

Body and Accessories

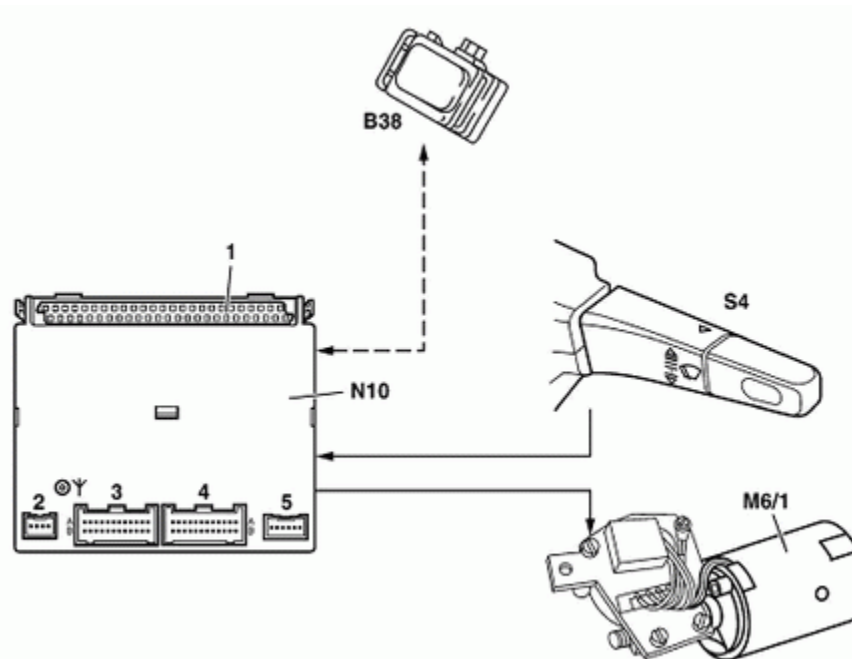
82.00 Electrical system body

82.30 Front windshield wipers; location/function/design

The rain sensor (B38) controls the time interval when the combination switch (S4) is in the intermittent position.

If combination switch (S4) is switched on or if terminal 15 is switched on with combination switch (S4) already in the intermittent position, the wetting of the windshield is measured. In addition, the vehicle speed and external temperature input information and the rain sensor housing temperature are evaluated.

If terminal 15 and terminal 1 are switched on at the same time, the temperature is interrogated. If the outside temperature and/or the rain sensor housing temperature is below 5°C, the vehicle speed is interrogated. If the vehicle is stationary, a wipe cycle is not initiated in this temperature range, to protect the wiper blade from possible damage (e.g. if the windshield is iced). The wipe cycle can therefore be activated when stationary either by an off/on switching cycle of the combination switch (S4) or automatically with the first movement of the vehicle.



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B38 Rain sensor
 M6/1 Wiper motor
 N10 All-activity module
 S4 Combination switch

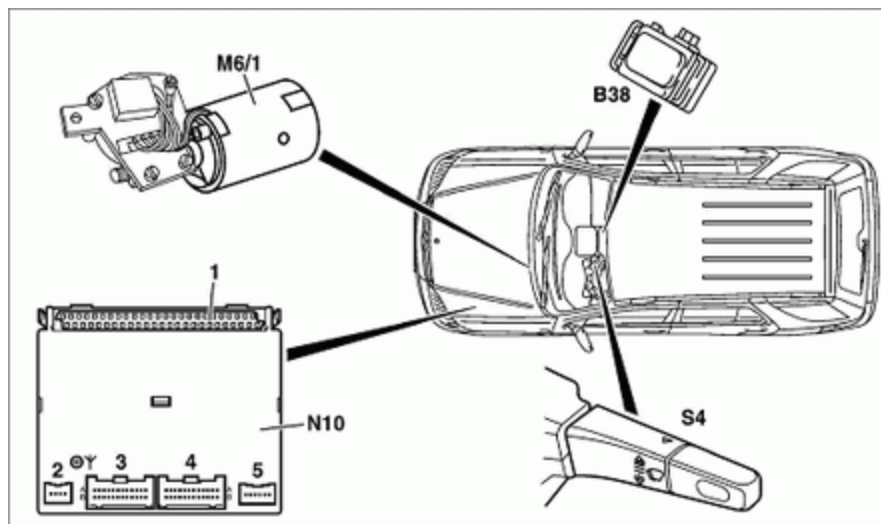
Note:

If the outside temperature and vehicle speed information is not available, the outside temperature is assumed to be < 5°C and the vehicle speed 0 mph.

