Data sheet

KTS-WB9114114IZZZZ

KTS

CONTRAST SENSORS

SICK
Sensor Intelligence.

Illustration may differ

Ordering information

Type	part no.
KTS-WB9114114IZZZZ	1078851

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

Detailed technical data

Features

Special applications	Standard
Device type	Standard
Dimensions (W x H x D)	26 mm x 62 mm x 47.5 mm
Sensing distance	≤ 13 mm
Sensing distance tolerance	± 5 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	0.9 mm x 3.8 mm
Light spot direction	Vertical [2]
Receiving filters	None
Teach-in mode	1-point teach-in, 2-point teach-in, teach-in dynamic, auto mode
Output function	Light/dark switching
Delay time	Adjustable
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.

Interfaces

Analog	✓ , Analog output (current)
Analog output	Q_A
Number	1
Type	Current output
Current	0 mA ... 20 mA
Digital output	Q_1
Number	1

Electronics

Supply voltage	10.8 V DC ... 28.8 V DC [1]
Ripple	≤ 5 V_{pp} [2]
Current consumption	< 100 mA [3]
Switching frequency	50 kHz [4] [5]
Response time	10 µs [6] [7]
Jitter	5 µs [8]
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 [9]
Retention time (ET)	25 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] 1-point teach-in (color mode): 16 kHz.
[6] Signal transit time with resistive load.
[7] 1-point teach-in (color mode): 30 µs.
[8] 1-point teach-in (color mode): 15 µs.
[9] 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

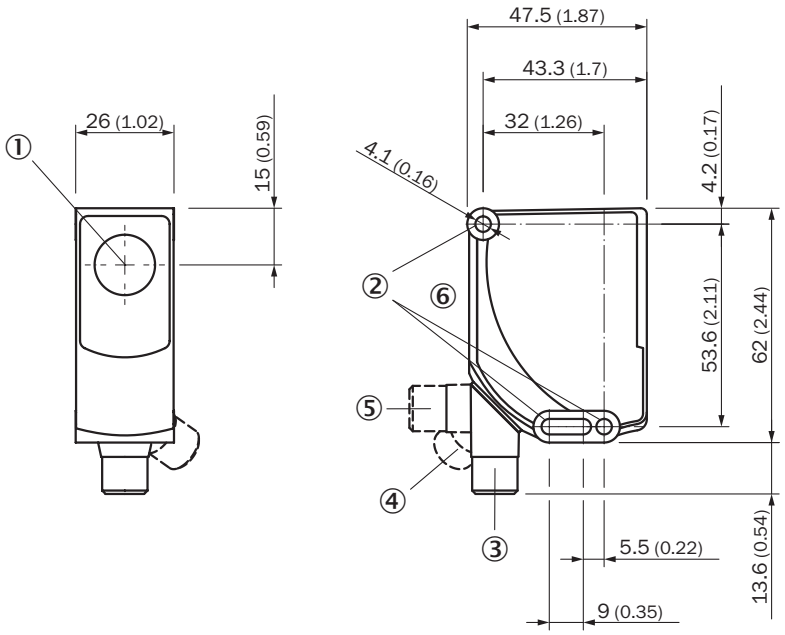
Certificates

EU declaration of conformity	✓
UK declaration of conformity	✓
ACMA declaration of conformity	✓
Moroccan declaration of conformity	✓
China-RoHS	✓
cULus certificate	✓
Photobiological safety (IEC EN 62471)	✓

Classifications

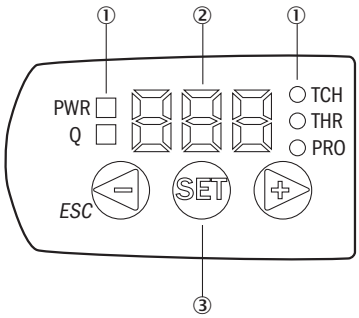
ECLASS 5.0	27270906
ECLASS 5.1.4	27270906
ECLASS 6.0	27270906
ECLASS 6.2	27270906
ECLASS 7.0	27270906
ECLASS 8.0	27270906
ECLASS 8.1	27270906
ECLASS 9.0	27270906
ECLASS 10.0	27270906
ECLASS 11.0	27270906
ECLASS 12.0	27270906
ETIM 5.0	EC001820
ETIM 6.0	EC001820
ETIM 7.0	EC001820
ETIM 8.0	EC001820
UNSPSC 16.0901	39121528

