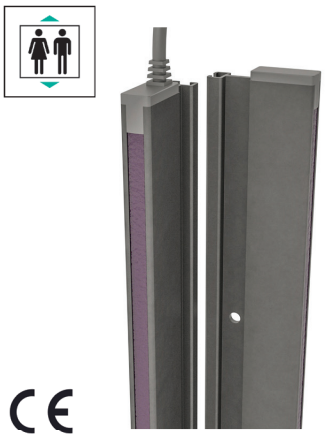


Order Designation

AL3609.4
Elevator light grid with fixed cable and 5-pin or 7-pin DIN plug

Features

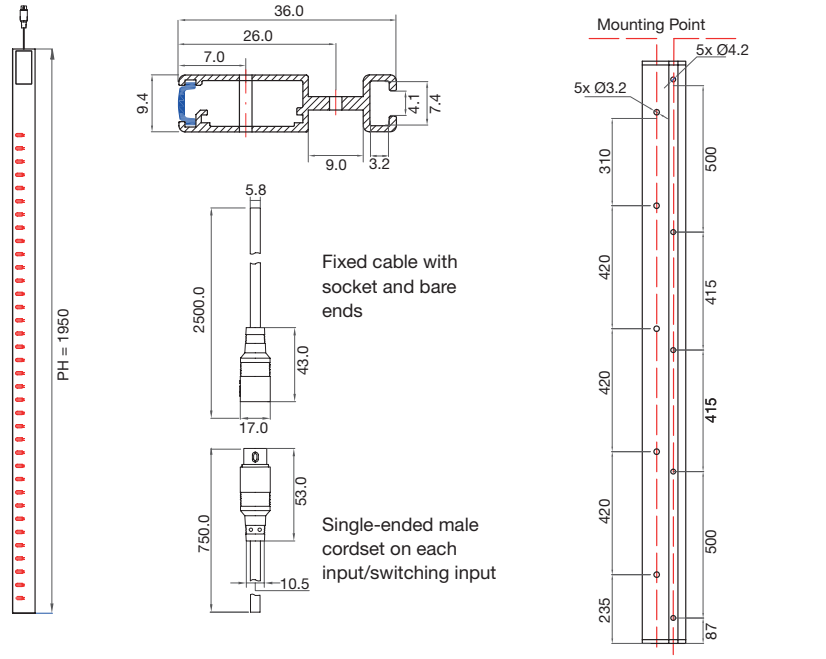
- Slim light grid with fine resolution for monitoring closing edges on elevators and entrances
- With integrated control panel
- Standard conformity in accordance with EN 81-20, EN 12015, and EN 12016.
- Dense monitoring field with a maximum of 174 beams ensures detection of small objects
- Object detection down to zero distance
- Automatic beam configuration
- Resistant to reflections and extraneous light such as sunlight
- Ideal for both new elevators and retrofitting existing elevator systems

Product Information

The AL3609.4 elevator light grid makes elevator doors more secure and provides access control. Its special features include dynamic beam configuration with up to 174 active beams, object detection down to a distance of zero millimeters, and immunity to extraneous light including sunlight. Evaluation electronics and power supply are fully integrated in the transmitter and receiver units so that no external devices are required for operation. The system offers flexible mounting options and meets the newest standards in accordance with EN 81-20, EN 12015, and EN 12016.

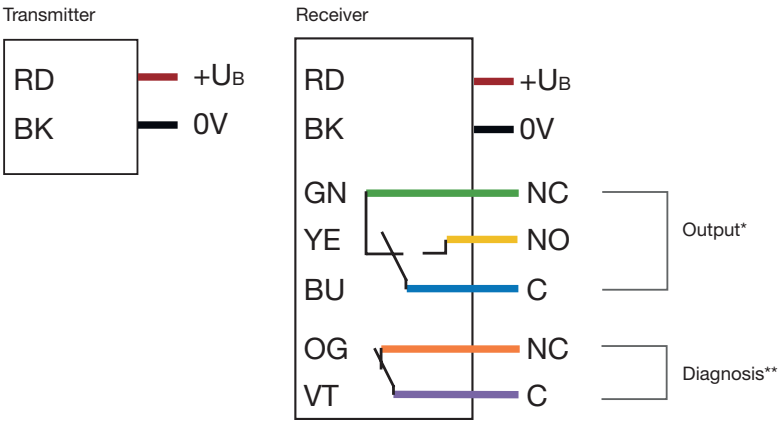
Variants compatible with the previous model AL2109 are available.

Technical Data



all dimensions in mm

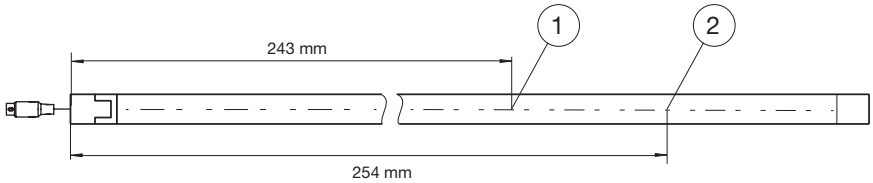
Electrical connection (energized and beam path is clear)



* The diagram shows the relay in a current and free beam path. The normally-open (NO) / normally-closed (NC) functions can be changed by assigning the connections externally. This allows the function of a semiconductor output to be simulated.

