Thru-beam sensor

ML29T-P/32/59/115 100mm

- Single-beam monitoring with extremely narrow sensor
- Integrated circuit
- Test
- Simple installation - Plug & Play
- Ideal for installation in door profiles or frames
- Version with Certification in accordance with railway standard EN50155

Single-beam miniature photoelectric sensor, ideal for installation in door frames, with certification in accordance with the EN 50155 railroad standard

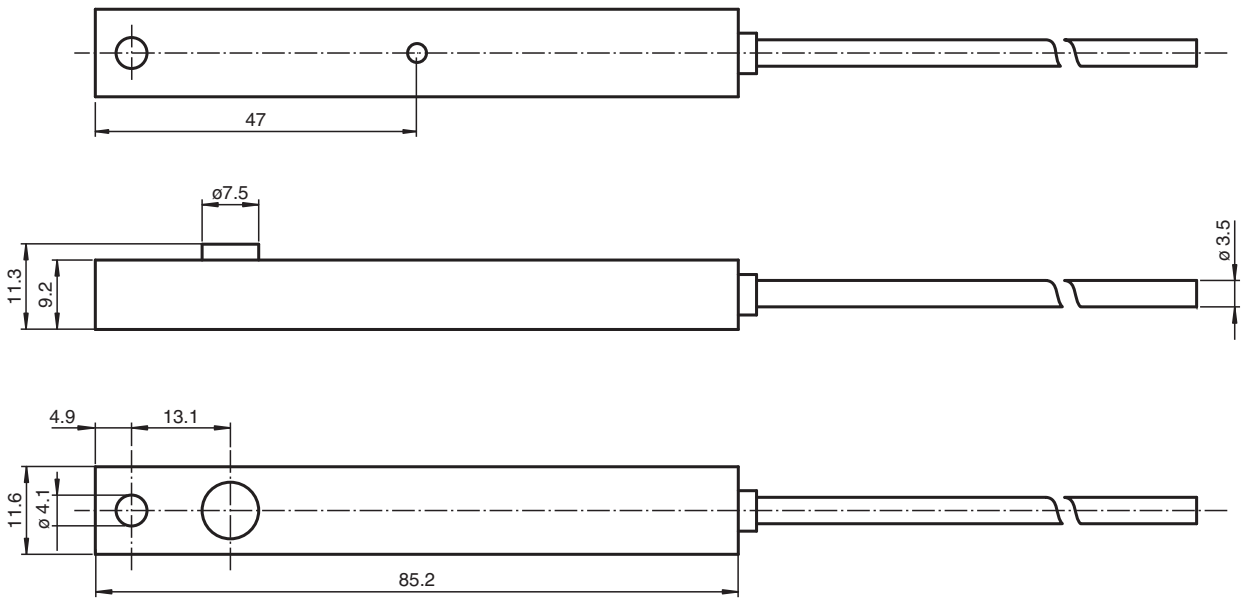
Function

The narrow miniature thru-beam sensors are a small and cost-effective solution, fitting in virtually any door frame. The ML29 and ML30 series offer fast, reliable detection at a distance of up to 8.5 m. The sensors are easy to mount on the profile, either using adhesive strips or a screw. A large opening angle ensures problem-free alignment. Several sensors can be mounted in a cross formation to offer multi-beam protection.

Application

- Person detection for automatic doors and gates
- Closing edge protection on sliding and revolving doors
- Threshold monitoring for elevator doors
- Step monitoring for doors on public transport vehicles
- Trigger function for restarting escalators

Dimensions



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Technical Data

System components		
Emitter		ML29T-T/115
Receiver		ML29T-R/32/59/115
General specifications		
Effective detection range		0 ... 2.5 m
Threshold detection range		3.5 m
Light source		IRED
Light type		modulated infrared light
Opening angle		+/- 8 °
Optical face		lateral
Ambient light limit		40000 Lux
Functional safety related parameters		
$MTTF_d$		1440 a
Mission Time (T_M)		20 a
Diagnostic Coverage (DC)		0 %
Indicators/operating means		
Function indicator		LED red in receiver : lights up when receiving the light beam
Electrical specifications		
Operating voltage	U_B	10 ... 32 V DC
No-load supply current	I_0	Emitter: ≤ 25 mA Receiver: ≤ 10 mA
Input		
Test input		Test: Transmitter switches off at +UB ≤ 5 V DC
Output		
Switching type		dark-on
Signal output		1 PNP output, short-circuit protected, reverse polarity protected, open collector
Switching voltage		max. 32 V DC
Switching current		max. 0.2 A
Switching frequency	f	10 Hz
Response time		50 ms
Conformity		
Product standard		EN 60947-5-2
Compliance with standards and directives		
Standard conformity		
Standards		EN 50121-3-2 , EN 50155
Approvals and certificates		
CCC approval		CCC approval / marking not required for products rated ≤36 V
Ambient conditions		
Ambient temperature		-25 ... 60 °C (-13 ... 140 °F)
Storage temperature		-25 ... 75 °C (-13 ... 167 °F)
Relative humidity		90 % , noncondensing
Mechanical specifications		
Degree of protection		IP65
Connection		100 mm fixed cable
Material		
Housing		PMMA , black
Optical face		Plastic pane
Mass		per device 12 g

