

FR 25-R

Retroreflective photoelectric sensor



PRODUCT HIGHLIGHTS

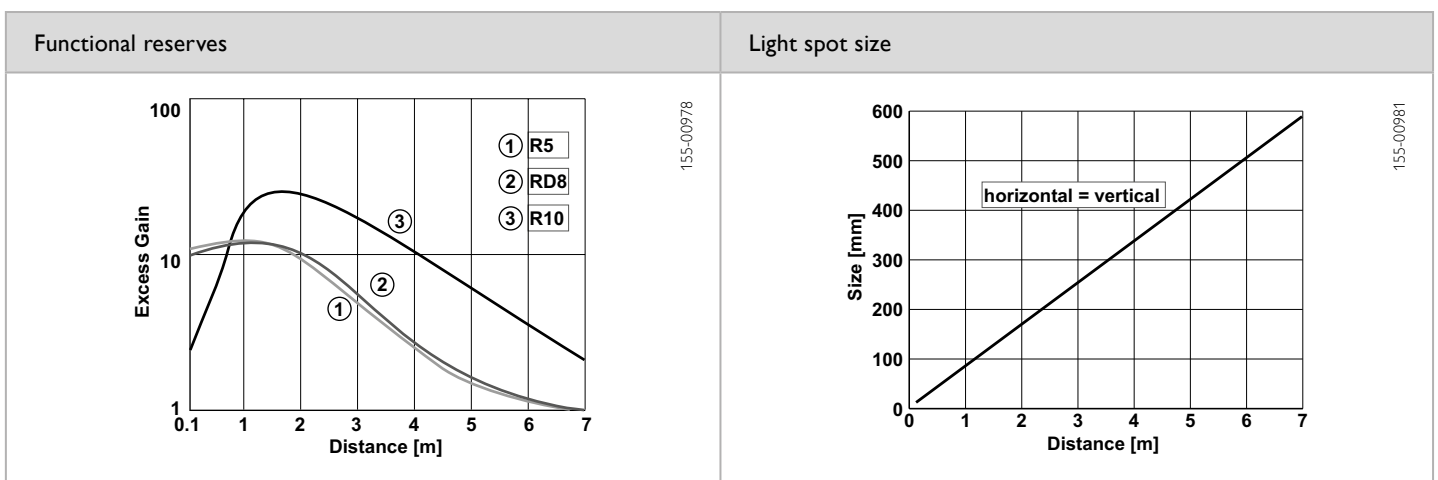
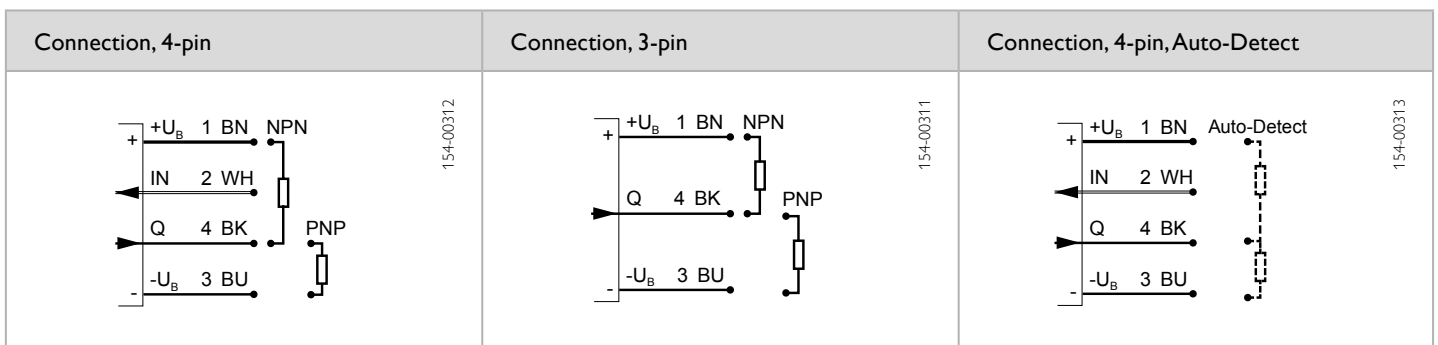
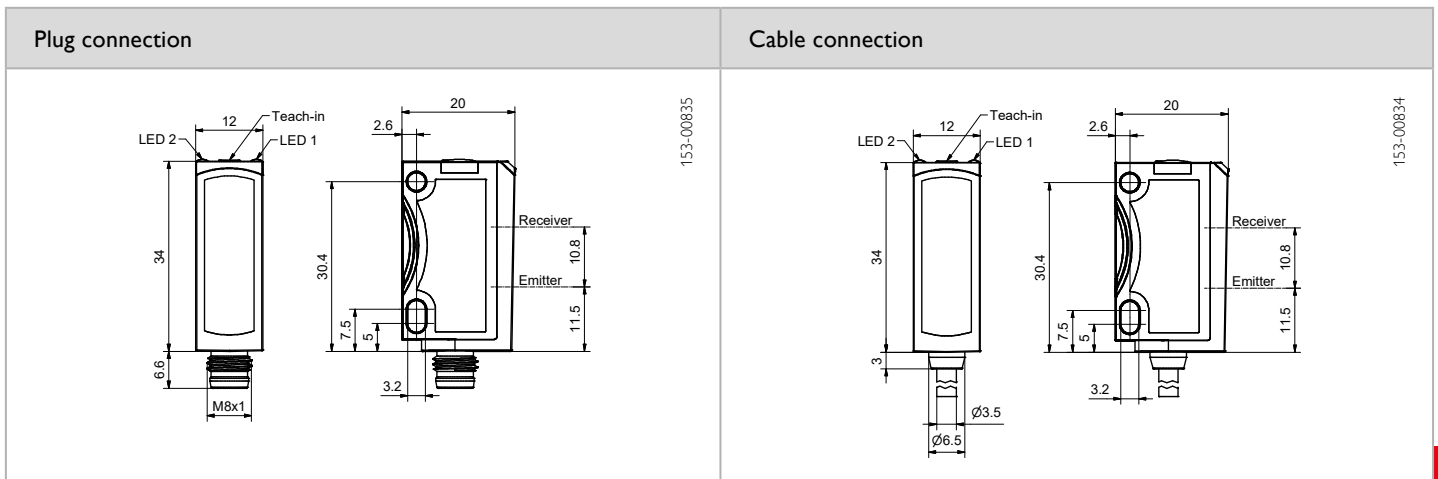
- Auto-detect retroreflective photoelectric sensor with real PNP and real NPN functions
- Particularly suitable for short-range applications
- Simple alignment thanks to easily visible light spot
- Robust glass-fibre-reinforced plastic housings
- Durable laser printing
- Wide range of variants

