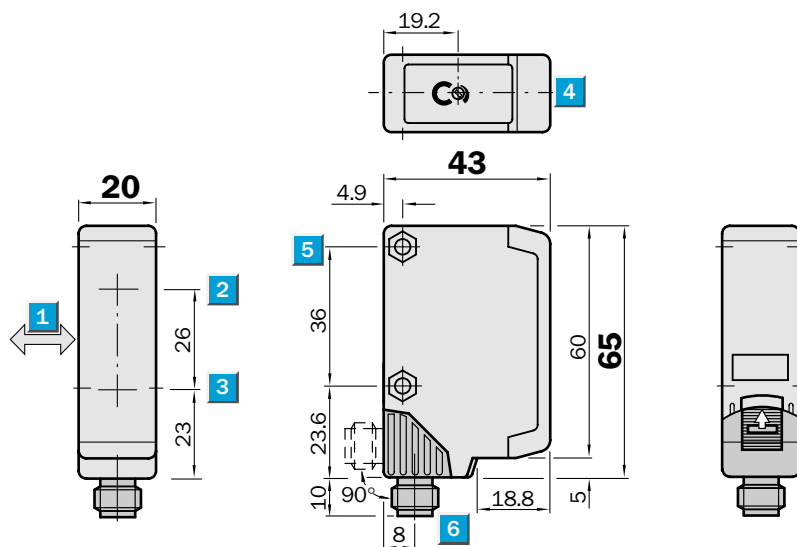


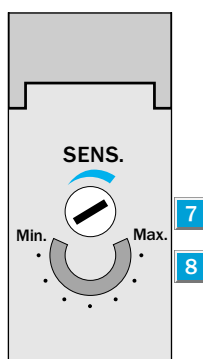
- Background suppression
- Continuous adjustment of scanning distance, scanning distance control (2 turns) with position indicator (270°)
- Visible red light as an alignment aid
- M 12 plug rotatable by 90°

Dimensional drawing



Adjustments possible

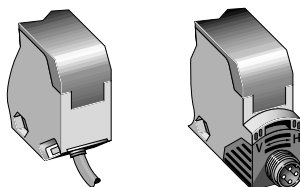
WT 250-P 162
WT 250-P 460
WT 250-N 162
WT 250-N 460



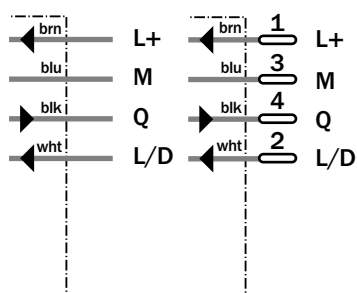
- 1 Standard direction of the material to be scanned
- 2 Transmission axis
- 3 Reception axis
- 4 Red LED signal strength indicator
- 5 Through borehole $\varnothing$ 4.2 mm, for M 4 hexagon nut on both sides
- 6 Connection cable or M 12 plug – 4-pin; plug position rotatable by 90° (V > H), V → vertical final position; H → horizontal final position; can be locked with slider
- 7 Scanning distance adjustment (2 turns), over-turn protected
- 8 Position indicator for scanning distance setting (270°)

