



Photoelectric sensors
W24-2, Photoelectric proximity sensor,
Background suppression

WT24-2R220

Model Name > [WT24-2R220](#)
Part No. > [1016854](#)



At a glance

- Precise background suppression at ranges up to 2500 mm
- Immune to ambient light and crosstalk from another photoelectric sensor
- Switch selectable PNP or NPN output, Switch selectable Light or Dark operating mode
- Variants with DC voltage and universal AC/DC voltage with UL approval
- Optional test input, adjustable ON and OFF time delays, alarm output and front screen heating also available in high-power version
- M12 or terminal chamber connection: 90° rotatable
- Red light or long-range IR

Your benefits

- Metal housing that has been IP 69K tested provides reliability and a long service life
- Immune to ambient light and crosstalk, reducing sensor downtime
- Precise detection at long sensing ranges
- User interface is stored under a durable protection hood to prevent unwanted tampering and protect vital components
- Selectable output type, operating mode, and adjustable time delays makes integration easier and reduce the number of devices needed
- Variants with DC voltage and universal AC/DC voltage provide installation flexibility



Features

Sensor/detection principle:	Photoelectric proximity sensor, Background suppression
Dimensions (W x H x D):	27 mm x 87.5 mm x 65 mm
Housing design (light emission):	Rectangular
Sensing range max.:	100 mm ... 2,500 mm ¹⁾
Sensing range:	100 mm ... 2,500 mm ²⁾
Type of light:	Infrared light ³⁾
Light source:	LED ³⁾
Light spot diameter (distance):	Ø 80 mm (2,500 mm)
Adjustment of operating distance:	Potentiometer
Time type:	Switch on delay time delay off
Delay time:	Adjustable via time delay selector switch: 0.5 ... 10 s

^{1) 2)} Object with 90 % reflectance (referred to standard white DIN 5033) ³⁾ Average service life of 100,000 h at T_A = +25 °C

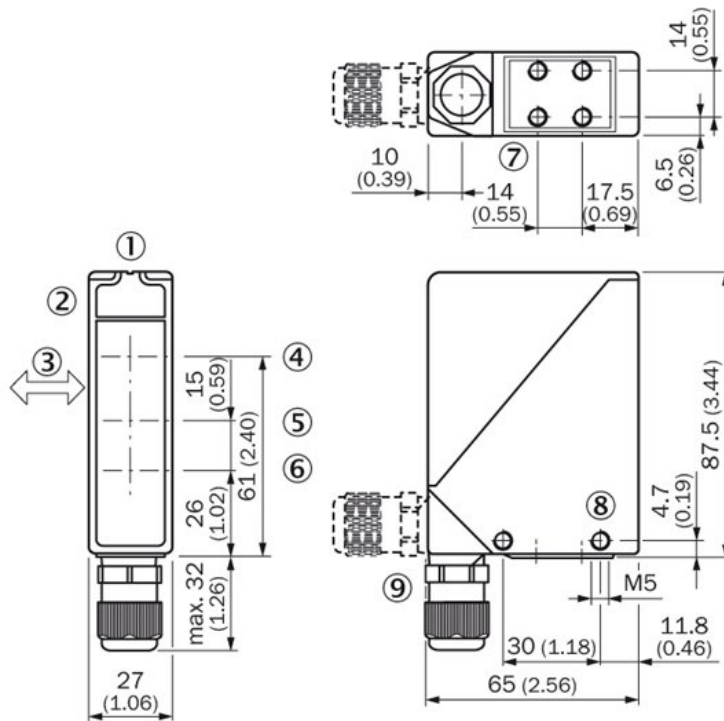
Mechanics/electronics

Supply voltage::	12 V DC ... 240 V DC ^{1) 2)}
Power consumption:	< 3 VA
Output type:	Relay, Light/dark-switching, selectable via light/dark selector, change-over contacts, electrically isolated ³⁾
Output function:	Change-over contacts
Switching mode selector:	Selectable via light/dark selector
Switching current (switching voltage):	4 A (24 V DC), 4 A (250 V AC)
Response time:	≤ 10 ms
Switching frequency:	10 Hz ⁴⁾
Connection type:	Terminal connection with M16 gland ⁵⁾
Circuit protection::	A, C ^{6) 7)}
Protection class:	II ⁸⁾
Weight:	330 g
Front screen heating:	✓
Housing material:	Zinc diecast
Optics material:	PMMA
Enclosure rating:	IP 69K
Usage category:	AC-15, DC-13, According to EN 60947-1
Ambient operating temperature:	-40 °C ... 60 °C
Ambient storage temperature:	-40 °C ... 75 °C
Switching mode characteristic:	Electrically isolated

Provide suitable spark suppression for inductive or capacitive loads;

