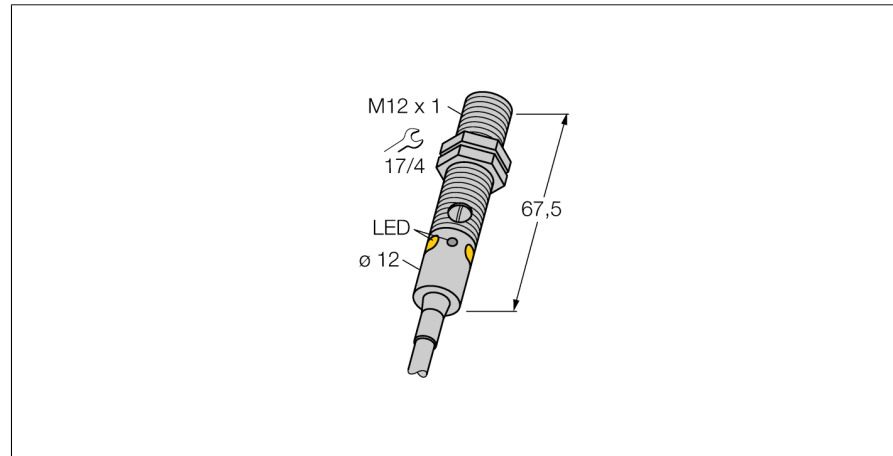
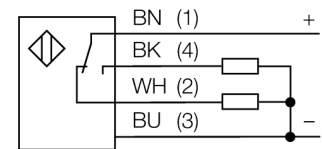


**Photoelectric sensor  
opposed mode sensor (emitter/receiver)  
M12PR**



- Cable, PVC, 2 m, 4-wire
- 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, changeover

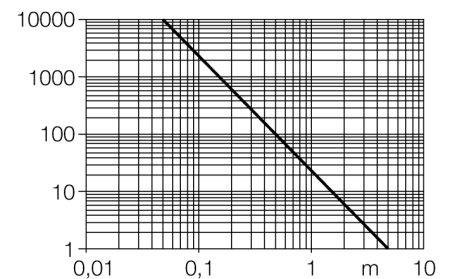
**Wiring diagram**



**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.

**Excess gain curve**



<b>Type code</b>	M12PR
Ident no.	3077198
<b>Operating mode</b>	opposed mode sensor (receiver)
Range	0...5000 mm
Ambient temperature	-20...+60 °C
<b>Operating voltage</b>	10...30VDC
Residual ripple	< 10 % U <sub>in</sub>
DC rated operational current	≤ 100 mA
No-load current I <sub>0</sub>	≤ 20 mA
Short-circuit protection	yes
Reverse polarity protection	yes
Output function	changover contact, PNP
Switching frequency	≤ 500 Hz
Readiness delay	≤ 100 ms
<b>Design</b>	threaded barrel, M12
Dimensions	67.5 mm
Housing diameter	12 mm
Housing material	metal, CuZn, nickel-plated
Lens	plastic, PMMP
Connection	cable, PVC
Cable length	2 m
Cable cross section	4 x 0.35 mm <sup>2</sup>
Protection class	IP68
MTTF	46 years acc. to SN 29500 (Ed. 99) 40 °C
<b>Power-on indication</b>	LED green
Switching state	LED yellow
Error indication	LED green flashing
Excess gain indication	LED yellow flashing

**Photoelectric sensor  
opposed mode sensor (emitter/receiver)  
M12PR**

**Accessories**

Type code	Ident no.	Description	Dimension drawing
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	