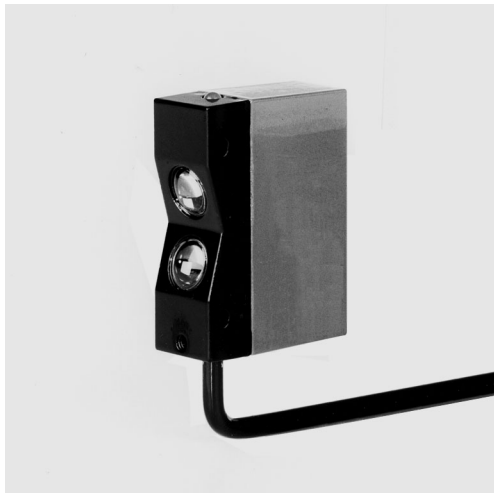


FRK 93

Diffuse reflection light scanner with background suppression

Part No. 501 11609

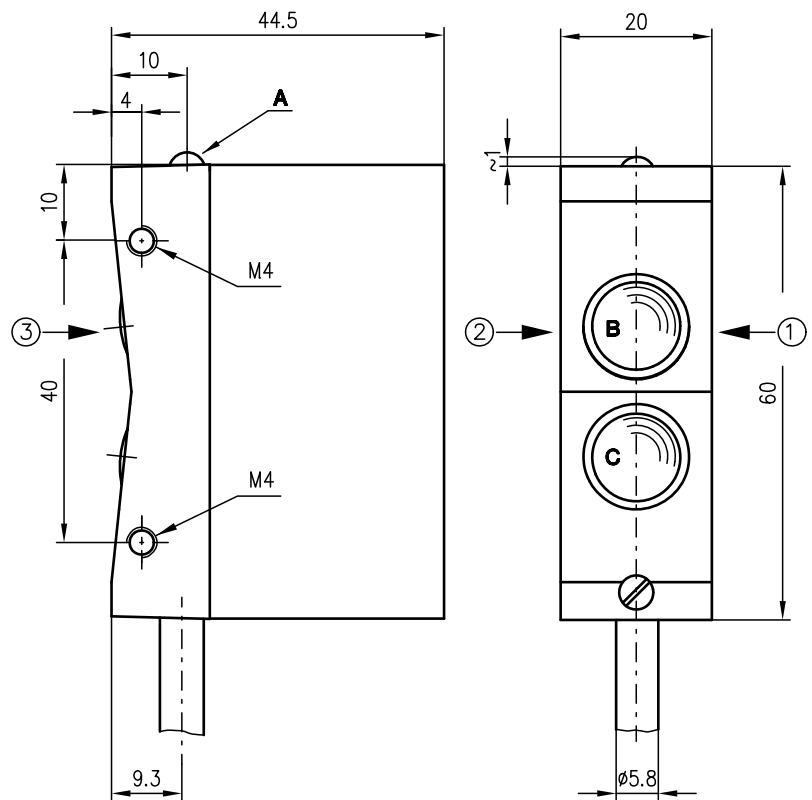


**15 ... 75m
m**



- Scanner with foreground and background suppression due to V-shaped optics
- Infrared light
- Very good detection of dark objects
- Mounting holes for fast installation
- Connection via cable

Dimensioned drawing



- A** Indicator diode
 - B** Receiver
 - C** Transmitter
- Preferred entry direction for objects ① + ② + ③

Electrical connection

10-30V DC +	br/BN
●	ws/WH
○	sw/BK
GND	bl/BU
⊕	gnge/GNYE



Accessories:

(available separately)

- Ready-made cables (KB ...)

We reserve the right to make changes • 93_d01gb.fm

Specifications

Optical data

Typ. scanning range limit (white 90%) ¹⁾	15 ... 75 mm
Scanning range ²⁾	see tables
Light source	LED (modulated light)
Wavelength	880nm (infrared)

Timing

Switching frequency	200Hz
Response time	3.3ms

Electrical data

Operating voltage U_B ³⁾	10 ... 35VDC (incl. residual ripple)
Residual ripple	$\leq 15\%$ of U_B
Power consumption	max. 2W
Switching output	PNP transistor output
Function characteristics	light/dark switching, complementary
Signal voltage high/low	$\geq (U_B - 3V) / \leq 2V$
Output current	max. 100mA

Indicators

LED yellow on	reflection, output transistor activated
LED yellow flashing	reflection, no performance reserve

Mechanical data

Housing	metal
Optics	glass
Weight	approx. 170g
Connection type	cable 2000mm

Environmental data

Ambient temp. (operation/storage)	-20°C ... +60°C / -30°C ... +70°C
Safety class	I (acc. to EN 61140)
Protective circuit ⁴⁾	2, 3
Protection class	IP 65 (acc. to EN 60529)
LED class	1 (acc. to EN 60825-1)
Applied standards	EN 60947-5-2, UL 508

- 1) Typ. scanning range limit: max. attainable range without performance reserve
- 2) Scanning range: recommended range with performance reserve
- 3) Observe the safety regulations and installation instructions regarding power supply and wiring; for UL applications: only for use in "Class 2" circuits acc. to NEC
- 4) 2=polarity reversal protection, 3=short-circuit protection for all outputs

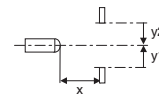
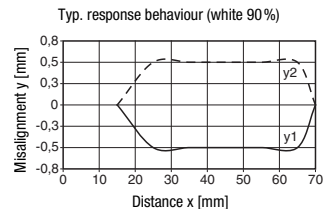
Tables

1	15	60	75
2	22	60	65
3	25	60	60

1	white 90%
2	grey 18%
3	black 6%

<input type="checkbox"/>	Scanning range [mm]
<input type="checkbox"/>	Typ. scanning range limit [mm]

Diagrams



Order guide

Designation	Part No.
FRK 93/44-60	500 21132

Remarks

Approved purpose:
The diffuse reflection light scanners are optical electronic sensors for optical, contactless detection of objects.