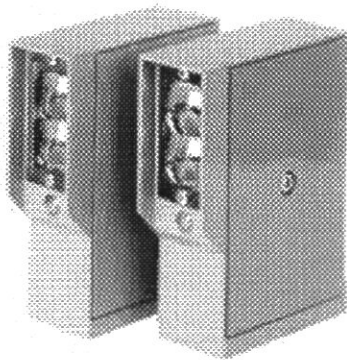




LS 78

Throughbeam photoelectric sensors



180m
450m

115/230 V
AC

24/48 V
AC

24 V
DC

24 / 42 V
AC

- AC voltage 115/230V, 24/42V, 24/48V and DC voltage 24V
- Light/dark switching in each device
- Universal connection via terminals
- Devices with integrated or separate add-on time module
- Special type with activation input

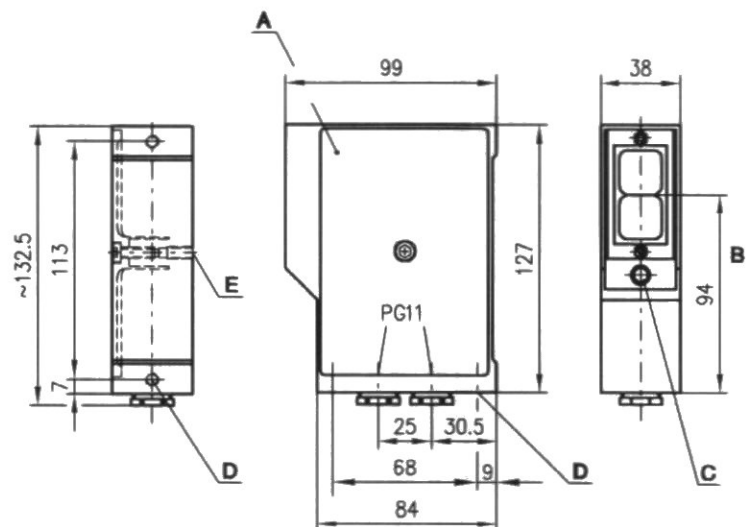


Accessories:

(available separately)

- Mounting systems (BT 16, UMS 78)
- Alignment aid ARH 2
- Test monitoring unit:
 - TNT 32 (Part No. 500 20476)
 - TNT 33 (Part No. 500 28158)
 - TNT 34 (Part No. 500 81023)

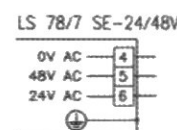
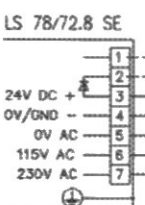
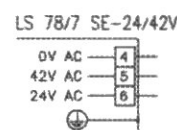
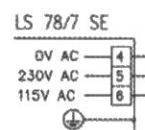
Dimensioned drawing



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

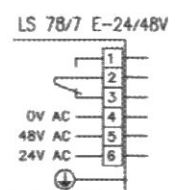
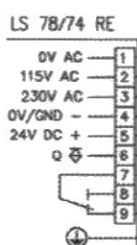
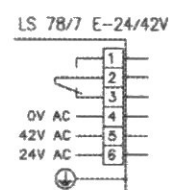
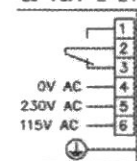
Electrical connection

Transmitter



Receiver

LS 78/7 E
 LS 78/7 E2
 LS 78/7 E-24



1. Operation with activation:
no connection between 1 and 2
2. Operation without activation:
make a connection between 1 and 2

Specifications

Optical data

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

LS 78/7.2

450m
300m

Timing

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

Electrical data

Operating voltage U_B	115/230VAC, 24VDC, 24/42VAC, 24/48VAC
Power consumption	approx. 600mW (PNP) approx. 3.5VA (relay)
Bias current	≤ 70mA (PNP) max. 120mA (relay)
Switching output	PNP transistor output, relay: 1 change-over contact
Function characteristics	Light/dark switching through sliding switch
Signal voltage high/low	≥ ($U_B - 2V$) / ≤ 2V (PNP)
Output current	max. 100mA (PNP)
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 (for LS 78/4 E.1, LS 78/74 R)

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

Activation input activ	
Transmitter active/not active	≥ 8V / ≤ 2V or not connected
Activation/disable delay	≤ 400µs
Input resistance	4.7kΩ ± 10%
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

Selection table		Order code →					
Equipment ↓		LS 78/7 Part No. 500 00235 (Tr) Part No. 500 00240 (Re)	LS 78/7.2 Part No. 500 00235 (Tr) Part No. 500 25512 (Re)	LS 78/7 Z4 Part No. 500 00235 (Tr) Part No. 500 00241 (Re)	LS 78/74 R.8 Part No. 500 12680 (Tr) Part No. 500 12681 (Re)	LS 78/7 24/42 V Part No. 500 00236 (Tr) Part No. 500 00237 (Re)	LS 78/7 24/48 V Part No. 500 25233 (Tr) Part No. 500 25232 (Re)
Housing	metal	●	●	●	●	●	●
Operating range	120m	●		●	●	●	●
	300m		●				
Connection	terminals	●	●	●	●	●	●
Features							
Voltage supply	115/230VAC	●	●	●	●		
	24VDC				●		
	24/42VAC					●	
	24/48VAC						●
Switching output	PNP				●		
	relay	●	●	●	●	●	●
Activation input					●		
Integrated time module				●			
Time modules ZK 7810, ZK 7820 retrofittable		●	●		●	●	

Tables

Diagrams

Remarks

The standard devices (see table) 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:

