



KTS-WS41141142ZZZZ

KTS Core

CONTRAST SENSORS

SICK
Sensor Intelligence.



Ordering information

Type	Part no.
KTS-WS41141142ZZZZ	1221031

Other models and accessories → www.sick.com/KTS_Core



Detailed technical data

Features

Special applications	Standard
Device type	Easy Teach
Dimensions (W x H x D)	26 mm x 62 mm x 47.5 mm
Sensing distance	13 mm
Sensing distance tolerance	± 3 mm
Housing design (light emission)	Rectangular
Light source	LED, RGB ¹⁾
Wave length	470 nm, 525 nm, 625 nm
Light emission	Long side of housing
Light spot size	1.2 mm x 3.9 mm
Light spot direction	Vertical ²⁾
Receiving filters	None
Teach-in mode	2-point teach-in
Output function	Light/dark switching
Delay time	-
Special features	-
Delivery status	2-point teach-in
Parameter presettings	None

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

²⁾ In relation to long side of housing.

Mechanics/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 ⁵⁾
Jitter	10 μs
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 ⁶⁾
Input, teach-in (ET)	Teach: $U = 10 \text{ V} \dots < V_S$ Teach: $U < 2 \text{ V}$
Input, blanking input (AT)	Blanked: $U = 10 \text{ V} \dots < U_v$ blanked: $U < 2 \text{ V}$
Input, fine/coarse (F/C)	Coarse: $U = 10 \text{ V} \dots < U_v$ coarse: $U < 2 \text{ V}$
Input, light/dark (L/D)	Light: $U = 10 \text{ V} \dots < U_v$: light: $U < 2 \text{ V}$ light: $U < 2 \text{ V}$: dark: $U = 10 \text{ V} \dots < U_v$
Retention time (ET)	35 ms, non-volatile memory
Connection type	Male connector M12, 4-pin
Protection class	III
Circuit protection	U_v connections, reverse polarity protected Output Q short-circuit protected Interference pulse suppression
Enclosure rating	IP67
Weight	68 g
Housing material	Plastic, VISTAL®
Optics material	Plastic, PMMA

¹⁾ Limit values: DC 12 V (–10 %) ... DC 24 V (+20 %). Operation 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⁾ Total current of all Outputs.

Communication interface

Communication interface	-
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Ambient data

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

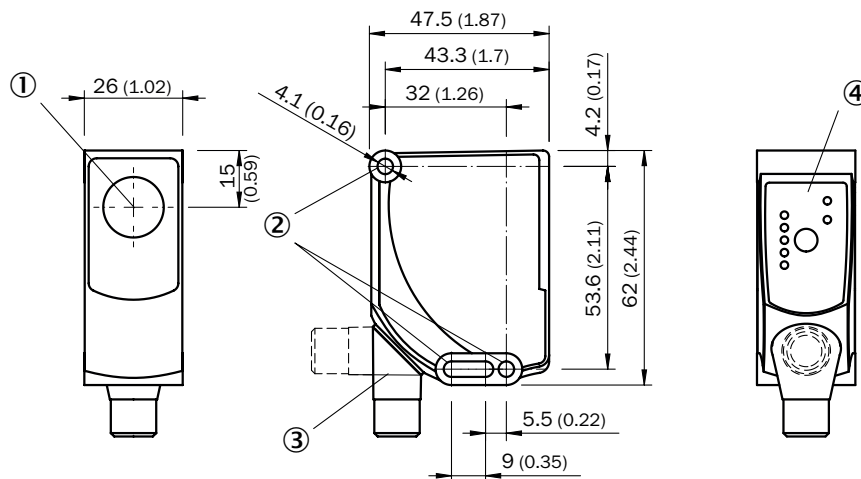
Classifications

ECI@ss 5.0	27270906
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ECl@ss 5.1.4	27270906
ECl@ss 6.0	27270906
ECl@ss 6.2	27270906
ECl@ss 7.0	27270906
ECl@ss 8.0	27270906
ECl@ss 8.1	27270906
ECl@ss 9.0	27270906
ECl@ss 10.0	27270906
ECl@ss 11.0	27270906
ETIM 5.0	EC001820
ETIM 6.0	EC001820
ETIM 7.0	EC001820
UNSPSC 16.0901	39121528

Dimensional drawing (Dimensions in mm (inch))

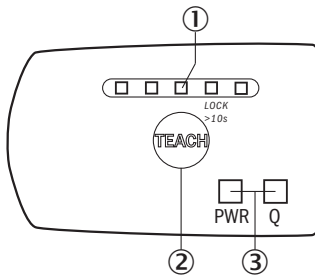
KTS Core easy teach



- ① Optical axis, sender
- ② Mounting hole, Ø 4.1 mm
- ③ Connector M12 (rotatable up to 180°)
- ④ Control panel

