CSM-WP1B7A2P

CSM

COLOR SENSORS

SICK
Sensor Intelligence.

CSM-WP1B7A2P | CSM
COLOR SENSORS

Illustration may differ

Ordering information

Type	part no.
CSM-WP1B7A2P	1122739

Other models and accessories ➔ www.sick.com/CSM

Detailed technical data

Features

Dimensions (W x H x D)	12 mm x 31.5 mm x 21 mm
Sensing distance	≤ 15 mm
Sensing distance tolerance	± 4 mm
Housing design	Small
Light source	LED, RGB [1]
Wave length	640 nm, 525 nm, 470 nm
Light spot size	4.9 mm x 10.1 mm
Light spot direction	Vertical
Adjustment	Teach-in button, cable, IO-Link
Teach-in mode	Teach-in static/dynamic ET: Teach-in dynamic

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

Mechanics/electronics

Supply voltage	12 V DC ... 24 V DC [1]
Ripple	< 5 V_{pp} [2]

[1] Limit values: DC 12 V (–10 %) ... DC 24 V (+20 %). Operation in short-circuit protected network max. 8 A.

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

[3] Without load.

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

[5] Signal transit time with resistive load.

[6] At supply voltage > 24 V, I_{max} = 50 mA. I_{max} is consumption count of all Q_n.

Current consumption	< 50 mA [3]
Switching frequency	1.7 kHz [4]
Response time	300 µs [5]
Jitter	150 µs
Switching output	PNP
Switching output (voltage)	PNP: HIGH = U_V ≤ 2 V / LOW approx. 0 V
Switching mode	Light/dark switching
Output (channel)	8 colors via IO-Link
Output current $I_{max.}$	< 100 mA [6]
Connection type	Cable with M12 male connector, 4-pin, 0.2 m
Cable diameter	Ø 3.4 mm
Protection class	III
Circuit protection	U_V connections, reverse polarity protected Output Q short-circuit protected Interference pulse suppression
Enclosure rating	IP67
Weight	Approx. 25 g
Housing material	Plastic, ABS
Optics material	Plastic, PMMA

[1] Limit values: DC 12 V (–10 %) ... DC 24 V (+20 %). Operation in short-circuit protected network max. 8 A.

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[3] Without load.

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

[5] Signal transit time with resistive load.

[6] At supply voltage > 24 V, I_{max} = 50 mA. I_{max} is consumption count of all Q_n.

Communication interface

IO-Link	✔ , V1.1
Data transmission rate	38,4 kbit/s (COM2)
Cycle time	2.3 ms
VendorID	26
DeviceID HEX	800071
DeviceID DEC	8388721
Process data length	16 Bit
Process data structure A	Bit 0 = switching signal Q_{L1} Bit 1 = switching signal Q_{L2} Bit 2 = Quality of Run Alarm Bit 3 ... 5 = Emission Color Bit 6 ... 15 = Measurment Value RGB
Process data structure B	Bit 0 = switching signal Q_{L1} Bit 1 = switching signal Q_{L2} Bit 2 = switching signal Q_{L3} Bit 3 = switching signal Q_{L4} Bit 4 = switching signal Q_{L5} Bit 5 = switching signal Q_{L6} Bit 6 = switching signal Q_{L7} Bit 7 = switching signal Q_{L8} Bit 9 ... 15 = empty

Digital output	Q_1, Q_2
Number	2

Ambient data

Ambient operating temperature	−10 °C … +55 °C
Ambient temperature, storage	−20 °C … +75 °C
Shock load	According to IEC 60068
UL File No.	NRKH.E348498 & NRKH7.E348498

Connection type/pinouts

Connection type	Cable with M12 male connector, 4-pin, 0.2 m
Connection type Detail	
Cable diameter	Ø 3.4 mm
Conductor cross section	0.15 mm²
Cable material	PVC
Pinouts	
BN 1	+ (L+)
WH 2	Q
BU 3	- (M)
BK 4	Q/C

Certificates

EU declaration of conformity	✓
UK declaration of conformity	✓
ACMA declaration of conformity	✓
Moroccan declaration of conformity	✓
China-RoHS	✓
cULus certificate	✓
IO-Link	✓
Photobiological safety (IEC EN 62471)	✓

