WTB2SC-2P1074B04

W2

PHOTOELECTRIC SENSORS

SICK
Sensor Intelligence.

WTB2SC-2P1074B04 | W2

PHOTOELECTRIC SENSORS

Ordering information

Type	part no.
WTB2SC-2P1074B04	1117582

Included in delivery: SCREW SET W2S/G2S (1)

Other models and accessories ➜ www.sick.com/W2

Illustration may differ

Detailed technical data

Features

Functional principle	Photoelectric proximity sensor
Functional principle detail	Background suppression
Dimensions (W x H x D)	7.7 mm x 21.8 mm x 13.5 mm
Housing design (light emission)	Rectangular
Sensing range max.	4 mm ... 90 mm [1]
Preset sensing range	65 mm
Sensing range	10 mm ... 70 mm [1]
Type of light	Visible red light
Light source	PinPoint LED
Light spot size (distance)	2.2 mm x 9 mm (45 mm)
Wave length	640 nm
Adjustment	IO-Link
Pin 2 configuration	External input, Teach-in input, Sender off input, Detection output, logic output
Special applications	Detecting small objects, Detecting perforated objects, Detecting uneven, shiny objects, Detecting objects wrapped in film, Detecting objects with position tolerances

[1] Object with 90% remission (based on standard white, DIN 5033).

Mechanics/electronics

Supply voltage U_B	10 V DC ... 30 V DC [1]
Ripple	< 5 V_{pp} [2]
Current consumption	20 mA [3]
Switching output	PNP [4] [5]
Switching mode	Light/dark switching [4]
Switching mode selector	Programmable
Output current $I_{max.}$	≤ 50 mA
Response time	< 0.5 ms [6]
Response time Q/ on Pin 2	300 µs ... 450 µs [6] [7]
Switching frequency	1,000 Hz
Switching frequency Q / to pin 2	1,000 Hz [7] [8]
Connection type	Cable, 4-wire, 600 mm [9]
Cable material	Plastic, PVC
Conductor cross section	0.09 mm²
Cable diameter	Ø 3 mm
Circuit protection	A [10] B [11] D [12]
Protection class	III
Housing material	Plastic, ABS/PC
Optics material	Plastic, PMMA
Enclosure rating	IP67
Description	IO-Link
Ambient operating temperature	−25 °C ... +50 °C
Ambient temperature, storage	−40 °C ... +75 °C
UL File No.	NRKH.E181493
Repeatability Q/ on Pin 2:	150 µs [7]

[1] Limit values.

[2] May not fall below or exceed U_V tolerances.

[3] Without load.

[4] Parametrisable via IO-Link.

[5] Pin 4: This switching output must not be connected to another output.

[6] Signal transit time with resistive load.

[7] Valid for Q \ on Pin2, if configured with software.

[8] With light/dark ratio 1:1.

[9] Do not bend below 0 °C.

[10] A = V_S connections reverse-polarity protected.

[11] B = output reverse-polarity protected.

[12] D = outputs overcurrent and short-circuit protected.

Safety-related parameters

$MTTF_D$	1,547 years

DC$_{avg}$	0 %

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	0x800121
DeviceID DEC	8388897

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: 1000 Hz [1] SIO Logic: 1000 Hz [2] IOL: 900 Hz [3]
Response time	SIO Direct: 300 µs ... 450 µs [1] SIO Logic: 500 µs ... 600 µs [2] IOL: 500 µs ... 900 µs [3]
Repeatability	SIO Direct: 150 µs [1] SIO Logic: 150 µs [2] IOL: 400 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

Certificates

| EU declaration of conformity	✓
ACMA declaration of conformity	✓

|	
Moroccan declaration of conformity	✓
China RoHS	✓
cULus certificate	✓
IO-Link certificate	✓
Photobiological safety (DIN EN 62471) cer-tificate	✓
Information according to Art. 3 of Data Act (Regulation EU 2023/2854)	✓

