Online data sheet



KTS-WB9114115AA90Z

KTS Prime

CONTRAST SENSORS

SICK
Sensor Intelligence.



Ordering information

Type	Part no.
KTS-WB9114115AA90Z	1078131

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

Detailed technical data

Features

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 (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	0.9 mm x 3.8 mm
Light spot direction	Vertical [2]
Teach-in mode	1-point teach-in, 2-point teach-in, dynamic Teach-in, auto mode
Output function	Light/dark switching
Delay time	Adjustable
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	≤ 5 V_{pp} [2]
Power consumption	< 100 mA [3]
Switching frequency	50 kHz [4]
Response time	10 µs [5]
Jitter	5 µs
Switching output	PUSH/PULL
Switching output (voltage)	Push/Pull: HIGH = V_S - 3 V / LOW ≤ 3 V
Output current $I_{max.}$	100 mA [6]
Input, teach-in (ET)	Teach: U = 10 V ... < V_S: Run: U < 2 V
Input, blanking input (AT)	Blanked: U = 10 V ... < Uv: free-running: U < 2 V
Input, fine/coarse (F/C)	Coarse: U = 10 V ... < Uv: fine: U < 2 V
Input, light/dark (L/D)	Light: U = 10 V ... < Uv: light: U < 2 V
Retention time (ET)	25 ms, non-volatile memory
Connection type	Male connector M12, 5-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	VISTAL®

[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.

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

ECl@ss 5.0	27270906
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

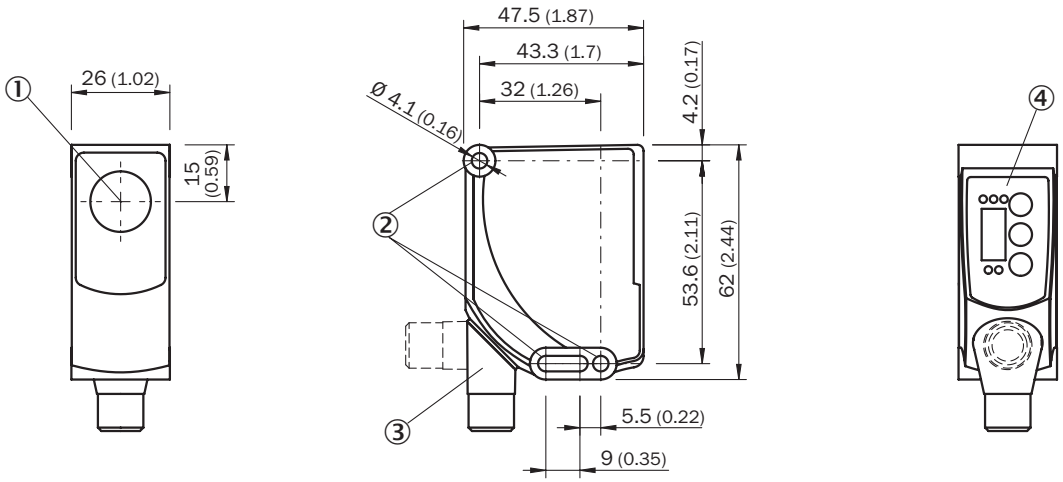
ECl@ss 9.0	27270906
ETIM 5.0	EC001820
ETIM 6.0	EC001820
UNSPSC 16.0901	39121528

Communication interface

Communication interface	IO-Link V1.1
Communication Interface detail	COM2 (38,4 kBaud)
Cycle time	2.3 ms
Process data length	16 Bit
Process data structure A	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
Process data structure B	Bit 0 = switching signal Q_{L1} Bit 1 = switching signal Q_{L2} Bit 2 ... 15 = time stamp

Dimensional drawing (Dimensions in mm (inch))

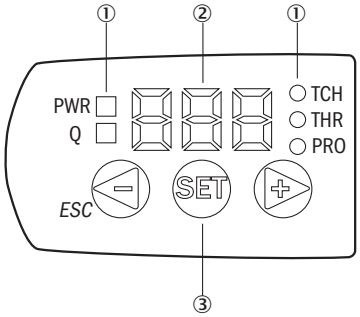
KTS Prime



① Optical axis sender
② Fixing hole
③ Connector M12 (rotatable up to 180°)
④ Control panel

