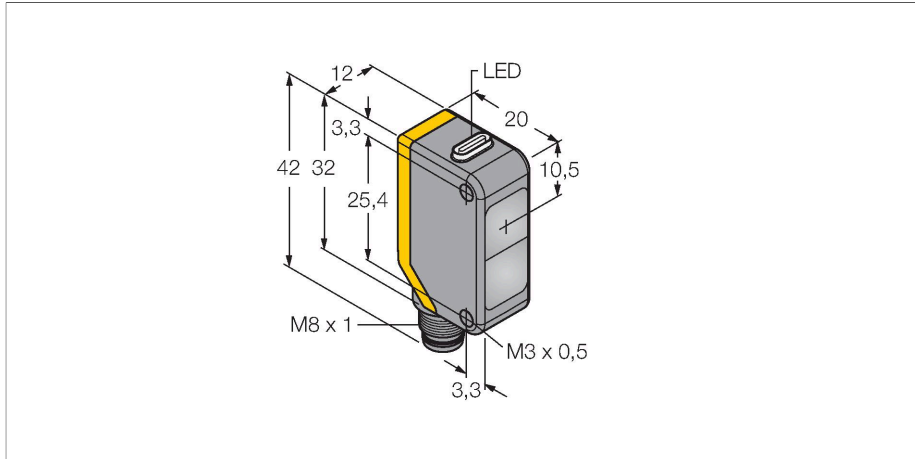


Q20NRQ7

Photoelectric Sensor – Opposed Mode Sensor (Emitter/Receiver)



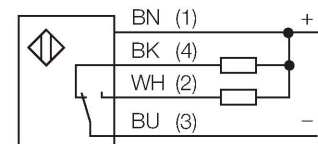
Technical data

Type	Q20NRQ7
ID no.	3077780
Optical data	
Function	Opposed mode sensor
Operating mode	Receiver
Wavelength	655 nm
Range	0...12000 mm
Electrical data	
Operating voltage	10...30 VDC
Residual ripple	< 10 % U _{ss}
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
Mechanical data	
Design	Rectangular, Q20
Dimensions	20 x 12 x 42 mm
Housing material	Plastic, Thermoplastic material
Lens	plastic, Acrylic
Electrical connection	Connectors, M8 × 1, PVC
Number of cores	4
Ambient temperature	-20...+60 °C
Protection class	IP67

Features

- Male M8 × 1; 4-pin
- Protection class IP67
- LED all-round visible
- Operating voltage: 10...30 VDC
- NPN switching output, changeover

Wiring diagram



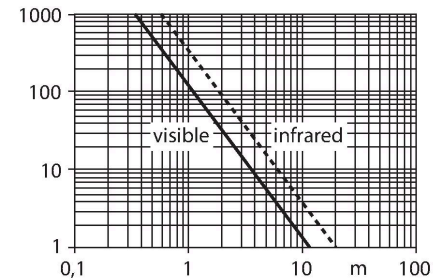
Functional principle

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

Dimensions: 30 x 15.7 x 55. Mounting holes: 3.4 x 10.3 and 3.4 x 9.4. A 20mm wide slot is also present.

SMBQ20L 3079040

Mounting bracket, stainless steel, rectangular, for Q20

Dimensions: 40 x 29 x 13.7. Mounting holes: 3.4 x 8.3 and 3.4 x 9.4. A 20mm wide slot is also present.

SMBQ20LV 3079042

Mounting bracket, stainless steel, rectangular, for Q20

Dimensions: 31.2 x 36 x 16.2. Mounting hole: 3.4 x 9.4. A 12mm wide slot is also present.

SMBQ20U 3079043

Protective housing, stainless steel, for Q20

Dimensions: 38.5 x 34 x 23. Mounting holes: 3.2 x 12.6 (2x) and a hole with diameter 25.

Accessories

Dimension drawing	Type	ID no.	
<p>Dimensions: M8 x 1, 16.5, 23.5, 50, 5. Cable length L.</p>	PKW4M-2/TEL	6625067	Connection cable, female M8, angled, 4-pin, cable length: 2 m, sheath material: PVC, black; cULus approval; other cable lengths and qualities available, see www.turck.com
<p>Dimensions: M8 x 1, 33.5, 50, 5. Cable length L.</p>	PKG4M-2/TEL	6625061	Connection cable, female M8, straight, 4-pin, cable length: 2 m, sheath material: PVC, black; cULus approval; other cable lengths and qualities available, see www.turck.com