

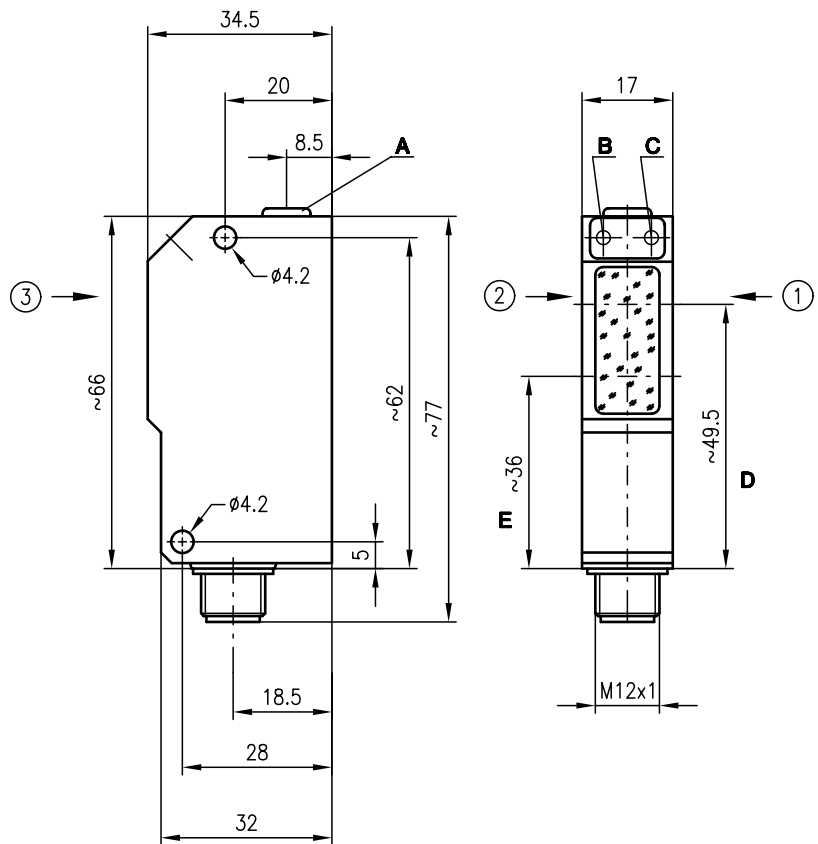


# FRK(R) 95

# Diffuse reflection light scanner with background suppression



## Dimensioned drawing



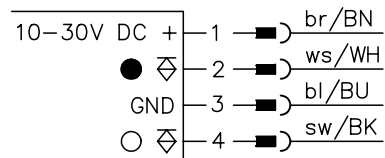
20 ... 500mm



- 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

- 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



## Accessories:

(available separately)

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

We reserve the right to make changes • 95\_d05e.fm

## Specifications

### Optical data

Typ. scanning range limit (white 90%) <sup>1)</sup>  
 Scanning range <sup>2)</sup>  
 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 1000Hz  
 Response time 0.5ms  
 Delay before start-up ≤ 100ms

### Electrical data

Operating voltage  $U_B$  10 ... 30VDC (incl. residual ripple)  
 Residual ripple ≤ 15% of  $U_B$   
 Bias current ≤ 35mA  
 Switching output 2 PNP transistor outputs, complementary  
 Function characteristics light/dark switching  
 Signal voltage high/low  $\geq (U_B - 2V) \leq 2V$   
 Output current max. 100mA

### Indicators

LED green ready  
 LED yellow reflection

### Mechanical data

Housing diecast zinc  
 Optics cover glass  
 Weight 90g  
 Connection type M12 connector, stainless steel, 4-pin

### Environmental data

Ambient temp. (operation/storage) <sup>3)</sup> 25°C (-30°C) ... +60°C/-40°C ... +70°C  
 Protective circuit <sup>4)</sup> 2, 3  
 VDE safety class <sup>5)</sup> II, all-insulated  
 Protection class IP 67, IP 69K <sup>6)</sup>  
 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) -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

	Designation	Part No.
Red light	FRKR 95/44-350 L	500 34514
Infrared light	FRK 95/44-350 L	500 34515

## Tables

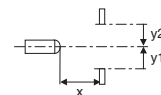
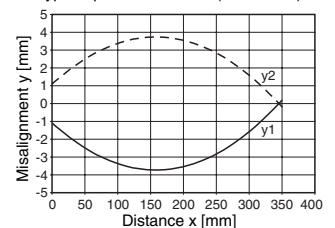
1	5	350	500
2	20	328	440
3	25	300	350

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

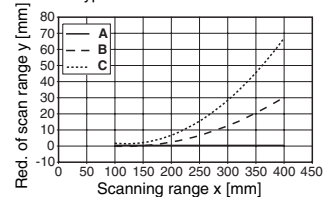
Scanning range [mm]  
 Typ. scanning range limit [mm]

## Diagrams

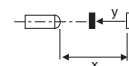
Typ. response behaviour (white 90%)



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.