



DATA SHEET

# KTX-WS41142242ZZZZ

KTX  
Contrast sensors

# SICK

Sensor Intelligence



Illustration may differ

CONTRAST SENSORS

KTX-WS41142242ZZZZ

ORDERING INFORMATION

| Type               | part no. |
|--------------------|----------|
| KTX-WS41142242ZZZZ | 1137289  |

Further device versions and accessories at [www.sick.com/KTX](http://www.sick.com/KTX)



DETAILED TECHNICAL DATA

FEATURES

|                            |                             |
|----------------------------|-----------------------------|
| Parameter presettings      | None                        |
| Special applications       | Standard                    |
| Device type                | Easy Teach                  |
| Housing design             | Large                       |
| Dimensions (W x H x D)     | 30 mm x 53 mm x 78.5 mm     |
| Light source               | LED, RGB <sup>1)</sup>      |
| Light emission             | Short device side           |
| Light spot size            | 0.9 mm x 3.8 mm             |
| Light spot direction       | Vertical <sup>2)</sup>      |
| Receiving filters          | None                        |
| Wave length                | 470 nm, 525 nm, 625 nm      |
| Sensing distance           | ≤ 13 mm                     |
| Sensing distance tolerance | ± 3 mm                      |
| Teach-in mode              | 2-point teach-in            |
| Output function            | Light/dark switching        |
| Delay time                 | Adjustable                  |
| Setting the key lock       | Standard                    |
| Delivery status            | 2-point teach-in            |
| Safety-related parameters  | MTTF <sub>0</sub> 291 years |

<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.

## ELECTRONICS

|                            |                                                                                                                     |
|----------------------------|---------------------------------------------------------------------------------------------------------------------|
| Supply voltage             | 10.8 V DC ... 28.8 V DC <sup>1)</sup>                                                                               |
| Ripple                     | $\leq 5 \text{ V}_{pp}$ <sup>2)</sup>                                                                               |
| Current consumption        | $< 100 \text{ mA}$ <sup>3)</sup>                                                                                    |
| Switching frequency        | 25 kHz <sup>4)</sup>                                                                                                |
| Response time              | 20 $\mu\text{s}$                                                                                                    |
| Jitter                     | 10 $\mu\text{s}$                                                                                                    |
| Switching output           | PNP, NPN                                                                                                            |
| Switching output (voltage) | PNP: HIGH = $V_s - 3 \text{ V}$ / LOW = 0 V, NPN: HIGH = $V_s$ / LOW $\leq 3 \text{ V}$                             |
| Output current $I_{max}$   | 100 mA <sup>5)</sup>                                                                                                |
| Retention time (ET)        | 35 ms, non-volatile memory                                                                                          |
| Time delay                 | None                                                                                                                |
| Protection class           | III                                                                                                                 |
| Circuit protection         | $U_v$ connections, reverse polarity protected<br>Output Q short-circuit protected<br>Interference pulse suppression |
| Connection type            | Male connector M12, 4-pin                                                                                           |

<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 fall below or exceed  $U_v$  tolerances.

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

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

<sup>5)</sup> Total current of all Outputs.

## MECHANICS

|                  |         |
|------------------|---------|
| Housing material | VISTAL® |
| Optics material  | COP     |
| Weight           | 94 g    |

