor voltage (350 XC-F US)	
Gear 1	0.525 ... 0.725 V
Gear N	0.910 ... 1.090 V
Gear 2	1.275 ... 1.475 V
Gear 3	2.025 ... 2.225 V
Gear 4	2.775 ... 2.975 V
Gear 5	3.525 ... 3.725 V
Gear 6	4.275 ... 4.475 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 fault memory using the KTM diagnostics tool.
- » If the displayed value is below the setpoint value:

3 ENGINE CONTROL TROUBLE CODE

- Check the next possible cause:
Gear position sensor – the signal wire is faulty (📖 p. 64)
- Check the next possible cause:
Gear position sensor – the ground wire is faulty (📖 p. 64)
- Check the next possible cause:
Gear position sensor – the power supply is faulty (📖 p. 65)
- Check the next possible cause:
Gear position sensor – the signal wire has a short circuit to plus (terminal 30) (📖 p. 66)
- Check the next possible cause:
Gear position sensor – the signal wire has a short circuit to ignition plus (terminal 15) (📖 p. 66)
- Check the next possible cause:
Gear position sensor – the signal wire has a short circuit to the sensor power supply (📖 p. 67)

Gear position sensor – the signal wire is faulty

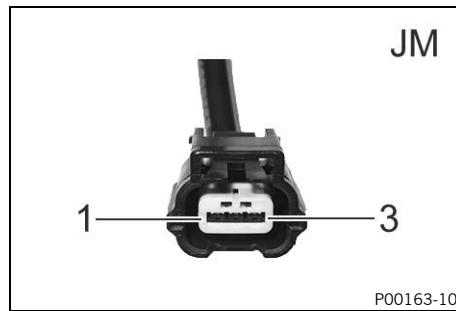
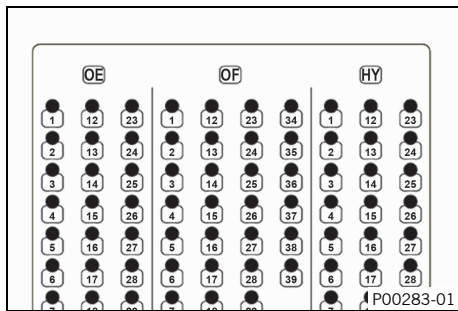
Condition

The diagnostics tool is disconnected.


Engine control unit is disconnected. (📖 p. 17)

The break-out box is connected to the engine control unit wiring harness with adapter **00029095015**.

The gear position sensor is disconnected. (📖 p. 17)



Gear position sensor – check the signal wire.

-  Measure the resistance between the specified points.
Break out box connector **HY** pin **18** – Gear position sensor, connector **JM** pin **2**

Resistance	$\leq 0.6 \Omega$
------------	-------------------

- » If the specifications have not been met:
 - Check engine control unit connector **HY** (📖 p. 122) pin **18** and connector **JM** (📖 p. 123) pin **2**.
 - Check the cable from engine control unit connector **HY** (📖 p. 122) pin **18** to connector **JM** (📖 p. 123) pin **2**.
- » If the specifications have been met:
 - Check the next possible cause:
Gear position sensor – the ground wire is faulty (📖 p. 64)

Gear position sensor – the ground wire is faulty

Condition

The diagnostics tool is disconnected.

Engine control unit is disconnected. (📖 p. 17)

The break-out box is connected to the engine control unit wiring harness with adapter **00029095015**.

The gear position sensor is disconnected. (📖 p. 17)

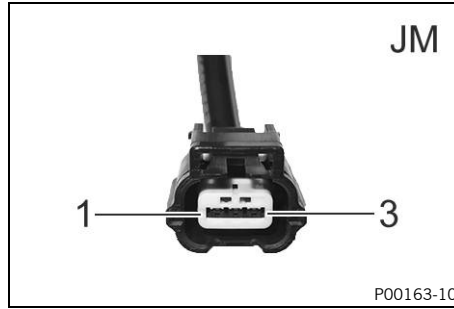
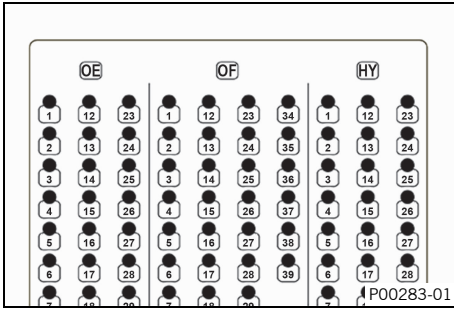
The coolant temperature sensor is disconnected. (📖 p. 9)

Induction manifold sensor is disconnected. (📖 p. 15)

Throttle valve position sensor circuit A is disconnected. (📖 p. 14)

The tilt sensor is disconnected. (📖 p. 16)

The intake air temperature sensor is disconnected. (📖 p. 12)



Gear position sensor – check the ground wire.

- Measure the resistance between the specified points.
Break out box connector **HY** pin **17** – Gear position sensor, connector **JM** pin **3**

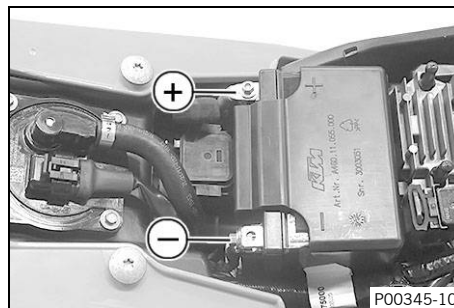
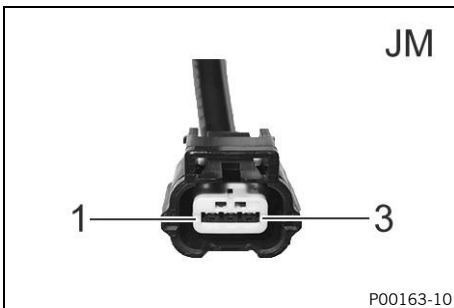
Resistance	$\leq 0.6 \Omega$
------------	-------------------

- » If the specifications have not been met:
 - Check engine control unit connector **HY** (p. 122) pin **17** and connector **JM** (p. 123) pin **3**.
 - Check the cable from engine control unit connector **HY** (p. 122) pin **17** to connector **JM** (p. 123) pin **3**.
- » If the specifications have been met:
 - Check the next possible cause:
Gear position sensor – the power supply is faulty (p. 65)

Gear position sensor – the power supply is faulty

Condition

The diagnostics tool is connected and running.
Engine control unit is connected. (p. 17)
The gear position sensor is disconnected. (p. 17)



Gear position sensor – check the power supply.

- Measure the voltage between the specified points.
Gear position sensor, connector **JM** pin **1** – Measuring point **Ground (-)**

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

Voltage	4.9 ... 5.1 V
---------	---------------

- » If the specifications have not been met:
 - Check connector **JM** (p. 123) pin **1**.
 - Check engine control unit connector **HY** (p. 122) pin **12**.
 - Check the cable from engine control unit connector **HY** (p. 122) pin **12** to connector **JM** (p. 123) pin **1**.
- » If the specifications have been met:

3 ENGINE CONTROL TROUBLE CODE

- Check the next possible cause:
Gear position sensor – the signal wire has a short circuit to plus (terminal 30) (📖 p. 66)

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

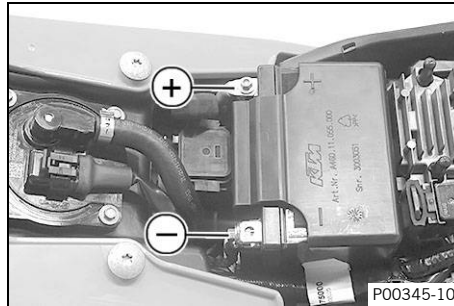
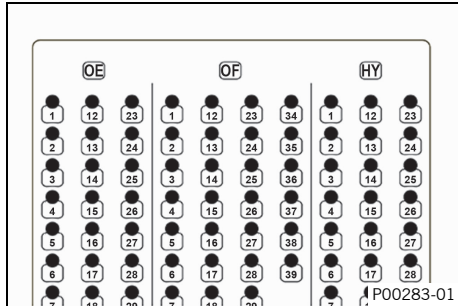
Condition

The diagnostics tool is disconnected.

Engine control unit is disconnected. (📖 p. 17)

The break-out box is connected to the engine control unit wiring harness with adapter **00029095015**.

The gear position sensor is disconnected. (📖 p. 17)



Gear position 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 **HY** pin **18** – Measuring point **Ground (-)**

Voltage	≤ 0.1 V
---------	---------

- » If the specifications have not been met:
 - Check the cable from engine control unit connector **HY** (📖 p. 122) pin **18** to connector **JM** (📖 p. 123) 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. 66)

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

Condition

The diagnostics tool is disconnected.

Engine control unit is disconnected. (📖 p. 17)

The break-out box is connected to the engine control unit wiring harness with adapter **00029095015**.

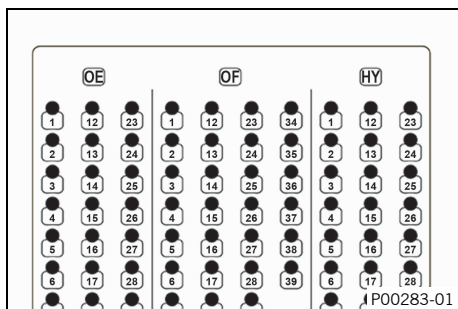
The gear position sensor is disconnected. (📖 p. 17)

Gear position 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 **HY** pin **18** – Break out box connector **HY** pin **1**

Resistance	∞ Ω
------------	-----

- » If the specifications have not been met:
 - Check the cable from engine control unit connector **HY** (📖 p. 122) pin **18** to connector **JM** (📖 p. 123) 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. 67)



Gear position sensor – the signal wire has a short circuit to the sensor power supply

Condition


The diagnostics tool is disconnected.

Engine control unit is disconnected. (📖 p. 17)

The break-out box is connected to the engine control unit wiring harness with adapter **00029095015**.

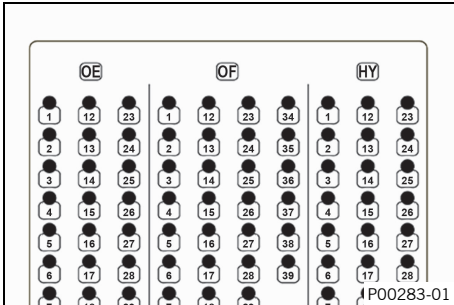
The gear position sensor is disconnected. (📖 p. 17)

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 **HY** pin **18** – Break out box connector **HY** pin **12**

Resistance	$\infty \Omega$
------------	-----------------

- » If the specifications have not been met:
 - Check the cable from engine control unit connector **HY** (📖 p. 122) pin **18** to connector **JM** (📖 p. 123) pin **2** for a short circuit to the sensor power supply.
- » If the specifications have been met:
 - Change the gear position sensor.



3 ENGINE CONTROL TROUBLE CODE

Blink code for malfunction indicator lamp	 22 Malfunction indicator lamp flashes 2x long, 2x short
Display on diagnostic tool	P0919 "Gear position sensor" "ERROR"
Error level condition	Gear position sensor malfunction
Possible cause	Incorrect installation position of the gear position sensor ( p. 68)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Incorrect installation position of the gear position sensor

- Check that the gear position sensor is seated correctly. The cable tie on the sensor must be located at the top.

Sensor is correctly attached.

- » If the specifications have not been met:
 - Attach the gear position sensor correctly.
- » If the specifications have been met:
 - Contact customer service.

Blink code for malfunction indicator lamp	Fi 41 Malfunction indicator lamp flashes 4x long, 1x short
Display on diagnostic tool	P1231 "Fuel pump controller" "Short circuit to ground or open circuit"
Error level condition	Fuel pump controller – short circuit to ground/open circuit The engine is switched off: ≥ 3 s
Function check	Checking the fuel pump controller (📖 p. 69)
Possible cause	Fuel pump – the value is not plausible (📖 p. 69)
	Fuel pump – the control wire is faulty (📖 p. 70)
	Fuel pump controller – the power supply is faulty (📖 p. 70)
	Fuel pump – the control wire has a short circuit to ground (terminal 31) (📖 p. 71)
	Fuel pump – the control wire has a short circuit to sensor ground (📖 p. 72)

Checking the fuel pump controller

Condition

The diagnostics tool is connected and running.

- Execute **"Engine control unit" > "Actuator test" > "Function test of fuel pump controller"**.

Fuel pump	Operating noise
-----------	-----------------

- » If the specified value is reached:
 - Clear the fault memory using the KTM diagnostics tool.
 - Take a test ride.
 - Read out the fault memory using the KTM diagnostics tool.
- » If the specification is not reached:
 - Check the next possible cause:
Fuel pump – the value is not plausible (📖 p. 69)
 - Check the next possible cause:
Fuel pump – the control wire is faulty (📖 p. 70)
 - Check the next possible cause:
Fuel pump controller – the power supply is faulty (📖 p. 70)
 - Check the next possible cause:
Fuel pump – the control wire has a short circuit to ground (terminal 31) (📖 p. 71)
 - Check the next possible cause:
Fuel pump – the control wire has a short circuit to sensor ground (📖 p. 72)

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

- Contact customer service.

