Data sheet


# KT5W-2P1126D

## KT5

**CONTRAST SENSORS**

SICK
Sensor Intelligence.

Illustration may differ

## Ordering information

| Type | part no. |
|---|---|
| KT5W-2P1126D | 1026579 |

Other models and accessories ➜ www.sick.com/KT5

## Detailed technical data

### Features

| | |
|---|---|
| **Dimensions (W x H x D)** | 30.4 mm x 53 mm x 80 mm |
| **Sensing distance** | ≤ 10 mm [1] |
| **Housing design** | Rectangular |
| **Light source** | LED, RGB [2] |
| **Wave length** | 470 nm, 525 nm, 640 nm |
| **Light emission** | Long and short side of housing, exchangeable |
| **Light spot size** | 1.2 mm x 4.2 mm |
| **Light spot direction** | Vertical [3] |
| **Adjustment** | Teach-in button |
| **Teach-in mode** | Static 2-point teach-in with manual fine adjustment |

[1] From leading edge of lens.
[2] Average service life: 100,000 h at $T_U$ = +25 °C.
[3] In relation to long side of housing.

### Mechanics/electronics

| | |
|---|---|
| **Supply voltage** | 10 V DC ... 30 V DC [1] |
| **Ripple** | ≤ 5 $V_{pp}$ [2] |
| **Current consumption** | < 130 mA [3] |
| **Switching frequency** | 10 kHz [4] |
| **Response time** | 50 µs [5] |
| **Switching output** | PNP |

[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] With light/dark ratio 1:1.
[5] Signal transit time with resistive load.
[6] Short-circuit-proof.
[7] Reference voltage DC 50 V.

| | |
|---|---|
| **Switching output (voltage)** | PNP: HIGH = $U_V$ ≤ 2 V / LOW approx. 0 V |
| **Output current $I_{max.}$** | 100 mA [6] |
| **Input, teach-in (ET)** | PNP<br>Teach: U = 10 V ... < $U_V$<br>Run: U < 2 V |
| **Retention time (ET)** | 25 ms, non-volatile memory |
| **Time delay** | 20 ms |
| **Connection type** | Male connector M12, 5-pin |
| **Protection class** | II [7] |
| **Circuit protection** | $U_V$ connections, reverse polarity protected<br>Output Q short-circuit protected<br>Interference pulse suppression |
| **Enclosure rating** | IP67 |
| **Weight** | 400 g |
| **Housing material** | Metal, zinc diecast |

[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] With light/dark ratio 1:1.
[5] Signal transit time with resistive load.
[6] Short-circuit-proof.
[7] Reference voltage DC 50 V.

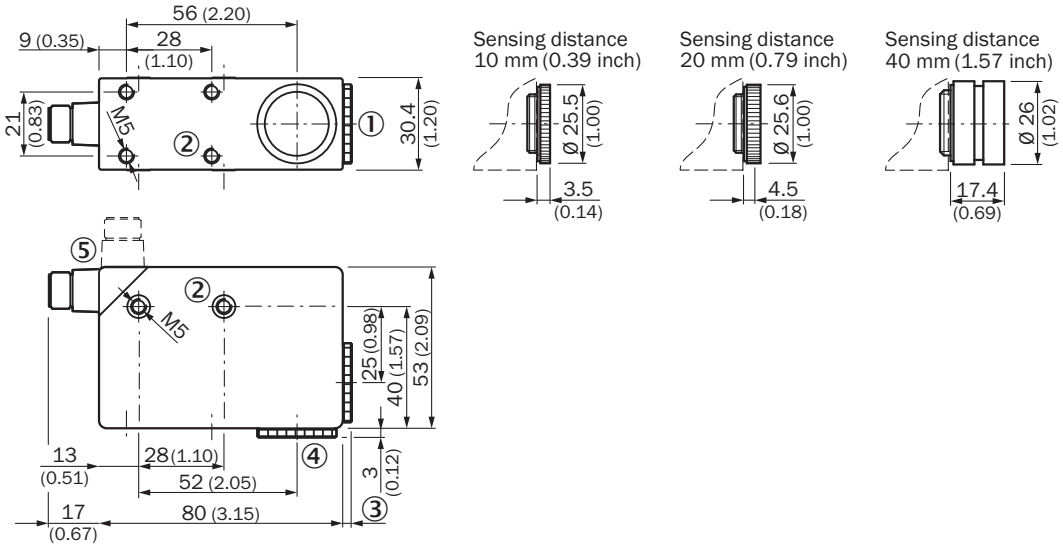
## Ambient data

| | |
|---|---|
| **Ambient operating temperature** | –10 °C ... +55 °C |
| **Ambient temperature, storage** | –25 °C ... +75 °C |
| **Shock load** | According to IEC 60068 |

