

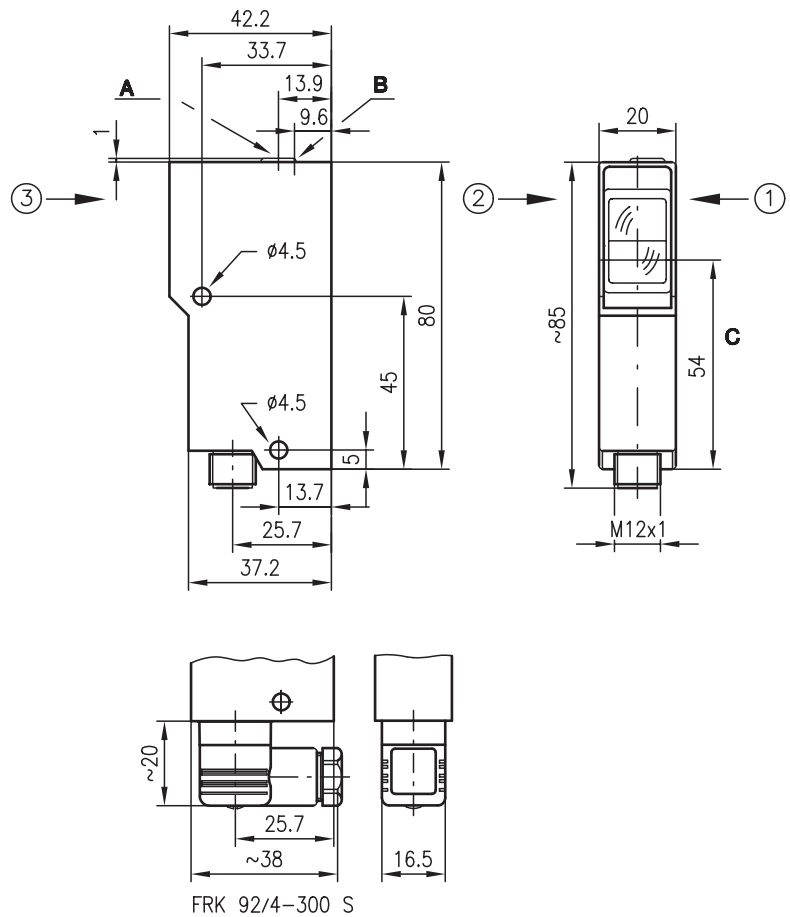


FRK 92

Diffuse reflection light scanner with background suppression



Dimensioned drawing



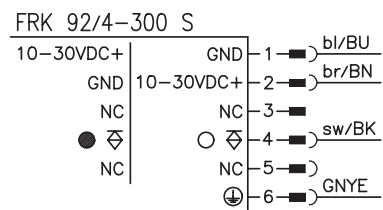
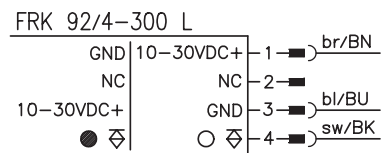
- A Scanning range adjustment
 - B Indicator diode
 - C Optical axis
- Preferred entry direction for objects ①+②+③

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%) ¹⁾ | 5 ... 440mm |
| Scanning range ²⁾ | 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 |
|------------|------------|

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 ³⁾ | II for L types (M12 connector) |
| Protective circuit ⁴⁾ | 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

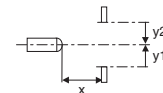
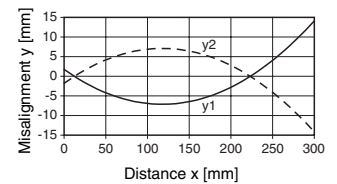
| | | | |
|---|----|-----|-----|
| 1 | 5 | 300 | 440 |
| 2 | 15 | 280 | 390 |
| 3 | 20 | 260 | 360 |

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

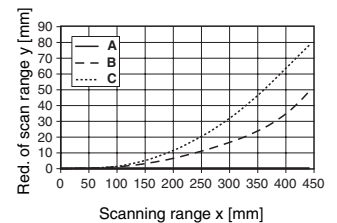
| | |
|--------------------------|--------------------------------|
| <input type="checkbox"/> | Scanning range [mm] |
| <input type="checkbox"/> | Typ. scanning range limit [mm] |

Diagrams

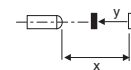
Typ. response behaviour (white 90%)



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.