Adjustments

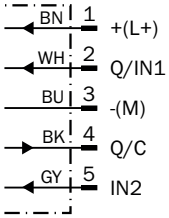
KTS/KTX Prime



① LED status indicator
② Display
③ Control panel

Connection diagram

cd-387

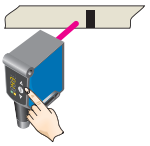


Concept of operation

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

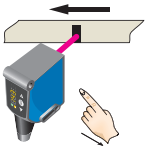
Suitable for teaching in moving objects.

1. Position background

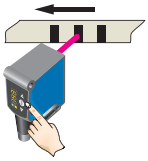


Press the Set pushbutton to start the teach-in process.

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

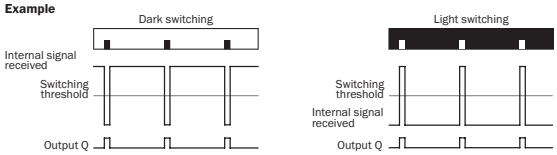


The display lights up during repeat length detection (- - -).



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.

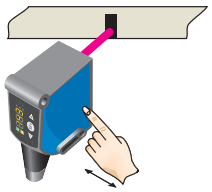
Keylock (activation and deactivation): Press and hold the “+” pushbutton > 10 s.

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)

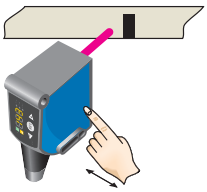
Suitable for manual positioning of the object to be detected, e.g. marks and background.

1. Position mark



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

2. Position background

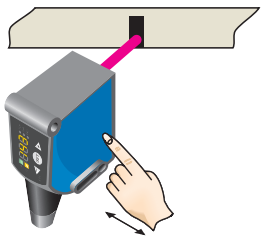


When setting the contrasts to be detected, “2nd” flashes. Press set button.
The Quality of Teach is displayed.

KTS/KTX Prime - Setting the switching threshold (color mode)

Suitable for teaching in color properties.

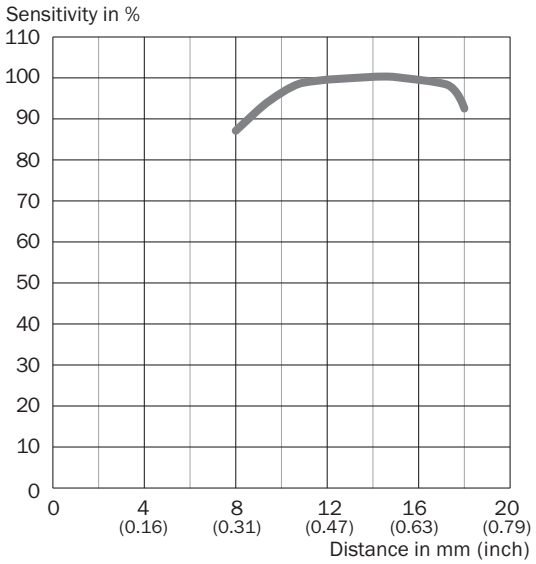
1. Position mark/color property



When detecting the contrast or color to be detected, “1st” flashes.
Press set button. The Quality of Teach-in is displayed.

Characteristic curve

Sensing distance 13 mm, light spot direction horizontal/vertical



Recommended accessories

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

	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
	Universal clamp bracket for rod mounting, steel, zinc coated, without mounting hardware	BEF-KHS-KH1	2022726
	Mounting bar, straight, 200 mm, steel, steel, zinc coated, without mounting hardware	BEF-MS12G-A	4056054
	Mounting bar, straight, 300 mm, steel, steel, zinc coated, without mounting hardware	BEF-MS12G-B	4056055
	Mounting bar, L-shaped, 150 mm x 150 mm, steel, steel, zinc coated, without mounting hardware	BEF-MS12L-A	4056052
	Mounting bar, L-shaped, 250 x 250 mm, steel, steel, zinc coated, without mounting hardware	BEF-MS12L-B	4056053

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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.

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For us, that is “Sensor Intelligence.”

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