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DATA SHEET

KTX-WS41141242ZZZZ

KTX
Contrast sensors

SICK Sensor Intelligence



Illustration may differ

CONTRAST SENSORS

KTX-WS41141242ZZZZ

ORDERING INFORMATION

Type	part no.
KTX-WS41141242ZZZZ	1137286

Further device versions and accessories at 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 [1]
Light emission	Long side of housing
Light spot size	0.9 mm x 3.8 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
Output function	Light/dark switching
Delay time	Adjustable
Setting the key lock	Standard
Delivery status	2-point teach-in
Safety-related parameters	
$MTTF_D$	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	≤ 5 V_{pp} [2]
Current consumption	< 100 mA [3]
Switching frequency	25 kHz [4]
Response time	20 µs
Jitter	10 µs
Switching output	PNP, NPN
Switching output (voltage)	PNP: HIGH = V_S - 3 V / LOW = 0 V, NPN: HIGH = V_S / LOW ≤ 3 V
Output current $I_{max.}$	100 mA [5]
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	94 g

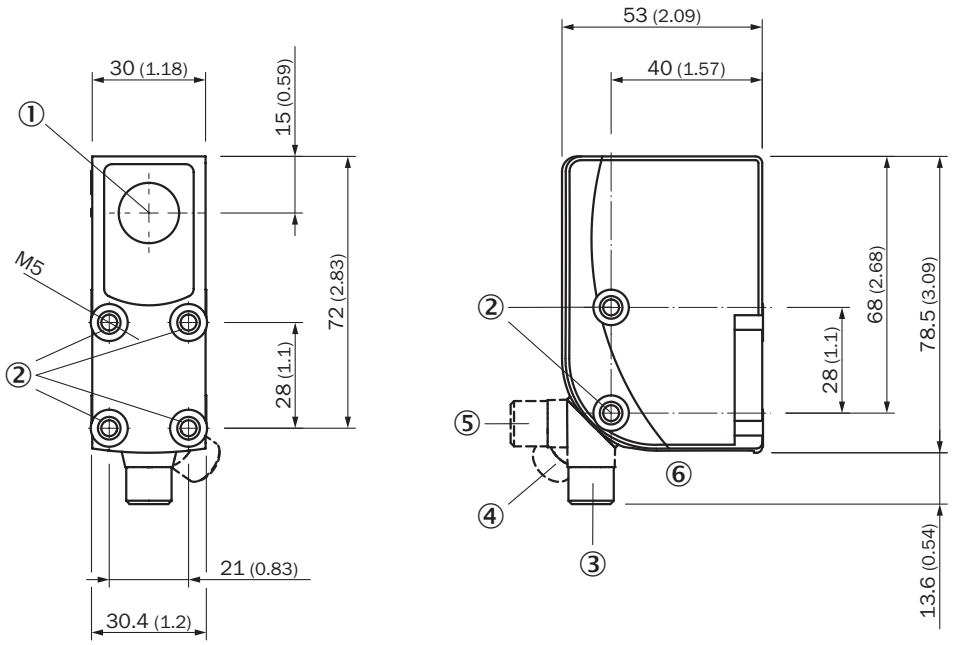
AMBIENT DATA

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

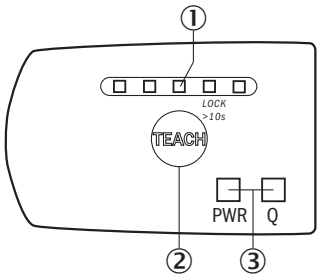
EU declaration of conformity	✓
UK declaration of conformity	✓
ACMA declaration of conformity	✓
Moroccan declaration of conformity	✓
China RoHS	✓
China Compulsory Product Certification (CCC) exempt	✓
cULus certificate	✓
Photobiological safety (IEC EN 62471)	✓

