



KT5W-2B1116

KT5

CONTRAST SENSORS

SICK
Sensor Intelligence.



Illustration may differ



Ordering information

| Type | Part no. |
|-------------|----------|
| KT5W-2B1116 | 1043006 |

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 |

¹⁾ From leading edge of lens.

²⁾ Average service life: 100,000 h at T_J = +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 | < 80 mA ³⁾ |
| Switching frequency | 10 kHz ⁴⁾ |
| Response time | 50 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⁾ 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 | PNP, NPN |
| Switching output (voltage) | PNP: HIGH = $U_V \leq 2 \text{ V}$ / LOW approx. 0 V NPN: HIGH = approx. U_V / LOW $\leq 2 \text{ V}$ |
| Output current I_{max} | 100 mA ⁶⁾ |
| Retention time (ET) | 25 ms, non-volatile memory |
| Connection type | Male connector M12, 4-pin |
| Protection class | II ⁷⁾ |
| Circuit protection | U_V connections, reverse polarity protected Output Q short-circuit protected 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

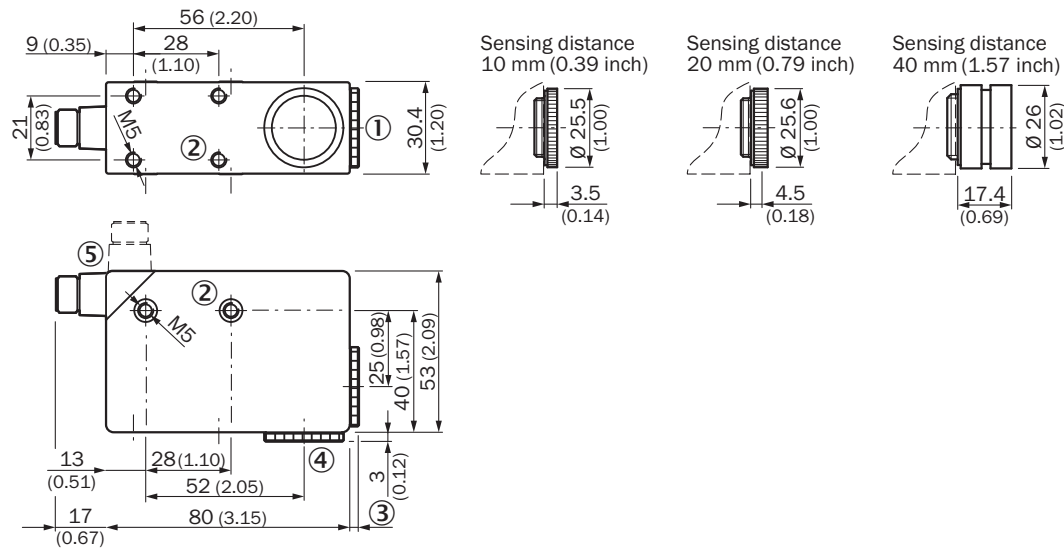
| | |
|--------------------------------------|------------------------|
| Ambient operating temperature | -10 °C ... +55 °C |
| Ambient temperature, storage | -25 °C ... +75 °C |
| Shock load | According to IEC 60068 |

Classifications

| | |
|-----------------------|----------|
| eCl@ss 5.0 | 27270906 |
| eCl@ss 5.1.4 | 27270906 |
| eCl@ss 6.0 | 27270906 |
| eCl@ss 6.2 | 27270906 |
| eCl@ss 7.0 | 27270906 |
| eCl@ss 8.0 | 27270906 |
| eCl@ss 8.1 | 27270906 |
| eCl@ss 9.0 | 27270906 |
| eCl@ss 10.0 | 27270906 |
| eCl@ss 11.0 | 27270906 |
| eCl@ss 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 (Dimensions in mm (inch))

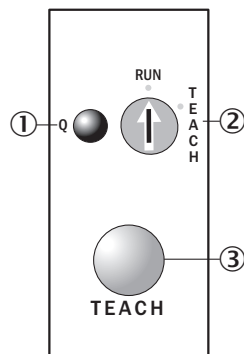
KT5-2 Teach-in, KT5-2 Display



- 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°)

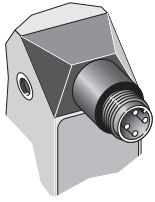
Adjustments

KT5-2 Teach-in, KT5G-xxx6, KT5W-xxx6



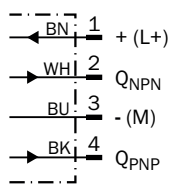
- ① Function signal indicator (yellow)
- ② Pre-selection switch
- ③ Teach-in button

