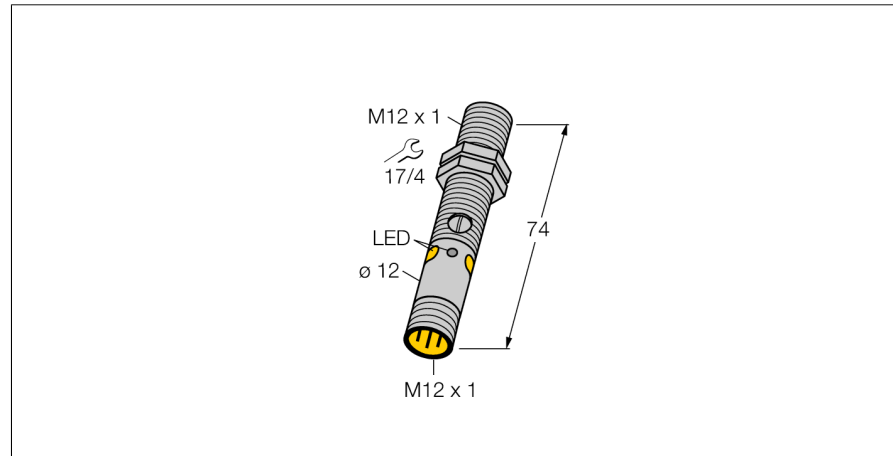
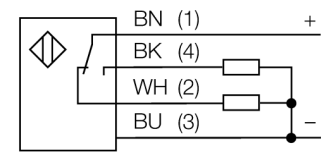


**Photoelectric Sensor**  
**diffuse mode sensor with fixed-field background suppression**  
**M12PFF50Q8**



- Male M12 × 1, 4-pin
- Protection classes IP67 / IP68
- Metal housing
- LED all-round visible
- Indication of insufficient excess gain
- Operating voltage: 10...30 VDC
- PNP switching output, complementary contact

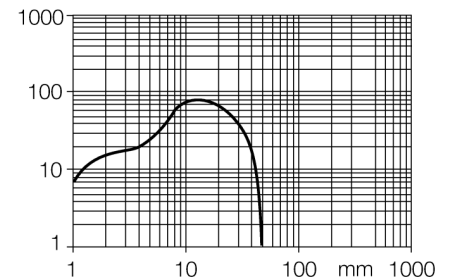
**Wiring Diagram**



**Functional principle**

Diffuse mode sensors with background suppression operate with a single emitter and several receiver elements. The target position and the photoelectric structure of the sensor determine which of the receiving elements receives the most light. The sensor electronics determine whether the reflecting object is within or outside the measuring range. These sensors come with a fixed cut-off point.

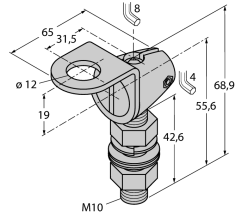
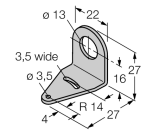
**Excess Gain Curve**



<b>Type designation</b>	M12PFF50Q8
Ident no.	3077195
<b>Function</b>	Proximity switch
Light type	Red
Wavelength	680 nm
Range	0...50 mm
Ambient temperature	-20...+60 °C
<b>Operating voltage</b>	10...30 VDC
Residual ripple	< 10 % U <sub>s</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	Complementary contact, PNP
Switching frequency	≤ 1000 Hz
Readiness delay	≤ 100 ms
Readiness delay	≤ 100 ms
Response time typical	< 0.5 ms
<b>Approvals</b>	CE
<b>Design</b>	Threaded barrel, M12
Dimensions	74 mm
Housing diameter	Ø 12 mm
Housing material	Metal, Nickel-plated brass, Nickel-plated plastic, PMMA
Lens	
Electrical connection	Connectors, M12 × 1, PVC
Number of cores	4
Protection class	IP67 / IP68
MTTF	46 years acc. to SN 29500 (Ed. 99) 40 °C
<b>Special features</b>	Encapsulated
	Wash down
Power-on indication	LED, Green
Switching state	LED, Yellow
Error indication	LED, green, Flashing
Excess gain indication	LED, yellow, flashing

**Photoelectric Sensor**  
**diffuse mode sensor with fixed-field background suppression**  
**M12PFF50Q8**

**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	