



LS 96

Throughbeam photoelectric sensors



39m



- Powerful throughbeam photoelectric sensors with performance reserve in visible red light
- Wide angle version for easy alignment
- Robust metal housing with glass cover, protection class IP 67/IP 69K for industrial application
- Complementary outputs, sensitivity adjustment and delay before start-up for optimal adaptation to the application
- Connection via M12 connector or comfortable terminal compartment up to 1.5mm²

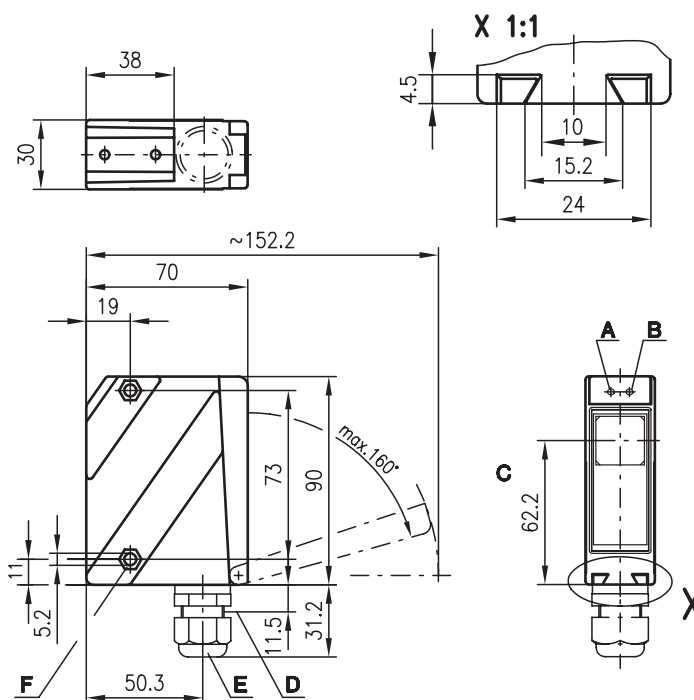


Accessories:

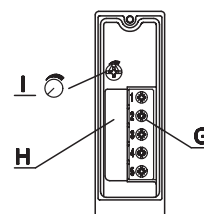
(available separately)

- 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

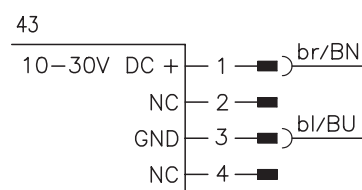
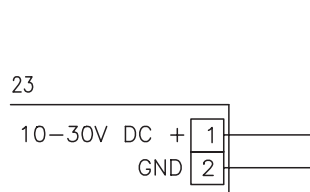


- A** Indicator diode green
- B** Indicator diode yellow
- C** Optical axis
- D** Device plug M12x1
- E** Screwed cable gland M16x1.5 for Ø 5 ... 10mm
- F** Countersinking for SK nut M5, 4.2 deep
- G** Connection terminals
- H** Cable entry
- I** Sensitivity adjustment

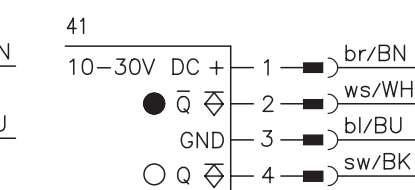
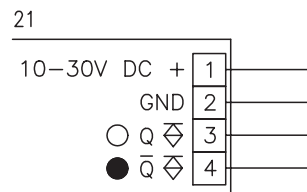


Electrical connection

Transmitter



Receiver



Specifications

Optical data

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

Red light

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

Timing

Switching frequency 500Hz
Response time 1ms
Delay before start-up ≤ 200ms

Electrical data

Operating voltage U_B 10 ... 30VDC (incl. residual ripple)
Residual ripple ≤ 15% of U_B
Bias current ≤ 50mA
Switching output PNP transistor
Function characteristics light/dark switching
Signal voltage high/low ≥ ($U_B - 2V$) ≤ 2V (PNP)
Output current max. 100mA
Sensitivity adjustable

Indicators

LED green ready
LED yellow light path free
LED yellow flashing light path free, no performance reserve

Mechanical data

Housing diecast zinc
Optics cover glass
Weight 380g
Connection type terminals, M12 connector

Environmental data

Ambient temp. (operation/storage) -20°C ... +60°C/-40°C ... +70°C
Protective circuit ³⁾ 1, 2, 3
VDE safety class ⁴⁾ II, all-insulated
Protection class IP 67, IP 69K ⁵⁾
LED class 1 (acc. to EN 60825-1)
Standards applied IEC 60947-5-2

- 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) IP 69K test acc. to DIN 40050 part 9 simulated, high pressure cleaning conditions without the use of additives, acids and bases are not part of the test

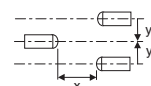
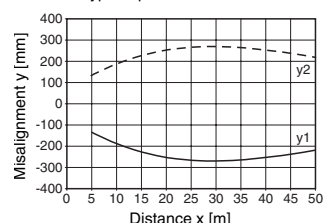
Tables

0	30	39
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	Operating range [m]
	Typ. operating range limit [m]

Diagrams

Typ. response behaviour



Remarks

- Angle at a distance of 3m:
transmitter:
angle of radiation typ. 10°
receiver:
receiving angle typ. 12°

Order guide

Selection table		Order code →						
Equipment ↓		LS 96M/P-181W-4 Part No. 500 31574 (Tr) Part No. 500 31575 (Re)	LS 96M/P-181W-2 Part No. 500 32835 (Tr) Part No. 500 32741 (Re)	LS 96M/P-1816-4 Part No. 500 32129 (Tr) Part No. 500 32128 (Re)				
Housing	metal	●	●	●				
Light source	red light (30m)	●	●	●				
Connection	terminals		●					
	M12 connector	●		●				
Features	fixed sensitivity setting	●	●	●				
	optics heating/low temp.			●				

LS = Pair consisting of
LSS = Transmitter
LSE = Receiver

LS 96M/P-181W-4

LSS 96M-120W-43
LSE 96M/P-181W-41

LS 96M/P-181W-2

LSS 96M-120W-23
LSE 96M/P-181W-21

LS 96M/P-1816-4

LSS 96M-1206-43
LSE 96M/P-1816-41