



LS 78

Throughbeam photoelectric sensors

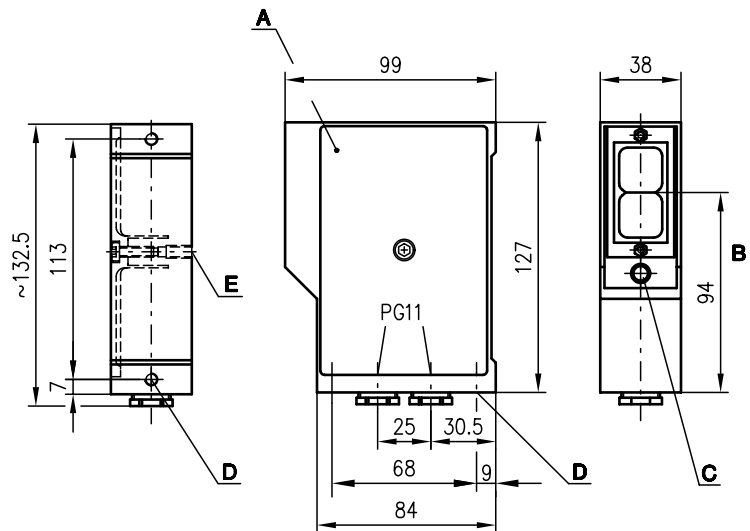


180m

10 - 30 V
DC

- Voltage range from 12 ... 30VDC with NPN, PNP and/or relay outputs
- Light/dark switching
- Universal connection via terminals
- Additional plug-in time module
- Integrated optics heating

Dimensioned drawing

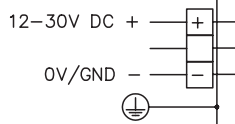


- A Removable lid • cheese head screw DIN 6912 M5x16 (machined)
- B Optical axis
- C Indicator diodes
- D Device fixture M6x9
- E Device fixture M6x12

Electrical connection

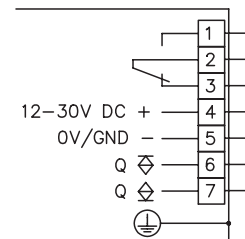
Transmitter

LS 78/2 SE



Receiver

LS 78/24 RE



Accessories:

(available separately)

- Mounting systems (BT 16, UMS 78)
- Fastening adapter BT 08
- Diaphragm BL 04
- Time module transient pulses ZK 7810
- Time module slow operation/release ZK 7820
- Alignment aid ARH 2

We reserve the right to make changes • 78_a01e.fm



Specifications

Optical data

Typ. operating range limit ¹⁾	180m
Operating range ²⁾	120m
Light source	LED (modulated light)
Wavelength	880nm

Timing

Sensor switching frequency	100Hz (PNP/NPN) 20Hz (relay)
Sensor response time	5 ms (PNP/NPN) approx. 25ms (relay)
Delay before start-up	≤ 200ms

Electrical data

Operating voltage U _B	12 ... 30VDC
Power consumption	approx. 600mW (PNP/NPN) approx. 3.5VA (relay)
Residual ripple	≤ 15% of U _B
Bias current	≤ 70mA (PNP/NPN) max. 120mA (relay)
Switching output	PNP/NPN transistor output or relay
Function characteristics	Light/dark switching through sliding switch
Signal voltage high/low	≥ (U _B -2V)/≤ 2V (PNP/NPN)
Output current	max. 100mA (PNP/NPN)
Switching voltage, relay	max. 240VAC with resistive load
Switching current, relay	max. 2.5AAC with resistive load

Indicators

LED red	light path interrupted
LED green	light path free

Mechanical data

Housing	diecast aluminium
Weight	transmitter 600g, receiver 600g
Optics	glass lens
Connection type	screw terminals

Environmental data

Ambient temp. (operation/storage) ³⁾	-20°C ... +60°C/-30°C ...+70°C
Protective circuit ⁴⁾	1, 2, 3
VDE safety class	I, all-insulated
Protection class	IP 65
LED class	1 (acc. to EN 60825-1)
Standards applied	IEC 60947-5-2

Options

De-humidifying system to prevent condensation on the optics due to temperature changes

- 1) Typ. operating range limit: max. attainable range without performance reserve
- 2) Operating range: recommended range with performance reserve
- 3) -30°C with operating voltage continuously applied
- 4) 1=transient protection, 2=polarity reversal protection, 3=short circuit protection

Order guide

	Designation	Part No.
Transmitter and receiver	LS 78/24 R	
Transmitter	LS 78/2 SE	500 00229
Receiver	LS 78/24 RE	500 06684

Tables

Diagrams

Remarks

The standard devices are expandable through plug-in time modules:

- Time module ZK 7810 (transient pulses), slow operation and pulse length adjustable from 0.1s ... 5s.
- Time module ZK 7820 (slow operation and release), slow operation and release separately adjustable from 0.2s ... 10s.

See figure for adjustment:

