SICK

0405 GO

SENSICK
VTB 18

Australia
Phone +61 3 9497 4100
E-Mail: sales@sick.com.au

Belgium/Luxembourg
Phone +32 (0)2 466 55 66
E-Mail: info@sick.be

Brasil
Phone +55 11 5091-4900
E-Mail: sac@sick.com.br

Ceská Republika
Phone +420 2 57 91 18 50
E-Mail: sick@sick.cz

China
Phone +852-2763 6966
E-Mail: ghk@sick.com.hk

Danmark
Phone +45 45 82 64 00
E-Mail: sick@sick.dk

Deutschland
Phone +49 (0)2 11 53 01-250
E-Mail: info@sick.de

España
Phone +34 93 480 31 00
E-Mail: info@sick.es

France
Phone +33 1 64 62 35 00
E-Mail: info@sick.fr

Great Britain
Phone +44 (0)1727 831121
E-Mail: info@sick.co.uk

India
Phone +91 (11) 2696 7651
E-Mail: ayograj@tecnovaglobal.com

Italia
Phone +39 02 27 40 93 19
E-Mail: info@sick.it

Japan
Phone +81 (0)3 3358 1341
E-Mail: info@sick.jp

Korea
Phone +82-2 786 6321/4
E-Mail: kang@sickkorea.net

Nederlands
Phone +31 (0)30 229 25 44
E-Mail: info@sick.nl

Norge
Phone +47 67 81 50 00
E-Mail: austefjord@sick.no

Österreich
Phone +43 (0)22 36 62 28 8-0
E-Mail: office@sick.at

Polska
Phone +48 22 837 40 50
E-Mail: info@sick.pl

Republika Slowenija
Phone +386 (0)1-47 69 990
E-Mail: selanm@sick.com

Russia
Phone +7 95 775 05 30
E-Mail info@sick-automation.ru

Schweiz
Phone +41 41 619 29 39
E-Mail: contact@sick.ch

Singapore
Phone +65 6744 3732
E-Mail: admin@sicksgp.com.sg

Suomi
Phone +358-9-25 15 800
E-Mail: sick@sick.fi

Sverige
Phone +46 8 680 64 50
E-Mail: info@sick.se

Taiwan
Phone +886 2 2365-6292
E-Mail: sickgrc@ms6.hinet.net

Türkiye
Phone +90 216 388 95 90 pbx
E-Mail: info@sick.com.tr

USA/Canada/México
Phone +1(952) 941-6780
E-Mail: info@sickusa.com

More representatives and agencies
in all major industrial nations at
www.sick.com

We reserve the right to make changes without prior notification

ENGLISH

Photoelectric Proximity Switch
with background suspression
Operating Instructions

Safety Specifications

- Read the operating instructions before starting operation.
- Connection, assembly, and settings only by competent technicians.
- Protect the device against moisture and soiling when operating.
- No safety component in accordance with EU machine guidelines.
- Always mount/disassemble contact in a de-energized state.

Proper Use

The VTB 18 photoelectric proximity switch is an optoelectronic sensor and is used for detection of optical, non-contact detection of objects, animals, and people.

Starting Operation

H: Light-switching; if light received, output (Q) switches.
D: dark-switching, if light interrupted, output (Q) switches.

With following connectors only:
Connect and secure cable receptacle tension-free.

Only for versions with connecting cable:
Connect cables.

Use M18 mounting to mount sensor to holders.
Maintain direction in which object moves relative to sensor.
Connect photoelectric proximity switch to operating voltage (see type label).

Check application conditions such as scanning distance, size and reflectance of object to be detected as well as of background, and compare with characteristic in diagram. (x=scanning distance, y=transition range between set scanning distance and reliable background suppression in % of scanning distance, Ro=reflectance of object, Rh=reflectance of background).
Reflectance: 6%=black, 18%=gray, 90%=white (based on standard white to DIN 5033).

Adjustment of light reception:

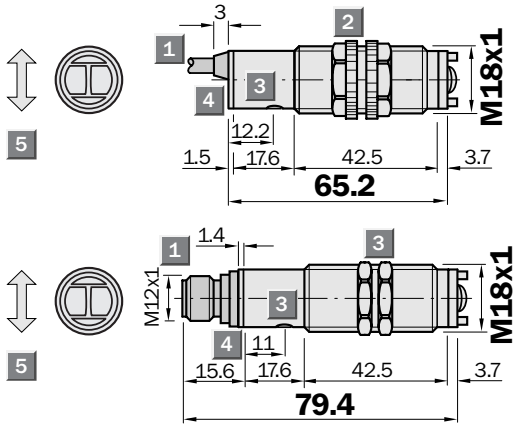
Set scanning distance to max.
Position object. Position light spot on object. Red sender light spot visible on object. Signal strength indicator should light up. If it does not light up, readjust and/or clean photoelectric proximity switch and/or check application conditions.

Setting scanning distance:

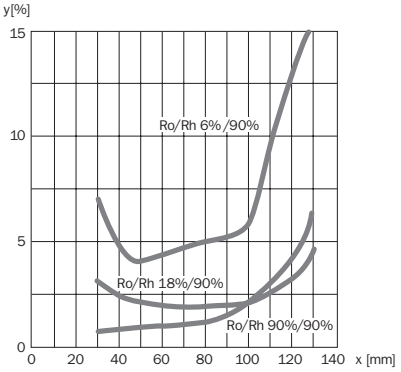
Remove object, signal strength indicator should go out (position A=max.). If it does not go out, turn switch (Range: 270 °) towards min. until it goes out (e.g. position A). Set switch to min. Position object. Turn switch towards max. until signal strength indicator lights up (e.g. position B).
If position B<position A:
select middle setting (e.g. position C). Check complete functioning. Functioning OK, setting completed. Functioning not OK, check and readjust application conditions.
If position A<=position B:
influence of background is too great. Check and readjust application conditions.

Maintenance

SICK photoelectric switches do not require any maintenance. We recommend that you clean the optical interfaces and check the screw connections and plug-in connections at regular intervals.



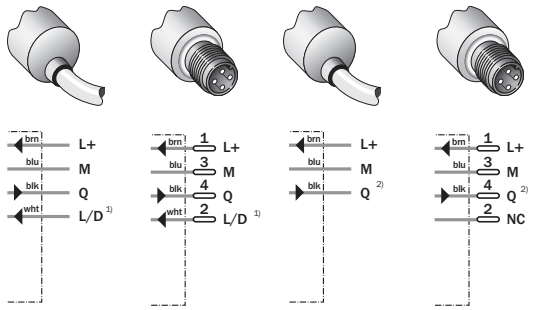
1 Connection
2 Scanning range adjustment 270°
3 Mounting nuts, SW 24
4 Yellow LED indicator:
lights: switching output active;
does not light: switching output inactive;
blinks slowly: short-circuit detected.
5 Maintain direction of object



VTB 18	
Operating range TW [1]	30 ... 130 mm
Light spot diameter/distance	approx. 12 mm/130 mm
Light source[2], light type	LED red, 660 nm
Scanning range adjustment	270°
Supply voltage U_V	10 ... 30 DC V [3]
Output current I_A max.	≤ 100 mA
Switching output/mode [4]	NPN or PNP – NO/NC
Switching frequency [5]	1000/s
Current consumption [6]	≤ 30 mA
Enclosure rating	IP 67 (EN 60529)
Ambient oprating temperature	–25 °C ... +70 °C
Circuit protection [7]	A, B, C, D
Housing material	Housing: Nickel-coated brass/PA; Optics: PC

[1] Object to be detected with 90 % remission (relating to standard white in acc. with DIN 5033)
[2] Average service life 100,000 h at T_A = +25 °C
[3] Limits
Ripple max. ±10 %
[4] See the connection drawings pos. 1) to pos. 2)
[5] Signal transit time with resistive load; with light/dark ratio 1:1
[6] Without load
[7] A = U_V connections reverse polarity protected
B = inputs/outputs reverse polarity protected
C = interference pulse suppression
D = Outputs short-circuit protected (auto-reset)

VTB 18-4 **VTB 18-4** **VTB 18-3** **VTB 18-3**



Wiring colors: 1/brn = brown; 2/wht = white; 3/blu = blue; 4/blk = black

[1] L/D, switching type: control line
L/D = + U_V: light-switching L.ON
L/D = 0 V: dark-switching D.ON
Switching type control line L/D open:
NPN = light-switching L.ON
PNP = dark-switching D.ON
[2] Switching output Q, 3-wire
a) NPN light-switching L.ON: VTB 18-3E....
b) NPN dark-switching D.ON: VTB 18-3N....
c) PNP light-switching L.ON: VTB 18-3F....
d) PNP dark-switching D.ON: VTB 18-3P....