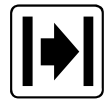


# V 180 Series Photoelectric Switches

**VS 180 / VE 180**

15 m

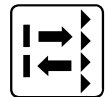


**VL 180**



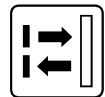
3 m  
1 m\*)

\*) with polarizing filter



**VT 180**

110 mm  
400 mm



Photoelectric switches of cylindrical design in threaded metal housing, M 18 x 1.

Small size, compact design.

Signal strength indicator for easy commissioning and adjustment.

Over-current and reverse-polarity protected; no false triggering on power-up.

Due to interference suppression insensitive to ambient light.

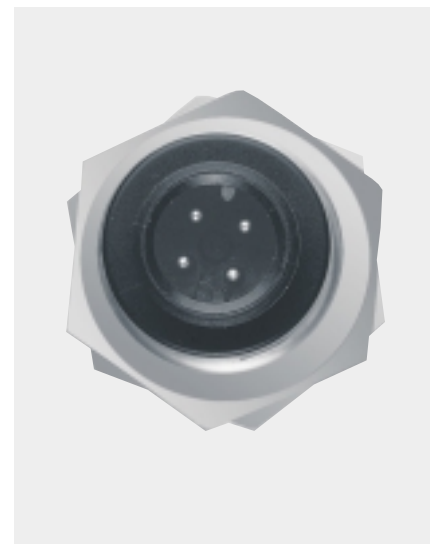
Photoelectric reflex switch with infrared light (scanning distance: 3 m) or visible red light and polarizing filter (scanning distance: 1 m).

Photoelectric proximity switch with optimized scanning distance: 110 mm or 400 mm.



Status indicator and sensitivity control

Available as through-beam photoelectric switch, as photoelectric reflex switch and as photoelectric proximity switch.



Plug for individual cable length and flexibility



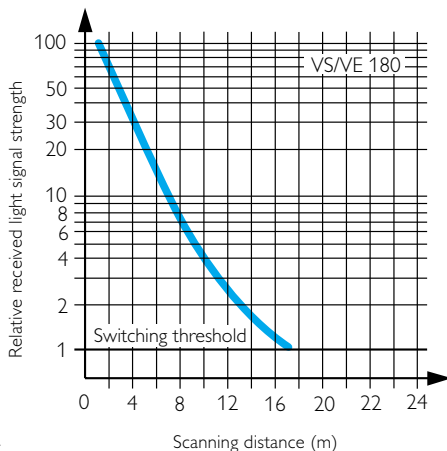
## Scanning Distance

15 m



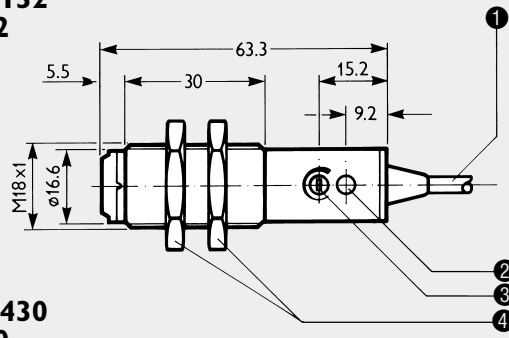
### Features:

- Supply connections reverse-polarity protected
- LED indicator for receiving status, on VS: power indicator
- Built-in switching amplifier
- Light- and dark-switching (L/D control wire)
- Adjustable sensitivity (VE)
- No false triggering on power-up
- Metal housing
- Output with over-current protection
- Test input to test the device and the complete system
- With connecting cable or plug
- Right-angle adapter (accessories)
- CE /