Classifications

ECLASS 5.0	27270907
ECLASS 5.1.4	27270907
ECLASS 6.0	27270907
ECLASS 6.2	27270907
ECLASS 7.0	27270907
ECLASS 8.0	27270907
ECLASS 8.1	27270907
ECLASS 9.0	27270907
ECLASS 10.0	27270907
ECLASS 11.0	27270907
ECLASS 12.0	27270907
ETIM 5.0	EC001817

| ETIM 6.0	EC001817
ETIM 7.0	EC001817
ETIM 8.0	EC001817
UNSPSC 16.0901	39121528

Dimensional drawing
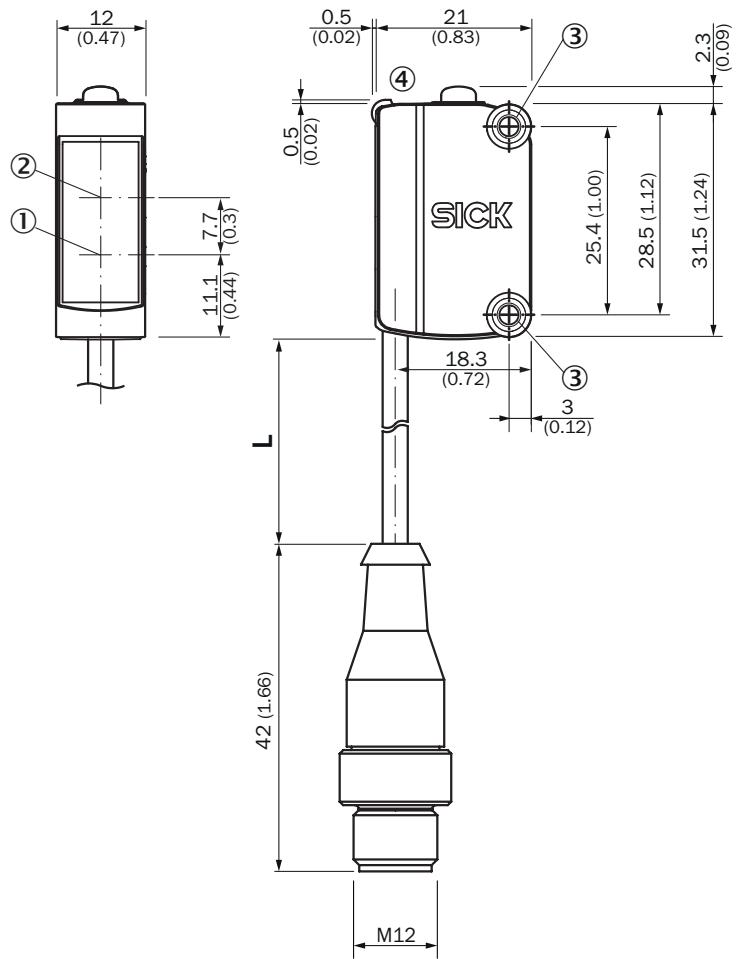
Dimensions in mm (inch)
For length of cable (L), see technical data
① Center of optical axis, sender
② Center of optical axis, receiver
③ Mounting holes M3
④ display and adjustment elements

## Pinouts, see Technical details: Connection type/pinouts
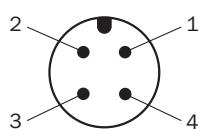
M12 male connector, 4-pin, A-coding

display and adjustment elements
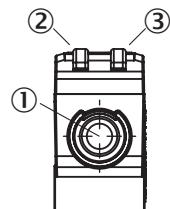
① Teach-in button
② LED yellow
③ LED green

Sensing distance

Relative sensitivity in %

Sensing distance in mm (inch)
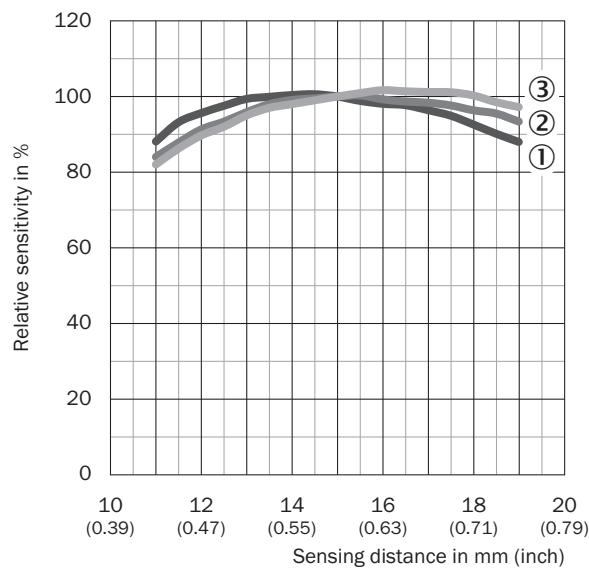
① Red
② Green
③ blue

Recommended accessories

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

Brief description		Type	part no.
Mounting systems			
	• **Material:** Stainless steel • **Details:** Stainless steel (1.4301) • **Suitable for:** W4S	BEF-WN-G6	2062909

Brief description	Type	part no.
connectors and cables		
• **Connection type head A:** Male connector, M12, 4-pin, straight, A-coded • **Description:** Unshielded • **Connection systems:** Screw-type terminals • **Permitted cross-section:** ≤ 0.75 mm²	STE-1204-G	6009932
• **Connection type head A:** Female connector, M12, 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:** Zones with chemicals, Uncontaminated zones	YF2A14-050VB3XLEAX	2096235

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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