

Diagnosis – Table of Trouble Code Description

≥ 1		Pressure sensor B28
	System trouble code OBD trouble code	P0105 P0105
	Storage of DTC and activation of CHECK ENGINE MIL	Immediately after occurrence of fault
	Monitoring time and frequency of test	Continuously
	Checked signal or condition	The intake manifold absolute pressure is registered by the pressure sensor (B28) and transmitted to the IFI control module.
	Supply voltage Supply voltage Signal voltage Signal voltage Engine rpm	The IFI control module checks the voltage values: < 4.7 V longer than 2 seconds > 5.0 V longer than 2 seconds > 4.6 V longer than 2 seconds < 0.4 V longer than 2 seconds < 800 rpm and the difference between Intake manifold pressure – atmospheric pressure > 210 mbar longer than 6 seconds
	Test step/Remedy	23 ⇒ 6.0

Diagnosis – Table of Trouble Code Description

≥ 2		IAT sensor B17
	System trouble code OBD trouble code	P0110 P0111
	Storage of DTC and activation of CHECK ENGINE MIL	Two consecutive trips with fault
	Monitoring time and frequency of test	Continuously
	Checked signal or condition	The IFI control module checks the voltage present at the IAT sensor for the threshold values. If the threshold is exceeded, the IFI control module replaces it with a substitute value.
	Signal voltage Signal voltage	The IFI control module checks the voltage values: > 4.7 V longer than 2 seconds < 0.2 V longer than 2 seconds
	Test step/Remedy	23 ⇒ 5.0

Diagnosis – Table of Trouble Code Description

≥ 3		ECT sensor B11/4
	System trouble code OBD trouble code	P0115 P0115
	Storage of DTC and activation of CHECK ENGINE MIL	Two consecutive trips with fault
	Monitoring time and frequency of test	Continuously
	Checked signal or condition	The IFI control module checks after starting the engine when engine rpm is once > 1000 rpm and the coolant temperature is not > 35°C after 20 minutes, the ECT sensor is recognized as faulty. The IFI control module checks the voltage present at the ECT sensor for the threshold values. If the threshold is exceeded, the IFI control module replaces it with a substitute value.
	Signal voltage Signal voltage	The IFI control module checks the voltage values: < 0.2 V longer than 500 ms >4.7 V longer than 500 ms As of an engine speed > 1000 rpm the coolant temperature must be > 35°C after at least 20 minutes.
	Test step/Remedy	23 ⇒ 4.0

Diagnosis – Table of Trouble Code Description

≥ 4		Fuel temperature sensor Y1/1b1
	System trouble code OBD trouble code	P0180 P0181
	Storage of DTC and activation of CHECK ENGINE MIL	Two consecutive trips with fault
	Monitoring time and frequency of test	Continuously
	Checked signal or condition	The IFI control module checks the voltage present at the fuel temperature sensor for the threshold values. If the threshold is exceeded, the IFI control module replaces it with a substitute value.
	Signal voltage Signal voltage	The IFI control module checks the voltage values: < 0.2 V longer than 2 seconds > 4.7 V longer than 2 seconds
	Test step/Remedy	23 ⇒ 23.0

Diagnosis – Table of Trouble Code Description

≥ 5		EGR, vacuum control, intake manifold pressure
	System trouble code OBD trouble code	P0400 P0400
	Storage of DTC and activation of CHECK ENGINE MIL	Immediately after occurrence of fault
	Monitoring time and frequency of test	Continuously
	Checked signal or condition	The logic chain EGR is checked, if the following conditions are met simultaneously: <ul style="list-style-type: none"> • Engine rpm approx. 1900 – 2600 rpm and constant • Engine coolant temperature > 60 °C A negative control deviation is present, if the control module calculates a lift of nominal = 2 mm but the EGR lifting sender (B28/3) reports a lift of actual = 4 mm to the IFI control module (N3/7). Control deviation 2 mm.
	Signal voltage Signal voltage Control deviation positive Control deviation negative	The IFI control module checks the electrical connection and permanent control deviation: <ul style="list-style-type: none"> > 5.2 V longer than 2 seconds 0 V longer than 2 seconds > 2.5 mm longer than 4 seconds < 1.5 mm longer than 4 seconds
	Test step/Remedy	23 ⇒ 31.0

Diagnosis – Table of Trouble Code Description

≥ 6		Atmospheric pressure sensor in control module
	System trouble code OBD trouble code	P1105 P0106
	Storage of DTC and activation of CHECK ENGINE MIL	Immediately after occurrence of fault
	Monitoring time and frequency of test	Continuously
	Checked signal or condition	
	Signal voltage Signal voltage	The IFI control module checks the voltage values: > 4.7 V longer than 2 seconds < 2.2 V longer than 2 seconds
	Test step/Remedy	N3/7