Classifications

ECLASS 5.0	27270904
ECLASS 5.1.4	27270904
ECLASS 6.0	27270904
ECLASS 6.2	27270904
ECLASS 7.0	27270904
ECLASS 8.0	27270904
ECLASS 8.1	27270904
ECLASS 9.0	27270904
ECLASS 10.0	27270904
ECLASS 11.0	27270904
ECLASS 12.0	27270903
ETIM 5.0	EC002719
ETIM 6.0	EC002719
ETIM 7.0	EC002719
ETIM 8.0	EC002719
UNSPSC 16.0901	39121528

Connection diagram Cd-364
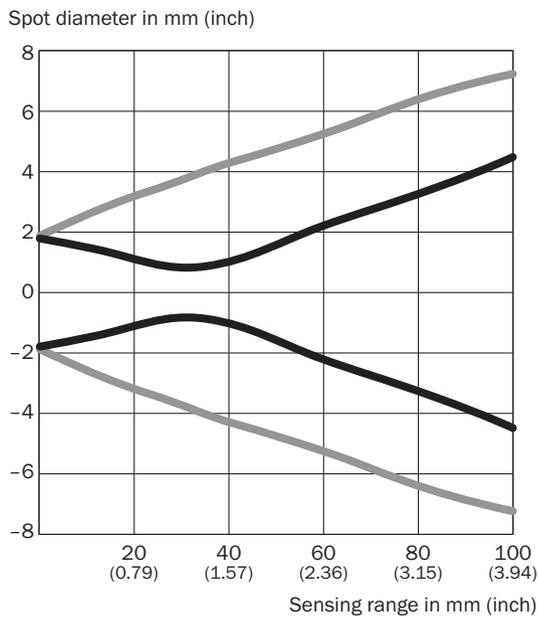
BN — + (L+)
BK — Q_{L1}/C
WH — MF
BU — – (M)
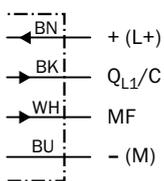
Characteristic curve WTB2S-2, 90 mm, line-shaped light spot
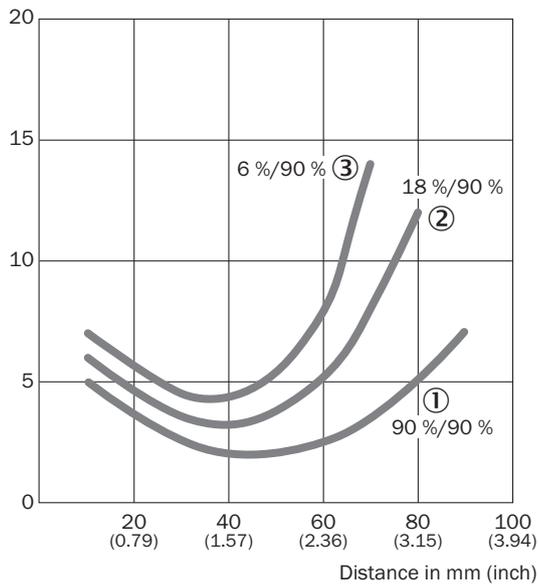
① Sensing range on white, 90% remission factor
② Sensing range on gray, 18% remission factor
③ Sensing range on black, 6% remission factor

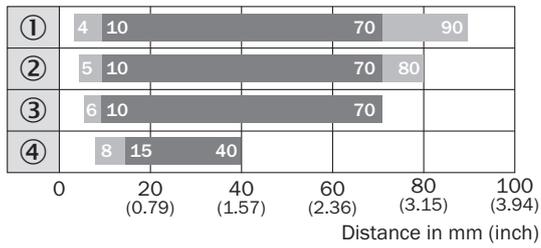## Light spot size WTB2S-2, 90 mm, line-shaped light spot

Spot diameter in mm (inch)

Dimensions in mm (inch)

Sensing range	Spot diameter Vertical	Horizontal
0 **(0.00)**	3.5 (0.14)	3.8 (0.15)
10 **(0.39)**	3.0 (0.12)	5.2 (0.20)
20 **(0.79)**	3.3 (0.13)	6.4 (0.25)
30 **(1.18)**	1.8 (0.07)	7.4 (0.29)
40 **(1.57)**	2.0 (0.08)	8.6 (0.34)
60 **(2.36)**	4.4 (0.17)	10.5 (0.41)
80 **(3.15)**	6.5 (0.26)	12.8 (0.50)
100 **(3.94)**	9.0 (0.35)	14.5 (0.57)