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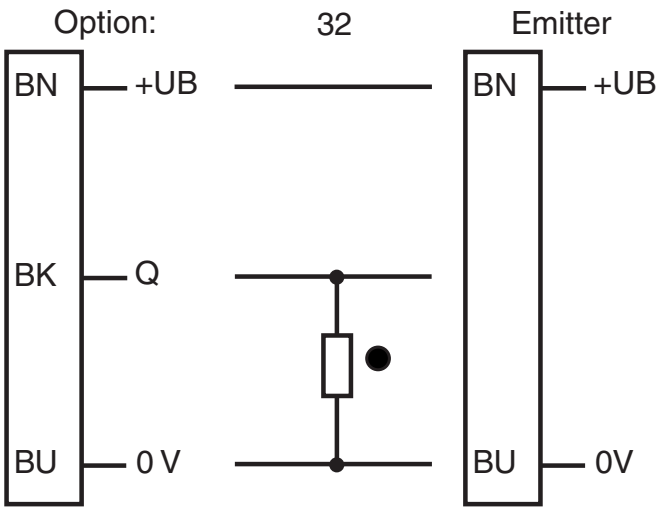
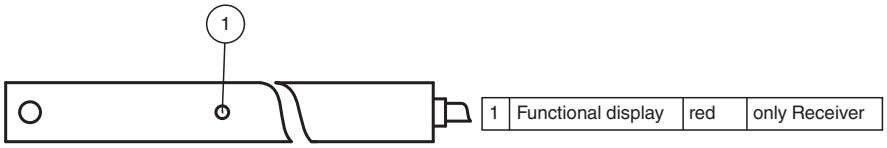
Connection Assignment



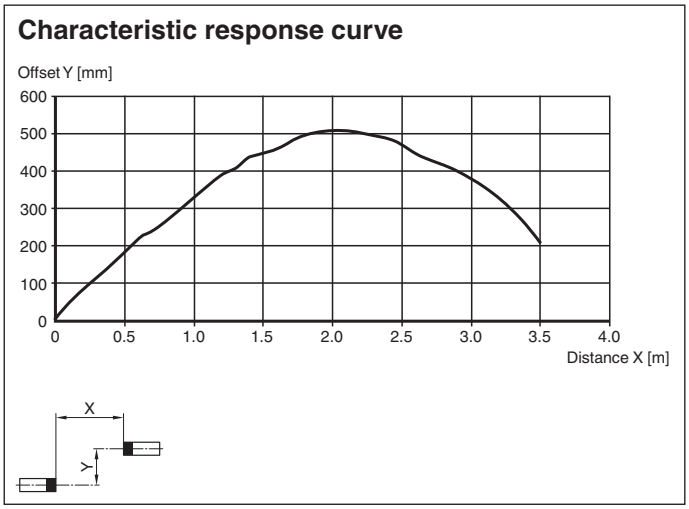
○ = Light on
● = Dark on

Assembly



1	Functional display	red	only Receiver

Characteristic Curve



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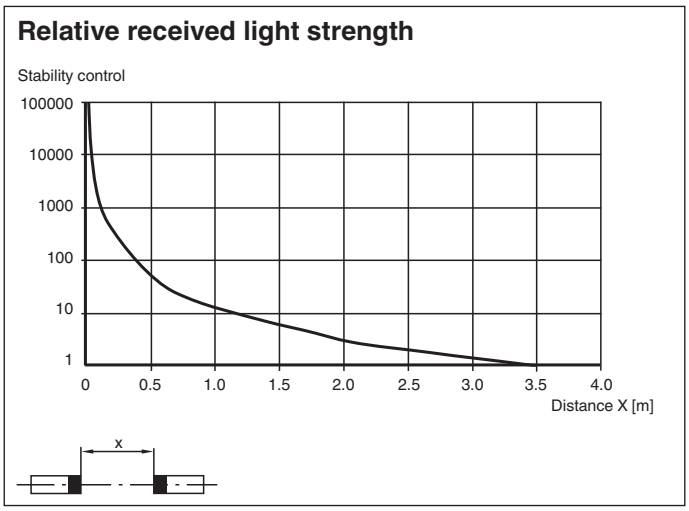
Characteristic Curve



Function Principle

The thru-beam sensor requires a pair of devices for operation, comprising a light transmitter and a light receiver. The emitter and receiver must be arranged in optical alignment with each other. The infrared light from the emitter is detected by the receiver and evaluated.

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Additional Information

Static detection:

The light beam switch detects persons and objects independently of movement and surface structure for as long as the object breaks the detection beam.

		Electronic output
Light detection /25	Person in the beam	Inactive
	No person in the beam	Active
Dark detection /59	Person in the beam	Active
	No person in the beam	Inactive

Optics:

The relatively wide opening angles enable the light beam switches to be installed quickly, without alignment problems. Even if there is a light distortion of the installation profiles the function is retained.

Test input:

The test input is used to check the function of the light beam switch.

The test signal at the emitter switches the emitter off at $+U_B \leq 5$ V and thereby simulates a light beam interruption. It thus enables a complete check of the sensor from the optical path through to the output.

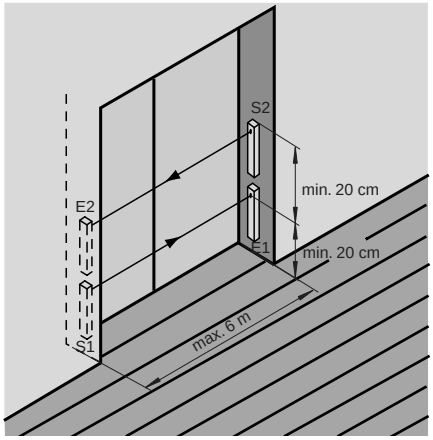
Installation:

Thanks to its small dimensions, the light beam can be fitted in a U-profile or behind a face panel.The hole diameter for both the emitter and the receiver is 8 mm.

Even fixing by means of the adhesive tape contained in the delivery package can be considered.

Installation of twin-beam arrangement:

A twin-beam version requires 2 emitters and receivers. Care should be taken that the beam separation is not less than 20 cm. The transmitters and receivers must be arranged in the form of a cross.



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