

# MAN FFR Fault Codes List PDF

MAN PDF manuals

32

the position of Division

Priority: 3

Readout in vehicle, only an indication of malfunction; specify actions for errors is not required.

Fault indication:

Central signal light STOP (H111) led is amber when a stationary car.

The reason for the failure:

Status divider (ratio of rotational speed of at the entrance to the transmission/engine speed) cannot be determined for a set time dimension, so the condition is passed to the "DIVISOR CANNOT BE DETERMINED".

Troubleshooting:

Test Executive elements, using current control MAN-cats ® II check the accuracy of the signal, check the wires, connectors, induction speed sensor at the inlet of the gearbox (B368).

Milestones:

Testing actuators:

Using MAN-cats ® II test actuators "small group" and "a large group".

Conduct ongoing monitoring:

Using MAN-cats ® II check the reliability of signals at the entrance to the rotational speed gearbox "and" Query "divider".

Nominal rotation speed values at the inlet of the gearbox (measured approx. at 550 rpm at idle):

Split Low approx. 550 RPM; Split High approx. 660 RPM.

If the signal "at the entrance to the rotational speed gearbox" wrong, measure the resistance.

Resistance measurement:

at the entrance to the rotational speed gearbox; car computer-between Pin X 3/12 (+) and Pin X 1/3 (-) on the side of the FFR: Aprox. 1.78 com, on the side of the vehicle: appr. 1.05 c.

Voltage measurement:

at the entrance to the rotational speed gearbox; car computer-between Pin X 3/12 (+) and Pin X 1/3 (-): voltage approx. 1 in (idle engine).

Note: see. SPN also 770 and 771.

161

rotational speed of gearbox input

Priority: 3

Readout in vehicle, only an indication of malfunction; specify actions for errors is not required.

Fault indication:

Central signal light STOP (H111) led is amber when a stationary car.

The reason for the failure:

Induction speed sensor at the inlet of the gearbox (B368) sends the wrong signal. Set the value of the rotation frequency of the signal is not available. To determine the status of the divider is no longer possible. It also blocks the function of Comfort-Shift.

Troubleshooting:

Using current control MAN-cats ® II check the accuracy of the signal, check the wires, connectors, induction speed sensor at the inlet of the gearbox (B368).

Milestones:

Conduct ongoing monitoring:

Using MAN-cats ® II check the reliability of the signal at the entrance to the rotational speed gearbox ".

Nominal rotation speed values at the inlet of the gearbox (measured approx. at 550 rpm at idle):

Split Low approx. 550 RPM; Split High approx. 660 RPM.

If the signal "at the entrance to the rotational speed gearbox" wrong, measure the resistance.

Resistance measurement:

at the entrance to the rotational speed gearbox; car computer-between Pin X 3/12 (+) and Pin X 1/3 (-) on the side of the FFR: Aprox. 1.78 com, on the side of the vehicle: appr. 1.05 c.

Voltage measurement:

at the entrance to the rotational speed gearbox; car computer-between Pin X 3/12 (+) and Pin X 1/3 (-): voltage approx. 1 in (idle engine).

168

Battery voltage

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Condition: FMI 1

Priority: 3

Readout in vehicle, only an indication of malfunction; specify actions for errors is not required.

Fault indication:

Central signal light STOP (H111) led is amber when a stationary car.

The reason for the failure:

Too high operating voltage ( $> 32$ ).

Troubleshooting:

Using current control MAN-cats ® II check the accuracy of the signal, check alternator, wires, connectors, batteries.

Milestones:

Conduct ongoing monitoring:

Using MAN-cats ® II validate signals Terminal 30 "and" Terminal 15 "(engine running, nominal value in 24-28).

If these values are correct, measure the voltage.

Voltage measurement:

The voltage directly on the Pin of the control unit X 1/2, X 1/1 (+) and X 1/3 (-). Nominal 20-28 volt.

If the measured (on the control unit) values are nominal and, despite this, active fault, replace the car computer (A403).

## 168

Battery voltage

Condition: FMI 2

Priority: 3

Readout in vehicle, only an indication of malfunction; specify actions for errors is not required.

Fault indication:

Central signal light STOP (H111) led is amber when a stationary car.

The reason for the failure:

The operating voltage is too low ( $< 16$  in).

Troubleshooting:

Using current control MAN-cats ® II check the accuracy of the signal, check fuses Terminal 15 FFR (F372) and Terminal 30 (F371), check the wires, connectors, lock function steering wheel (Q101), batteries, generator.

Milestones:

Conduct ongoing monitoring:

Using MAN-cats ® II validate signals Terminal 30 "and" Terminal 15 "(specification 20-28).

If these values are correct, measure the voltage.