Diagnosis – Table of Trouble Code Description

≥ 7		Fuel quantity actuator Y23/1
	System trouble code OBD trouble code	P1220 P0200
	Storage of DTC and activation of CHECK ENGINE MIL	Immediately after occurrence of fault
	Monitoring time and frequency of test	Continuously
	Checked signal or condition	Control deviation between fuel rack position sensor and fuel quantity actuator see nominal – actual value comparison
		The IFI control module checks the voltage values
	Test step/Remedy	23 ⇒ 8.0

Diagnosis – Table of Trouble Code Description

≥ 8		IFI accelerator pedal position sensor R25/2
	System trouble code OBD trouble code	P1222 P0220
	Storage of DTC and activation of CHECK ENGINE MIL	Immediately after occurrence of fault
	Monitoring time and frequency of test	Continuously
	Checked signal or condition	Checking the supply voltage. If the accelerator pedal position sensor is activated > 20%, the idle speed contact display must be OFF, see HHT actual values. As of < 1% the idle speed contact in the accelerator pedal position sensor must be actuated. If the accelerator pedal position sensor is not actuated, the display on the HHT must be 0%, see HHT actual values.
	Supply voltage Supply voltage Signal voltage	The IFI control module checks the voltage values: > 5 V longer than 2 seconds < 4.7 V longer than 2 seconds > 4.7 V longer than 240 ms
	Test step/Remedy	23 ⇒ 10.0

Diagnosis – Table of Trouble Code Description

≥ 9		Fuel rack position sensor Y23/111
	System trouble code OBD trouble code	P1223 P0200
	Storage of DTC and activation of CHECK ENGINE MIL	Immediately after occurrence of fault
	Monitoring time and frequency of test	Continuously
	Checked signal or condition	Control deviations between fuel rack position sensor and fuel quantity actuator see nominal – actual value comparison
	Signal voltage Signal voltage	The IFI control module checks the signal voltage: > 4.8 V longer than 320 ms < 0.35 V longer than 120 ms
	Test step/Remedy	23 ⇒ 9.0

Diagnosis – Table of Trouble Code Description

≥ 10		CKP sensor L5/6
	System trouble code OBD trouble code	P1335 P0725
	Storage of DTC and activation of CHECK ENGINE MIL	Immediately after occurrence of fault
	Monitoring time and frequency of test	Continuously
	Checked signal or condition	Checking for dynamic plausibility, e.g. the time from one impulse to the next must not deviate by a specified time
		Engine is shut off
	Test step/Remedy	23 ⇒ 7.0

Diagnosis – Table of Trouble Code Description

≥ 11		EGR lifting sender B28/3
	System trouble code OBD trouble code	P1401 P0403
	Storage of DTC and activation of CHECK ENGINE MIL	Immediately after occurrence of fault
	Monitoring time and frequency of test	Continuously
	Checked signal or condition	Monitoring of supply and signal voltage
	Signal voltage Supply voltage Supply voltage Signal voltage, ignition ON	The IFI control module checks the voltage values: > 4.7 V longer than 2 seconds > 5 V longer than 2 seconds <4.7 V longer than 2 seconds >1.3 V longer than 2 seconds
	Test step/Remedy	23 ⇒ 30.0

Diagnosis – Table of Trouble Code Description

≥ 12		Pressure control flap vacuum transducer Y31/2
	System trouble code OBD trouble code	P1470 P0120
	Storage of DTC and activation of CHECK ENGINE MIL	Immediately after occurrence of fault
	Monitoring time and frequency of test	Continuously
	Checked signal or condition	The IFI control module (N3/7) checks the electrical wiring and for permanent control deviations. Monitoring for positive or negative control deviations. Monitoring the final stage for short and open circuit.
	Engine coolant temperature Positive control deviation Negative control deviation	> 60 °C, Engine speed approx. 2500 rpm, control deviation > 6 seconds > 210 mbar longer than 6 seconds > 75 mbar longer than 6 seconds
	Test step/Remedy	23 ⇒ 32.0

Diagnosis – Table of Trouble Code Description

➤ 13		Resonance intake line switchover valve Y22/7
	System trouble code OBD trouble code	P1475 P0200
	Storage of DTC and activation of CHECK ENGINE MIL	Immediately after occurrence of fault
	Monitoring time and frequency of test	Continuously
	Checked signal or condition	The IFI control module checks the activation. If problems occur longer than approx. 2 seconds, the control module recognizes a fault. Monitoring the final stage for short and open circuit.
	Test step/Remedy	23 ⇒ 26.0