## Classifications

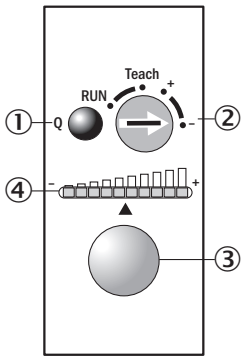
| | |
|---|---|
| **ECLASS 5.0** | 27270906 |
| **ECLASS 5.1.4** | 27270906 |
| **ECLASS 6.0** | 27270906 |
| **ECLASS 6.2** | 27270906 |
| **ECLASS 7.0** | 27270906 |
| **ECLASS 8.0** | 27270906 |
| **ECLASS 8.1** | 27270906 |
| **ECLASS 9.0** | 27270906 |
| **ECLASS 10.0** | 27270906 |
| **ECLASS 11.0** | 27270906 |
| **ECLASS 12.0** | 27270906 |
| **ETIM 5.0** | EC001820 |
| **ETIM 6.0** | EC001820 |
| **ETIM 7.0** | EC001820 |
| **ETIM 8.0** | EC001820 |
| **UNSPSC 16.0901** | 39121528 |

## Dimensional drawing KT5-2 Teach-in, KT5-2 Display



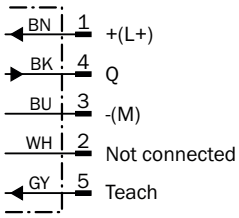

Dimensions in mm (inch)
① Lens (light transmission), can be exchanged for pos. 4
② M5 threaded mounting hole, 5.5 mm deep
③ see dimensional drawings of lenses
④ Blind screw can be replaced by pos. 1
⑤ Connector M12 (rotatable up to 90°)

## Adjustments KT5-2 Display



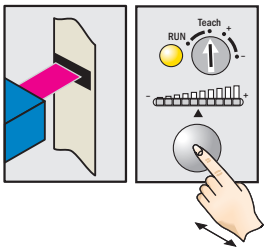

① Function signal indicator (yellow)
② Pre-selection switch
③ Teach-in button
④ Bar graph (green)

## Connection diagram Cd-323



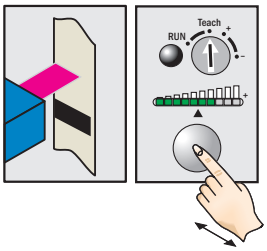

## Concept of operation KT5-2 Display, Teach-in static

**1. Position mark**

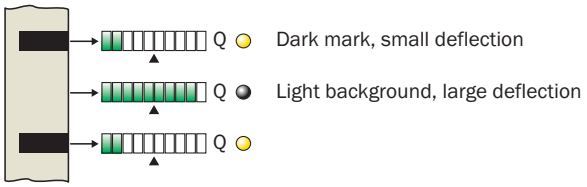



Turn rotary switch to “Teach” position. Press and hold teach-in button > 1 s.
Red emitted light and yellow LED flash.

**2. Position background**




Press and hold teach-in button > 1 s.
Yellow LED goes out.
Optimum emitted light is selected.

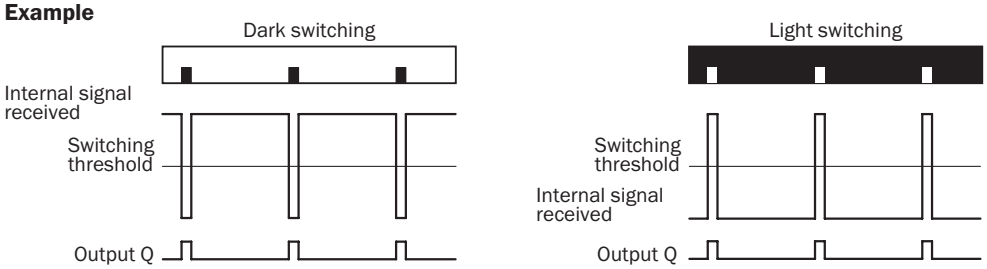



Fine adjustment possible using the “+”/“–” buttons.

