

LS 96

Throughbeam photoelectric sensors

en 2019/05/21 50142047



150m

10 - 30 V
DC

- Throughbeam photoelectric sensors with high function reserve in infrared light
- Robust metal housing with glass cover, degree of protection 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 terminal compartment
- Multiple options with warning output, activation input, switching delays and optics heating for use at low temperatures

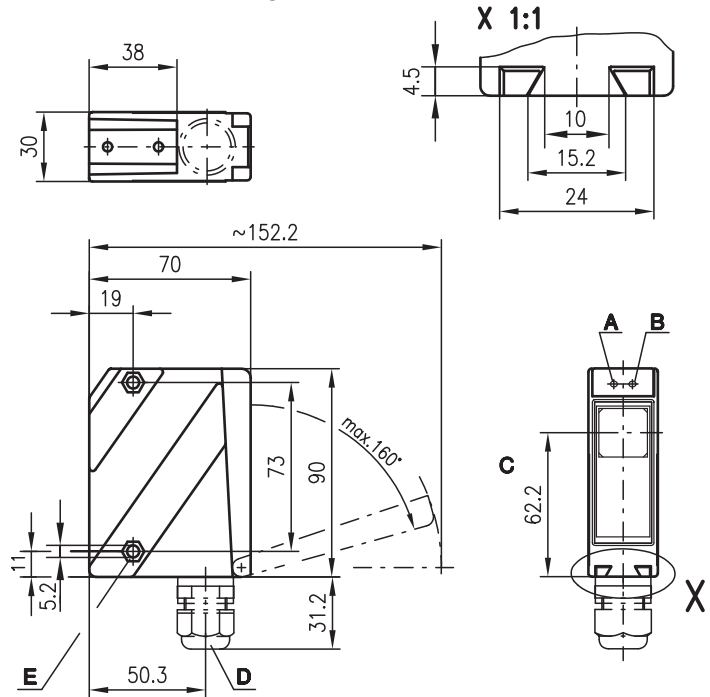


Accessories:

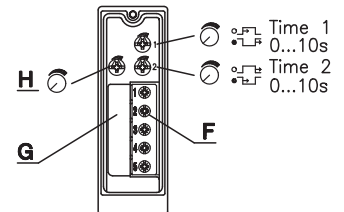
(available separately)

- Mounting systems (BT 96, BT 96.1, UMS 96, BT 450.1-96)
- M12 connectors (KD ...)
- Alignment aid ARH 96

Dimensioned drawing

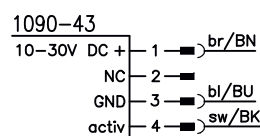
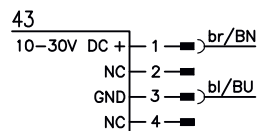
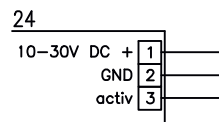


- A Green indicator diode
B Yellow indicator diode
C Optical axis
D Device plug M12x1
E Screwed cable gland M16x1.5 for Ø 5 ... 10mm
F Countersinking for SK nut M5, 4.2 deep
G Connection terminals
H Cable entry
I Sensitivity adjustment

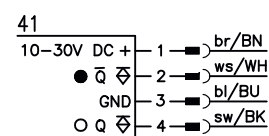
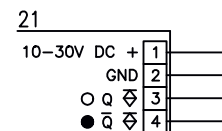
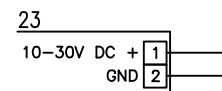


Electrical connection

Transmitter



Receiver



Technical data

Optical data

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

Infrared light

0 ... 150m
0 ... 120m
LED (modulated light)
880nm

Time behavior

Switching frequency 500Hz
Response time 1ms
Readiness delay ≤ 200ms

Electrical data

Operating voltage U_B 10 ... 30VDC (incl. residual ripple)
Residual ripple ≤ 15% of U_B
Open-circuit current ≤ 50mA, ≤ 130mA optics heating option
Switching output PNP transistor
Function Light/dark switching
Signal voltage high/low ≥ ($U_B - 2V$) ≤ 2V (PNP)
Output current Max. 100mA
Sensitivity Adjustable

Indicators

Green LED Ready
Yellow LED Light path free
Yellow LED, flashing Light path free, no function reserve

Mechanical data

Housing Diecast zinc
Optics cover Glass
Weight 380g
Connection type Terminals, M12 connector

Environmental data

Ambient temp. (operation/storage) -30°C ... +60°C/-40°C ... +70°C
Protective circuit ³⁾ 1, 2, 3
VDE protection class ⁴⁾ II, all-insulated
Degree of protection IP 67, IP 69K ⁵⁾
LED class 1 (acc. to EN 60825-1)
Standards applied IEC 60947-5-2

Additional functions

Activation input active
Transmitter active/not active ≥ 8V/≤ 2V (≥ 2V/≤ 2V) ⁶⁾
Activation/disable delay ≤ 0.5ms
Input resistance 47KΩ ± 10%
Warning output autoControl warn PNP transistor, 100mA, counting principle
Optics heating For temperature changes, prevents fogging
Low temperature to -35°C
Switching delay (slow oper./release) 0 ... 10s (separately adjustable)

- 1) Typ. operating range limit: max. attainable range without function reserve
2) Operating range: recommended range with function 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
6) Active high

Order guide

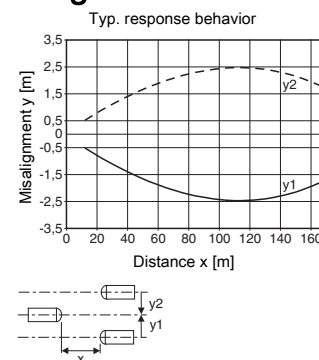
Selection table		Order code →					
Equipment ↓		LS 96M/P-3010-2 Part No. 500 25225 (Tr) Part No. 500 34128 (Re)	LS 96M/P-3010-4 Part No. 500 25228 (Tr) Part No. 500 34128 (Re)	LS 96M/P-3012-2 Part No. 500 25223 (Tr) Part No. 500 33328 (Re)	LS 96M/P-3012-4 Part No. 501 03290 (Tr) Part No. 501 03291 (Re)		
Housing	Metal	●	●	●	●		
Light source	Infrared light (120m)	●	●	●	●		
Connection	Terminals	●		●			
	M12 plug		●		●		
Features	Optics heating/low temperature			●	●		
	Activation input			● 6)	● 6)		

Tables

0	120	150
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Operating range [m]
Typ. operating range limit [m]

Diagrams



Notes

LS = Pair consisting of
LSS = Transmitter
LSE = Receiver

LS 96M/P-3010-2

LSS 96M-1070-23
LSE 96M/P-3010-21

LS 96M/P-3010-4

LSS 96M-1070-43
LSE 96M/P-3010-41

LS 96M/P-3012-2

LSS 96M-1090-24
LSE 96M/P-3012-21

LS 96M/P-3012-4

LSS 96M-1090-43
LSE 96M/P-3012-41