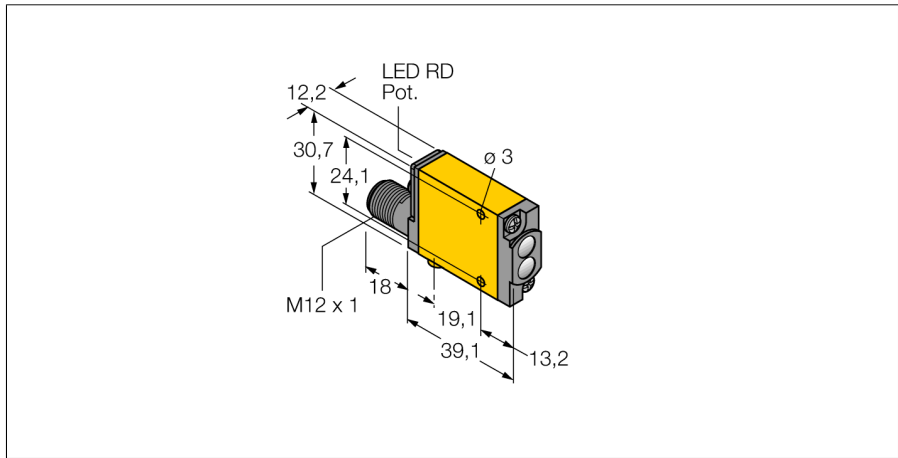
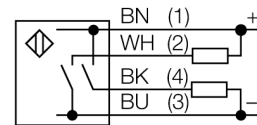


**Photoelectric Sensor**  
**diffuse mode sensor**  
**SM312WQD**



- Male M12 × 1, 4-pin
- Protection class IP67
- Sensitivity adjustable via potentiometer
- Alignment indicator
- Operating voltage: 10...30 VDC
- Switching output, bipolar
- Light/dark operation

**Wiring Diagram**



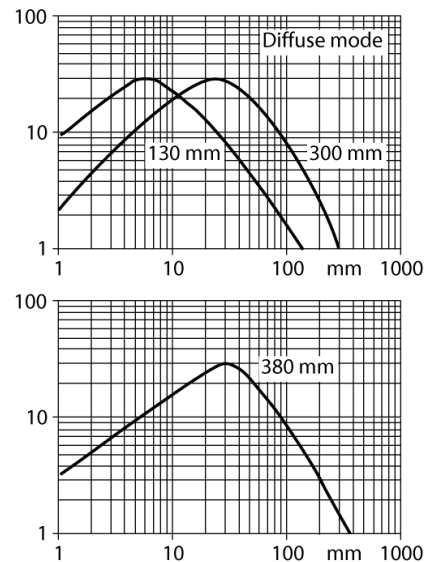
<b>Type designation</b>	SM312WQD
Ident no.	3026892
<b>Function</b>	Diffuse mode sensor
Light type	IR
Wavelength	880 nm
Range	0...130 mm
Ambient temperature	-20...+70 °C
<b>Operating voltage</b>	10...30 VDC
Residual ripple	< 10 % U <sub>s</sub>
DC rated operational current	≤ 150 mA
No-load current I <sub>0</sub>	≤ 25 mA
Output function	NO contact, PNP/NPN
Switching frequency	≤ 500 Hz
Readiness delay	≤ 100 ms
Readiness delay	≤ 100 ms
Overcurrent release	> 220 mA
<b>Approvals</b>	CE, cURus, CSA
<b>Design</b>	Rectangular, Mini Beam
Dimensions	57.1 mm x 12.3 mm x 30.7 mm
Housing diameter	0 mm
Housing material	Plastic, PBT, Yellow
Lens	plastic, Acrylic
Electrical connection	Connectors, M12 × 1, PVC
Cable cross section	4 mm <sup>2</sup>
Protection class	IP67
<b>Special features</b>	Encapsulated
Switching state	LED, Red
Excess gain indication	LED red flashing

**Functional principle**

Diffuse mode sensors incorporate the emitter and receiver in a single housing. However, diffuse mode sensors do not detect the interruption of the light beam like opposed mode sensors, but the reflection of the target. A target is detected if it reflects a sufficient amount of light back to the receiver. The switching distance of diffuse mode sensors thus largely depends on the reflectivity of the target.

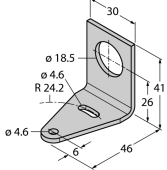
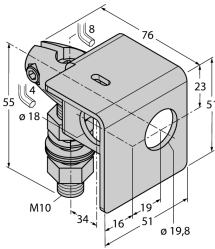
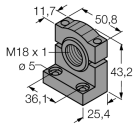
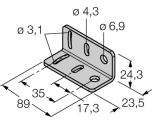
**Excess gain curve**

Excess gain in relation to the distance



**Photoelectric Sensor  
diffuse mode sensor  
SM312WQD**

**Accessories**

Type code	Ident no.	Description	
SMB18A	3033200	Mounting bracket, rectangular, stainless steel, for sensors with 18 mm thread	
SMB18AFAM10	3012558	Mounting bracket, material VA 1.4401, for M10 x 1.5 thread, thread length 18 mm	
SMB18SF	3052519	Mounting bracket, PBT black, for sensors with 18 mm thread, rotatable	
SMB312B	3025519	Mounting bracket, stainless steel, for MINI-BEAM NAMUR	
SMB3018SC	3053952	Mounting bracket, PTB black, for sensors with 18 mm thread	