



- *Visible red LED emission versions*
- *High resolution LASER versions*
- *Versions with 30, 50, 80 and 120 mm slots*
- *Sensitivity adjustment and dark/light selectors*
- *Sturdy metal housing with glass lenses*

## SRF SERIES

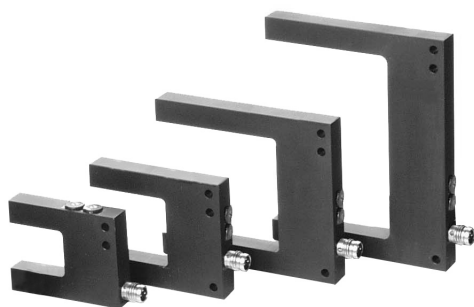
The slot sensors of the **SRF** series are photoelectric devices characterised by an excellent precision thanks to the red LED emission which offers resolutions reaching 0.3 mm or class II LASER emission for resolutions down to 0.03 mm. High precision and reading repeatability are obtained thanks to the Laser emission combined with high switching frequency.

The particular 'U' shape with opposite receiver and emitter units, together with the high resistance of the metal housing, make monitoring extremely simple and rapid, guaranteeing reliable functioning as well as shock and vibration resistance. The SRF series presents versions with 30, 50, 80 and 120 mm slots allowing the best adaptation to the many different applications, including opaque label detection on transparent supports, monitoring of the correct material position and dimension or object counting on conveyor belts. Sensitivity adjustment is easily accomplished thanks to the trimmer positioned on the back side of the sensor. The range offers versions with PNP or NPN output. The light/dark mode can be selected in all models.

# SR SLOT SENSORS

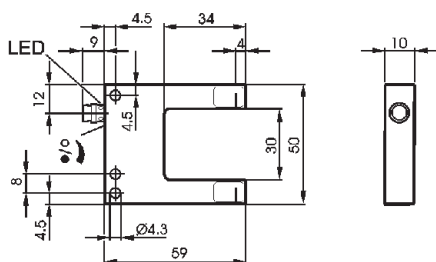
The best resolution, in terms of minimum detectable object, can be obtained rotating completely the sensitivity trimmer in a clockwise direction.

The normally closed output is selected by turning clockwise the output trimmer. The sensor, in this manner, functions in the light mode where the connector LED ON signals the absence of an object to detect. The opposite effect is obtained rotating the trimmer in an anti-clockwise direction and the sensor functions in the dark mode with the LED ON in presence of an object.

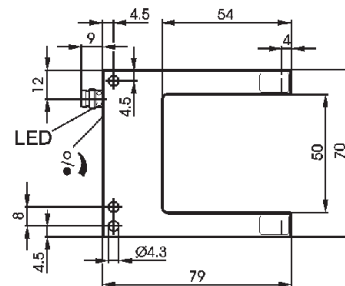


## DIMENSIONS

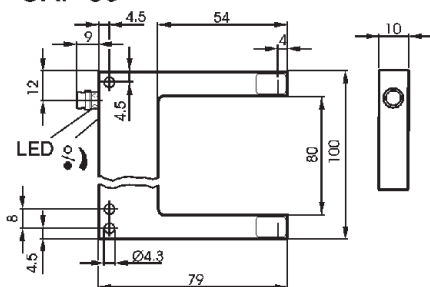
SRF-30



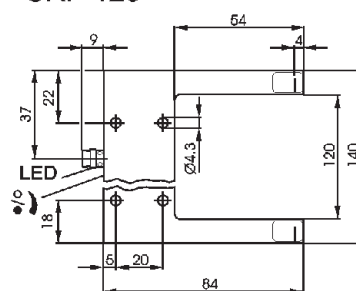
SRF-50



SRF-80

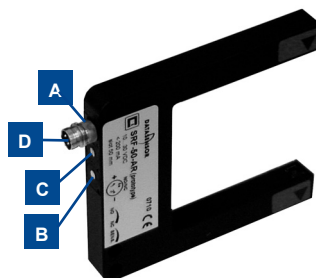


SRF-120



mm

## INDICATORS AND SETTINGS

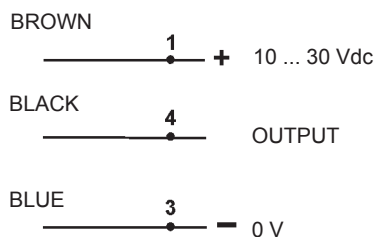


- A** Output status LED
- B** Sensitivity trimmer
- C** Output type selector
- D** M8 connector output