| Optical data | | Functions | |
|------------------------------------|--|--|---|
| Limit range | 0.1 ... 7 m ¹ | Indicator LED, green | Operating voltage indicator |
| Operating range | 0.1 ... 6 m ¹ | Indicator LED, yellow | Switching output indicator |
| Type of light | LED, red, 632 nm | Sensitivity adjustment | Via Teach-in button and control input |
| Light spot size | See diagram | Teach-in modes | Mode 1: during running process |
| Polarising filter | Yes | Adjustment possibilities | Mode 2: during standing process |
| | | | N.O./N.C. via Teach-in button and control input |
| | | | Button lock via control input |
| | | | Auto-detect / NPN / PNP via Teach-in button and control input (only Auto-detect variants) |
| | | Default settings | Max. range and N.O. |
| Electrical data | | Mechanical data | |
| Operating voltage, +U _B | 10 ... 30V DC ² | Dimensions | 34 × 20 × 12 mm |
| No-load current, I ₀ | ≤ 30 mA | Enclosure rating | IP 69K & IP 67 ⁴ |
| Output current, I _e | ≤ 100 mA | Material, housing | ABS |
| Protective circuits | Reverse-polarity protection, U _B / 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 ⁵ |
| Switching output, Q | PNP/NPN/Auto-detect (see Selection Table) | Ambient temperature: storage | -20 ... +80 °C |
| Output function | N.O./N.C. | Weight (plug device) | 10 g |
| Switching frequency, f (ti/tp 1:1) | ≤ 1000 Hz | Weight (metal plug device ⁶) | 10 g |
| Response time | 500 μs | Weight (cable device) | 40 g |
| Control input, IN ³ | +U _B = teach-in -U _B = button locked Open = normal operation | Weight (pigtail) | 20 g |
| | | Vibration and impact resistance | EN 60947-5-2 |

¹ Reference material: R10 reflector ² Max. 10 % ripple, within U_B, ~ 50 Hz / 100 Hz ³ Only 4-pin design ⁴ With connected IP 67 / IP 69K plug ⁵ UL: -20 ... +50 °C ⁶ No Ecolab

| Operating range | Switching output | Type of connection | Part number | Article number |
|-----------------|------------------|-------------------------|----------------|----------------|
| 0.1 ... 6 m | PNP | Plug, M8x1, 4-pin | FR 25-R-PS-M4 | 606-11000 |
| 0.1 ... 6 m | NPN | Plug, M8x1, 4-pin | FR 25-R-NS-M4 | 606-11002 |
| 0.1 ... 6 m | PNP | Metal plug, M8x1, 3-pin | FR 25-R-PS-M3M | 606-11006 |
| 0.1 ... 6 m | NPN | Metal plug, M8x1, 3-pin | FR 25-R-NS-M3M | 606-11007 |
| 0.1 ... 6 m | PNP | Metal plug, M8x1, 4-pin | FR 25-R-PS-M4M | 606-11008 |
| 0.1 ... 6 m | NPN | Metal plug, M8x1, 4-pin | FR 25-R-NS-M4M | 606-11009 |
| 0.1 ... 6 m | PNP | Cable, 2 m, 4-wire | FR 25-R-PS-K4 | 606-11001 |
| 0.1 ... 6 m | NPN | Cable, 2 m, 4-wire | FR 25-R-NS-K4 | 606-11003 |

| Operating range | Switching output | Type of connection | Part number | Article number |
|-----------------|------------------|---------------------------------------|-----------------|----------------|
| 0.1 ... 6 m | PNP | Pigtail, 150 mm with plug, M8, 4-pin | FR 25-R-PS-KM4 | 606-11028 |
| 0.1 ... 6 m | NPN | Pigtail, 150 mm with plug, M8, 4-pin | FR 25-R-NS-KM4 | 606-11029 |
| 0.1 ... 6 m | PNP | Pigtail, 150 mm with plug, M12, 4-pin | FR 25-R-PS-KL4 | 606-11004 |
| 0.1 ... 6 m | NPN | Pigtail, 150 mm with plug, M12, 4-pin | FR 25-R-NS-KL4 | 606-11005 |
| 0.1 ... 6 m | Auto-detect | Metal plug, M8x1, 4-pin | FR 25-R-PNS-M4M | 606-11011 |



| Reflector | Operating range | Accessories |
|-----------|-----------------|-------------------|
| R10 | 0.1 ... 6 m | Reflectors |
| RD8 | 0,05 ... 4 m | Connection cables |
| R5 | 0.1 ... 4 m | Brackets |
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