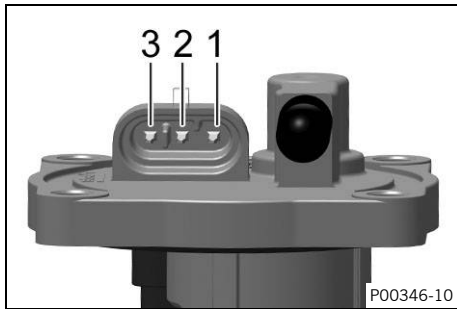
Fuel pump – the value is not plausible

Condition


The fuel pump is disconnected. (📖 p. 6) (350 SX-F EU, 350 SX-F US, 350 SX-F AR)

The fuel pump is disconnected. (📖 p. 7) (350 XC-F US)

3 ENGINE CONTROL TROUBLE CODE



Fuel pump - check the resistance.

-  Measure the resistance between the specified points.
Fuel pump pin **2** – Fuel pump pin **3**

Fuel pump	
Resistance at: 20 °C (68 °F)	0.9 ... 1.3 Ω

- » If the specifications have not been met:
 - Change the fuel pump.
- » If the specifications have been met:
 - Check the next possible cause:
Fuel pump – the control wire is faulty (📖 p. 70)

Fuel pump – the control wire is faulty

Condition

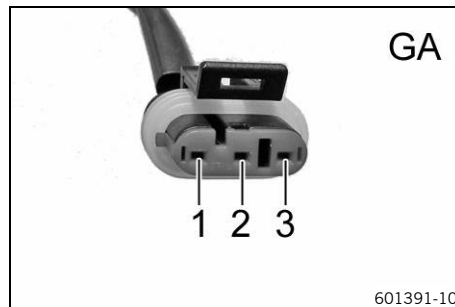
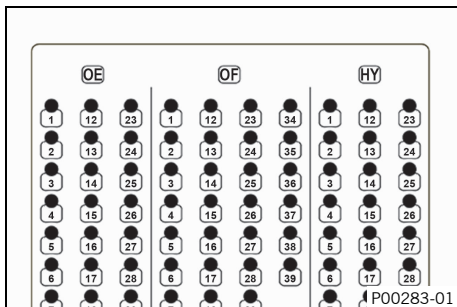
The diagnostics tool is disconnected.

Engine control unit is disconnected. (📖 p. 17)


The break-out box is connected to the engine control unit wiring harness with adapter **00029095015**.

The fuel pump is disconnected. (📖 p. 6) (350 SX-F EU, 350 SX-F US, 350 SX-F AR)

The fuel pump is disconnected. (📖 p. 7) (350 XC-F US)



Fuel pump – check the control wire.

-  Measure the resistance between the specified points.
Break out box connector **HY** pin **10** – Fuel pump, connector **GA** pin **2**

Resistance	≤ 0.6 Ω
------------	---------

- » If the specifications have not been met:
 - Check engine control unit connector **HY** (📖 p. 122) pin **10** and connector **GA** (📖 p. 121) pin **2**.
 - Check the cable from engine control unit connector **HY** (📖 p. 122) pin **10** to connector **GA** (📖 p. 121) pin **2**.
- » If the specifications have been met:
 - Check the next possible cause:
Fuel pump controller – the power supply is faulty (📖 p. 70)

Fuel pump controller – the power supply is faulty

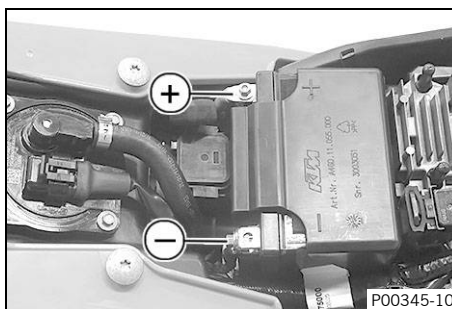
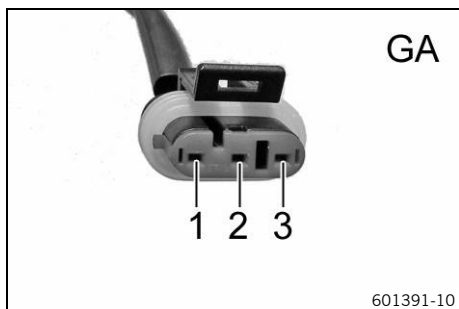
Condition

The diagnostics tool is connected and running.

Engine control unit is connected. (📖 p. 17)

The fuel pump is disconnected. (📖 p. 6) (350 SX-F EU, 350 SX-F US, 350 SX-F AR)

The fuel pump is disconnected. (📖 p. 7) (350 XC-F US)



Fuel pump controller – check the power supply.

- **V** Measure the voltage between the specified points.
Fuel pump, connector **GA** pin **3** – 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 **GA** (📖 p. 121) pin **3**.
 - Check the cable from connector **GA** (📖 p. 121) pin **3** to the next node in the wiring harness.
- » If the specifications have been met:
 - Check the next possible cause:
Fuel pump – the control wire has a short circuit to ground (terminal 31) (📖 p. 71)

Fuel pump – the control wire has a short circuit to ground (terminal 31)

Condition

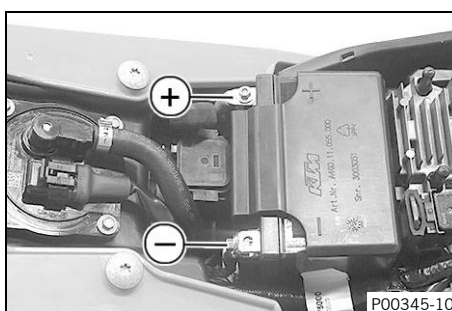
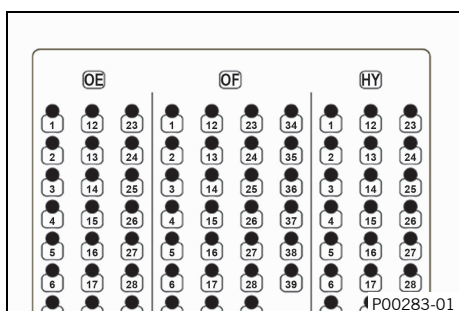
The diagnostics tool is disconnected.

Engine control unit is disconnected. (📖 p. 17)

The break-out box is connected to the engine control unit wiring harness with adapter **00029095015**.

The fuel pump is disconnected. (📖 p. 6) (350 SX-F EU, 350 SX-F US, 350 SX-F AR)

The fuel pump is disconnected. (📖 p. 7) (350 XC-F US)



Fuel pump – check the control wire for a short circuit to ground (terminal 31).

- **Ω** Measure the resistance between the specified points.
Break out box connector **HY** pin **10** – Measuring point **Ground (-)**

Resistance

$\infty \Omega$

- » If the specifications have not been met:
 - Check the cable from engine control unit connector **HY** (📖 p. 122) pin **10** to connector **GA** (📖 p. 121) pin **2** for a short circuit to ground (terminal 31).
- » If the specifications have been met:
 - Check the next possible cause:
Fuel pump – the control wire has a short circuit to sensor ground (📖 p. 72)

Fuel pump – the control wire has a short circuit to sensor ground

Condition

The diagnostics tool is disconnected.


Engine control unit is disconnected. (📖 p. 17)

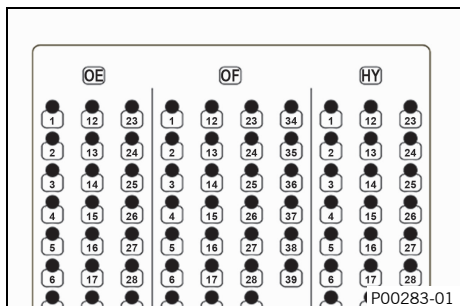
The break-out box is connected to the engine control unit wiring harness with adapter **00029095015**.

The fuel pump is disconnected. (📖 p. 6) (350 SX-F EU, 350 SX-F US, 350 SX-F AR)

The fuel pump is disconnected. (📖 p. 7) (350 XC-F US)

Fuel pump – check the control wire for a short circuit to sensor ground.

-  Measure the resistance between the specified points.
Break out box connector **HY** pin **10** – Break out box connector **HY** pin **17**



Resistance	$\infty \Omega$
------------	-----------------

- » If the specifications have not been met:
 - Check cable from engine control unit connector **HY** (📖 p. 122) pin **10** to connector **GA** (📖 p. 121) pin **2** for a short circuit to sensor ground.
- » If the specifications have been met:
 - Contact customer service.

Blink code for malfunction indicator lamp	Fi 41 Malfunction indicator lamp flashes 4x long, 1x short
Display on diagnostic tool	P1232 "Fuel pump controller" "Short circuit to plus"
Error level condition	Fuel pump controller - short circuit to plus The engine is switched off: ≥ 3 s
Function check	Checking the fuel pump controller (🔧 p. 73)
Possible cause	Fuel pump controller – the power supply is faulty (🔧 p. 73)

Checking the fuel pump controller

Condition

The diagnostics tool is connected and running.

- Execute **"Engine control unit" > "Actuator test" > "Function test of fuel pump controller"**.

Fuel pump	Operating noise
-----------	-----------------

- » If the specified value is reached:
 - Clear the fault memory using the KTM diagnostics tool.
 - Take a test ride.
 - Read out the fault memory using the KTM diagnostics tool.
 - » If the specification is not reached:
 - Check the next possible cause:
Fuel pump controller – the power supply is faulty (🔧 p. 73)
- Last measure if none of the documented causes leads to elimination of the fault
- Contact customer service.

Fuel pump controller – the power supply is faulty

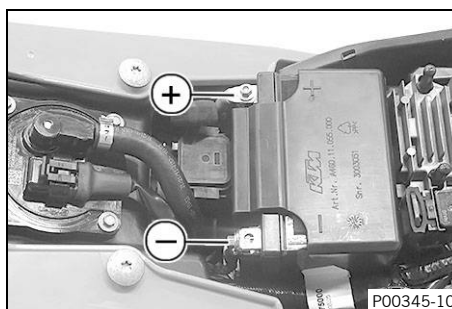
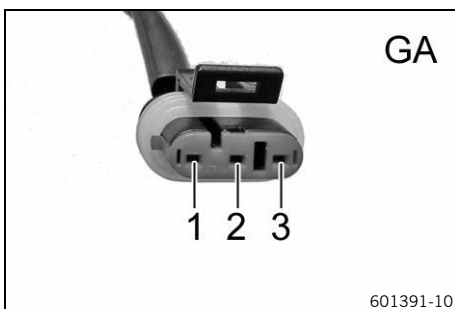
Condition

The diagnostics tool is connected and running.

Engine control unit is connected. (🔧 p. 17)

The fuel pump is disconnected. (🔧 p. 6) (350 SX-F EU, 350 SX-F US, 350 SX-F AR)

The fuel pump is disconnected. (🔧 p. 7) (350 XC-F US)



Fuel pump controller – check the power supply.

- **V** Measure the voltage between the specified points.
Fuel pump, connector **GA** pin **3** – Measuring point **Ground (-)**



Info

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

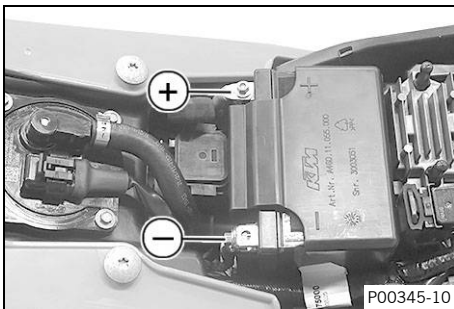
3 ENGINE CONTROL TROUBLE CODE

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

- » If the specifications have not been met:
 - Check connector **GA** (📖 p. 121) pin **3**.
 - Check the cable from connector **GA** (📖 p. 121) pin **3** to the next node in the wiring harness.
- » If the specifications have been met:
 - Contact customer service.

Blink code for malfunction indicator lamp	Fi Malfunction indicator lamp flashes continuously
Display on diagnostic tool	P1609 "THREF" "Malfunction"
Error level condition	THREF – internal malfunction of the engine control unit
Function check	Resetting the engine control unit (📖 p. 75)
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.
- Read out the fault memory using the KTM diagnostics tool.
 - » If the malfunction persists:
 - Change the engine control unit.

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

- Contact customer service.

3 ENGINE CONTROL TROUBLE CODE

Display on diagnostic tool	P1583 "Combination switch, left side" "Button malfunction"
Error level condition	Combination switch, left side – buttons pressed longer than 20 seconds
Function check	Checking the combination switch on the left side (🔧 p. 76)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Checking the combination switch on the left side

- Check the function of the buttons for the combination switch on the left side.
 - » If the buttons do not function properly:
 - Change the combination switch on the left side.

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

- Contact customer service.

Blink code for malfunction indicator lamp	Fi 15 Malfunction indicator lamp flashes 1x long, 5x short
Display on diagnostic tool	P1631 "Tilt sensor" "Input signal too low"
Error level condition	Tilt sensor – input signal too low Voltage: ≤ 0.176 V Time: ≥ 25.5 s
Function check	Checking the tilt sensor (📖 p. 77)
Possible cause	Tilt sensor – the power supply is faulty (📖 p. 77)
	Tilt sensor – the signal wire has a short circuit to ground (terminal 31) (📖 p. 78)
	Tilt sensor – the signal wire has a short circuit to sensor ground (📖 p. 79)

Checking the tilt sensor

Condition

The diagnostics tool is connected and running.

- Select **"Engine control unit" > "Measured values" > "Rollover sensor voltage (rollover AD)"**.