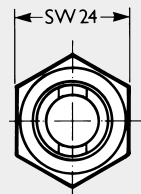


## VS 180 / VE 180

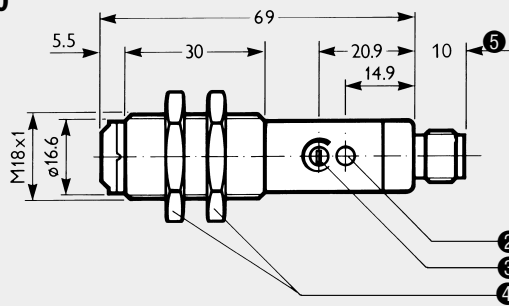
**-N/-P 132**  
**-D 132**



Dimensions in mm



**-N/-P 430**  
**-D 430**

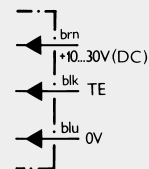


- 1 Connecting cable
- 2 Signal strength indicator on VE 180 (power indicator on VS 180)
- 3 Sensitivity control (270 °-potentiometer) on VE 180 (DC only)
- 4 Mounting nuts
- 5 M 12 plug, 4-pin (cable connector see page 8)

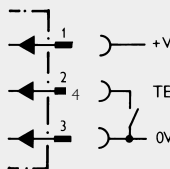
For right-angle adapter WIV-V 180-T 400 (accessories), Part no. 5 305 535, see page 8.

## Connection Diagram

**VS 180**  
**-D 132**

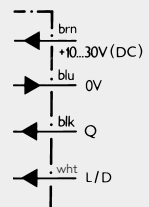


**-D 430**

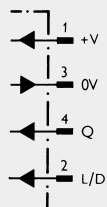


wht	blk	blu	brn
white	black	blue	brown

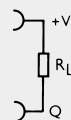
**VS 180**



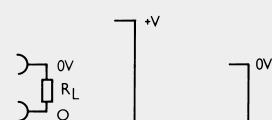
**-N/-P 430**



**N**



**P**



light-switching

dark-switching

# VS 180 / VE 180 Through-beam Photoelectric Switch

Through-beam Photoelectric Switch	VS 180 Sender	VS 180 Receiver	
<b>Model with connecting cable</b>	-D 132	-N 132	-P 132
<b>Part No.</b>	–	6 008 865 <sup>1)</sup>	6 008 864 <sup>1)</sup>
<b>Model with plug</b>	-D 430	-N 430	-P 430
<b>Part No.</b>	–	6 008 867 <sup>1)</sup>	6 008 866 <sup>1)</sup>
<b>Scanning distance<sup>2)</sup></b>		15 m	
Light spot diameter <sup>3)</sup>	800 mm		
<b>Supply voltage <math>V_s</math><sup>4)</sup></b>	10 to 30 VDC	10 to 30 VDC	
Power consumption	≤ 25 mA	≤ 25 mA (without load)	
Ripple max. <sup>5)</sup>	5 V <sub>pp</sub>	5 V <sub>pp</sub>	
<b>Light source</b>	LED, infrared, modulated, average service life: 100,000 h <sup>6)</sup>		
Light receiver switching mode	–	light- and dark-switching, (L/D control wire) <sup>7)</sup>	
Sensitivity	–	adjustable	
Status indicator	LED		
<b>Switching outputs</b>		NPN <sup>8)</sup>	PNP <sup>8)</sup>
Signal voltage HIGH		approx. $V_s$	$V_s - (\leq 1 \text{ V})$
Signal voltage LOW		≤ 1 V	approx. 0 V
Output current max.		100 mA	
Response time; switching frequency, max.		1,5 ms; 333/s	
Test input	light source disconnected OV	–	
<b>VDE protection class</b>	III <sup>9)</sup>		
<b>Enclosure rating</b>	IP 66		
Circuit protection <sup>10)</sup>	A	A, B, C	
Ambient operating temperature	– 25 to + 55 °C		
Storage temperature	– 40 to + 70 °C		
Connecting cable	2 m, 3 × 0,34 mm <sup>2</sup> PVC ø 5 mm	2 m, 4 × 0,34 mm <sup>2</sup> PVC ø 5 mm	
Weight with connecting cable	125 g		
Weight with plug	65 g		

- 1) The Part No. includes sender and receiver unit  
 2) The scanning range is reduced to 10 m with right-angle adapter 5 305 535  
 3) At scanning distance  
 4) Limit values