Connection types

WT 250-P 162	WT 250-P 460
WT 250-N 162	WT 250-N 460


4 x 0.18 mm²

4-pin, M 12

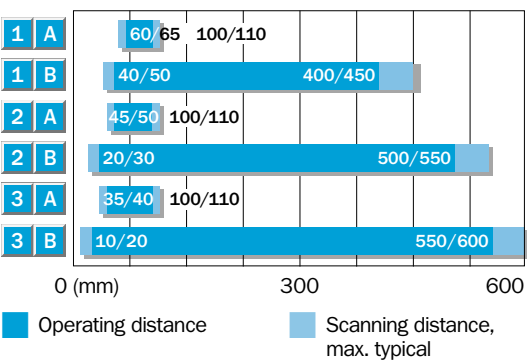


Accessories	page
Cable receptacles	496
Mounting brackets*	510

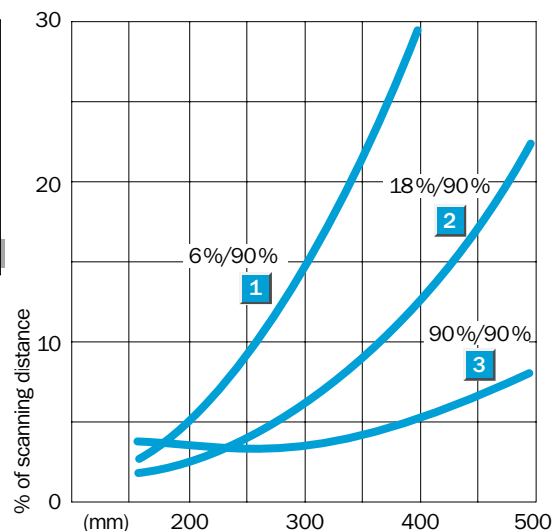
* included with delivery

Technical data		WT 250-	P 162	P 460	N 162	N 460						
Scanning distance, adjustable	Max. 10...600 mm ¹⁾											
	Min. 35...110 mm ¹⁾											
Scanning distance, adjustable	Potentiometer, 2 turns,											
	with position indicator											
Light source²⁾, light type	LED, visible red light											
Light spot diameter	Approx. 35 mm at 500 mm											
Angle of dispersion, sender	Approx. 3°											
Supply voltage V_S	10...30 V DC ³⁾											
Residual ripple ⁴⁾	≤ 5 V _{SS}											
Current consumption ⁵⁾	≤ 35 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 control wire:											
	+ V _S = light-switching											
	0 V = dark-switching											
Response time ⁶⁾	≤ 2 ms											
Max. switching frequency ⁷⁾	250/s											
Connection types	Cable PVC, 2 m ⁸⁾											
	4 x 0.18 mm ² , Ø 3.8 mm											
	Plug M 12, 4-pin, 90° rotatable											
VDE protection class⁹⁾	□											
Circuit protection¹⁰⁾	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 2 m											
	with plug M 12, 4-pin											
Housing material	Housing: ABS; optics: PC											

1) 90 % remission of material scanned (based on standard white according to DIN 5033)
 2) Average service life T_A = + 25 °C; LED, red light 100,000 h
 3) Limit value
 4) May not exceed or fall short of V_S tolerances
 5) Without load
 6) Signal transit time with resistive load
 7) With dark/light ratio 1:1
 8) Do not bend below 0 °C
 9) Reference voltage 50 V DC
 10) A = V_S connections reverse-polarity protected
 B = Output Q short-circuit protected
 C = Interference pulse suppression
 D = Output overcurrent and short-circuit protected
 11) Black = 6 % remission
 Gray = 18 % remission
 White = 90 % remission

Scanning distance

1	Scanning range on black ¹¹⁾ , white background
2	Scanning range on gray ¹¹⁾ , white background
3	Scanning range on white ¹¹⁾ , white background
A	Scanning distance control set to MIN
B	Scanning distance control set to MAX

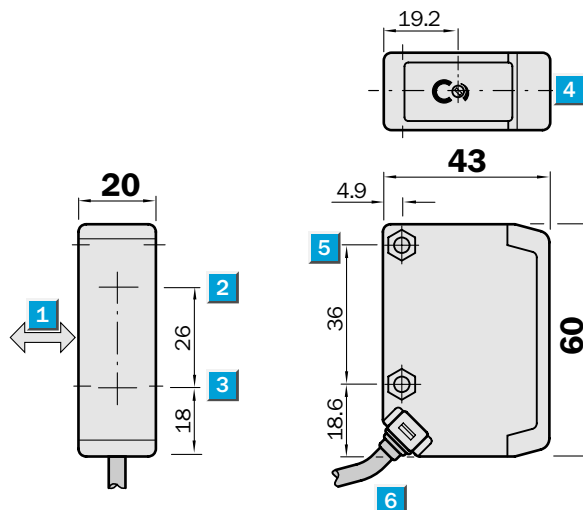
**Order information**

Type	Part no.
WT 250-P 162	6 010 704
WT 250-P 460	6 010 706
WT 250-N 162	6 010 701
WT 250-N 460	6 010 703

