Data sheet

KT10W-2N2115

KT10

CONTRAST SENSORS

SICK
Sensor Intelligence.

Illustration may differ

Ordering information

Type	part no.
KT10W-2N2115	1029071

Other models and accessories ➜ www.sick.com/KT10

Detailed technical data

Features

Dimensions (W x H x D)	30.4 mm x 53 mm x 80 mm
Sensing distance	≤ 10 mm [1]
Sensing distance tolerance	± 3 mm
Housing design	Rectangular
Light source	LED, RGB [2]
Wave length	640 nm, 525 nm, 470 nm
Light emission	Long and short side of housing, exchangeable
Light spot size	0.8 mm x 4 mm
Light spot direction	Horizontal [3]
Adjustment	Teach-in button
Teach-in mode	Static 2-point teach-in Dynamic teach-in (min/max)
Function	Automatic drift correction

[1] From leading edge of lens.
[2] Average service life: 100,000 h at T_U = +25 °C.
[3] In relation to long side of housing.

Electronics

Supply voltage	10 V DC ... 30 V DC [1]
Ripple	≤ 5 V_{pp} [2]
Current consumption	< 120 mA [3]
Switching frequency	25 kHz [4]

[1] Limit values when operated 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] AT > 200 µs.
[7] Reference voltage DC 50 V.

Response time	20 µs [5]
Jitter	< 10 µs
Switching output	NPN
Switching output (voltage)	NPN: HIGH = approx. U_V / LOW ≤ 2 V
Output current $I_{max.}$	100 mA
Input, teach-in (ET)	NPN Teach: U < 2 V Run: U = 10 V ... < U_V
Input, blanking input (AT)	NPN Blanked: U < 2 V Free-running: U > 10 V ... < Uv [6]
Retention time (ET)	25 ms, non-volatile memory
Time delay	20 ms, adjustable
Protection class	II [7]
Circuit protection	U_V connections, reverse polarity protected Output Q short-circuit protected Interference pulse suppression Outputs overcurrent and short-circuit protected

[1] Limit values when operated 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] AT > 200 µs.
[7] Reference voltage DC 50 V.

Mechanics

Housing material	Zinc diecast
Connection type	Plug, M12, 5-pin
Weight	400 g

Ambient data

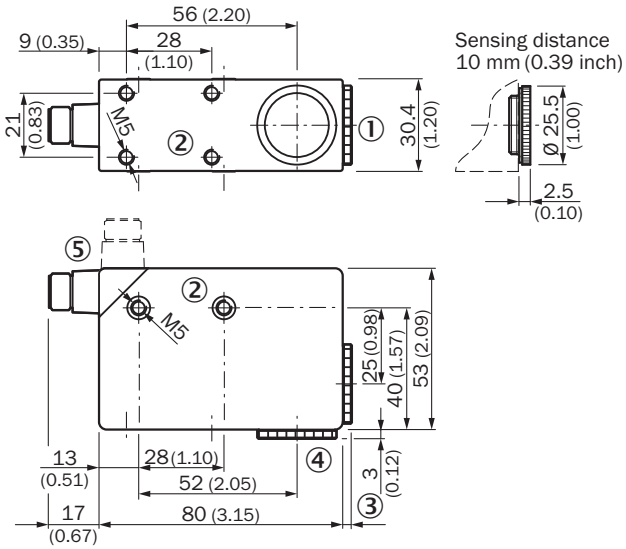
Ambient operating temperature	–10 °C ... +55 °C
Ambient temperature, storage	–10 °C ... +75 °C
Shock load	According to IEC 60068
Enclosure rating	IP67
UL File No.	NRKH.E181493 & NRKH7.E181493

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

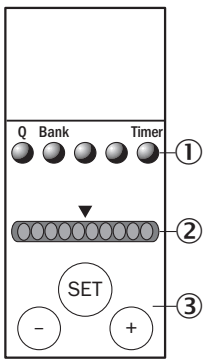
ECLASS 10.0	27270906
ECLASS 11.0	27270906
ECLASS 12.0	27270906
ETIM 5.0	EC001820
ETIM 6.0	EC001820
ETIM 7.0	EC001820
ETIM 8.0	EC001820
UNSPSC 16.0901	39121528

Dimensional drawing



Dimensions in mm (inch)
① lens (light emission)
② M5 threaded mounting hole, 5.5 mm deep
③ See dimensional drawing of lens
④ Blind screw can be replaced by pos. 1
⑤ Connector M12 (rotatable up to 90°)

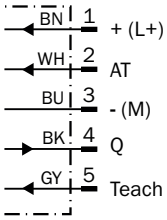
Adjustments



① Function signal indicators (yellow)

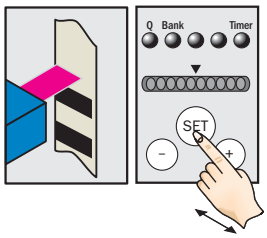
② Bar graph (green)
③ teach-in pushbutton / +/– pushbutton

Connection diagram Cd-313



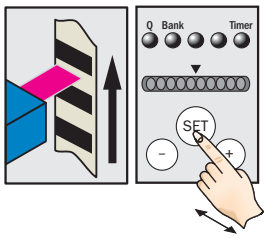
Concept of operation Teach-in dynamic

1. Position background

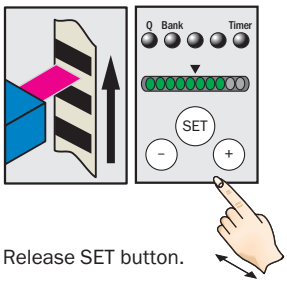


Press and hold SET button.
Emitted light turns white.

2. Move at least one repeat length using the light spot



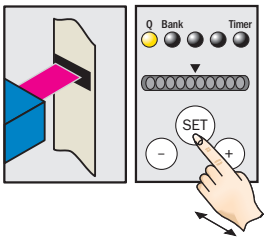
Hold down SET button.



Release SET button.

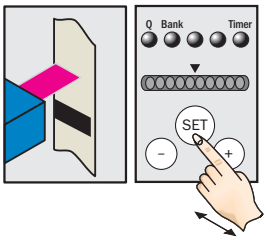
Concept of operation Teach-in static

1. Position mark



Press and hold SET button > 1 s.
Red emitted light and yellow LED flash.

2. Position background

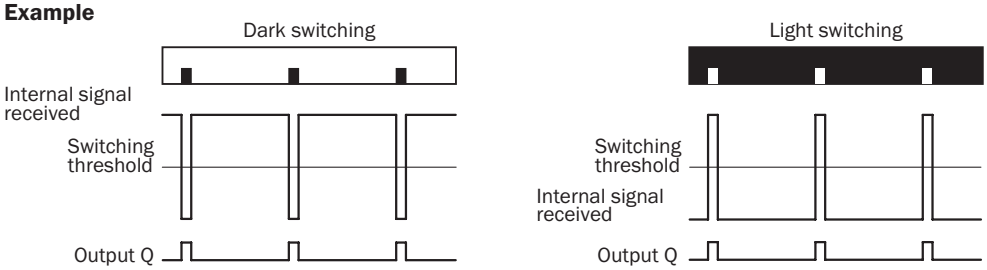


Press and hold SET button > 1 s.
Yellow LED goes out.
Optimum emitted light is selected.

Note

The bar display visualizes the detection reliability during teach-in. The more LEDs that illuminate, the better the teach-in:
1 LED illuminates = operation not reliable – lowest contrast difference
≤ 4 LEDs illuminate = operation OK – sufficient contrast difference
> 4 LEDs illuminate = reliable operation – high contrast difference

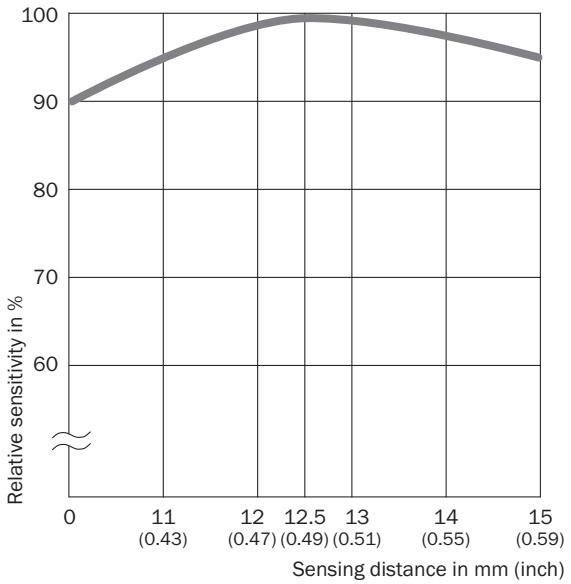
Example



Switching characteristics

Light/dark setting is defined using teach-in sequence.
The switching threshold is set in the center between the background and the mark.
Teach-in and the light/dark setting can also be configured using an external control signal.

