

# W 18-3: Incorporated application Know-how, expanded functionality, high level of equipment availability



appropriate sensor can be selected from the W 18-3 Series: With precision background suppression, the WT 18-3 Series is ideal for demanding applications. The scanning distance can be simply and quickly adjusted, either via conventional potentiometer or via double Teach buttons, with fine adjustment option. Scanners with red-light transmitters can be quickly and accurately aligned with the object to be sensed. Scanners with infrared light beams are particularly useful in arduous environmental conditions.

WL 18-3, using an auto-collimation optical principle, are designed to optically focus upon the object in a reliable manner and utilising a visually defined small red spot of light, simple and quick alignment is possible.

WS/WE 18-3 – ideal for applications where greater system reserve is required. Using an auto-collimation optical principle, designed to optically focus upon the object in a reliable manner and utilising a visually defined small red spot of light.

The main target industries for the W 18-3 Series are:

- Packaging industry,
- Food and Confectionery industry,
- Storage and Conveying,
- Wood Processing.

In Automation Technology, customers demand optical sensors, which can reliably solve complex applications, which are capable of operating at high processing speeds and which provide a high level of in-service availability under arduous operating conditions. To meet these demands the W 18-3 Series is recommended. The W 18-3 Series is the result of a vast amount of experience and many years of knowledge gathered from thousands of applications, from which the user can now benefit. Depending upon the task required, the most

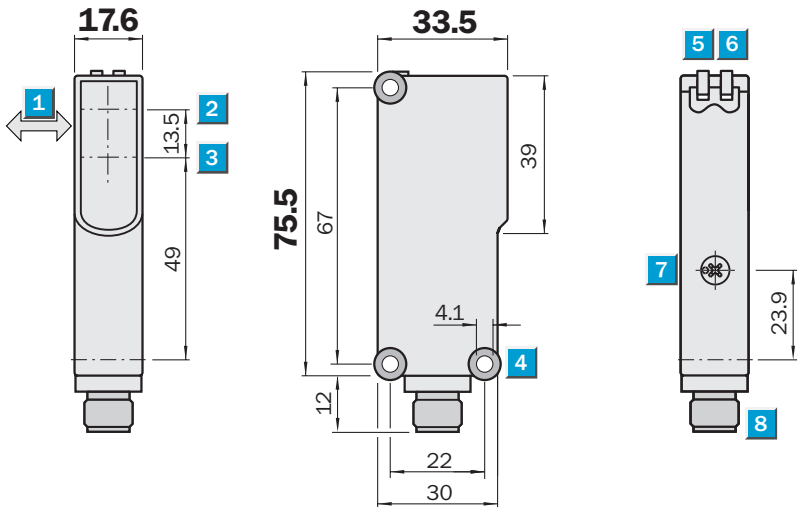
	<b>Photoelectric proximity switches, FGS</b>
	<b>Photoelectric reflex switches</b>
	<b>Through-beam photoelectric switches</b>



**Scanning distance**  
 50 ... 700 mm  
**Photoelectric proximity switches**

- Precise background suppression; suitable for high demanding applications
- Scanning range adjustable via potentiometer
- Insensitive to external light sources (HF lamps)
- Operation reliability with equipment facing each other
- Permissible ambient operating temperature  $-40^{\circ}\text{C} \dots +60^{\circ}\text{C}$

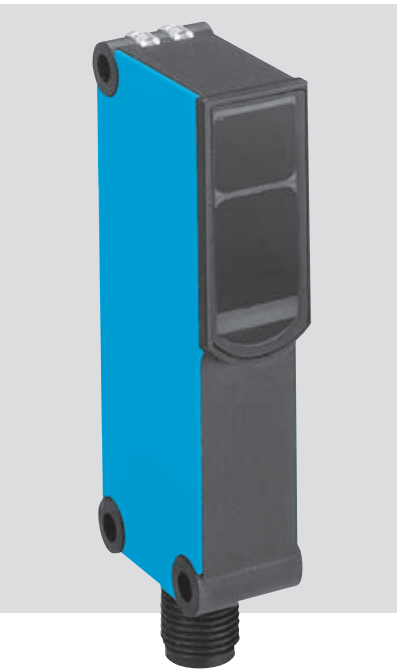
**Dimensional drawing**



**Adjustments possible**  
All types

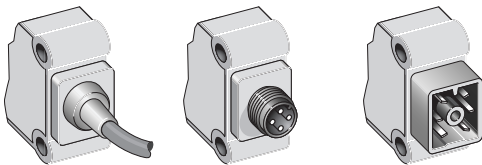


- 1** Standard direction of the material being scanned
- 2** Optical axis sender
- 3** Optical axis receiver
- 4** Mounting hole  $\varnothing 4.1$  mm
- 5** LED indicator, yellow; status of received light beam
- 6** LED indicator, green; power on
- 7** Scanning distance adjustment, Poti 4 turn
- 8** Plug M12, 4-pin or 2 m cable or cubic plug, 6-pin

