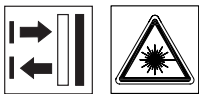
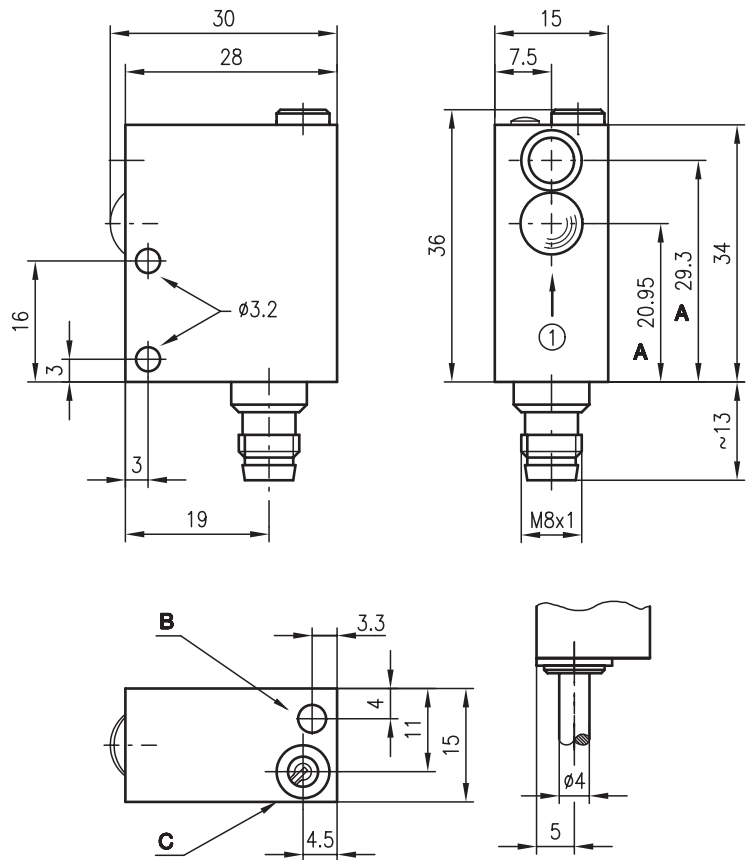




FRKL 713 Laser diffuse reflection light scanners with background suppression



Dimensioned drawing



0 ... 150mm

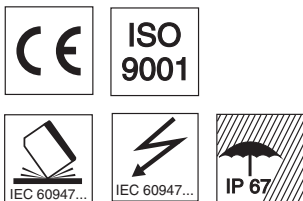


- Scanner with electrically adjustable background suppression using visible red laser light
- Reflection dependent laser power regulation for detection of metal surfaces
- Very small visible light spot for detection of small parts $\geq 0.2\text{mm}$
- High switching frequency of 5kHz for detection of fast events

- A** Optical axis
- B** Indicator diode
- C** Sensitivity adjustment

Scanning direction ① see remarks

Electrical connection

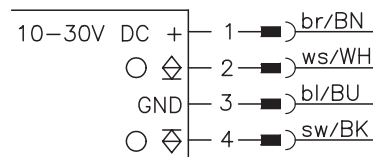


Accessories:

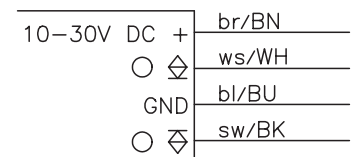
(available separately)

- Mounting system (BT 713)
- Wobble plate (SET BT 713-66 + BT 66)
- M8 connectors (KD ...)
- Ready-made cables (KB ...)

FRKL 713/24-100 L8



FRKL 713/24-100



Specifications

Optical data

Typ. scanning range limit (white 90%) ¹⁾	0 ... 150mm
Scanning range ²⁾	see tables
Adjustment range	25 ... 150mm
Scanning range hysteresis	≤ 10% (relative to white 90%)
Light beam characteristic	divergent
Light source	laser (modulated light)
Wavelength	670nm (visible red light)
Laser warning notice	see remarks

Timing

Switching frequency	5kHz
Response time	0.1ms
Delay before start-up	≤ 100ms

Electrical data

Operating voltage U_B	10 ... 30VDC (incl. residual ripple)
Residual ripple	≤ 15% of U_B
Bias current	≤ 25mA
Switching output	PNP and NPN transistor output
Function characteristics	light switching
Signal voltage high/low	$\geq (U_B - 2V) / \leq 2V$
Output current	max. 200mA
Scanning range adjustment	adjustable with 270° potentiometer

Indicators

LED yellow	reflection
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Mechanical data

Housing	metal
Optics	glass
Weight	100g
Connection type	M8 connector (4-pin) cable 2000mm, 4x0.14mm ²

Environmental data

Ambient temp. (operation/storage)	-20°C ... +40°C / -40°C ... +80°C
Protective circuit ³⁾	1, 2, 3, 4
VDE safety class	III
Protection class	IP 67
Laser class	2 (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) 1=transient protection, 2=polarity reversal protection, 3=short circuit protection for all outputs, 4=interference blanking

Order guide

Selection table		Order code →					
Equipment ↓		FRKL 713/24-100 Part No. 500 38473	FRKL 713/24-100 L8 Part No. 500 38474				
Light source	laser	●	●				
Light spot	divergent						
	adjustable						
	focussed	●	●				
LED	on top	●	●				
Connection	cable	●					
	M8 connector		●				
Features	electrical background suppression	●	●				

Tables

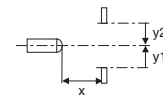
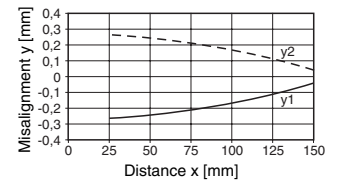
1	25	100	150
2	25	95	130
3	25	87	100

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

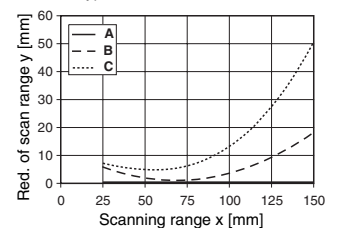
- Scanning range [m]
- Typ. scanning range limit [m]

Diagrams

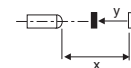
Typ. response behaviour (white 90%)



Typ. black/white behaviour



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



Remarks

- A conductive connection between sensor housing and machine is to be established in order to discharge electrostatic charges.
- Use scanning direction ① for detection of objects ≤ 0.5mm.
- Scanning ranges ≥ 50mm require a background for detections ≤ 0.5mm.
- Install sensor inclined at angle of approx. 10° if used to detect objects with shiny surfaces.
- Laser notices

LASER LIGHT
DO NOT STARE INTO BEAM

Maximum Output: 1.2mW
 Pulse duration: 12µs
 Wavelength: 670nm

CLASS 2 LASER PRODUCT
EN60825-1:2003-10