Sensing distance



Recommended accessories

Other models and accessories ➜ www.sick.com/KT10

	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
	• **Description:** Plate G for universal clamp bracket • **Material:** Steel • **Details:** Steel, zinc coated • **Items supplied:** Universal clamp (2022726), mounting hardware • **Usable for:** W34, LUT3, KT5-2, KT10, CS8, W24-2, KT8, KT8	BEF-KHS-G01	2022464

	Brief description	Type	part no.
connectors and cables			
	• **Connection type head A:** Female connector, M12, 5-pin, straight, A-coded • **Description:** Unshielded • **Connection systems:** Screw-type terminals • **Permitted cross-section:** ≤ 0.75 mm²	DOS-1205-G	6009719
	• **Connection type head A:** Female connector, M12, 5-pin, angled, A-coded • **Description:** Unshielded • **Connection systems:** Screw-type terminals • **Permitted cross-section:** ≤ 0.75 mm²	DOS-1205-W	6009720
	• **Connection type head A:** Female connector, M12, 5-pin, angled, A-coded • **Connection type head B:** Flying leads • **Signal type:** Sensor/actuator cable • **Cable:** 2 m, 5-wire, PVC • **Description:** Sensor/actuator cable, unshielded • **Application:** Zones with chemicals, Uncontaminated zones	YG2A15-020VB5XLEAX	2096215
	• **Connection type head A:** Female connector, M12, 5-pin, angled, 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	YG2A15-050VB5XLEAX	2096216
	• **Connection type head A:** Female connector, M12, 5-pin, angled, A-coded • **Connection type head B:** Flying leads • **Signal type:** Sensor/actuator cable • **Cable:** 10 m, 5-wire, PVC • **Description:** Sensor/actuator cable, unshielded • **Application:** Zones with chemicals, Uncontaminated zones	YG2A15-100VB5XLEAX	2096217
	• **Connection type head A:** Female connector, M12, 5-pin, straight, A-coded • **Connection type head B:** Flying leads • **Signal type:** Sensor/actuator cable • **Cable:** 2 m, 5-wire, PVC • **Description:** Sensor/actuator cable, unshielded • **Application:** Zones with chemicals, Uncontaminated zones	YF2A15-020VB5XLEAX	2096239
	• **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
	• **Connection type head A:** Female connector, M12, 5-pin, straight, A-coded • **Connection type head B:** Flying leads • **Signal type:** Sensor/actuator cable • **Cable:** 10 m, 5-wire, PVC • **Description:** Sensor/actuator cable, unshielded • **Application:** Zones with chemicals, Uncontaminated zones	YF2A15-100VB5XLEAX	2096241
	• **Connection type head A:** Female connector, M12, 5-pin, angled, A-coded • **Connection type head B:** Flying leads • **Signal type:** Sensor/actuator cable • **Cable:** 0.6 m, 5-wire, PVC • **Description:** Sensor/actuator cable, unshielded • **Application:** Zones with chemicals, Uncontaminated zones	YG2A15-C60VB5XLEAX	2145573
	• **Connection type head A:** Female connector, M12, 5-pin, angled, A-coded • **Connection type head B:** Flying leads • **Signal type:** Sensor/actuator cable • **Cable:** 1 m, 5-wire, PVC • **Description:** Sensor/actuator cable, unshielded • **Application:** Zones with chemicals, Uncontaminated zones	YG2A15-010VB5XLEAX	2145574
	• **Connection type head A:** Female connector, M12, 5-pin, angled, A-coded • **Connection type head B:** Flying leads • **Signal type:** Sensor/actuator cable • **Cable:** 3 m, 5-wire, PVC • **Description:** Sensor/actuator cable, unshielded	YG2A15-030VB5XLEAX	2145575

	Brief description	Type	part no.
	• **Application:** Zones with chemicals, Uncontaminated zones		
	• **Connection type head A:** Female connector, M12, 5-pin, straight, A-coded • **Connection type head B:** Flying leads • **Signal type:** Sensor/actuator cable • **Cable:** 0.6 m, 5-wire, PVC • **Description:** Sensor/actuator cable, unshielded • **Application:** Zones with chemicals, Uncontaminated zones	YF2A15-C60VB5XLEAX	2145570
	• **Connection type head A:** Female connector, M12, 5-pin, straight, A-coded • **Connection type head B:** Flying leads • **Signal type:** Sensor/actuator cable • **Cable:** 3 m, 5-wire, PVC • **Description:** Sensor/actuator cable, unshielded • **Application:** Zones with chemicals, Uncontaminated zones	YF2A15-030VB5XLEAX	2145572

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.”

WORLDWIDE PRESENCE:

Contacts and other locations –www.sick.com