

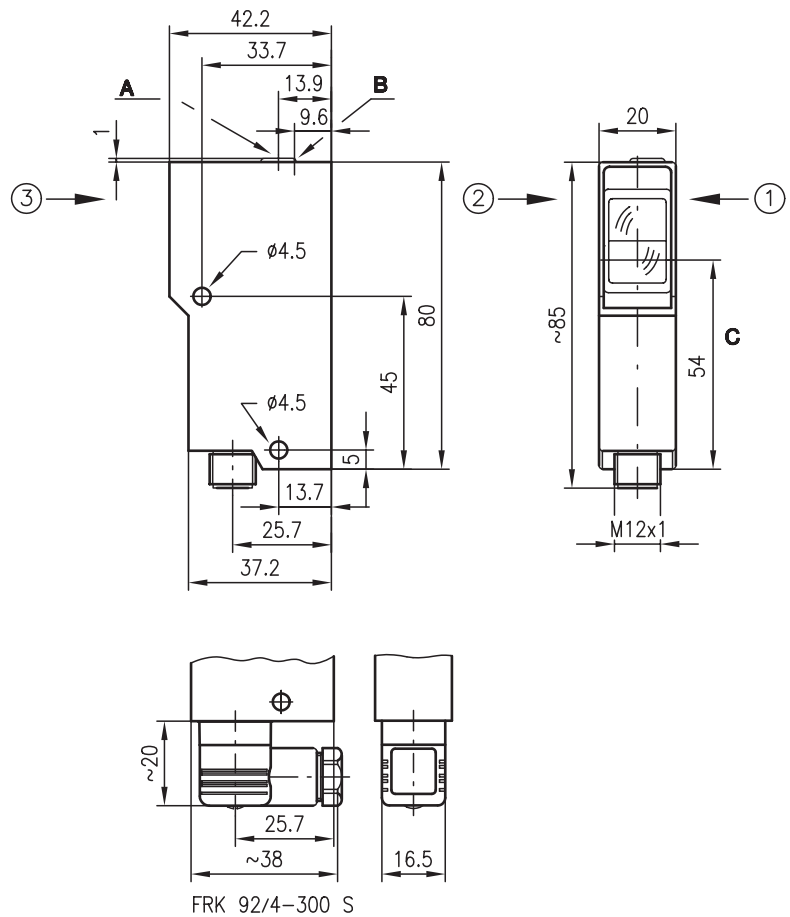


# FRK 92

# Diffuse reflection light scanner with background suppression



## Dimensioned drawing



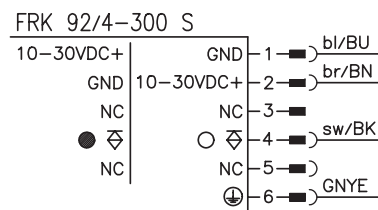
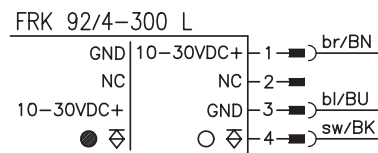
- A** Scanning range adjustment
  - B** Indicator diode
  - C** Optical axis
- Preferred entry direction for objects ① + ② + ③

5 ... 440 mm



- Very good black/white performance, exact adjustment via multiturn potentiometer
- Compact construction with robust diecast zinc housing and glass optics for protection against environmental influences
- Electrical connection with M 12 connector or 6-pin standard plug

## Electrical connection



## Accessories:

(available separately)

- Mounting systems (BT 92, UMS 1)
- M12 connectors (KD ...)
- Ready-made cables (KB ...)

We reserve the right to make changes • 92\_d01e.fm

## Specifications

### Optical data

Typ. scanning range limit (white 90%) <sup>1)</sup>	5 ... 440mm
Scanning range <sup>2)</sup>	see table
Adjustment range	50 ... 300mm
Light beam characteristic	divergent
Light source	LED (modulated light)
Wavelength	880nm

### Timing

Switching frequency	500Hz
Response time	1ms
Delay before start-up	≤ 100ms

### Electrical data

Operating voltage $U_B$	10 ... 30VDC (incl. residual ripple)
Residual ripple	≤ 15% of $U_B$
Bias current	≤ 30mA
Switching output	PNP transistor output
Function characteristics	light or dark switching (by reversing the polarity of $U_B$ )
Signal voltage high/low	≥ ( $U_B - 2V$ ) / ≤ 2V
Output current	max. 100mA

### Indicators

LED yellow	reflection
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### Mechanical data

Housing	diecast zinc
Optics	glass
Weight	140g
Connection type	M12 connector or 6-pin standard plug

### Environmental data

Ambient temp. (operation/storage)	-20°C ... +60°C / -30°C ... +70°C
VDE safety class	I for S types
VDE safety class <sup>3)</sup>	II for L types (M12 connector)
Protective circuit <sup>4)</sup>	2, 3
Protection class	IP 67, IP 65 for FRK 92/4-300 S
LED class	1 (acc. to EN 60825-1)
Standards applied	IEC 60947-5-2

- 1) Typ. scanning range limit: max. attainable range without performance reserve
- 2) Scanning range: recommended range with performance reserve
- 3) Rating voltage 250VAC
- 4) 2=polarity reversal protection, 3=short-circuit protection for all outputs

## Order guide

	Designation	Part No.
with M12 connector	FRK 92/4-300 L	500 19283
with 6-pin standard plug	FRK 92/4-300 S	500 11213

## Tables

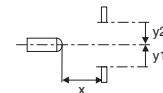
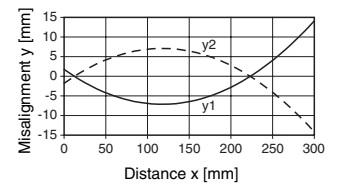
1	5	300	440
2	15	280	390
3	20	260	360

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

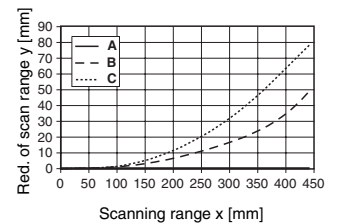
<input type="checkbox"/>	Scanning range [mm]
<input type="checkbox"/>	Typ. scanning range limit [mm]

## Diagrams

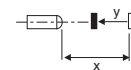
Typ. response behaviour (white 90%)



Typ. black/white behaviour



- A white 90%
- B grey 18%
- C black 6%



## Remarks

- The upper and lower scanning range limits can change with poorly reflecting materials.
- The diffuse reflection light scanner is also available with integrated AS-i chip for direct connection to the AS-i system.