Data sheet

# VS/VE18-3P3640

## V18

PHOTOELECTRIC SENSORS

SICK
Sensor Intelligence.

Illustration may differ

## Ordering information

| Type | part no. |
|---|---|
| VS/VE18-3P3640 | 6013743 |

Other models and accessories ➜ www.sick.com/V18

## Detailed technical data

### Features

| | |
|---|---|
| **Functional principle** | Through-beam photoelectric sensor |
| **Dimensions (W x H x D)** | 18 mm x 18 mm x 78 mm |
| **Housing design (light emission)** | Cylindrical |
| **Housing length** | 78 mm |
| **Thread diameter (housing)** | M18 x 1 |
| **Optical axis** | Axial |
| **Sensing range max.** | 0 m ... 20 m |
| **Sensing range** | 0 m ... 14 m |
| **Focus** | Approx. 2.8° |
| **Type of light** | Infrared light |
| **Light source** | LED [1] |
| **Light spot size (distance)** | Ø 700 mm (14 m) |
| **Angle of dispersion** | Approx. 2.8° |
| **Adjustment** | None |

[1] Average service life: 100,000 h at $T_U$ = +25 °C.

### Mechanics/electronics

| | |
|---|---|
| **Supply voltage $U_B$** | 10 V DC ... 30 V DC [1] |

[1] Limit values.
[2] May not fall below or exceed $U_V$ tolerances.
[3] Without load.
[4] Signal transit time with resistive load.
[5] With light/dark ratio 1:1.
[6] A = $V_S$ connections reverse-polarity protected.
[7] B = inputs and output reverse-polarity protected.
[8] C = interference suppression.
[9] D = outputs overcurrent and short-circuit protected.

| | |
|---|---|
| **Ripple** | ± 10 % [2] |
| **Current consumption** | 30 mA [3] |
| **Switching output** | PNP |
| **Switching mode** | Dark switching |
| **Output current $I_{max.}$** | ≤ 100 mA |
| **Response time** | ≤ 2 ms [4] |
| **Switching frequency** | 250 Hz [5] |
| **Connection type** | Male connector M12, 4-pin |
| **Circuit protection** | A [6]<br>B [7]<br>C [8]<br>D [9] |
| **Protection class** | III |
| **Weight** | 200 g |
| **Housing material** | Plastic, PBT/PC |
| **Enclosure rating** | IP67 |
| **Test input sender off** | TE to 0 V |
| **Ambient operating temperature** | –25 °C ... +70 °C |
| **UL File No.** | NMFT2.E175606 |

[1] Limit values.
[2] May not fall below or exceed $U_V$ tolerances.
[3] Without load.
[4] Signal transit time with resistive load.
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[6] A = $V_S$ connections reverse-polarity protected.
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## Certificates

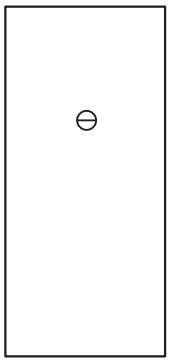
| | |
|---|---|
| **EU declaration of conformity** | ✓ |
| **UK declaration of conformity** | ✓ |
| **ACMA declaration of conformity** | ✓ |
| **Moroccan declaration of conformity** | ✓ |
| **China RoHS** | ✓ |
| **cRUus certificate** | ✓ |

## Classifications

| | |
|---|---|
| **ECLASS 5.0** | 27270901 |
| **ECLASS 5.1.4** | 27270901 |
| **ECLASS 6.0** | 27270901 |
| **ECLASS 6.2** | 27270901 |
| **ECLASS 7.0** | 27270901 |
| **ECLASS 8.0** | 27270901 |
| **ECLASS 8.1** | 27270901 |

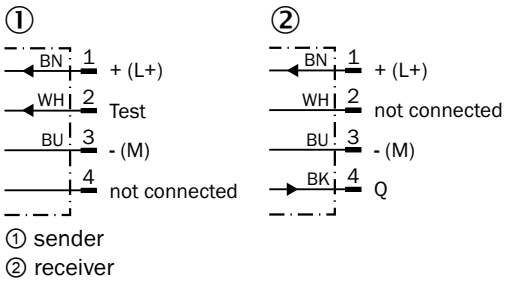
| | |
|---|---|
| **ECLASS 9.0** | 27270901 |
| **ECLASS 10.0** | 27270901 |
| **ECLASS 11.0** | 27270901 |
| **ECLASS 12.0** | 27270901 |
| **ETIM 5.0** | EC002716 |
| **ETIM 6.0** | EC002716 |
| **ETIM 7.0** | EC002716 |
| **ETIM 8.0** | EC002716 |
| **UNSPSC 16.0901** | 39121528 |