— Vertical
— Horizontal

Sensing range diagram WTB2S-2, 90 mm, line-shaped light spot

①	4 10 ... 70 90
②	5 10 ... 70 80
③	6 10 ... 70
④	8 15 40

Distance in mm (inch): 0 — 20 (0.79) — 40 (1.57) — 60 (2.36) — 80 (3.15) — 100 (3.94)

■ Sensing range   ■ Sensing range max.

① Sensing range on white, 90% remission factor
② Sensing range on gray, 18% remission factor
③ Sensing range on black, 6% remission factor
④ sensing range to ultra-black, 1% remission factor

Dimensional drawing WTB2S-2, 66 mm, 90 mm, 110 mm
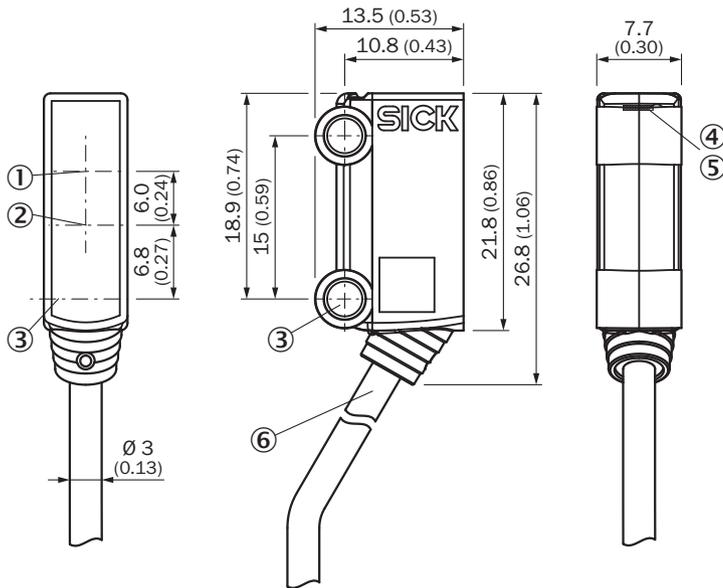
Dimensions in mm (inch)
① Optical axis, receiver
② Optical axis, sender
③ Middle axis fixing hole Ø 3.2 mm
④ LED indicator green: Supply voltage active
⑤ LED indicator yellow: Status of received light beam
⑥ Connection

Recommended accessories

Other models and accessories ➜ www.sick.com/W2

Brief description	Type	part no.
Mounting systems		
• **Description:** Mounting bracket for floor mounting • **Material:** Steel • **Details:** Steel, zinc coated • **Items supplied:** Without mounting hardware • **Suitable for:** W2S-2	BEF-W2S-A	4034748
connectors and cables		
• **Connection type head A:** Male connector, M8, 4-pin, straight, A-coded • **Description:** Unshielded • **Connection systems:** Screw-type terminals • **Permitted cross-section:** 0.14 mm² ... 0.5 mm²	STE-0804-G	6037323
• **Connection type head A:** Female connector, M8, 4-pin, straight, A-coded • **Connection type head B:** Flying leads • **Signal type:** Sensor/actuator cable • **Cable:** 5 m, 4-wire, PVC • **Description:** Sensor/actuator cable, unshielded • **Application:** Uncontaminated zones, Zones with chemicals	YF8U14-050VA3XLEAX	2095889
• **Connection type head A:** Female connector, M8, 4-pin, straight, A-coded • **Connection type head B:** Flying leads • **Signal type:** Sensor/actuator cable • **Cable:** 5 m, 4-wire, PUR, halogen-free • **Description:** Sensor/actuator cable, unshielded • **Application:** Drag chain operation, Zones with oils and lubricants, Robot, Drag chain operation	YF8U14-050UA3XLEAX	2094792

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."

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