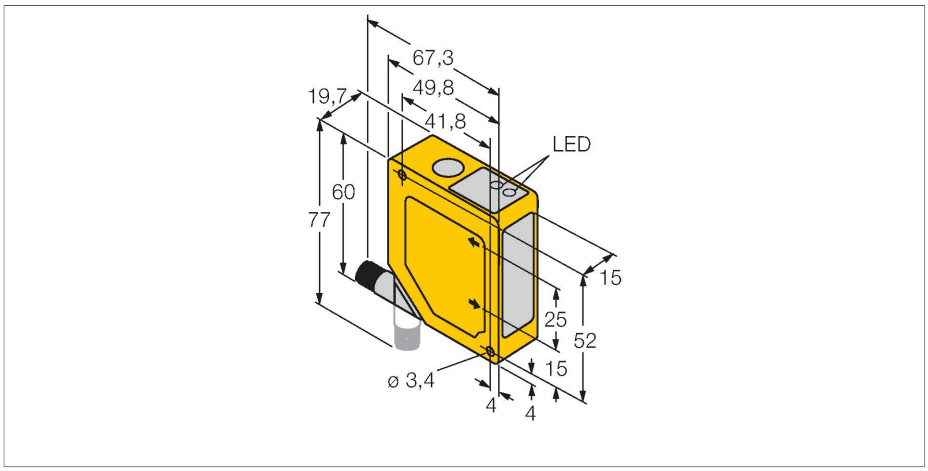
Q50BVPQPMA
Photoelectric Sensor – Triangulation Sensor with Switching Output



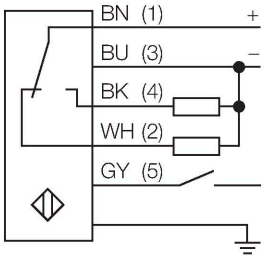
Technical data

Type	Q50BVPQPMA
ID	3072683
Optical data	
Function	Proximity switch
Operating mode	Background suppression, adjustable
Light type	Red
Wavelength	685 nm
Range	100…300 mm
Electrical data	
Operating voltage	12…30 VDC
No-load current	≤ 70 mA
Output function	NO/NC, PNP
Switching frequency	≤ 7 Hz
Readiness delay	≤ 2 s
Mechanical data	
Design	Rectangular, Q50
Dimensions	49.8 x 19.7 x 60 mm
Housing material	Plastic, ABS
Lens	plastic, Acrylic
Electrical connection	Connector, M12 × 1
Ambient temperature	-10…+55 °C
Protection class	IP67
Switching state	LED, Yellow
Tests/approvals	

Features

- Foreground and background suppression
- Operating range 100…300 mm
- M12 × 1 connector rotatable by 90°
- Operating voltage 12…30 VDC
- PNP switching output
- Response time of output 64 ms

Wiring diagram



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.