BRIEF INFORMATION

Rain/light sensor for vehicles with steeply raked windscreens

→ Fourth generation of the long-established rain sensors from HELLA
→ Optics specially designed for vehicles with steeply raked windshields e.g. trucks, buses, agricultural machinery, construction machinery, and motorhomes
→ Dual function: rain and light detection (surroundings and tunnel detection)
→ Optimised design – extremely compact package space

PRODUCT FEATURES

1 Infrared-transparent optics for rain and tunnel detection

2 Transparent optics for surrounding light detection

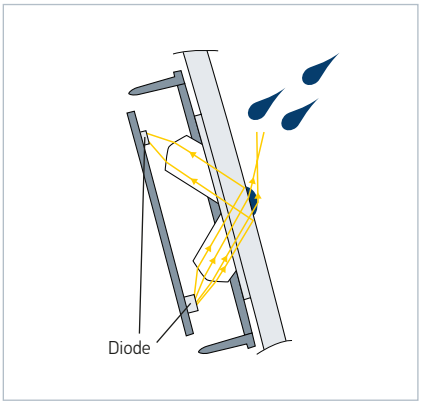
Rain sensor
The rain sensor is used to detect different rain conditions in the sensor area and controls the front windshield wiper accordingly. Manual driver intervention is no longer required.

Light sensor
The light sensor has the task of controlling activation and deactivation of low-beam lights under varying lighting conditions and in special situations such as in tunnels.

OPERATING PRINCIPLE

Operating principle of rain detection:

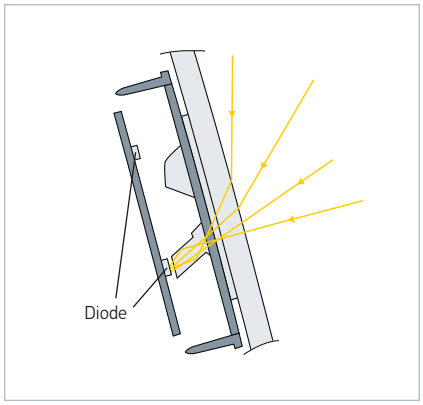
Use of the successfully field-proven principle of total reflection. The large, homogenous measuring section guarantees good starting behavior and comfortable wiper performance. The sensor also has enhanced functions for detecting streaks and dirt.



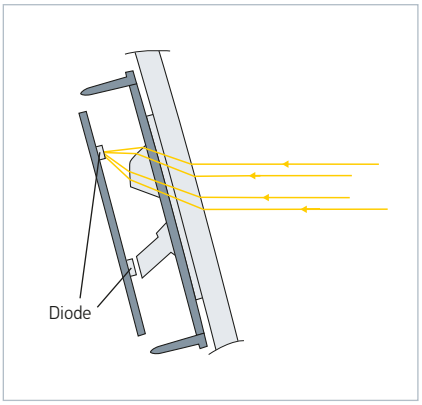
Rain sensor

Operating principle of light detection:

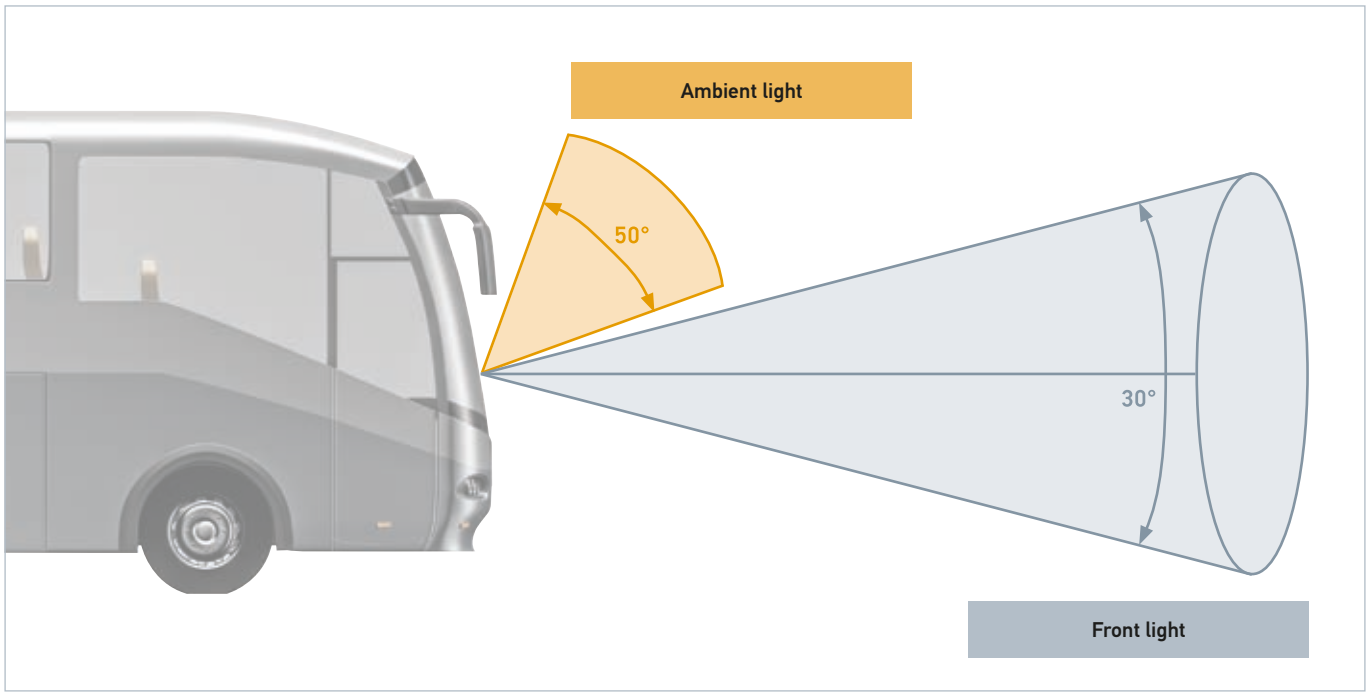
The light sensor contains separate diodes for detecting ambient light and front light. The optical concept is designed such that the light switching characteristics are stable and independent of the direction of travel. The large opening angles of the light diodes enable homogenous light switching behavior in all driving situations.