DIMENSIONAL DRAWING



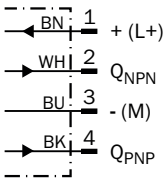
Dimensions in mm (inch)
① Optical axis
② Threaded mounting hole M5
③ M12 male connector, delivery state
④ M12 male connector, end stop right
⑤ M12 male connector, end stop left
⑥ display and adjustment elements

DISPLAY AND ADJUSTMENT ELEMENTS



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

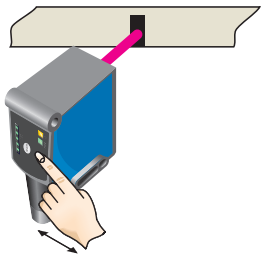
CONNECTION DIAGRAM CD-086



KTS CORE EASY TEACH - SETTING THE SWITCHING THRESHOLD

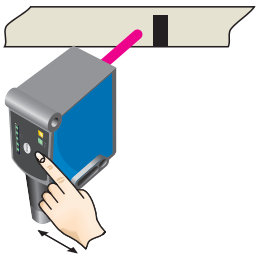
Suitable for manual positioning of the object to be detected, e.g. marks and background.

1. Position mark



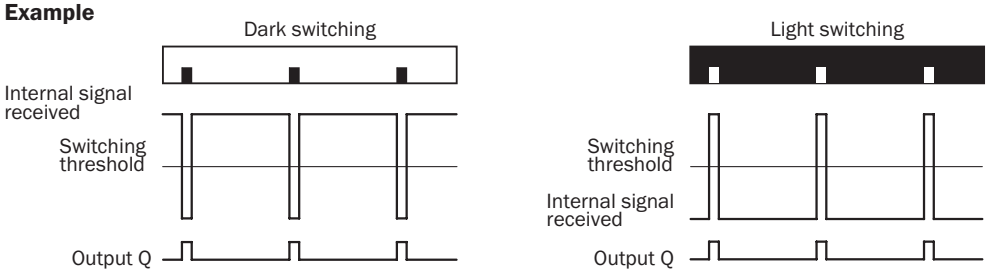
When setting the contrasts to be detected, the first LED (green) flashes in the bar graph.
Press Teach-in pushbutton.

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.

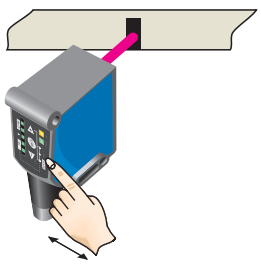
Keylock (activation and deactivation): Press and hold the Teach-in pushbutton > 10 s.

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)

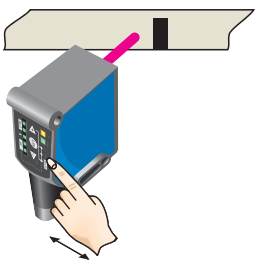
Suitable for manual positioning of the object to be detected, e.g. marks and background.

1. Position mark



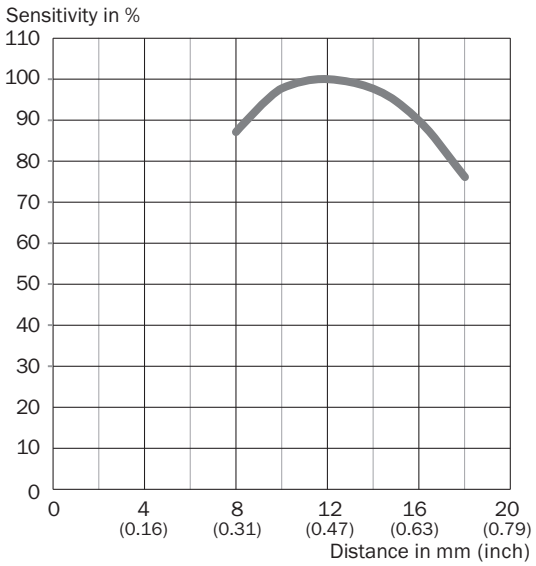
When setting the contrasts to be detected, the first LED (green) flashes in the bar graph.
Press set button.

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/1137286

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SICK AT A GLANCE

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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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