



LS 96

Throughbeam photoelectric sensors



39m
65m



- Throughbeam photoelectric sensors with high performance reserve in visible red light or infrared light
- Robust metal housing with glass cover or plastic housing, protection class IP 67 for industrial application
- Complementary outputs for standard applications and a wide range of input and output variants for optimum adaptation to the application
- Multiple options with warning output, activation input, switching delays and optics heating for use at low temperatures

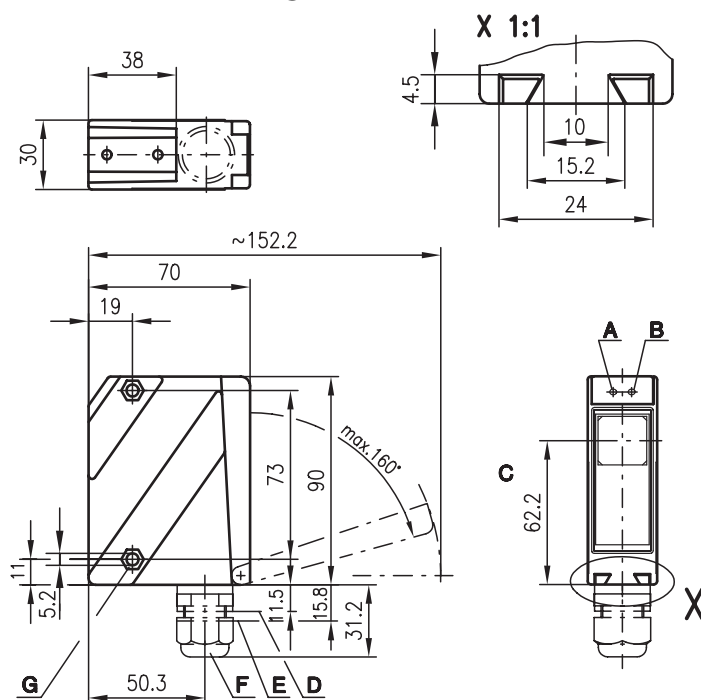


Accessories:

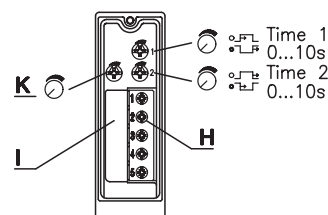
(available separately)

- Mounting systems (BT 96, BT 96.1, UMS 96, BT 450.1-96)
- M12 connectors (KD ...)
- Ready-made cables (K-D ...)
- Alignment aid ARH 96

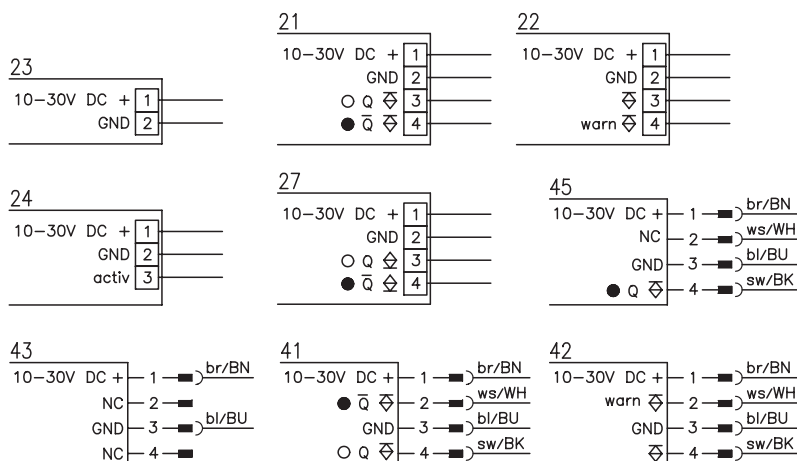
Dimensioned drawing



- A** Indicator diode green
- B** Indicator diode yellow
- C** Optical axis
- D** Device plug M12x1
- E** Device plug M18x1
- F** Screwed cable gland M16x1.5 for Ø 5 ... 10mm
- G** Countersinking for SK nut M5, 4.2 deep
- H** Connection terminals
- I** Cable entry
- K** Sensitivity adjustment



