

GLASS DETECTION

FR 20 RG / FR 20 RG I Retro-reflective sensor for the detection of glass



The solution for the detection of transparent materials

The FR 20 RG of the large F20 line is specialist for the detection of glass. Thanks to the **autocollimation principle**, the FR 20 RG I detects transparent materials of any shape throughout the entire detection range. It is thus specialist for the detection of container glass.

Thanks to the polarisation filter used for the FR 20 RG line, reflections of mirroring surfaces are effectively suppressed.

The retro-reflective sensor FR 20 RG / FR 20 RG I is supplied in the F20 miniature casing (32 x 20 x 12 mm³) and is thus suitable for restricted spaces. It may be configured easily and conveniently per teach-in.

Typical applications

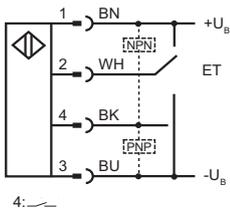
- Detection of bottles in bottling plants (FR 20 RG I)
- Detection of ampullas in the pharmaceutical industry (FR 20 RG I)
- Detection of transparent foils in the food industry.

Features

- *Autocollimation principle for the reliable detection of transparent objects of any shape (only FR 20 RG I)*
- *Miniature sensor range*
- *Working range:
FR 20 RG I: 5 ... 500 mm
FR 20 RG: 50 ... 500 mm*
- *Temperature compensation ensures reliable switching throughout the entire temperature range*
- *Polarisation filter*
- *Teach-in*
- *Red light 660 nm*
- *N.O. - N.C. selectable*
- *Small hysteresis for detection of transparent objects*
- *External teach for setting and disabling the teach button*

Technical data	FR 20 RG	FR 20 RG I
Typical application	detection of flat glass	detection of container glass
Optical data		
Operating voltage	50 ... 500 mm	5 ... 500 mm
Used light	red 660 nm, pulsed	
Light spot	20x20 mm at 500 mm	
Ambient light	EN 60947-5-2	
Electrical data		
Operating voltage	10 ... 30VDC, internal polarity reversal protection	
Connection	plug or cable versions	
External teach (ET)	-UB = locked / +UB = Teach mode	
Power consumption (no load)	≤ 25 mA at 24V DC	
Switching output	versions with PNP N.O. or NPN N.O.	
Output current	100 mA with short circuit protection	
Switching frequency (ti/tp 1:1)	1000 Hz	
Protection class	□	
Mechanical data		
Casing material	ABS	
Protection standard	IP67	
Ambient temperature range	-20 ... +60 °C	
Storage temperature range	-20 ... +80 °C	
Cable	4 x 0.14 mm ²	
Standard cable length	2 m	
Connection	M8x1	
Weight	plug version approx. 10 g / cable version approx. 40 g	
Accessories		
Cable	e.g. K4-2m-G-PUR (Art. 902-50801)	
Mounting set	e.g. MSP F20-I (Art. 558-41004)	
Reflector	e.g. R5L (Art. 904-51543)	

Wiring diagram



Dimensional drawings

153-00382 - FR 20 RG

153-00383 - FR 20 RG I

