



Photoelectric sensors V180-2, Through-beam photoelectric sensor

VSE180-2N42432



Model Name > [VSE180-2N42432](#)
Part No. > [6041821](#)



Illustration may differ

At a glance

- Lowest-cost M18 housing sensor on the market
- Sensing distance up to 28 m
- Bright power and signal LEDs with 360° visibility
- High switching frequencies up to 1000 Hz
- Available in a metal housing for applications in harsh environments
- Optical axis selectively axial or radial (90°)
- Wide product portfolio solves a broad range of applications

Your benefits

- Lowest-cost M18 cylindrical sensor on the market reduces installation costs
- Bright red sender LED simplifies alignment and saves installation time
- Bright power and signal LEDs with 360° visibility offer quick and simple troubleshooting, reducing maintenance time and costs
- The flat and smooth lens reduces the collection of dust and dirt, ensuring safe operation with less maintenance and fewer costs



Features

Sensor/detection principle:	Through-beam photoelectric sensor
Housing design (light emission):	Cylindrical, straight
Housing length:	69.8 mm
Thread diameter (housing):	M18 x 1
Optical axis:	axial
Sensing range max.:	0 m ... 28 m
Sensing range:	0 m ... 20 m
Type of light:	Visible red light
Light source:	LED ¹⁾
Wave length:	645 nm
Angle of dispersion:	Ca. 5 °
Adjustment:	Potentiometer, 270 ° ²⁾
Light spot size (distance):	Ø 1,100 mm (20 m)

¹⁾ Average service life of 100,000 h at $T_A = +25\text{ °C}$ ²⁾ Receiver

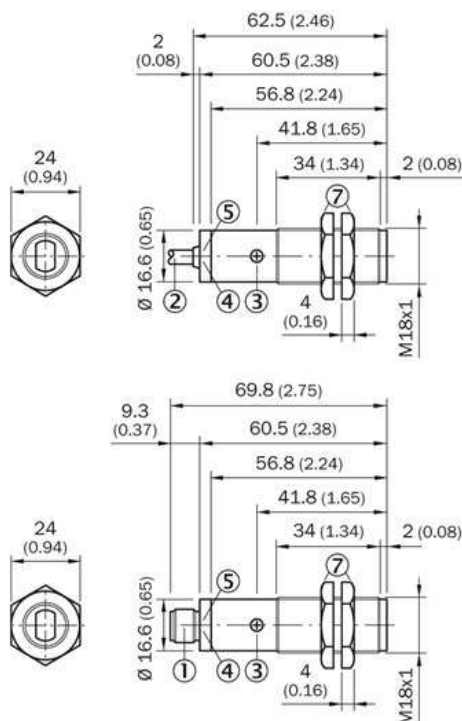
Mechanics/electronics

Supply voltage:	10 V DC ... 30 V DC ¹⁾
Residual ripple:	± 10 % ²⁾

Power consumption, sender:	20 mA ³⁾
Power consumption, receiver:	15 mA ⁴⁾
Output type:	NPN, open collector ⁵⁾
Switching mode:	Light/dark switching ⁶⁾
Switching mode selector:	Selectable via L/D control wire
Output current I _{max} ..:	≤ 100 mA ⁷⁾
Response time:	≤ 0.5 ms ⁸⁾
Switching frequency:	1,000 Hz ⁹⁾
Electrical connection:	Connector M12, 4-pin
Circuit protection:::	A, B, D ⁹⁾ ¹⁰⁾ ¹¹⁾
Protection class:	III
Weight:	94 g
Housing material:	Nickel-plated brass and PC, Metal
Optics material:	PMMA
Enclosure rating:	IP 67
Items supplied:	Fastening nuts (4 x)
Ambient temperature operation:	-25 °C ... +55 °C
Ambient storage temperature:	-40 °C ... +70 °C
Signal voltage NPN HIGH/LOW:	Approx. V _S / < 1.8 V

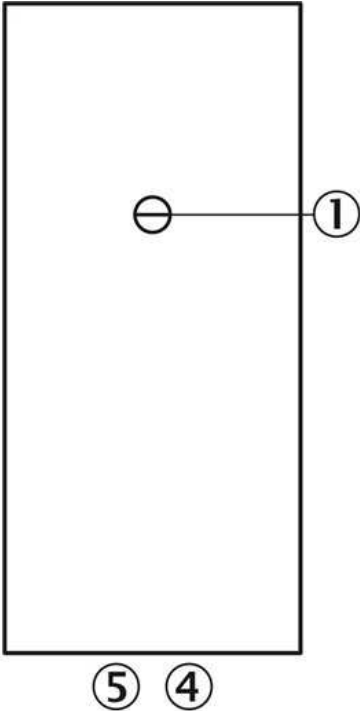
¹⁾ Limit values, operation in short-circuit protected network max. 8 A ²⁾ May not exceed or fall short of V_S tolerances ³⁾ ⁴⁾ Without load ⁵⁾ ⁶⁾ Control wire open: light-switching L.ON ⁷⁾ Signal transit time with resistive load ⁸⁾ With light/dark ratio 1:1 ⁹⁾ A = V_S connections reverse-polarity protected ¹⁰⁾ B = inputs and output reverse-polarity protected ¹¹⁾ D = outputs overcurrent and short-circuit protected

