Product data sheet

KTS-WS41141142ZZZZ

KTS

CONTRAST SENSORS

SICK
Sensor Intelligence.

Illustration may differ

Ordering information

Type	Part no.
KTS-WS41141142ZZZZ	1221031

Other models and accessories ➜ www.sick.com/KTS

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	Middle
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
Setting the key lock	Standard
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 [5]
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 [6]
Retention time (ET)	35 ms, non-volatile memory
Protection class	III
Circuit protection	U_V connections, reverse polarity protected Output Q short-circuit protected Interference pulse suppression
Enclosure rating	IP67

[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] Signal transit time with resistive load.
[6] Total current of all Outputs.

Mechanics

Housing material	VISTAL®
Optics material	COP
Connection type	Male connector M12, 4-pin
Weight	68 g

Ambient data

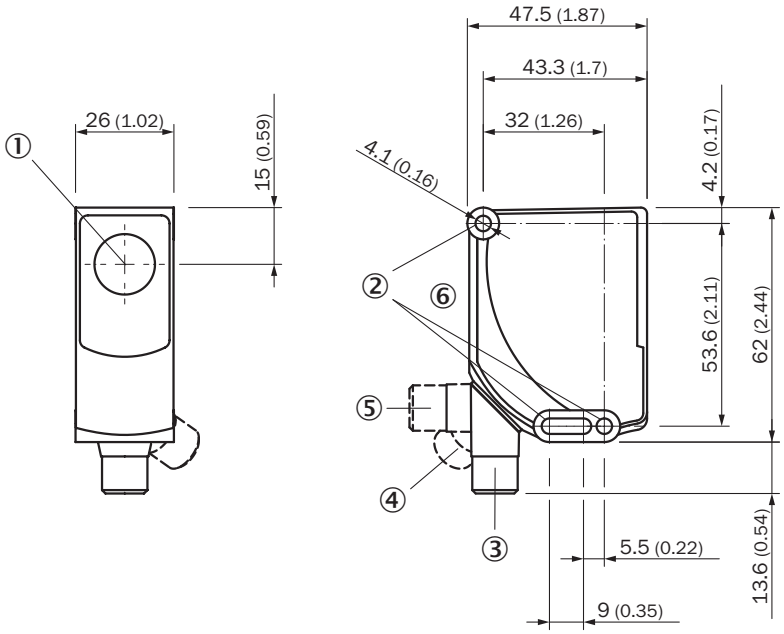
Ambient operating temperature	–20 °C ... +60 °C
Ambient temperature, storage	–25 °C ... +75 °C
Shock load	According to IEC 60068-2-27 (30 g/11 ms)
UL File No.	E181493

Classifications

ECLASS 5.0	27270906
ECLASS 5.1.4	27270906
ECLASS 6.0	27270906
ECLASS 6.2	27270906
ECLASS 7.0	27270906
ECLASS 8.0	27270906
ECLASS 8.1	27270906
ECLASS 9.0	27270906

ECLASS 10.0	27270906
ECLASS 11.0	27270906
ECLASS 12.0	27270906
ETIM 5.0	EC001820
ETIM 6.0	EC001820
ETIM 7.0	EC001820
ETIM 8.0	EC001820
UNSPSC 16.0901	39121528

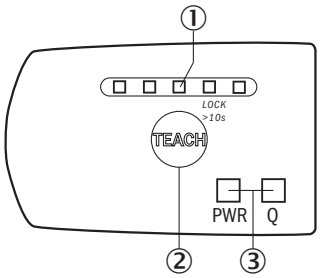
Dimensional drawing (Dimensions in mm (inch))



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

Adjustments

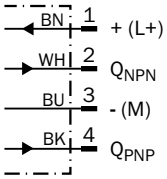
Display and adjustment elements



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

Connection diagram

Cd-086

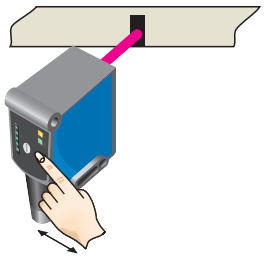


Concept of operation

KTS Core Easy Teach - Setting the switching threshold

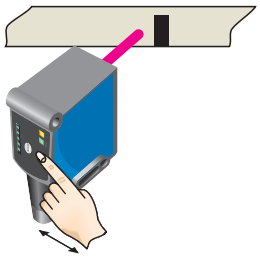
Suitable for manual positioning of the object to be detected, e.g. marks and background.

