

MODEL 212

as of model year 2014

with CODE 640 (Headlamps, LED, dynamic, SAE, right-side traffic)

without CODE 641 (Headlamps, LED, dynamic, left-side traffic)

without CODE 642 (Headlamps, LED, dynamic, right-side traffic)

MODEL 212

as of model year 2014

with CODE 641 (Headlamps, LED, dynamic, left-side traffic)

without CODE 640 (Headlamps, LED, dynamic, SAE, right-side traffic)

without CODE 642 (Headlamps, LED, dynamic, right-side traffic)

MODEL 212

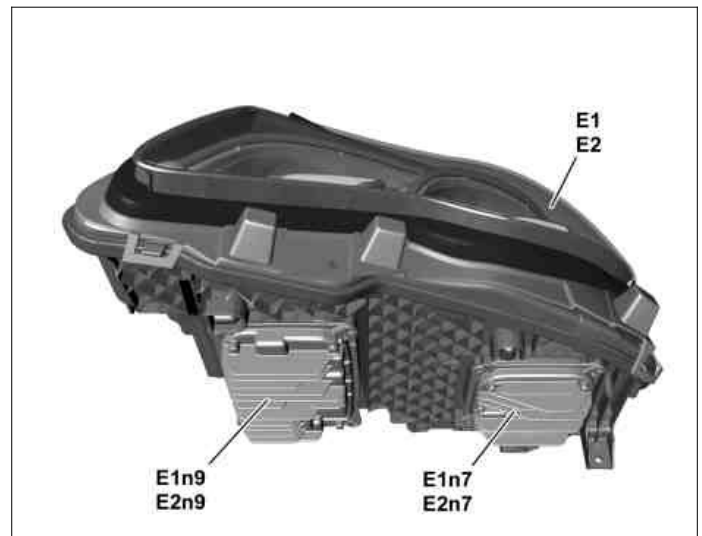
as of model year 2014

with CODE 642 (Headlamps, LED, dynamic, right-side traffic)

without CODE 640 (Headlamps, LED, dynamic, SAE, right-side traffic)

without CODE 641 (Headlamps, LED, dynamic, left-side traffic)

- E1 Left front lamp unit
 E1n7 Left front actuation module, LED exterior lighting
 E2 Right front lamp unit
 E2n7 Right front actuation module, LED exterior lighting



P82.10-7231-11

Task

The front LED exterior lights actuation modules are responsible for the following tasks:

- Provide and monitor operating voltage and operating current of the actuated light-emitting diodes (LED)
- Thermal management (temperature monitoring and fan control)
- Actuation of the LEDs in the corresponding front lamp unit to output the following light functions:
 - Short range low beam
 - Long range low beam
 - High beam

The front LED exterior lights actuation modules actuate the LEDs located in the front lamp unit to implement the individual light functions.

Thermal management**Location**

The left front actuation module, LED exterior lighting is mounted on the bottom of the left front lamp unit. The left right front actuation module, LED exterior lighting is located on the bottom of the right front lamp unit.

In addition, the front LED exterior lights actuation modules actuate the following components:

- Left front Vario LED lamp unit (E1e22)
- Right front Vario LED lamp unit (E2e22)

The front LED exterior lights actuation modules are supplied with voltage from circuit 30L by the front SAM control unit with fuse and relay module (N10/1).

The individual light functions are output after applying voltage at the respective input channel of the front LED exterior lights actuation module. This occurs through the front SAM control unit.

The left front LED exterior lights actuation module communicates via left headlamp LIN (LIN G1) with the left headlamp control unit (E1n9).

The right front LED exterior lights actuation module communicates via right headlamp LIN (LIN G2) with the right headlamp control unit (E2n9).

Identified malfunctions of individual components are stored in a non-volatile memory. The front LED exterior lights actuation modules can be diagnosed using the corresponding headlamp control unit.

Fan motor 2 for left front lamp unit (E1m5)

The front lamp units are each equipped with a temperature sensor for each light function, with which the heat development in the area of the actuated LEDs is recorded. The front LED exterior lights actuation modules evaluate the signals of two temperature sensors each. If the LEDs or the plastic housing of the front lamp units threaten to overheat as a consequence of high outside temperatures or high actuation currents, the front LED exterior lights actuation modules reduce the actuation currents for the LEDs and thereby lower the heat development.

Apart from this, the front LED exterior lights actuation modules actuate the following components to additionally cool the LEDs or plastic housing of the front lamp units:

- Fan motor 2 for right front lamp unit (E2m5)
The fan motors are either actuated immediately or with a time delay. The actuation depends on which light function is active. The active ventilation by means of actuation of the fan motors is used simultaneously for de-icing the front lamp units at low outside temperatures.

	Exterior lights wiring diagram	MODEL 212 as of model year 2014 with CODE 641 (Headlamps, LED, dynamic, left-side traffic) without CODE 640 (Headlamps, LED, dynamic, SAE, right-side traffic) without CODE 642 (Headlamps, LED, dynamic, right-side traffic)E1MODEL 212 as of model year 2014 with CODE 642 (Headlamps, LED, dynamic, right-side traffic) without CODE 640 (Headlamps, LED, dynamic, SAE, right-side traffic) without CODE 641 (Headlamps, LED, dynamic, left-side traffic)E1	PE82.10-P-2000-97DAC
	Exterior lights wiring diagram	MODEL 212 as of model year 2014 with CODE 641 (Headlamps, LED, dynamic, left-side traffic) without CODE 640 (Headlamps, LED, dynamic, SAE, right-side traffic) without CODE 642 (Headlamps, LED, dynamic, right-side traffic)E2MODEL 212 as of model year 2014 with CODE 642 (Headlamps, LED, dynamic, right-side traffic) without CODE 640 (Headlamps, LED, dynamic, SAE, right-side traffic) without CODE 641 (Headlamps, LED, dynamic, left-side traffic)E2	PE82.10-P-2000-97DAD