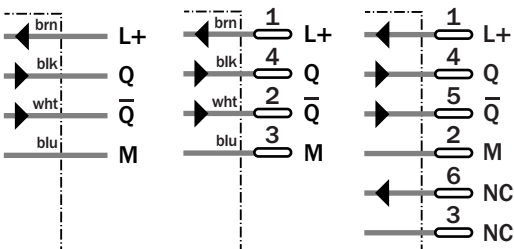


**Connection types**

WT18-3P110	WT18-3P410	WT18-3P610
WT18-3N110	WT18-3N410	WT18-3N610



4 x 0.25 mm <sup>2</sup>	4-pin, M12	6-pin
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**Accessories**

Connectors
Mounting systems

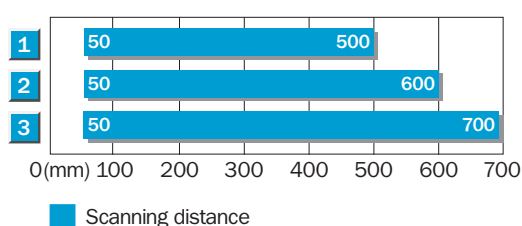
Technical data		WT18-3	P110	P410	P610	N110	N410	N610				
Scanning distance, adjustable <sup>1)</sup>	50 ... 700 mm, 90 % remission											
Visible range <sup>1)</sup>	10 ... 700 mm											
Adjustment	Teach-in, via Poti, 4 turn											
Light source <sup>2)</sup> , light type	LED, infrared light											
Light spot diameter	20 mm at 400 mm											
Supply voltage $V_S$	10 ... 30 V DC <sup>3)</sup>											
Residual ripple <sup>4)</sup>	< 5 $V_{SS}$											
Current consumption <sup>5)</sup>	< 60 mA											
Output current $I_A$ max.	< 100 mA											
Switching outputs	PNP, antivalent											
	NPN, antivalent											
Response time <sup>6)</sup>	< 700 $\mu$ s											
Switching frequency max. <sup>7)</sup>	700/s											
Connection types	Cable <sup>8)</sup> , 2 m, 4 wire											
	M12 plug, 4-pin											
	Cubic plug, 6-pin											
VDE protection class cable <sup>9)</sup>	<input type="checkbox"/>											
Circuit protection <sup>10)</sup>	A, B, C											
Enclosure rating	IP 67											
Ambient temperature	Operation -40 °C ... +60 °C											
	Storage -40 °C ... +75 °C											
Weight	With cable, 2 m, approx. 120 g											
	With M12 plug, approx. 40 g											
	With cubic plug, approx. 40 g											
Housing material	ABS											

<sup>1)</sup> Object with 90 % remission (according to standard white DIN 5033)  
<sup>2)</sup> Average service life 100,000 h at  $T_A = +25\text{ °C}$   
<sup>3)</sup> Limit values  
<sup>4)</sup> Must be within  $V_S$  tolerances  
<sup>5)</sup> Without load  
<sup>6)</sup> Signal transit time with resistive load  
<sup>7)</sup> With light/dark ratio 1:1  
<sup>8)</sup> Do not bend below 0 °C  
<sup>9)</sup> Reference voltage 50 V DC  
<sup>10)</sup> A =  $V_S$  connection reverse-polarity protected  
 B = Outputs short-circuit protected  
 C = Interference pulse suppression

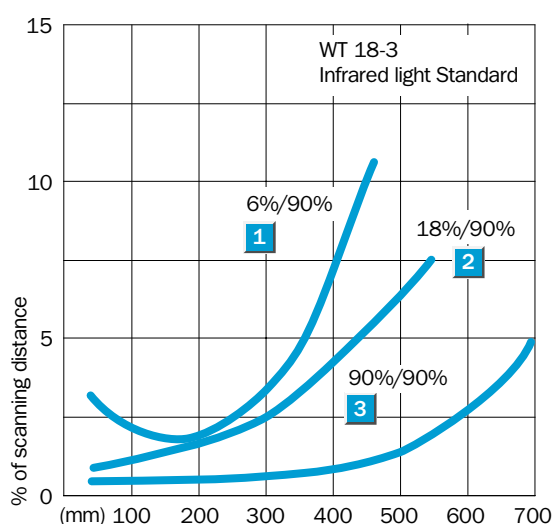
**Adjustment via Poti**

1. Position the object in the path of the beam.
2. By rotating the potentiometer to the right until the yellow LED illuminates continuously = object is positively detected.
3. If necessary, fine adjustments to the scanning distance can be made to suit the conditions of the application:  
 minimal rotation of the potentiometer to the right = scanning distance will be increased,  
 minimal rotation of the potentiometer to the left = scanning distance will be decreased.

**Scanning distance**



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



**Order information**

Type	Part no.
WT18-3P110	1 025 887
WT18-3P410	1 025 889
WT18-3P610	1 025 890
WT18-3N110	1 025 891
WT18-3N410	1 025 893
WT18-3N610	1 025 894