CE

Model Number

ML29-P/25/102/143

Thru-beam sensor

4-pin plastic connector, 6.5 mm diameter

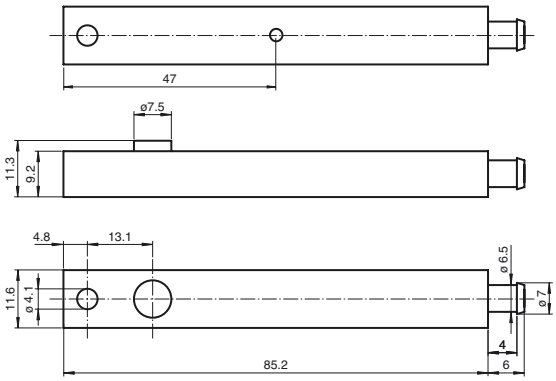
Features

- Single-beam monitoring with extremely narrow sensor
- Integrated circuit
- Test
- Simple installation - Plug & Play
- Ideal for installation in door profiles or frames
- Light on version

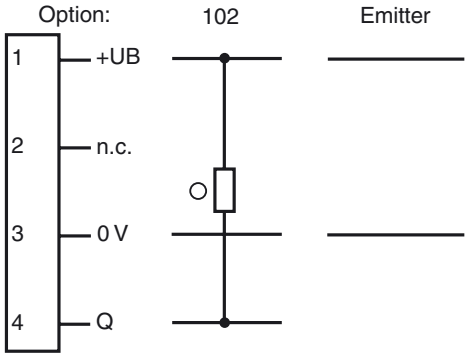
Product information

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.

Dimensions



Electrical connection



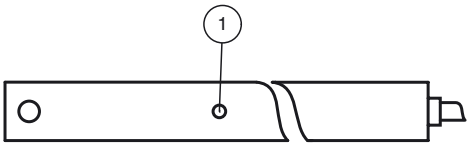
○ = Light on
● = Dark on

Pinout

Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)

Indicators/operating means



1	Functional display	red	only Receiver

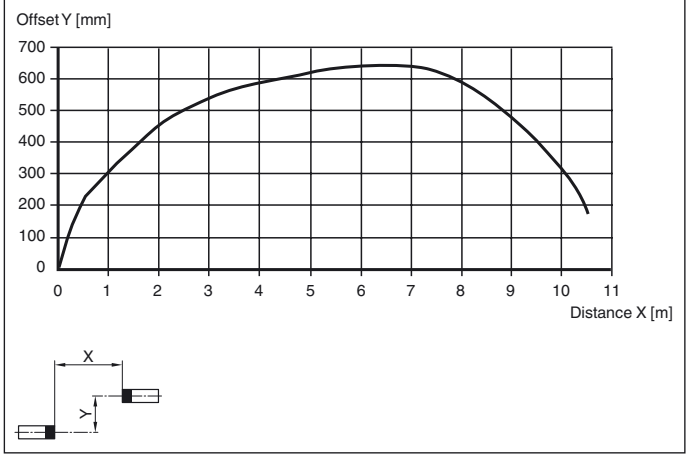
Release date: 2019-12-18 11:19 Date of issue: 2019-12-18 129310_eng.xml

Technical data

System components		
Emitter		ML29-T/143
Receiver		ML29-R/25/102/143
General specifications		
Effective detection range		0 ... 6 m
Threshold detection range		8.5 m
Light source		IRED
Light type		modulated infrared light
Angle of divergence		+/- 8 °
Optical face		lateral
Ambient light limit		40000 Lux
Functional safety related parameters		
$MTTF_d$		880 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	11 ... 30 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		light on
Signal output		1 NPN output, short-circuit protected, reverse polarity protected, open collector
Switching voltage		max. 30 V DC
Switching current		max. 0.1 A
Switching frequency	f	100 Hz
Response time		5 ms
Conformity		
Product standard		EN 60947-5-2
Ambient conditions		
Ambient temperature		-20 ... 60 °C (-4 ... 140 °F)
Storage temperature		-20 ... 75 °C (-4 ... 167 °F)
Relative humidity		90 % , noncondensing
Mechanical specifications		
Degree of protection		IP65
Connection		4-pin plastic connector, 6.5 mm diameter
Material		
Housing		PMMA , black
Optical face		Plastic pane
Mass		per device 120 g
Compliance with standards and directives		
Standard conformity		
Standards		EN 61000-6-2, EN 61000-6-3
Approvals and certificates		
CCC approval		CCC approval / marking not required for products rated ≤36 V

