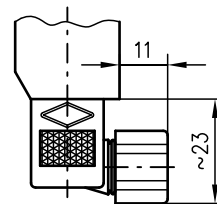
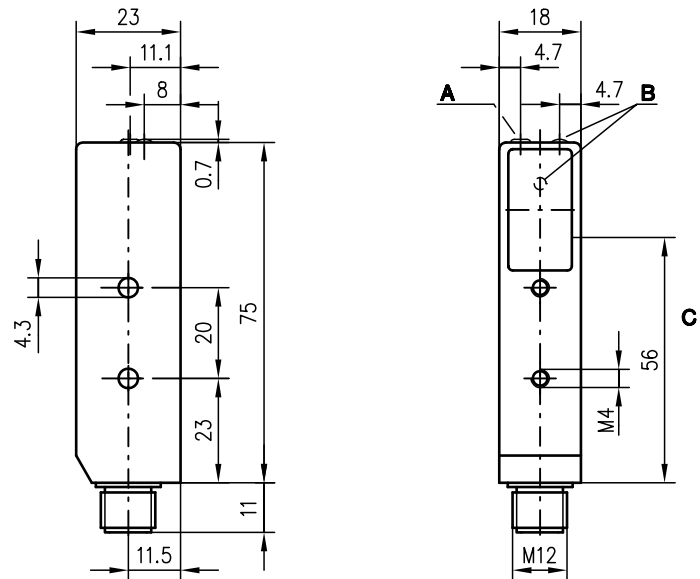


LS 97

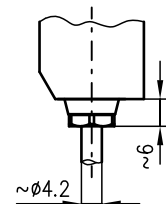
Throughbeam photoelectric sensors



Dimensioned drawing



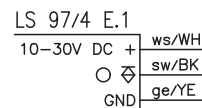
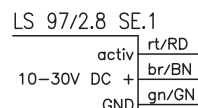
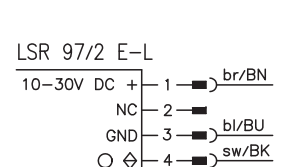
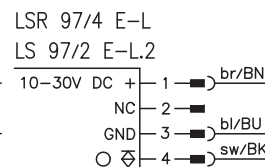
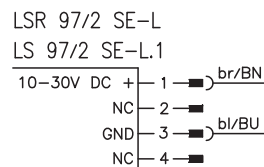
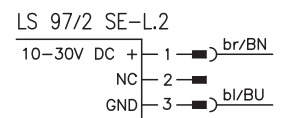
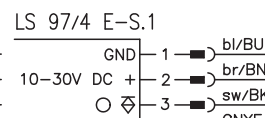
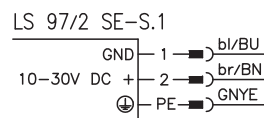
LS 97/2 SE-S.1
LS 97/4 E-S.1



LS 97/2.8 SE.1
LS 97/4 E.1

- A** Sensitivity adjustment (only for LS 97/4 E-L.2)
- B** Indicator diode
- C** Optical axis

Electrical connection



9m

10 - 30 V
DC

- Throughbeam photoelectric sensor with infrared light or visible red light
- Small construction with glass cover and robust metal housing for protection against environmental influences
- Connection via M12 connector, plug or cable
- Activation input for testing and interlinking
- Additional indicator diode on the front part (for exact alignment)



Accessories:

(available separately)

- Mounting systems (BT 92, UMS 1, UMS 96-95)
- Diaphragm (BL 97.1)
- M12 connectors (KD ...)
- Ready-made cables (KB ...)



Specifications

Optical data

Typ. operating range limit ¹⁾
Operating range ²⁾
Light source
Wavelength

LS 97...

0 ... 9m
0 ... 5m
LED (modulated light)
880nm (infrared)/660nm (visible red light)

LS 97/4 L.2

0 ... 6m
0 ... 3.5m

Timing

Switching frequency
Response time
Delay before start-up

200Hz
2.5ms
≤ 100ms

Electrical data

Operating voltage U_B
Residual ripple
Bias current
Switching output
Function characteristics
Signal voltage high/low
Output current
Sensitivity

10 ... 30VDC (incl. residual ripple)
≤ 15% of U_B
≤ 40mA
PNP or NPN transistor output
light switching
≥ ($U_B - 2V$) / ≤ 2V
max. 100mA

adjustable with
12-turn potentiometer

Indicators

LED yellow
LED yellow flashing

light path free
light path free, no performance reserve

Mechanical data

Housing
Optics cover
Weight
Connection type

diecast zinc
glass
85g
M12 connector 4-pin, stainless steel,
connector 4-pin or cable 2m (cross section 3x0.25mm²)

Environmental data

Ambient temp. (operation/storage)
Protective circuit ³⁾
VDE safety class ⁴⁾

-20°C ... +60°C / -30°C ... +70°C
2, 3
I (for S types)
II, all-insulated (for all L and cable types)
IP 67/IP 65 (for all S types)
1 (acc. to EN 60825-1)
IEC 60947-5-2

Options

Activation input active
Transmitter active/not active

≥ 8V / ≤ 2V or not connected

- 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 for all outputs
4) Rating voltage 250VAC

Tables

LS 97...

0	5	9
---	---	---

Operating range [m]
Typ. operating range limit [m]

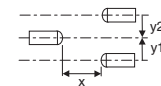
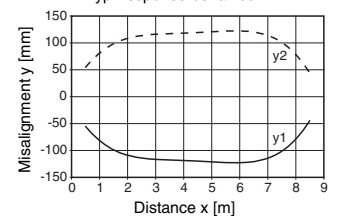
LS 97/4 L.2

0	3.5	6
---	-----	---

Operating range [m]
Typ. operating range limit [m]

Diagrams

Typ. response behaviour



Order guide

Selection table		Order code →							
Equipment ↓		LSR 97/2 L Part No. 500 29648 (Tr) Part No. 500 29647 (Re)	LS 97/4 S.1 Part No. 500 29651 (Tr) Part No. 500 29655 (Re)	LSR 97/4 L Part No. 500 29648 (Tr) Part No. 500 29649 (Re)	LS 97/4 L.2 Part No. 500 29650 (Tr) Part No. 500 29654 (Re)	LS 97/4.8.1 Part No. 500 29652 (Tr) Part No. 500 29653 (Re)			
Switching output	PNP transistor		●	●	●	●			
	NPN transistor	●							
Light source	red light	●		●					
	infrared light		●		●	●			
Connection	M12 connector	●		●	●				
	cable					●			
	plug		●						
Features	sensitivity adjustment				●				
	activation input					●			
	UL	●	●	●	●				

Remarks

- The S types are shipped with connectors.