

# FT 25-RLA

## Miniature laser distance sensor



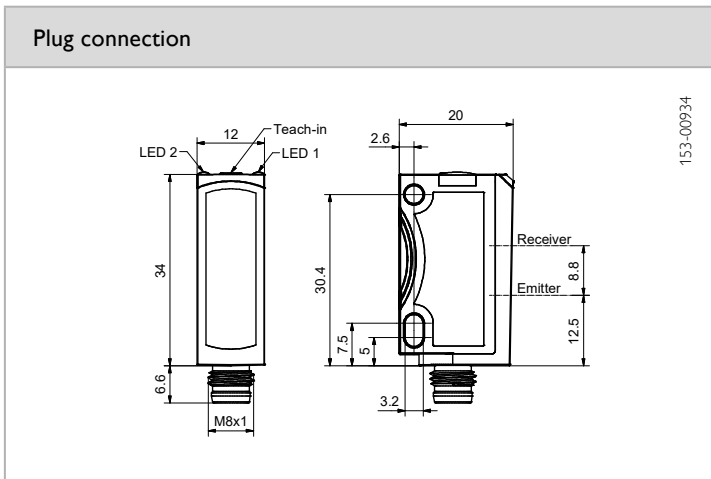
### PRODUCT HIGHLIGHTS

- Small laser light spot for reliable distance measurement of small objects part detection
- Miniature housing and low weight - suitable for robotic applications
- High linearity and high repeatability for precise control tasks
- Invertible analogue characteristic
- Window mode e.g. for two-step controls separately adjustable

| Optical data                         |  | Functions                            |   |
|--------------------------------------|--|--------------------------------------|---|
| Measurement range                    | 20 ... 100 mm <sup>1</sup>   | Indicator LED, green                 | Operating voltage indicator                                 |
| Resolution                           | 0.12 mm (12-bit)   | Indicator LED, yellow                | Switching output indicator                                  |
| Linearity                            | ± 0.25 mm <sup>2</sup>   | Measurement range adjustment         | Via Teach-in button   |
| Repeatability                        | < 0.25 mm <sup>2,3</sup>   | Adjustment possibilities             | Analogue measurement range Q <sub>A</sub>                   |
| Type of light                        | Laser, red, 650 nm   |                                      | Invertible analogue characteristic                          |
| Light spot size                      | See diagram  |                                      | Switching output Q (window mode)                            |
| Laser class (IEC 60825-1)            | 1  |                                      | N.O. / N.C. and Auto-Detect / NPN / PNP via teach-in button |
|                                      |  | Default settings                     | See Table   |
| Electrical data                      |  | Mechanical data                      |   |
| Operating voltage, +U <sub>B</sub>   | 13 ... 30V DC  | Dimensions                           | 34 x 20 x 12 mm   |
| No-load current, I <sub>0</sub>      | ≤ 30 mA  | Enclosure rating                     | IP 67 / IP 69K <sup>5</sup>                                 |
| Output current, I <sub>e Q</sub>     | ≤ 100 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       | -20 ... +60 °C <sup>6</sup>                                 |
| Switching output, Q                  | Auto-Detect (NPN / PNP) <sup>4</sup>                                       | Ambient temperature: storage         | -20 ... +80 °C  |
| Output function                      | N.O. / N.C.  | Weight (metal plug device)           | 10 g  |
| Max. capacitive load                 | 10 nF  | Resistance to vibrations and impacts | EN 60947-5-2  |
| Switching frequency, f (ti/tp 1:1) Q | ≤ 1000 Hz  |                                      |   |
| Response time Q                      | 500 μs   |                                      |   |
| Analogue output Q <sub>A</sub>       | 1 ... 10V / max. 3 mA  |                                      |   |
| Response time Q <sub>A</sub>         | 3.4 ms   |                                      |   |
| Warm-up time                         | 10 min.  |                                      |   |
| Temperature drift                    | < 0.1 mm/K   |                                      |   |

<sup>1</sup> Reference material: 6...90 % reflectivity    <sup>2</sup> Reference material, 18 % reflectivity    <sup>3</sup> At 6 σ, at constant ambient conditions, typ. values see diagram    <sup>4</sup> Auto-Detect: Automatic selection of PNP or NPN by the sensor; PNP or NPN can be fixed    <sup>5</sup> With connected IP 67 / IP 69K plug    <sup>6</sup> UL: -20 ... +50 °C

| Measurement range | Analogue output | Switching output | Type of connection      | Part number           | Article number |
|-------------------|-----------------|------------------|-------------------------|-----------------------|----------------|
| 20 ... 100 mm     | 1 ... 10V       | Auto-Detect      | Metal plug, M8x1, 4-pin | FT 25-RLA-80-PNSU-M4M | 604-41010      |



