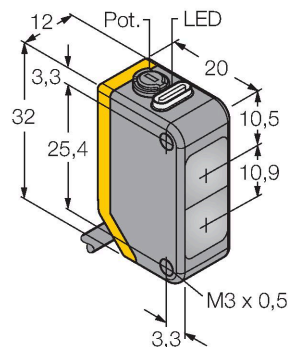


# Q20NLV

## Photoelectric Sensor – Retroreflective Sensor



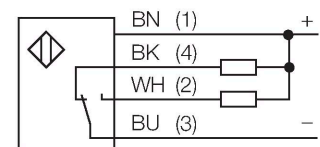
### Technical data

|                                |                                 |
|--------------------------------|---------------------------------|
| Type                           | Q20NLV                          |
| ID no.                         | 3077767                         |
| <b>Optical data</b>            |                                 |
| Function                       | Retroreflective Sensor          |
| Operating mode                 | Unpolarized                     |
| Reflector included in delivery | no                              |
| Light type                     | Red                             |
| Wavelength                     | 645 nm                          |
| Range                          | 30...6000 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          | < 0.8 ms                        |
| Setting option                 | Potentiometer                   |
| <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                               |

### Features

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

### Wiring diagram



### Functional principle

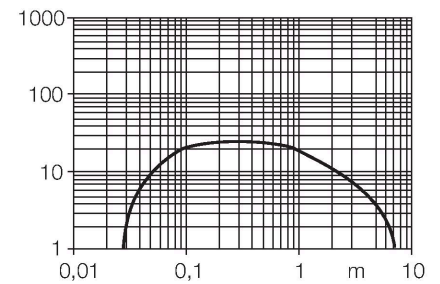
Retroreflective sensors have emitter and receiver circuitry incorporated in the same housing. The light beam of the emitter is directed towards a reflector which returns the light back to the receiver. A target is detected when it interrupts this beam. Retroreflective sensors feature some of the advantages of opposed mode sensors (good contrast and high excess gain). Furthermore, only one device has to be installed and wired. A smaller sensing range and susceptibility of devices without polarizing filter can be of disadvantage when shiny targets have to be detected.

Excess gain curve  
Excess gain in relation to distance

## Technical data

|                        |                       |
|------------------------|-----------------------|
| Core cross-section     | 0.35 mm <sup>2</sup>  |
| Ambient temperature    | -20...+60 °C          |
| Protection class       | IP67                  |
| Power-on indication    | LED, Green            |
| Switching state        | LED, Yellow           |
| Error indication       | LED, green, Flashing  |
| Excess gain indication | LED, yellow, flashing |
| <b>Tests/approvals</b> |                       |
| Approvals              | CE                    |

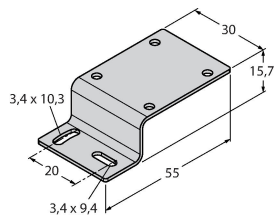
## Excess Gain Curve



## Accessories

### SMBQ20H

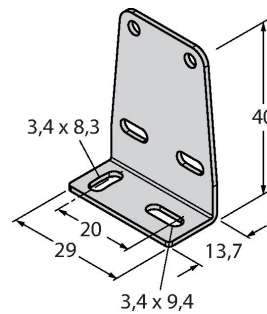
3079041



Mounting bracket, stainless steel, horizontally mounted, for Q20

### SMBQ20L

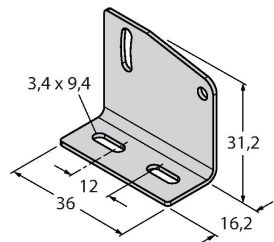
3079040



Mounting bracket, stainless steel, rectangular, for Q20

### SMBQ20LV

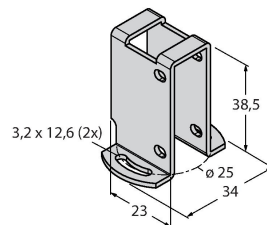
3079042



Mounting bracket, stainless steel, rectangular, for Q20

### SMBQ20U

3079043



Protective housing, stainless steel, for Q20

Accessories

| Dimension drawing | Type   | ID no.  |   |
|-------------------|--------|---------|---|
|                   | BRT-84 | 3058979 | Round reflector, reflection coefficient 1.4, material acrylic, ambient temperature -20 ... +60 °C |

