



Photoelectric sensors
W12-3, Photoelectric proximity sensor,
Background suppression

WTB12C-3P2432A91



Type > [WTB12C-3P2432A91](#)
Part No. > [1060222](#)



Illustration may differ

At a glance

- State of the art technology provides precise background suppression
- Withstands harsh environments
- PinPoint LED technology with highly visible light spot
- Rugged die-cast zinc housing
- Flexible sensor settings, monitoring, advanced diagnostics, and visualization thanks to IO-Link
- Programmable functions as debouncing and time-measurement are included

Your benefits

- State of the art technology, e.g. OES3 provides precise background suppression and reliable detection of challenging objects
- High immunity to ambient light, optical reflections and crosstalk ensures fewer false readings and less downtime
- IO-Link provides easy data access from the PLC
- Quick and easy configuration
- Quick and easy integration using function blocks
- Easy device replacement and identification



Features

Sensor/detection principle:	Photoelectric proximity sensor, Background suppression
Dimensions (W x H x D):	15.6 mm x 48.5 mm x 42 mm
Housing design (light emission):	Rectangular
Sensing range max.:	20 mm ... 350 mm ¹⁾
Sensing range:	20 mm ... 350 mm ²⁾
Type of light:	Visible red light
Light source:	PinPoint LED ³⁾
Wave length:	640 nm
Adjustment:	Single teach-in button
Light spot size (distance):	Ø 6 mm (200 mm)
IO-Link functions:	Advanced functions, Standard functions
IO-Link advanced functions:	Decentralized debouncing, Timestamp
Gen. Response Time:::	IOL: ---, SIO Direct: 250 µs ... 350 µs, SIO Logic: 900 µs ... 1000 µs ^{4) 5)}
Gen. Repeatability:::	IOL: ---, SIO Direct: 100 µs, SIO Logic: 100 µs ^{7) 8) 9)}
Min. Time between two process events (switches):::	IOL: 950 µs, SIO Direct: 350 µs, SIO Logic: 650 µs ^{10) 11) 12)}
Debounce time max.:::	IOL: 52 ms, SIO Direct: ---, SIO Logic: 52 ms ^{13) 14) 15)}
Max. timeStamp buffer:	IOL: 8, SIO Direct: ---, SIO Logic: ---

Max. TimeStamp Range: IOL: 260 ms, SIO Direct: ---, SIO Logic: ---
 TimeStampAccuracy::: IOL: - 0,9 ... + 0,9 ms ± 0,5 % of time measurement value, SIO Direct: ---,
 SIO Logic: ---

1) 2) Object with 90 % reflectance (referred to standard white, DIN 5033) 3) Average service life of 100,000 h at T_A = +25 °C 4) 7) 10) 13) 16) SIO Direct: Sensor
 operation in standard I/O mode without IO-Link communication and without usage of sensor-internal logic or timing parameters (set to "direct"/"deactivated"). 5) 8) 11)
 14) 17) SIO Logic: Sensor operation in standard I/O mode without IO-Link communication. Sensor-internal logic or timing parameters plus Automation Functions used.
 6) 9) 12) 15) 18) IOL: Sensor operation with full IO-Link communication and usage of logic, timing and Automation Function parameters.

