



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

WT24-2R240



Model Name > WT24-2R240
Part No. > 1017854



Illustration may differ

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 ... 1,200 mm ¹⁾
Sensing range:	100 mm ... 1,200 mm ²⁾
Type of light:	Visible red light
Light source:	LED ³⁾
Alarm output:	-
Adjustment:	Potentiometer
Light spot size (distance):	Ø 40 mm (1,200 mm)

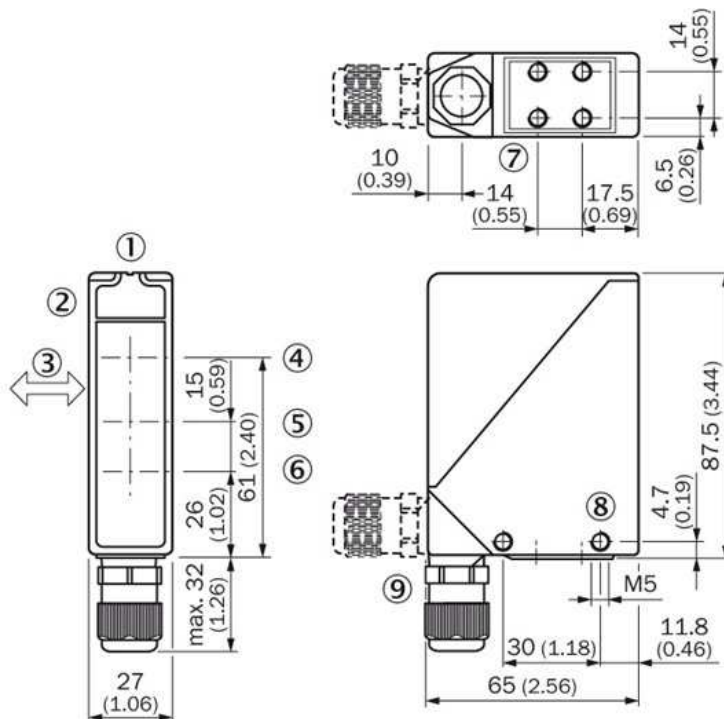
^{1) 2)} Object with 90 % reflectance (referred to standard white, DIN 5033) ³⁾ Average service life of 100,000 h at T_A = +25 °C

Mechanics/electronics

Supply voltage::	12 V DC ... 240 V DC/24 V AC ... 240 V AC ^{1) 2)}
Power consumption:	< 2 VA
Output type:	Relay, electrically isolated ³⁾
Output function:	Change-over contacts
Switching mode:	Light/dark switching ⁴⁾
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 ⁵⁾
Connection type:	Terminal connection with M16 gland ⁶⁾
Circuit protection::	A, C ^{7) 8)}
Protection class:	II ⁹⁾
Weight:	330 g
Housing material:	Metal, 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

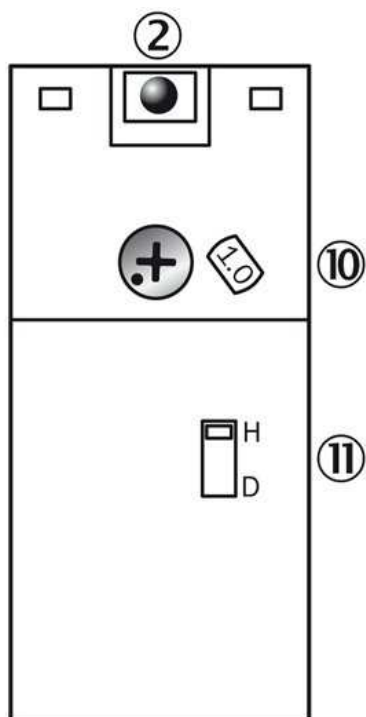
1) Limit values, operation in short-circuit protected network max. 8 A 2) +- 10 % 3) 4) Provide suitable spark suppression for inductive or capacitive loads 5) With light/dark ratio 1:1 6) Connection rotatable by 90° 7) A = V_S connections reverse-polarity protected 8) C = interference suppression 9) Rated voltage: 250 V AC/DC