	Scanning distance 10...600 mm
Photoelectric proximity switches	

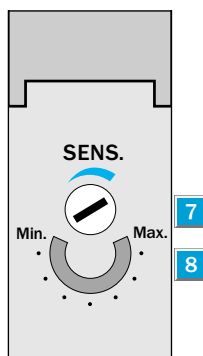
- Background suppression
- Continuous adjustment of scanning distance, scanning distance control (2 turns) with position indicator (270°)
- Visible red light as an alignment aid
- Universal current

Dimensional drawing



Adjustments possible

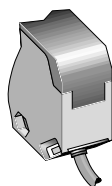
WT 250-S 162



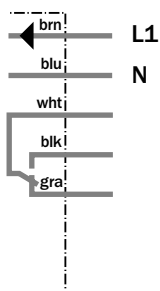
- 1 Standard direction of the material to be scanned
- 2 Transmission axis
- 3 Reception axis
- 4 Red LED signal strength indicator
- 5 Through borehole $\varnothing$ 4.2 mm, for M 4 hexagon nut on both sides
- 6 Connection cable
- 7 Scanning distance adjustment (2 turns), over-turn protected
- 8 Position indicator for scanning distance setting (270°)

Connection type

WT 250-S 162



5 x 0,76 mm²



Accessories	page
Mounting brackets*	510

* included with delivery

Technical data		WT 250-	S 162												
Scanning distance, adjustable	Max. 10...600 mm ¹⁾														
	Min. 35...110 mm ¹⁾														
Scanning distance, adjustable	Potentiometer, 2 turns,														
	with position indicator														
Light source²⁾, light type		LED, visible red light													
Light spot diameter	Approx. 35 mm at 500 mm														
Angle of dispersion, sender	Approx. 3°														
Supply voltage V_S		10...240 V DC ³⁾													
	24...240 V AC														
Power consumption	≤ 2 VA														
Switching outputs		Relay, SPDT, electrically isolated													
Switching current I _A max. ⁴⁾	3 A/240 V AC; 3 A/30 V DC														
Light receiver, switching type	Light-switching														
Response time	≤ 15 ms														
Max. switching frequency ⁵⁾	33/s														
Connection type		Cable PVC ⁶⁾ , 2 m													
	5 x 0.76 mm ² , Ø 6.3 mm														
VDE protection class⁷⁾		□													
Circuit protection⁸⁾		A, C													
Enclosure rating		IP 67													
Ambient temperature T_A		Operation - 25 °C...+ 55 °C													
	Storage - 40 °C...+ 70 °C														
Weight		Approx. 160 g													
Housing material		Housing: ABS; optics: PC													

1) 90 % remission of material scanned
(based on standard white according to
DIN 5033)

