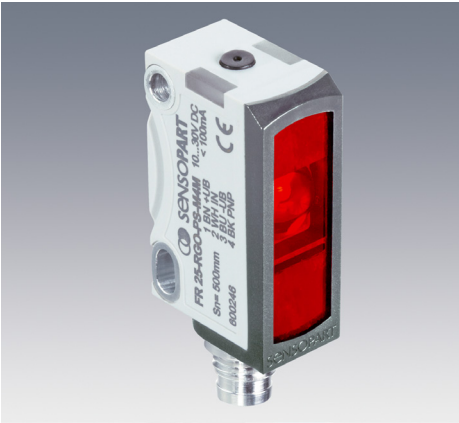# The clear choice.

FR 25 RGO – retro-reflective light barrier for the recognition of transparent objects

🇩🇪 **Made in Germany**

FR 25-RGO

Retro-reflective light barrier for the recognition of transparent objects
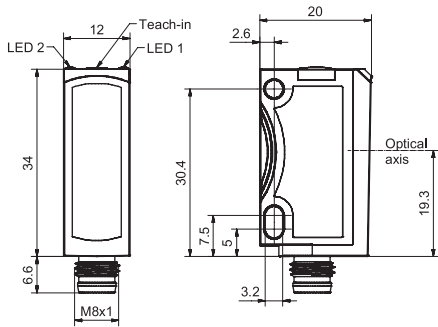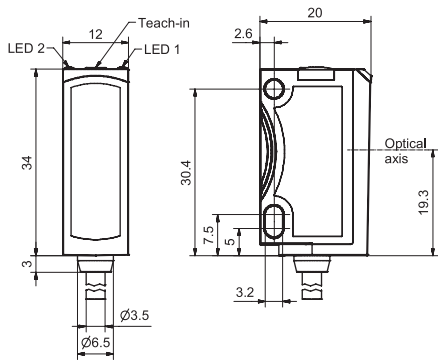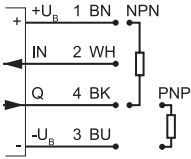
CE
IP 69k
ECOLAB

PRODUCT HIGHLIGHTS

- Reliable recognition of transparent objects regardless of their shape
- Autocollimation principle: Reliable and precise recognition starting from a range of just 0 mm
- DELTA-function (Dynamic Evaluation of Light for Threshold Adaption): Dynamic adaption of the sensor to alternating environmental conditions – not influenced by dust or dirt
- Precise and highly visible light spot with a sharp contour for an easy alignment of the sensor
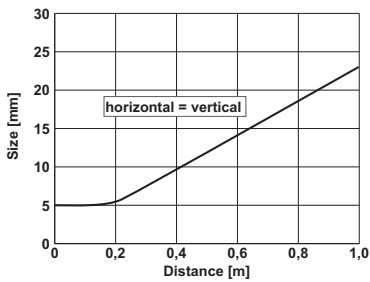
Optical data	
Operating range	0 … 2 m[1]
Type of light	LED, red, 632 nm
Polarisation filter	Yes

Functions	
Indicator LED green	Operating voltage indicator
Indicator LED yellow	Switching output indicator
Sensitivity adjustment	Via teach-in button and control input
Teach-in modes	Mode 1: during running process Mode 2: during stationary process
Adjustment possibilities	N.O./N.C. via teach-in button and control input Button lock via control input
Default settings	Max. range and N.O.

Electrical data	
Operating voltage $+U_B$	10 … 30 V DC[2]
No-load current Io	≤ 30 mA
Output current Ie	≤ 100 mA
Protective circuits	Reverse-polarity protection U_B/ short-circuit protection (Q)
Protection class	2
Time to readiness	< 300 ms
Switching output Q	PNP / NPN (see selection table)
Output function	N.O. / N.C.
Switching frequency f (ti/tp 1:1)	≤ 1000 Hz
Response time	500 µs
Control input IN	$+U_B$ = Teach-in $-U_B$ = Button locked Open = Normal operation

