

## RTFR 25B

## Diffuse reflection light scanner with fading

en 02-2014/05 50108925-01

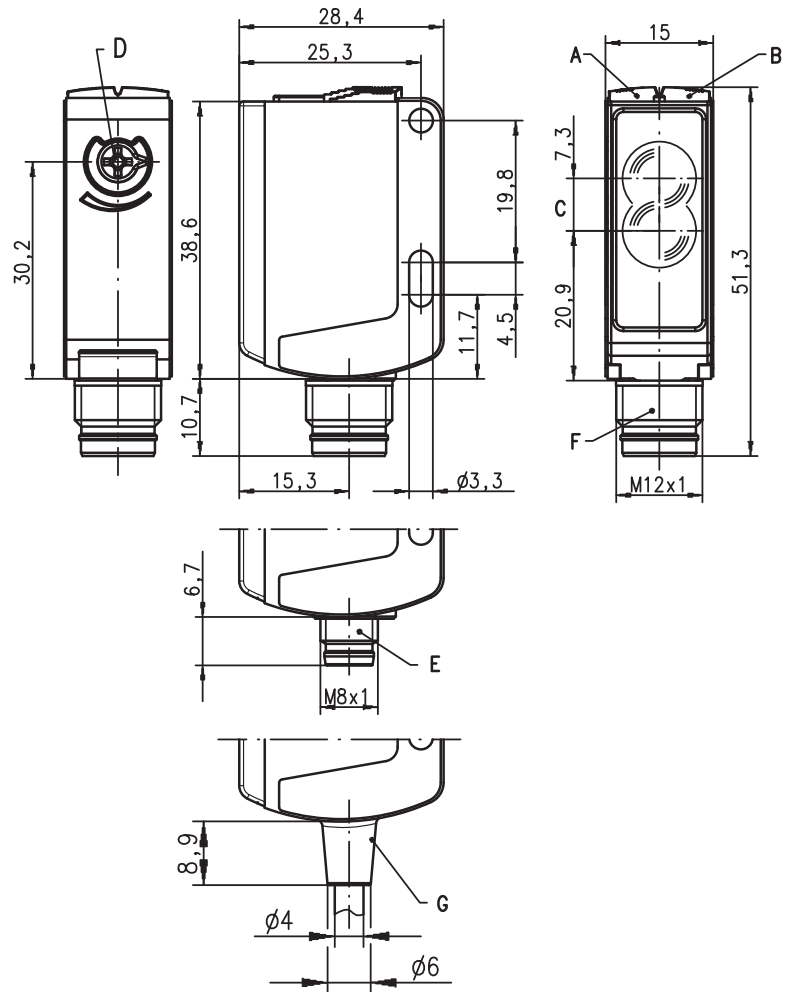


**5 ... 650mm**



- Diffuse reflection light scanner with visible red light
- Small and compact construction with robust plastic housing, protection class IP 67/IP 69K for industrial application
- Fast alignment through *brightVision*®
- A²LS - Active Ambient Light Suppression
- Push-pull switching outputs
- High switching frequency for detection of fast events
- Scanning range adjustment via potentiometer

### Dimensioned drawing



- A** Indicator diode green
- B** Indicator diode yellow
- C** Optical axis
- D** Scanning range adjustment
- E** Connector M8x1
- F** Connector M12x1
- G** Cable

### Electrical connection

RTFR 25B/66-S8  
RTFR 25B/66-S12  
RTFR 25B/66, 200-S12  
RTFR 25B/66

10-30V DC +	1	■	br/BN
● ○ ⊗	2	■	ws/WH
GND	3	■	bl/BU
○ ● ⊗	4	■	sw/BK



### Accessories:

(available separately)

- Mounting systems (BT 25, UMS 25...)
- Cable with M8 or M12 connector (K-D ...)