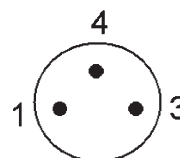
## ACCESSORIES

For dedicated accessories refer to the **ACCESSORIES** section of this catalogue.

## CONNECTIONS



M8 CONNECTOR





## TECHNICAL DATA

|                        |                                      | SRF-30-5-P | SRF-30-5-N | SRF-50-5-P | SRF-50-5-N | SRF-80-5-P | SRF-80-5-N | SRF-120-5-P | SRF-120-5-N | SRF-L-30-5-P | SRF-L-30-5-N | SRF-L-50-5-P | SRF-L-50-5-N | SRF-L-80-5-P | SRF-L-80-5-N | SRF-L-120-5-P | SRF-L-120-5-N |
|------------------------|--------------------------------------|------------|------------|------------|------------|------------|------------|-------------|-------------|--------------|--------------|--------------|--------------|--------------|--------------|---------------|---------------|
| Power supply:          | 10...30 Vdc <sup>1</sup>             | •          | •          | •          | •          | •          | •          | •           | •           | •            | •            | •            | •            | •            | •            | •             | •             |
| Consumption:           | 35 mA max                            | •          | •          | •          | •          | •          | •          | •           | •           | •            | •            | •            | •            | •            | •            | •             | •             |
| Light emission:        | red LED 640 nm <sup>2</sup>          | •          | •          | •          | •          | •          | •          | •           | •           | •            | •            | •            | •            | •            | •            | •             | •             |
|                        | red LASER 650 nm <sup>3</sup>        |            |            |            |            |            |            |             |             | •            | •            | •            | •            | •            | •            | •             | •             |
| Setting:               | sensitivity trimmer <sup>4</sup>     | •          | •          | •          | •          | •          | •          | •           | •           | •            | •            | •            | •            | •            | •            | •             | •             |
| Resolution:            | 0.06 mm                              |            |            |            |            |            |            |             |             | •            |              |              |              |              |              |               |               |
|                        | 0.1 mm                               |            |            |            |            |            |            |             |             |              | •            |              |              |              |              |               |               |
|                        | 0.2 mm                               |            |            |            |            |            |            |             |             |              |              | •            |              |              |              |               |               |
|                        | 0.3 mm                               | •          | •          |            |            |            |            |             |             |              |              |              |              |              |              | •             |               |
|                        | 0.5 mm                               |            |            | •          | •          | •          | •          |             |             |              |              |              |              |              |              |               |               |
|                        | 0.8 mm                               |            |            |            |            |            |            | •           |             |              |              |              |              |              |              |               |               |
| Repeatability:         | 0.015 mm                             |            |            |            |            |            |            |             |             | •            | •            | •            | •            |              |              |               |               |
|                        | 0.02 mm                              | •          | •          |            |            |            |            |             |             |              |              |              |              |              |              |               |               |
|                        | 0.04 mm                              |            |            | •          | •          |            |            |             |             |              |              |              |              |              |              |               |               |
|                        | 0.06 mm                              |            |            |            |            | •          |            |             |             |              |              |              |              |              |              |               |               |
|                        | 0.08 mm                              |            |            |            |            |            | •          | •           |             |              |              |              |              |              |              |               |               |
| Power on delay:        | 0.33 ms                              | •          | •          | •          | •          | •          | •          | •           | •           | •            | •            | •            | •            | •            | •            | •             | •             |
| Slot width:            | 30 mm                                | •          | •          |            |            |            |            |             |             | •            |              |              |              |              |              |               |               |
|                        | 50 mm                                |            |            | •          |            |            |            |             |             |              | •            |              |              |              |              |               |               |
|                        | 80 mm                                |            |            |            |            | •          | •          |             |             |              |              | •            |              |              |              |               |               |
|                        | 120 mm                               |            |            |            |            |            |            | •           | •           |              |              |              |              |              |              | •             |               |
| Slot depth:            | 34 mm                                | •          | •          |            |            |            |            |             |             | •            |              |              |              |              |              |               |               |
|                        | 54 mm                                |            |            | •          | •          | •          | •          | •           | •           | •            | •            | •            | •            | •            | •            | •             | •             |
