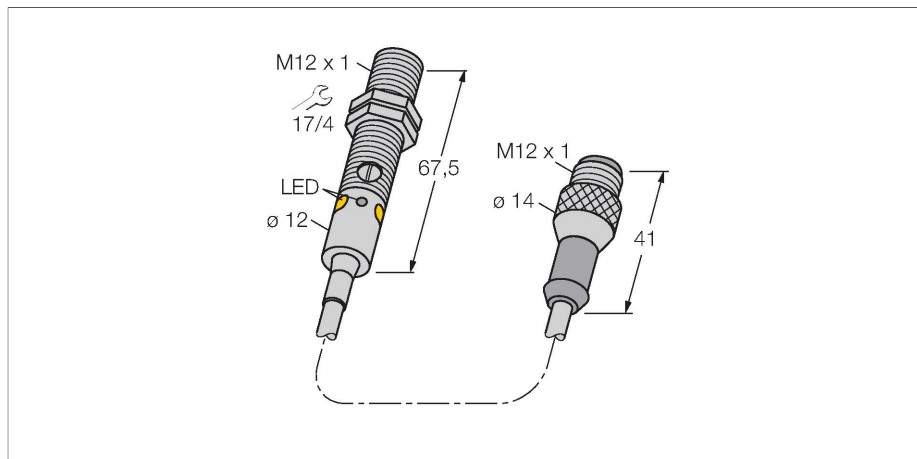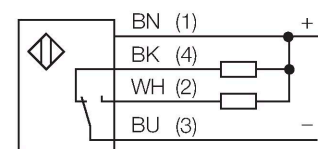# M12NRQPMA
Photoelectric Sensor –   Opposed Mode Sensor (Emitter/Receiver)

Features

- Cable with male end M12 × 1, 4-pin, PUR, 150 mm
- Protection classes IP67 / IP68
- Metal housing
- LED all-round visible
- Indication of insufficient excess gain
- Sensitivity adjustable via potentiometer
- Operating voltage: 10…30 VDC
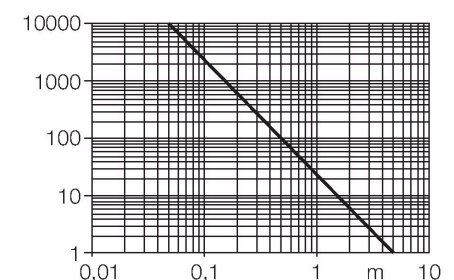- NPN switching output, changeover

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 extremly high excess gain are typical of this sensing mode, thus allowing operation over larger distances and under difficult conditions.

Technical data

Type	M12NRQPMA
ID no.	3077744
Optical data	
Function	Opposed mode sensor
Operating mode	Receiver
Wavelength	660 nm
Range	0…5000 mm
Electrical data	
Operating voltage	10…30 VDC
Residual ripple	< 10 % U_{ss}
DC rated operational current	≤ 100 mA
No-load current	≤ 20 mA
Short-circuit protection	yes
Reverse polarity protection	yes
Output function	Complementary contact, NPN
Switching frequency	≤ 500 Hz
Readiness delay	≤ 100 ms
Response time typical	< 0.625 ms
Setting option	Potentiometer
Mechanical data	
Design	Threaded barrel, M12
Dimensions	Ø 12 x 67.5 mm
Housing material	Metal, Nickel-plated brass, Nickel-plated
Lens	plastic, PMMA
Electrical connection	Cable with connector, M12 × 1, 0.15 m, PUR

Excess Gain Curve

Technical data

Number of cores	4
Ambient temperature	-20…+60 °C
Protection class	IP67 IP68
Special features	Encapsulated Wash down
Power-on indication	LED, Green
Switching state	LED, Yellow
Error indication	LED, green, Flashing
Excess gain indication	LED, yellow, flashing
Tests/approvals	
MTTF	46 years acc. to SN 29500 (Ed. 99) 40 °C
Approvals	CE

Accessories

SMB12FAM10	3011221
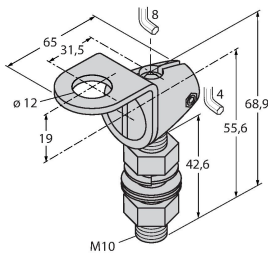
Mounting bracket, stainless steel, for M12, M10 x 1.5 thread

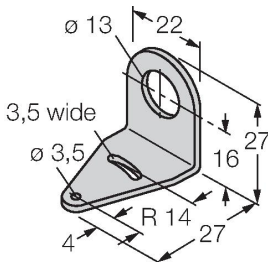| SMB12MM	3027635

Mounting bracket, stainless steel, for M12

SMBQS12PD	3059606

Mounting bracket; material VA 1.4401, for Q12 & M12 series