



KT8L-N3656

KT8

CONTRAST SENSORS

SICK
Sensor Intelligence.



Illustration may differ



Ordering information

Type	part no.
KT8L-N3656	1041263

Other models and accessories → www.sick.com/KT8

Detailed technical data

Features

Dimensions (W x H x D)	30.4 mm x 53 mm x 80 mm
Sensing distance	≤ 150 mm ¹⁾
Sensing distance tolerance	- 120 mm / + 650 mm
Housing design	Large
Light source	Laser, red ²⁾
Laser class	II (EN 60825-1:2014), IEC 60825-1:2014
Wave length	655 nm
Light emission	Long side of housing
Light spot size	Ø 0.3 mm ³⁾
Light spot direction	Round
Operating distance	30 mm ... 800 mm ⁴⁾
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: 50,000 h at T_U = +25 °C.

³⁾ At focal point = sensing distance 150 mm.

⁴⁾ With respect to black-white contrast 6 % / 90 %.

Electronics

Supply voltage	10 V DC ... 30 V DC ¹⁾
Ripple	$\leq 5 \text{ V}_{pp}$ ²⁾
Current consumption	$< 80 \text{ mA}$ ³⁾
Switching frequency	17 kHz ⁴⁾
Response time	30 μs ⁵⁾
Jitter	$< 15 \mu\text{s}$
Switching output	NPN
Switching output (voltage)	NPN: HIGH = approx. U_V / LOW $\leq 2 \text{ V}$
Analog output	0.3 mA ... 20 mA
Output current $I_{max.}$	100 mA
Input, teach-in (ET)	NPN Teach: $U < 2 \text{ V}$ Run: $U = 10 \text{ V} \dots < U_V$
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
Enclosure rating	IP67

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⁾ Reference voltage DC 50 V.

Mechanics

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

Ambient data

Ambient operating temperature	$-10 \text{ }^{\circ}\text{C} \dots +45 \text{ }^{\circ}\text{C}$
Ambient temperature, storage	$-10 \text{ }^{\circ}\text{C} \dots +75 \text{ }^{\circ}\text{C}$
Shock load	According to IEC 60068
UL File No.	242368, CDRH-conform

Certificates

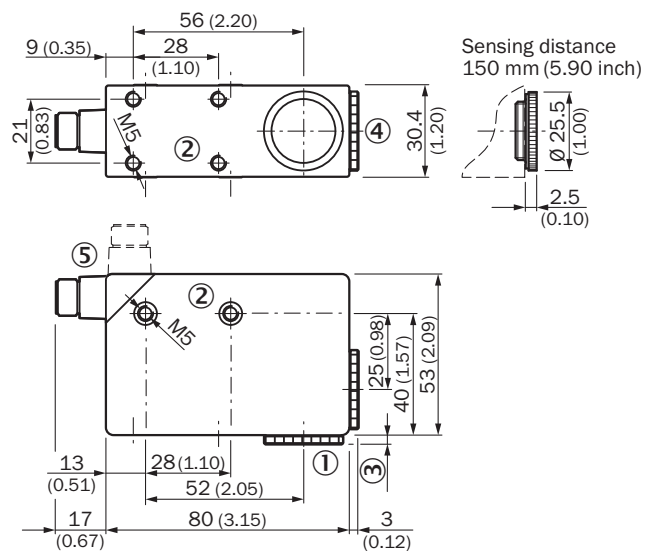
EU declaration of conformity	✓
UK declaration of conformity	✓
ACMA declaration of conformity	✓
Moroccan declaration of conformity	✓

China-RoHS	✓
cULus certificate	✓
Laser safety (IEC 60825-1) declaration of manufacturer	✓

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 KT8L Laser

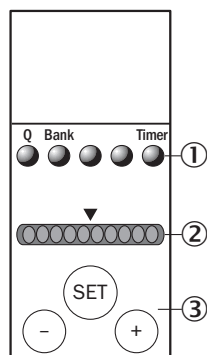


Dimensions in mm (inch)

- ① Lens (light transmission), cannot be exchanged for pos. 4
- ② M5 threaded mounting hole, 5.5 mm deep
- ③ See dimensional drawing of lens
- ④ Blind screw cannot be replaced by pos. 1

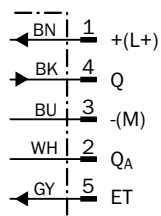
⑤ Connector M12 (rotatable up to 90°)