1. Position mark



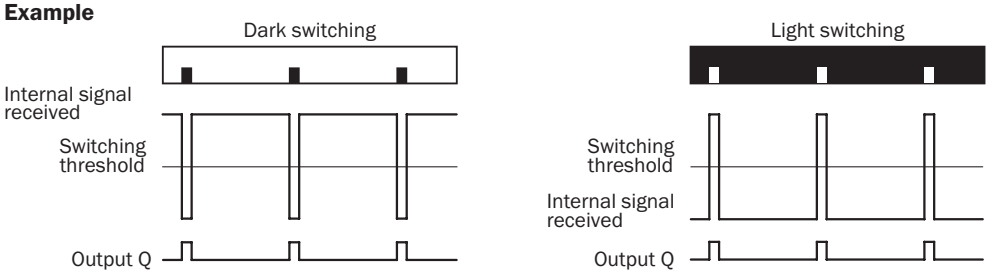
When setting the contrasts to be detected, the first LED (green) flashes in the bar graph.
Press Teach-in pushbutton.

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.

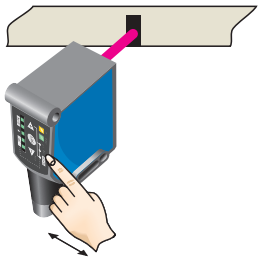
Keylock (activation and deactivation): Press and hold the Teach-in pushbutton > 10 s.

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)

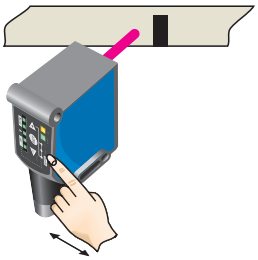
Suitable for manual positioning of the object to be detected, e.g. marks and background.

1. Position mark



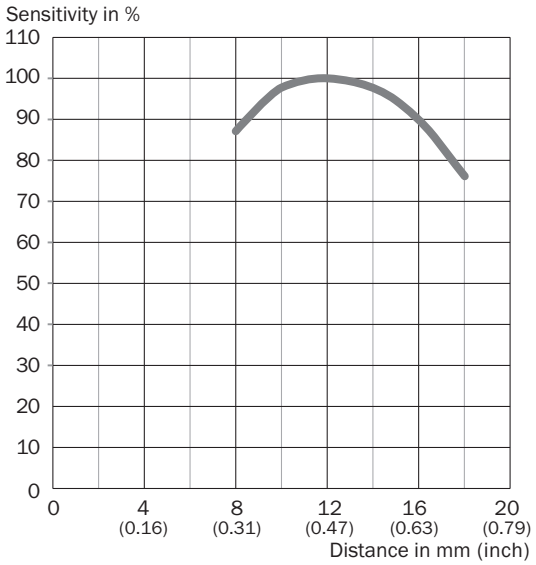
When setting the contrasts to be detected, the first LED (green) flashes in the bar graph. Press set button.

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



Recommended accessories

Other models and accessories ➜ www.sick.com/KTS

	Brief description	Type	Part no.
Universal bar clamp systems			
	• **Description:** Plate K for universal clamp bracket • **Material:** Steel • **Details:** Steel, zinc coated • **Items supplied:** Universal clamp (2022726), mounting hardware • **Usable for:** W11-2, W12-3, W14-2, W18-3, W23-2, W24-2, W27-3, W30, W32, W34, W36, PL50A, PL80A, P250, UC12, LUT3, KT2, KT5-2, KT8, CS8, DT2, DS30, DS40, W12-2 Laser, W16, W26, KT5	BEF-KHS-K01	2022718
Others			
	• **Connection type head A:** Female connector, M12, 4-pin, straight, A-coded • **Connection type head B:** Flying leads • **Signal type:** Sensor/actuator cable • **Cable:** 5 m, 4-wire, PVC • **Description:** Sensor/actuator cable, unshielded • **Application:** Zones with chemicals, Uncontaminated zones	YF2A14-050VB3XLEAX	2096235
	• **Connection type head A:** Male connector, M12, 4-pin, straight, A-coded • **Description:** Unshielded • **Connection systems:** Screw-type terminals • **Permitted cross-section:** ≤ 0.75 mm²	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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