LS 96 — Throughbeam photoelectric sensors

39 m

- Throughbeam photoelectric sensors with high performance reserve in red light
- Robust metal housing with glass cover, protection class IP 67/IP 69K for industrial application
- Receiver with integrated AS-i slave technology
- Transmitter without integrated AS-i slave technology; receives voltage supply via AS-i line
- Wide angle version to simplify the alignment

IEC 60947... IEC 60947... IP 69K IP 67

Accessories:

(available separately)

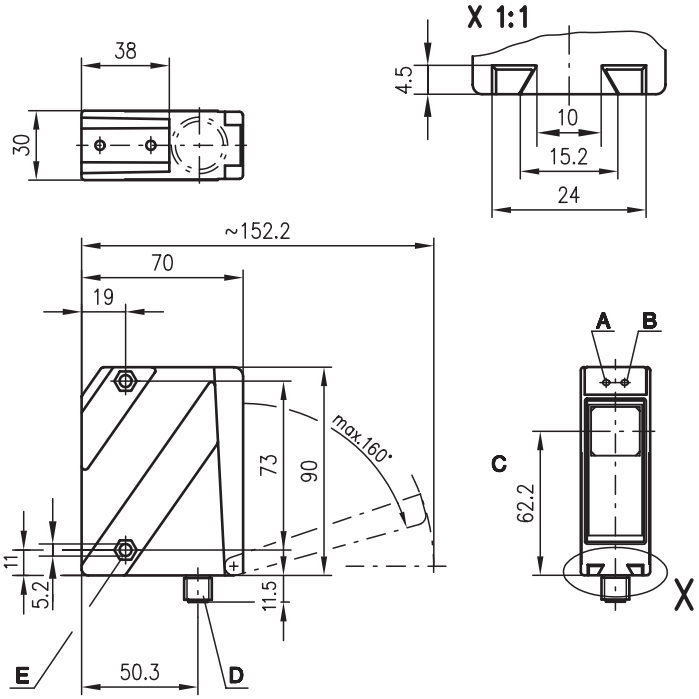
- Mounting systems (BT 96, BT 96.1, UMS 96, BT 450.1-96)
- M12 connectors
- Ready-made cables (K-D …)
- Alignment aid ARH 96

AS-i Accessories:

(available separately)

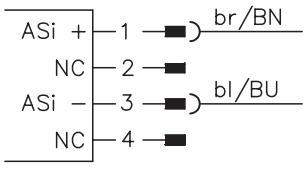
- Bus terminals
- AS-i ribbon cable
- Address programming device
- Coupling modules, intermediate cables, etc.

Dimensioned drawing



A Indicator diode green
B Indicator diode yellow
C Optical axis
D Device plug M12x1
E Countersinking for SK nut M5, 4.2 deep

Electrical connection



Specifications

Optical data

Typ. operating range limit [1]	0 … 39m
Operating range [2]	0 … 30m
Light source	LED (modulated light)
Wavelength	660nm (red light)

Timing

Sensor switching frequency	500Hz
Sensor response time	1ms
Delay before start-up	≤ 200ms

Electrical data

Operating voltage U_B	26.5 … 31.6V (according to AS-i specification)
Bias current receiver	≤ 35mA
Bias current transmitter	≤ 15mA

Indicators

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

Mechanical data	**Metal housing**
Housing	diecast zinc
Optics cover	glass
Weight	380g
Connection type	M12 connector

Environmental data

Ambient temp. (operation/storage)	-20°C … +60°C/-40°C … +70°C
Protective circuit [3]	1, 2
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

AS-i data for receiver

I/O code	1
ID code	1
Cycle time acc. to AS-i specification	5ms
AS-i standard according to profile	S-1.1

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
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

Assignment: data bits				Assignment: parameter bits			
		Programming (host level)				Programming (host level)	
D_0	**Switching output**	Ø no reflection	System input	$*P_0$	**NC**	Ø	System parameter
		1 reflection				1	
D_1	**Warning output autoControl**	Ø active	System input	$*P_1$	**Light/dark switching**	Ø dark switching	System parameter
		1 not active				1 light switching	
D_2	**Ready output**	Ø sensor not ready	System input	$*P_2$	**NC**	Ø	System parameter
		1 sensor ready				1	
$*D_3$	**NC**	Ø		$*P_3$	**NC**	Ø	System parameter
		1				1	

* default = 1

Order guide

	Designation	Part No.
Transmitter and receiver	**LS 96M/A-182W-4**	
Transmitter	LSS 96 M-180W-44	500 82040
Receiver	LSE 96 M/A-182W-44	500 82039

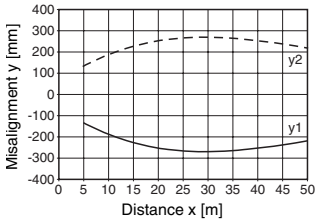
Tables

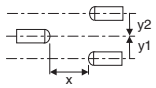
0	30	39

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

Diagrams

Typ. response behaviour





Remarks

- The transmitter has no integrated AS-i slave technology.
- The low current consumption of the transmitter enables power supply via AS-i line.
- Transmitter and receiver behave like a slave in an AS-i branch.

  Angle at 3m distance:
  Transmitter:
  Angle of radiation typ.: 10°
  Receiver:
  Receiving angle typ.: 12°