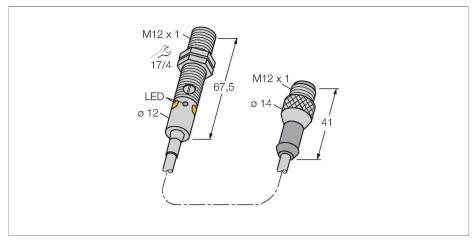


M12PLVQ5 Photoelectric Sensor – Retroreflective Sensor



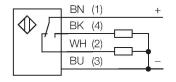
Technical data

ID 3078240 Optical data Function Retroreflective Sensor Operating mode Unpolarized Reflector included in delivery no Light type Red Wavelength 660 nm Range 02500 mm Electrical data Operating voltage Operating voltage 1030 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, PNP Switching frequency ≤ 1000 Hz Readiness delay ≤ 100 ms Response time typical < 0.5 ms Setting option Potentiometer Mechanical data Design Dimensions Ø 12 x 67.5 mm Housing material Metal, Nickel-plated brass, Nickel Plated Lens plastic, PMMA	Туре	M12PLVQ5
Function Retroreflective Sensor Operating mode Unpolarized Reflector included in delivery no Light type Red Wavelength 660 nm Range 02500 mm Electrical data Operating voltage 1030 VDC Residual ripple < 10 % U₂₂ DC rated operational current ≤ 100 mA No-load current ≤ 20 mA Short-circuit protection yes Reverse polarity protection yes Output function Complementary contact, PNP Switching frequency ≤ 100 ms Response time typical < 0.5 ms Setting option Potentiometer Mechanical data Design Tube, M12 Dimensions Ø 12 x 67.5 mm Housing material Metal, Nickel-plated brass, Nickel Plated	ID	3078240
Operating mode Unpolarized Reflector included in delivery no Light type Red Wavelength 660 nm Range 02500 mm Electrical data Operating voltage Operating voltage 1030 VDC Residual ripple < 10 % U₂s	Optical data	
Reflector included in delivery no Light type Red Wavelength 660 nm Range 02500 mm Electrical data 0perating voltage Operating voltage 1030 VDC Residual ripple < 10 % Uss	Function	Retroreflective Sensor
Light type Red Wavelength 660 nm Range 02500 mm Electrical data 0 Operating voltage 1030 VDC Residual ripple < 10 % U₅	Operating mode	Unpolarized
Wavelength 660 nm Range 02500 mm Electrical data 0 mm Operating voltage 1030 VDC Residual ripple < 10 % Uss	Reflector included in delivery	no
Range 02500 mm Electrical data Operating voltage 1030 VDC Residual ripple < 10 % U₂₂ DC rated operational current ≤ 100 mA No-load current ≤ 20 mA Short-circuit protection yes Reverse polarity protection yes Output function Complementary contact, PNP Switching frequency ≤ 1000 Hz Readiness delay ≤ 100 ms Response time typical < 0.5 ms Setting option Potentiometer Mechanical data Design Tube, M12 Dimensions Ø 12 x 67.5 mm Housing material Metal, Nickel-plated brass, Nickel Plated	Light type	Red
Electrical data Operating voltage 1030 VDC Residual ripple < 10 % U₂₅ DC rated operational current ≤ 100 mA No-load current ≤ 20 mA Short-circuit protection yes Reverse polarity protection yes Output function Complementary contact, PNP Switching frequency ≤ 1000 Hz Readiness delay ≤ 100 ms Response time typical < 0.5 ms Setting option Potentiometer Mechanical data Design Tube, M12 Dimensions Ø 12 x 67.5 mm Housing material Metal, Nickel-plated brass, Nickel Plated	Wavelength	660 nm
Operating voltage 1030 VDC Residual ripple < 10 % U₅s	Range	02500 mm
Residual ripple < 10 % U₅s	Electrical data	
DC rated operational current ≤ 100 mA No-load current ≤ 20 mA Short-circuit protection yes Reverse polarity protection yes Output function Complementary contact, PNP Switching frequency ≤ 1000 Hz Readiness delay ≤ 100 ms Response time typical < 0.5 ms	Operating voltage	1030 VDC
No-load current ≤ 20 mA Short-circuit protection yes Reverse polarity protection yes Output function Complementary contact, PNP Switching frequency ≤ 1000 Hz Readiness delay ≤ 100 ms Response time typical < 0.5 ms	Residual ripple	< 10 % U _{ss}
Short-circuit protection yes Reverse polarity protection yes Output function Complementary contact, PNP Switching frequency ≤ 1000 Hz Readiness delay ≤ 100 ms Response time typical < 0.5 ms	DC rated operational current	≤ 100 mA
Reverse polarity protection yes Output function Complementary contact, PNP Switching frequency ≤ 1000 Hz Readiness delay ≤ 1000 ms Response time typical < 0.5 ms	No-load current	≤ 20 mA
Output function Complementary contact, PNP Switching frequency ≤ 1000 Hz Readiness delay ≤ 100 ms Response time typical < 0.5 ms	Short-circuit protection	yes
Switching frequency ≤ 1000 Hz Readiness delay ≤ 100 ms Response time typical < 0.5 ms	Reverse polarity protection	yes
Readiness delay ≤ 100 ms Response time typical < 0.5 ms	Output function	Complementary contact, PNP
Response time typical < 0.5 ms Setting option Potentiometer Mechanical data Design Tube, M12 Dimensions Ø 12 x 67.5 mm Housing material Metal, Nickel-plated brass, Nickel Plated	Switching frequency	≤ 1000 Hz
Setting option Potentiometer Mechanical data Design Tube, M12 Dimensions Ø 12 x 67.5 mm Housing material Metal, Nickel-plated brass, Nickel Plated	Readiness delay	≤ 100 ms
Mechanical dataDesignTube, M12DimensionsØ 12 x 67.5 mmHousing materialMetal, Nickel-plated brass, Nickel Plated	Response time typical	< 0.5 ms
Design Tube, M12 Dimensions Ø 12 x 67.5 mm Housing material Metal, Nickel-plated brass, Nickel Plated	Setting option	Potentiometer
Dimensions Ø 12 x 67.5 mm Housing material Metal, Nickel-plated brass, Nickel Plated	Mechanical data	
Housing material Metal, Nickel-plated brass, Nickel Plated	Design	Tube, M12
	Dimensions	Ø 12 x 67.5 mm
Lens plastic, PMMA	Housing material	Metal, Nickel-plated brass, Nickel Plated
	Lens	plastic, PMMA

