



# KT10W-2N1115

KT10

CONTRAST SENSORS

**SICK**  
Sensor Intelligence.



### Ordering information

Type	Part no.
KT10W-2N1115	1028233

Other models and accessories → [www.sick.com/KT10](http://www.sick.com/KT10)



### Detailed technical data

#### Features

<b>Dimensions (W x H x D)</b>	30.4 mm x 53 mm x 80 mm
<b>Sensing distance</b>	10 mm <sup>1)</sup>
<b>Sensing distance tolerance</b>	± 3 mm
<b>Housing design (light emission)</b>	Rectangular
<b>Light source</b>	LED, RGB <sup>2)</sup>
<b>Wave length</b>	640 nm, 525 nm, 470 nm
<b>Light emission</b>	Long and short side of housing, exchangeable
<b>Light spot size</b>	0.8 mm x 4 mm
<b>Light spot direction</b>	Vertical <sup>3)</sup>
<b>Adjustment</b>	Teach-in button
<b>Teach-in mode</b>	Static 2-point teach-in Dynamic teach-in (min/max)
<b>Function</b>	Automatic drift correction

<sup>1)</sup> From front edge of lens.

<sup>2)</sup> Average service life: 100,000 h at T<sub>J</sub> = +25 °C.

<sup>3)</sup> In relation to long side of housing.

#### Mechanics/electronics

<b>Supply voltage</b>	10 V DC ... 30 V DC <sup>1)</sup>
<b>Ripple</b>	≤ 5 V <sub>pp</sub> <sup>2)</sup>
<b>Power consumption</b>	< 120 mA <sup>3)</sup>

<sup>1)</sup> Limit values when operated in short-circuit protected network: max. 8 A.

<sup>2)</sup> May not exceed or fall below U<sub>V</sub> tolerances.

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

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

<sup>5)</sup> Signal transit time with resistive load.

<sup>6)</sup> AT > 200 μs.

<sup>7)</sup> Reference voltage DC 50 V.

<b>Switching frequency</b>	25 kHz <sup>4)</sup>
<b>Response time</b>	20 μs <sup>5)</sup>
<b>Jitter</b>	< 10 μs
<b>Switching output</b>	NPN
<b>Switching output (voltage)</b>	NPN: HIGH = approx. $V_S$ / LOW ≤ 2 V
<b>Output current <math>I_{max}</math></b>	100 mA
<b>Input, teach-in (ET)</b>	NPN Teach: $U < 2$ V Run: $U = 10$ V ... < $U_V$
<b>Input, blanking input (AT)</b>	NPN Blanked: $U < 2$ V Free-running: $U > 10$ V ... < $U_V$ <sup>6)</sup>
<b>Retention time (ET)</b>	25 ms, non-volatile memory
<b>Time delay</b>	20 ms, adjustable
<b>Connection type</b>	Male connector M12, 5-pin
<b>Protection class</b>	II <sup>7)</sup>
<b>Circuit protection</b>	$U_V$ connections, reverse polarity protected Output Q short-circuit protected Interference pulse suppression Outputs overcurrent and short-circuit protected
<b>Enclosure rating</b>	IP67
<b>Weight</b>	400 g
<b>Housing material</b>	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) AT > 200 μs.

7) Reference voltage DC 50 V.

## Ambient data

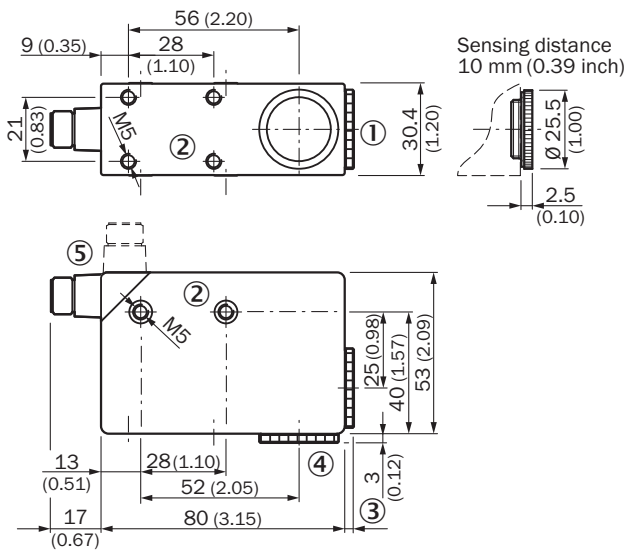
<b>Ambient operating temperature</b>	-10 °C ... +55 °C
<b>Ambient storage temperature</b>	-10 °C ... +75 °C
<b>Shock load</b>	According to IEC 60068
<b>UL File No.</b>	NRKH.E181493 & NRKH7.E181493