| Detection point depth: | 4 mm                                 | •          | •          | •          | •          | •          | •          | •           | •           | •            | •            | •            | •            | •            | •            | •             | •             |
| Indicators:            | red LED                              | •          | •          | •          | •          | •          | •          | •           | •           | •            | •            | •            | •            | •            | •            | •             | •             |
| Output type:           | PNP                                  | •          |            | •          | •          | •          | •          | •           | •           | •            | •            | •            | •            | •            | •            | •             | •             |
|                        | NPN                                  |            | •          |            | •          |            | •          |             | •           |              | •            |              | •            |              | •            |               | •             |
| Saturation voltage:    | 3 V max                              | •          | •          | •          | •          | •          | •          | •           | •           | •            | •            | •            | •            | •            | •            | •             | •             |
| Output current:        | 200 mA, short-circuit protection     | •          | •          | •          | •          | •          | •          | •           | •           | •            | •            | •            | •            | •            | •            | •             | •             |
| Response time:         | 166 µs                               |            |            |            |            |            |            |             |             | •            | •            | •            | •            |              |              |               |               |
|                        | 333 µs                               | •          | •          | •          | •          | •          | •          | •           | •           |              |              |              |              |              |              |               |               |
| Switching frequency:   | 1.5 KHz                              | •          | •          | •          | •          | •          | •          | •           | •           |              |              |              |              |              |              |               |               |
|                        | 3 KHz                                |            |            |            |            |            |            |             |             | •            | •            | •            | •            |              |              |               |               |
| Operating mode:        | configurable light/dark <sup>5</sup> | •          | •          | •          | •          | •          | •          | •           | •           | •            | •            | •            | •            | •            | •            | •             | •             |
| Connection:            | M8 3-pole connector                  | •          | •          | •          | •          | •          | •          | •           | •           | •            | •            | •            | •            | •            | •            | •             | •             |
| Electrical protection: | class 1                              | •          | •          | •          | •          | •          | •          | •           | •           | •            | •            | •            | •            | •            | •            | •             | •             |
| Mechanical protection: | IP65                                 | •          | •          | •          | •          | •          | •          | •           | •           | •            | •            | •            | •            | •            | •            | •             | •             |
| Protection devices:    | A,B <sup>6</sup>                     | •          | •          | •          | •          | •          | •          | •           | •           | •            | •            | •            | •            | •            | •            | •             | •             |
| Housing material:      | anodised aluminium                   | •          | •          | •          | •          | •          | •          | •           | •           | •            | •            | •            | •            | •            | •            | •             | •             |
| Lens material:         | glass                                | •          | •          | •          | •          | •          | •          | •           | •           | •            | •            | •            | •            | •            | •            | •             | •             |
| Weight:                | 36 g                                 | •          | •          |            |            |            |            |             |             | •            |              |              |              |              |              |               |               |
|                        | 54 g                                 |            |            | •          | •          |            |            |             |             |              | •            |              |              |              |              |               |               |
|                        | 77 g                                 |            |            |            |            | •          | •          |             |             |              |              | •            |              |              |              |               |               |
|                        | 118 g                                |            |            |            |            |            |            | •           | •           |              |              |              |              |              |              | •             |               |
| Operating temperature: | -10...+60°C                          | •          | •          | •          | •          | •          | •          | •           | •           | •            | •            | •            | •            | •            | •            | •             | •             |
| Storage temperature:   | -20...+70°C                          | •          | •          | •          | •          | •          | •          | •           | •           | •            | •            | •            | •            | •            | •            | •             | •             |
| Reference standard:    | EN 60947-5-2,                        | •          | •          | •          | •          | •          | •          | •           | •           | •            | •            | •            | •            | •            | •            | •             | •             |
|                        | EN 60825-1, CDRH21 CFR 1040.10       |            |            |            |            |            |            |             |             | •            | •            | •            | •            |              |              |               |               |