## Adjustments



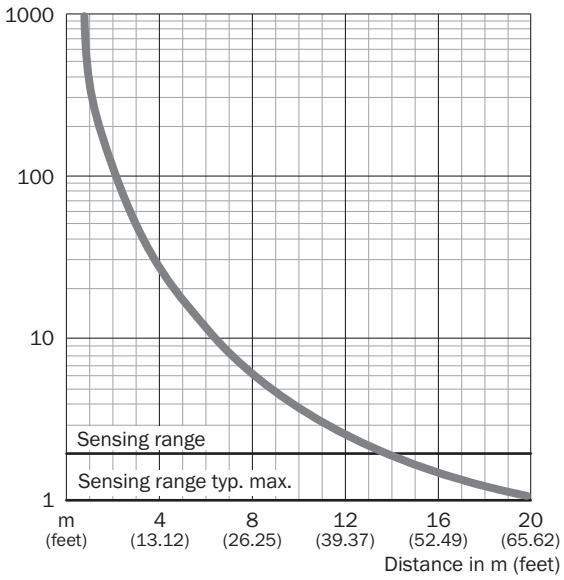
## Connection type

## Connection diagram Cd-220

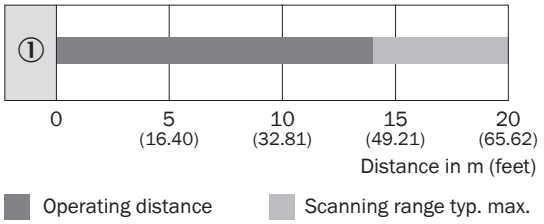



① sender
② receiver

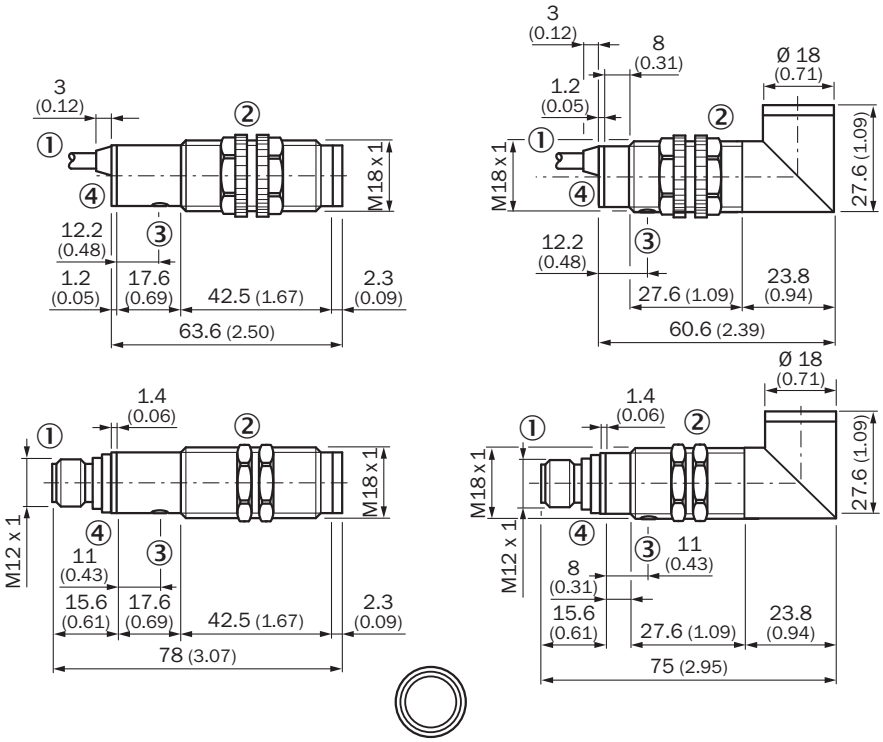
## Characteristic curve




## Sensing range diagram



## Dimensional drawing




Dimensions in mm (inch)
① Connecting cable or connector
② Fastening nut, 22 mm hex, made of plastic for equipment with plastic housing
② Fastening nut, 24 mm hex, made of metal for equipment with metal housing
③ sensitivity control
④ status indicator for VS, yellow LED
④ Receive indicator for VE, yellow LED

## Recommended accessories

Other models and accessories ➜ www.sick.com/V18

| | Brief description | Type | part no. |
|---|---|---|---|
| Mounting systems | | | |
| | • **Description:** Mounting bracket for M18 sensors<br>• **Material:** Steel<br>• **Details:** Steel, zinc coated<br>• **Items supplied:** Without mounting hardware<br>• **Suitable for:** GR18, V180-2, V18, W15, Z1, Z2 | BEF-WN-M18 | 5308446 |
| | • **Description:** Plate N11N for universal clamp bracket<br>• **Material:** Stainless steel<br>• **Details:** Stainless steel 1.4571 (sheet), Stainless steel 1.4408 (clamp)<br>• **Items supplied:** Universal clamp (5322627), mounting hardware<br>• **Usable for:** DeltaPac, Glare, WTD20E | BEF-KHS-N11N | 2071081 |

| | Brief description | Type | part no. |
|---|---|---|---|
| connectors and cables | | | |
| | • **Connection type head A:** Female connector, M12, 4-pin, straight, A-coded<br>• **Connection type head B:** Flying leads<br>• **Signal type:** Sensor/actuator cable<br>• **Cable:** 5 m, 4-wire, PVC<br>• **Description:** Sensor/actuator cable, unshielded<br>• **Application:** Zones with chemicals, Uncontaminated zones | YF2A14-050VB3XLEAX | 2096235 |
| | • **Connection type head A:** Male connector, M12, 4-pin, straight, A-coded<br>• **Description:** Unshielded<br>• **Connection systems:** Screw-type terminals<br>• **Permitted cross-section:** ≤ 0.75 mm² | STE-1204-G | 6009932 |
| | • **Connection type head A:** Female connector, M12, 4-pin, straight, A-coded<br>• **Connection type head B:** Flying leads<br>• **Signal type:** Sensor/actuator cable<br>• **Cable:** 5 m, 4-wire, PUR, halogen-free<br>• **Description:** Sensor/actuator cable, unshielded<br>• **Application:** Uncontaminated zones, Zones with oils and lubricants, Robot, Drag chain operation | YF2A14-050UB3XLEAX | 2095608 |

# 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



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