2) Average service life T_A = + 25 °C;
LED, red light 100,000 h

3) ± 10 %

4) Ensure spark extinguishing for inductive
or capacitive load

5) With dark/light ratio 1:1

6) Do not bend below 0 °C

7) Reference voltage 250 V UC

8) A = V_S connections reverse-polarity
protected

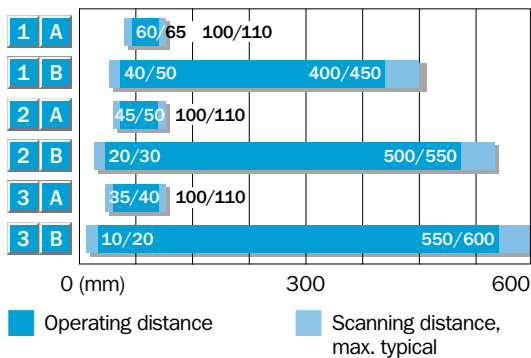
C = Interference pulse suppression

9) Black = 6 % reflectance

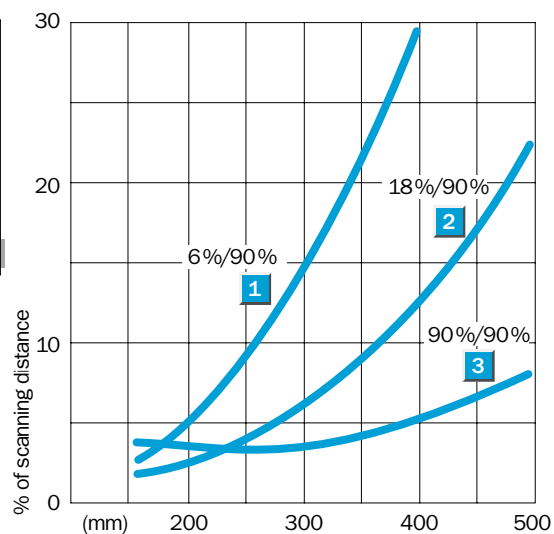
Gray = 18 % reflectance

White = 90 % reflectance

Scanning distance

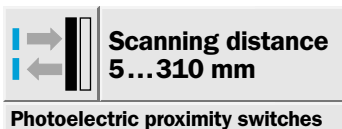


1	Scanning range on black ¹¹⁾ , white background
2	Scanning range on gray ¹¹⁾ , white background
3	Scanning range on white ¹¹⁾ , white background
A	Scanning distance control set to MIN
B	Scanning distance control set to MAX



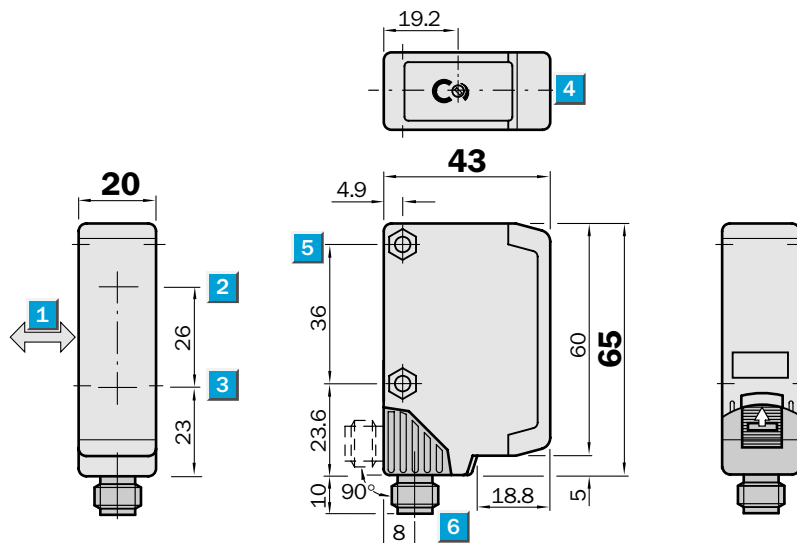
Order information

Type	Part no.
WT 250-S 162	6 010 707



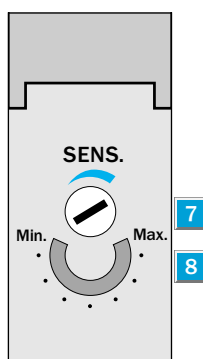
- Background suppression
- Continuous adjustment of scanning distance, scanning distance control (2 turns) with position indicator (270°)
- Visible red light as an alignment aid
- M 12 plug rotatable by 90°

Dimensional drawing



Adjustments possible

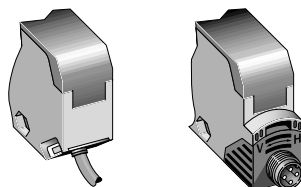
WT 250-P 142
WT 250-P 440
WT 250-N 142
WT 250-N 440



- Standard direction of the material to be scanned
- Transmission axis
- Reception axis
- Red LED signal strength indicator
- Through borehole $\varnothing$ 4.2 mm, for M 4 hexagon nut on both sides
- Connection cable or M 12 plug – 4-pin; plug position rotatable by 90° (V > H),
V → vertical final position
H → horizontal final position; can be locked with slider
- Scanning distance adjustment (2 turns), over-turn protected
- Position indicator for scanning distance setting (270°)

