

Art-Nr.602043



**Features**

- Robust metal housing with glass lens, protection class IP 65 for industrial application
- Integrated optics heating



**Safety note:**

The protective throughbeam photoelectric sensor is a contactless active protective device only in connection with a safety-relevant control system, in which the cyclical testing of transmitter and receiver is carried out according to EN 61496-1, category 2 (testing).



**Safety note for test function:**

- 1 For correct testing, the activation input of the SLS 78's transmitter must be connected with the test monitoring unit.
- 2 The test time may not exceed 150 ms with access guarding.
- 3 The output switching elements of the test monitoring device must stay in the OFF state for at least 80 ms after responding to the sensor unit, so that downstream connected devices are safely switched off when the Light Beam Device is being used as access guarding.

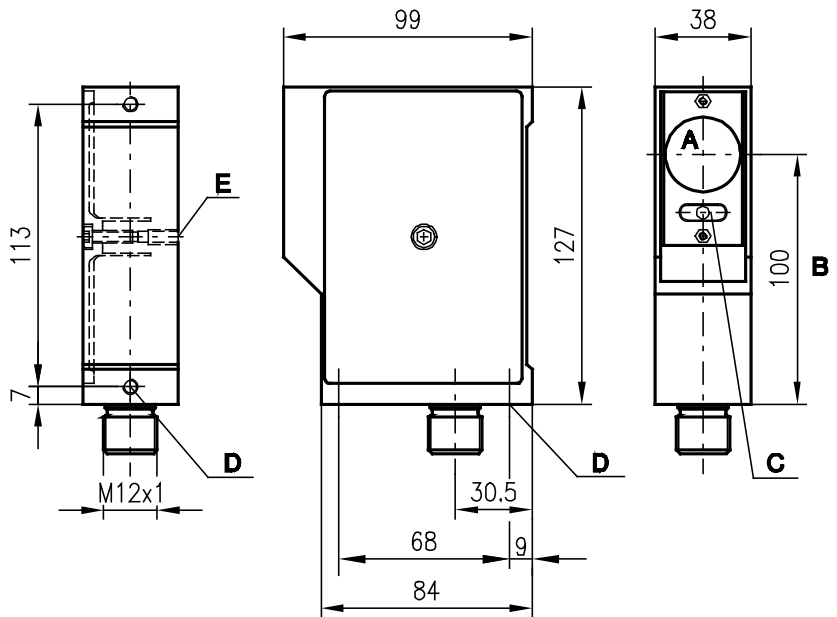
Use of Leuze electronic Test Monitoring Units, such as the TNT 35 or MSI-m, are recommended so that points 2/3 are satisfied.

The power supply unit used to operate the photoelectric sensor must be able to compensate for changes and interruptions of the supply voltage acc. to EN 61496-1.

Minimum blackening object: Ø30mm.

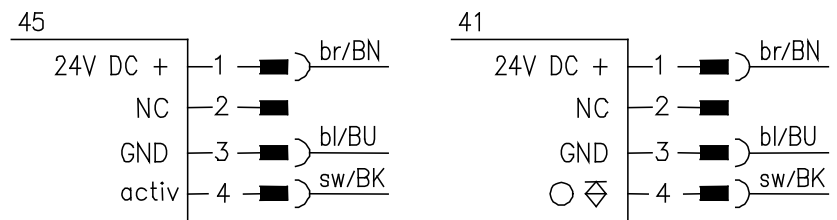


**Dimensional drawing**



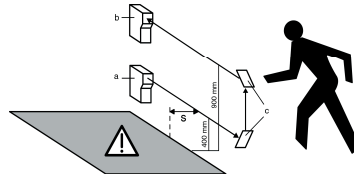
- A Transmitter/receiver
- B Optical axis
- C Indicator diodes
- D Device fixture M6x 9
- E Device fixture M6x 12

**Electrical connection**



**Safety distance**

The Light Beam Safety Device must be mounted at a great enough distance from the dangerous movement. If the light beam is interrupted, it must only be possible to reach the danger zone when the machine has already stopped its movement.