## Classifications

<b>ECl@ss 5.0</b>	27270906
<b>ECl@ss 5.1.4</b>	27270906
<b>ECl@ss 6.0</b>	27270906
<b>ECl@ss 6.2</b>	27270906
<b>ECl@ss 7.0</b>	27270906
<b>ECl@ss 8.0</b>	27270906
<b>ECl@ss 8.1</b>	27270906
<b>ECl@ss 9.0</b>	27270906
<b>ETIM 5.0</b>	EC001820

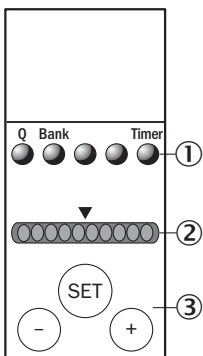
<b>ETIM 6.0</b>	EC001820
<b>UNSPSC 16.0901</b>	39121528

### Dimensional drawing (Dimensions in mm (inch))



- ① Lens (light emission)
- ② M5 threaded mounting hole, 5.5 mm deep
- ③ See dimensional drawing of lens
- ④ Blind screw can be replaced by pos. 1
- ⑤ Connector M12 (rotatable up to 90°)

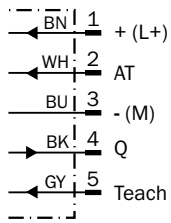
### Adjustments



- ① Function signal indicators (yellow)
- ② Bar graph (green)
- ③ Teach-in pushbutton / +/- pushbutton

## Connection diagram

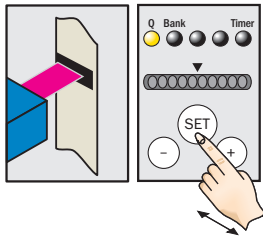
cd-313



## Concept of operation

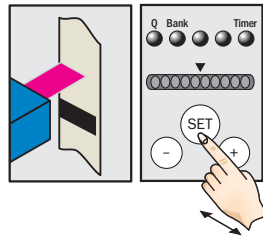
Teach-in static

### 1. Position mark



Press and hold SET button > 1 s.  
Red emitted light and yellow LED flash.

### 2. Position background



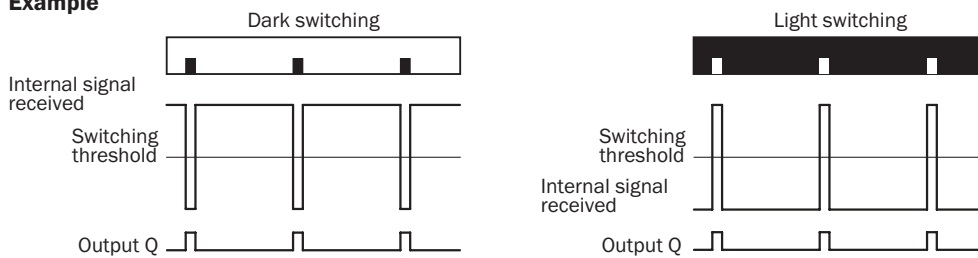
Press and hold SET button > 1 s.  
Yellow LED goes out.  
Optimum emitted light is selected.

### 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 – lowest contrast difference
- ≤ 4 LEDs illuminate = operation OK – sufficient contrast difference
- > 4 LEDs illuminate = reliable operation – high contrast difference

### Example



### Switching characteristics

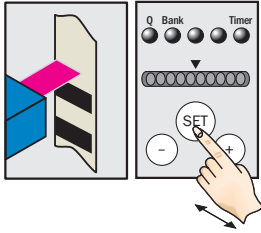
Light/dark setting is defined using teach-in sequence.

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

Teach-in and the light/dark setting can also be configured using an external control signal.

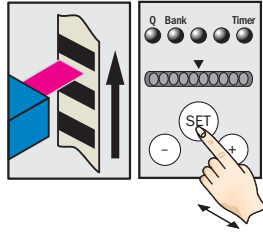
Teach-in dynamic

### 1. Position background

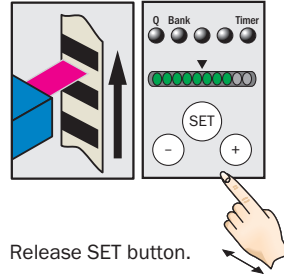


Press and hold SET button.  
Emitted light turns white.

