Data sheet

KTS-WB91141152ZZZZ

KTS

CONTRAST SENSORS

SICK
Sensor Intelligence.

Illustration may differ

Ordering information

Type	part no.
KTS-WB91141152ZZZZ	1081730

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

Detailed technical data

Features

Parameter presettings	None
Special applications	High Precision
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 3.8 mm
Light spot direction	Vertical [2]
Receiving filters	None
Wave length	470 nm, 525 nm, 625 nm
Sensing distance	≤ 13 mm
Sensing distance tolerance	± 5 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
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	70 kHz [4] [5]
Response time	3 µs
Jitter	3 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
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): 23 kHz.
[6] 1-point teach-in (color mode): 9 µs.
[7] 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

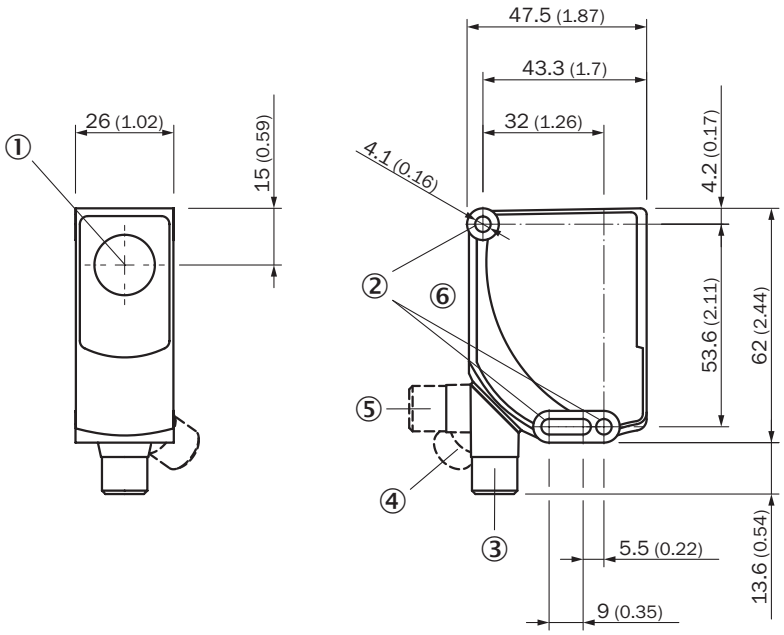
EU declaration of conformity	✓
UK declaration of conformity	✓

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

Classifications

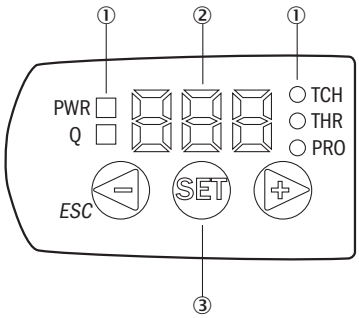
ECLASS 5.0	27270906
ECLASS 5.1.4	27270906
ECLASS 6.0	27270906
ECLASS 6.2	27270906
ECLASS 7.0	27270906
ECLASS 8.0	27270906
ECLASS 8.1	27270906
ECLASS 9.0	27270906
ECLASS 10.0	27270906
ECLASS 11.0	27270906
ECLASS 12.0	27270906
ETIM 5.0	EC001820
ETIM 6.0	EC001820
ETIM 7.0	EC001820
ETIM 8.0	EC001820
UNSPSC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

Dimensional drawing



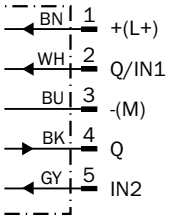
Dimensions in mm (inch)
① Optical axis
② fixing hole
③ M12 male connector, delivery state
④ M12 male connector, end stop right
⑤ M12 male connector, end stop left
⑥ display and adjustment elements

display and adjustment elements



① LED status indicator
② Display
③ Navigation buttons

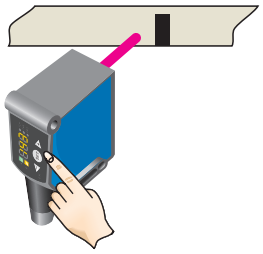
Connection diagram Cd-382



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

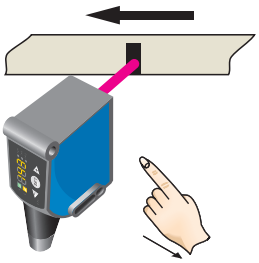
Suitable for teaching in moving objects.