Adjustments KT8L Laser



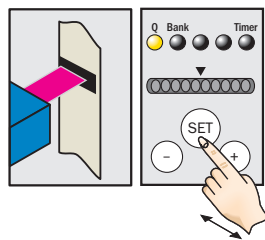
- ① Function signal indicators (yellow)
- ② Bar graph (green)
- ③ teach-in pushbutton / +/- pushbutton

Connection diagram Cd-329



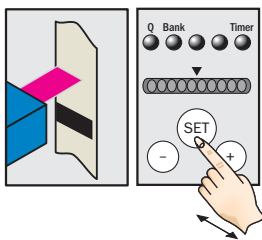
Connection type and diagram

1. Position mark



Press and hold SET button > 1 s.
Yellow LED flashes.

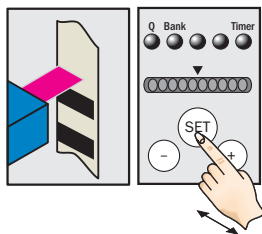
2. Position background



Press and hold SET button > 1 s.
Yellow LED goes out.

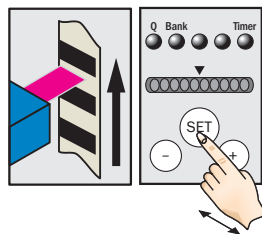
Connection type and diagram

1. Position background

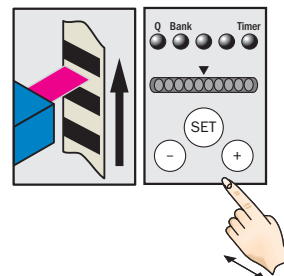


Press and hold SET button.
Emitted light turns white.

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



Hold down SET button.



Release SET button.

Note

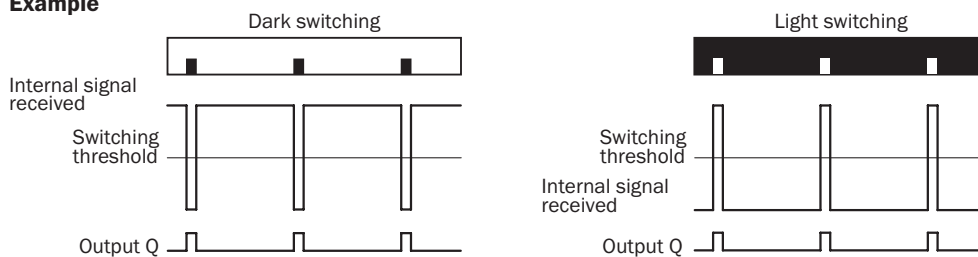
The bar display visualizes the detection reliability during teach-in. The more LEDs that illuminate, the better the teach-in:

1 LED illuminates = operation not reliable – contrast difference too low

≤ 4 LEDs illuminate = operation OK – sufficient contrast difference

> 4 LEDs illuminate = reliable operation – high contrast difference

Example



Switching characteristics

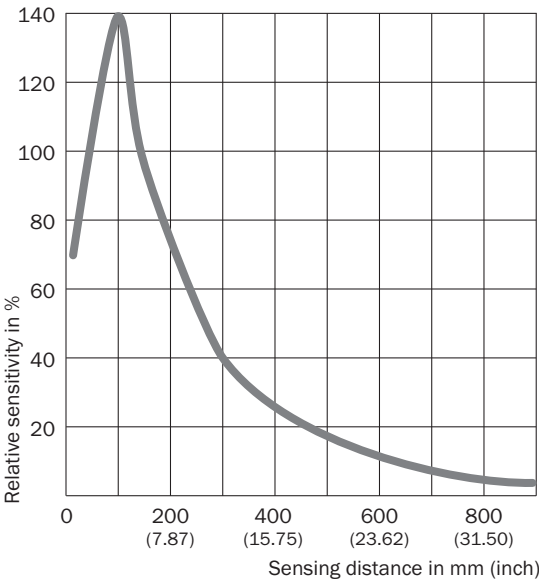
Light/dark setting is defined using teach-in sequence or menu, cf. operating instructions.

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.

Configuration only possible via CAN (see operating instruction).

Sensing distance



Recommended accessories

Other models and accessories → www.sick.com/KT8

	Brief description	Type	part no.
Mounting systems			
 	• 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
	• 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

	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.”

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