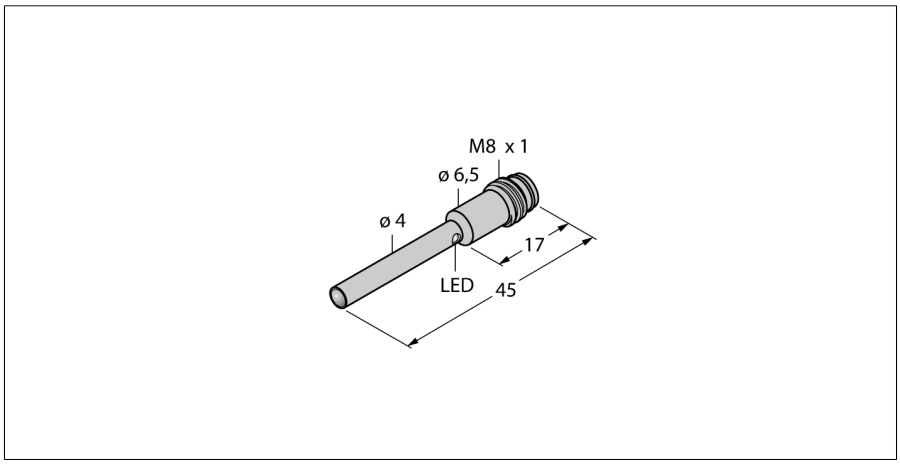
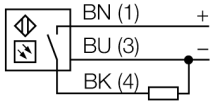
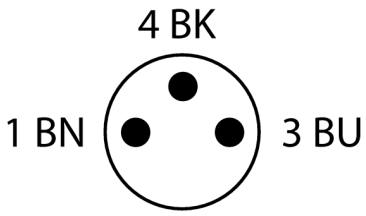
Opto-Sensor
Convergent Mode Sensor
Miniature Sensor
VSM4AP6CV50Q7



- **Stainless steel housing V2A**
- **Protection class IP67**
- **Male M8 × 1; 3-pin**
- **Lens, sapphire crystal glass**
- **Operating voltage: 10…30 VDC**
- **PNP switching output, light operation**

Wiring Diagram



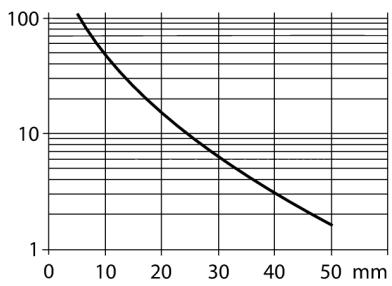


Type designation	VSM4AP6CV50Q7
Ident no.	3013280
Function	Proximity switch
Light type	IR
Wavelength	880 nm
Focal distance	50 mm
Ambient temperature	0…+55 °C
Operating voltage	10…30 VDC
Residual ripple	< 10 % U_{ss}
DC rated operational current	≤ 100 mA
No-load current I_0	≤ 15 mA
Short-circuit protection	yes/ yes
Reverse polarity protection	yes
Output function	NO contact, light operation, PNP
Switching frequency	≤ 250 Hz
Readiness delay	≤ 20 ms
Response time typical	< 2.5 ms
Approvals	CE, UL
Design	Tube, VSM
Dimensions	45 mm
Housing diameter	Ø 4 mm
Housing material	Metal, Stainless steel
Lens	glass, Sapphire
Electrical connection	Connector, M8 × 1, PVC
Cable length	2 m
Number of cores	3
Core cross-section	0.34 mm²
Protection class	IP67
Special features	Chemical-resistant
Switching state	LED, Yellow
Excess gain indication	LED, flashing

Functional principle

Convergent mode sensors are equipped with a lens in front of the emitter diode that produces a small and intense focal point at a defined distance from the sensor. Similar to diffuse mode sensors, the light reflected by the target is evaluated. Convergent mode sensors are ideal for the detection of small targets, color marks, edge guiding and positioning control of transparent materials. The targets must always be within the focal depth of the sensors. The focal depth is defined as the area in front of or behind the focal point within which the object can be detected. Based on the intense light concentration in the focal point, convergent mode sensors are capable of detecting targets with a low reflectivity.

Excess Gain Curve



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