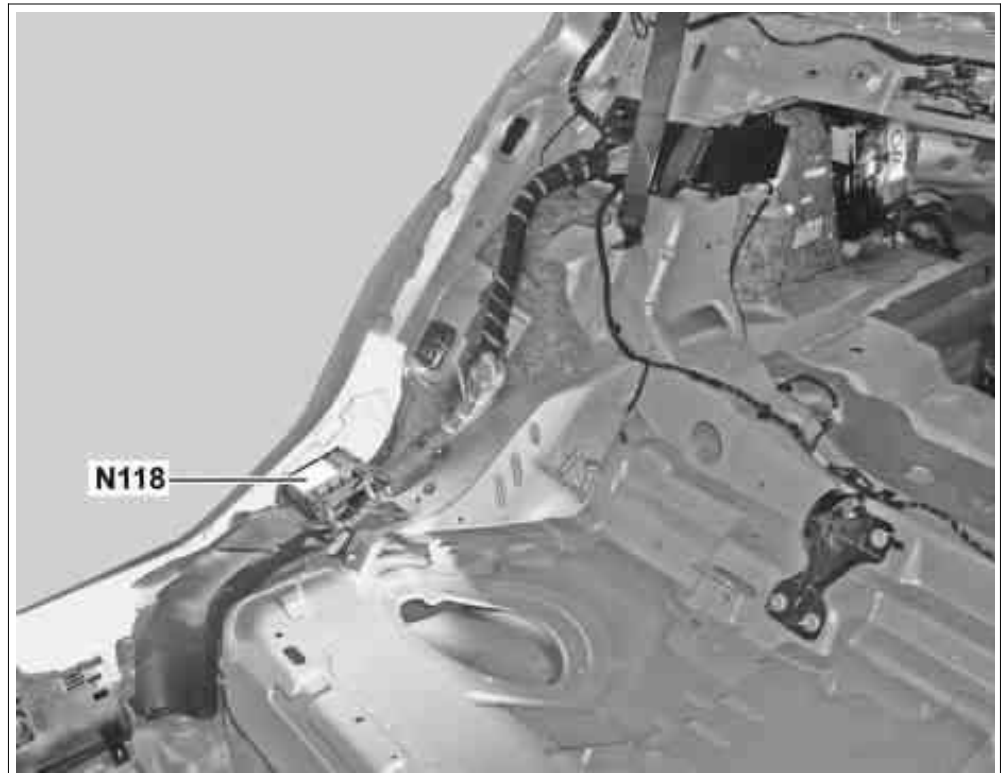


Document title Component description for fuel pump control unit

Document number gf4740p2001mma

ENGINE 157.9 in MODEL 212, 218**View of right rear compartment door sill, model 218**

N118 fuel system control unit



P47.40-2095-11

Location

The fuel system control unit is located under the trim of the right rear door sill.

Task

The FSCU carries the internal designation UFPC AMG (**U**niversal **F**uel **P**ump **C**ontroller for AMG).

The fuel system control unit regulates the fuel pump (M3) according to need and transmits information via the current fuel pressure to the ME-SFI [ME] control unit (N3/10).

Input and output signals

The following input signals are evaluated by the fuel system control unit and appropriate output signals are emitted:

- **CAN input signals**
- **CAN output signals**
- **Direct input signals**
- **Direct output signals**

CAN input signals

- fuel pump ON
- data for variant coding

CAN output signals

- fuel supply status
- Diagnostic data

Direct input signals

- circuit 15
- circuit 30
- circuit 31
- "Fuel pump ON" ground signal
- fuel pressure sensor signal (B4/7) (model 212), fuel pressure sensor (B4/7) (model 218)

Direct output signals

- fuel pressure sensor (5 V), (model 212), fuel pressure sensor (model 218)
- fuel pressure sensor mass (model 212), fuel pressure sensor (model 218)
- AC signal for fuel pump (phase A)
- AC signal for fuel pump (phase B)
- AC signal for fuel pump (phase C)

Body

The fuel system control unit consists of a fuel housing with two plugs and internal measuring and control electronics.

Function

The function is described at the following points:

- **Fuel pump regulation**
- **Fuel system limp-home mode control unit**
- **Diagnosis**
- **Tank-draining function**

Fuel pump regulation

Switching on of the fuel pump takes place if a signal "fuel pump ON" is received by the fuel system control unit. This signal is sent redundantly by the ME-SFI [ME] control unit as a CAN signal via the drive CAN (CAN C) and directly as a ground signal.

The fuel system control unit detects the current fuel pressure by means of a voltage signal from the fuel pressure sensor and transmits this information via the drive train CAN to the ME control unit.

The fuel system control unit evaluates the current fuel pressure, compares it with the specified fuel pressure and actuates the fuel pump appropriately by means of these phase-offset AC voltage signals in such a way that the actual value corresponds to the specified value.

The fuel pump pressure is regulated dependent on the fuel temperature and the engine rpm between about 4.0 and a maximum of 6.7 bar.

Fuel system limp-home mode control unit

- If the signal "Specified fuel pressure" is missing, a substitute value is created by the fuel system control unit and the fuel pump is appropriately actuated.

- if the signal from the fuel pressure sensor is missing the fuel pump is actuated over a consumption-dependent limp-home mode characteristics.

- If the signal "specified fuel pressure" and the signal from the fuel pressure sensor are missing, the fuel pump is actuated by an established replacement voltage.

Diagnosis

The fuel system control unit conducts an own and component check. Recognized errors are stored by the fuel system control unit and sent to the Xentry diagnostics via the diagnostic CAN to the ME-SFI control unit via the drive train CAN.

Tank-draining function

The fuel tank can be emptied over the fuel system control unit without the engine running.

To do this, the tank draining function is selected using Xentry Diagnostics, and the following parameters are entered:

- Parameter 01 for "Fuel pump ON"
- Time "0-99999" seconds
- Specified fuel pressure 5.5 bar

During draining, Xentry Diagnostics must remain connected and the ignition must remain switched on.

Variants

The vehicle and engine variants are already stored in the fuel system control unit. After replacing the fuel system control unit, variant coding must be conducted.

Designation	Unit	Values	Tolerance range	Remarks
Fuel system control unit (N118)				
Supply voltage	V	13.5		Terminal 30
Voltage limit: Minimum Maximum	V	6.0		
	V	16.0		
Power consumption: No-load current (typical) No-load current (maximum) readiness-to- operate	μ A μ A mA mA	7 300 100 300		at 13 V and 23°C
Reverse polarity protection				Inverse-polarity protection diode between circuit 30 and circuit 31
Short-circuit resistance				For power supply, load outputs and signal lines
Operating temperature range	°C	-40 - 85		
Diagnosis capability				Yes
Flash capability/coding capability				Yes/yes
Special features				De-tanking service (de-tanking without engine running)
Fuel pressure sensor signal (B4/7) (model 212), fuel pressure sensor (B4/7) (model 218)				
Type				Capacitive, absolute measuring sensor
Supply voltage	V	5.0	± 0.25 V	
Signal voltage	V	0.3 - 4.5		Linear, signal proportional to fuel pressure
Measuring range	bar	0.5 - 10		
Operating temperature range	°C	-40 - 80		
Fuel pump (M3)				
Model				Two-stage flow pump with a 3-phase AC motor
Supply voltage	V	12.0		3 phase-shifted AC signals from FSCU
Delivery rate maximum	l/h	130		

	Wiring diagram for fuel system control unit	N118 MODEL 212 N118 Model 218	PE47.40-P-2101-97DAD PE47.40-P-2101-97XAB
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