Ambient light sensor

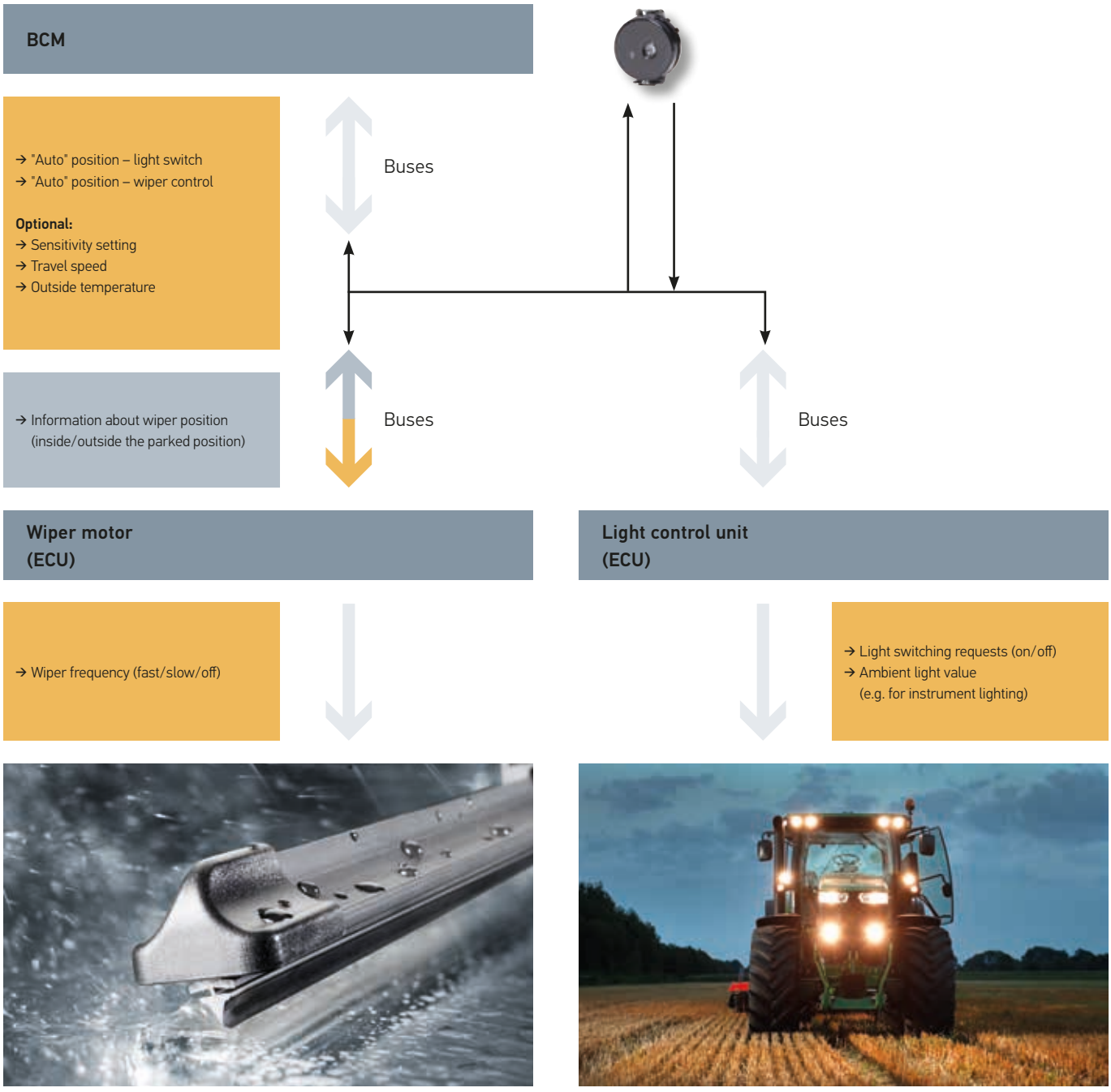


Front light sensor



INTERFACES/FUNCTIONAL DESCRIPTION

The following overview illustrates an option for how the sensor communicates with other system components in the vehicle via the LIN interface. Here the sensor is switched on by the overriding control unit and supplied with voltage. It thus provides the system with information, however does not have direct access to the system itself.



Wiper function control

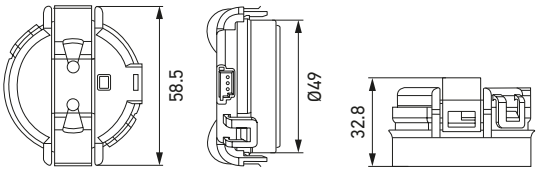
Main/worklights

TECHNICAL DETAILS

Technical data, 12 V	
Operating temperature	- 40 to + 85°C
Storage temperature	- 40 to + 100°C
Protection class	IP 50
Operating voltage	9 – 16 V
Rated voltage	12 V
Overvoltage	24 V
Rated current consumption	< 50 mA
Communication interface	LIN 2.1
Weight	≤ 42 g
Mating connector[1)]	AMP C-1718346, coding A
Requirements of the windshield[2)]	
Spectral range of operation	400 – 1,050 nm
Permitted windshield transmission	23 – 80 % (at 800 – 1,100 nm)
Permitted windshield thickness	6 – 9 mm
Permitted windshield angle	80° – 90°
Permitted curvature radius in sensor range	R => 1,400 mm
Diameter of print section	40 +/- 0.2 mm

[1)] This accessory is not included in the scope of delivery. May be purchased from TE Connectivity.
[2)] Other windshield configurations available on request.