Voltage measurement:

The voltage directly on the Pin of the control unit X 1/2, X 1/1 (+) and X 1/3 (-). Nominal 20-28 volt.

If the measured (on the control unit) values are nominal and, despite this, active fault, replace the car computer (A403).

## 572

Auxiliary device incorporating retarder

Priority: 5

Indication while driving and stop the car; the only indication of a malfunction.

Fault indication:

Central signal light STOP (H111) led is amber while driving and parking.

The reason for the failure:

Malfunction data line touch switch retarder. As a result, the switch no longer works. Active retarder is deactivated by pressing the accelerator pedal (A410).

Troubleshooting:

Using current control MAN-cats ® II check the accuracy of the signal, check the wires, connectors, touch switch brakes zamedl. (A437).

Milestones:

Conduct ongoing monitoring:

Using MAN-cats ® II check the reliability of the signal "Touch retarder switch" (above, below, off).

If the wrong signals, measure the resistance.

Resistance measurement:

Retarder, data link retarder switch touch; car computer-between Pin X 2/10 (+) and Pin X 1/3 (-) on the side of the FFR: Aprox. 1.5 M $\omega$ , on the side of the vehicle: appr. 1.6 Mohm

Retarder, retarder switch touch synchronization wire; car computer-between Pin X 2/6 (+) and Pin X

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1/3 (-) on the side of the FFR: Aprox. 1.7 the IOM, on the side of the car: Aprox. 1.2 Mw

Voltage measurement:

Retarder, data link retarder switch touch; car computer-between Pin X 2/10 (+) and Pin X 1/3 (-): jumper (test block) closed: Aprox. 14.2 v, jumper (test block) open: FFR side: Aprox. 23.5 in, on the side of the vehicle: appr. 14 in

Retarder, retarder switch touch synchronization wire; car computer-between Pin X 2/6 (+) and Pin X 1/3 (-): jumper (test block) closed: Aprox. 12.3 in, jumper (test block) open: FFR side: Aprox. 13.5 v, on the side of the car: Aprox. 22.5 in

#### **601**

Switch speed control system resume

Priority: 5

Indication while driving and stop the car; the only indication of a malfunction.

Fault indication:

Central signal light STOP (H111) led is amber while driving and parking.

The reason for the failure:

Malfunction switch FGR/FGB. AS-Tronic transmission goes into automatic mode. Speed regulation system (FGR) is deactivated.

Troubleshooting:

Using current control MAN-cats ® II check the accuracy of the signal, check the wires, connectors, switch FGR/FGB (S284).

Milestones:

Conduct ongoing monitoring:

Using MAN-cats ® II check the accuracy of the signal "switch FGR gearbox (Tempomat)."

Resistance measurement:

The switch is open, the FGR; car computer-between Pin X 2/16 (+) and Pin X 1/3 (-): FFR unplugged: Aprox. 4.6 com

Voltage measurement:

The switch is open, the FGR; car computer-between Pin X 2/16 (+) and Pin X 1/3 (-): 0 in

#### **697**

Accelerator pedal signal PWM1

Priority: 2

Perhaps the problem, requiring removal of the Service Center! Indication of a fault.

Fault indication:

Central signal light STOP (H111) lights continuously red.

The reason for the failure:

Malfunction signal PWM1 Accelerator (A410) or is being passed the wrong signal. As a consequence, the accelerator position signal used PWM2. In case of malfunction of the engine speed and torque. (1800 rpm; the restriction on 80%).

Troubleshooting:

Using MAN-cats ® II validate signal, check the wires, connectors, run the oscillograficheskoe measurement using Skopemeter Fluke 123 (frequency = 200 Hz) accelerator pedal (A410)-check signal PWM1.

Milestones:

Conduct ongoing monitoring:

Using MAN-cats ® II check the accuracy of the signal module PWM1 pedals ".

Voltage measurement:

car computer-between Pin X 2/11 (+) and Pin X 1/3 (-): jumper (test block) closed: Signal Low: Aprox. 8 in (the accelerator pedal to failure), signal High: Aprox. 20 in, jumper (test block) open: FFR side: Aprox. 25.4 in, on the side of the vehicle: appr. 0.5 in

If the cause of the malfunction is not set, calibrate the accelerator pedal.

Note: If the voltage drop when the power is turned off (Terminal 15) at PWM1 (A410/Pin 5) and nutrition for PWM2 (A410/Pin 6) shared the Bole 100 MS, then the fault is saved in the registry.

#### **698**

Accelerator pedal signal PWM2

Priority: 2

Perhaps the problem, requiring removal of the Service Center! Indication of a fault.

Fault indication:

Central signal light STOP (H111) lights continuously red.