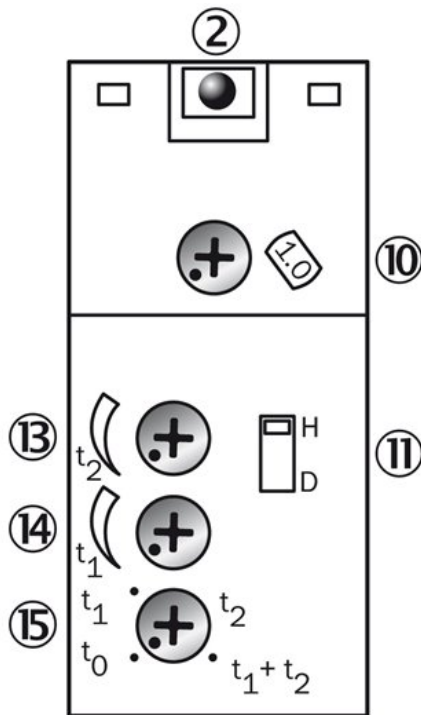
¹⁾ Limit values, operation in short-circuit protected network max. 8 A ²⁾ +/- 10 % ³⁾ Provide suitable spark suppression for inductive or capacitive loads ⁴⁾ With light/dark ratio 1:1 ⁵⁾ Connection rotatable by 90° ⁶⁾ A = V_S connections reverse-polarity protected ⁷⁾ C = interference suppression ⁸⁾ Rated voltage 250 V AC/DC

Dimensional drawing



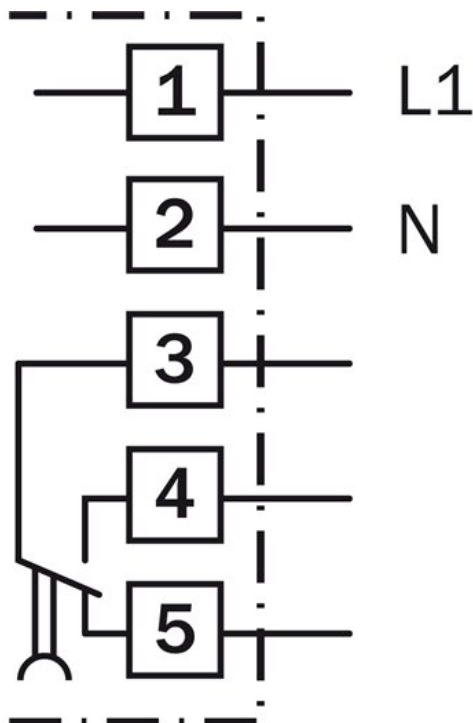
- |1| Alignment sight
- |2| LED signal strength indicator
- |3| Standard direction of the material being scanned
- |4| Center of optical axis, sender
- |5| Centre of optical axis, receiver (close range)
- |6| Centre of optical axis, receiver (far range)
- |7| M5 threaded mounting hole, 6 mm deep
- |8| M5 threaded mounting hole, through-hole
- |9| M16 screw fixing and plug rotatable by 90°

Adjustments possible

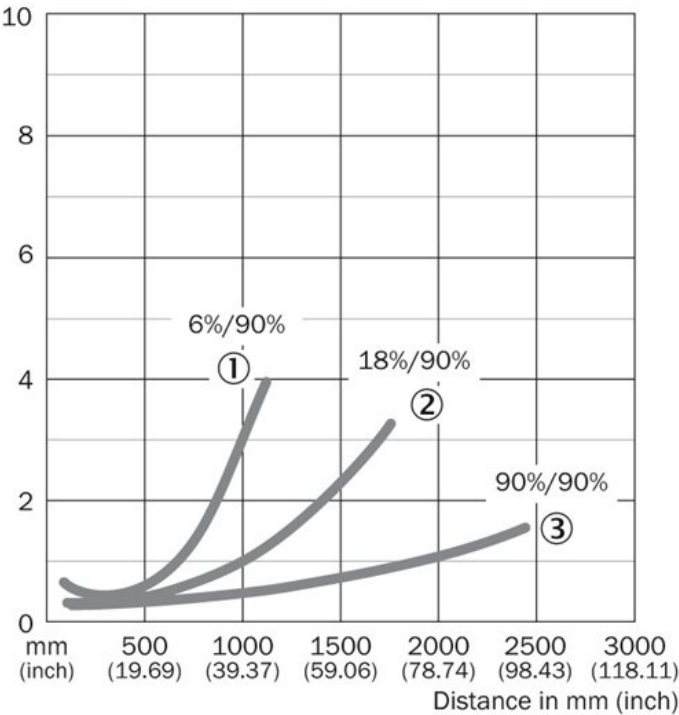


- |2| LED signal strength indicator
- |10| Adjustment sensing range (WT) / sensitivity (WL, WS/WE)
- |11| Light/dark selector
- |12| Time control t2=OFF-delay
- |13| Time control t1=ON-delay
- |14| time delay selector switch

Connection diagram

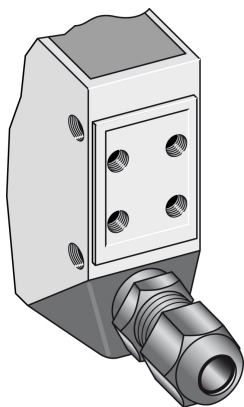


Characteristic curve

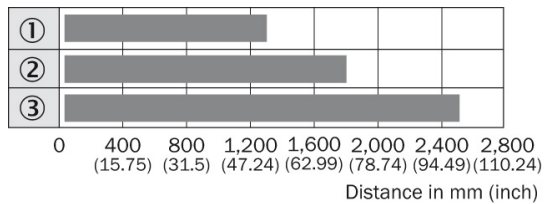


- |1| Sensing range on black, 6 % remission
- |2| Sensing range on grey, 18 % remission
- |3| Sensing range on white, 90 % remission

Connection type



Sensing range diagram



- Operating distance
- ① Scanning distance on black, 6 % remission
 - ② Scanning distance on grey, 18 % remission
 - ③ Scanning distance on white, 90 % remission

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