Electrical connection



Specifications

Optical data

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

Infrared light

0 ... 65m
0 ... 50m
LED (modulated light)
880nm

Red light

0 ... 39m
0 ... 30m
LED (modulated light)
660nm

Timing

Switching frequency
Response time
Delay before start-up

500Hz
1 ms
≤ 200ms

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
≤ 50mA, ≤ 130mA with optional optics heating
NPN or PNP transistor
light/dark switching
≥ ($U_B - 2V$) ≤ 2V (PNP)
max. 100mA
adjustable

Indicators

LED green
LED yellow
LED yellow flashing

ready
light path free
light path free, no performance reserve

Mechanical data

Housing
Optics cover
Weight
Connection type

Plastic housing
polycarbonate
plastic
150g
terminals or M12 connector

Environmental data

Ambient temp. (operation/storage)
Protective circuit ³⁾
VDE safety class ⁴⁾
Protection class
LED class
Standards applied

-20°C ... +60°C/-40°C ... +70°C
1, 2, 3
II, all-insulated
IP 67
1 (acc. to EN 60825-1)
IEC 60947-5-2

Options

Activation input activ
Transmitter active/not active
Activation/disable delay
Input resistance

≤ 2V/≥ 8V ⁵⁾
≤ 0.5ms
47KΩ ± 10%

Warning output autoControl warn

Optics heating

Low temperature

Switching delay (slow oper./release)

PNP transistor, 100mA, counting principle
for temperature changes, prevents fogging
to -35°C
0 ... 10s (separately adjustable)

- 1) Typ. operating range limit: max. attainable range without performance reserve
- 2) Operating range: recommended range with performance reserve
- 3) 1=transient protection, 2=polarity reversal protection, 3=short-circuit protection for all outputs
- 4) Rating voltage 250VAC
- 5) Active low

Order guide

Selection table		Order code →					
Equipment ↓		LS 96K/P-1010-4 Part No. 500 25254 (Tr) Part No. 500 25258 (Re)	LS 96K/P-1030-2 Part No. 500 25255 (Tr) Part No. 500 25259 (Re)	LS 96K/P-1030-4 Part No. 500 25254 (Tr) Part No. 500 80483 (Re)	LS 96K/P-1140-2 Part No. 500 80657 (Tr) Part No. 500 31295 (Re)	LS 96K/P-1015-4 Part No. 500 25254 (Tr) Part No. 501 03004 (Re)	LS 96K/P-1010.1-4 Part No. 500 25254 (Tr) Part No. 501 03218 (Re)
Housing	metal						
	plastic	●	●	●	●	●	●
Light source	red light (30m)				●		
	infrared light (50m)	●	●	●		●	●
Connection	terminals		●		●		
	M12 connector	●		●		●	●
Features	switching delay		●	●			
	warning output						
	activation input				● 5)		
	PIN 2 = NC *					●	●
	PIN 4 = dark switching					●	
	PIN 4 = light/dark reversible						●

Tables

Red light

0	30	39
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Infrared light

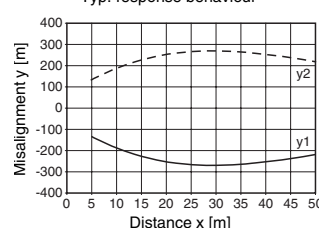
0	50	65
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Operating range [m]
Typ. operating range limit [m]

Diagrams

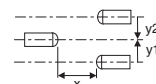
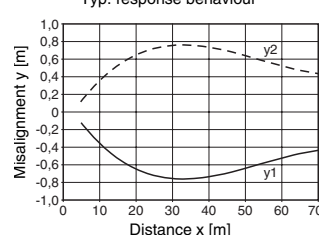
Red light

Typ. response behaviour



Infrared light

Typ. response behaviour



Remarks

- The throughbeam photoelectric sensor is also available with integrated AS-i chip for direct connection to the AS-i system.
- *For direct connection to AS-i I/O coupling modules (LS 96K/P-1015-4 and LS 96K/P-1010.1-4)