The reason for the failure:

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Malfunction signal PWM2 Accelerator (A410) or is being passed the wrong signal. As a consequence, the accelerator position signal PWM1 is used. In case of malfunction of the engine speed and torque. (1800 rpm; the restriction on 80%).

Troubleshooting:

Using MAN-cats ® II validate signal, check the wires, connectors, run the oscillograficheskoe measurement using Skopemeter Fluke 123 (frequency = 200 Hz) accelerator pedal (A410)-check signal PWM2.

Milestones:

Conduct ongoing monitoring:

Using MAN-cats ® II check the accuracy of the signal module PWM2 pedals ".

Voltage measurement:

car computer-between Pin X 2/18 (+) and Pin X 1/3 (-): jumper (test block) closed: Signal Low:

Aprox. 8 in High signal: Aprox. 20 in (accelerator pedal until failure); jumper (test block) open: FFR side: Aprox. 25.5 in, on the side of the vehicle: appr. 0 in.

If the cause of the malfunction is not set, calibrate the accelerator pedal.

Note: If the voltage drop when you turn off power 15 terminals PWM1 (A410/Pin 5) and nutrition PWM2 (A410/Pin 6) shared the Bole 100 MS, then the fault is saved in the registry.

## 770

Separate H

Priority: 5

Indication while driving and stop the car; the only indication of a malfunction.

Fault indication:

Central signal light STOP (H111) led is amber while driving and parking.

The reason for the failure:

Wiring solenoid valve malfunction Split-High (Y307). Write fault in fault recorder running when she registered for 3 cycles (500 ms). Due to a fault valve divider no longer subject to management.

Troubleshooting:

Test Executive elements, using current control MAN-cats ® II check the accuracy of the signal, check the wires, connectors, ZF 16S151 gearboxes/ZF 16S181 check solenoid valve Split-High (Y307).

Milestones:

Testing actuators:

Using MAN-cats ® II test actuators "Split Low" and "Split High".

If the block solenoid valves (Y307) is not subject to management, measure the resistance.

Conduct ongoing monitoring:

Using MAN-cats ® II validate signal "replace Query".

Resistance measurement:

car computer-between Pin X 3/13 (+) and Pin x 4/6 (-) on the side of the FFR: Aprox. 6, on the side of the car: Aprox. 83.3.

car computer-between Pin X 3/13 (+) and Pin X 1/3 (-) on the side of the FFR: Aprox. 4.3 com, on the side of the car:-

Voltage measurement:

car computer-between Pin X 3/13 (+) and Pin x 4/6 (-) solenoid valve activated: Aprox. 27.6 in; solenoid valve deactivated: 0 in.

## 771

Separate L

Priority: 5

Indication while driving and stop the car; the only indication of a malfunction.

Fault indication:

Central signal light STOP (H111) led is amber while driving and parking.

The reason for the failure:

Wiring solenoid valve malfunction Split-Low (Y307). Write fault in fault recorder running when she registered for 3 cycles (500 ms). Due to a fault valve divider no longer subject to management.

If there is a failure of management/break wires may display fault code SPN 32.

Troubleshooting:

Test Executive elements, using current control MAN-cats ® II check the accuracy of the signal, check the wires, connectors, ZF 16S151 gearboxes/ZF 16S181 check solenoid valve Low (Split- Y307).

Milestones:

Testing actuators:

Using MAN-cats ® II test actuators "Split Low" and "Split High".

If the block solenoid valves (Y307) is not subject to management, measure the resistance.

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Conduct ongoing monitoring:

Using MAN-cats ® II validate signal "replace Query".

Resistance measurement:

car computer-between Pin x 4/7 (+) and Pin x 4/6 (-) on the side of the FFR: Aprox. 6, on the side of the car: Aprox. 84.6 Ohm

car computer-between Pin x 4/7 (+) and Pin X 1/3 (-) on the side of the FFR: Aprox. 4.3 com, on the side of the car:-

Voltage measurement:

car computer-between Pin x 4/7 (+) and Pin x 4/6 (-) solenoid valve activated: Aprox. 27.6 in; solenoid valve deactivated: 0 in.

## 898

Group of resistors limit the maximum speed

Priority: 5

Indication while driving and stop the car; the only indication of a malfunction.

Fault indication:

Central signal light STOP (H111) led is amber while driving and parking.

The reason for the failure:

From the Group of resistors (R134) enters the wrong signal. As a consequence, remains activated stage HGB. After following the inclusion of the selected step HGB 0 (activates the "maximum speed limit 1").

Troubleshooting:

Using MAN-cats ® II validate signal, check the wires: check the interface body X1996, connectors, resistors Group (R134).

Milestones:

Conduct ongoing monitoring:

Using MAN-cats ® II check the reliability of the signal "Multistage input maximum speed limiter".