Curves/Diagrams

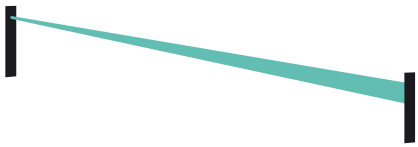
Characteristic response curve



Typical applications

- 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

Detection area



Accessories

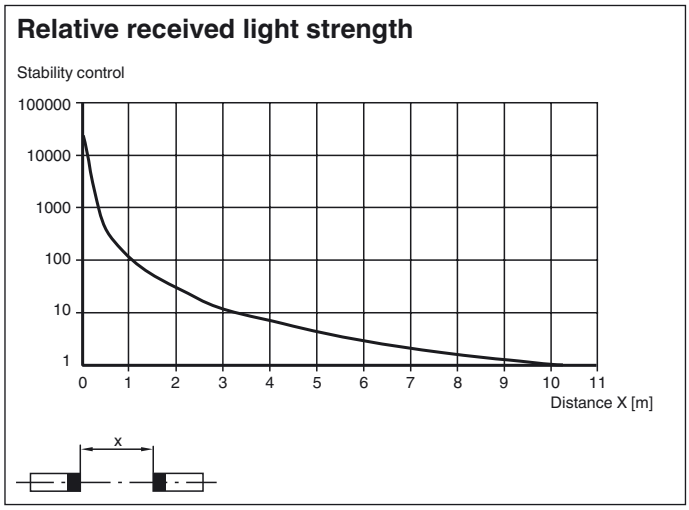
ML29 Kupplungsdose 6m 4polig
Female cordset with 6 m cable for ML29 series sensors

ML29 Front Plate
Front plate for thru-beam sensors in series ML29

ML29 Kupplungsdose 3m 4polig
Female cordset with 3 m cable for ML29 series sensors

Other suitable accessories can be found at www.pepperl-fuchs.com

Release date: 2019-12-18 11:19 Date of issue: 2019-12-18 129310_eng.xml



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.

Function

Static detection:

The thru-beam sensor 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.

Testing:

Testing is used to check the function of the light beam switch.

With supply voltage $+U_B < 5$ V the emitter device is switched off. This simulates a light beam interruption. By means of this, the function of the light barrier can be tested easily without using a separate test input.

Installation:

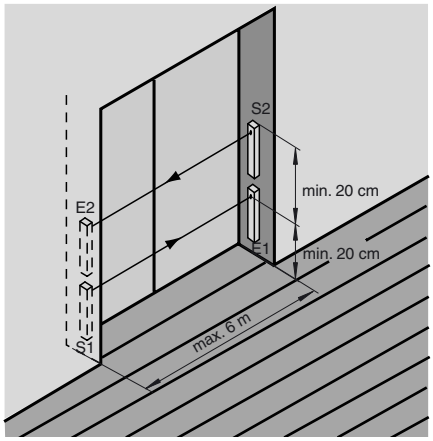
Thanks to its small dimensions, the light beam can be fitted in a U-profile or behind a face panel.The hole diameter for both the emitter and the receiver is 8 mm.

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

Installation of twin-beam arrangement:

Release date: 2019-12-18 11:19 Date of issue: 2019-12-18 129310_eng.xml

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.



Release date: 2019-12-18 11:19 Date of issue: 2019-12-18 129310_eng.xml