





Illustration may differ



### Ordering information

| Type               | Part no. |
|--------------------|----------|
| KTS-WB9114114IZZZZ | 1078851  |

Other models and accessories → [www.sick.com/KTS](http://www.sick.com/KTS)

### Detailed technical data

#### Features

|                                   |   |
|-----------------------------------|---|
| <b>Special applications</b>       | Standard  |
| <b>Device type</b>                | Standard  |
| <b>Dimensions (W x H x D)</b>     | 26 mm x 62 mm x 47.5 mm   |
| <b>Sensing distance</b>           | ≤ 13 mm   |
| <b>Sensing distance tolerance</b> | ± 5 mm  |
| <b>Housing design</b>             | Middle  |
| <b>Light source</b>               | LED, RGB <sup>1)</sup>  |
| <b>Wave length</b>                | 470 nm, 525 nm, 625 nm  |
| <b>Light emission</b>             | Long side of housing  |
| <b>Light spot size</b>            | 0.9 mm x 3.8 mm   |
| <b>Light spot direction</b>       | Vertical <sup>2)</sup>  |
| <b>Receiving filters</b>          | None  |
| <b>Teach-in mode</b>              | 1-point teach-in, 2-point teach-in, teach-in dynamic, auto mode |
| <b>Output function</b>            | Light/dark switching  |
| <b>Delay time</b>                 | Adjustable  |
| <b>Special features</b>           | -   |
| <b>Delivery status</b>            | 2-point teach-in  |
| <b>Parameter presettings</b>      | None  |
| <b>Setting the key lock</b>       | Standard  |

<sup>1)</sup> Average service life: 100,000 h at T<sub>U</sub> = +25 °C.

<sup>2)</sup> In relation to long side of housing.

## Mechanics/electronics

|  |   |
|--|---|
| <b>Supply voltage</b>                      | 10.8 V DC ... 28.8 V DC <sup>1)</sup>   |
| <b>Ripple</b>                              | $\leq 5 V_{pp}$ <sup>2)</sup>   |
| <b>Current consumption</b>                 | $< 100 \text{ mA}$ <sup>3)</sup>  |
| <b>Switching frequency</b>                 | 50 kHz <sup>4)</sup> <sup>5)</sup>  |
| <b>Response time</b>                       | 10 $\mu\text{s}$ <sup>6)</sup> <sup>7)</sup>  |
| <b>Jitter</b>                              | 5 $\mu\text{s}$ <sup>8)</sup>   |
| <b>Switching output</b>                    | Push-pull: PNP/NPN  |
| <b>Switching output (voltage)</b>          | Push-pull: PNP/NPN HIGH = $U_V - 3 \text{ V}$ / LOW $\leq 3 \text{ V}$  |
| <b>Output current <math>I_{max}</math></b> | 100 mA <sup>9)</sup>  |
| <b>Input, teach-in (ET)</b>                | Teach: $U = 10 \text{ V} \dots < V_S$   |
| <b>Input, blanking input (AT)</b>          | Blanked: $U = 10 \text{ V} \dots < U_V$   |
| <b>Input, fine/coarse (F/C)</b>            | Coarse: $U = 10 \text{ V} \dots < U_V$  |
| <b>Input, light/dark (L/D)</b>             | Light: $U = 10 \text{ V} \dots < U_V$   |
| <b>Retention time (ET)</b>                 | 25 ms, non-volatile memory  |
| <b>Connection type</b>                     | Male connector M12, 4-pin   |
| <b>Protection class</b>                    | III   |
| <b>Circuit protection</b>                  | $U_V$ connections, reverse polarity protected<br>Output Q short-circuit protected<br>Interference pulse suppression |
| <b>Enclosure rating</b>                    | IP67  |
| <b>Weight</b>                              | 68 g  |
| <b>Housing material</b>                    | Plastic, VISTAL®  |
| <b>Optics material</b>                     | Plastic, COP  |

<sup>1)</sup> Limit values: DC 12 V (-10 %) ... DC 24 V (+20 %). Operation in short-circuit protected network max. 8 A.

<sup>2)</sup> May not exceed or fall below  $U_V$  tolerances.

<sup>3)</sup> Without load.

<sup>4)</sup> With light/dark ratio 1:1.

<sup>5)</sup> 1-point teach-in (color mode): 16 kHz.

<sup>6)</sup> Signal transit time with resistive load.

<sup>7)</sup> 1-point teach-in (color mode): 30  $\mu\text{s}$ .

<sup>8)</sup> 1-point teach-in (color mode): 15  $\mu\text{s}$ .

<sup>9)</sup> Total current of all Outputs.