Dimensional drawing



- [1] Connector M12, 4-pin
- [2] Connection cable 2 m
- [3] Sensitivity adjustment 270°
- [4] LED indicator orange: switching output active
- [5] LED indicator green: strength indicator
- [7] fastening nuts (2 x); 24 mm hex, metal

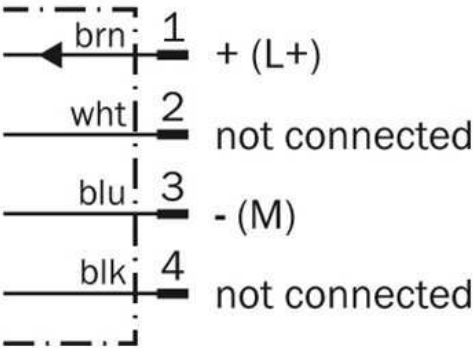
Adjustments possible



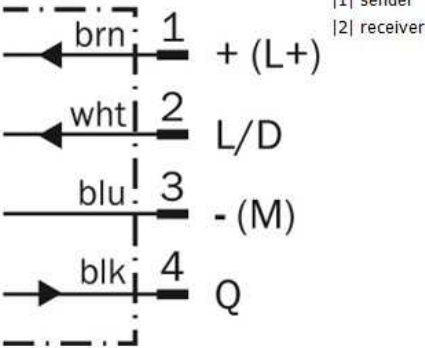
- |3| Sensitivity adjustment 270°
- |4| LED indicator orange: switching output active
- |5| LED indicator green

Connection diagram

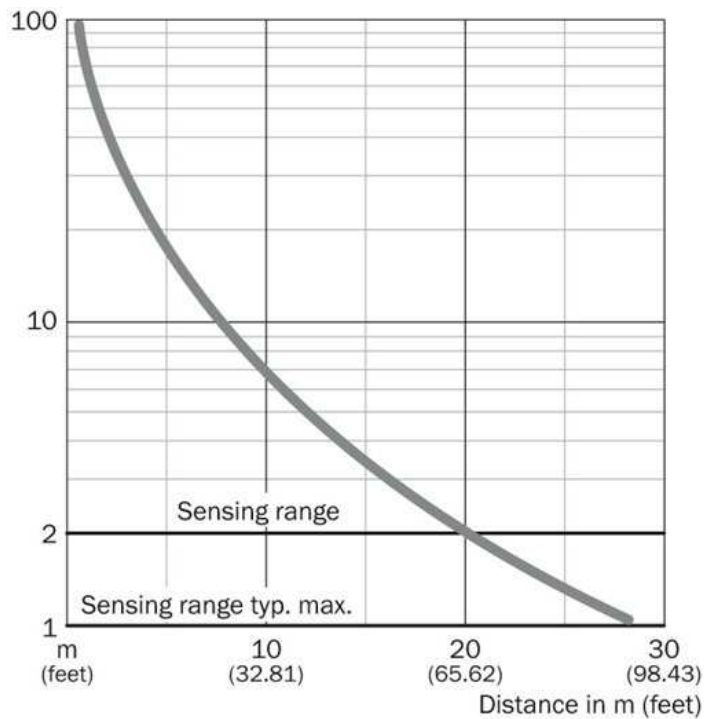
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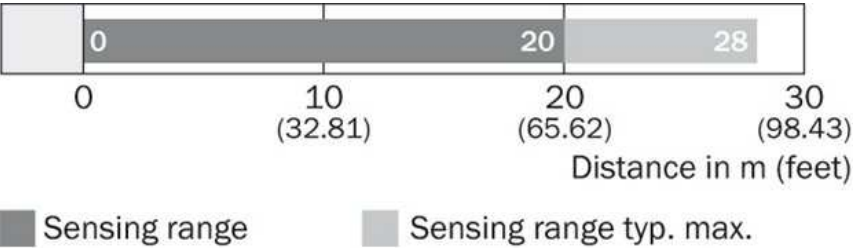
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Characteristic curve



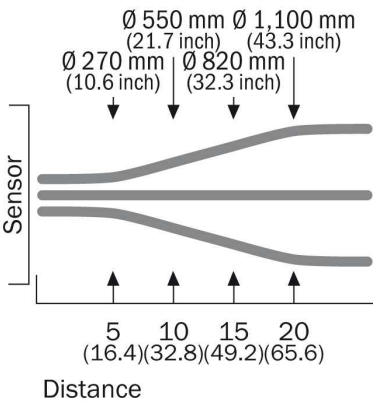
Sensing range diagram



Connection type



Light spot size



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