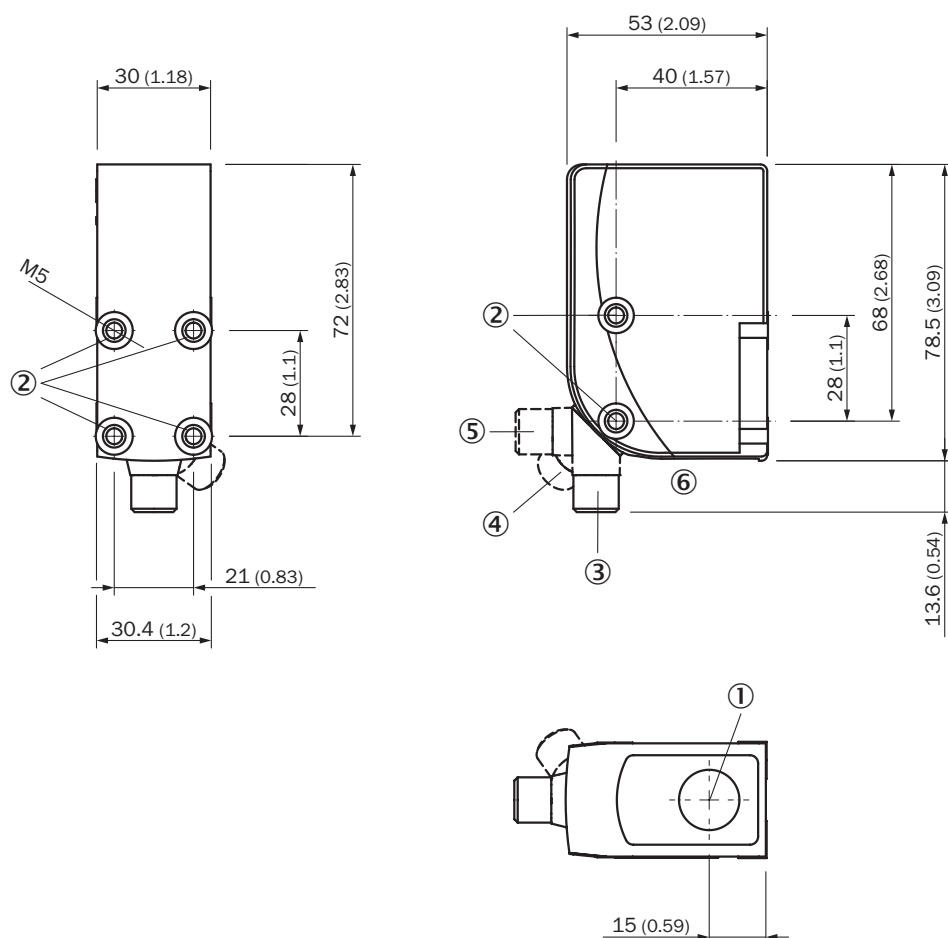
## AMBIENT DATA

|                               |                                          |
|-------------------------------|------------------------------------------|
| Ambient operating temperature | -20 °C ... +60 °C                        |
| Ambient temperature, storage  | -25 °C ... +75 °C                        |
| Shock load                    | According to IEC 60068-2-27 (30 g/11 ms) |
| Enclosure rating              | IP67                                     |
| UL File No.                   | E181493                                  |

## CERTIFICATES

|                                                     |   |
|-----------------------------------------------------|---|
| EU declaration of conformity                        | ✓ |
| UK declaration of conformity                        | ✓ |
| ACMA declaration of conformity                      | ✓ |
| Moroccan declaration of conformity                  | ✓ |
| China RoHS                                          | ✓ |
| China Compulsory Product Certification (CCC) exempt | ✓ |
| cULus certificate                                   | ✓ |
| Photobiological safety (IEC EN 62471)               | ✓ |

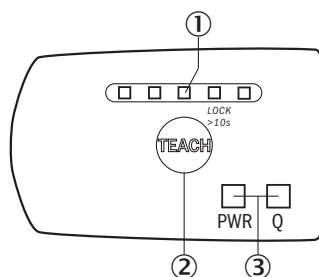
## DIMENSIONAL DRAWING



Dimensions in mm (inch)

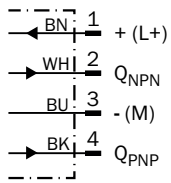
- ① Optical axis
- ② Threaded mounting hole M5
- ③ M12 male connector, delivery state
- ④ M12 male connector, end stop right
- ⑤ M12 male connector, end stop left
- ⑥ display and adjustment elements

## DISPLAY AND ADJUSTMENT ELEMENTS



- ① Bar graph
- ② single teach-in button
- ③ LED status indicator

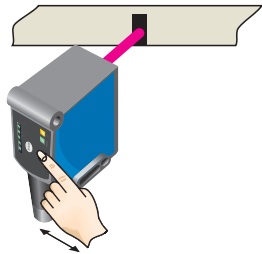
## CONNECTION DIAGRAM CD-086



## KTS CORE EASY TEACH - SETTING THE SWITCHING THRESHOLD

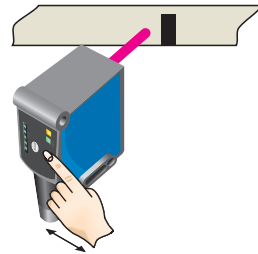
Suitable for manual positioning of the object to be detected, e.g. marks and background.

