KTS-WB9134115AZZZZZZSZZZZZZZZ1

KTS

CONTRAST SENSORS

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CONTRAST SENSORS

Ordering information

Type	part no.
KTS-WB9134115AZZZZZZSZZZZZZZZ1	1222250

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

Illustration may differ

Detailed technical data

Features

Parameter presettings	None
Special applications	High Sensitivity
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	0.9 mm x 3.9 mm
Light spot direction	Vertical [2]
Receiving filters	None
Wave length	470 nm, 525 nm, 625 nm
Sensing distance	≤ 40 mm [3]
Sensing distance tolerance	± 3 mm
Teach-in mode	1-point teach-in, 2-point teach-in, teach-in dynamic, auto mode
Output function	Light/dark switching
Delay time	Adjustable
Special features	Long sensing distance

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

[2] In relation to long side of housing.

[3] Sensing distance from leading edge of lens.

Setting the key lock	Standard
Delivery status	2-point teach-in

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

[2] In relation to long side of housing.

[3] Sensing distance from leading edge of lens.

Interfaces

IO-Link	✓ , V1.1, IO-Link
VendorID	26
DeviceID HEX	8000A4
DeviceID DEC	8388772
Process data structure	Bit 0 = switching signal Q_{L1} Bit 1 = empty Bit 2 = Quality of Run Alarm Bit 3 ... 5 = Emission Color Bit 6 ... 15 = Measurment Value Emission Color
Digital output	Q_1, Q_2
Number	2
Digital input	In_1, In_2
Number	2

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] [5]
Response time	20 µs
Jitter	10 µs [6]
Switching output	Push-pull: PNP/NPN
Switching output (voltage)	Push-pull: PNP/NPN HIGH = U_V - 3 V/LOW ≤ 3 V
Output current $I_{max.}$	100 mA [7]
Input, teach-in (ET)	Teach: U = 10 V ... < V_S
Input, blanking input (AT)	Blanked: U = 10 V ... < Uv
Input, fine/coarse (F/C)	Coarse: U = 10 V ... < Uv
Input, light/dark (L/D)	Light: U = 10 V ... < Uv
Retention time (ET)	25 ms, non-volatile memory
Time delay	None

[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] 1-point teach-in (color mode): 8 kHz.

[6] 1-point teach-in (color mode): 30 µs.

[7] Total current of all Outputs.

Protection class	III
Circuit protection	U_V connections, reverse polarity protected Output Q short-circuit protected Interference pulse suppression
Connection type	
	Plug, M12, 5-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] 1-point teach-in (color mode): 8 kHz.

[6] 1-point teach-in (color mode): 30 µs.

[7] Total current of all Outputs.

Mechanics

Housing material	VISTAL®
Optics material	Glass
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

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

Certificates

EU declaration of conformity	✓

| UK declaration of conformity | ✓ |
ACMA declaration of conformity	✓
Moroccan declaration of conformity	✓
China RoHS	✓
cULus certificate	✓
IO-Link certificate	✓
Photobiological safety (IEC EN 62471)	✓
Information according to Art. 3 of Data Act (Regulation EU 2023/2854)	✓

