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# KTS-WB9114115AZZZ

KTS Prime

CONTRAST SENSORS

**SICK**  
Sensor Intelligence.



### Ordering information

Type	Part no.
KTS-WB9114115AZZZZ	1078126

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



### Detailed technical data

#### Features

<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 (light emission)</b>	Rectangular
<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>Teach-in mode</b>	1-point teach-in, 2-point teach-in, dynamic Teach-in, auto mode
<b>Output function</b>	Light/dark switching
<b>Delay time</b>	Adjustable

<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.

#### Communication interface

<b>Communication interface</b>	IO-Link V1.1
<b>Communication Interface detail</b>	COM2 (38,4 kBaud)
<b>Cycle time</b>	2.3 ms
<b>Process data length</b>	16 Bit
<b>Process data structure</b>	Bit 0 = switching signal Q <sub>L1</sub> Bit 1 = empty Bit 2 = Quality of Run Alarm Bit 3 ... 5 = Emission Color Bit 6 ... 15 = Measurement Value Emission Color

## 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>Power consumption</b>	$< 100 \text{ mA}$ <sup>3)</sup>
<b>Switching frequency</b>	50 kHz <sup>4)</sup>
<b>Response time</b>	10 $\mu\text{s}$ <sup>5)</sup>
<b>Jitter</b>	5 $\mu\text{s}$
<b>Switching output</b>	PUSH/PULL
<b>Switching output (voltage)</b>	Push/Pull: HIGH = $V_S - 3 \text{ V}$ / LOW $\leq 3 \text{ V}$
<b>Output current <math>I_{\text{max}}</math></b>	100 mA <sup>6)</sup>
<b>Input, teach-in (ET)</b>	Teach: $U = 10 \text{ V} \dots < V_S$ ; Run: $U < 2 \text{ V}$
<b>Input, blanking input (AT)</b>	Blanked: $U = 10 \text{ V} \dots < U_v$ ; free-running: $U < 2 \text{ V}$
<b>Input, fine/coarse (F/C)</b>	Coarse: $U = 10 \text{ V} \dots < U_v$ ; fine: $U < 2 \text{ V}$
<b>Input, light/dark (L/D)</b>	Light: $U = 10 \text{ V} \dots < U_v$ ; light: $U < 2 \text{ V}$
<b>Retention time (ET)</b>	25 ms, non-volatile memory
<b>Connection type</b>	Male connector M12, 5-pin
<b>Protection class</b>	III
<b>Circuit protection</b>	$U_v$ connections, reverse polarity protected Output Q short-circuit protected Interference pulse suppression
<b>Enclosure rating</b>	IP67
<b>Weight</b>	68 g
<b>Housing material</b>	VISTAL®

<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> Signal transit time with resistive load.

<sup>6)</sup> Total current of all Outputs.

## Ambient data

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

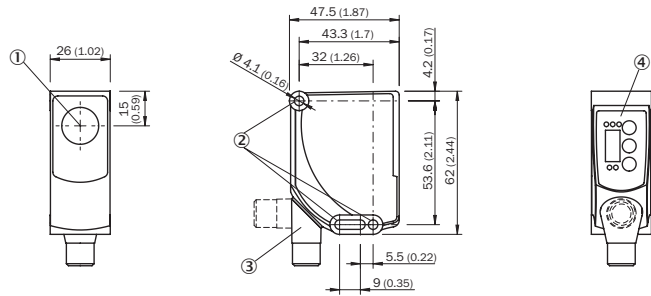
## Classifications

<b>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))

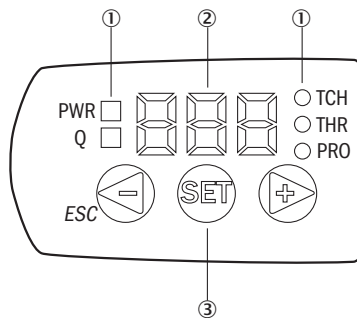
KTS Prime



- ① Optical axis sender
- ② Fixing hole
- ③ Connector M12 (rotatable up to 180°)
- ④ Control panel

### Adjustments

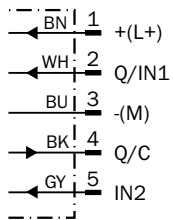
KTS/KTX Prime



- ① LED status indicator
- ② Display
- ③ Control panel

## Connection diagram

Cd-387

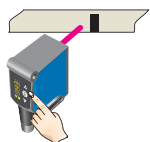


## Concept of operation

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

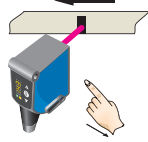
Suitable for teaching in moving objects.

#### 1. Position background

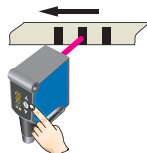


Press the Set pushbutton to start the teach-in process.

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

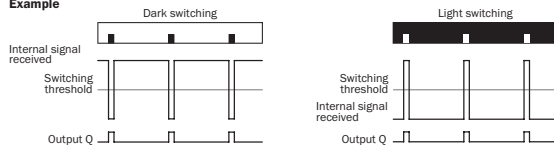


The display lights up during repeat length detection (---).



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.

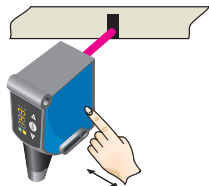
Keylock (activation and deactivation): Press and hold the "+" pushbutton > 10 s.

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

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

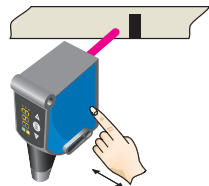
Suitable for manual positioning of the object to be detected, e.g. marks and background.

#### 1. Position mark



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

#### 2. Position background

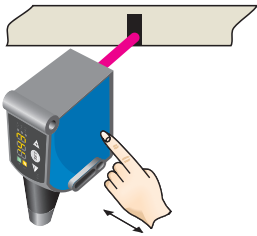


When setting the contrasts to be detected, "2nd" flashes. Press set button. The Quality of Teach is displayed.

KTS/KTX Prime - Setting the switching threshold (color mode)

Suitable for teaching in color properties.

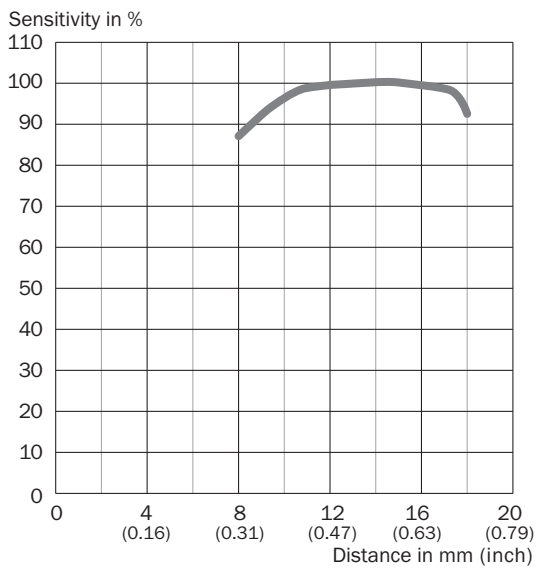
### 1. Position mark/color property



When detecting the contrast or color to be detected, "1st" flashes. Press set button. The Quality of Teach-in is displayed.


### Characteristic curve






Sensing distance 13 mm, light spot direction horizontal/vertical



### Recommended accessories

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

	Brief description	Type	Part no.
Universal bar clamp systems			
	Plate K for universal clamp bracket, steel, zinc coated, universal clamp and mounting hardware included	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



## SICK AT A GLANCE

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For us, that is “Sensor Intelligence.”

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