The safety distance "S" between the Light Beam Device and the danger zone is calculated with the following formula:

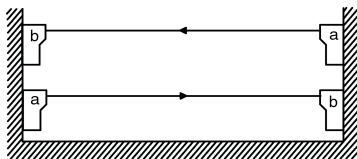
**S = (K·T)+C (in acc. With EN 999)**

- S Safety distance between Light Beam Device and danger zone (mm)
- K Approach speed (constant 1600 mm/s)
- T Delay time between beam interruption and machine standstill (s)
- C Safety constant = 850 mm

Änderungen vorbehalten

**Multiple beam setup**

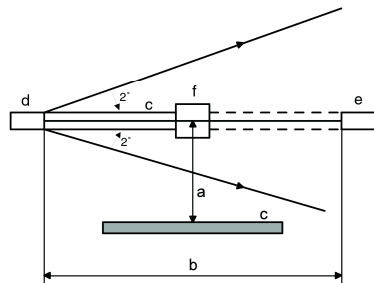
With multiple beam setups the light beams must be parallel to the reference plane (e.g. floor) and aligned parallel with one another.



a Transmitter  
b Receiver

**Distance to reflective surfaces**

A sufficiently great enough distance from the optical axis to reflective surfaces must be set with the installation.



a Distance to reflective surface  
b Protective field width  
c Reflective surface  
d Transmitter  
e Receiver  
f Object

**! Safety note:**

Testing before a machine's first start-up and after a relocation or repair of the optical protective device or any other safety components will ensure that these have been correctly selected and provide the required protection.

To perform the test the beam must be interrupted between the transmitter and receiver with a test rod (30 mm diameter).

Regular inspections are carried out in accordance with local regulations. These will reveal changes (e.g. changed stopping time) or manipulations to the machine or protective device, among other factors.

**Technical data**

**Optical data**

Typ. operating range limit <sup>1)</sup>	0 ... 150m
Operating range	0 ... 120m
Light source	LED
Wavelength	880 nm

**Timing**

Switching frequency	300Hz
Response time	1.7 ms
Delay before start-up	≤ 200 ms
Input pulse	Min. 1.7 ms

**Electrical data**

Operating voltage U <sub>B</sub> <sup>2)</sup>	24VDC ± 20%
Residual ripple	≤ 15% von U <sub>B</sub>
Bias current	Receiver ≤ 55mA Transmitter ≤ 70mA
Switching output	pnp transistor output, (short circuit-proof) Leakage current 300 µA Max. voltage in off state, 1.6 V
Max. load capacity	4 µF
Max. load inductivity	2.0 H
Function characteristics	Light switching
Signal voltage high/low	≥ (U <sub>B</sub> -2V) ≤ 2V
Output current	Max. 200mA

**Indicators**

**Receiver**

LED red	Light path interrupted
LED green	Light path free
LED green flashing	Light path free, no performance reserve

**Transmitter**

LED yellow	Transmitter ON
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**Mechanical data**

Housing	Die cast aluminum
Optics	Glass, eff. angle of radiation ±4° acc. to EN IEC 61496/-1-2
Weight	463g
Connection type	Terminals, max. 2.5mm <sup>2</sup>

**Environmental data**

Ambient temp. (operation/storage)	-25°C ... +60°C / -30°C ... + 70°C
VDE safety class	III
Protective circuit <sup>3)</sup>	1, 2, 3
Protection class	IP 65
Standards applied	IEC 60947-5-2

**Options**

Activation input active	
Transmitter active/not active	≥ 8V / ≤ 2V or not connected
Activation/disable delay	≤ 400µs
Input resistance	4.6kΩ ± 10%

1) Typ. operating range limit: max. attainable range without performance reserve  
2) Operating range: recommended range with performance reserve  
3) 2=polarity reversal protection, 3=short circuit protection

**Ordering information**

Article no.	Article	Description
	SLS 78M/P-1730-T2-4	Transmitter and Receiver
500 29536	SLSS 78M-1720-T2-45	Receiver
500 80323	SLSE 78 M/P-1730-T2-41	Transmitter

**Accessories (available separately)**

- Mounting system (B 763)
- Alignment aid ARH2
- Test-monitoring units, e.g: TNT 35 (Part No. 500 33058), TMC 66 (Part No. 500 82121)