



WSE12C-3P2430A00 W12

PHOTOELECTRIC SENSORS

SICK
Sensor Intelligence.

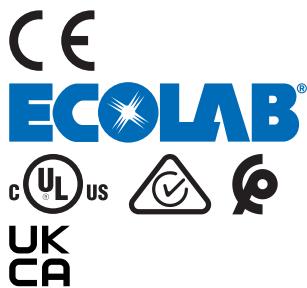


Ordering information

| Type | part no. |
|------------------|----------|
| WSE12C-3P2430A00 | 1067780 |

Other models and accessories → www.sick.com/W12

Illustration may differ



Detailed technical data

Features

| | |
|---|---|
| Functional principle | Through-beam photoelectric sensor |
| Sensing range max. | 0 m ... 20 m |
| Sensing range | 0 m ... 15 m |
| Emitted beam | |
| Light source | PinPoint LED ¹⁾ |
| Type of light | Visible red light |
| Light spot size (distance) | Ø 220 mm (15 m) |
| Key LED figures | |
| Wave length | 640 nm |
| Adjustment | IO-Link |
| Angle of dispersion | Approx. 1.5° |
| Part number of individual components | 2077227 WE12C-3P2430A00 2078000 WS12-3D2430S05 |
| Pin 2 configuration | External input, Teach-in input, Detection output, logic output, Device contamination alarm output |

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

Safety-related parameters

| | |
|-------------------------------------|-----------|
| MTTF_D | 539 years |
| DC_{avg} | 0 % |
| T_M (mission time) | 20 years |

Communication interface

| | |
|------------------------|--|
| IO-Link | ✓, COM2 (38,4 kBaud) |
| Data transmission rate | COM2 (38,4 kBaud) |
| Cycle time | 2.3 ms |
| Process data length | 16 Bit |
| Process data structure | Bit 0 = switching signal Q_{L1} Bit 1 = switching signal Q_{L2} Bit 2 ... 15 = empty |
| VendorID | 26 |
| DeviceID HEX | 0x8000F6 |
| DeviceID DEC | 8388854 |

Electronics

| | |
|---|---|
| Supply voltage U_B | 10 V DC ... 30 V DC ¹⁾ |
| Ripple | < 5 V _{pp} ²⁾ |
| Current consumption, sender | ≤ 30 mA ³⁾ |
| Current consumption, receiver | ≤ 15 mA ³⁾ |
| Protection class | III |
| Digital output | |
| Type | PNP ⁴⁾ |
| Switching mode | Light/dark switching |
| Signal voltage PNP HIGH/LOW | > U _v - 2,5 V / ca. 0 V |
| Output current $I_{max.}$ | ≤ 100 mA |
| Response time | 5) |
| Repeatability (response time) | 100 µs ⁶⁾ |
| Switching frequency | 1,500 Hz |
| Circuit protection | |
| | A ⁷⁾ B ⁸⁾ C ⁹⁾ D ¹⁰⁾ |
| Response time Q_{\downarrow} on Pin 2 | 200 µs ... 300 µs ^{5) 6)} |
| Switching frequency Q_{\downarrow} to pin 2 | ≤ 1,500 Hz ¹¹⁾ |
| Test input sender off | TE to 0 V |

¹⁾ Limit values when operated in short-circuit protected network: max. 8 A.²⁾ May not fall below or exceed U_V tolerances.³⁾ Without load.⁴⁾ Pin 4: This switching output must not be connected to another output.⁵⁾ Signal transit time with resistive load.⁶⁾ Valid for Q_{\downarrow} on Pin2, if configured with software.⁷⁾ A = V_S connections reverse-polarity protected.⁸⁾ B = inputs and output reverse-polarity protected.⁹⁾ C = interference suppression.¹⁰⁾ D = outputs overcurrent and short-circuit protected.¹¹⁾ With light / dark ratio 1:1, valid for Q_{\downarrow} on Pin2, if configured with software.

Mechanics

| | | |
|-------------------------------|---------------------------|---------------------|
| Housing | Rectangular | |
| Dimensions (W x H x D) | 15.6 mm x 48.5 mm x 42 mm | |
| Connection | Male connector M12, 4-pin | |
| Material | Housing | Metal, zinc diecast |
| | Front screen | Plastic, PMMA |
| Weight | 120 g | |

Ambient data

| | |
|--------------------------------------|------------------------------|
| Enclosure rating | IP66 IP67 IP69K |
| Ambient operating temperature | -40 °C ... +60 °C |
| Ambient temperature, storage | -40 °C ... +75 °C |
| UL File No. | NRKH.E181493 & NRKH7.E181493 |

Smart Task

| | |
|----------------------------|---|
| Smart Task name | Base logics |
| Logic function | Direct AND OR WINDOW Hysteresis |
| Timer function | Deactivated Switch-on delay Off delay ON and OFF delay Impulse (one shot) |
| Inverter | Yes |
| Switching frequency | SIO Direct: 1500 Hz ¹⁾ SIO Logic: 1500 Hz ²⁾ IOL: 1100 Hz ³⁾ |
| Response time | SIO Direct: 200 µs ... 300 µs ¹⁾ SIO Logic: 400 µs ... 500 µs ²⁾ IOL: 400 µs ... 750 µs ³⁾ |
| Repeatability | SIO Direct: 100 µs ¹⁾ SIO Logic: 100 µs ²⁾ IOL: 350 µs ³⁾ |
| Switching signal | |
| | Switching signal Q _{L1} Switching output |
| | Switching signal Q _{L2} Switching output |

¹⁾ SIO Direct: sensor operation in standard I/O mode without IO-Link communication and without using internal sensor logic or time parameters (set to "direct"/"deactivated").