Resistance measurement:

car computer-between Pin X 2/6 (+) and Pin X 1/3 (-) on the side of the FFR: Aprox. 6.5 com, on the side of the vehicle: appr. 0.511 com.

Group of resistors (R134)-between:

PIN 5 and Pin 7/6:3.09 PL

PIN 5 and Pin 3/4: com 1.37

PIN 5 and Pin 2/8:0.51 com

PIN 5 and Pin 1/9:8.20 com

Voltage measurement:

car computer-between Pin X 2/6 (+) and Pin X 1/3 (-): appr. 460 MW.

## 1045

The final stage of the transmission setting lock

Priority: 5

Indication while driving and stop the car; the only indication of a malfunction.

Fault indication:

Central signal light STOP (H111) led is amber while driving and parking.

The reason for the failure:

Found a short circuit at the output of the transmission setting lock (final step) solenoid valve block (Y307). Due to a failure of the lock enable the transfer is no longer subject to management.

Troubleshooting:

Using MAN-cats ® II control element test, check the wires, connectors, ZF 16S151 gearboxes/ZF 16S181 check solenoid valve block (Y307).

Milestones:

Testing actuators:

Using MAN-cats ® II test actuators "override gear".

If the block solenoid valves (Y307) is not subject to management, measure the resistance.

Resistance measurement:

car computer-between Pin x 4/13 (+) and Pin X 3/5 (-) on the side of the FFR: Aprox. 8.9 com, on the side of the vehicle: appr. 135 ohms.

car computer-between Pin x 4/13 (+) and Pin X 1/3 (-) on the side of the FFR: Aprox. 8.3 com, on the side of the car:-

Voltage measurement:

car computer-between Pin x 4/13 (+) and Pin X 3/5 (-) solenoid valve activated: Aprox. 27.5 in, with a simple signal High every 6 seconds; solenoid valve deactivated: 0 in.

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### 3010

Limiting torque and rotational speed

Condition: FMI 5, 6

Priority: 5

Indication while driving and stop the car; the only indication of a malfunction.

Fault indication:

Central signal light STOP (H111) led is amber while driving and parking.

The reason for the failure:

From the Group of resistors (R134) enters the wrong signal. As a consequence, remains activated stage for engine speed range. When you first enable is activated step 0 engine speed range.

Troubleshooting:

Using current control MAN-cats ® II check the accuracy of the signal, check the wires: check the FFR interface X1996, connectors, resistors Group (R134).

Milestones:

Conduct ongoing monitoring:

Using MAN-cats ® II check the reliability of the signal "Multistage input torque and rotational speed limits".

Resistance measurement:

car computer-between Pin X 2/1 (+) and Pin X 1/3 (-) on the side of the FFR: Aprox. 6.5 com, on the side of the vehicle: appr. 0.511 ohms.

Group of resistors (R134)-between:

PIN 5 and Pin 7/6:3.09 PL

PIN 5 and Pin 3/4: com 1.37

PIN 5 and Pin 2/8:0.51 com

PIN 5 and Pin 1/9:8.20 com

Voltage measurement:

car computer-between Pin X 2/1 (+) and Pin X 1/3 (-): appr. 460 MW.

### 3020

Calibration error the accelerator pedal signal PWM1

Priority: 3

Readout in vehicle, only an indication of malfunction; specify actions for errors is not required.

Fault indication:

Central signal light STOP (H111) led is amber when a stationary car.

The reason for the failure:

Is not configured or is not specified signal PWM1 Accelerator (A410). This malfunction occurs when the value of the idling is > 10% or 30% < and > full-load point value 90% or < 40%. This enables limiting torque and rotational speed. The value is calculated using the accelerator pedal signal PWM2. The incoming signal is denoted as incorrect.

Troubleshooting:

Using current control MAN-cats ® II signal validate, calibrate the accelerator pedal.

Conduct ongoing monitoring:

Using MAN-cats ® II check the accuracy of the signal module PWM1 pedals ".

Accelerator pedal calibration:

Accelerator pedal calibration is performed using MAN-cats ® II. Squeeze the accelerator pedal to failure (including "kick-down"). Hold it down approximately 3 with this situation and again release. Repeat 2-3 times.

New accelerator pedal always requires calibration.

### 3021

Calibration error the accelerator pedal signal PWM2

Priority: 3

Readout in vehicle, only an indication of malfunction; specify actions for errors is not required.

Fault indication:

Central signal light STOP (H111) led is amber when a stationary car.

The reason for the failure:

Is not configured or is not specified signal PWM2 Accelerator (A410). This malfunction occurs when the value of the idling is < 10% or > 30% and full load point value > 90% or < 40%. This enables limiting torque and rotational speed. The value is calculated using the accelerator pedal signal PWM1. The incoming signal is denoted as incorrect.