## SELECTION TABLE

| slot sensors  |        |        |
|---------------|--------|--------|
| model         | slot   | output |
| SRF-30-5-P    | 30 mm  | PNP    |
| SRF-30-5-N    | 30 mm  | NPN    |
| SRF-50-5-P    | 50 mm  | PNP    |
| SRF-50-5-N    | 50 mm  | NPN    |
| SRF-80-5-P    | 80 mm  | PNP    |
| SRF-80-5-N    | 80 mm  | NPN    |
| SRF-120-5-P   | 120 mm | PNP    |
| SRF-120-5-N   | 120 mm | NPN    |
| SRF-L-30-5-P  | 30 mm  | PNP    |
| SRF-L-50-5-P  | 50 mm  | PNP    |
| SRF-L-80-5-P  | 80 mm  | PNP    |
| SRF-L-120-5-P | 120 mm | PNP    |

## TECHNICAL NOTES

<sup>1</sup> Limit values

<sup>2</sup> Average life of 100.000 h with  $T_A = +25^\circ\text{C}$

<sup>3</sup> Class 1 EN60825-1, CDRH21 CFR 1040.10

<sup>4</sup> 270° trimmer

<sup>5</sup> Dark/light selector

<sup>6</sup> A - reverse polarity protection

B - overload and short-circuit protection



## MODEL SELECTION AND ORDER INFORMATION

| MODEL         | SLOT   | EMISSION TYPE | USCITA | ORDER N°  |
|---------------|--------|---------------|--------|-----------|
| SRF-30-5-P    | 30 mm  | red LED       | PNP    | 95B020050 |
| SRF-30-5-N    | 30 mm  | red LED       | NPN    | 95B020090 |
| SRF-50-5-P    | 50 mm  | red LED       | PNP    | 95B020060 |
| SRF-50-5-N    | 50 mm  | red LED       | NPN    | 95B020100 |
| SRF-80-5-P    | 80 mm  | red LED       | PNP    | 95B020070 |
| SRF-80-5-N    | 80 mm  | red LED       | NPN    | 95B020110 |
| SRF-120-5-P   | 120 mm | red LED       | PNP    | 95B020080 |
| SRF-120-5-N   | 120 mm | red LED       | NPN    | 95B020120 |
| SRF-L-30-5-P  | 30 mm  | red LASER     | PNP    | 95B020130 |
| SRF-L-50-5-P  | 50 mm  | red LASER     | PNP    | 95B020140 |
| SRF-L-80-5-P  | 80 mm  | red LASER     | PNP    | 95B020150 |
| SRF-L-120-5-P | 120 mm | red LASER     | PNP    | 95B020160 |

## ACCESSORY SELECTION AND ORDER INFORMATION

| MODEL         | DESCRIPTION                    | ORDER N°  |
|---------------|--------------------------------|-----------|
| CS-B1-01-G-03 | 3 m M8 3-pole axial connector  | 95A251490 |
| CS-B1-01-G-05 | 5 m M8 3-pole axial connector  | 95A251510 |
| CS-B2-01-G-03 | 3 m M8 3-pole radial connector | 95A251500 |
| CS-B2-01-G-05 | 5 m M8 3-pole radial connector | 95A251520 |

# SLOT SENSORS



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