## Dimensional drawing Sensing distance from leading edge of lens
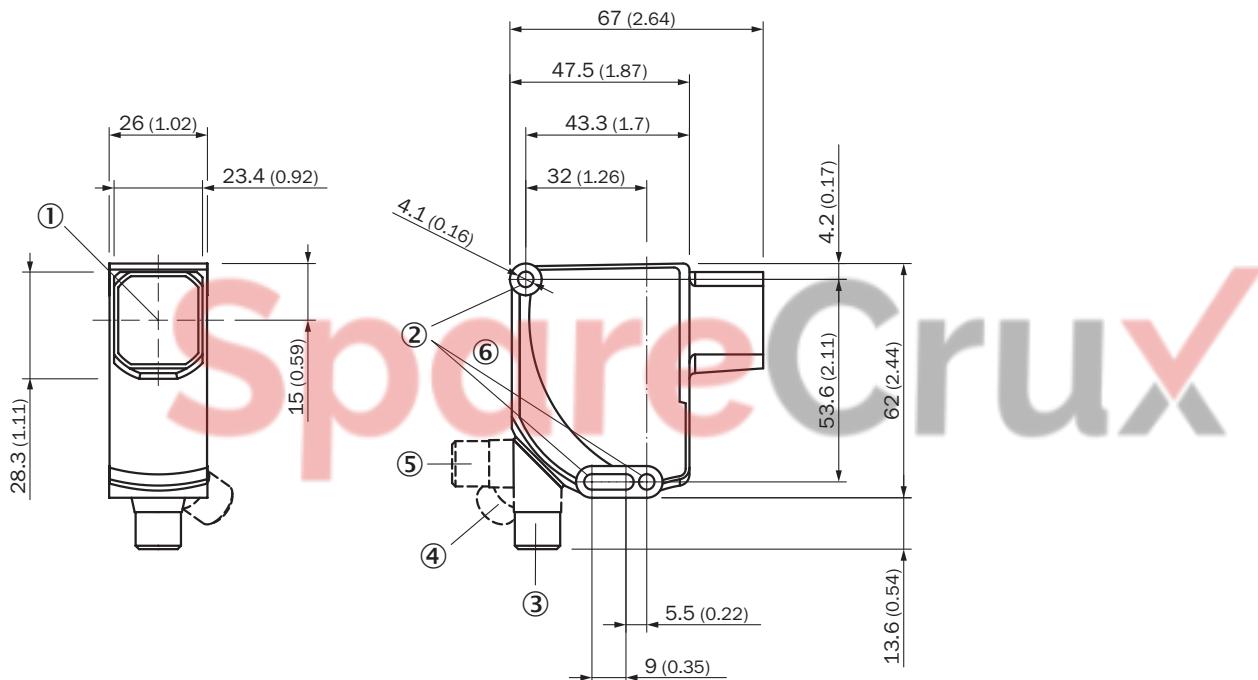
Dimensions in mm (inch)
① Optical axis
② fixing hole
③ M12 male connector, delivery state
④ M12 male connector, end stop right
⑤ M12 male connector, end stop left
⑥ display and adjustment elements

display and adjustment elements
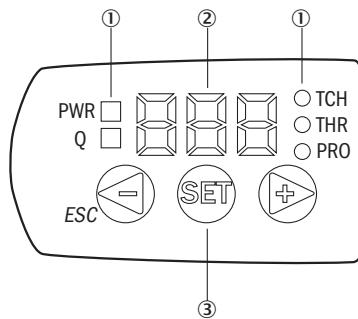
① LED status indicator
② Display
③ Navigation buttons

Connection diagram Cd-387

BN	1	+(L+)
WH	2	Q/IN1
BU	3	-(M)
BK	4	Q/C
GY	5	IN2
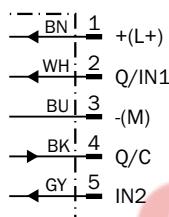
## KTS/KTX Prime - setting the switching threshold (2-point teach-in)

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

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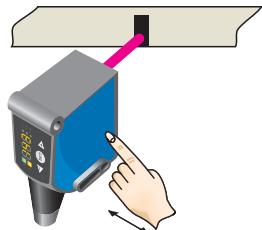
When setting the contrasts to be detected, "1st" flashes. Press set button.

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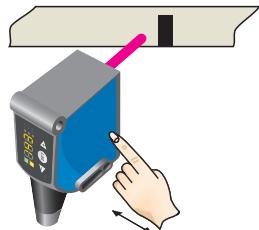
When setting the contrasts to be detected, "2nd" flashes. Press set button. The Quality of Teach is displayed.

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

Suitable for teaching in moving objects.