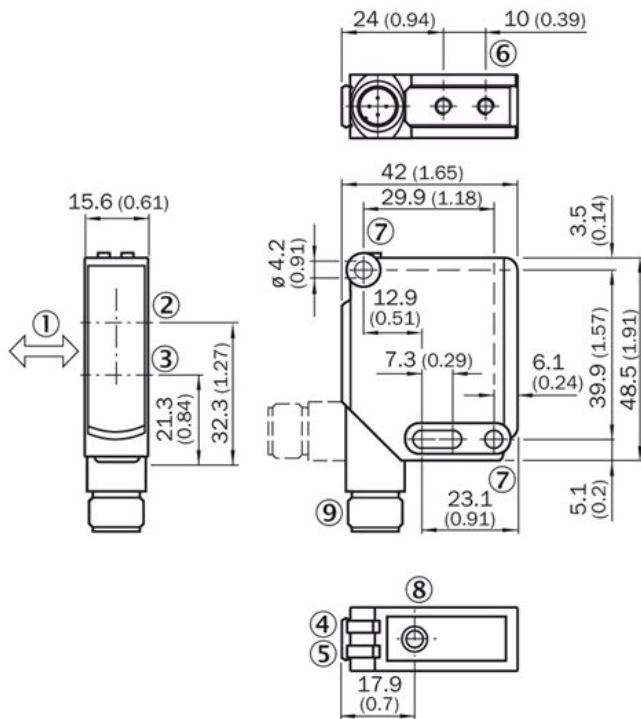
Mechanics/electronics

Supply voltage:	10 V DC ... 30 V DC ¹⁾
Ripple:	≤ 5 Vpp ²⁾
Power consumption:	≤ 45 mA ³⁾
Output type:	PNP
Switching mode:	Light/dark switching
Output current I _{max} ::	≤ 100 mA
Connection type:	M12, 4-pin male connector
Circuit protection:::	A, B, C, D ^{4) 5) 6) 7)}
Protection class:	II
Weight:	120 g
IO-Link:	✓
Special device:	-
Enclosure rating:	IP 66 IP 67
Ambient operating temperature:	-40 °C ... +60 °C
Ambient storage temperature:	-40 °C ... +75 °C
UL File No.:	NRKH.E181493 & NRKH7.E181493
Signal voltage PNP HIGH/LOW:	> U _v - 2,5 V / ca. 0 V
Housing material:	Metal
Response time Q/ on Pin 2::	250 μs ... 350 μs ^{8) 9)}
Switching frequency Q \ on Pin2:	≤ 1,100 Hz
Repeatability Q/ on Pin 2::	100 μs
IO-Link version:	1.0
Transmission rate:	COM2

With light/dark ratio 1:1, valid for Q \ on Pin2, if configured with software; Valid for Q \ on Pin2, if configured with software;

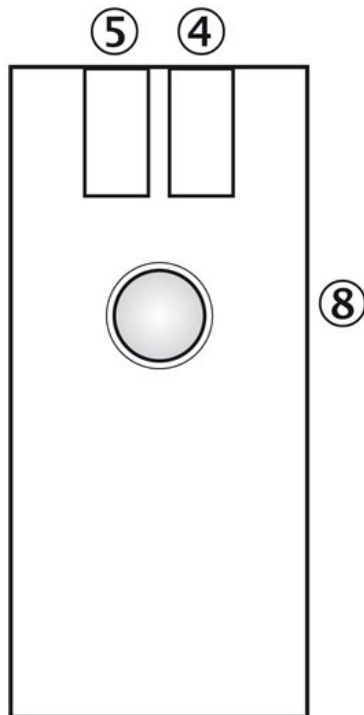
1) Limit values, operation in short-circuit protected network max. 8 A 2) May not exceed or fall short of V_S tolerances 3) Without load 4) A = V_S connections reverse-polarity protected 5) B = inputs and output reverse-polarity protected 6) C = interference suppression 7) D = outputs overcurrent and short-circuit protected 8) Signal transit time with resistive load 9) Valid for Q \ on Pin2, if configured with software

Dimensional drawing



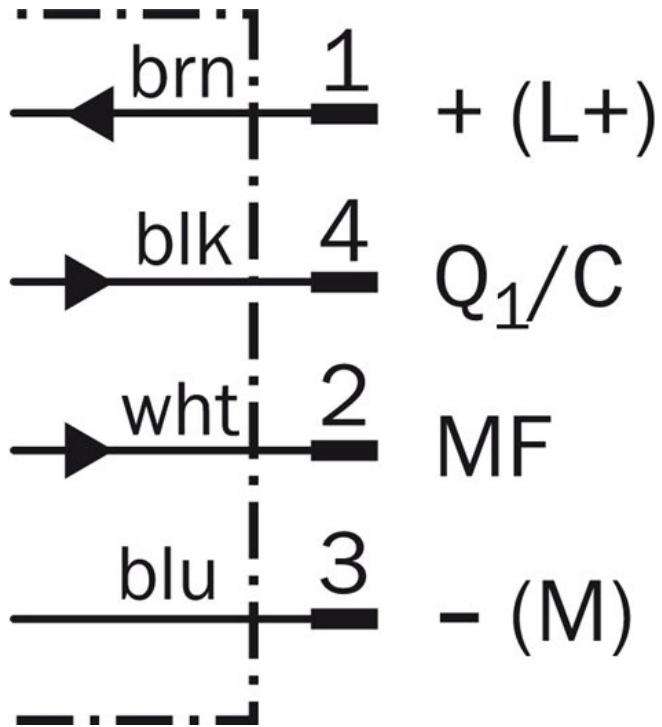
- |1| Standard direction of the material being detected
- |2| Optical axis, receiver
- |3| Optical axis, sender
- |4| Status indicator LED green: supply voltage on
- |5| Status indicator LED,
yellow: Status of received light beam
- |6| M4 threaded mounting hole, 4 mm deep
- |7| Mounting hole, \varnothing 4.2 mm
- |8| Adjustment sensing range: single teach-in button
- |9| Connection

Adjustments possible

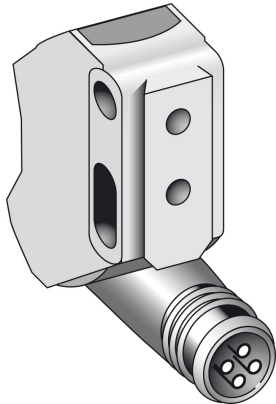


- |4| Status indicator LED green: supply voltage on
- |5| Status indicator LED,
yellow: Status of received light beam
- |8| Adjustment sensing range: single teach-in button

Connection diagram



Connection type



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