



WSE12C-3P2430A00

W12-3

SMALL PHOTOELECTRIC SENSORS

SICK
Sensor Intelligence.



Illustration may differ



Ordering information

Type	Part no.
WSE12C-3P2430A00	1067780

Other models and accessories → www.sick.com/W12-3

Detailed technical data

Features

Device type	Photoelectric sensors
Sensor/ detection principle	Through-beam photoelectric sensor
Dimensions (W x H x D)	15.6 mm x 48.5 mm x 42 mm
Housing design (light emission)	Rectangular
Sensing range max.	0 m ... 20 m
Sensing range	0 m ... 15 m
Focus	Approx. 1.5°
Type of light	Visible red light
Light source	PinPoint LED ¹⁾
Light spot size (distance)	Ø 220 mm (15 m)
Angle of dispersion	Approx. 1.5°
Wave length	640 nm
Adjustment	IO-Link
Diagnosis	Status indicator operating reserve
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_J = +25 °C.

Mechanics/electronics

Supply voltage	10 V DC ... 30 V DC ¹⁾
Ripple	< 5 V _{pp} ²⁾
Power consumption, sender	≤ 30 mA ³⁾
Power consumption, receiver	≤ 15 mA ³⁾
Switching output	PNP
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 Q/ on Pin 2	200 μs ... 300 μs ^{4) 5)}
Switching frequency	1,500 Hz
Switching frequency Q / to pin 2	≤ 1,500 Hz ⁶⁾
Connection type	Male connector M12, 4-pin
Circuit protection	A ⁷⁾ B ⁸⁾ C ⁹⁾ D ¹⁰⁾
Protection class	III
Weight	120 g
Housing material	Metal, zinc diecast
Optics material	Plastic, PMMA
Enclosure rating	IP66 IP67 IP69K
Test input sender off	TE to 0 V
Ambient operating temperature	-40 °C ... +60 °C
Ambient temperature, storage	-40 °C ... +75 °C
UL File No.	NRKH.E181493 & NRKH7.E181493
Part number of individual components	2077227 WE12C-3P2430A00 2078000 WS12-3D2430S05
Repeatability Q/ on Pin 2:	100 μs ⁵⁾

¹⁾ Limit values when operated in short-circuit protected network: max. 8 A.

²⁾ May not exceed or fall below U_v tolerances.

³⁾ Without load.

⁴⁾ Signal transit time with resistive load.

⁵⁾ Valid for Q \ on Pin2, if configured with software.

⁶⁾ With light / dark ratio 1:1, valid for Q \ 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.

Safety-related parameters

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

Communication interface

Communication interface	IO-Link V1.1
Communication Interface detail	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

Smart Task

Smart Task name	Base logics
Logic function	Direct AND OR WINDOW Hysteresis
Timer function	Deactivated 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.

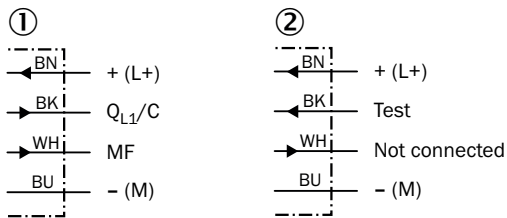
Classifications

ECl@ss 5.0	27270901
ECl@ss 5.1.4	27270901
ECl@ss 6.0	27270901
ECl@ss 6.2	27270901
ECl@ss 7.0	27270901
ECl@ss 8.0	27270901

ECI@ss 8.1	27270901
ECI@ss 9.0	27270901
ECI@ss 10.0	27270901
ECI@ss 11.0	27270901
ETIM 5.0	EC002716
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UNSPSC 16.0901	39121528

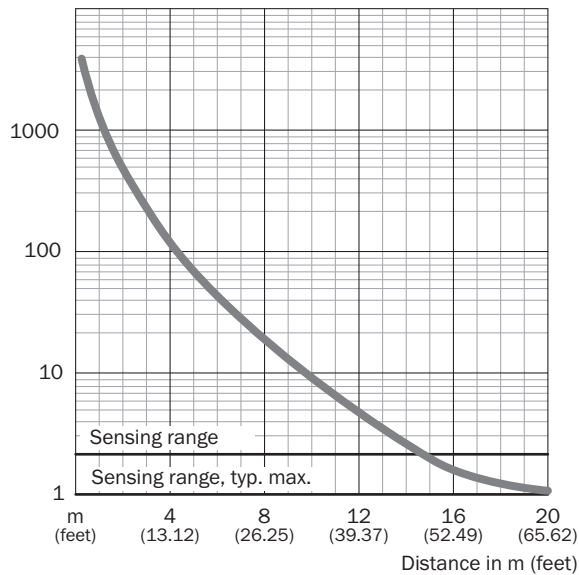
Connection diagram

Cd-366

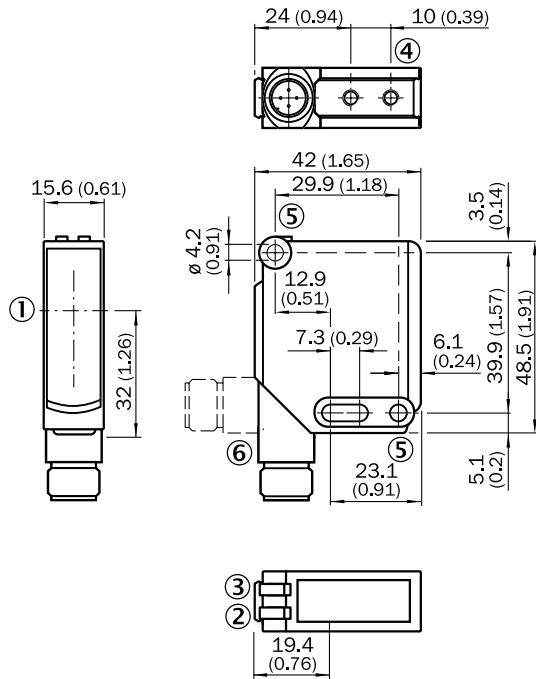


Characteristic curve

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, \varnothing 4.2 mm
- ⑥ Connection

Recommended accessories

Other models and accessories → www.sick.com/W12-3

	Brief description	Type	Part no.
Plug connectors and cables			
	Head A: female connector, M12, 4-pin, straight, A-coded Head B: Flying leads Cable: Sensor/actuator cable, PVC, unshielded, 5 m	YF2A14-050VB3XLEAX	2096235
	Head A: male connector, M12, 4-pin, straight Head B: - Cable: unshielded	STE-1204-G	6009932

Recommended services

Additional services → www.sick.com/W12-3

	Type	Part no.
Function Block Factory		
<ul style="list-style-type: none">Description: The Function Block Factory supports common programmable logic controllers (PLCs) from various manufacturers, such as Siemens, Beckhoff, Rockwell Automation and B&R. More information on the FBF can be found <a _blank"="" href="https://fbf.cloud.sick.com target=">here.	Function Block Factory	On request

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