Tilt sensor	
Voltage (rollover AD) "no fall detected"	0.4 ... 1.4 V
Voltage (RolloverAD) "fall detected"	3.7 ... 4.1 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 fault memory using the KTM diagnostics tool.
- » If the displayed value is below the setpoint value:
 - Check the next possible cause:
Tilt sensor – the power supply is faulty (📖 p. 77)
 - Check the next possible cause:
Tilt sensor – the signal wire has a short circuit to ground (terminal 31) (📖 p. 78)
 - Check the next possible cause:
Tilt sensor – the signal wire has a short circuit to sensor ground (📖 p. 79)

Tilt sensor – the power supply is faulty

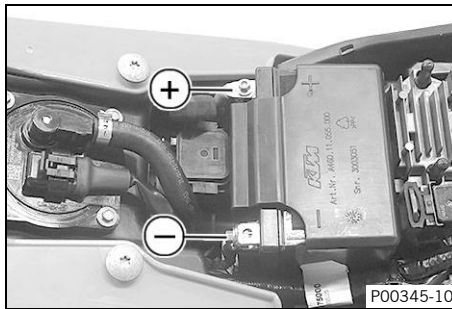
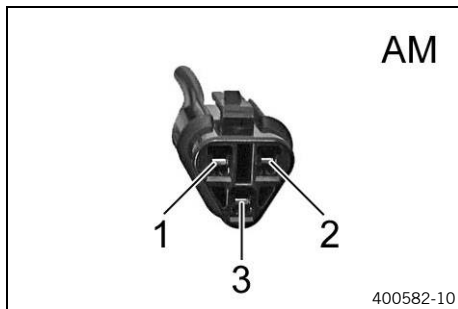
Condition

The diagnostics tool is connected and running.

Engine control unit is connected. (📖 p. 17)

The tilt sensor is disconnected. (📖 p. 16)

3 ENGINE CONTROL TROUBLE CODE



Tilt sensor – check the power supply.

- **V** Measure the voltage between the specified points.
Tilt sensor connector **AM** pin **2** – Measuring point **Ground (-)**

i Info

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

Voltage	4.9 ... 5.1 V
---------	---------------

- » If the specifications have not been met:
 - Check connector **AM** (📖 p. 118) pin **2**.
 - Check the wire from connector **AM** (📖 p. 118) pin **2** according to the wiring diagram.
- » If the specifications have been met:
 - Check the next possible cause:
Tilt sensor – the signal wire has a short circuit to ground (terminal 31) (📖 p. 78)

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

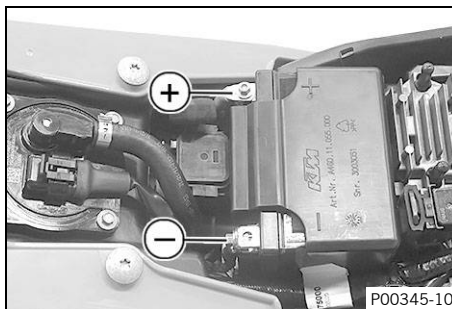
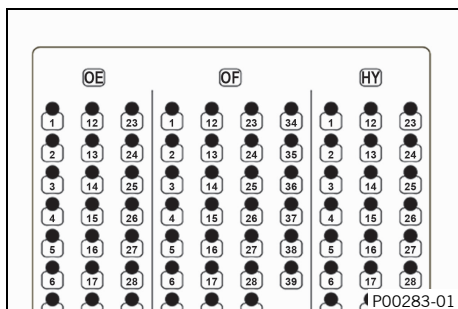
Condition

The diagnostics tool is disconnected.

Engine control unit is disconnected. (📖 p. 17)

The break-out box is connected to the engine control unit wiring harness with adapter **00029095015**.

The tilt sensor is disconnected. (📖 p. 16)



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

- **Ω** Measure the resistance between the specified points.
Break out box connector **HY** pin **16** – Measuring point **Ground (-)**

Resistance	$\infty \Omega$
------------	-----------------

- » If the specifications have not been met:
 - Check the cable from engine control unit connector **HY** (📖 p. 122) pin **16** to connector **AM** (📖 p. 118) pin **3** for a short circuit to ground (terminal 31).
- » If the specifications have been met:
 - Check the next possible cause:
Tilt sensor – the signal wire has a short circuit to sensor ground (📖 p. 79)

Tilt sensor – the signal wire has a short circuit to sensor ground

Condition


The diagnostics tool is disconnected.

Engine control unit is disconnected. (📖 p. 17)

The break-out box is connected to the engine control unit wiring harness with adapter **00029095015**.

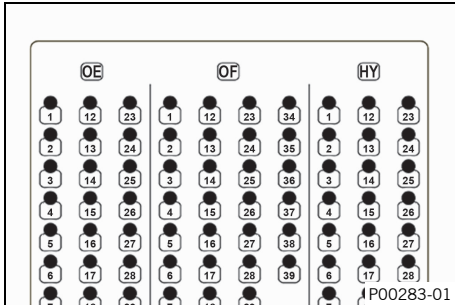
The tilt sensor is disconnected. (📖 p. 16)


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

-  Measure the resistance between the specified points.
Break out box connector **HY** pin **16** – Break out box connector **HY** pin **17**

Resistance	$\infty \Omega$
------------	-----------------

- » If the specifications have not been met:
 - Check cable from engine control unit connector **HY** (📖 p. 122) pin **16** to connector **AM** (📖 p. 118) pin **3** for a short circuit to sensor ground.



Blink code for malfunction indicator lamp	 15 Malfunction indicator lamp flashes 1x long, 5x short
Display on diagnostic tool	P1632 "Tilt sensor" "Open / input signal too high"
Error level condition	Tilt sensor – open / input signal too high Voltage: ≥ 4.57 V Time: ≥ 25.5 s
Function check	Checking the tilt sensor (📖 p. 80)
Possible cause	Tilt sensor – the signal wire has a short circuit to ignition plus (terminal 15) (📖 p. 80)
	Tilt sensor – the signal wire has a short circuit to the sensor power supply (📖 p. 81)
	Tilt sensor – the signal wire is faulty (📖 p. 81)
	Tilt sensor – the ground wire is faulty (📖 p. 82)

Checking the tilt sensor

Condition

The diagnostics tool is connected and running.

- Select **"Engine control unit" > "Measured values" > "Rollover sensor voltage (rollover AD)"**.

Tilt sensor	
Voltage (rollover AD) "no fall detected"	0.4 ... 1.4 V
Voltage (RolloverAD) "fall detected"	3.7 ... 4.1 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 fault memory using the KTM diagnostics tool.
- » If the displayed value is above the setpoint value:
 - Check the next possible cause:
Tilt sensor – the signal wire has a short circuit to ignition plus (terminal 15) (📖 p. 80)
 - Check the next possible cause:
Tilt sensor – the signal wire has a short circuit to the sensor power supply (📖 p. 81)
 - Check the next possible cause:
Tilt sensor – the signal wire is faulty (📖 p. 81)
 - Check the next possible cause:
Tilt sensor – the ground wire is faulty (📖 p. 82)

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

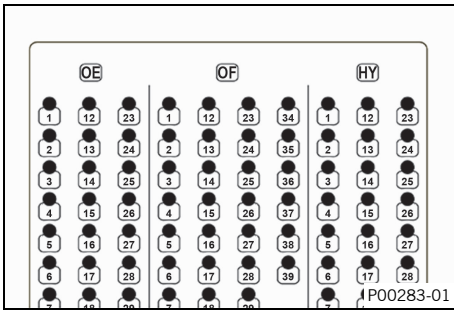
Condition

The diagnostics tool is disconnected.

Engine control unit is disconnected. (📖 p. 17)

The break-out box is connected to the engine control unit wiring harness with adapter **00029095015**.

The tilt sensor is disconnected. (📖 p. 16)



Tilt 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 **HY** pin **16** – Break out box connector **HY** pin **1**

Resistance	$\infty \Omega$
------------	-----------------

- » If the specifications have not been met:
 - Check the cable from engine control unit connector **HY** (📖 p. 122) pin **16** to connector **AM** (📖 p. 118) pin **3** for a short circuit to ignition plus (terminal 15).
- » If the specifications have been met:
 - Check the next possible cause:
Tilt sensor – the signal wire has a short circuit to the sensor power supply (📖 p. 81)

Tilt sensor – the signal wire has a short circuit to the sensor power supply

Condition

The diagnostics tool is disconnected.
 Engine control unit is disconnected. (📖 p. 17)
 The break-out box is connected to the engine control unit wiring harness with adapter **00029095015**.
 The tilt sensor is disconnected. (📖 p. 16)

Tilt 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 **HY** pin **16** – Break out box connector **HY** pin **12**

Resistance	$\infty \Omega$
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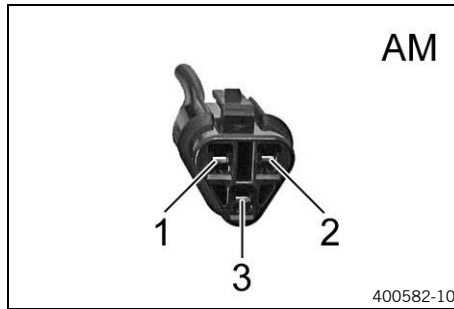
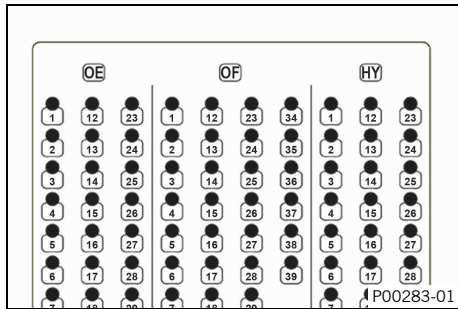
- » If the specifications have not been met:
 - Check the cable from engine control unit connector **HY** (📖 p. 122) pin **16** to connector **AM** (📖 p. 118) pin **3** for a short circuit to the sensor power supply.
- » If the specifications have been met:
 - Check the next possible cause:
Tilt sensor – the signal wire is faulty (📖 p. 81)

Tilt sensor – the signal wire is faulty


Condition

The diagnostics tool is disconnected.
 Engine control unit is disconnected. (📖 p. 17)
 The break-out box is connected to the engine control unit wiring harness with adapter **00029095015**.
 The tilt sensor is disconnected. (📖 p. 16)

3 ENGINE CONTROL TROUBLE CODE



Tilt sensor – check the signal wire.

-  Measure the resistance between the specified points.
Break out box connector **HY** pin **16** – Tilt sensor connector **AM** pin **3**

Resistance	$\leq 0.6 \Omega$
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- » If the specifications have not been met:
 - Check engine control unit connector **HY** (p. 122) pin **16** and connector **AM** (p. 118) pin **3**.
 - Check the cable from engine control unit connector **HY** (p. 122) pin **16** to connector **AM** (p. 118) pin **3**.
- » If the specifications have been met:
 - Check the next possible cause:
Tilt sensor – the ground wire is faulty (p. 82)

Tilt sensor – the ground wire is faulty

Condition

The diagnostics tool is disconnected.

Engine control unit is disconnected. (p. 17)

The break-out box is connected to the engine control unit wiring harness with adapter **00029095015**.

The tilt sensor is disconnected. (p. 16)

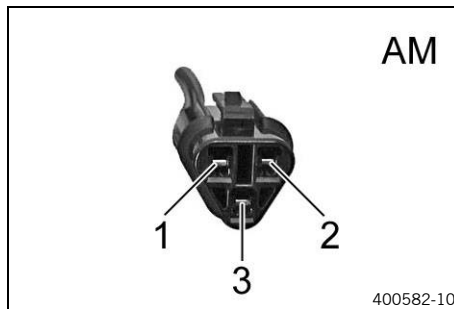
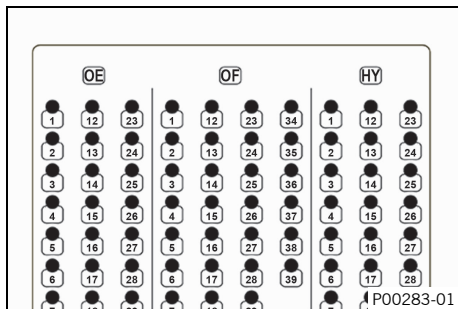
The coolant temperature sensor is disconnected. (p. 9)

Induction manifold sensor is disconnected. (p. 15)


Throttle valve position sensor circuit A is disconnected. (p. 14)

The intake air temperature sensor is disconnected. (p. 12)

The gear position sensor is disconnected. (p. 17)



Tilt sensor – check the ground wire.

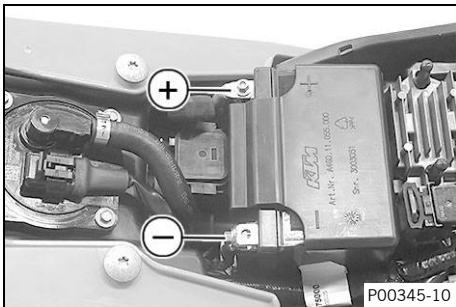
-  Measure the resistance between the specified points.
Break out box connector **HY** pin **17** – Tilt sensor connector **AM** pin **1**

Resistance	$\leq 0.6 \Omega$
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- » If the specifications have not been met:
 - Check engine control unit connector **HY** (p. 122) pin **17** and connector **AM** (p. 118) pin **1**.
 - Check the cable from engine control unit connector **HY** (p. 122) pin **17** to connector **AM** (p. 118) pin **1**.

