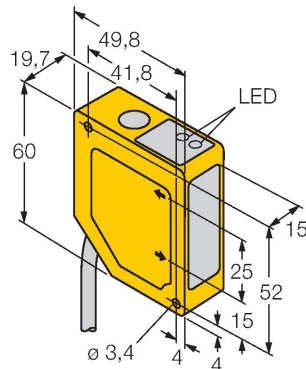


# Q50BN

## Photoelectric Sensor – Triangulation Sensor with Switching Output



### Features

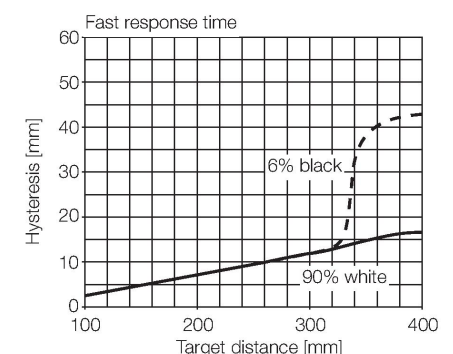
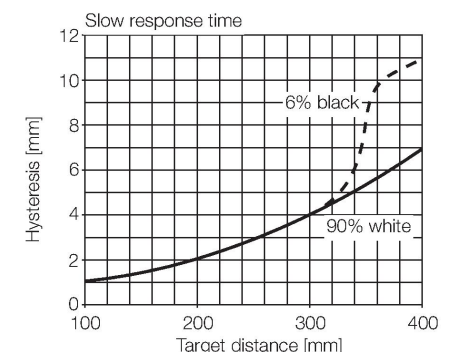
- Foreground and background suppression
- Operating range 100...400 mm
- 2 m cable, 5-pole
- Operating voltage 12...30 VDC
- NPN switching output
- Response time of output 64 ms

### Functional principle

The function principle of the Q50 is based on optical triangulation. The emitter and the optics create a light source that is directed towards a target. The target reflects the light back to the receiver lens of the sensor, from where it then is directed to the position sensitive device (PSD) as the receiver element. The target's distance from the receiver determines the angle at which the light meets the receiver element. This angle in turn determines where the reflected light falls onto the PSD. The microprocessor analyses and compares the target position to the programmed position values and creates a corresponding output signal.

### Technical data

|                        |                            |
|------------------------|----------------------------|
| Type                   | Q50BN                      |
| ID no.                 | 3063880                    |
| <b>Optical data</b>    |                            |
| Function               | Proximity switch           |
| Operating mode         | Triangulation              |
| Light type             | IR                         |
| Wavelength             | 880 nm                     |
| Range                  | 100...400 mm               |
| Ambient light immunity | 10000 lux                  |
| <b>Electrical data</b> |                            |
| Operating voltage      | 12...30 VDC                |
| No-load current        | ≤ 70 mA                    |
| Output function        | NO/NC, NPN                 |
| Switching frequency    | ≤ 7 Hz                     |
| Readiness delay        | ≤ 2 s                      |
| Readiness delay        | ≤ 2000 ms                  |
| Response time typical  | < 48 ms                    |
| <b>Mechanical data</b> |                            |
| Design                 | Rectangular, Q50           |
| Dimensions             | 49.8 x 19.7 x 60 mm        |
| Housing material       | Plastic, ABS/Polycarbonate |
| Lens                   | plastic, Acrylic           |
| Electrical connection  | Cable, 2 m, PVC            |
| Number of cores        | 5                          |
| Core cross-section     | 0.5 mm <sup>2</sup>        |
| Ambient temperature    | -10...+55 °C               |



## Technical data

|                   |             |
|-------------------|-------------|
| Relative humidity | 90 %        |
| Protection class  | IP67        |
| Switching state   | LED, Yellow |
| Tests/approvals   |             |