Location

Component location

- B38 Rain sensor
- M6/1 Wiper motor
- N10 All-activity module
- S4 Combination switch



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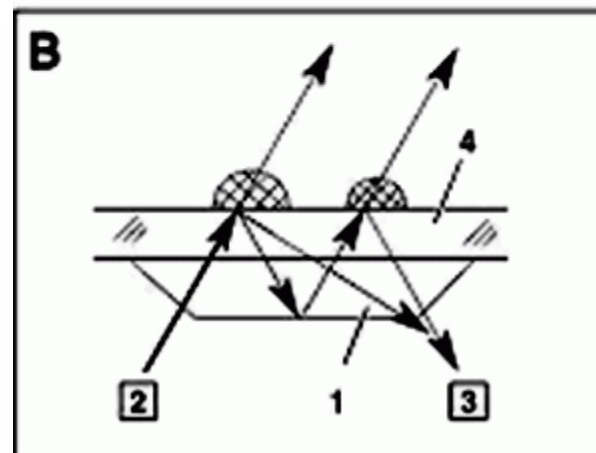
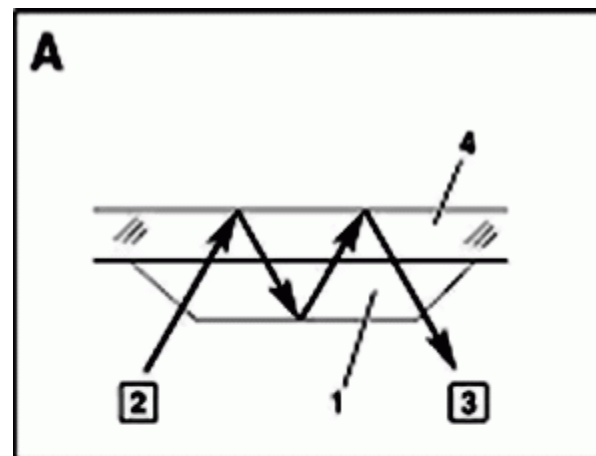
Function

The rain sensor (B38) is connected to the All Activity Module (AAM) via the engine compartment CAN. Once the All-Activity-Module (AAM) has detected terminal 15 on and intermittent wiping on the combination switch, it activates the rain sensor (B38) via the CAN. Measurement of windshield wetting is by means of an optical element that works with infrared light. If the windshield is dry in the area of the rain sensor (B38), the light from the transmitter diodes is reflected 100 %. If the windshield is wet in the reflection area, the light is dispersed. The percentage light reflection decreases as the wetting increases. This light reflection acts as the variable for the time interval. If the rain sensor (B38) detects "windshield wet", it sends the "wiper on" signal to the AAM. The AAM then activates the wiper relay k17 (located in fuse box 1) until a signal on terminal 31b is detected or for a maximum of 1sec. As long as the wipe sequence is active (terminal 31b on), the AAM accepts no new "wiper on" signal from the rain sensor.

If the wipe/ wash combination switch is operated (terminal 86), the AAM sends this information to the rain sensor. The rain sensor (B38) sends no further "wiper on" signal until the end of the wipe/wash sequence.

1 Rain sensor

- 2 Transmitter diodes
- 3 Receiver diodes
- 4 Windshield
- A dry windshield
- B wet windshield



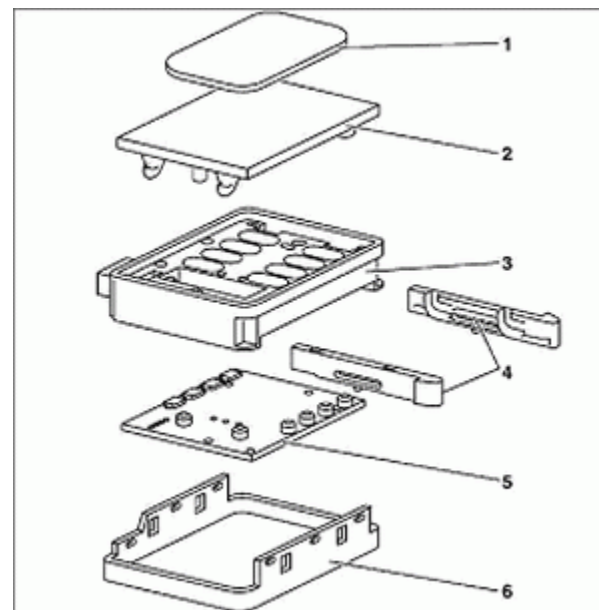
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Design

Unlike the rain sensors on other models, which have 3 transmitting and receiving diodes, the rain sensor on Model 163 has 4 transmitting and receiving diodes.

This enables more accurate evaluation of the signals and therefore a more precise control of the wiper.

- 1 Adhesive pad
- 2 Optical unit
- 3 Housing
- 4 interlocks
- 5 Printed circuit board
- 6 Cover



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