Pin assignment



Connection diagram

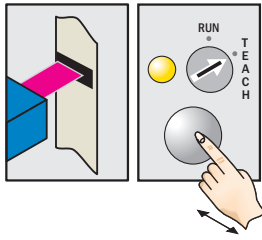
Cd-086



Concept of operation

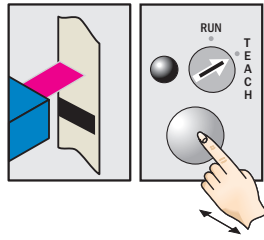
KT5-2 Teach-in, teach-in static

1. Position mark



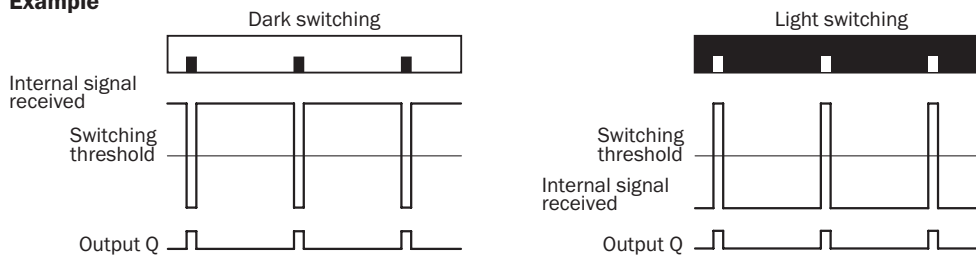
Turn rotary switch to “Teach” position. Press and hold teach-in button > 1 s. Red emitted light and yellow LED flash.

2. Position background



Press and hold teach-in button > 1 s. Yellow LED goes out.

Example



Switching characteristics

The optimum emitted light is selected automatically.

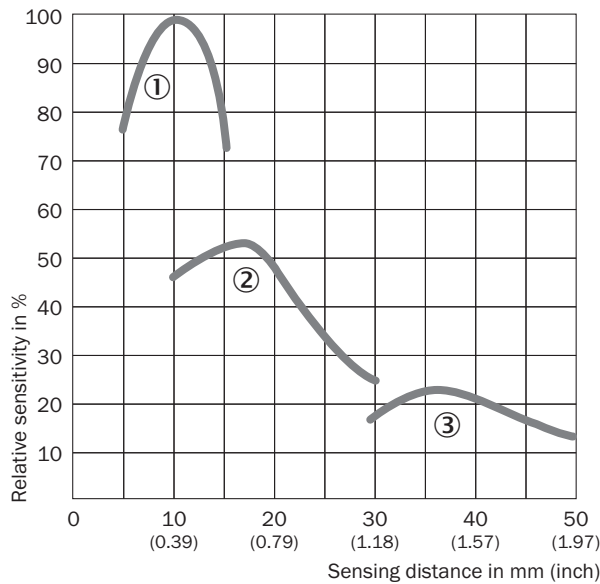
Light/dark setting is defined using teach-in sequence.

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

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. |
|------------------------------------|--|-------------|----------|
| Lenses and accessories | | | |
| | Lens, 40 mm sensing distance, M20 x 0.75 | OBJ-210 | 2010945 |
| | Lens, 10 mm sensing distance, M20 x 0.75 | OBJ-211 | 1004936 |
| Universal bar clamp systems | | | |
| | | BEF-KHS-G01 | 2022464 |
| | | BEF-KHS-K01 | 2022718 |
| | | BEF-KHS-KH1 | 2022726 |
| | | BEF-MS12G-A | 4056054 |
| | | BEF-MS12G-B | 4056055 |
| | | BEF-MS12L-A | 4056052 |
| | | BEF-MS12L-B | 4056053 |

| | Brief description | Type | Part no. |
|---|---|--------------------|----------|
| Plug connectors and cables | | | |
|  |  | YF2A14-020VB3XLEAX | 2096234 |
|  |  | YF2A14-050VB3XLEAX | 2096235 |
|  |  | YF2A14-100VB3XLEAX | 2096236 |
|  |  | YG2A14-020VB3XLEAX | 2095895 |
|  |  | YG2A14-050VB3XLEAX | 2095897 |
|  |  | YG2A14-100VB3XLEAX | 2095898 |
|  |  | DOS-1204-G | 6007302 |
|  |  | DOS-1204-W | 6007303 |

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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