



DATA SHEET

KTS-WB81141142ZZZZ

KTS
Contrast sensors

SICK

Sensor Intelligence



Illustration may differ

CONTRAST SENSORS

KTS-
WB81141142ZZZZ

ORDERING INFORMATION

Type	part no.
KTS-WB81141142ZZZZ	1078120

Further device versions and accessories at www.sick.com/KTS



DETAILED TECHNICAL DATA

FEATURES

Parameter presettings	None
Special applications	Standard
Device type	Standard
Housing design	Middle
Dimensions (W x H x D)	26 mm x 62 mm x 47.5 mm
Light source	LED, RGB ¹⁾
Light emission	Long side of housing
Light spot size	1.2 mm x 3.9 mm
Light spot direction	Vertical ²⁾
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, teach-in dynamic
Output function	Light/dark switching
Delay time	-
Setting the key lock	Standard
Delivery status	2-point teach-in
Safety-related parameters	MTTF ₀ 291 years

¹⁾ Average service life: 100,000 h at T_u = +25 °C.

²⁾ In relation to long side of housing.

ELECTRONICS

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

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

²⁾ May not fall below or exceed U_v tolerances.

³⁾ Without load.

⁴⁾ With light/dark ratio 1:1.

⁵⁾ Total current of all Outputs.

MECHANICS

Housing material	VISTAL®
Optics material	COP
Weight	68 g

AMBIENT DATA

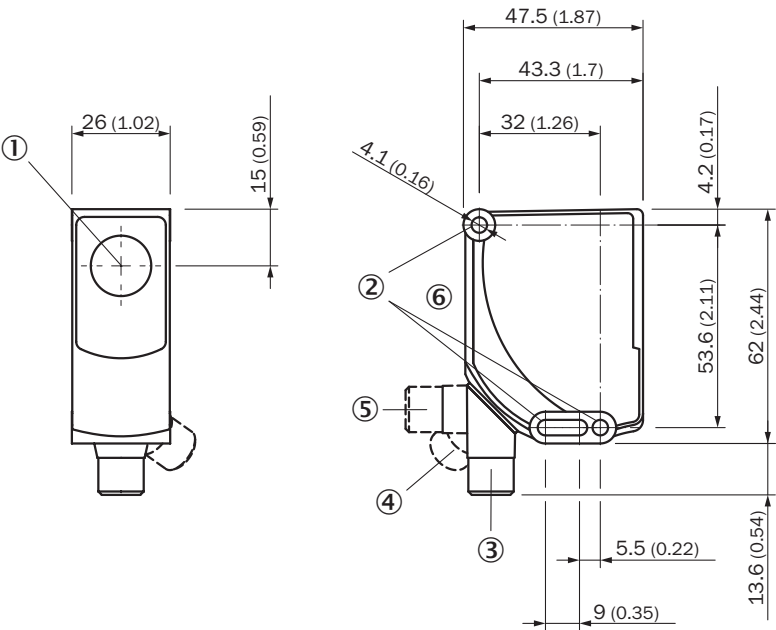
Ambient operating temperature	–20 °C ... +60 °C
Ambient temperature, storage	–25 °C ... +75 °C
Shock load	According to IEC 60068-2-27 (30 g/11 ms)
Enclosure rating	IP67
UL File No.	E181493

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	✓

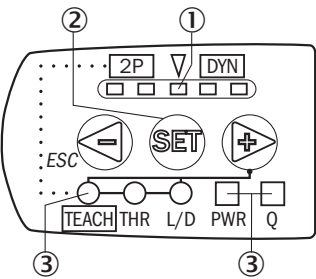
Photobiological safety (IEC EN 62471)	✓
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DIMENSIONAL DRAWING



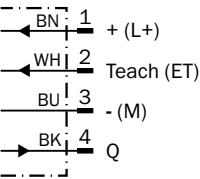
- Dimensions in mm (inch)
- ① Optical axis
 - ② fixing hole
 - ③ M12 male connector, delivery state
 - ④ M12 male connector, end stop right
 - ⑤ M12 male connector, end stop left
 - ⑥ display and adjustment elements