1. Position background

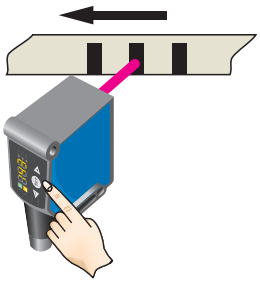


Press the Set pushbutton to start the teach-in process.

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

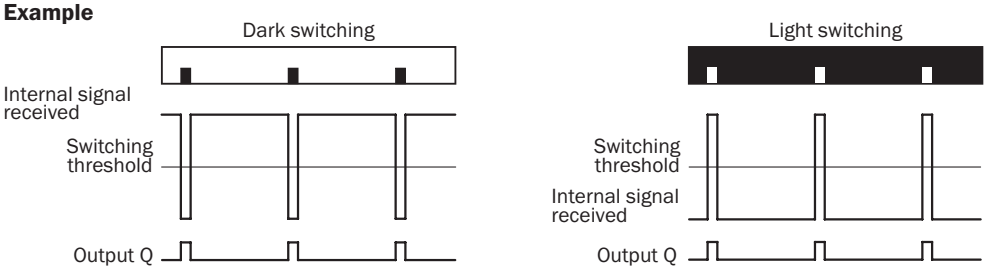


The display lights up during repeat length detection (- - -).



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.

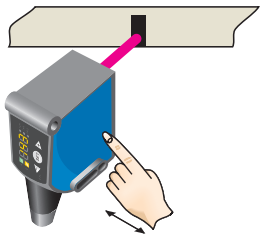
Keylock (activation and deactivation): Press and hold the “+” pushbutton > 10 s.

The Q-LED (yellow) flashes and the “Err” error message appears on the display.

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

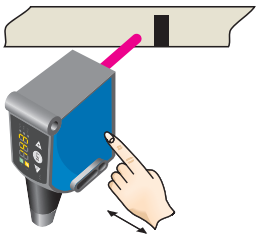
Suitable for manual positioning of the object to be detected, e.g. marks and background.

1. Position mark



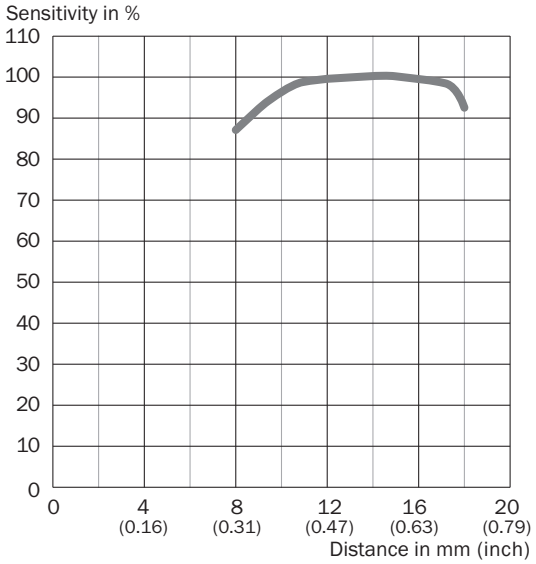
When setting the contrasts to be detected, “1st” flashes.
Press set button.

2. Position background



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

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			
	• **Description:** Sensor/actuator cable, unshielded • **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 • **Application:** Uncontaminated zones, Zones with chemicals	YF2A15-050VB5XLEAX	2096240
	• **Description:** Unshielded • **Connection type head A:** Male connector, M12, 5-pin, straight, A-coded • **Connection systems:** Screw-type terminals • **Permitted cross-section:** ≤ 0.75 mm² • **Note:** For field bus technology	STE-1205-G	6022083

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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