Troubleshooting:

Using current control MAN-cats ® II signal validate, calibrate the accelerator pedal.

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Conduct ongoing monitoring:

Using MAN-cats ® II check the accuracy of the signal module PWM2 pedals ".

Accelerator pedal calibration:

Accelerator pedal calibration is performed using MAN-cats ® II. Squeeze the accelerator pedal to failure (including "kick-down"). Hold it down approximately 3 with this situation and again release. Repeat 2-3 times.

New accelerator pedal always requires calibration.

### **3197**

Data bus CAN: ETC1 Astronic Message, byte 1

Priority: 3

Readout in vehicle, only an indication of malfunction; specify actions for errors is not required.

Fault indication:

Central signal light STOP (H111) led is amber when a stationary car.

The reason for the failure:

The signal "shift\_in\_process" or "driveline\_engaged" AS-Tronic control unit (A330) contains invalid data. Write failure occurs when 3 times in a row received incorrect/invalid data. The incoming signal is indicated as invalid.

Troubleshooting:

Check the fault logger AS-Tronic (A330), check the wires, check the connectors, measure the resistance.

Milestones:

Reading fault Registrar:

Consider fault recorder AS-Tronic control unit (A330) and correct the malfunction, data stored in the memory diagnostics.

Resistance measurement:

CAN data bus transmission (T-CAN); AS-Tronic control unit-Pin A12 (-) and Pin A8 (+): appr. 60 Ohms

CAN data bus transmission (T-CAN); car computer-Pin X 1/15 (-) and X 1/14 (+): appr. 120 ohm at aprox. 0 Ohms short circuit from CAN-High and CAN-Low on.

### **3250**

Comfort entrances Shift (CS1 and CS2)

Priority: 5

Indication while driving and stop the car; the only indication of a malfunction.

Fault indication:

Central signal light STOP (H111) led is amber while driving and parking.

The reason for the failure:

The input value is false when both input signal Comfort-Shift gearbox control lever switch (S477) have the same level of 100 milliseconds or longer after you enable the request remains unfulfilled longer 2 c. troubleshooting Comfort functions-Shift are blocked. If the function is activated, the Comfort-Shift, clutch is closed, when the difference frequency of rotation on the clutch is in the valid range or switched transmission in the neutral position.

Troubleshooting:

Using current control MAN-cats ® II check the accuracy of the signal, check the wires, connectors, switch control lever gearbox (S477).

Milestones:

Conduct ongoing monitoring:

Using MAN-cats ® II validate signals Comfort Switch Shift "and" Comfort Shift Switch in the reverse position.

Resistance measurement:

Request Comfort Shift 1; car computer-between Pin X 2/12 (+) and Pin X 1/3 (-) on the side of the FFR: Aprox. 4.6.

Request Comfort Shift 2; car computer-between Pin X 2/3 (+) and Pin X 1/3 (-) on the side of the FFR: Aprox. 4.6.

Voltage measurement:

Request Comfort Shift 1; car computer-between Pin X 2/12 (+) and Pin X 1/3 (-): switch open: 0 switch closed: UKL15

Request Comfort Shift 2; car computer-between Pin X 2/3 (+) and Pin X 1/3 (-): switch open: 0 switch closed: UKL15.

### **3251**

Switch FGR/FGB

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Priority: 5

Indication while driving and stop the car; the only indication of a malfunction.

Fault indication:

Central signal light STOP (H111) led is amber while driving and parking.

The reason for the failure:

Malfunction switch FGR/FGB. Speed regulation system (FGR) is deactivated.

Troubleshooting:

Using current control MAN-cats ® II check the accuracy of the signal, check the wires, connectors, switch FGR/FGB (S284).

Milestones:

Conduct ongoing monitoring:

Using MAN-cats ® II check the accuracy of the signal "switch FGR gearbox (Tempomat)."

Resistance measurement:

The switch is open, the FGR; car computer-between Pin X 2/16 (+) and Pin X 1/3 (-): FFR unplugged: Aprox. 4.6.

Voltage measurement:

The switch is open, the FGR; car computer-between Pin X 2/16 (+) and Pin X 1/3 (-): 0 in.

### 3269

Reliability of signal Terminal 50 "engine start"-entry query engine start

Priority: 3

Readout in vehicle, only an indication of malfunction; specify actions for errors is not required.

Fault indication:

Central signal light STOP (H111) led is amber when a stationary car.

The reason for the failure:

Signal engine start (lock steering wheel Q101) considered to be misleading when there are 15 terminals after turn off a start signal. After the next procedure enable start is possible only if the start procedure detected the positive momentum. The incoming signal is referred to as implausible.