Adjustments

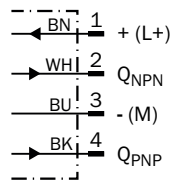
KTS Core easy teach



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

Connection diagram

Cd-086

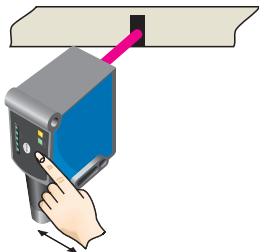


Concept of operation

KTS Core Easy Teach - Setting the switching threshold

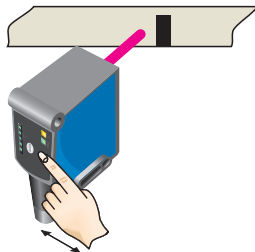
Suitable for manual positioning of the object to be detected, e.g. marks and background.

1. Position mark



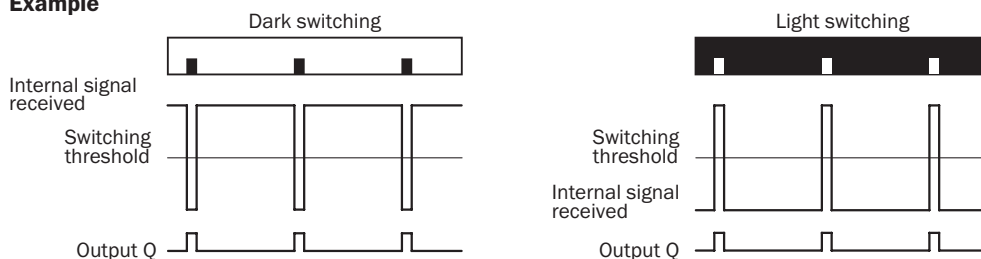
When setting the contrasts to be detected, the first LED (green) flashes in the bar graph. Press Teach-in pushbutton.

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.

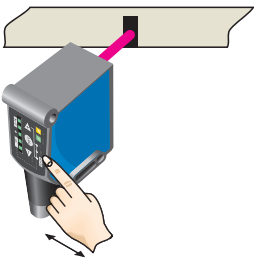
Keylock (activation and deactivation): Press and hold the Teach-in pushbutton > 10 s.

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)

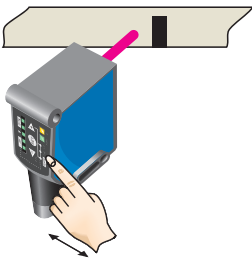
Suitable for manual positioning of the object to be detected, e.g. marks and background.

1. Position mark



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

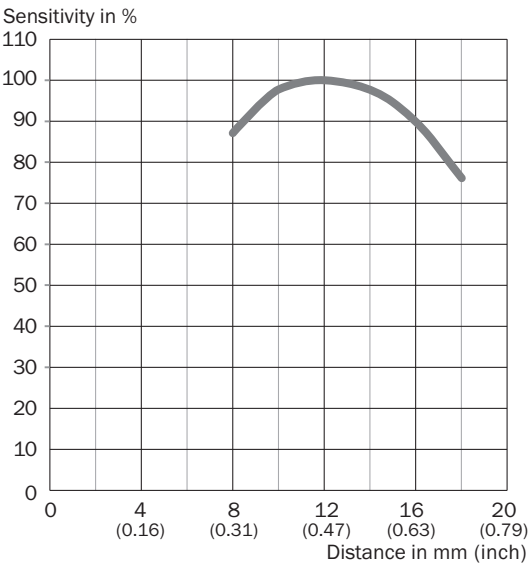
2. Position background



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

KTS Core



Recommended accessories

Other models and accessories → www.sick.com/KTS_Core

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

	Brief description	Type	Part no.
	Mounting bar, straight, 200 mm, steel, steel, zinc coated, without mounting hardware	BEF-MS12G-A	4056054
	Mounting bar, L-shaped, 150 mm x 150 mm, steel, steel, zinc coated, without mounting hardware	BEF-MS12L-A	4056052
Plug connectors and cables			
	Head A: female connector, M12, 4-pin, straight, A-coded Head B: Flying leads Cable: Sensor/actuator cable, PVC, unshielded, 5 m	YF2A14-050VB3XLEAX	2096235
	Head A: male connector, M12, 4-pin, straight Head B: - Cable: unshielded	STE-1204-G	6009932

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.”

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