Mechanical data	
Dimensions	34 × 20 × 12 mm
Enclosure rating	IP 69K & IP 67[3]
Material housing	ABS
Material front screen	PMMA
Type of connection	(see selection table)
Ambient temperature: operation	-20 … +60 °C
Ambient temperature: storage	-20 … +80 °C
Weight (plug)	10 g
Weight (cable)	40 g
Resistance to vibrations and impacts	EN 60947-5-2

[1] Reference material reflector R5L   [2] Max. 10 % ripple, within U_B, ~ 50 Hz / 100 Hz   [3] With connected IP 67 / IP 69K plug

Operating range	Switching output	Type of connection	Order designation	Part no.
0 … 2 m	PNP	Plug, M8x1, 4-pin	FR 25-RGO-PS-M4	606-11020
0 … 2 m	NPN	Plug, M8x1, 4-pin	FR 25-RGO-NS-M4	606-11021
0 … 2 m	PNP	Metal plug, M8x1, 4-pin	FR 25-RGO-PS-M4M	606-11016
0 … 2 m	NPN	Metal plug, M8x1, 4-pin	FR 25-RGO-NS-M4M	606-11017
0 … 2 m	PNP	Cable, 2 m, 4-wire	FR 25-RGO-PS-K4	606-11018
0 … 2 m	NPN	Cable, 2 m, 4-wire	FR 25-RGO-NS-K4	606-11019

Plug connection

Teach-in
LED 2 — LED 1
12
2.6
20
34
30.4
19.3
Optical axis
7.5
5
6.6
M8x1
3.2

153-00964

Cable connection

Teach-in
LED 2 — LED 1
12
2.6
20
34
30.4
19.3
Optical axis
7.5
5
3
3.2
Ø3.5
Ø6.5

153-00963

4-pin connection

+U$_B$	1 BN	NPN
IN	2 WH	
Q	4 BK	PNP
-U$_B$	3 BU	

154-00508

Light spot size

horizontal = vertical

Size [mm] vs Distance [m]

* 34 × 34 mm^2 @ Distance 1.5 m
45 × 45 mm^2 @ Distance 2.0 m

155-01531

Reflectors/Reflective foil*	Description	Operating distance for transparent cylindrical objects	Operating distance for transparent flat objects
R5/L (904-51543)	Reflector 51 × 61 mm, 2 mounting holes	0 … 500 mm	0 … 800 mm
RF-230 KL* (904-51593)	Reflective foil 230 × 230 mm, self-adhesive, cut-to-size	0 … 300 mm	0 … 800 mm

We look ahead.

Yesterday, today and in the future.
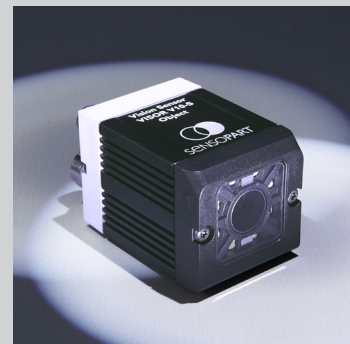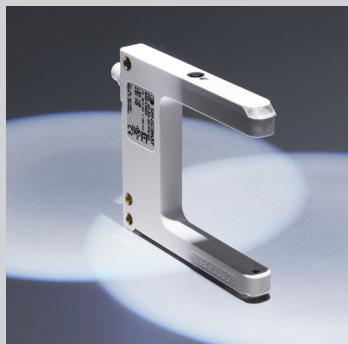
Since SensoPart was founded in 1994, we have constantly focussed on the future. Our motto has always been: We gauge ourselves not by what is possible today, but by our ideas for what can be achieved in the future. Many ground-breaking ideas from that time have since become successful products, which are now indispensible in modern automation technology – endorsed by the numerous prizes for innovation which we have received over recent years. Today, SensoPart is the technological leader in many areas of industrial sensor technology. And we still have many ideas for the future.

SENSOR TECHNOLOGY	VISION
Light barriers	Vision sensors
Proximity switches	Smart cameras
Laser sensors	Object detection
Miniature sensors	Object measurement
Distance sensors	Colour detection
Colour sensors	Code reading
Contrast sensors	Lighting
Anti-collision sensors	Lenses
Slot sensors	
Fibre-optic amplifiers	
Inductive sensors	Find the suitable product
Capacitive sensors	for your application under
Ultrasonic sensors	www.sensopart.com