



DATA SHEET

KT10W-2P1115

KT10
Contrast sensors

SICK

Sensor Intelligence



Illustration may differ

CONTRAST SENSORS

KT10W-2P1115

ORDERING INFORMATION

Type	part no.
KT10W-2P1115	1028232

Further device versions and accessories at www.sick.com/KT10

DETAILED TECHNICAL DATA

FEATURES

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

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

²⁾ In relation to long side of housing.

³⁾ From leading edge of lens.

ELECTRONICS

Supply voltage	10 V DC ... 30 V DC ¹⁾
Ripple	$\leq 5 \text{ V}_{pp}$ ²⁾
Current consumption	$< 120 \text{ mA}$ ³⁾
Switching frequency	25 kHz ⁴⁾
Response time	20 μs
Jitter	$< 10 \mu\text{s}$
Switching output	PNP
Switching output (voltage)	PNP: HIGH = $U_v \leq 2 \text{ V}$ / LOW approx. 0 V
Output current I_{max}	100 mA
Input, teach-in (ET)	PNP Teach: $U = 10 \text{ V} \dots < U_v$ Run: $U < 2 \text{ V}$
Input, blanking input (AT)	PNP Blanked: $U > 10 \text{ V} \dots < U_v$ Free-running: $U < 2 \text{ V}$ ⁵⁾
Retention time (ET)	25 ms, non-volatile memory
Time delay	20 ms, adjustable
Protection class	II ⁶⁾
Circuit protection	U_v connections, reverse polarity protected Output Q short-circuit protected Interference pulse suppression Outputs overcurrent and short-circuit protected
Connection type	Plug, M12, 5-pin

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⁾ AT > 200 μs .

⁶⁾ Reference voltage DC 50 V.

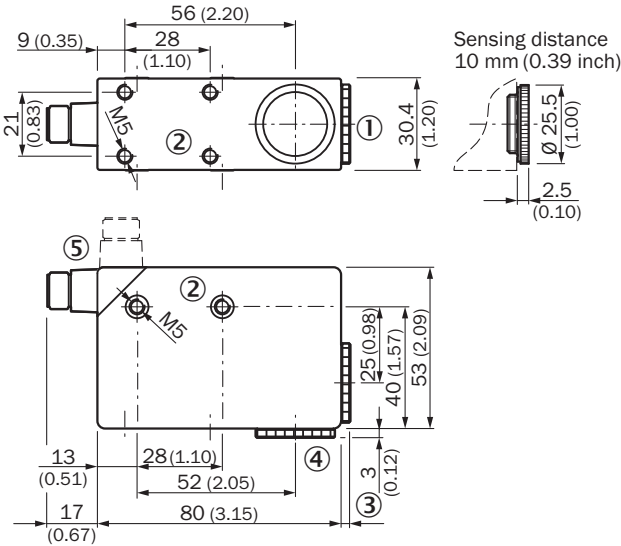
MECHANICS

Housing material	Zinc diecast
Weight	400 g

AMBIENT DATA

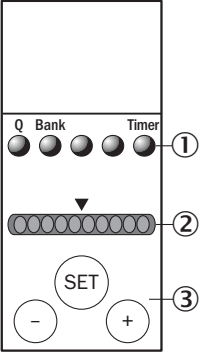
Ambient operating temperature	-10 °C ... +55 °C
Ambient temperature, storage	-10 °C ... +75 °C
Shock load	According to IEC 60068
Enclosure rating	IP67
UL File No.	NRKH.E181493 & NRKH7.E181493

DIMENSIONAL DRAWING



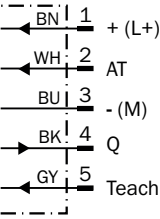
- Dimensions in mm (inch)
- ① lens (light emission)
 - ② M5 threaded mounting hole, 5.5 mm deep
 - ③ See dimensional drawing of lens
 - ④ Blind screw can be replaced by pos. 1
 - ⑤ Connector M12 (rotatable up to 90°)

ADJUSTMENTS



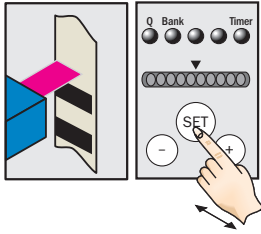
- ① Function signal indicators (yellow)
- ② Bar graph (green)
- ③ teach-in pushbutton / +/- pushbutton

CONNECTION DIAGRAM CD-313



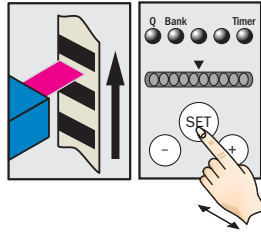
CONCEPT OF OPERATION TEACH-IN DYNAMIC

1. Position background

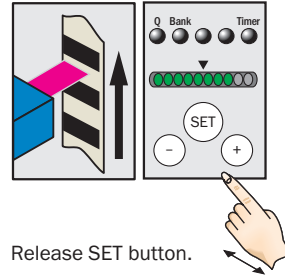


Press and hold SET button.
Emitted light turns white.