### 2. Move at least one repeat length using the light spot



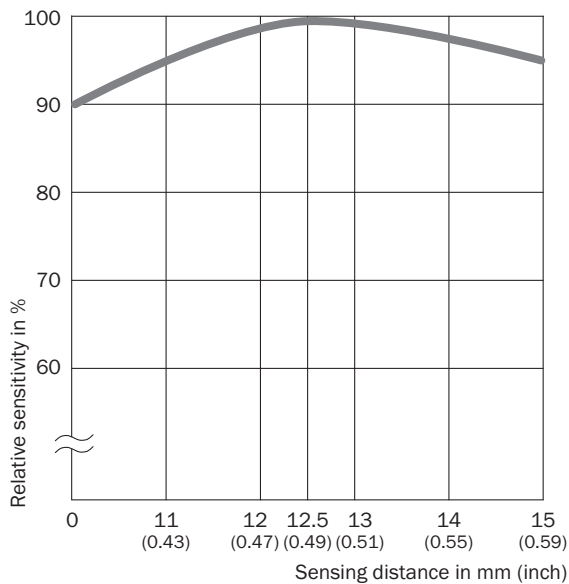
Hold down SET button.



Release SET button.



## Characteristic curve







KT8 CAN, KT10-2



## Recommended accessories

Other models and accessories → [www.sick.com/KT10](http://www.sick.com/KT10)

	Brief description	Type	Part no.
<b>Universal bar clamp systems</b>			
	Plate G for universal clamp bracket, steel, zinc coated, Universal clamp (2022726), mounting hardware	BEF-KHS-G01	2022464
	Plate K for universal clamp bracket, steel, zinc coated, Universal clamp (2022726), mounting hardware	BEF-KHS-K01	2022718

	Brief description	Type	Part no.
	Universal clamp bracket for rod mounting, steel, zinc coated, without mounting hardware	BEF-KHS-KH1	2022726
	Mounting bar, straight, 200 mm, steel, steel, zinc coated, without mounting hardware	BEF-MS12G-A	4056054
	Mounting bar, straight, 300 mm, steel, steel, zinc coated, without mounting hardware	BEF-MS12G-B	4056055
	Mounting bar, L-shaped, 150 mm x 150 mm, steel, steel, zinc coated, without mounting hardware	BEF-MS12LA	4056052
	Mounting bar, L-shaped, 250 x 250 mm, steel, steel, zinc coated, without mounting hardware	BEF-MS12L-B	4056053
<b>Plug connectors and cables</b>			
	Head A: female connector, M12, 5-pin, straight, A-coded Head B: Flying leads Cable: Sensor/actuator cable, PVC, unshielded, 2 m	YF2A15-020VB5XLEAX	2096239
	Head A: female connector, M12, 5-pin, straight, A-coded Head B: Flying leads Cable: Sensor/actuator cable, PVC, unshielded, 5 m	YF2A15-050VB5XLEAX	2096240
	Head A: female connector, M12, 5-pin, straight, A-coded Head B: Flying leads Cable: Sensor/actuator cable, PVC, unshielded, 10 m	YF2A15-100VB5XLEAX	2096241
	Head A: female connector, M12, 5-pin, angled, A-coded Head B: Flying leads Cable: Sensor/actuator cable, PVC, unshielded, 2 m	YG2A15-020VB5XLEAX	2096215
	Head A: female connector, M12, 5-pin, angled, A-coded Head B: Flying leads Cable: Sensor/actuator cable, PVC, unshielded, 5 m	YG2A15-050VB5XLEAX	2096216
	Head A: female connector, M12, 5-pin, angled, A-coded Head B: Flying leads Cable: Sensor/actuator cable, PVC, unshielded, 10 m	YG2A15-100VB5XLEAX	2096217
	Head A: female connector, M12, 5-pin, straight Cable: unshielded	DOS-1205-G	6009719
	Head A: female connector, M12, 5-pin, angled Head B: - Cable: unshielded	DOS-1205-W	6009720

## 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.”

## WORLDWIDE PRESENCE:

Contacts and other locations –[www.sick.com](http://www.sick.com)