Dimensional drawing



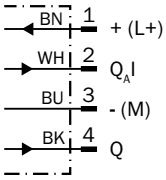
Dimensions in mm (inch)
① Optical axis
② fixing hole
③ M12 male connector, delivery state
④ M12 male connector, end stop right
⑤ M12 male connector, end stop left
⑥ display and adjustment elements

display and adjustment elements



① LED status indicator
② Display
③ Navigation buttons

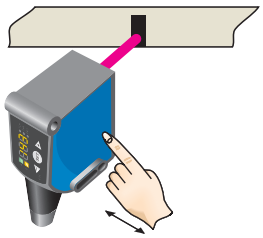
Connection diagram Cd-383



KTS/KTX Prime - setting the switching threshold (2-point teach-in)

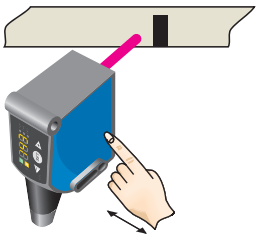
Suitable for manual positioning of the object to be detected, e.g. marks and background.

1. Position mark



When setting the contrasts to be detected, “1st” flashes.
Press set button.

2. Position background

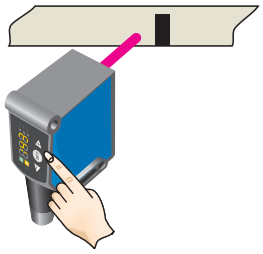


When setting the contrasts to be detected, “2nd” flashes. Press set button.
The Quality of Teach is displayed.

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

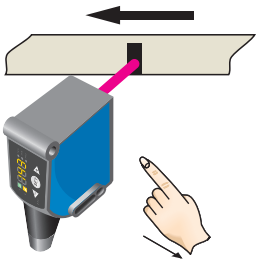
Suitable for teaching in moving objects.

1. Position background

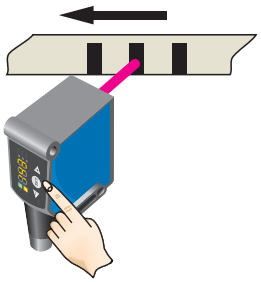


Press the Set pushbutton to start the teach-in process.

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

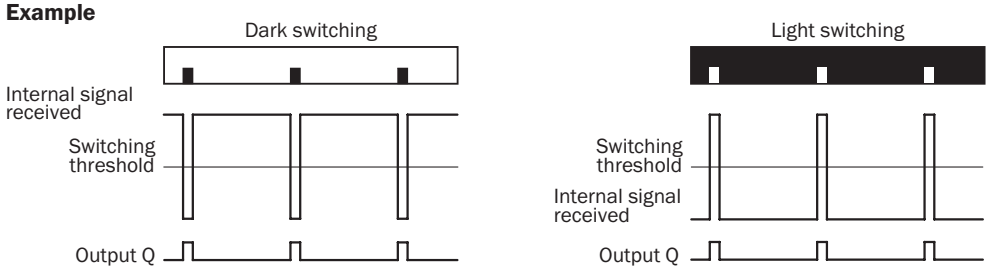


The display lights up during repeat length detection (- - -).



Press the Set pushbutton to end the teach-in process.
The Quality of Teach is displayed.

Example



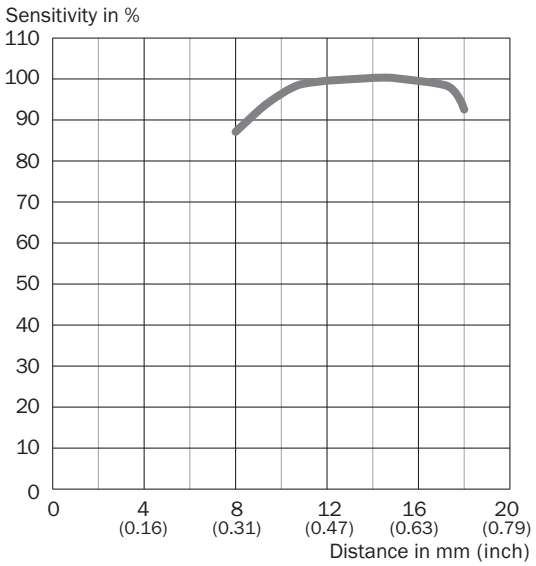
Switching characteristics

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 13 mm, light spot direction horizontal/vertical



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:** 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

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