### 1. Position mark



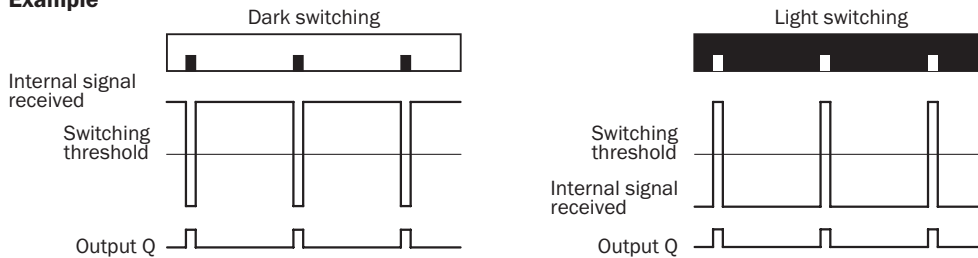
When setting the contrasts to be detected, the first LED (green) flashes in the bar graph. Press Teach-in pushbutton.

### 2. Position background



When setting the contrasts to be detected, the second LED (green) flashes in the bar graph. Press Teach-in pushbutton.

## 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.

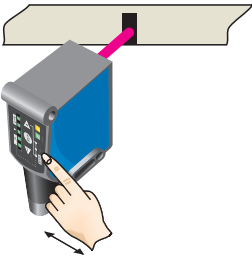
Keylock (activation and deactivation): Press and hold the Teach-in pushbutton > 10 s.

Teach-in failure: The Q-LED (yellow) flashes and all LEDs flash on the bar graph (green).

KTS CORE - SETTING THE SWITCHING THRESHOLD (2-POINT TEACH-IN)

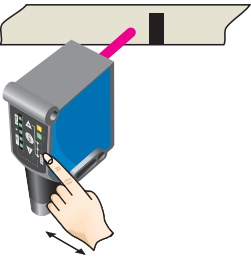
Suitable for manual positioning of the object to be detected, e.g. marks and background.

1. Position mark



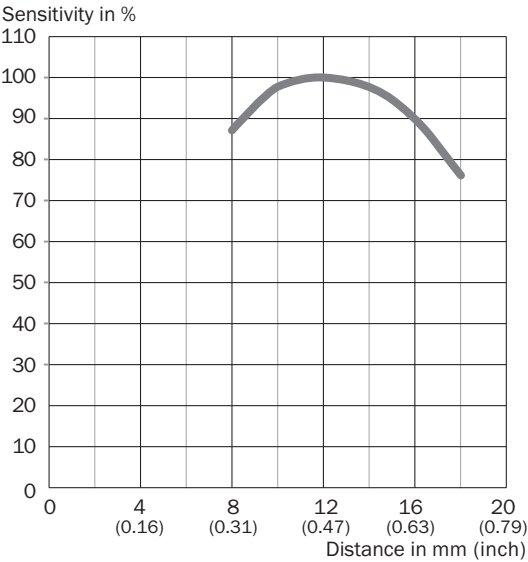
When setting the contrasts to be detected, the first LED (green) flashes in the bar graph. Press set button.

2. Position background



When setting the contrasts to be detected, the second LED (green) flashes in the bar graph. Press set button. The Quality of Teach is displayed.

SENSING DISTANCE



Further information as well as suitable accessories, example applications and downloads such as CAD dimensional models, operating instructions and software can be found at [www.sick.com/1137289](http://www.sick.com/1137289)



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# SICK AT A GLANCE

SICK is a leading global technology company for intelligent sensors and integrated solutions in industrial automation. Our technologies set benchmarks, making your industrial processes more efficient, safer and more sustainable – both in logistics and manufacturing operations.

SICK combines sensor intelligence with industry expertise and certified consulting services. We provide the ideal foundation for scalable as well as tailor-made automation solutions and create added value along the entire value chain. Our close partnerships with our customers are more than just a promise: Together, we optimize productivity, improve quality, protect health and safety, and help build a sustainable future. All with empathy and trust.

Since 1946, we have been developing innovative technologies with passion and a pioneering spirit. With a global network in around 40 countries, SICK has a global presence and is always close by. The company's headquarters are located in Waldkirch near Freiburg, Germany. Our customers benefit from our understanding of both local and global requirements, which enables us to deliver tailor-made solutions

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