1. Position background

2. Move at least the mark and background using the light spot
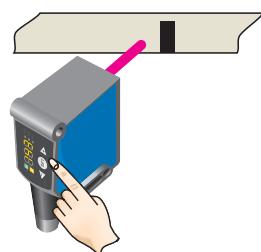
Press the Set pushbutton to start the teach-in process.
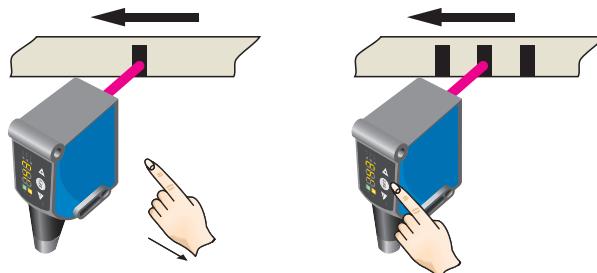
The display lights up during repeat length detection (- - -).
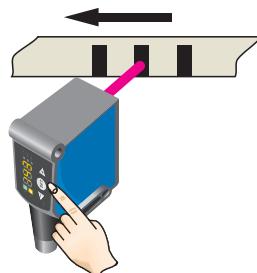
Press the Set pushbutton to end the teach-in process.
The Quality of Teach is displayed.

Example

| Dark switching | Light switching |

Internal signal received

Switching threshold

Output Q

Switching threshold

Internal signal received
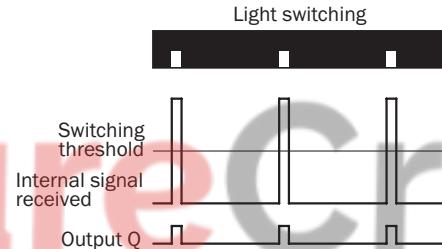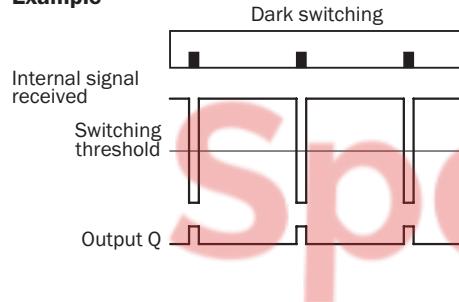
Output Q

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.

Sensing distance Sensing distance 40 mm

Sensitivity in %

Distance in mm (inch)
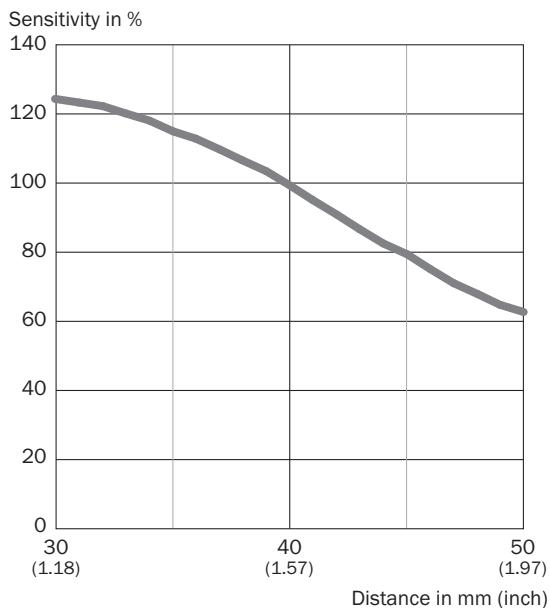
Recommended accessories

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

	Brief description	Type	part no.
Mounting 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
connectors and cables			
	• **Connection type head A:** Male connector, M12, 5-pin, straight, A-coded • **Description:** Unshielded • **Connection systems:** Screw-type terminals • **Permitted cross-section:** ≤ 0.75 mm² • **Note:** For field bus technology	STE-1205-G	6022083
	• **Connection type head A:** Female connector, M12, 5-pin, straight, A-coded • **Connection type head B:** Flying leads • **Signal type:** Sensor/actuator cable • **Cable:** 5 m, 5-wire, PVC • **Description:** Sensor/actuator cable, unshielded • **Application:** Zones with chemicals, Uncontaminated zones	YF2A15-050VB5XLEAX	2096240

	Brief description	Type	part no.
network devices			
		SIG200-0A0412200	1089794
		SIG200-0A0G12200	1102605

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.

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