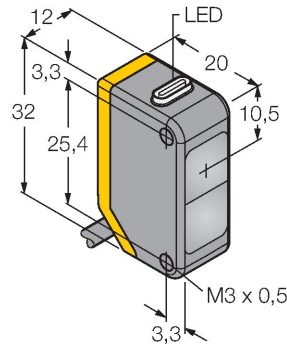


# Q20NRL

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



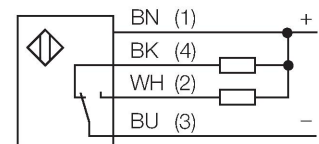
### Technical data

|                              |                                 |
|------------------------------|---------------------------------|
| Type                         | Q20NRL                          |
| ID                           | 3078274                         |
| <b>Optical data</b>          |                                 |
| Function                     | Opposed mode sensor             |
| Operating mode               | Receiver                        |
| Range                        | 0...20000 mm                    |
| <b>Electrical data</b>       |                                 |
| Operating voltage            | 10...30 VDC                     |
| Residual ripple              | < 10 % U <sub>ss</sub>          |
| DC rated operational current | ≤ 100 mA                        |
| No-load current              | ≤ 18 mA                         |
| Reverse polarity protection  | yes                             |
| Output function              | Complementary contact, NPN      |
| Switching frequency          | ≤ 600 Hz                        |
| Readiness delay              | ≤ 100 ms                        |
| Response time typical        | < 1 ms                          |
| <b>Mechanical data</b>       |                                 |
| Design                       | Rectangular, Q20                |
| Dimensions                   | 20 x 12 x 32 mm                 |
| Housing material             | Plastic, Thermoplastic material |
| Lens                         | plastic, Acrylic                |
| Electrical connection        | Cable, 2 m, PVC                 |
| Number of cores              | 4                               |
| Core cross-section           | 0.35 mm <sup>2</sup>            |
| Ambient temperature          | -20...+60 °C                    |
| Protection class             | IP67                            |

### Features

- Cable, PVC, 2 m
- Protection class IP67
- LED all-round visible
- Operating voltage: 10...30 VDC
- NPN switching output, changeover

### Wiring diagram



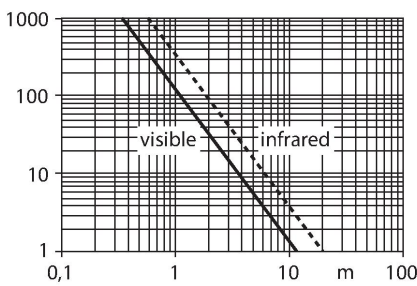
### Functional principle

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.

Technical data

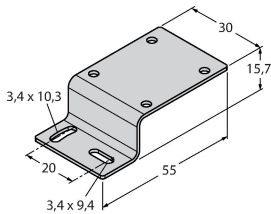
|                        |                       |
|------------------------|-----------------------|
| Power-on indication    | LED, Green            |
| Switching state        | LED, Yellow           |
| Error indication       | LED, green, Flashing  |
| Excess gain indication | LED, yellow, flashing |
| Tests/approvals        |                       |
| Approvals              | CE                    |

Excess Gain Curve



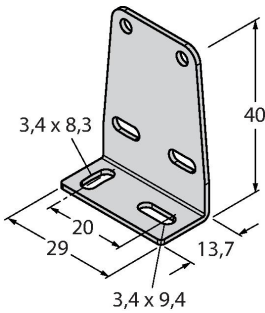
Accessories

SMBQ20H 3079041



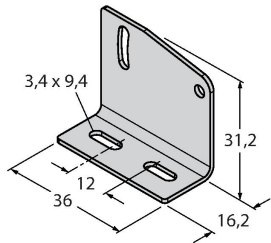
Mounting bracket, stainless steel, horizontally mounted, for Q20

SMBQ20L 3079040



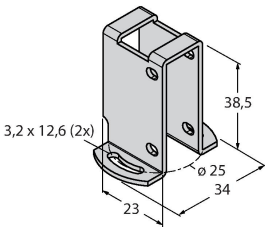
Mounting bracket, stainless steel, rectangular, for Q20

SMBQ20LV 3079042



Mounting bracket, stainless steel, rectangular, for Q20

SMBQ20U 3079043



Protective housing, stainless steel, for Q20