



FRK(R) 95

Diffuse reflection light scanner with background suppression



20 ... 500mm



- Scanner with adjustable background suppression using visible red light for fast and easy alignment
- Scanner with adjustable background suppression using infrared light for inclined and/or shiny surfaces
- Very good black/white performance, exact adjustment via multiturn potentiometer
- High switching frequency for detection of fast events

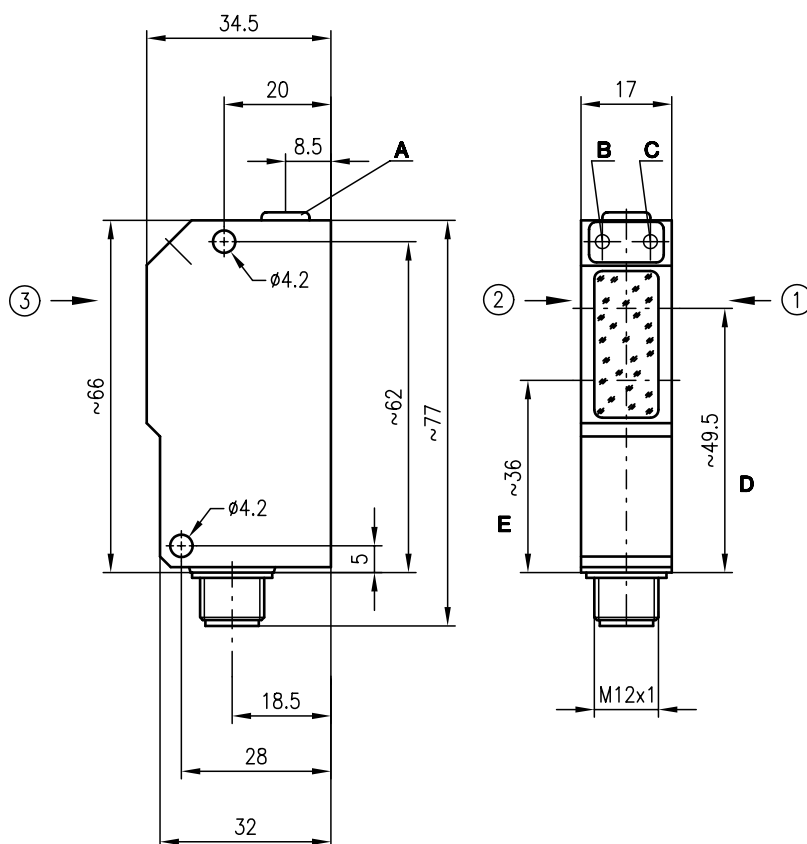


Accessories:

(available separately)

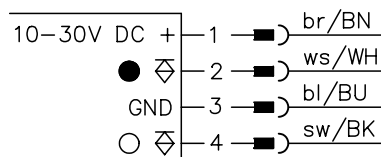
- Mounting systems (BT 95, UMS 1)
- M12 connectors (KD ...)

Dimensioned drawing



- A Scanning range adjustment
 - B Switching indicator yellow
 - C Operation indicator green
 - D Optical axis receiver
 - E Optical axis transmitter
- Preferred entry direction for objects ① + ② + ③

Electrical connection



Specifications

Optical data

Typ. scanning range limit (white 90%) ¹⁾
 Scanning range ²⁾
 Adjustment range
 Light beam characteristic
 Light source
 Wavelength

FRKR 95/44-350 L

20 ... 500mm
 see tables
 60 ... 500mm
 focussed
 LED (modulated light)
 660nm (red light)

FRK 95/44-350 L

880 nm (infrared light)

Timing

Switching frequency
 Response time
 Delay before start-up

1000Hz
 0.5ms
 ≤ 100ms

Electrical data

Operating voltage U_B
 Residual ripple
 Bias current
 Switching output
 Function characteristics
 Signal voltage high/low
 Output current

10 ... 30VDC (incl. residual ripple)
 ≤ 15% of U_B
 ≤ 35mA
 2 PNP transistor outputs, complementary
 light/dark switching
 $\geq (U_B - 2V) / \leq 2V$
 max. 100mA

Indicators

LED green
 LED yellow

ready
 reflection

Mechanical data

Housing
 Optics cover
 Weight
 Connection type

diecast zinc
 glass
 90g
 M12 connector, stainless steel, 4-pin

Environmental data

Ambient temp. (operation/storage) ³⁾
 Protective circuit ⁴⁾
 VDE safety class ⁵⁾
 Protection class
 LED class
 Standards applied

25°C (-30°C) ... +60°C/-40°C ... +70°C
 2, 3
 II, all-insulated
 IP 67, IP 69K ⁶⁾
 1 (acc. to EN 60825-1)
 IEC 60947-5-2

- 1) Typ. scanning range limit: max. attainable range without performance reserve
- 2) Scanning range: recommended range with performance reserve
- 3) -30°C with operating voltage continuously applied
- 4) 2=polarity reversal protection, 3=short-circuit protection for all outputs
- 5) Rating voltage 250VAC
- 6) IP 69K test acc. to DIN 40050 part 9 simulated, high pressure cleaning conditions without the use of additives, acids and bases are not part of the test

Order guide

Red light
 Infrared light

Designation

FRKR 95/44-350 L
 FRK 95/44-350 L

Part No.

500 34514
 500 34515

Tables

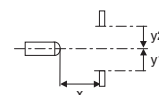
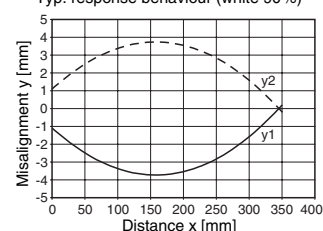
1	5	350	500
2	20	328	440
3	25	300	350

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

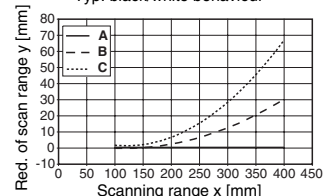
Scanning range [mm]
 Typ. scanning range limit [mm]

Diagrams

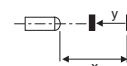
Typ. response behaviour (white 90%)



Typ. black/white behaviour



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



Remarks

- With the set scanning range, a tolerance of the upper scanning range limit is possible depending on the reflection properties of the material surface.