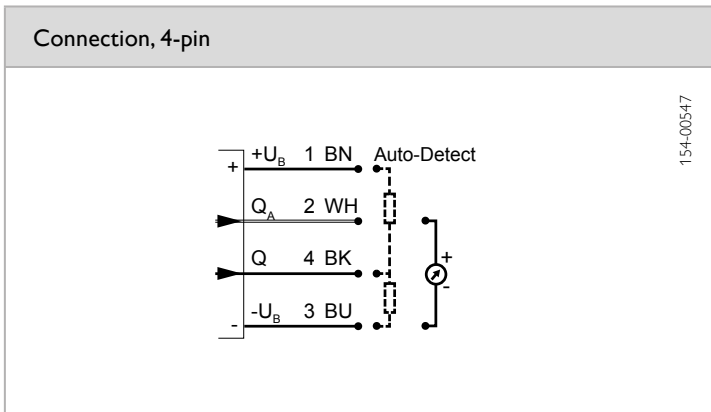
Sold & Serviced By:



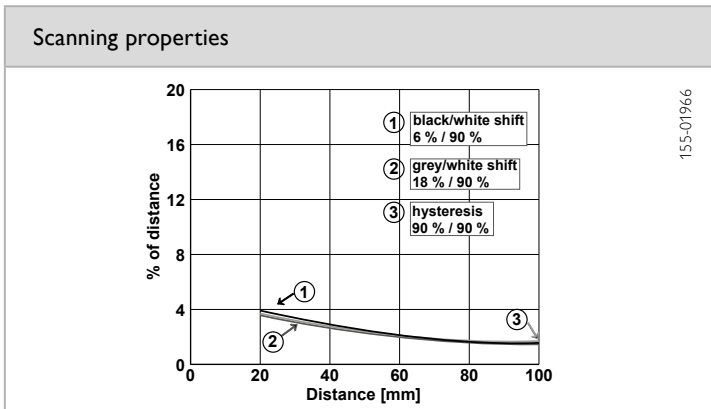
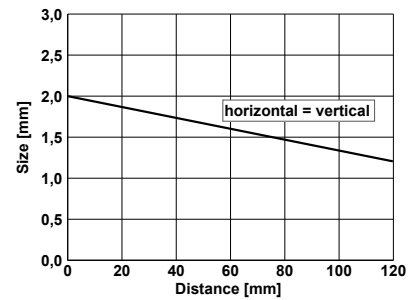
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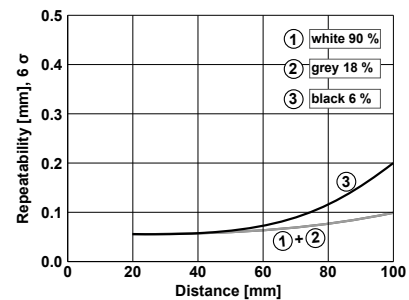
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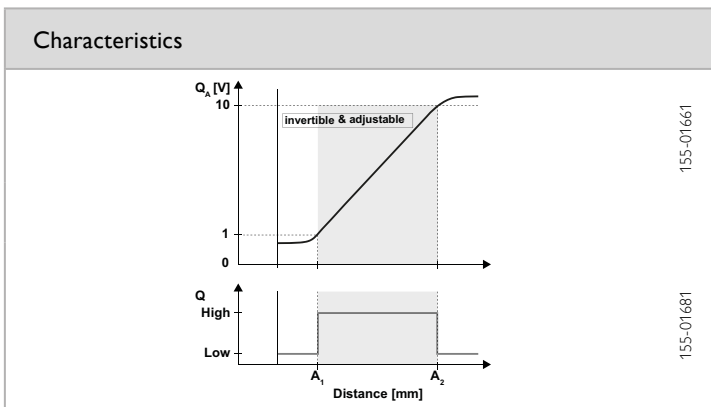
**Light spot size**



**Repeatability<sup>1</sup> (typ.)**



<sup>1</sup> At constant ambient conditions



**Default settings**

Analogue output Q<sub>A</sub> (1 ... 10V)

20 ... 100 mm

Switching output Q (A1 ... A2), N.O.

20 ... 100 mm

**Accessories**

Connection cables

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Brackets

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