Blink code for malfunction indicator lamp	Fi 21 Malfunction indicator lamp flashes 2x long, 1x short
Display on diagnostic tool	P1660 "Battery voltage" "Input voltage too high"
Error level condition	Battery voltage – input voltage too high Engine control unit power supply: ≥ 15.98 V Time: ≥ 2 s
Function check	Checking the charging voltage (📖 p. 83)
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 seat.
- Pull back the 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 less than the specified value:
 - Check the plug-in connections from the alternator to the voltage regulator.
 - Check the plug-in connections from the voltage regulator to the wiring harness.
 - Check the stator winding of the alternator.
- » If the displayed value is greater than the specified value:
 - Change voltage regulator.
- Mount the seat.

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

- Contact customer service.

3 ENGINE CONTROL TROUBLE CODE

Blink code for malfunction indicator lamp	Fi 91 Malfunction indicator lamp flashes 9x long, 1x short
Display on diagnostic tool	P1690 "CAN bus communication" "faulty"
Error level condition	CAN bus communication – faulty
Possible cause	Software version/coding incorrect (📖 p. 84) Check the CAN bus total resistance (📖 p. 84)
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. 84)

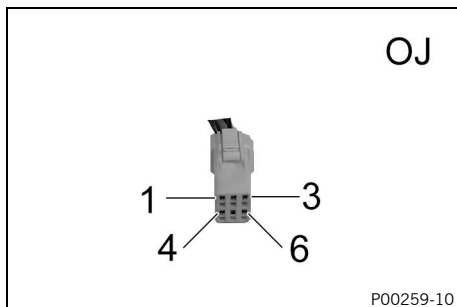
Check the CAN bus total resistance

Condition

The diagnostics tool is disconnected.
Connectivity Unit is disconnected. (📖 p. 18)


CAN bus total resistance – check the resistance.

-  Measure the resistance between the specified points.
Connectivity unit connector **OJ** pin **2** – Connectivity unit connector **OJ** pin **3**

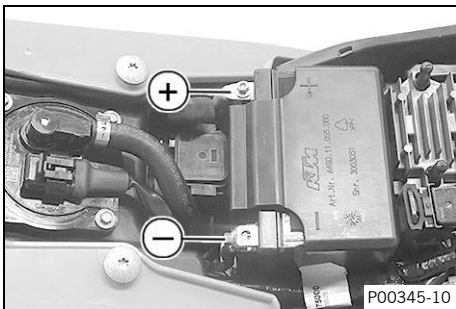


CAN bus total resistance	
Resistance on connected engine control unit and CAN bus terminating resistor: 20 °C (68 °F)	54 ... 66 Ω

- » If the specifications have not been met:
 - Check the CAN bus wires.
- » If the specifications have been met:
 - Contact customer service.

Connectivity Unit blink code	 Indicator lamp flashes red once
Display on diagnostic tool	B10F149 "Connectivity Unit" "Accelerator sensor malfunction"
Error level condition	Accelerator sensor malfunction
Function check	Resetting the Connectivity Unit (📖 p. 85)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

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.
- Disconnect the diagnostics tool for 30 seconds.
- Read out the fault memory using the KTM diagnostics tool.
 - » If the error persists:
 - Change Connectivity Unit.

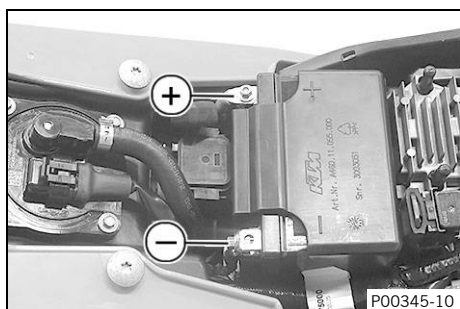
Last measure if none of the documented causes leads to elimination of the fault

- Contact customer service.

4 TROUBLE CODE, CONNECTIVITY UNIT

Connectivity Unit blink code	 Indicator lamp flashes red once
Display on diagnostic tool	B10F349 "Connectivity Unit" "GPS sensor malfunction"
Error level condition	GPS sensor malfunction
Function check	Resetting the Connectivity Unit (🔧 p. 86)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.


Resetting the Connectivity Unit



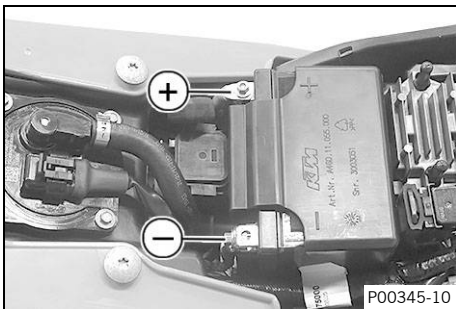
- Disconnect the negative terminal of the 12-V battery.
- Wait for 10 minutes.
- Connect the negative terminal of the 12-V battery.
- Clear the fault memory using the KTM diagnostics tool.
- Disconnect the diagnostics tool for 30 seconds.
- Read out the fault memory using the KTM diagnostics tool.
 - » If the error persists:
 - Change Connectivity Unit.

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

- Contact customer service.

Connectivity Unit blink code	 Indicator lamp flashes red four times
Display on diagnostic tool	B10F449 "Connectivity Unit" "Bluetooth malfunction"
Error level condition	Bluetooth malfunction
Function check	Resetting the Connectivity Unit (🔧 p. 87)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

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.
- Disconnect the diagnostics tool for 30 seconds.
- Read out the fault memory using the KTM diagnostics tool.
 - » If the error persists:
 - Change Connectivity Unit.

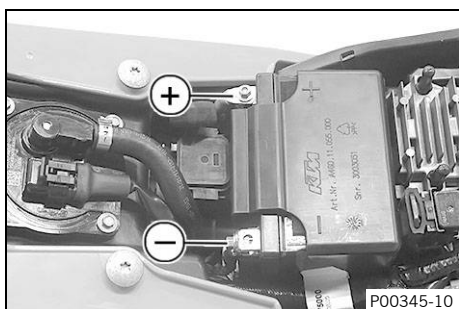
Last measure if none of the documented causes leads to elimination of the fault

- Contact customer service.

4 TROUBLE CODE, CONNECTIVITY UNIT

Connectivity Unit blink code	 Indicator lamp flashes red three times
Display on diagnostic tool	B10F549 "Connectivity Unit" "WLAN malfunction"
Error level condition	WLAN malfunction
Function check	Resetting the Connectivity Unit (🔧 p. 88)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.


Resetting the Connectivity Unit



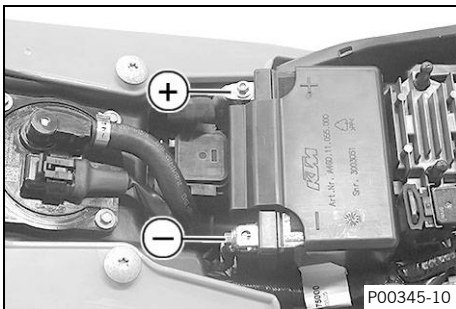
- Disconnect the negative terminal of the 12-V battery.
- Wait for 10 minutes.
- Connect the negative terminal of the 12-V battery.
- Clear the fault memory using the KTM diagnostics tool.
- Disconnect the diagnostics tool for 30 seconds.
- Read out the fault memory using the KTM diagnostics tool.
 - » If the error persists:
 - Change Connectivity Unit.

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

- Contact customer service.

Connectivity Unit blink code	 Indicator lamp flashes red once
Display on diagnostic tool	B10F649 "Connectivity Unit" "LED malfunction"
Error level condition	LED malfunction
Function check	Resetting the Connectivity Unit (📖 p. 89)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

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.
- Disconnect the diagnostics tool for 30 seconds.
- Read out the fault memory using the KTM diagnostics tool.
 - » If the error persists:
 - Change Connectivity Unit.

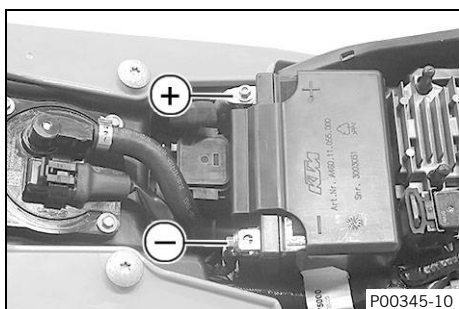
Last measure if none of the documented causes leads to elimination of the fault

- Contact customer service.

4 TROUBLE CODE, CONNECTIVITY UNIT

Connectivity Unit blink code	 Indicator lamp flashes red once
Display on diagnostic tool	B10F701 "Connectivity Unit" "Button malfunction"
Error level condition	Button pressed for more than 60 seconds
Function check	Resetting the Connectivity Unit (🔧 p. 90)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.


Resetting the Connectivity Unit



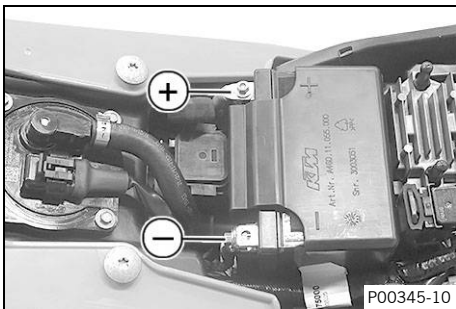
- Disconnect the negative terminal of the 12-V battery.
- Wait for 10 minutes.
- Connect the negative terminal of the 12-V battery.
- Clear the fault memory using the KTM diagnostics tool.
- Disconnect the diagnostics tool for 30 seconds.
- Read out the fault memory using the KTM diagnostics tool.
 - » If the error persists:
 - Change Connectivity Unit.

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

- Contact customer service.

Connectivity Unit blink code	 Indicator lamp flashes red once
Display on diagnostic tool	B10F842 "Connectivity Unit" "Memory faulty"
Error level condition	Memory faulty
Function check	Resetting the Connectivity Unit (📖 p. 91)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

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.
- Disconnect the diagnostics tool for 30 seconds.
- Read out the fault 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

- Contact customer service.

4 TROUBLE CODE, CONNECTIVITY UNIT

Connectivity Unit blink code	 Indicator lamp flashes red once
Display on diagnostic tool	B10FB13 "Control wire, power relay" "Open circuit"
Error level condition	Control wire, power relay – circuit interrupted
Possible cause	Power relay – the control wire is faulty (📖 p. 92)
	Power relay – the control wire has a short circuit to plus (terminal 30) (📖 p. 92)
	Power relay – the control wire has a short circuit to ground (terminal 31) (📖 p. 93)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Power relay – the control wire is faulty

Condition

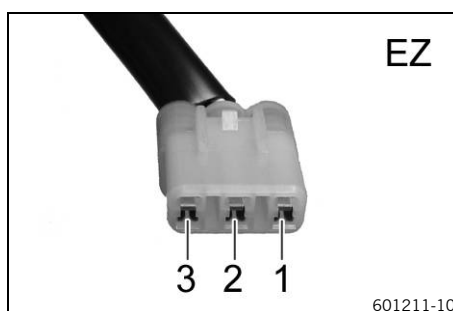
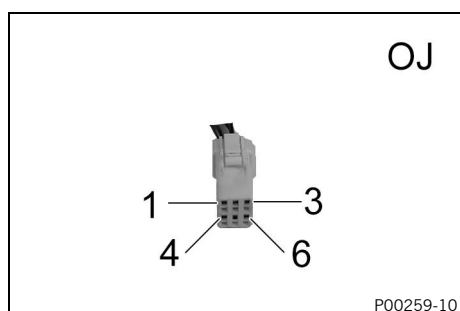
The diagnostics tool is disconnected.

Engine control unit is disconnected. (📖 p. 17)


Connectivity Unit is disconnected. (📖 p. 18)

Voltage regulator is disconnected.

Power relay is disconnected.



Power relay – check the control wire.

-  Measure the resistance between the specified points.
Connectivity unit connector **OJ** pin **5** – Voltage regulator, connector **EZ** pin **1**

Resistance	$\leq 0.6 \Omega$
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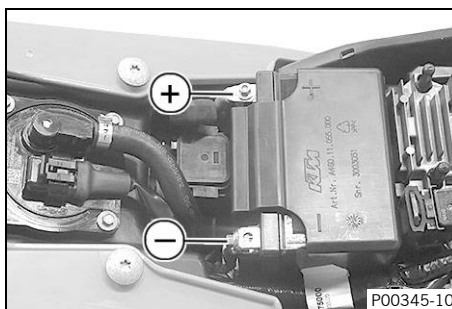
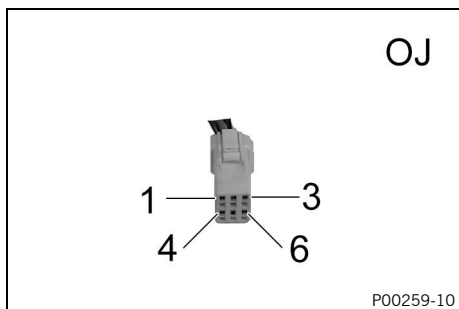
- » If the specifications have not been met:
 - Check the cable from engine control unit connector **OJ** (📖 p. 123) pin **5** to connector **EZ** (📖 p. 120) pin **1**.
- » If the specifications have been met:
 - Check the next possible cause:
Power relay – the control wire has a short circuit to plus (terminal 30) (📖 p. 92)

Power relay – the control wire has a short circuit to plus (terminal 30)

Condition

The diagnostics tool is disconnected.