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



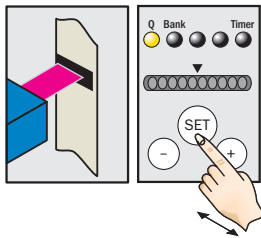
Hold down SET button.



Release SET button.

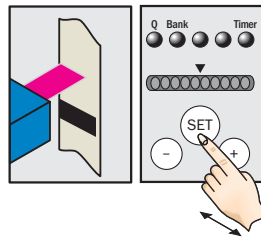
CONCEPT OF OPERATION TEACH-IN STATIC

1. Position mark



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

2. Position background



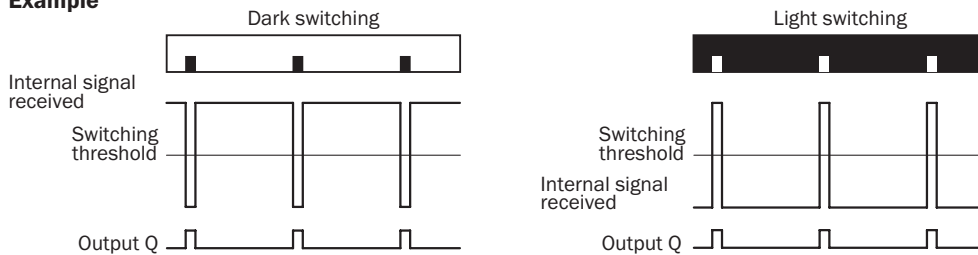
Press and hold SET button > 1 s.
Yellow LED goes out.
Optimum emitted light is selected.

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



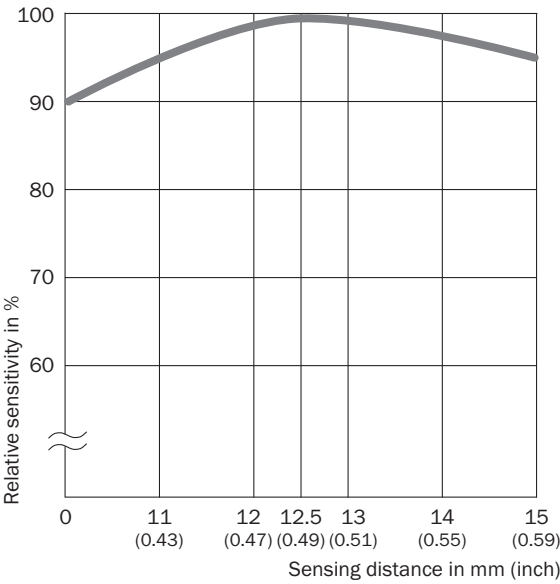
Switching characteristics

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



Further information as well as suitable accessories, example applications and downloads such as CAD dimensional models, operating instructions and software can be found at www.sick.com/1028232



SICK AG
WALDKIRCH
GERMANY
SICK.COM

SICK AT A GLANCE

SICK is a leading global technology company for intelligent sensors and integrated solutions in industrial automation. Our technologies set benchmarks, making your industrial processes more efficient, safer and more sustainable – both in logistics and manufacturing operations.

SICK combines sensor intelligence with industry expertise and certified consulting services. We provide the ideal foundation for scalable as well as tailor-made automation solutions and create added value along the entire value chain. Our close partnerships with our customers are more than just a promise: Together, we optimize productivity, improve quality, protect health and safety, and help build a sustainable future. All with empathy and trust.

Since 1946, we have been developing innovative technologies with passion and a pioneering spirit. With a global network in around 40 countries, SICK has a global presence and is always close by. The company's headquarters are located in Waldkirch near Freiburg, Germany. Our customers benefit from our understanding of both local and global requirements, which enables us to deliver tailor-made solutions

SICK
Sensor Intelligence