²⁾ SIO Logic: Sensor operation in standard I/O mode without IO-Link communication. Sensor-internal logic or timing parameters plus Automation Functions used.

³⁾ IOL: Sensor operation with full IO-Link communication and usage of logic, timing and Automation Function parameters.

Diagnosis

| | |
|-------------------------|-----|
| Device status | Yes |
| Function reserve | Yes |

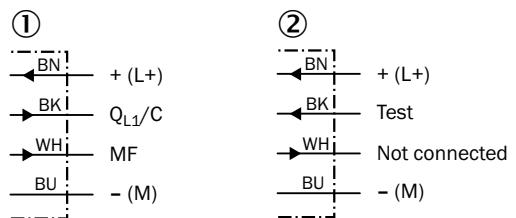
Certificates

| | |
|--|---|
| EU declaration of conformity | ✓ |
| UK declaration of conformity | ✓ |
| ACMA declaration of conformity | ✓ |
| Moroccan declaration of conformity | ✓ |
| China-RoHS | ✓ |
| ECOLAB certificate | ✓ |
| cULus certificate | ✓ |
| Photobiological safety (DIN EN 62471) certificate | ✓ |

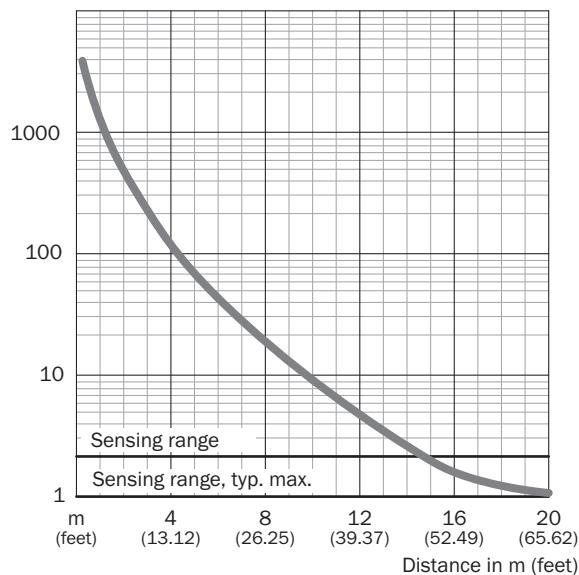
Classifications

| | |
|-----------------------|----------|
| 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 |

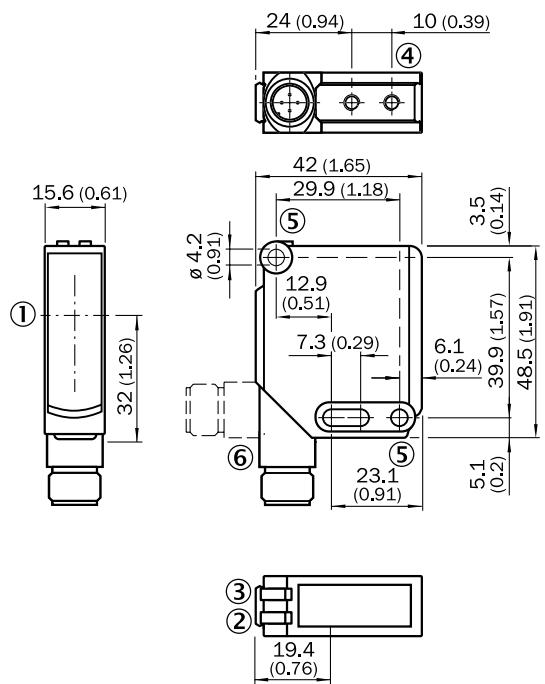
Connection diagram Cd-366



Characteristic curve WSE12-3



Dimensional drawing



Dimensions in mm (inch)

- ① Optical axis
- ② LED indicator yellow: Status of received light beam
- ③ LED indicator green: Supply voltage active
- ④ M4 threaded mounting hole, 4 mm deep
- ⑤ Mounting hole, Ø 4.2 mm
- ⑥ Connection

Recommended accessories

Other models and accessories → www.sick.com/W12

| | Brief description | Type | part no. |
|---|--|--------------------|----------|
| connectors and cables | | | |
|  | <ul style="list-style-type: none">Connection type head A: Female connector, M12, 4-pin, straight, A-codedConnection type head B: Flying leadsSignal type: Sensor/actuator cableCable: 5 m, 4-wire, PVCDescription: Sensor/actuator cable, unshieldedApplication: Zones with chemicals, Uncontaminated zones | YF2A14-050VB3XLEAX | 2096235 |
|  | <ul style="list-style-type: none">Connection type head A: Male connector, M12, 4-pin, straight, A-codedDescription: UnshieldedConnection systems: Screw-type terminalsPermitted cross-section: ≤ 0.75 mm² | STE-1204-G | 6009932 |

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