- 5) Must be within  $V_s$  tolerances  
 6) At room temperature = + 25 °C  
 7) Control wire open  
 NPN: light-switching  
 PNP: dark-switching

- 8) Open collector  
 9) DC models  
 10) A =  $V_s$  connections reverse-polarity protected  
 B = output over-current protect  
 C = interference suppression



## Scanning Distance

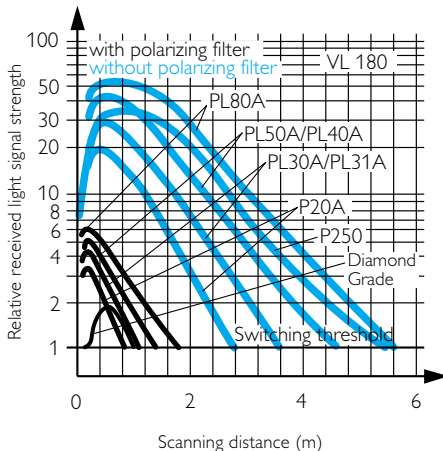
**3 m**  
**1 m\*)**

\*) with polarizing filter



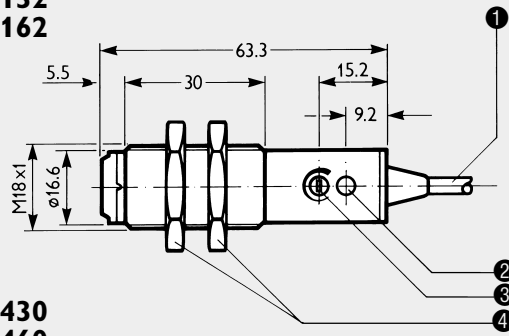
## Features:

- Polarizing filter, enabling objects even with reflecting surfaces to be detected
- Supply connections reverse-polarity protected
- LED status indicator
- Built-in switching amplifier
- Light- and dark-switching (L/D control wire)
- Adjustable sensitivity
- No false triggering on power-up
- Metal housing
- Output with over-current protection
- With connecting cable or plug
- Right-angle adapter (accessories)
- CE /

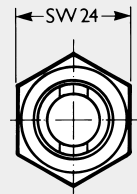


## VL 180

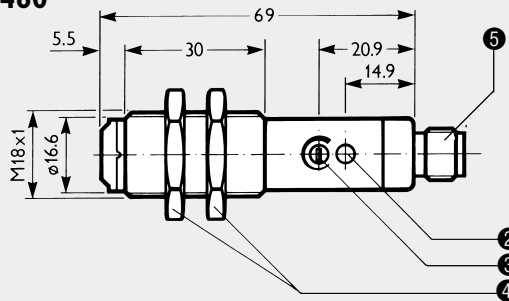
**-N/-P 132**  
**-N/-P 162**



Dimensions in mm



**-N/-P 430**  
**-N/-P 460**



- 1 Connecting cable
- 2 Status indicator
- 3 Sensitivity control (270 °-potentiometer, not with polarizing-filter version)
- 4 Mounting nuts
- 5 M 12 plug, 4-pin (cable connector see page 8)

For P 250 reflector (included), see page 8.

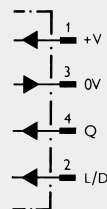
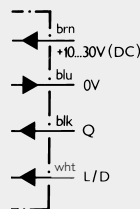
For right-angle adapter WIV-V 180-T 400 (accessories), Part No. 5 305 535, see page 8 (Right-angle adapter not to be used with polarizing-filter models)