## Communication interface

|                       |                            |
|-----------------------|----------------------------|
| <b>Analog</b>         | ✓, Analog output (current) |
| <b>Analog output</b>  | $Q_A$                      |
| Number                | 1                          |
| Type                  | Current output             |
| Current               | 0 mA ... 20 mA             |
| <b>Digital output</b> | $Q_1$                      |
| Number                | 1                          |

## Ambient data

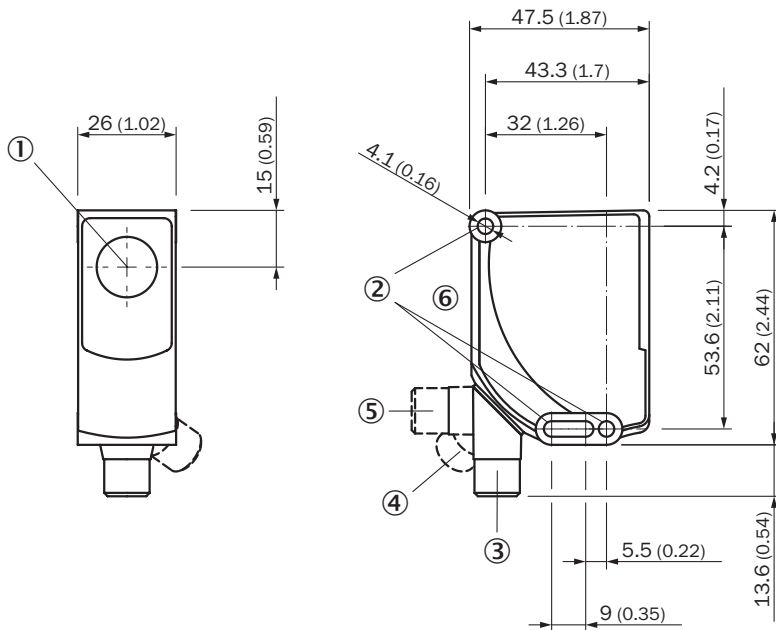
|                                      |                   |
|--------------------------------------|-------------------|
| <b>Ambient operating temperature</b> | -20 °C ... +60 °C |
|--------------------------------------|-------------------|

|                                     |  |
|-------------------------------------|--|
| <b>Ambient temperature, storage</b> | -25 °C ... +75 °C                        |
| <b>Shock load</b>                   | According to IEC 60068-2-27 (30 g/11 ms) |
| <b>UL File No.</b>                  | E181493                                  |

Classifications

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

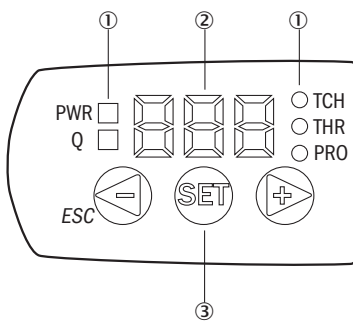
Dimensional drawing (Dimensions in mm (inch))



- ① Optical axis
- ② Fixing hole
- ③ M12 male connector, delivery state
- ④ M12 male connector, end stop right
- ⑤ M12 male connector, end stop left
- ⑥ Display and adjustment elements

Adjustments

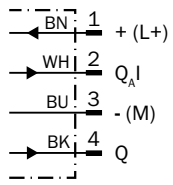
Display and adjustment elements



- ① LED status indicator
- ② Display
- ③ Navigation buttons

### Connection diagram

Cd-383

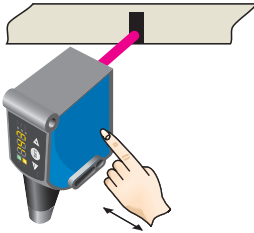


### Concept of operation

KTS/KTX Prime - setting the switching threshold (2-point teach-in)

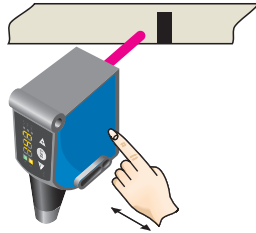
Suitable for manual positioning of the object to be detected, e.g. marks and background.

#### 1. Position mark



When setting the contrasts to be detected, "1st" flashes. Press set button.

#### 2. Position background

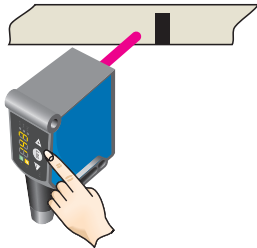


When setting the contrasts to be detected, "2nd" flashes. Press set button. The Quality of Teach is displayed.

KTS/KTX Prime - Setting the switching threshold (teach-in dynamic)

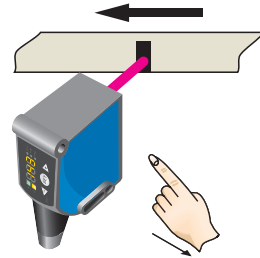
Suitable for teaching in moving objects.