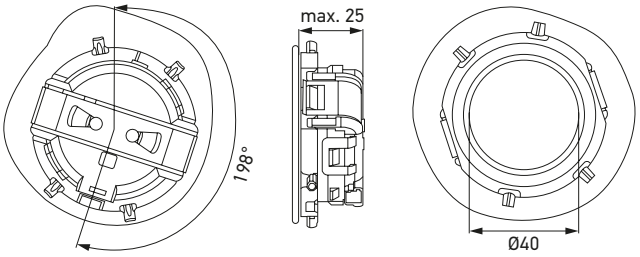
Technical drawing



Pinbelegung

Pin 1	12 V
Pin 2	LIN
Pin 3	GND

Illustration of installation on the windshield



APPLICATION EXAMPLE

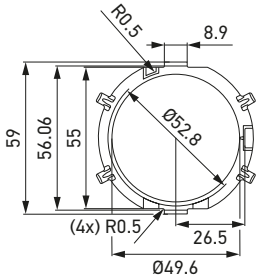
The rain sensor must be mounted in an area in which it is wiped over by at least one wiper blade. In order to determine the installation position, the minimum distances to the wiper blades must be observed (can be found in the technical specifications).

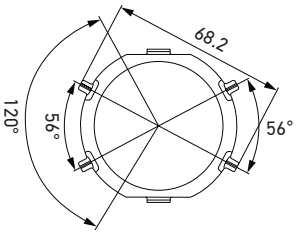
RANGE OVERVIEW AND ACCESSORIES

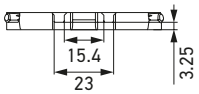
Product photograph	Description	Part number
	Rain/light sensor for vehicles with steeply raked windshields	**On request***

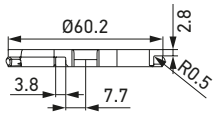
* The sensors must be specially applied for each vehicle. For that reason all part numbers are customer-specific provided.

Part number	
9XD 420 696-104	For mounting with PUR liquid adhesive sintered metal

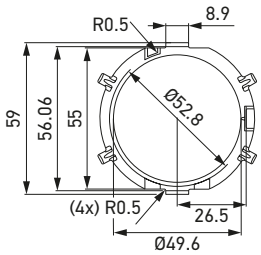


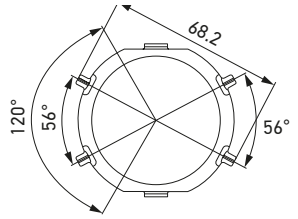


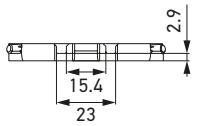


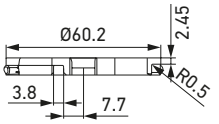


Part number	
9XD 420 696-001	For mounting with 3M adhesive tape sintered metal

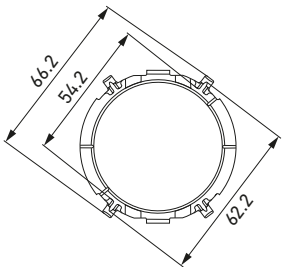


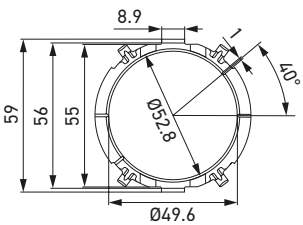


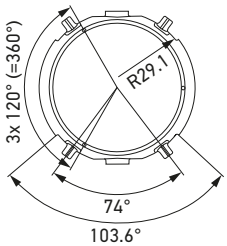


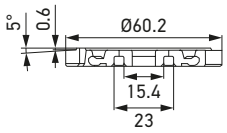


Partnumber	
9XD 748 921-011	For mounting with PUR liquid adhesive sintered metal This bracket can be used together with a design cover (9HB 748 851-107).









Part number	
9HB 748 851-101	Design cover