**Note**

The bar display visualizes the detection reliability during teach-in. The more LEDs that illuminate, the better the teach-in:
1 LED illuminates = operation not reliable – contrast difference too low
≤ 4 LEDs illuminate = operation OK – sufficient contrast difference
> 4 LEDs illuminate = reliable operation – high contrast difference

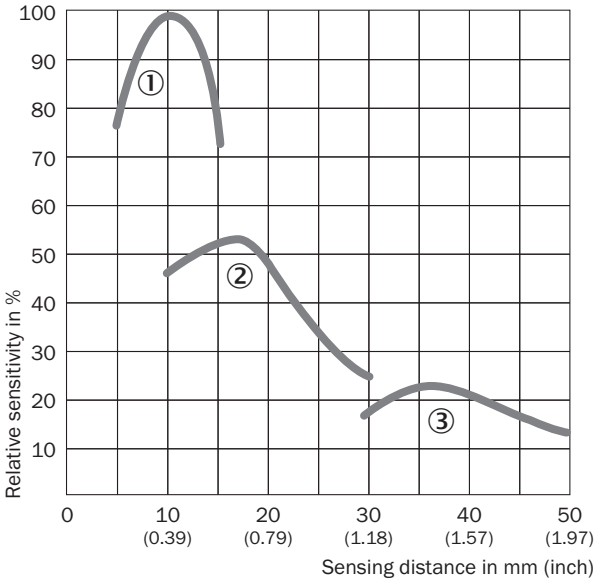
**Example**




**Switching characteristics**

The optimum emitted light is selected automatically.
Light/dark setting is defined using teach-in sequence.
The switching threshold is set in the center between the background and the mark.
Teach-in can also be performed using an external control signal.

## Sensing distance




① Sensing distance 10 mm
② Sensing distance 20 mm
③ Sensing distance 40 mm

## Recommended accessories

Other models and accessories ➜ www.sick.com/KT5

| | Brief description | Type | part no. |
|---|---|---|---|
| Mounting systems | | | |
|  | • **Description:** Plate G for universal clamp bracket<br>• **Material:** Steel<br>• **Details:** Steel, zinc coated<br>• **Items supplied:** Universal clamp (2022726), mounting hardware<br>• **Usable for:** W34, LUT3, KT5-2, KT10, CS8, W24-2, KT8, KT8 | BEF-KHS-G01 | 2022464 |
|  | • **Description:** Plate K for universal clamp bracket<br>• **Material:** Steel<br>• **Details:** Steel, zinc coated<br>• **Items supplied:** Universal clamp (2022726), mounting hardware<br>• **Usable for:** W11-2, W12-3, W14-2, W18-3, W23-2, W24-2, W27-3, W30, W32, W34, W36, PL50A, PL80A, P250, UC12, LUT3, KT2, KT5-2, KT8, CS8, DT2, DS30, DS40, W12-2 Laser, W16, W26, KT5 | BEF-KHS-K01 | 2022718 |
| reflectors and optics | | | |
| | • **Description:** Lens, 20 mm sensing distance | OBJ-212 | 1011506 |
| | • **Description:** Lens, 40 mm sensing distance | OBJ-210 | 2010945 |
| | • **Description:** Lens, 10 mm sensing distance | OBJ-211 | 1004936 |