**1. Position background**

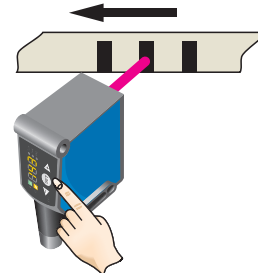


Press the Set pushbutton to start the teach-in process.

**2. Move at least the mark and background using the light spot**

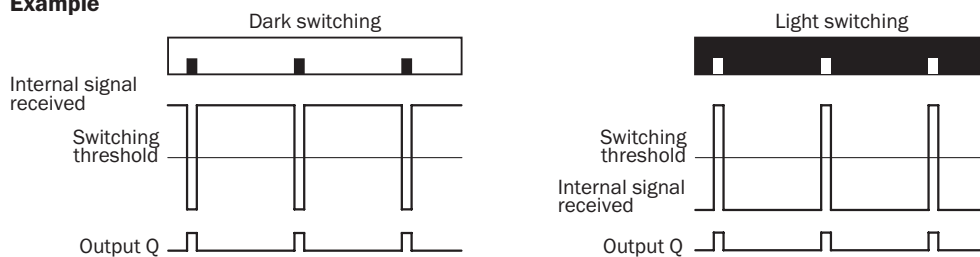


The display lights up during repeat length detection ( - - - ).



Press the Set pushbutton to end the teach-in process. The Quality of Teach is displayed.

**Example**



**Switching characteristics**

The optimum emitted light is selected automatically (at RGB variants).

Static teach-in: light/dark setting is defined using teach-in sequence.

Dynamic teach-in: switching output active on mark, if background is longer in the field of view during the teach-in.

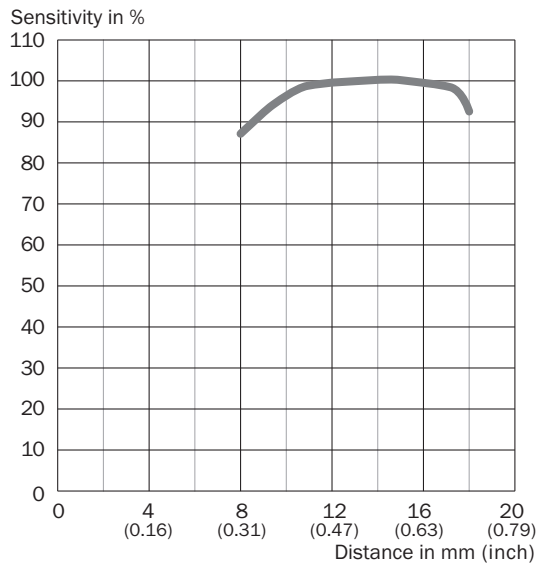
The switching threshold is set in the center between the background and the mark.

Keylock (activation and deactivation): Press and hold the “+” pushbutton > 10 s.

The Q-LED (yellow) flashes and the “Err” error message appears on the display.

### Sensing distance

Sensing distance 13 mm, light spot direction horizontal/vertical



### Recommended accessories

Other models and accessories → [www.sick.com/KTS](http://www.sick.com/KTS)

|   | Brief description   | Type               | Part no. |
|---|---|--------------------|----------|
| <b>Universal bar clamp systems</b>  |   |                    |          |
|  | Plate K for universal clamp bracket, steel, zinc coated, Universal clamp (2022726), mounting hardware   | BEF-KHS-K01        | 2022718  |
|  | Mounting bar, straight, 200 mm, steel, steel, zinc coated, without mounting hardware  | BEF-MS12G-A        | 4056054  |
|  | Mounting bar, L-shaped, 150 mm x 150 mm, steel, steel, zinc coated, without mounting hardware   | BEF-MS12L-A        | 4056052  |
| <b>Plug connectors and cables</b>   |   |                    |          |
|  | <ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Female connector, M12, 4-pin, straight, A-coded</li> <li>• <b>Connection type head B:</b> Flying leads</li> <li>• <b>Signal type:</b> Sensor/actuator cable</li> <li>• <b>Cable:</b> 5 m, 4-wire, PVC</li> <li>• <b>Description:</b> Sensor/actuator cable, unshielded</li> <li>• <b>Application:</b> Zones with chemicals</li> </ul> | YF2A14-050VB3XLEAX | 2096235  |
|  | <ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Male connector, M12, 4-pin, straight</li> <li>• <b>Description:</b> Unshielded</li> <li>• <b>Connection systems:</b> Screw-type terminals</li> <li>• <b>Permitted cross-section:</b> ≤ 0.75 mm<sup>2</sup></li> </ul>   | STE-1204-G         | 6009932  |

## SICK AT A GLANCE

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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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