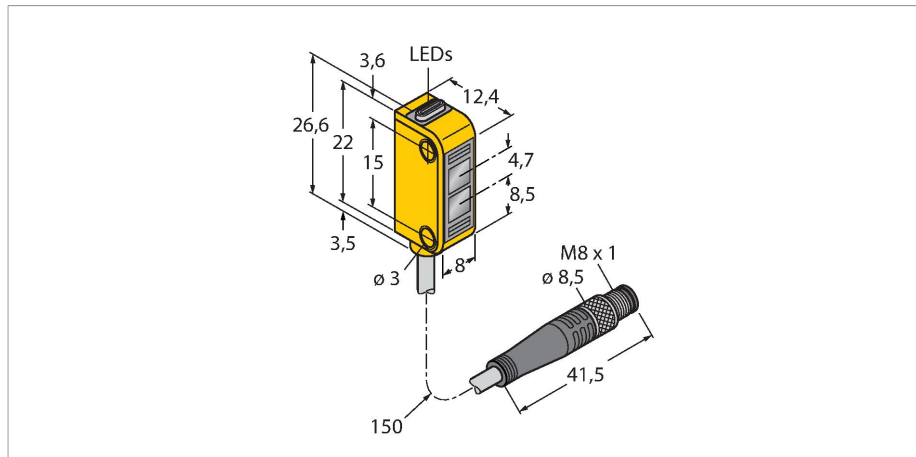


Q12AN6RQ3

## Photoelectric Sensor – Opposed Mode Sensor (Emitter/Receiver)

# Miniature Sensor



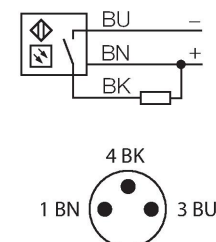
## Technical data

|                              |                                           |
|------------------------------|-------------------------------------------|
| Type                         | Q12AN6RQ3                                 |
| ID                           | 3077097                                   |
| Optical data                 |                                           |
| Function                     | Opposed mode sensor                       |
| Operating mode               | Receiver                                  |
| Wavelength                   | 640 nm                                    |
| Range                        | 0...2000 mm                               |
| Electrical data              |                                           |
| Operating voltage            | 10...30 VDC                               |
| Residual ripple              | < 10 % U <sub>ss</sub>                    |
| DC rated operational current | ≤ 50 mA                                   |
| No-load current              | ≤ 20 mA                                   |
| Short-circuit protection     | yes                                       |
| Reverse polarity protection  | yes                                       |
| Output function              | NO contact, NPN                           |
| Switching frequency          | ≤ 450 Hz                                  |
| Readiness delay              | ≤ 120 ms                                  |
| Response time typical        | < 1.3 ms                                  |
| Mechanical data              |                                           |
| Design                       | Rectangular, Q12                          |
| Dimensions                   | 12.4 x 8 x 26.6 mm                        |
| Housing material             | Plastic, Thermoplastic material, Yellow   |
| Lens                         | plastic, Polycarbonate                    |
| Electrical connection        | Cable with connector, M8 × 1, 0.15 m, PVC |

## Features

- Cable, PVC, 150 mm, with M8 × 1 male end, 3-pin
- Protection class IP67
- LED all-round visible
- Indication of insufficient excess gain
- Operating voltage: 10...30 VDC
- NPN switching output, light operation

## Wiring diagram



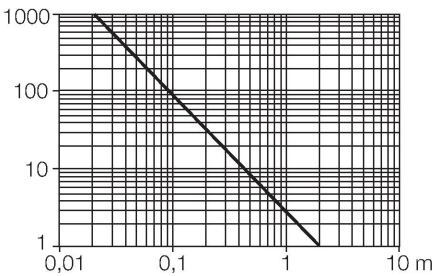
### Functional principle

Opposed mode sensors consist of an emitter and receiver. They are installed opposite each other so that the light from the emitter is aimed directly at the receiver. When an object interrupts or weakens the light beam, the sensor switches. Opposed mode sensors are the most reliable photoelectric sensors for detection of opaque targets. An excellent contrast between light and dark conditions and an extremely high excess gain are typical of this sensing mode, thus allowing operation over larger distances and under difficult conditions.

Excess gain curve  
Excess gain in relation to the distance

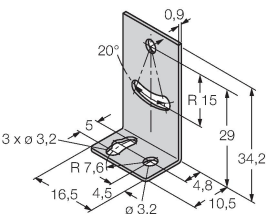
Technical data

|                        |                                           |
|------------------------|-------------------------------------------|
| Number of cores        | 3                                         |
| Core cross-section     | 0.34 mm <sup>2</sup>                      |
| Ambient temperature    | -20...+55 °C                              |
| Protection class       | IP67                                      |
| Power-on indication    | LED, Green                                |
| Switching state        | LED, Yellow                               |
| Error indication       | LED, green                                |
| Excess gain indication | LED, yellow, flashing                     |
| Tests/approvals        |                                           |
| MTTF                   | 139 years acc. to SN 29500 (Ed. 99) 40 °C |
| Approvals              | CE, cURus                                 |



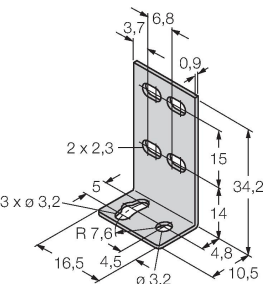
Accessories

SMBQ12A 3074341



Mounting bracket; material VA 1.4401, for photoelectric sensor, Q12 series

SMBQ12T 3073722



Mounting bracket; material VA 1.4401, for photoelectric sensor, Q12 series

Accessories

| Dimension drawing | Type        | ID      |                                                                                                                                                                                                                 |
|-------------------|-------------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                   | PKG3M-2/TEL | 6625058 | Connection cable, female M8, straight, 3-pin, cable length: 2 m, sheath material: PVC, black; cULus approval; other cable lengths and qualities available, see <a href="http://www.turck.com">www.turck.com</a> |
|                   | PKW3M-2/TEL | 6625064 | Connection cable, female M8, angled, 3-pin, cable length: 2 m, sheath material: PVC, black; cULus approval; other cable lengths and qualities available, see <a href="http://www.turck.com">www.turck.com</a>   |