Troubleshooting:

Using current control MAN-cats ® II check the accuracy of the signal, check the wires, connectors, lock the steering wheel (Q101), external start/stop device.

Milestones:

Conduct ongoing monitoring:

Using MAN-cats ® II validate signals "Terminal" and 50 "outer query engine shutdown" and "outer query engine".

Resistance measurement:

car computer-between Pin X 3/7 (+) and Pin X 1/3 (-) on the side of the FFR: Aprox. 4.6.

Voltage measurement:

car computer-between Pin X 3/7 (+) and Pin X 1/3 (-): switch open: 0 switch closed: 16-32 in (Ubat)

### 3311

Control unit (EEPROM checksum)

Priority: 1

In combination with a symbol STOP. You want to stop the engine!

Fault indication:

Central signal light STOP (H111) flashes red together with a symbol STOP.

The reason for the failure:

During initialization, data is read from the EEPROM and calculates a checksum for each block of parameters. This checksum is compared to the value of the EEPROM.

Troubleshooting:

If the driver detects a fault, the car computer (A403) replaced. If the problem occurs after the parameterization (key, accelerator pedal, clutch) or after replacing the car computer, parameterization is done again.

Note: If the car is replaced by computer because of this problem, follow these steps.

Before connecting the diagnostic system MAN-cats ® II vehicle, remove the faulty FFR.

Then using MAN-cats ® and the menu item "with the service computer: via network connection at the enterprise" prepare the vehicle data necessary to replace the control unit, but not read them from faulty FFR. It is possible to transfer the fault code 3311 on new control unit!

### 3449

Exhaust backpressure

Priority: 2

Perhaps the problem, requiring removal of the Service Center! Indication of a fault.

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Fault indication:

Central signal light STOP (H111) lights continuously red.

The reason for the failure:

If engine brake is not activated and the exhaust gas back-pressure within the given time exceeds a specified threshold is faulty. Module EVB (Y355) is deactivated until the next power on.

Troubleshooting:

Using current control MAN-cats ® II check the accuracy of the signal, check the wires, connectors, the module EVB (Y355).

Milestones:

Conduct ongoing monitoring:

Using MAN-cats ® II check the reliability of the signal "exhaust Backpressure.

Resistance measurement:

power supply 5 v; car computer-between Pin X 2/5 (+) and Pin X 1/3 (-) on the side of the FFR:

Aprox. 100 kΩ, on the side of the vehicle: appr. 3.7 com

exhaust back pressure signal; car computer-between Pin X 3/4 (+) and Pin X 1/3 (-) on the side of the FFR: Aprox. 100 kΩ, on the side of the vehicle: appr. 12.2.

mass; car computer-between Pin X 3/5 (+) and Pin X 1/3 (-) on the side of the FFR: Aprox. 1.9 com, on the side of the vehicle: appr. 54.

motor brake car computer-between Pin x 4/14 (+) and Pin X 1/3 (-) on the side of the FFR: Aprox. 8.82 com, on the side of the vehicle: appr. 22 ohms.

Voltage measurement:

power supply 5 v; car computer-between Pin X 2/5 (+) and Pin X 1/3 (-): appr. 5 in

exhaust back pressure signal; car computer-between Pin X 3/4 (+) and Pin X 1/3 (-): appr. 560 MW.

mass; car computer-between Pin X 3/5 (+) and Pin X 1/3 (-): 0 in

motor brake car computer-between Pin x 4/14 (+) and Pin X 1/3 (-): plugin activated: EVB-module, EVB is not activated: 0 in.

car computer-between Pin x 4/1 (+) and Pin X 3/5 (-) solenoid valve activated: Aprox. 27.6 when a simple signal High every 6 c solenoid valve deactivated: 0 in.

### 3450

Exhaust backpressure

Priority: 2

Perhaps the problem, requiring removal of the Service Center! Indication of a fault.

Fault indication:

Central signal light STOP (H111) lights continuously red.

The reason for the failure:

If engine brake is activated and exhaust backpressure within a specified time remains below the specified threshold is faulty. Module EVB (Y355) is deactivated until the next power on.

Troubleshooting:

Using current control MAN-cats ® II check the accuracy of the signal, check the wires, connectors, the module EVB (Y355).

Milestones:

Conduct ongoing monitoring:

Using MAN-cats ® II check the reliability of the signal "exhaust Backpressure.

Resistance measurement:

power supply 5 v; car computer-between Pin X 2/5 (+) and Pin X 1/3 (-) on the side of the FFR:

Aprox. 100 kΩ, on the side of the vehicle: appr. 3.7 com

exhaust back pressure signal; car computer-between Pin X 3/4 (+) and Pin X 1/3 (-) on the side of the FFR: Aprox. 100 kΩ, on the side of the vehicle: appr. 12.2.

mass; car computer-between Pin X 3/5 (+) and Pin X 1/3 (-) on the side of the FFR: Aprox. 1.9 com, on the side of the vehicle: appr. 54.

motor brake car computer-between Pin x 4/14 (+) and Pin X 1/3 (-) on the side of the FFR: Aprox. 8.82 com, on the side of the vehicle: appr. 22 ohms.