## Connection Diagram

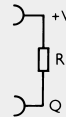
### VL 180

**-N/-P 132**  
**-N/-P 162**

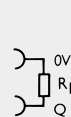
**-N/-P 430**  
**-N/-P 460**



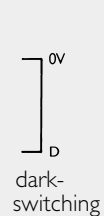
**N**



**P**



wht	blk	blu	brn
white	black	blue	brown



# VL 180 Photoelectric Reflex Switch

VL 180	without polarizing filter		with polarizing filter	
<b>Model with connecting cable</b>	-P 132	-N 132	-P 162	-N 162
<b>Part No.</b>	6 008 779	6 008 780	6 008 783	6 008 784
<b>Model with plug</b>	-P 430	-N 430	-P 460	-N 460
<b>Part No.</b>	6 008 781	6 008 782	6 008 785	6 008 786
Typical max. operating range / with reflector	0.05 to 3.6 m / P 250		0.05 to 1.35 m / P 250	
<b>Suggested operating range<sup>1)</sup></b> with P 250 polarizing filter	0.05 to 3 m		0.05 to 1 m	
Light spot diameter <sup>2)</sup>	150 mm		50 mm	
<b>Supply voltage <math>V_s</math><sup>3)</sup></b>	10 to 30 VDC		10 to 30 VDC	
Power consumption (without load)	≤ 30 mA		≤ 30 mA	
Ripple max. <sup>4)</sup>	5 $V_{pp}$		5 $V_{pp}$	
<b>Light source</b>	LED, infrared, modulated <sup>5)</sup>		LED, red, modulated <sup>5)</sup>	
Light receiver switching	light- and dark-switching (L/D control wire)		light- and dark-switching, (L/D control wire)	
<b>Switching outputs</b>	PNP <sup>7)</sup>	NPN <sup>7)</sup>	PNP <sup>7)</sup>	NPN <sup>7)</sup>
Signal voltage HIGH	$V_s - (\leq 1 \text{ V})$	approx. $V_s$	$V_s - (\leq 1 \text{ V})$	approx. $V_s$
Signal voltage LOW	approx. 0 V	$V_s - (\leq 1 \text{ V})$	approx. 0 V	≤ 1 V
Output current max.	100 mA		100 mA	
Response time; switching frequency, max.	1,5 ms; 333/s		1,5 ms; 333/s	
<b>VDE protection class</b>	III <sup>8)</sup>			
<b>Enclosure rating</b>	IP 66			
Circuit protection <sup>9)</sup>	A, B, C		A, B, C	
Ambient operating temperature	- 25 to + 55 °C			
Storage temperature	- 40 to + 70 °C			
Connecting cable	2 m, 4 x 0,34 mm <sup>2</sup> PVC ø 5 mm		2 m, 4 x 0,34 mm <sup>2</sup> PVC ø 5 mm	
Weight with connecting cable	125 g			
Weight with plug	65 g			

1) The scanning distance is reduced to 2.5 m with right-angle adapter. Not to be used with polarizing filter.

2) At scanning distance

3) Limit values

4) Must be within  $V_s$  tolerances

5) Average service life at room temperature = 25 °C: 100,000 h

6) Control wire open

NPN: light-switching

PNP: dark-switching

7) Open collector

8) DC models

9) A =  $V_s$  connections reverse-polarity protected

B = output over-current protected

C = interference suppression



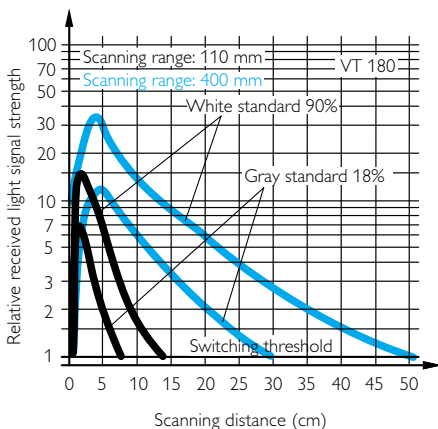
## Scanning Distance

110 und  
400 mm



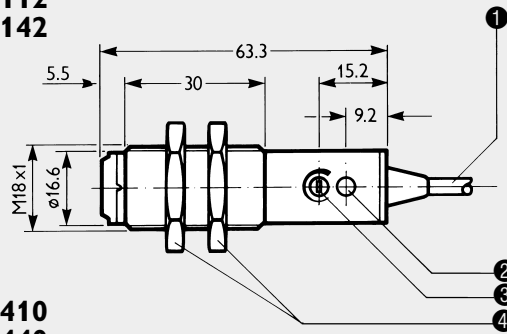
### Features:

- Supply connection reverse-polarity protected
- LED status indicator
- Built-in switching amplifier
- Light- and dark-switching (L/D control wire)
- Adjustable sensitivity
- No false triggering on power-up
- Metal housing
- Output with over-current protection
- With connecting cable or plug
- Simple fitting
- Right-angle adapter (accessories)
- CE /

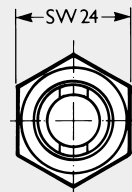


## VT 180

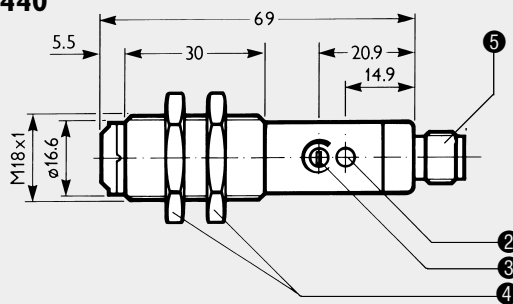
-N/-P 112  
-N/-P 142



Dimensions in mm



-N/-P 410  
-N/-P 440



- 1 Connecting cable
- 2 Status indicator
- 3 Sensitivity control (270 °-potentiometer, not with polarizing-filter version)
- 4 Mounting nuts
- 5 M 12 plug, 4-pin (cable connector see page 8)

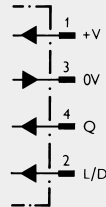
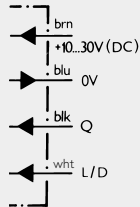
WIV-V 180-T 110 for scanning distance 110 mm: Part No. 5 305 534  
WIV-V 180-T 400 for scanning distance 400 mm: Part No. 5 305 535  
For right-angle adapter (accessories), see page 8.

## Connection Diagram

### VT 180

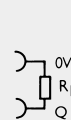
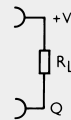
-N/-P 112  
-N/-P 142

-N/-P 410  
-N/-P 440

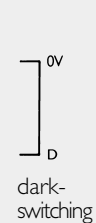
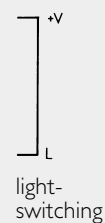


N

P



wht	blk	blu	brn
white	black	blue	brown



# VT 180

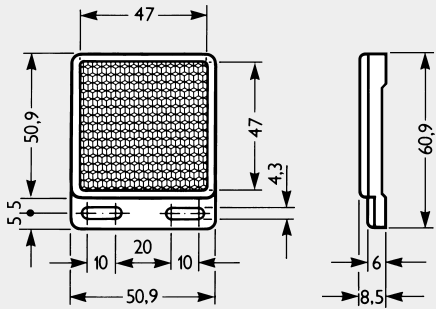
## Photoelectric Proximity Switch

VT 180	Scanning distance 110 mm		Scanning distance 400 mm	
<b>Model with connecting cable</b>	-P 112	-N 112	-P 142	-N 142
<b>Part No.</b>	6 008 787	6 008 788	6 008 791	6 008 792
<b>Model with plug</b>	-P 410	-N 410	-P 440	-N 440
<b>Part No.</b>	6 008 789	6 008 790	6 008 793	6 008 794
<b>Scanning distance, adjustable<sup>1)</sup></b>	110 mm <sup>2</sup>		400 mm <sup>2</sup>	
Light spot diameter <sup>3)</sup>	65 mm		30 mm	
<b>Supply voltage V<sub>s</sub><sup>4)</sup></b>	10 to 30 VDC		10 to 30 VDC	
Power consumption (without load)	≤ 30 mA		≤ 30 mA	
Ripple max. <sup>5)</sup>	5 V <sub>pp</sub>		5 V <sub>pp</sub>	
<b>Light source</b>	LED, infrared, modulated, average service life: 100,000 h <sup>6)</sup>			
Light receiver switching mode	light- and dark-switching (L/D control wire <sup>7)</sup> )		light- and dark-switching, (L/D control wire <sup>7)</sup> )	
<b>Switching outputs</b>	PNP <sup>8)</sup>	NPN <sup>8)</sup>	PNP <sup>8)</sup>	NPN <sup>8)</sup>
Signal voltage HIGH	V <sub>s</sub> - (≤ 1 V)	approx. V <sub>s</sub>	V <sub>s</sub> - (≤ 1 V)	approx. V <sub>s</sub>
Signal voltage LOW	approx. 0 V	V <sub>s</sub> - (≤ 1 V)	approx. 0 V	≤ 1 V
Output current max.	100 mA		100 mA	
Response time; switching frequency, max.	1,5 ms; 333/s		1,5 ms; 333/s	
<b>VDE protection class</b>	III <sup>9)</sup>			
<b>Enclosure rating</b>	IP 66			
Circuit protection <sup>10)</sup>	A, B, C		A, B, C	
Ambient operating temperature	- 25 to + 55 °C			
Storage temperature	- 40 to + 70 °C			
Connecting cable	2 m, 4 x 0,34 mm <sup>2</sup> PVC ø 5 mm		2 m, 4 x 0,34 <sup>2</sup> mm PVC ø 5 mm	
Weight with connecting cable	125 g			
Weight with plug	65 g			

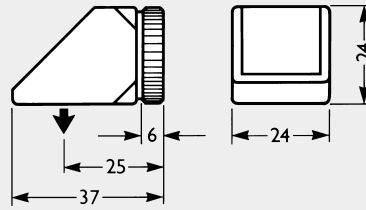
1) Based on white standard 90 %  
 2) With right-angle adapter, the scanning distances are reduced from 110 mm to 100 mm and from 400 mm to 280 mm.  
 3) At scanning distance  
 4) Limit values  
 5) Must be within V<sub>s</sub> tolerances  
 6) At room temperature = 25 °C

7) Control wire open  
 NPN = light-switching  
 PNP = dark-switching  
 8) Open collector  
 9) DC models  
 10) A = V<sub>s</sub> connections reverse-polarity protected  
 B = output over-current protect  
 C = interference suppression

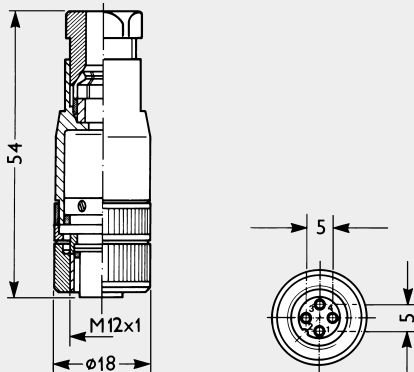
# Accessories



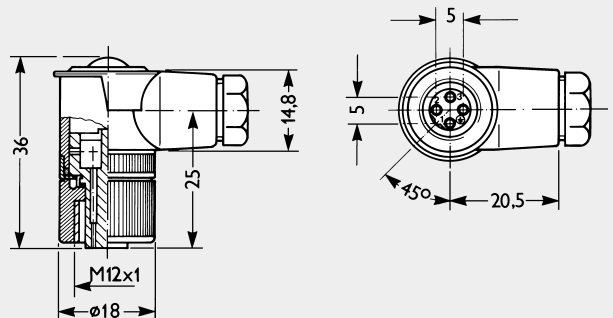
P 250 Reflector (Part No. 5 304 812)  
included with VL 180



Right-angle adapter, (Part No. 1 005 389) VL 180  
Right-angle adapter, (Part No. 1 005 390) VT 180  
Right-angle adapter, (Part No. 1 009 707) VS/VE 180



Cable receptacle, straight  
(Part No. 6 007 302 DC)  
(Part No. 6 007 305 AC)



Cable receptacle, right angle  
(Part No. 6 007 303 DC)  
(Part No. 6 007 306 AC)