| | Brief description | Type | part no. |
|---|---|---|---|
| connectors and cables | | | |
|  | • **Connection type head A:** Female connector, M12, 5-pin, straight, A-coded<br>• **Description:** Unshielded<br>• **Connection systems:** Screw-type terminals<br>• **Permitted cross-section:** ≤ 0.75 mm² | DOS-1205-G | 6009719 |
|  | • **Connection type head A:** Female connector, M12, 5-pin, angled, A-coded<br>• **Description:** Unshielded<br>• **Connection systems:** Screw-type terminals<br>• **Permitted cross-section:** ≤ 0.75 mm² | DOS-1205-W | 6009720 |
|  | • **Connection type head A:** Female connector, M12, 5-pin, angled, A-coded<br>• **Connection type head B:** Flying leads<br>• **Signal type:** Sensor/actuator cable<br>• **Cable:** 2 m, 5-wire, PVC<br>• **Description:** Sensor/actuator cable, unshielded<br>• **Application:** Zones with chemicals, Uncontaminated zones | YG2A15-020VB5XLEAX | 2096215 |
|  | • **Connection type head A:** Female connector, M12, 5-pin, angled, A-coded<br>• **Connection type head B:** Flying leads<br>• **Signal type:** Sensor/actuator cable<br>• **Cable:** 5 m, 5-wire, PVC<br>• **Description:** Sensor/actuator cable, unshielded<br>• **Application:** Zones with chemicals, Uncontaminated zones | YG2A15-050VB5XLEAX | 2096216 |
|  | • **Connection type head A:** Female connector, M12, 5-pin, angled, A-coded<br>• **Connection type head B:** Flying leads<br>• **Signal type:** Sensor/actuator cable<br>• **Cable:** 10 m, 5-wire, PVC<br>• **Description:** Sensor/actuator cable, unshielded<br>• **Application:** Zones with chemicals, Uncontaminated zones | YG2A15-100VB5XLEAX | 2096217 |
|  | • **Connection type head A:** Female connector, M12, 5-pin, straight, A-coded<br>• **Connection type head B:** Flying leads<br>• **Signal type:** Sensor/actuator cable<br>• **Cable:** 2 m, 5-wire, PVC<br>• **Description:** Sensor/actuator cable, unshielded<br>• **Application:** Zones with chemicals, Uncontaminated zones | YF2A15-020VB5XLEAX | 2096239 |
|  | • **Connection type head A:** Female connector, M12, 5-pin, straight, A-coded<br>• **Connection type head B:** Flying leads<br>• **Signal type:** Sensor/actuator cable<br>• **Cable:** 5 m, 5-wire, PVC<br>• **Description:** Sensor/actuator cable, unshielded<br>• **Application:** Zones with chemicals, Uncontaminated zones | YF2A15-050VB5XLEAX | 2096240 |
|  | • **Connection type head A:** Female connector, M12, 5-pin, straight, A-coded<br>• **Connection type head B:** Flying leads<br>• **Signal type:** Sensor/actuator cable<br>• **Cable:** 10 m, 5-wire, PVC<br>• **Description:** Sensor/actuator cable, unshielded<br>• **Application:** Zones with chemicals, Uncontaminated zones | YF2A15-100VB5XLEAX | 2096241 |
|  | • **Connection type head A:** Female connector, M12, 5-pin, angled, A-coded<br>• **Connection type head B:** Flying leads<br>• **Signal type:** Sensor/actuator cable<br>• **Cable:** 0.6 m, 5-wire, PVC<br>• **Description:** Sensor/actuator cable, unshielded<br>• **Application:** Zones with chemicals, Uncontaminated zones | YG2A15-C60VB5XLEAX | 2145573 |
|  | • **Connection type head A:** Female connector, M12, 5-pin, angled, A-coded<br>• **Connection type head B:** Flying leads<br>• **Signal type:** Sensor/actuator cable<br>• **Cable:** 1 m, 5-wire, PVC<br>• **Description:** Sensor/actuator cable, unshielded<br>• **Application:** Zones with chemicals, Uncontaminated zones | YG2A15-010VB5XLEAX | 2145574 |
|  | • **Connection type head A:** Female connector, M12, 5-pin, angled, A-coded<br>• **Connection type head B:** Flying leads<br>• **Signal type:** Sensor/actuator cable<br>• **Cable:** 3 m, 5-wire, PVC<br>• **Description:** Sensor/actuator cable, unshielded | YG2A15-030VB5XLEAX | 2145575 |

| | Brief description | Type | part no. |
|---|---|---|---|
| | • **Application:** Zones with chemicals, Uncontaminated zones | | |
|  | • **Connection type head A:** Female connector, M12, 5-pin, straight, A-coded<br>• **Connection type head B:** Flying leads<br>• **Signal type:** Sensor/actuator cable<br>• **Cable:** 0.6 m, 5-wire, PVC<br>• **Description:** Sensor/actuator cable, unshielded<br>• **Application:** Zones with chemicals, Uncontaminated zones | YF2A15-C60VB5XLEAX | 2145570 |
|  | • **Connection type head A:** Female connector, M12, 5-pin, straight, A-coded<br>• **Connection type head B:** Flying leads<br>• **Signal type:** Sensor/actuator cable<br>• **Cable:** 3 m, 5-wire, PVC<br>• **Description:** Sensor/actuator cable, unshielded<br>• **Application:** Zones with chemicals, Uncontaminated zones | YF2A15-030VB5XLEAX | 2145572 |

# 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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