Voltage measurement:

power supply 5 v; car computer-between Pin X 2/5 (+) and Pin X 1/3 (-): appr. 5 in.

exhaust back pressure signal; car computer-between Pin X 3/4 (+) and Pin X 1/3 (-): appr. 560 MW.

mass; car computer-between Pin X 3/5 (+) and Pin X 1/3 (-): 0 in.

motor brake car computer-between Pin x 4/14 (+) and Pin X 1/3 (-): plugin activated: EVB-module, EVB is not activated: 0 in.

car computer-between Pin x 4/1 (+) and Pin X 3/5 (-) solenoid valve activated: Aprox. 27.6 when a simple signal High every 6 c solenoid valve deactivated: 0 in.

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### 3451

Comfort function does not work-Shift

Priority: 5

Indication while driving and stop the car; the only indication of a malfunction.

Fault indication:

Central signal light STOP (H111) led is amber while driving and parking.

The reason for the failure:

Due to the associated fault feature Comfort-Shift is locked.

Troubleshooting:

Using current control MAN-cats ® II check the accuracy of the signal, check the wires, connectors, switch control lever gearbox (S477).

Milestones:

Conduct ongoing monitoring:

Using MAN-cats ® II validate signals Comfort Switch Shift "and" Comfort Shift Switch in the reverse position.

Resistance measurement:

Request Comfort Shift 1; car computer-between Pin X 2/12 (+) and Pin X 1/3 (-) on the side of the FFR: Aprox. 4.6.

Request Comfort Shift 2; car computer-between Pin X 2/3 (+) and Pin X 1/3 (-) on the side of the FFR: Aprox. 4.6.

Voltage measurement:

Request Comfort Shift 1; car computer-between Pin X 2/12 (+) and Pin X 1/3 (-): switch open: 0 switch closed: UKL15.

Request Comfort Shift 2; car computer-between Pin X 2/3 (+) and Pin X 1/3 (-): switch open: 0 switch closed: UKL15.

### 3452

Squeeze the grip

Priority: 5

Indication while driving and stop the car; the only indication of a malfunction.

Fault indication:

Central signal light STOP (H111) led is amber while driving and parking.

The reason for the failure:

During switching or switch grip Comfort-Shift pressed insufficient (included incorrectly).

Troubleshooting:

Hold the clutch depressed throughout the procedure.

### 3510

Overload clutch, lowering the moment

Priority: 5

Indication while driving and stop the car; the only indication of a malfunction.

Fault indication:

Central signal light STOP (H111) led is amber while driving and parking.

The reason for the failure:

Car computer has detected stalling clutch, so the maximum torque is limited to 80%.

Troubleshooting:

After a predetermined time, which serves to cool the clutch, maximum torque is unlocked again and the indication appears on the display (see service information 187002).

### 3520

LSS1 Timeout

Priority: 5

Indication while driving and stop the car; the only indication of a malfunction.

Fault indication:

Central signal light STOP (H111) led is amber while driving and parking.

The reason for the failure:

Timeout switch (A942) on the steering column/transmission retarder.

Troubleshooting:

Using current control MAN-cats ® II check the accuracy of the signal, check the wires, connectors, switch (A942) on the steering column, F583 fuse.

Milestones:

Conduct ongoing monitoring:

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Using current control MAN-cats ® II validate signals switch (A942) on the steering column/retarder gearbox (above, below, off).

Resistance measurement:

Signal wire LIN Road between computer X 2/8 and 2 Pin switch on the steering column/transmission retarder: Aprox. 0.2 Ohm

Voltage measurement:

Switch on the steering column/retarder gearbox, power LIN between Pin 3 (+) and Pin 1 (-): Ubat.

### **3521**

MFL1 Timeout

Priority: 5

Indication while driving and stop the car; the only indication of a malfunction.

Fault indication:

Central signal light STOP (H111) led is amber while driving and parking.

The reason for the failure:

The timeout of a multifunctional steering wheel MFL (A943).

Troubleshooting:

Using current control MAN-cats ® II check the accuracy of the signal, check the wires, connectors, multifunctional steering wheel (A943) fuse F583.

Milestones:

Conduct ongoing monitoring:

Using current control MAN-cats ® II check the reliability of signals of a multifunctional steering wheel MFL (A943) (Set-Set + Off, memo, FGR/FGB).