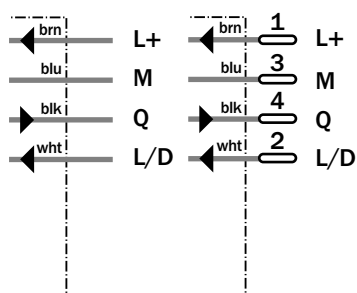
Connection types

WT 250-P 142	WT 250-P 440
WT 250-N 142	WT 250-N 440



4 x 0.18 mm²

4-pin, M 12



Accessories	page
Cable receptacles M 12	496
Mounting brackets*	510

* included with delivery

Technical data		WT 250-	P 142	P 440	N 142	N 440						
Scanning distance, adjustable	Max. 5...310 mm ¹⁾											
	Min. 15...90 mm ¹⁾											
Scanning distance, adjustable		Potentiometer, 2 turns, with position indicator										
Light source²⁾, light type		LED, visible red light										
Light spot diameter		Approx. 35 mm at 500 mm										
Angle of dispersion, sender		Approx. 3°										
Supply voltage V_S		10...30 V DC ³⁾										
Ripple ⁴⁾		$\leq 5 V_{SS}$										
Current consumption ⁵⁾		≤ 35 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 control wire:										
		+ V_S = light-switching										
		0 V = dark-switching										
Response time ⁶⁾		≤ 2 ms										
Max. switching frequency ⁷⁾		250/s										
Connection types		Cable PVC, 2 m ⁸⁾										
		4 x 0.18 mm ² , $\varnothing$ 3.8 mm										
		Plug M 12, 4-pin, 90° rotatable										
VDE protection class⁹⁾		□										
Circuit protection¹⁰⁾		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 2 m	Approx. 80 g										
	with plug M 12, 4-pin	Approx. 40 g										
Housing material		Housing: ABS; optics: PC										

1) 90 % remission of material scanned
(based on standard white according to
DIN 5033)

2) Average service life $T_A = + 25$ °C;
LED, red light 100,000 h

3) Limit value

4) May not exceed or fall short of
 V_S tolerances

5) Without load

6) Signal transit time with resistive load

7) With dark/light ratio 1:1, without time
level

8) Do not bend cable below 0 °C

9) Reference voltage 50 V DC

10) A = V_S connections reverse-polarity
protected

B = Output Q short-circuit protected

C = Interference pulse suppression

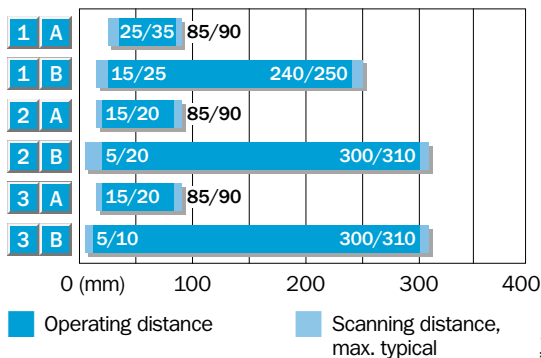
D = Output overcurrent and
short-circuit protected

11) Black = 6 % remission

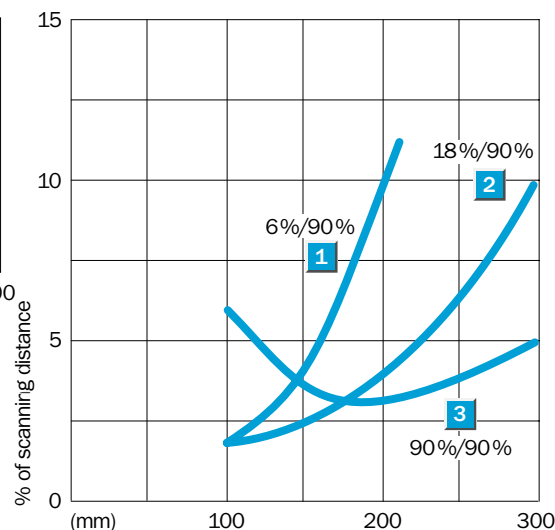
Gray = 18 % remission

White = 90 % remission

Scanning distance

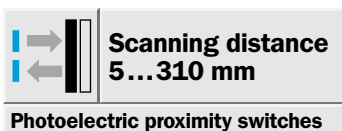


- 1 Scanning range on black¹¹⁾, white background
- 2 Scanning range on gray¹¹⁾, white background
- 3 Scanning range on white¹¹⁾, white background
- A Scanning distance control set to MIN
- B Scanning distance control set to MAX