Connectivity Unit is disconnected. (📖 p. 18)



Power relay – check the control wire for a short circuit to plus (terminal 30).

- **V** Measure the voltage between the specified points.
Connectivity unit connector **OJ** pin **5** – Measuring point **Ground (-)**

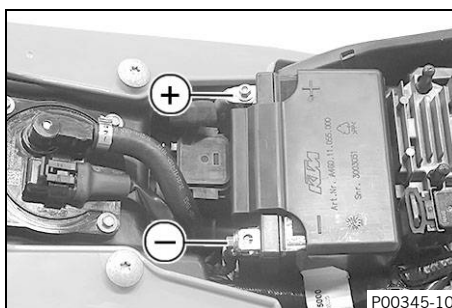
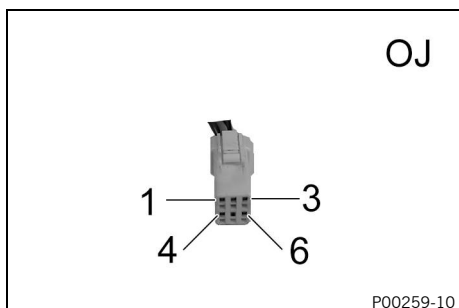
Voltage	< 0.1 V
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- » If the specifications have not been met:
 - Check the cable from connector **OJ** (🔗 p. 123) pin **5** against the wiring diagram for a short circuit to plus (terminal 30).
- » If the specifications have been met:
 - Check the next possible cause:
Power relay – the control wire has a short circuit to ground (terminal 31) (🔗 p. 93)

Power relay – the control wire has a short circuit to ground (terminal 31)

Condition

- The diagnostics tool is disconnected.
- Engine control unit is disconnected. (🔗 p. 17)
- Connectivity Unit is disconnected. (🔗 p. 18)
- Voltage regulator is disconnected.
- Power relay is disconnected.




Power relay – check the control wire for a short circuit to ground (terminal 31).

- **Ω** Measure the resistance between the specified points.
Connectivity unit connector **OJ** pin **5** – Measuring point **Ground (-)**

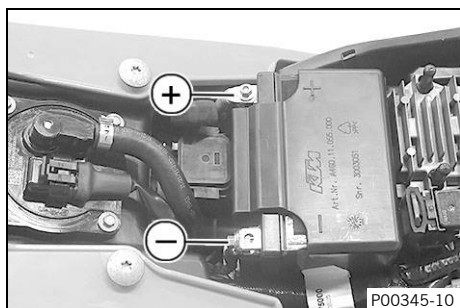
Resistance	$\infty \Omega$
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- » If the specifications have not been met:
 - Check the cable from connector **OJ** (🔗 p. 123) pin **5** against the wiring diagram for a short circuit to ground (terminal 31).
- » If the specifications have been met:
 - Contact customer service.

4 TROUBLE CODE, CONNECTIVITY UNIT

Connectivity Unit blink code	 Indicator lamp flashes red once
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. 94)
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 seat.
- Pull back the 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 less than the specified value:
 - Check the plug-in connections from the alternator to the voltage regulator.
 - Check the plug-in connections from the voltage regulator to the wiring harness.
 - Check the stator winding of the alternator.
- » If the displayed value is greater than the specified value:
 - Change voltage regulator.
- Mount the seat.

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

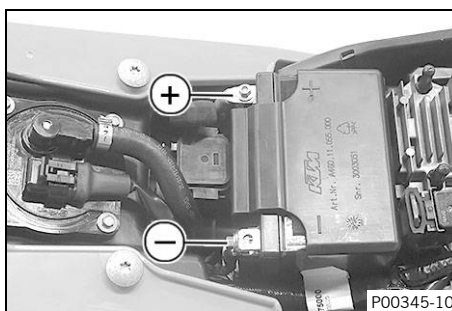
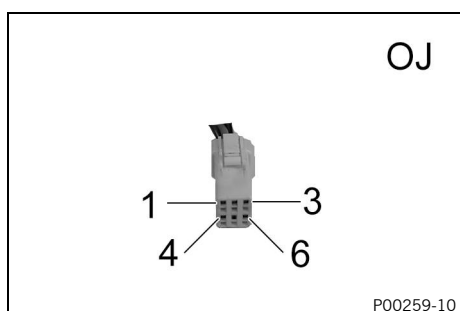
- Contact customer service.

Connectivity Unit blink code	 Indicator lamp flashes red once
Display on diagnostic tool	B10FD16 "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. 95)
	Connectivity Unit – power supply 2 is faulty (📖 p. 95)
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 diagnostics tool is connected and running.
Connectivity Unit is disconnected. (📖 p. 18)



Connectivity Unit – check power supply 1.

-  Measure the voltage between the specified points.
Connectivity unit connector **OJ** 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.

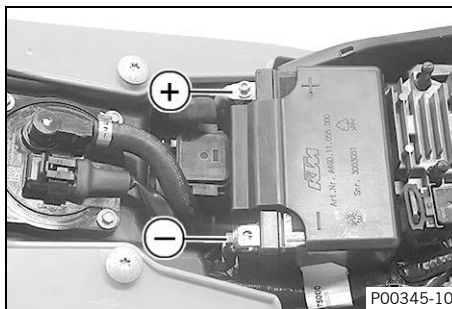
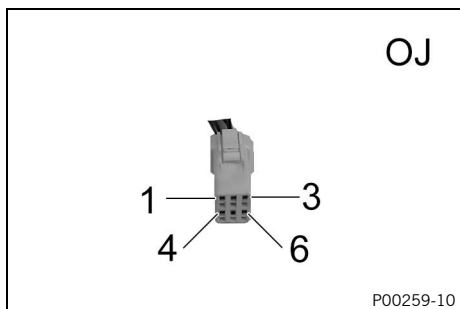
- » If the specifications have not been met:
 - Check connector **OJ** (📖 p. 123) pin **1**.
 - Check the cable from connector **OJ** (📖 p. 123) pin **1** to the next node in the wiring harness.
- » If the specifications have been met:
 - Check the next possible cause:
Connectivity Unit – power supply 2 is faulty (📖 p. 95)

Connectivity Unit – power supply 2 is faulty

Condition

The diagnostics tool is connected and running.
Connectivity Unit is disconnected. (📖 p. 18)

4 TROUBLE CODE, CONNECTIVITY UNIT



Connectivity Unit – check power supply 2.


- **V** Measure the voltage between the specified points.
Connectivity unit connector **OJ** pin **6** – 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. 123) pin **6**.
 - Check the cable from connector **OJ** (p. 123) pin **6** to the next node in the wiring harness.
- » If the specifications have been met:
 - Contact customer service.

Connectivity Unit blink code	 Indicator lamp flashes red once
Display on diagnostic tool	B10FE4B "Connectivity Unit" "Temperature too high"
Error level condition	Temperature too high Temperature: ≥ 70 °C (≥ 158 °F)
Function check	Checking the Connectivity Unit temperature (📖 p. 97)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Checking the Connectivity Unit temperature

Condition

The diagnostics tool is connected and running.

- Check the plausibility of the Connectivity Unit temperature being exceeded.

Guideline


Result is plausible.

- » If the specified value is reached:
 - Clear the fault memory using the KTM diagnostics tool.
 - Read out the fault memory using the KTM diagnostics tool.
- » If the specification is not reached:
 - Change Connectivity Unit.

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

- Contact customer service.

4 TROUBLE CODE, CONNECTIVITY UNIT

Connectivity Unit blink code	 Indicator lamp flashes red once
Display on diagnostic tool	B10FF00 "Connectivity Unit" "Temperature too low"
Error level condition	Temperature too low Temperature: ≤ -10 °C (≤ 14 °F)
Function check	Checking the Connectivity Unit temperature (🔧 p. 98)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Checking the Connectivity Unit temperature

Condition

The diagnostics tool is connected and running.

- Check the plausibility of the Connectivity Unit temperature being exceeded.


Guideline

Result is plausible.

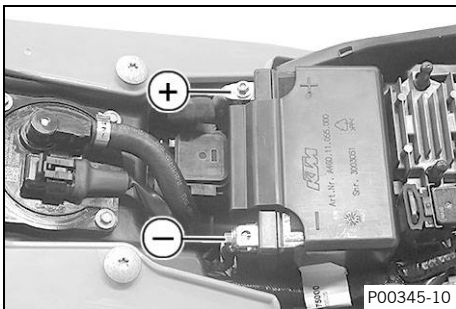
- » If the specified value is reached:
 - Clear the fault memory using the KTM diagnostics tool.
 - Read out the fault memory using the KTM diagnostics tool.
- » If the specification is not reached:
 - Change Connectivity Unit.

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

- Contact customer service.

Connectivity Unit blink code	 Indicator lamp flashes red once
Display on diagnostic tool	B110092 "Connectivity Unit" "CPU overload"
Error level condition	CPU overload
Function check	Resetting the Connectivity Unit (📖 p. 99)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

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.
- Disconnect the diagnostics tool for 30 seconds.
- Read out the fault memory using the KTM diagnostics tool.
 - » If the error persists:
 - Change Connectivity Unit.

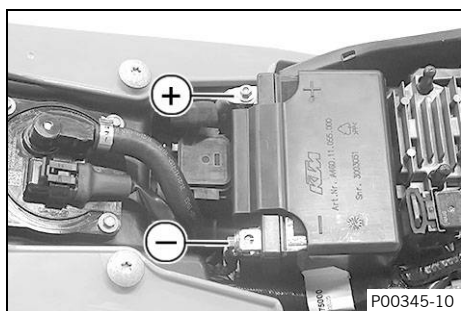
Last measure if none of the documented causes leads to elimination of the fault

- Contact customer service.

4 TROUBLE CODE, CONNECTIVITY UNIT

Connectivity Unit blink code	 Indicator lamp flashes red once
Display on diagnostic tool	B110192 "Connectivity Unit" "RAM overload"
Error level condition	RAM overload
Function check	Resetting the Connectivity Unit (🔧 p. 100)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.


Resetting the Connectivity Unit



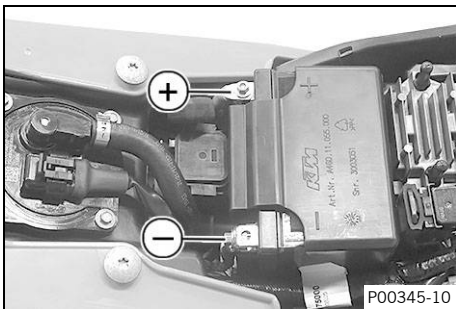
- Disconnect the negative terminal of the 12-V battery.
- Wait for 10 minutes.
- Connect the negative terminal of the 12-V battery.
- Clear the fault memory using the KTM diagnostics tool.
- Disconnect the diagnostics tool for 30 seconds.
- Read out the fault memory using the KTM diagnostics tool.
 - » If the error persists:
 - Change Connectivity Unit.

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

- Contact customer service.

Connectivity Unit blink code	 Indicator lamp flashes red seven times
Display on diagnostic tool	B110292 "Connectivity Unit" "ROM overload"
Error level condition	ROM overload
Function check	Resetting the Connectivity Unit (🔧 p. 101)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

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.
- Disconnect the diagnostics tool for 30 seconds.
- Read out the fault memory using the KTM diagnostics tool.
 - » If the error persists:
 - Change Connectivity Unit.

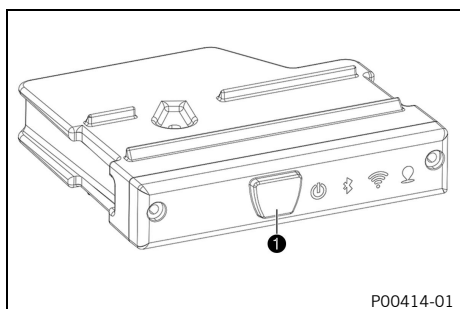
Last measure if none of the documented causes leads to elimination of the fault

- Contact customer service.

4 TROUBLE CODE, CONNECTIVITY UNIT

Connectivity Unit blink code	 Indicator lamp flashes red six times
Display on diagnostic tool	B110300 "Connectivity Unit" "Deviation in VIN"
Error level condition	VIN does not match
Function check	Resetting Connectivity Unit to factory settings (🔧 p. 102)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.


Resetting Connectivity Unit to factory settings



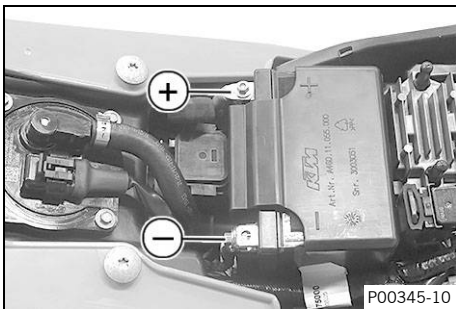
- Press and hold the **1** button (6 s...12 s) – the Connectivity Unit is prepared for being reset to factory settings.
- Press and hold the **1** button (12 s...18 s) – the Connectivity Unit is reset to factory settings.
- Reconnect the Connectivity Unit to the app on the smartphone.
- Clear the fault memory using the KTM diagnostics tool.
- Disconnect the diagnostics tool for 30 seconds.
- Read out the fault 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

- Contact customer service.