Resistance measurement:

Signal wire LIN Road between computer X 2/8 and Pin 3 multifunctional steering wheel: Aprox. 0.2 Ohm

Voltage measurement:

Multifunctional steering wheel, power LIN between Pin 1 (+) and Pin 2 (-): Ubat

Note: using MAN-cats ® II checks only the right side of the multifunctional steering wheel.

### **3522**

Timeout INST1

Priority: 5

Indication while driving and stop the car; the only indication of a malfunction.

Fault indication:

Central signal light STOP (H111) led is amber while driving and parking.

The reason for the failure:

Dashboard timeout (A407).

Troubleshooting:

Check the wires, connectors, dashboard (A407).

Milestones:

Resistance measurement:

Signal wire LIN Road between computer X 2/8 and dashboard X 1/15: Aprox. 0.2 ohms.

### **3524**

Faulty right side of MFL

Priority: 5

Indication while driving and stop the car; the only indication of a malfunction.

Fault indication:

Central signal light STOP (H111) led is amber while driving and parking.

The reason for the failure:

Faulty right side multifunctional steering wheel MFL. This fault is detected by the MFL and the car computer is passed to the MFL1 message.

Troubleshooting:

Using current control MAN-cats ® II check the accuracy of the signal, check the wires, connectors, multifunctional steering wheel (A943) fuse F583.

Milestones:

Conduct ongoing monitoring:

Using current control MAN-cats ® II check the reliability of signals of a multifunctional steering wheel MFL (A943) (Set-Set + Off, memo, FGR/FGB).

Resistance measurement:

Signal wire LIN Road between computer X 2/8 and Pin 3 multifunctional steering wheel: Aprox. 0.2

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ohms.

Voltage measurement:

Multifunctional steering wheel, power LIN between Pin 1 (+) and Pin 2 (-): Ubat.

Note: using MAN-cats ® II checks only the right side of the multifunctional steering wheel.

### 3525

Faulty left/right side of MFL

Priority: 5

Indication while driving and stop the car; the only indication of a malfunction.

Fault indication:

Central signal light STOP (H111) led is amber while driving and parking.

The reason for the failure:

Faulty left/right side of the multifunctional steering wheel MFL. This fault is detected by the MFL and the car computer is passed to the MFL1 message.

Troubleshooting:

Using current control MAN-cats ® II check the accuracy of the signal, check the wires, connectors, multifunctional steering wheel (A943) fuse F583.

Milestones:

Conduct ongoing monitoring:

Using current control MAN-cats ® II check the reliability of signals of a multifunctional steering wheel MFL (A943) (Set-Set + Off, memo, FGR/FGB).

Resistance measurement:

Signal wire LIN Road between computer X 2/8 and Pin 3 multifunctional steering wheel: Aprox. 0.2 ohms.

Voltage measurement:

Multifunctional steering wheel, power LIN between Pin 1 (+) and Pin 2 (-): Ubat.

Note: using MAN-cats ® II checks only the right side of the multifunctional steering wheel.

### 3526

Faulty LSS

Priority: 5

Indication while driving and stop the car; the only indication of a malfunction.

Fault indication:

Central signal light STOP (H111) led is amber while driving and parking.

The reason for the failure:

Defective switch (A942) on the steering column/transmission retarder. This fault is detected by the MFL and the car computer is passed to the MFL1 message.

Troubleshooting:

Using current control MAN-cats ® II check the accuracy of the signal, check the wires, connectors, switch (A942) on the steering column, F583 fuse.

Milestones:

Conduct ongoing monitoring:

Using current control MAN-cats ® II validate signals switch (A942) on the steering column/retarder gearbox (above, below, off).

Resistance measurement:

Signal wire LIN Road between computer X 2/8 and 2 Pin switch on the steering column/transmission retarder: Aprox. 0.2 ohms.

Voltage measurement:

Switch on the steering column/retarder gearbox, power LIN between Pin 3 (+) and Pin 1 (-): Ubat.

### 3527

Mass closure/U bat.

Priority: 5

Indication while driving and stop the car; the only indication of a malfunction.

Fault indication:

Central signal light STOP (H111) led is amber while driving and parking.

The reason for the failure:

This fault is recorded when there is a closure or mass LIN Ubat. The fault is written after its registration within 10 s.

Troubleshooting:

Check the signal wire LIN for short-circuit and Ubat, connectors.

Milestones:

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Resistance measurement:

Signal wire LIN Road between computer X 2/8 and 2 Pin switch on the steering column/transmission retarder: Aprox. 0.2 ohms.

Signal wire LIN Road between computer X 2/8 and Pin 3 multifunctional steering wheel MFL: Aprox. 0.2 ohms.

Signal wire LIN Road between computer X 2/8 and dashboard X 1/15: Aprox. 0.2 ohms.