DISPLAY AND ADJUSTMENT ELEMENTS



- ① Bar graph
- ② Navigation buttons
- ③ Status indicator LED

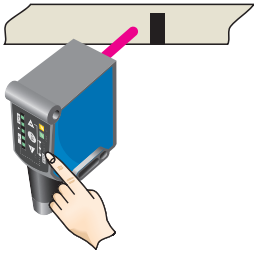
CONNECTION DIAGRAM CD-380



KTS CORE - SETTING OF SWITCHING THRESHOLD (TEACH-IN DYNAMIC)

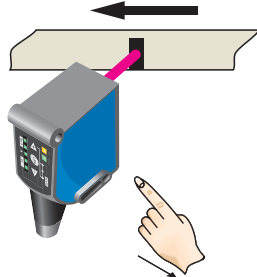
Suitable for teaching in moving objects.

1. Position background

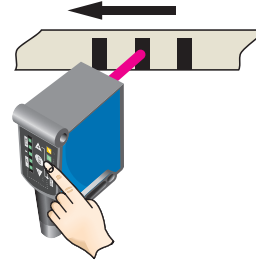


Press the set button < 1 s.

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

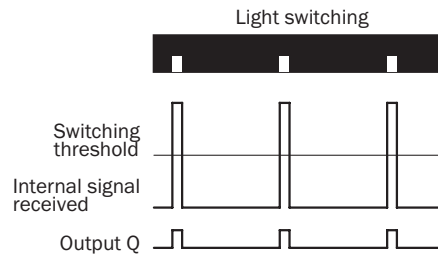
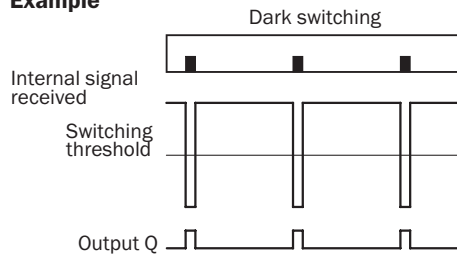


The bar graph display flashes during repeat length detection.



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.

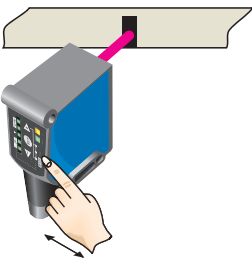
Keylock (activation and deactivation): Press and hold the "+" pushbutton > 10 s.

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)

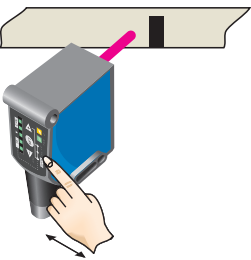
Suitable for manual positioning of the object to be detected, e.g. marks and background.

1. Position mark



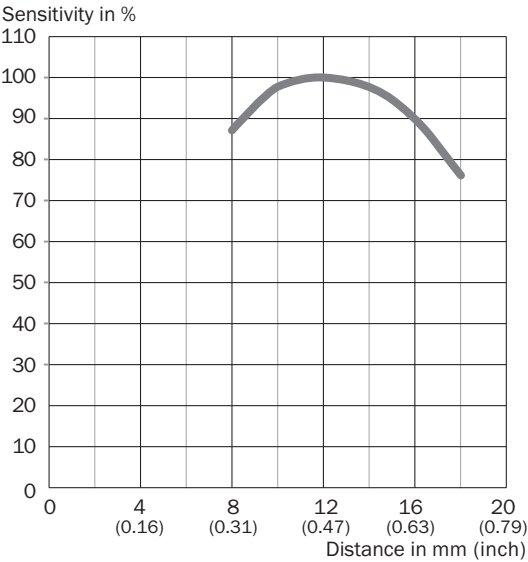
When setting the contrasts to be detected, the first LED (green) flashes in the bar graph. Press set button.

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/1078120



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SICK AT A GLANCE

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