Connectivity Unit blink code	 Indicator lamp flashes red eight times
Display on diagnostic tool	B110600 "Connectivity Unit" "Reset with active fuse"
Error level condition	Attempt a reset with active fuse
Function check	Resetting the Connectivity Unit (📖 p. 103)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

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.
- Disconnect the diagnostics tool for 30 seconds.
- Read out the fault memory using the KTM diagnostics tool.
 - » If the error persists:
 - Change Connectivity Unit.

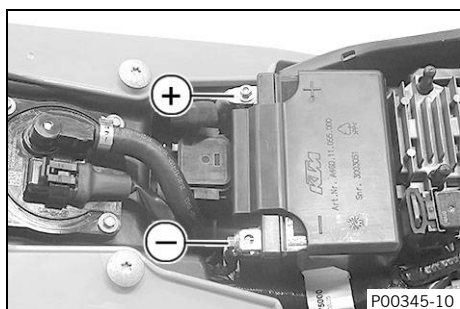
Last measure if none of the documented causes leads to elimination of the fault

- Contact customer service.

4 TROUBLE CODE, CONNECTIVITY UNIT

Connectivity Unit blink code	 Indicator lamp flashes red once
Display on diagnostic tool	B110744 "Connectivity Unit" "Data storage error"
Error level condition	Flash storage formatted due to storage damage
Function check	Resetting the Connectivity Unit (📖 p. 104)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.


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.
- Disconnect the diagnostics tool for 30 seconds.
- Read out the fault 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

- Contact customer service.

Connectivity Unit blink code	 Indicator lamp flashes red twice
Display on diagnostic tool	U100288 "Connectivity Unit" "CAN bus communication faulty"
Error level condition	CAN bus communication faulty
Possible cause	Check the CAN bus total resistance (📖 p. 105)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.


Check the CAN bus total resistance

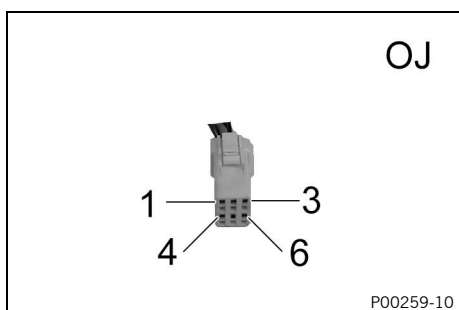
Condition

The diagnostics tool is disconnected.

Connectivity Unit is disconnected. (📖 p. 18)

CAN bus total resistance – check the 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 on connected engine control unit and CAN bus terminating resistor: 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.

4 TROUBLE CODE, CONNECTIVITY UNIT


Connectivity Unit blink code	 Indicator lamp flashes red twice
Display on diagnostic tool	U100408 "Connectivity Unit" "Faulty CAN bus communication with engine control unit"
Error level condition	Faulty CAN bus communication with engine control unit
Possible cause	Check the CAN bus total resistance (🔧 p. 106)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

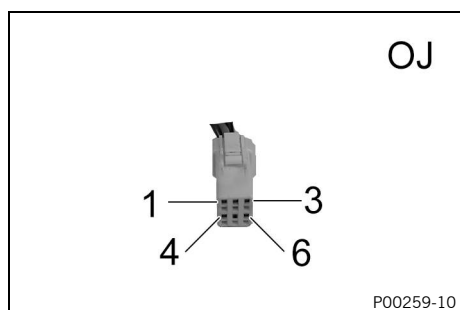
Check the CAN bus total resistance

Condition

The diagnostics tool is disconnected.
Connectivity Unit is disconnected. (🔧 p. 18)


CAN bus total resistance – check the resistance.

-  Measure the resistance between the specified points.
Connectivity unit connector **OJ** pin **2** – Connectivity unit connector **OJ** pin **3**

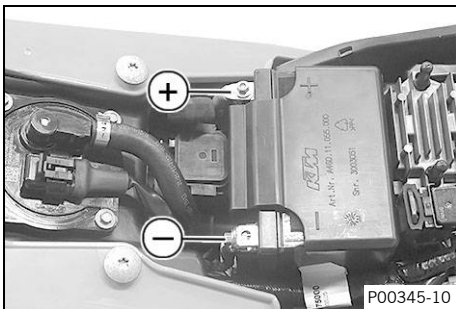


CAN bus total resistance	
Resistance on connected engine control unit and CAN bus terminating resistor: 20 °C (68 °F)	54 ... 66 Ω

- » If the specifications have not been met:
 - Check the CAN bus wires.
- » If the specifications have been met:
 - Contact customer service.

Connectivity Unit blink code	 Indicator lamp flashes red once
Display on diagnostic tool	U101201 "Connectivity Unit" "CAN bus hardware communication faulty"
Error level condition	CAN bus driver faulty
Function check	Resetting the Connectivity Unit (📖 p. 107)
Last measure if none of the documented causes leads to elimination of the fault	– Contact customer service.

Resetting the Connectivity Unit

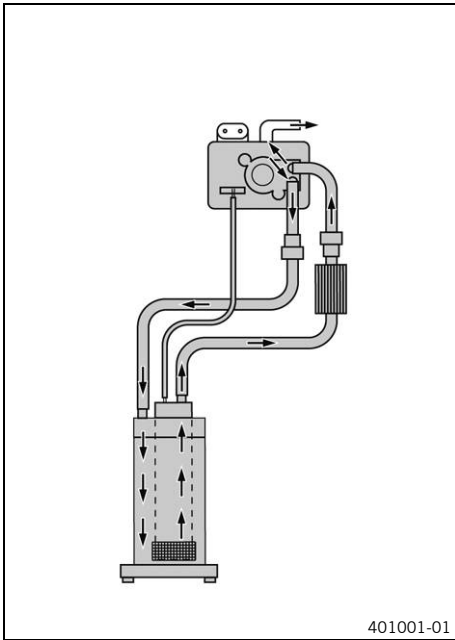


- Disconnect the negative terminal of the 12-V battery.
- Wait for 10 minutes.
- Connect the negative terminal of the 12-V battery.
- Clear the fault memory using the KTM diagnostics tool.
- Disconnect the diagnostics tool for 30 seconds.
- Read out the fault memory using the KTM diagnostics tool.
 - » If the error persists:
 - Change Connectivity Unit.

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

- Contact customer service.

5.1 Fuel pump controller operation



Functional description

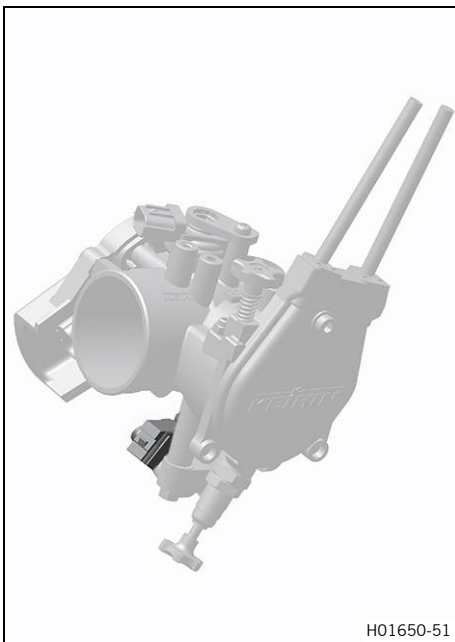
- The engine control unit activates the fuel pump controller.



Info

The test can be interrupted by pressing the "Quit" button.

5.2 Injection valve cylinder 1 function



Functional description

Note

Material damage Insufficient fuel lubricant has a negative effect on the service life of the injection valve.

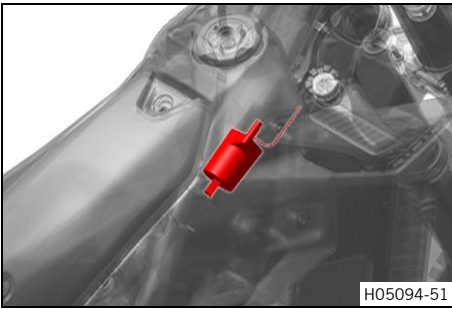
- Perform the actuator test only when the throttle valve body is connected to the fuel line.
- The injection valve is supplied with power via terminal 15. After the actuator test is started, the engine control unit switches the injection valve ground signal on/off. An acoustic confirmation signal confirms correct operation.



Info

The test ends automatically after 10 seconds.

5.3 Ignition cylinder 1 function



Functional description



Warning

Risk of injury The ignition system is under high voltage.

- Do not touch any affected metal parts or the ends of the connection cables during and immediately after the measurement.

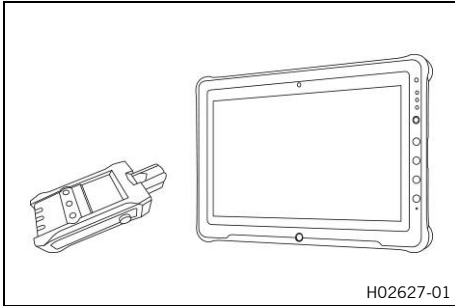
- After the actuator test starts, the engine control unit triggers a thyristor in the control unit. In this way, the capacitor can be abruptly discharged. An audible signal or a test spark plug can be used to check the function of the ignition.



Info

The test is interrupted by pressing the "Quit" button.

6.1 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.

- Execute **"Engine control unit" > "Functions" > "Clear adaptation values"**.
- ✓ The adaptation values are deleted.
- Program the gear position sensor. (p. 111)
- Program the quickshifter. (p. 111)
- Select **"Engine control unit" > "Functions" > "Initialization Run"**.

Guideline

The instructions must be followed precisely.

- ✓ Initialization run successful.

i 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.

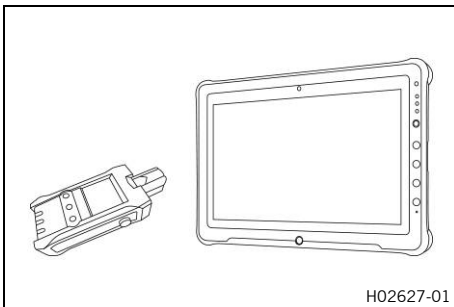
7.1 Program the gear position sensor

Condition

The diagnostics tool is connected and running.

Main work

- Execute "**Engine control unit**" > "**Functions**" > "**Program the gear position sensor**".
- Follow the instructions in the diagnostics tool exactly.



Final steps

- Program the quickshifter. (📖 p. 111)



7.2 Programming the quickshifter



Info

If the shifting performance of the quickshifter starts to decrease, it must be reprogrammed.



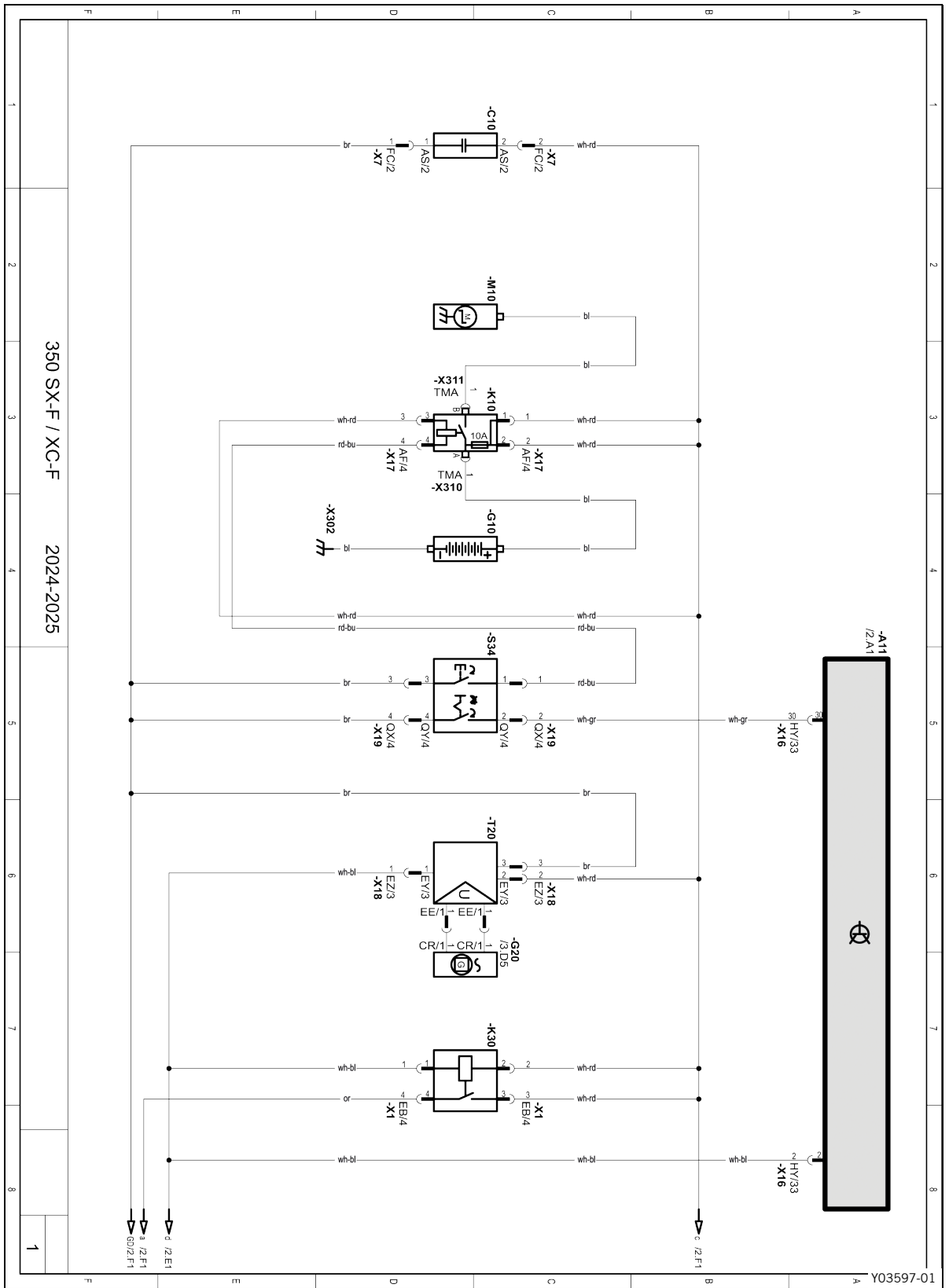
- Carry out start procedure.
- Press and hold the QS button ① for at least 10 seconds.
 - ✓ The QS indicator lamp flashes.
- Pull the clutch lever, engage first-gear and hold the shift lever all the way down.
- Briefly press the QS button ①.
 - ✓ The QS indicator lamp lights up blue, the teaching procedure was successful.



Info

If the quickshifter cannot be activated, the teaching procedure was unsuccessful and must be repeated.





Components:

A11	Engine control unit
C10	Capacitor
G10	12-V battery
G20	Alternator
K10	Starter relay with main fuse
K30	Power relay
M10	Starter motor
S34	Combination switch, right
T20	Voltage regulator

Components:

A11	Engine control unit
A41	Connectivity Unit (if installed)
B32	Fuel level sensor (if installed)
F1	Fuse
M13	Fuel pump
M51	Injection valve
P32	Service hour counter
X295	Diagnostics connector

Components:

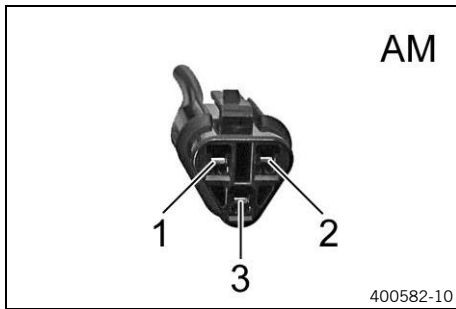
A11	Engine control unit
B12	Intake air temperature sensor
B21	Coolant temperature sensor
B26	Tilt sensor
B34	Gear position sensor
B37	Crankshaft speed sensor
B41	Induction manifold pressure sensor
B43	Throttle valve position sensor
R30	Terminating resistor (if installed)
R51	Ignition coil
S33	Combination switch (if fitted)

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

9 CONNECTOR OVERVIEW

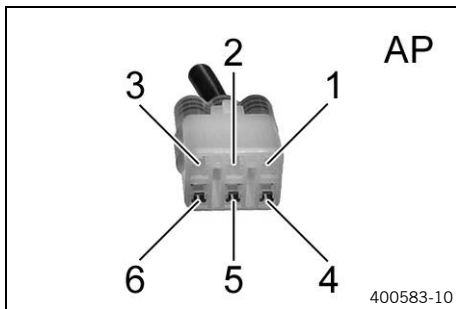
9.1 Tilt sensor connector AM



Pin overview

1	Sensor ground
2	Power supply
3	Signal wire

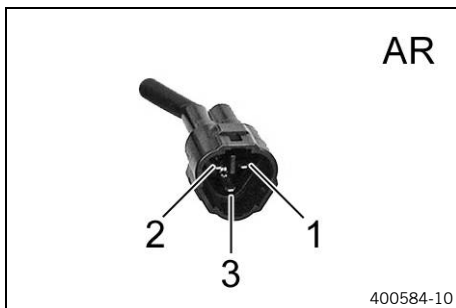
9.2 Diagnostics connector AP



Pin overview

1	Wired ground
2	CAN high
3	CAN low
4	K wire
5	Power supply (terminal 15)
6	Ground

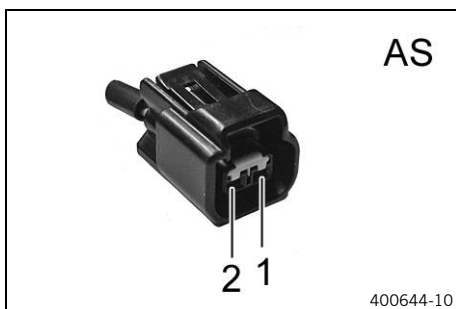
9.3 Tilt sensor connector AR



Pin overview

1	Sensor ground
2	Power supply
3	Signal wire

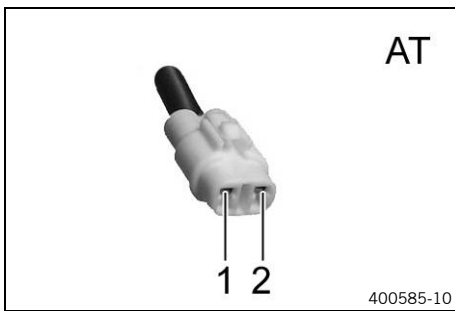
9.4 Capacitor connector AS



Pin overview

1	Ground (terminal 31)
2	Power supply (terminal 15)

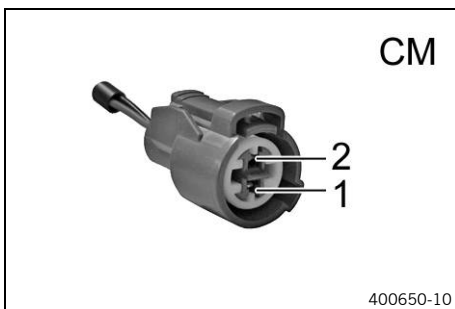
9.5 Crankshaft speed sensor connector AT



Pin overview

- | | |
|---|-------------|
| 1 | Signal wire |
| 2 | Signal wire |

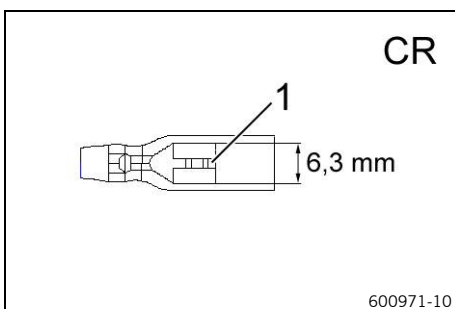
9.6 Intake air temperature sensor connector CM



Pin overview

- | | |
|---|---------------|
| 1 | Signal wire |
| 2 | Sensor ground |

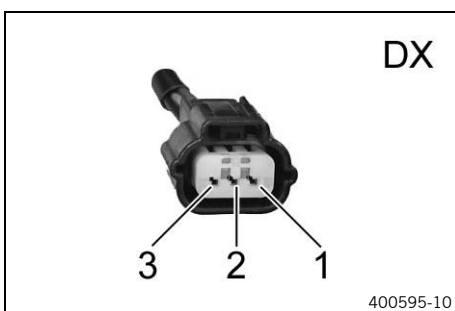
9.7 Ignition coil, connector CR



Pin overview

- | | |
|---|--------------|
| 1 | Control wire |
|---|--------------|

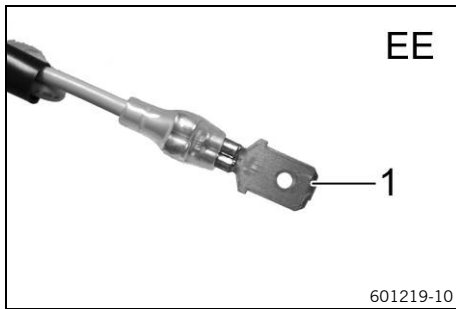
9.8 Induction manifold pressure sensor, connector DX



Pin overview

- | | |
|---|---------------|
| 1 | Power supply |
| 2 | Signal wire |
| 3 | Sensor ground |

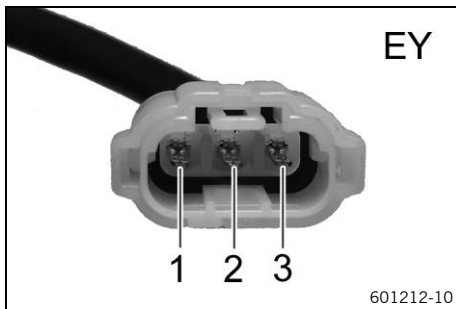
9.9 Voltage regulator, connector EE



Pin overview

1	Signal wire
---	-------------

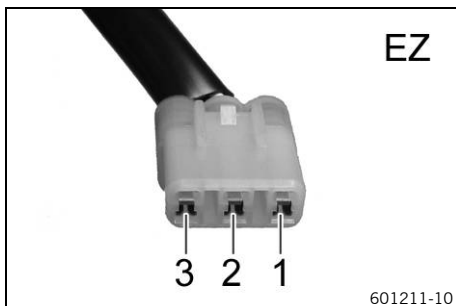
9.10 Voltage regulator, connector EY



Pin overview

1	Control wire
2	Power supply (terminal 15)
3	Ground (terminal 31)

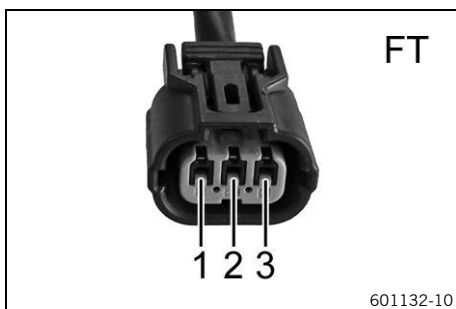
9.11 Voltage regulator, connector EZ



Pin overview

1	Control wire
2	System voltage (terminal 15)
3	Ground (terminal 31)

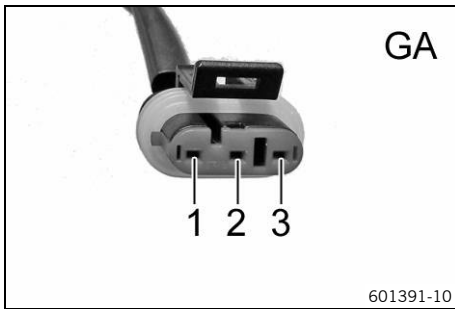
9.12 Throttle valve position sensor circuit A, connector FT



Pin overview

1	Power supply
2	Signal wire
3	Sensor ground

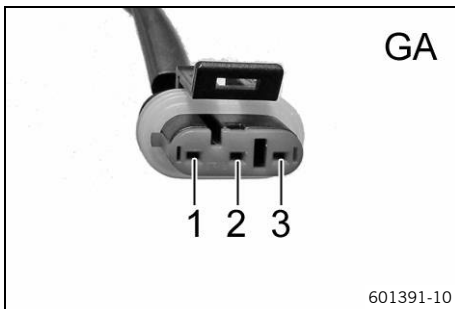
9.13 Fuel pump, connector GA (350 SX-F EU, 350 SX-F US, 350 SX-F AR)



Pin overview

1	Not assigned
2	Control wire
3	Power supply

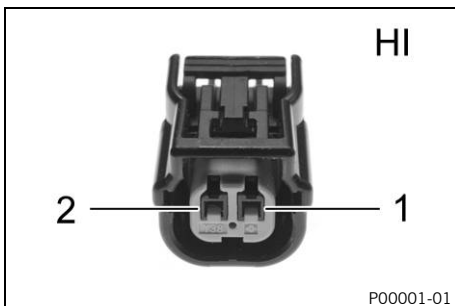
9.14 Fuel pump, connector GA (350 XC-F US)



Pin overview

1	Signal wire, fuel level sensor
2	Control wire
3	Power supply

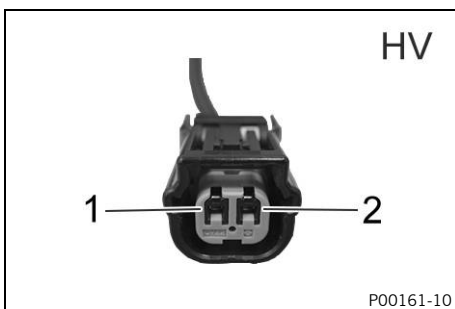
9.15 Injection valve cylinder 1, connector HI



Pin overview

1	Control wire
2	Power supply

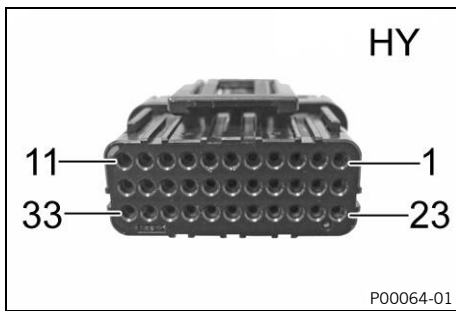
9.16 Coolant temperature sensor connector HV