** Opens after 30 sec. of continuous interruption (e.g., dirt on an transmitter diode)

Indicators/Operating Elements (Receiver)



1 Yellow LED indicator: operating voltage indicator

2 Red LED indicator: object detection/system error

Part. no. 010-0033 01/22

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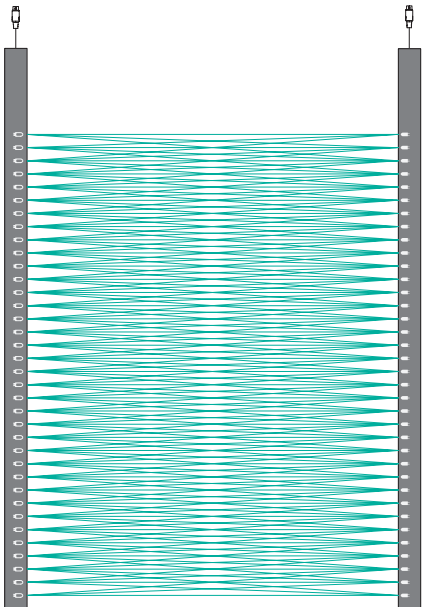
Technical Data

General Data		
Effective operating distance		0 mm ... 4000 mm
Light emitter		IRED
Field height		1,645 mm
Crossover		Automatic, 3x/5x (depending on transmitter/receiver distance)
Beam gap		47.50 mm
Number of beams		106 to 174 (dynamic)
Extraneous light limit		> 100,000 Lux
Supplied accessories		2 connection cables, length 2.5 m, mounting material
Functional Safety Data		
$MTTF_d$		95 a
Life time (T_M)		20 a
Diagnostic coverage (DC)		0 %
Indicators/Operating Elements		
Function indicator (receiver)		Yellow LED: operating voltage indicator Red LED: object detection/system error
Electrical Data		
Operating voltage	U_B	15 to 30 VDC
No-load current	I_0	< 100 mA at 24 VDC
Output		
Signal output		Potential-free changeover contact, programmable semi-conductor switching behavior
Switching mode		Light-on/dark-on switching, programmable
Diagnostic output		Volt-free contact: opens if there is continuous (>30 sec.) blocking or contamination of a single transmitter diode, and closes as soon as this beam path is clear again.
Response time		< 100 ms
Switching voltage		Max. 30 VDC
Switching current		Max. 1 A DC
Ambient Conditions		
Ambient/storage temperature		-20 °C ... 65 °C (-4 °F ... 149 °F)
Mechanical Data		
Degree of protection		IP54
Electrical connection		2x DIN plug (5- or 7-pin) and 2x cables
Transmitter connection		2.5 m cable with 2x strands
Connection for receiver		2.5 m cable with 7x strands
Profile height		1,950 mm
Material		
Housing		Aluminum
Optical face		Plastic
Weight		1,400 g (transmitter and receiver)
Directive Conformity		
EMC Directive 2014/30/EU		EN 12015:2014, EN 12016:2013
Standard Conformity		
Standards		EN 81-20:2014, 2006/42/EC, 2014/33/EU
Approvals and Certificates		
CCC approval		Products with a maximum operating voltage of ≤ 36 V are not subject to approval and are therefore not assigned a CCC marking.

Typical Applications

- Secure and complete monitoring of elevator doors
- Monitoring of access systems and entrances
- Access control

Detection Area



Accessories (optional)

Mounting set AL3609.4 vertical
Mounting aid

PS1/31
Power supply/power supply module

SJ15-WS
Inductive slot sensor

MINI-PS-100-240AC/24DC/1.3
Power Supply

Other accessories can be found online at: www.sensotek-shop.com

Part. no. 010-0033 01/22

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Functional Principle

The AL3609.4 light grid is primarily used for monitoring entry to elevators. It consists of a transmitter and receiver unit. Each component is equipped with a power supply and evaluation electronics, making it suitable for direct connection to the elevator electronic system.

No additional external components are required for operation.

Mounting and Alignment

Transmitter and receiver bar must be aligned opposite to and facing one another at a maximum distance of 4.0 m. The lenses of the two bars must be aligned flush with one another. A maximum inclination of 7 ° in relation to the vertical axis and of 5 ° in relation to the horizontal axis must be observed.

Choice of Operating Mode and Switching Function

The switching characteristics (NPN/PNP) of a semiconductor switching output, as well as the operating mode (NO/NC), can be simulated via the external wiring.

The following wiring table shows the possible functions depending on how the wiring strands are connected to the control panel:

Switching characteristics	NO (dark-on switching)	NC (light-on switching)
NPN switching	Yellow to black Green is not connected Blue is output	Green to black Yellow is not connected Blue is output
PNP switching	Yellow to red Green is not connected Blue is output	Green to red Yellow is not connected Blue is output

LED Indicators

The yellow LED in the upper end of the receiver illuminates constantly once operating voltage is supplied. The light grid is thus ready for operation.

Upon detection of an object or if a fault occurs in the system as a whole, the red LED illuminates. It goes out only when all light rays are unobstructed.

Diagnostic Output

The AL3609.4 elevator light grid is equipped with a diagnostic output. If at least one of the 36 transmitters is continuously blocked (e.g., by dirt) or has a technical fault, the diagnostic relay is opened after 30 sec. (normally-closed function). It remains open until the fault is resolved or the dirt is cleaned. Only then will the relay close again. The diagnostic output can also remain unswitched and has no effect on the signal output of the elevator light grid.

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