Dimensional drawing



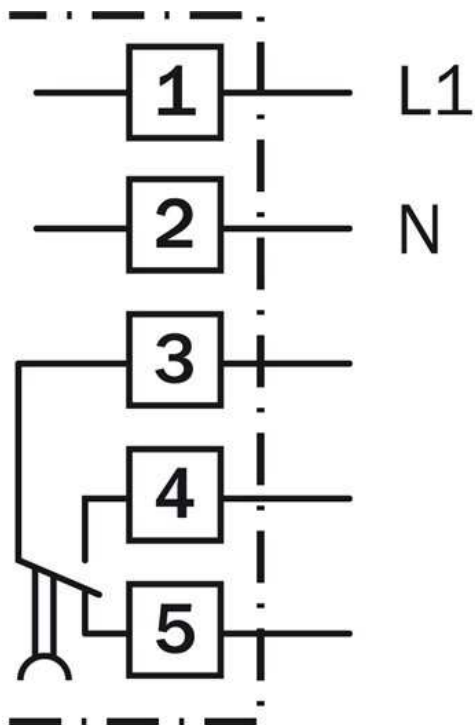
- [1] Alignment sight
- [2] LED signal strength indicator
- [3] Standard direction of the material being detected
- [4] Center of optical axis, sender
- [5] Center of optical axis, receiver (close range)
- [6] Center of optical axis, receiver (far range)
- [7] M5 threaded mounting hole, 6 mm deep
- [8]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

Adjustments possible

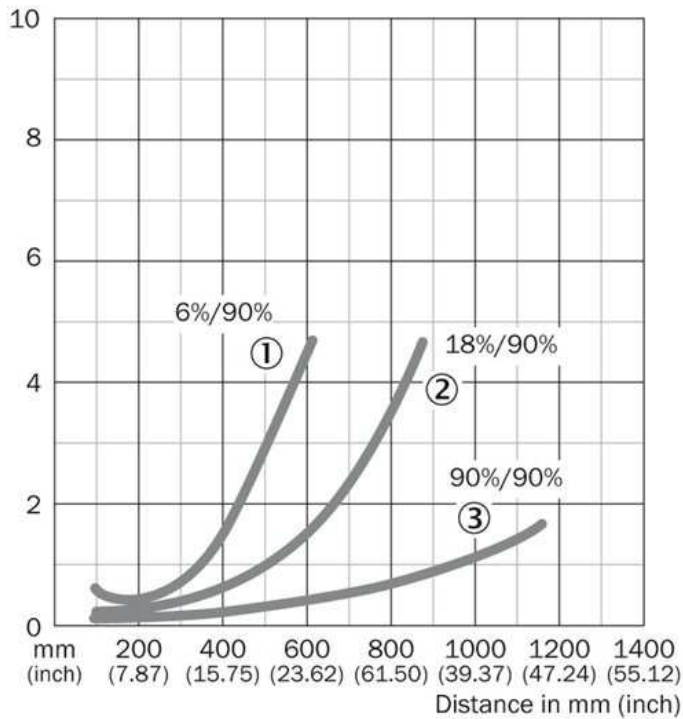


- |2| LED signal strength indicator
- |10| Adjustment sensing range
(WT) / sensitivity (WL, WS/WE)
- |11| Light/dark selector

Connection diagram

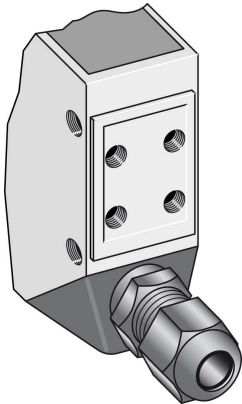


Characteristic curve

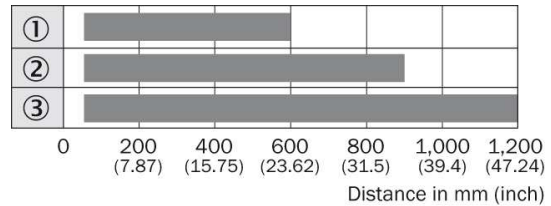


- |1| Sensing range on black, 6 % remission
- |2| Sensing range on gray, 18 % remission
- |3| Sensing range on white, 90 % remission

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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