Pin overview

1	Signal wire
2	Sensor ground

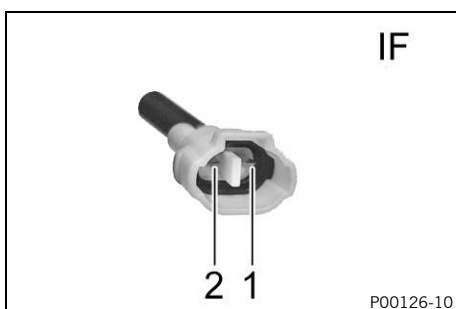
9.17 Engine control unit connector HY



Pin overview

1	Power supply (terminal 15)
2	Wired ground from voltage regulator
3	Not assigned
4	Control wire, injection valve
5	Not assigned
6	Ground (terminal 31)
7	Control wire FI malfunction indicator lamp
8	Not assigned
9	Not assigned
10	Control wire, fuel pump relay
11	Control wire, ignition coil
12	Power supply, sensor
13	CAN high
14	CAN low
15	Signal wire, throttle valve position sensor
16	Signal wire, tilting sensor
17	Sensor ground
18	Signal wire, gear position sensor
19	Signal wire, intake air temperature sensor
20	Not assigned
21	Signal wire, coolant temperature sensor
22	Ground (terminal 31)
23	Signal wire, crankshaft speed sensor
24	Signal wire, crankshaft speed sensor
25	Not assigned
26	K wire, KTM diagnostics tool
27	Signal wire, induction manifold pressure sensor
28	Not assigned
29	Not assigned
30	Control wire, stop button
31	Not assigned
32	Not assigned
33	Ground (terminal 31)

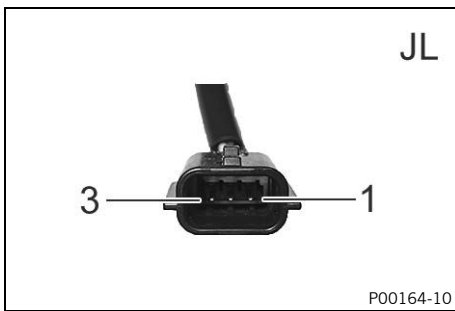
9.18 Crankshaft speed sensor connector IF



Pin overview

1	Signal wire
2	Signal wire

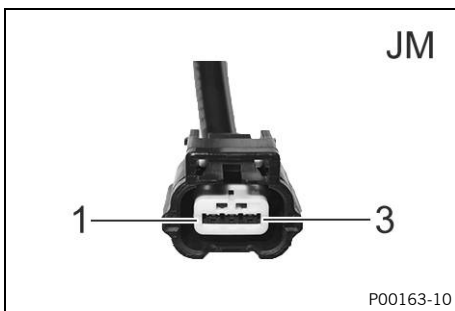
9.19 Gear position sensor, connector JL



Pin overview

1	Power supply
2	Signal wire
3	Ground

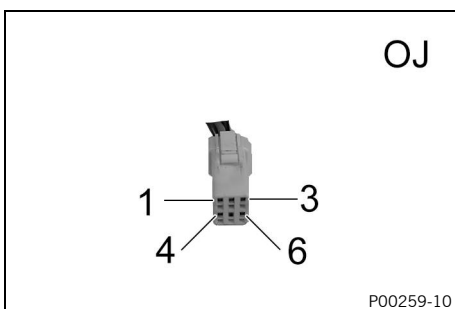
9.20 Gear position sensor, connector JM



Pin overview

1	Power supply
2	Signal wire
3	Sensor ground

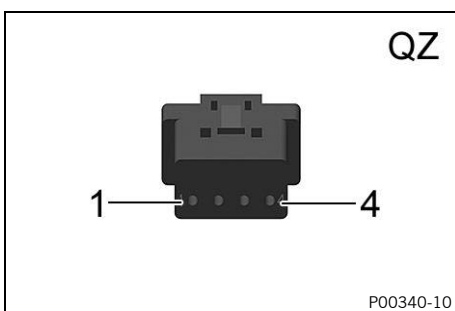
9.21 Connectivity unit connector OJ



Pin overview

1	Power supply (terminal 15)
2	CAN high
3	CAN low
4	Ground
5	Ground
6	Power supply (terminal 30)

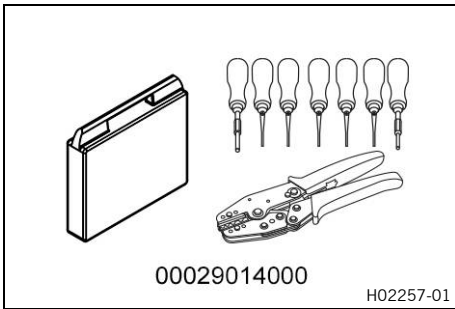
9.22 Map select switch connector QZ



Pin overview

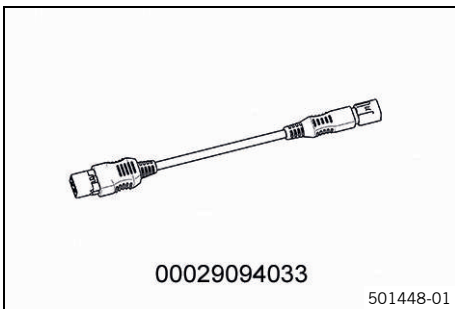
1	Power supply
2	CAN high
3	CAN low
4	Ground wire

Cable connector unlocking kit



Art. no.: 00029014000

Diagnostics adapter cable

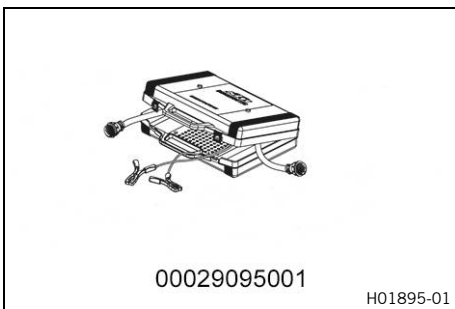


Art. no.: 00029094033

Feature

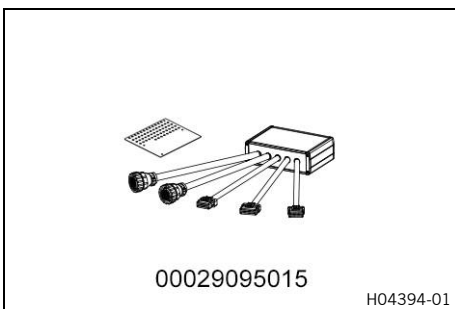
Length approx.	25.8 cm (10.16 in)
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Break out box



Art. no.: 00029095001

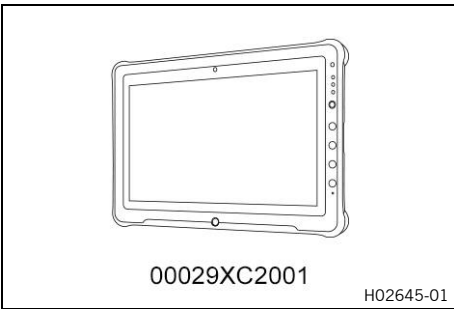
Adapter and template KTKS



Art. no.: 00029095015

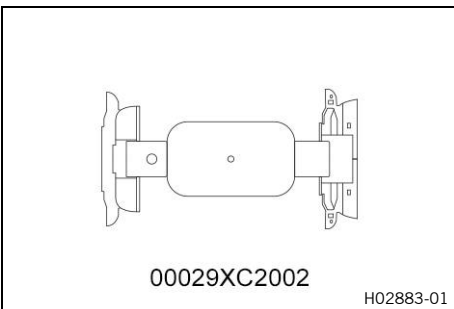
Diagnostics tablet

Art. no.: 00029XC2001



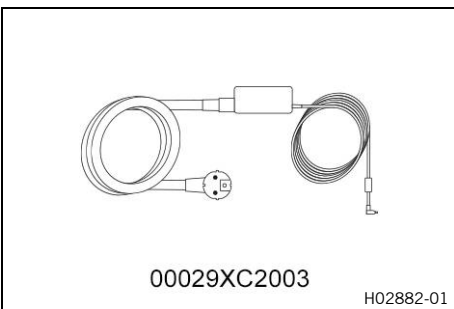
Hand strap

Art. no.: 00029XC2002



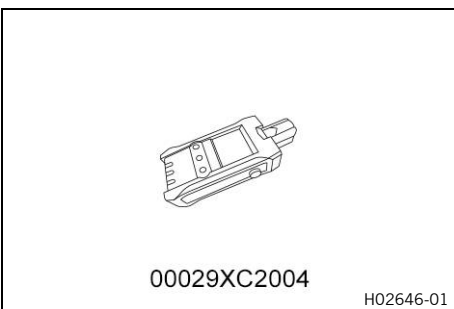
Battery charger

Art. no.: 00029XC2003

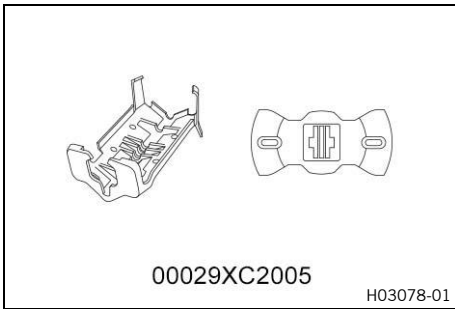


VCI

Art. no.: 00029XC2004

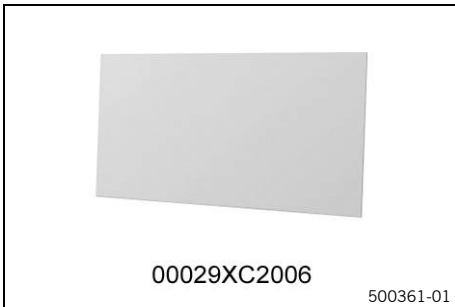


VCI attachment



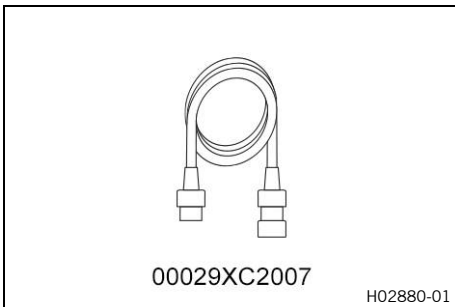
Art. no.: 00029XC2005

Protective film



Art. no.: 00029XC2006

Diagnostics cable extension



Art. no.: 00029XC2007

Feature

Length approx.	1.15 m (3.77 ft)
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USB cable



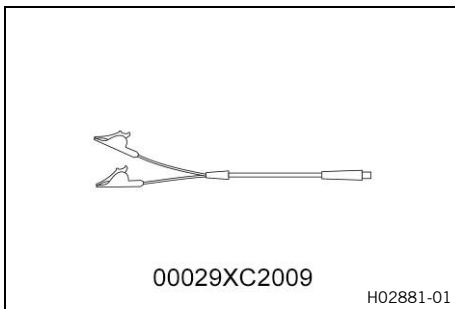
Art. no.: 00029XC2008

Feature

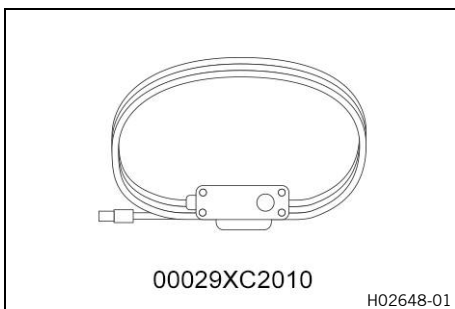
Length approx.	5 m (16 ft)
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12-V power supply cable

Art. no.: 00029XC2009

**RideRecorder trigger**

Art. no.: 00029XC2010

**Case**

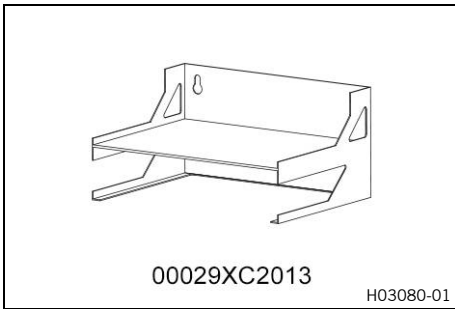
Art. no.: 00029XC2011

**Docking station**

Art. no.: 00029XC2012

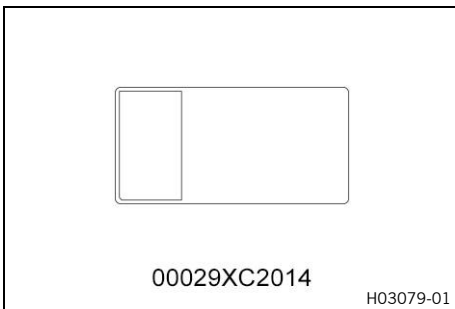


Wall attachment



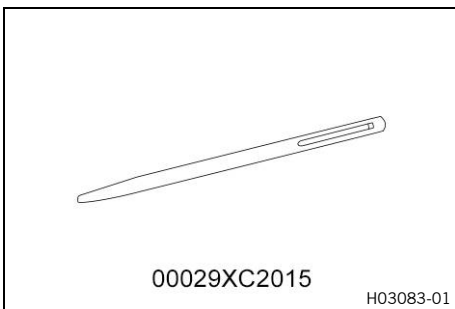
Art. no.: 00029XC2013

Battery



Art. no.: 00029XC2014

Input stylus



Art. no.: 00029XC2015

-	Launch control	Vehicles electronics functions for achieving the best possible acceleration from a standing position
OBD	On-board diagnosis	Vehicle system, which monitors the specified parameters of the vehicle electronics
TC	Traction Control	Auxiliary function of the motor control that reduces engine torque with spinning rear wheel

12 LIST OF ABBREVIATIONS

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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