

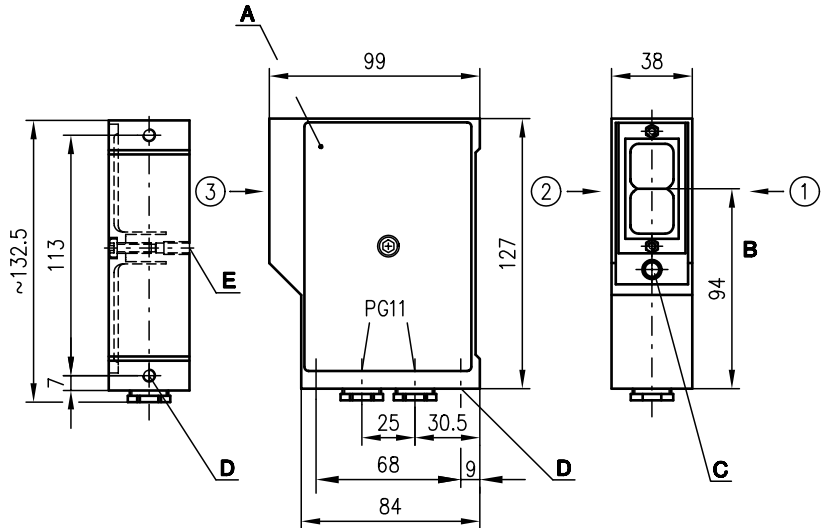


FRK 78

Diffuse reflection light scanner with background suppression



Dimensioned drawing

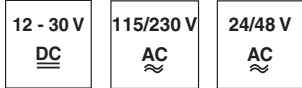


- A Removable lid • cheese head screw DIN 6912 M5x16 (machined)
- B Optical axis
- C Indicator diodes
- D Device fixture M6x9
- E Device fixture M6x12

Preferred entry direction for objects ① + ② + ③



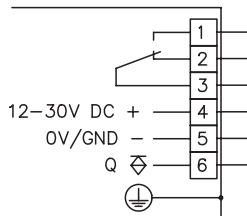
50 ... 800 mm



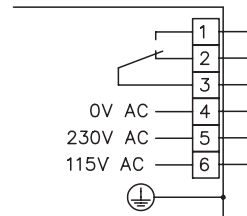
- With PNP switching output and/or relay outputs
- Light/dark switching in each device
- Universal connection via terminals
- Additional plug-in time module

Electrical connection

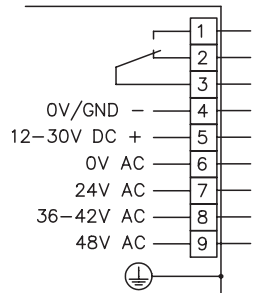
FRK 78/4 R-800



FRK 78/7-800



FRK 78/7-800-24-48V



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 and release ZK 7820
- Alignment aid ARH 2

We reserve the right to make changes • 78_d01e.fm

Specifications

Optical data

Scanning range ¹⁾	50 ... 800mm
Adjustment range	140 ... 1000mm
Light source	LED (modulated light)
Wavelength	880nm

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	12 ... 30VDC, 115/230VAC, 24/48VAC
Power consumption	approx. 600mW (PNP) approx. 3.5VA (relay)
Residual ripple	≤ 15% of U_B
Bias current	≤ 70mA (PNP / NPN) 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
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Mechanical data

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

Environmental data

Ambient temp. (operation/storage) ²⁾	-20°C ... +60°C / -30°C ... +70°C
Protective circuit ³⁾	1, 2, 3
VDE safety class ⁴⁾	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
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- 1) Scanning range: adjustable through spindle drive inside the housing
- 2) -30°C with operating voltage continuously applied
- 3) 1=transient protection, 2=polarity reversal protection, 3=short circuit protection
- 4) Rating voltage 250VAC

Order guide

Selection table		Order code →								
Equipment ↓		FRK 78/4 R-800 Part No. 500 00590	FRK 78/7-800 Part No. 500 00591	FRK 78/7-800-24-48 V Part No. 500 00365						
Housing	metal	●	●	●						
Scanning range	800mm	●	●	●						
Connection	terminals	●	●	●						
Features										
Voltage supply	12 ... 30VDC	●		●						
	115/230VAC		●							
	24/48VAC			●						
Switching output	PNP	●								
	relay	●	●	●						
Time modules ZK 7810, ZK 7820 retrofittable		●	●	●						

Tables

Diagrams

Remarks

Operation without relay through splitting of bridge "B" (FRK 78/4 R-800).

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

See figure for adjustment:

