



# VT180-N410

V180

PHOTOELECTRIC SENSORS

**SICK**  
Sensor Intelligence.



Illustration may differ

## Ordering information

| Type       | part no. |
|------------|----------|
| VT180-N410 | 6008790  |

Other models and accessories → [www.sick.com/V180](http://www.sick.com/V180)

## Detailed technical data

### Features

|  |                                      |
|--|--------------------------------------|
| <b>Functional principle</b>            | Photoelectric proximity sensor       |
| <b>Functional principle detail</b>     | Energetic                            |
| <b>Dimensions (W x H x D)</b>          | 18 mm x 18 mm x 69 mm                |
| <b>Housing design (light emission)</b> | Cylindrical                          |
| <b>Housing length</b>                  | 69 mm                                |
| <b>Thread diameter (housing)</b>       | M18 x 1                              |
| <b>Optical axis</b>                    | Axial                                |
| <b>Sensing range max.</b>              | 0 mm ... 130 mm <sup>1)</sup>        |
| <b>Sensing range</b>                   | 0 mm ... 110 mm <sup>2)</sup>        |
| <b>Type of light</b>                   | Infrared light                       |
| <b>Light source</b>                    | LED <sup>3)</sup>                    |
| <b>Light spot size (distance)</b>      | Ø 65 mm (110 mm)                     |
| <b>Wave length</b>                     | 920 nm                               |
| <b>Adjustment</b>                      | Potentiometer, 270 ° (Sensing range) |

<sup>1)</sup> Object with 90% remission (based on standard white, DIN 5033).

<sup>2)</sup> With right-angle adapter, the sensing range is reduced from 110 mm to 100 mm.

<sup>3)</sup> Average service life: 100,000 h at T<sub>U</sub> = +25 °C.

### Mechanics/electronics

|                                     |                                    |
|-------------------------------------|------------------------------------|
| <b>Supply voltage U<sub>B</sub></b> | 10 V DC ... 30 V DC <sup>1)</sup>  |
| <b>Ripple</b>                       | < 5 V <sub>pp</sub> <sup>2)</sup>  |
| <b>Current consumption</b>          | 30 mA <sup>3)</sup>                |
| <b>Switching output</b>             | NPN <sup>4)</sup>                  |
| <b>Switching mode</b>               | Light/dark switching <sup>4)</sup> |

<sup>1)</sup> Limit values.

<sup>2)</sup> May not fall below or exceed U<sub>V</sub> tolerances.

<sup>3)</sup> Without load.

<sup>4)</sup> Control wire open: light switching L.ON.

<sup>5)</sup> Signal transit time with resistive load.

<sup>6)</sup> With light/dark ratio 1:1.

<sup>7)</sup> A = V<sub>S</sub> connections reverse-polarity protected.

<sup>8)</sup> C = interference suppression.

<sup>9)</sup> D = outputs overcurrent and short-circuit protected.

|  |   |
|--|---|
| <b>Switching mode selector</b>             | Selectable via L/D control cable                      |
| <b>Signal voltage NPN HIGH/LOW</b>         | Approx. $V_S$ / < 1.0 V                               |
| <b>Output current <math>I_{max}</math></b> | ≤ 100 mA  |
| <b>Response time</b>                       | ≤ 1.5 ms <sup>5)</sup>                                |
| <b>Switching frequency</b>                 | 333 Hz <sup>6)</sup>                                  |
| <b>Connection type</b>                     | Male connector M12, 4-pin                             |
| <b>Circuit protection</b>                  | A <sup>7)</sup><br>C <sup>8)</sup><br>D <sup>9)</sup> |
| <b>Protection class</b>                    | III   |
| <b>Weight</b>                              | 65 g  |
| <b>Housing material</b>                    | Metal, Nickel-plated brass, PBT/PC                    |
| <b>Optics material</b>                     | Plastic, PMMA   |
| <b>Enclosure rating</b>                    | IP66  |
| <b>Items supplied</b>                      | Fastening nuts (2 x)                                  |
| <b>Ambient operating temperature</b>       | -25 °C ... +55 °C                                     |
| <b>Ambient temperature, storage</b>        | -40 °C ... +70 °C                                     |
| <b>UL File No.</b>                         | NRNT2.E128350 & NRNT8.E128350                         |

- 1) Limit values.  
 2) May not fall below or exceed  $U_y$  tolerances.  
 3) Without load.  
 4) Control wire open: light switching L.ON.  
 5) Signal transit time with resistive load.  
 6) With light/dark ratio 1:1.  
 7) A =  $V_S$  connections reverse-polarity protected.  
 8) C = interference suppression.  
 9) D = outputs overcurrent and short-circuit protected.

## Classifications





|                     |          |
|---------------------|----------|
| <b>ECLASS 5.0</b>   | 27270903 |
| <b>ECLASS 5.1.4</b> | 27270903 |
| <b>ECLASS 6.0</b>   | 27270903 |
| <b>ECLASS 6.2</b>   | 27270903 |
| <b>ECLASS 7.0</b>   | 27270903 |
| <b>ECLASS 8.0</b>   | 27270903 |
| <b>ECLASS 8.1</b>   | 27270903 |
| <b>ECLASS 9.0</b>   | 27270903 |
| <b>ECLASS 10.0</b>  | 27270904 |
| <b>ECLASS 11.0</b>  | 27270904 |
| <b>ECLASS 12.0</b>  | 27270903 |
| <b>ETIM 5.0</b>     | EC001821 |
| <b>ETIM 6.0</b>     | EC001821 |
| <b>ETIM 7.0</b>     | EC002719 |
| <b>ETIM 8.0</b>     | EC002719 |

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### Recommended accessories

Other models and accessories → [www.sick.com/V180](http://www.sick.com/V180)

|   | Brief description  | Type               | part no. |
|---|--|--------------------|----------|
| connectors and cables   |  |                    |          |
|    | <ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Female connector, M12, 4-pin, straight, A-coded</li> <li>• <b>Connection type head B:</b> Flying leads</li> <li>• <b>Signal type:</b> Sensor/actuator cable</li> <li>• <b>Cable:</b> 5 m, 4-wire, PVC</li> <li>• <b>Description:</b> Sensor/actuator cable, unshielded</li> <li>• <b>Application:</b> Zones with chemicals, Uncontaminated zones</li> </ul>  | YF2A14-050VB3XLEAX | 2096235  |
|    | <ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Male connector, M12, 4-pin, straight, A-coded</li> <li>• <b>Description:</b> Unshielded</li> <li>• <b>Connection systems:</b> Screw-type terminals</li> <li>• <b>Permitted cross-section:</b> ≤ 0.75 mm<sup>2</sup></li> </ul>   | STE-1204-G         | 6009932  |
|    | <ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Female connector, M12, 4-pin, straight, A-coded</li> <li>• <b>Connection type head B:</b> Flying leads</li> <li>• <b>Signal type:</b> Sensor/actuator cable</li> <li>• <b>Cable:</b> 5 m, 4-wire, PUR, halogen-free</li> <li>• <b>Description:</b> Sensor/actuator cable, unshielded</li> <li>• <b>Application:</b> Uncontaminated zones, Zones with oils and lubricants, Robot, Drag chain operation</li> </ul> | YF2A14-050UB3XLEAX | 2095608  |
| Mounting systems  |  |                    |          |
|  | <ul style="list-style-type: none"> <li>• <b>Description:</b> Plate N11N for universal clamp bracket</li> <li>• <b>Material:</b> Stainless steel</li> <li>• <b>Details:</b> Stainless steel 1.4571 (sheet), Stainless steel 1.4408 (clamp)</li> <li>• <b>Items supplied:</b> Universal clamp (5322627), mounting hardware</li> <li>• <b>Usable for:</b> DeltaPac, Glare, WTD20E</li> </ul>  | BEF-KHS-N11N       | 2071081  |

## SICK AT A GLANCE

SICK is one of the leading manufacturers of intelligent sensors and sensor solutions for industrial applications. A unique range of products and services creates the perfect basis for controlling processes securely and efficiently, protecting individuals from accidents and preventing damage to the environment.

We have extensive experience in a wide range of industries and understand their processes and requirements. With intelligent sensors, we can deliver exactly what our customers need. In application centers in Europe, Asia and North America, system solutions are tested and optimized in accordance with customer specifications. All this makes us a reliable supplier and development partner.

Comprehensive services complete our offering: SICK LifeTime Services provide support throughout the machine life cycle and ensure safety and productivity.

For us, that is “Sensor Intelligence.”

## WORLDWIDE PRESENCE:

Contacts and other locations –[www.sick.com](http://www.sick.com)