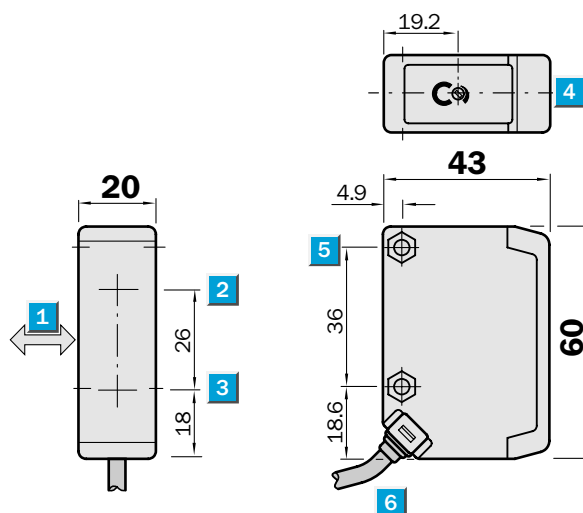
Order information

Type	Part no.
WT 250-P 142	6 010 619
WT 250-P 440	6 010 621
WT 250-N 142	6 010 616
WT 250-N 440	6 010 618



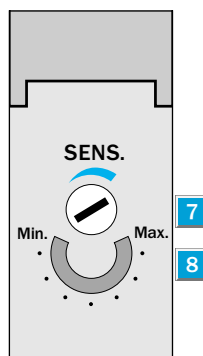
- Background suppression
- Continuous adjustment of scanning distance, scanning distance control (2 turns) with position indicator (270°)
- Visible red light as an alignment aid
- Universal current, relay switching output, SPDT

Dimensional drawing



Adjustments possible

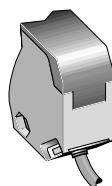
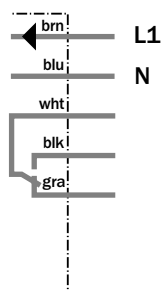
WT 250-S 142



- 1 Standard direction of the material to be scanned
- 2 Transmission axis
- 3 Reception axis
- 4 Red LED signal strength indicator
- 5 Through borehole $\varnothing$ 4.2 mm, for M 4 hexagon nut on both sides
- 6 Connection cable
- 7 Scanning distance adjustment (2 turns), over-turn protected
- 8 Position indicator for scanning distance setting (270°)

Connection type

WT 250-S 142


5 x 0.76 mm²


Accessories	page
Mounting brackets*	510

* included with delivery

Technical data		WT 250-
		S 142
Scanning distance , adjustable		Max. 5...310 mm ¹⁾
		Min. 15...90 mm ¹⁾
Scanning distance, adjustable		Potentiometer, 2 turns,
		with position indicator
Light source ²⁾ , light type		LED, visible red light
Light spot diameter		Approx. 25 mm at 300 mm
Angle of dispersion, sender		Approx. 3°
Supply voltage V_s ³⁾		12...240 V DC
		24...240 V AC
Power consumption		≤ 2 VA
Switching outputs		Relay, SPDT, electrically isolated
Switching current I _A max. ⁴⁾		3 A/240 V AC; 3 A/30 V DC
Light receiver, switching type		Light-switching
Response time		≤ 15 ms
Max. switching frequency ⁵⁾		33/s
Connection type		Cable PVC ⁶⁾ , 2 m
		5 x 0.76 mm², Ø 6.3 mm
VDE protection class ⁷⁾		□
Circuit protection ⁸⁾		A, C
Enclosure rating		IP 67
Ambient temperature T_A		Operation – 25 °C...+ 55 °C
		Storage – 40 °C...+ 70 °C
Weight		Approx. 160 g
Housing material		Housing: ABS; optics: PC

- | | | | |
|---|---|--|---|
| 1) 90 % remission of material scanned
(based on standard white according to
DIN 5033) | 3) $\pm 10\%$ | 7) Reference voltage 250 V UC | 9) Black = 6 % remission
Gray = 18 % remission
White = 90 % remission |
| 2) Average service life $T_A = + 25\text{ }^{\circ}\text{C}$;
LED, red light 100,000 h | 4) Ensure spark extinguishing for inductive
or capacitive load | 8) A = V_s connections reverse-polarity
protected
C = Interference pulse suppression | |
| | 5) With dark/light ratio 1:1 | | |
| | 6) Do not bend below $0\text{ }^{\circ}\text{C}$ | | |

Scanning distance