We reserve the right to make changes • DS\_RTFR25B\_en\_50108925\_01.fm

## Specifications

### Optical data

Typ. scanning range limit <sup>1)</sup>	0 ... 650mm
Scanning range <sup>2)</sup>	see tables
Light source <sup>3)</sup>	LED (modulated light)
Wavelength	620nm (visible red light, polarised)

### Timing

Switching frequency	500Hz
Response time	1ms
Delay before start-up	≤ 300ms

### Electrical data

Operating voltage $U_B$ <sup>4)</sup>	10 ... 30VDC (incl. residual ripple)
Residual ripple	≤ 15% of $U_B$
Bias current	≤ 20mA
Switching output <sup>5)</sup>	.../66
Function characteristics	2 push-pull switching outputs
Signal voltage high/low	light/dark switching
Output current	≥ ( $U_B - 2V$ )/≤ 2V
Scanning range	max. 100mA
	adjustable with potentiometer

### Indicators

Green LED	ready
Yellow LED	Reflection (object detected)

### Mechanical data

Housing	plastic (PC-ABS)
Optics cover	plastic (PMMA)
Weight	with connector: 15g
	with 200mm cable and connector: 30g
	with 2m cable: 55g
	cable 2m (cross section 4x0.21mm <sup>2</sup> ),
	connector M8 or M12,
	cable 0.2m with connector M8 or M12

Connection type

### Environmental data

Ambient temp. (operation/storage)	-30°C ... +55°C/-30°C ... +60°C
Protective circuit <sup>6)</sup>	2, 3
VDE safety class <sup>7)</sup>	II
Protection class	IP 67, IP 69K
Light source	free group (in accordance with EN 62471)
Standards applied	IEC 60947-5-2
Certifications	UL 508, C22.2 No.14-13 <sup>4)</sup> <sup>8)</sup>

- 1) Typ. scan. range limit/adjustment range: max. achievable scanning range/adjustment range for light objects (white 90%)
- 2) Scanning range: recommended scanning range for objects with different diffuse reflection
- 3) Average life expectancy 100,000h at an ambient temperature of 25°C
- 4) For UL applications: for use in class 2 circuits according to NEC only
- 5) The push-pull switching outputs must not be connected in parallel
- 6) 2=polarity reversal protection, 3=short-circuit protection for all transistor outputs
- 7) Rating voltage 50V
- 8) These proximity switches shall be used with UL Listed Cable assemblies rated 30V, 0.5A min, in the field installation, or equivalent (categories: CYJV/CYJV7 or PVVA/PVVA7)



**fading:** black/white error < 50%

### Example:

Setting 600mm, white 90%

- **Detection:**  
Object with 6% black is detected at approx. 330mm
- **Situation in background:**  
Object with 90% white is no longer detected at a distance > 690mm

For setting < 300mm against white 90%, objects (<18% diffuse reflection) are no longer detected

## Tables

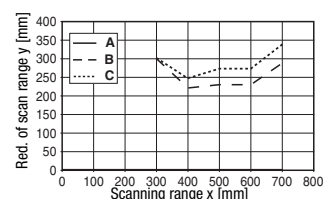
1	0	600	650
2	1	370	380
3	15	330	350

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

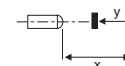
	Scanning range [mm]
	Typ. scanning range limit [mm]

## Diagrams

Typ. black/white behaviour



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



## Remarks

- **Intended use:**  
The light scanners are optical electronic sensors for optical, contactless detection of objects.

### Operate in accordance with intended use!

- ⚠ This product is not a safety sensor and is not intended as personnel protection.
- ⚠ The product may only be put into operation by competent persons.
- ⚠ Only use the product in accordance with the intended use.

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

# RTFR 25B

## Diffuse reflection light scanner with fading

### Order guide

Selection table		Order code →			
Equipment ↓		RTFR 25B/66-S12 Part No. 501 08472	RTFR 25B/66-S8 Part No. 501 08474	RTFR 25B/66 Part No. 501 08475	RTFR 25B/66-200-S12 Part No. 501 08473
Switching output	2 x Push-pull switching output	●	●	●	●
	1 x PNP output				
	2 x PNP output				
Switching function	1 PNP light switching and NPN dark switching output	●	●	●	●
	1 PNP dark switching and NPN light switching output	●	●	●	●
	1 x PNP light switching output				
	1 x PNP dark switching output				
	1 warning output				
Connection	M8 connector, 4-pin		●		
	M12 connector, 4-pin	●			
	cable 2.000 mm			●	
	cable 200 mm with M8 connector, 4-pin				
	cable 200 mm with M12 connector, 4-pin				●
Indicators	green LED: ready	●	●	●	●
	yellow LED: light path free	●	●	●	●
Options	scanning range adjustment via potentiometer	●	●	●	●
	activation input				
	for direct connection to AS-i I/O coupling modules				
	black/white error < 50%	●	●	●	●