Features

- Cable with male end M12 × 1, 4-pin, PVC, 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
- PNP switching output, complementary contact

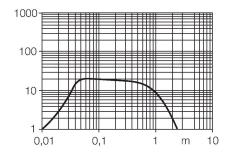
Wiring diagram



Functional principle

Retro-reflective sensors incorporate emitter and receiver in a single compact housing. The light beam of the emitter is directed towards a reflector which returns the light back to the receiver. An object is detected when it interrupts this beam. Retro-reflective sensors incorporate some of the advantages of opposed mode sensors (good contrast and high excess gain). Further it is merely required to install and wire a single device. A smaller sensing range and susceptibility of devices without polarisation filter can be of disadvantage when shiny objects have to be detected.

Excess Gain Curve



Technical data

Electrical connection	Cable with connector, M12 × 1, 0.15 m, PVC
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

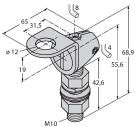
3011221

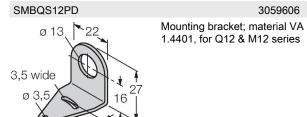
SMB12MM

3027635

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

Mounting bracket, stainless steel, for M12





Accessories

Dimension drawing	Type	ID	
M12x1 o 15 /2 14	RKC4.4T-2/TEL	6625013	Connection cable, female M12, straight, 4-pin, cable length: 2 m, sheath material: PVC, black; cULus approval; other cable lengths and qualities available, see www.turck.com

Dimension drawing	Туре	ID	
0 15 M12 x 1 26.5 3 14	WKC4.4T-2/TEL	6625025	Connection cable, female M12, angled, 4-pin, cable length: 2 m, sheath material: PVC, black; cULus approval; other cable lengths and qualities available, see www.turck.com

Accessories

Dimension drawing	Туре	ID	
7.4	BRT-84	3058979	Round reflector, reflection coefficient 1.4, material acrylic, ambient temperature -20 +60 °C

