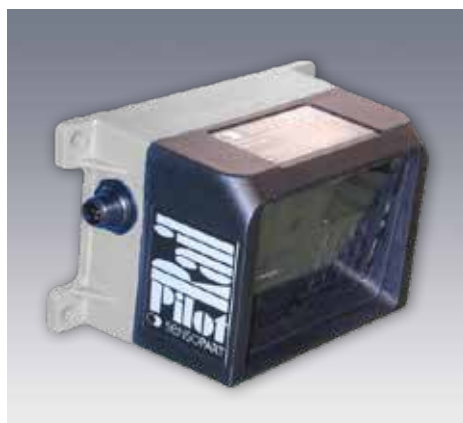


# FR 85 RailPilot

Distance sensor for collision prevention



## PRODUCT HIGHLIGHTS

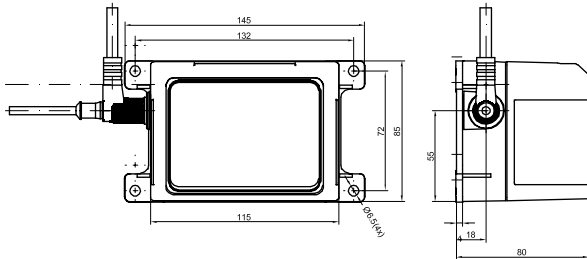
- Measurement range: 0 ... 6 m
- Wide detection cone
- 2x2 detection zones
- 1 input
- 2 PNP outputs
- RS485 interface
- Detection zone adjustable externally
- Reliable suppression of foreign objects (girders, pillars)

| Optical data                       |                                                                                                                                                                                         | Functions                      |                             |
|------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|-----------------------------|
| Scanning distance                  | 0 ... 6 m <sup>1</sup>                                                                                                                                                                  | Indicator LED, green           | Operating voltage indicator |
| Type of light                      | Infrared, 905 nm                                                                                                                                                                        | Indicator LED, red             | Switching output indicator  |
| Laser Class (IEC 60825-1)          | 1                                                                                                                                                                                       | Scanning distance adjustment   | Via control wire            |
| Resolution                         | ~ 1 mm                                                                                                                                                                                  |                                |                             |
| Repeatability                      | ≤ 10 mm                                                                                                                                                                                 |                                |                             |
| Linearity                          | ± 70 mm                                                                                                                                                                                 |                                |                             |
| Electrical data                    |                                                                                                                                                                                         | Mechanical data                |                             |
| Operating voltage, +U <sub>B</sub> | 18 ... 30V DC <sup>2</sup>                                                                                                                                                              | Dimensions                     | 145 x 85 x 80 mm            |
| No-load current, I <sub>0</sub>    | ≤ 100 mA                                                                                                                                                                                | Enclosure rating               | IP 54 <sup>4</sup>          |
| Output current, I <sub>e</sub>     | ≤ 200 mA                                                                                                                                                                                | Material, housing              | ABS                         |
| Protective circuits                | Reverse-polarity protection, U <sub>B</sub> / short-circuit protection (Q)                                                                                                              | Material, front screen         | PMMA                        |
| Protection Class                   | 2                                                                                                                                                                                       | Type of connection             | See selection table         |
| Power On Delay                     | < 300 ms                                                                                                                                                                                | Ambient temperature: operation | 0 ... +50 °C                |
| Switching output, Q                | See selection table                                                                                                                                                                     | Ambient temperature: storage   | -20 ... +70 °C              |
| Output function                    | See selection table                                                                                                                                                                     | Weight                         | 340 g                       |
| Serial interface                   | RS485 / R = 1 KΩ <sup>3</sup>                                                                                                                                                           |                                |                             |
| Control input E1 / banking         | Close and remote switching<br>-U <sub>B</sub> (low)<br>Q1 = switching point 1;<br>Q2 = switching point 2<br>+U <sub>B</sub> (high)<br>Q1 = switching point 3;<br>Q2 = switching point 4 |                                |                             |

<sup>1</sup> Reference material: R10/2 reflector    <sup>2</sup> 10 % ripple, within U<sub>B</sub>    <sup>3</sup>Type FR 85 ... S1L5    <sup>4</sup>With connected IP 54 plug

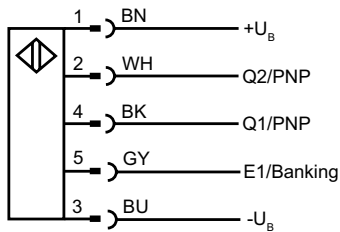
| Interface                        | Baud rate | Suitable for control    | Type of connection | Part number               | Article number |
|----------------------------------|-----------|-------------------------|--------------------|---------------------------|----------------|
| RS485                            | 57.6 kB   | SEW / Lenze / DETO      | Plug, M12x1, 5-pin | FR 85-2 ILLG-S1L5         | 529-11008      |
| RS485                            | 57.6 kB   | Standard (e.g. Siemens) | Plug, M12x1, 5-pin | FR 85-2 ILLG2-S1L5        | 529-11009      |
| RS485                            | 62.5 kB   | LJU                     | Plug, M12x1, 5-pin | FR 85-2 ILLG-S1L5-62,5 kB | 529-11014      |
| 2 switching outputs Q (PNP) N.C. | -         | Standard (e.g. Siemens) | Plug, M12x1, 5-pin | FR 85-2 ILLG-POL5         | 529-11010      |

Plug connection



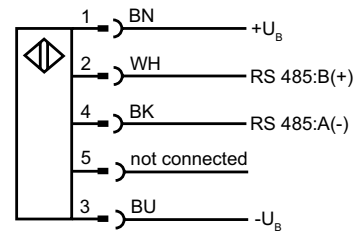
153-00349

Connection, 5-pin: FR 85-2 ILLG-POL5



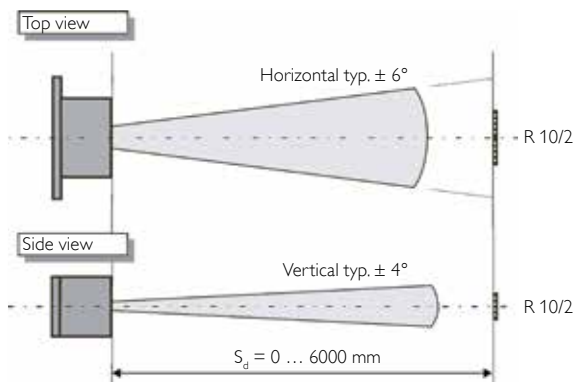
154-00325

Connection, 5-pin: FR 85-2 ILLG(x)-S1L5



154-00478

Detection cone



155-00202

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[sales@electromate.com](mailto:sales@electromate.com)

| Reflector       | Article number | Accessories                      |                                                                                        |
|-----------------|----------------|----------------------------------|----------------------------------------------------------------------------------------|
| R10 / 2 (2xR10) | 904-51636      | Reflectors                       | <a href="http://www.sensopart.com/en/accessories">www.sensopart.com/en/accessories</a> |
|                 |                | Connection cables                |                                                                                        |
|                 |                | Setup Box FR 85-2 ILLX 533-11016 |                                                                                        |