

WT 150

Proximity/Diffuse Sensors - Background Suppression



0.08...3.9 in (2...100 mm)
sensing range



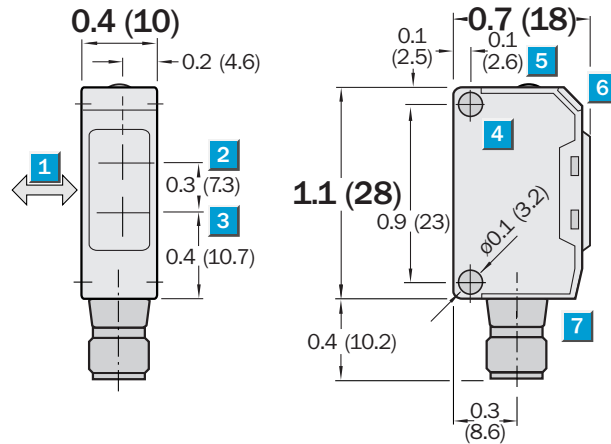
Highlights

- Adjustable background suppression for reliable detection of dark objects, even in front of light backgrounds
- High switching frequency
- Signal strength indicator
- Adjustable sensing range using 5-turn adjustment screw
- Easy mounting with included bracket
- Cable or M8 quick disconnect versions

WT 150

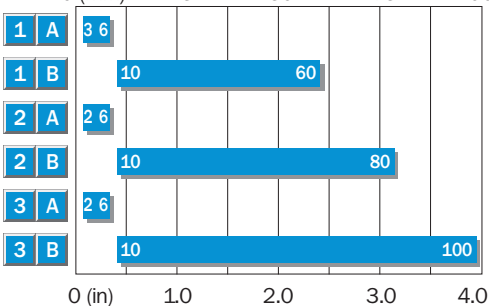
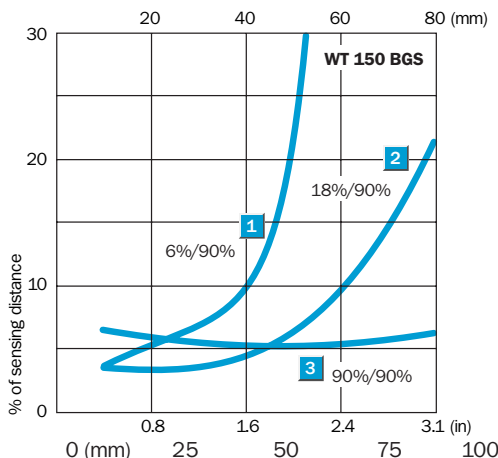


Dimensional Drawing



dimensions in inches (mm)

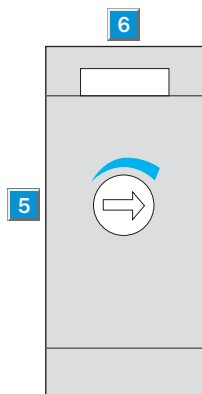
Background Suppression



1	Sensing distance on black ¹²⁾ /white background
2	Sensing distance on grey ¹²⁾ /white background
3	Sensing distance on white ¹²⁾ /white background
A	Sensing distance control set to MIN
B	Sensing distance control set to MAX

Adjustments

All types



- Standard direction of the material being sensed
- Center of optical axis, receiver
- Center of optical axis, sender
- Mounting holes \varnothing 3.2 mm
- Sensing range adjustment (5 rev.)
- LED indicator, red light received \geq switching threshold
- M8 4-pin plug or cable

Order Information

Type	Part no.
WT 150-P162	6 011 048
WT 150-P460	6 011 050
WT 150-N162	6 011 045
WT 150-N460	6 011 047

Accessories

	page
Cables and connectors	908
Mounting brackets Type A*	919

* included with delivery

Technical Data		WT 150-	P162	P460	N162	N460					
Sensing range, adjustable	0.08...3.9 in (2...100 mm) ¹⁾ , adjustable										
Background suppression	0.4...3.9 in (10...100 mm)										
Background suppression capability	% of set sensing distance (see previous pg)										
	Potentiometer, 5 revolutions										
Light source²⁾, light type	LED, visible red light										
Light spot diameter	Approx. 0.2 in at 1.6 in (4 mm at 40 mm)										
Angle of divergence	Approx. 5°										
Supply voltage V_S	10...30 V DC ³⁾										
Ripple ⁴⁾	± 10%										
Current consumption ⁵⁾	20 mA										
Switching outputs	PNP, open collector: Q										
	NPN, open collector: Q										
Max. output current I _A	100 mA										
Switching mode ⁶⁾	Light or dark switching selectable via control wire L/D										
	+ V _S = light switching										
	0 V = dark switching										
Response time ⁷⁾	0.5 ms										
Max. switching frequency ⁸⁾	1000 Hz										
Connection types	Cable, PVC, 2 m ⁹⁾ ; 4 x 0.18 mm ² , Ø 3.5 mm										
	Plug, M8 4-pin										
VDE protection class¹⁰⁾											
Circuit protection¹¹⁾	A, B, C, D										
Enclosure rating	IP 67/NEMA 6										
Ambient temperature T_A	Operation -13...131°F (-25...55°C)										
	Storage -40...167°F (-40...75°C)										
Approximate weight	1.6 oz (44 g)										
	0.3 oz (7 g)										
Housing material	Glass fiber reinforced ABS										

- 1) Object with 90% remission (based on standard white to DIN 5033)
2) Average service life 100,000 h where T_A = 25°C
3) Limit values
4) May not exceed or fall short of V_S tolerances

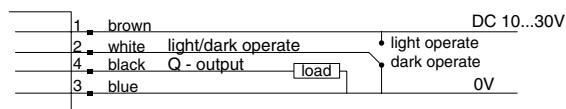
- 5) Without load
6) Control cable open:
NPN: light-switching
PNP: dark-switching
7) Signal transit time with resistive load
8) With light/dark ratio 1:1
9) Do not bend below 0°C

- 10) Reference voltage 50 V DC
11) A = V_S connections reverse-polarity protected
B = Inputs and outputs reverse-polarity protected
C = Interference pulse suppression
D = Outputs overcurrent and short-circuit protected

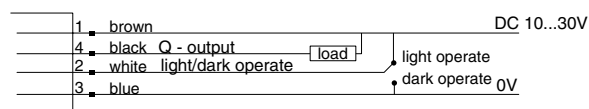
- 12) Black = 6% remission
Grey = 18% remission
White = 90% remission

Connection Diagram

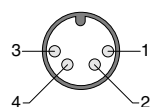
PNP Models



NPN Models



M8 Connector



wire colors refer to standard cable, not included with quick disconnect models