Diagnosis – Table of Trouble Code Description

≥ 14		Resonance intake manifold switchover valve Y22/6
	System trouble code OBD trouble code	P1476 P0200
	Storage of DTC and activation of CHECK ENGINE MIL	Immediately after occurrence of fault
	Monitoring time and frequency of test	Continuously
	Checked signal or condition	The IFI control module checks the activation. If problems occur longer than approx. 2 seconds, the control module recognizes a fault. Monitoring the final stage for short and open circuit.
	Test step/Remedy	23 ⇒ 27.0

Diagnosis – Table of Trouble Code Description

≥ 15		Preglow system
	System trouble code OBD trouble code	P1480 P0380
	Storage of DTC and activation of CHECK ENGINE MIL	Immediately after occurrence of fault
	Monitoring time and frequency of test	Continuously
	Checked signal or condition	The IFI control module checks if at engine speeds > 500 rpm the preglow indicator lamp goes out.
	Ignition: ON	The preglow indicator lamp must light up and go out after maximum preglow time or engine speed > 500 rpm. Preglow indicator lamp must go out while cranking engine.
	Test step/Remedy	24 ⇒ 1.0-4.0


Diagnosis – Table of Trouble Code Description

≥ 16		IFI control module N3/7
	System trouble code OBD trouble code	P1611 P0200
	Storage of DTC and activation of CHECK ENGINE MIL	Immediately after occurrence of fault
	Monitoring time and frequency of test	Continuously
	Checked signal or condition	Internal check of control module for over/under voltage.
		 Control module fault, replace control module.
	Test step/Remedy	N3/7


Diagnosis – Table of Trouble Code Description

≥ 17		IFI control module circuit 15
	System trouble code OBD trouble code	P1612 P1612
	Storage of DTC and activation of CHECK ENGINE MIL	Immediately after occurrence of fault
	Monitoring time and frequency of test	Continuously
	Checked signal or condition	If no voltage supply via circuit 15 is supplied to the control module with ignition ON , a fault is present.
	Supply voltage	11 – 14 V
	Test step/Remedy	23 ⇒ 2.0

Diagnosis – Table of Trouble Code Description

➤ 18		IFI control module
	System trouble code OBD trouble code	P1613 P0200
	Storage of DTC and activation of CHECK ENGINE MIL	Immediately after occurrence of fault
	Monitoring time and frequency of test	Continuously
	Checked signal or condition	Internal check in control module after engine is turned off
		 Control module fault, replace control module.
	Test step/Remedy	N3/7


Diagnosis – Table of Trouble Code Description

≥ 19		IFI control module, fuel metering actuator or fuel rack position sensor
	System trouble code OBD trouble code	P1614 P0200
	Storage of DTC and activation of CHECK ENGINE MIL	Immediately after occurrence of fault
	Monitoring time and frequency of test	Continuously
	Checked signal or condition	Internal check of the control module during operation and after engine is turned off.
		 Control module fault, replace control module.
	Test step/Remedy	23 ⇒ 8.0 + 9.0

Diagnosis – Table of Trouble Code Description

➤ 20		IFI control module supply voltage
	System trouble code OBD trouble code	P1615 P0560
	Storage of DTC and activation of CHECK ENGINE MIL	Immediately after occurrence of fault
	Monitoring time and frequency of test	Continuously
	Checked signal or condition	Supply voltage is checked for over/under voltage
	Supply voltage Battery voltage Battery voltage	11 – 14 V > 17.5 V longer than 5 seconds < 8 V longer than 5 seconds
	Test step/Remedy	23 ⇒ 1.0

Diagnosis – Table of Trouble Code Description

≥ 21		IFI control module or not correctly coded
	System trouble code OBD trouble code	P1617 P0200
	Storage of DTC and activation of CHECK ENGINE MIL	Immediately after occurrence of fault
	Monitoring time and frequency of test	Continuously
	Checked signal or condition	With ignition ON and after engine is turned off.
		 check version coding, correct
	Test step/Remedy	see HHT “version coding“ menu point 5

Diagnosis – Table of Trouble Code Description

➤ 22		IFI electrohydraulic shut-off actuator Y1/1
	System trouble code OBD trouble code	P1622 P0200
	Storage of DTC and activation of CHECK ENGINE MIL	Immediately after occurrence of fault
	Monitoring time and frequency of test	Continuously
	Checked signal or condition	Checking of final stage and test when turning off engine
		i The engine speed must drop within 2 seconds < 500 rpm after turning off engine. Short circuit of electrohydraulic actuator against battery +
	Test step/Remedy	23 ⇒ 22.0