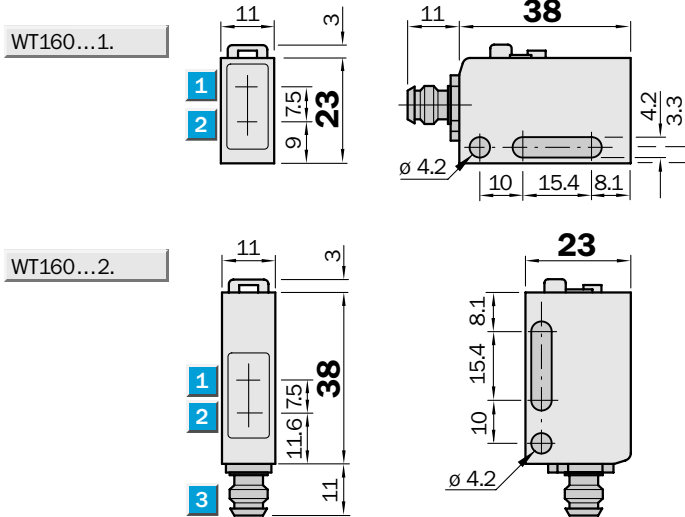


Scanning distance
3...60 mm

Photoelectric proximity switches

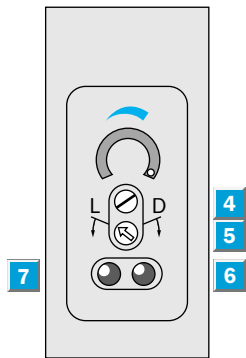
- Horizontal and vertical models
- Focused scanner with background blanking and great sensitivity
- Contamination control with green LED indicator and pre-failure signalling output
- Test input for equipment and system testing

Dimensional drawing



Adjustments possible

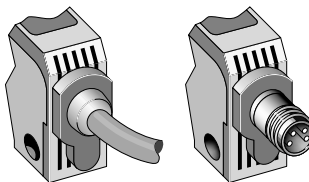
All types



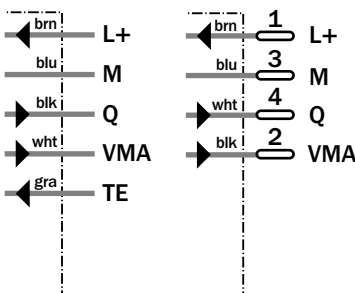
- 1 Centre of optical axis, receiver
- 2 Centre of optical axis, sender
- 3 Plug 4-pin, M 8 or connection cable
- 4 Sensitivity adjustment
- 5 Light/dark rotary switch:
L = light-switching
D = dark-switching
- 6 Red LED signal strength indicator
- 7 Green LED signal strength indicator

Connection types

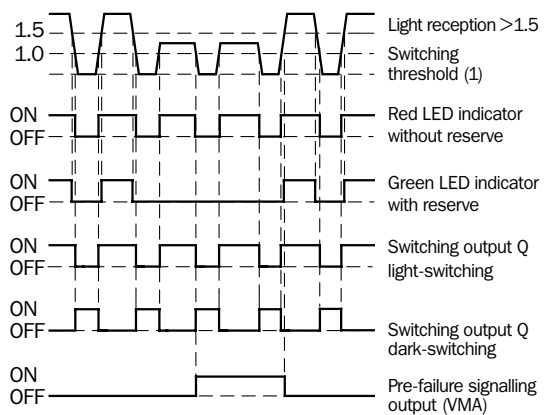
WT 160-P 112	WT 160-P410
WT 160-N 112	WT 160-N410
WT 160-P 122	WT 160-P420
WT 160-N 122	WT 160-N420



5 x 0.2 mm² 4-pin, M 8



Operating diagram



Accessories	page
Cable receptacles	496
Mounting brackets*	510

* included with delivery

Technical data		WT 160-	P 112	P 410	N 112	N 410	P 122	P 420	N 122	N 420
Housing design	Horizontal									
	Vertical									
Scanning distance, max. typical	3... 60 mm ¹⁾									
Operating distance	8... 50 mm ¹⁾									
Background blanking	From approx. 100 mm (background 90 % remission) ²⁾									
Adjustable sensitivity	Potentiometer, 2 turns with scaling 270°									
Light source ³⁾ , light type	LED, red light									
Light spot diameter	Approx. 3 mm at 25 mm									
Angle of dispersion, sender	Focused, focus 25 mm									
Supply voltage V_S	10...30 V DC ⁴⁾									
Ripple ⁵⁾	± 10 %									
Current consumption ⁶⁾	≤ 30 mA									
Switching outputs	PNP, open collector: Q NPN, open collector: Q									
Output current I_A max.	100 mA									
Light receiver, switching type	Light /dark-switching via rotary switch									
Response time ⁷⁾ /max. switching freq. ⁸⁾	≤ 0.9 ms / 550/s									
Pre-failure signalling output (VMA)	100 mA, static									
Test input "TE" ⁹⁾	Sender off; PNP: TE to +V Sender off; NPN: TE to 0V									
Connection types cable	PVC, 2 m ¹⁰⁾ ; 5 x 0.2 mm ² , \varnothing 4.2 mm									
plug	4-pin, M8									
VDE protection class ¹¹⁾	□									
Circuit protection ¹²⁾	A, B, C, D									
Enclosure rating	IP 67									
Ambient temperature T_A	Operation - 25 °C...+ 55 °C Storage - 40 °C...+ 70 °C									
Weight	with cable: Approx. 60 g with plug: Approx. 20 g									
Housing material	Housing: ABS; optics: PC									

- | | | | |
|---|---|-------------------------------|--|
| 1) Scanned material with 90 % remission (based on standard white according to DIN 5033) | 4) Limit values | 8) With light/dark ratio 1:1 | 12) A = V_S connections reverse-polarity protected |
| 2) Average service life 100,000 h at $T_A = + 25 °C$ | 5) May not exceed or fall short of V_S tolerances | 9) TE not with plug model | B = Inputs and outputs reverse-polarity protected |
| 3) Background 90 % remission | 6) Without load | 10) Do not bend below 0 °C | C = Interference pulse suppression |
| | 7) Signal transit time with resistive load | 11) Reference voltage 50 V DC | D = Outputs overload and short-circuit protected |

Scanning distance

Remission Level	Scanning Range (mm)	Operating Range (mm)
90% (White)	3 - 60	6 - 50
18% (Gray)	5 - 40	8 - 30
6% (Black)	15 - 25	17 - 22

- 1) Scanning range on white, 90 % remission
- 2) Scanning range on gray, 18 % remission
- 3) Scanning range on black, 6 % remission

Order information

Type	Part no.
WT 160-P112	6 009 511
WT 160-P410	6 009 519
WT 160-N112	6 008 819
WT 160-N410	6 008 827
WT 160-P122	6 009 512
WT 160-P420	6 009 520
WT 160-N122	6 008 820
WT 160-N420	6 008 828

Operating reserve vs. distance (mm) graph showing curves for different remission levels. The y-axis is logarithmic (1 to 100). The x-axis is linear (0 to 100 mm). Curve 1 (90% remission) peaks at ~10 reserve at 25mm. Curve 2 (18% remission) peaks at ~4 reserve at 20mm. Curve 3 (6% remission) peaks at ~1.5 reserve at 15mm.