



DATA SHEET

KT3L-P3216

KT3
Contrast sensors

SICK

Sensor Intelligence



Illustration may differ

CONTRAST SENSORS

KT3L-P3216

ORDERING INFORMATION

Type	part no.
KT3L-P3216	1026244

Further device versions and accessories at www.sick.com/KT3

DETAILED TECHNICAL DATA

FEATURES

Housing design	Middle
Dimensions (W x H x D)	12 mm x 40 mm x 22 mm
Light source	Laser, visible red light ¹⁾
Light spot size	1 mm x 2 mm
Light spot direction	Vertical ²⁾
Wave length	655 nm
Laser class	II ³⁾
Operating distance	20 mm ... 60 mm
Sensing distance	≤ 40 mm
Sensing distance tolerance	± 20 mm
Adjustment	Teach-in button
Teach-in mode	Static 2-point teach-in

¹⁾ Average service life: 50,000 h at T_u = +25 °C.

²⁾ In relation to long side of housing.

³⁾ Do not intentionally look into the laser beam. Never point the laser beam at people's eyes.

ELECTRONICS

Supply voltage	10 V DC ... 30 V DC ¹⁾
----------------	-----------------------------------

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⁾ Reference voltage DC 50 V.

Ripple	$\leq 5 \text{ V}_{pp}^{2)}$
Current consumption	$< 35 \text{ mA}^{3)}$
Switching frequency	$1.5 \text{ kHz}^{4)}$
Response time	$400 \mu\text{s}$
Switching output	PNP
Switching output (voltage)	PNP: $\text{HIGH} = U_v \leq 2 \text{ V}$ / LOW approx. 0 V
Output current I_{max}	100 mA
Input, teach-in (ET)	PNP Teach $U > 8 \text{ V}$ Run: $U < 2 \text{ V}$
Retention time (ET)	25 ms , non-volatile memory
Time delay	None
Protection class	II ⁵⁾
Circuit protection	U_v connections, reverse polarity protected Output Q short-circuit protected Interference pulse suppression
Connection type	Male connector M12, 4-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⁾ Reference voltage DC 50 V .

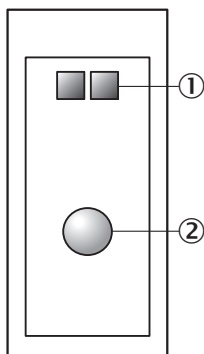
MECHANICS

Housing material	ABS
Weight	$+ 11 \text{ g}$

AMBIENT DATA

Ambient operating temperature	$-10 \text{ }^{\circ}\text{C} \dots +45 \text{ }^{\circ}\text{C}$
Ambient temperature, storage	$-20 \text{ }^{\circ}\text{C} \dots +75 \text{ }^{\circ}\text{C}$
Shock load	According to IEC 60068
Enclosure rating	IP67
UL File No.	NRKH.E181493 & NRKH7.E181493, CDRH-conform

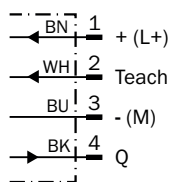
ADJUSTMENTS



① LED signal strength indicator

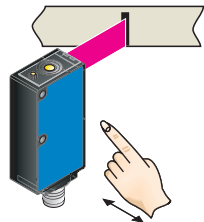
② Teach-in button

CONNECTION DIAGRAM CD-092



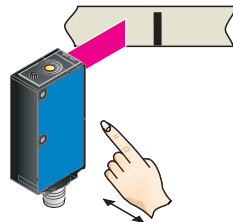
CONCEPT OF OPERATION TEACH-IN STATIC

1. Position mark



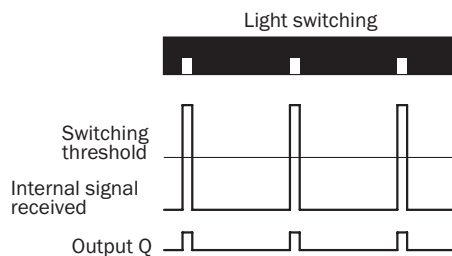
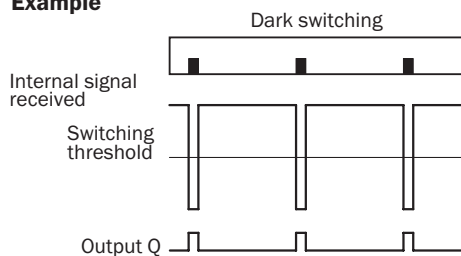
Press and hold teach-in button > 1 s.
Yellow LED flashes slowly.

2. Position background



Press and hold teach-in button > 1 s.
Yellow LED goes out.

Example



Switching characteristics

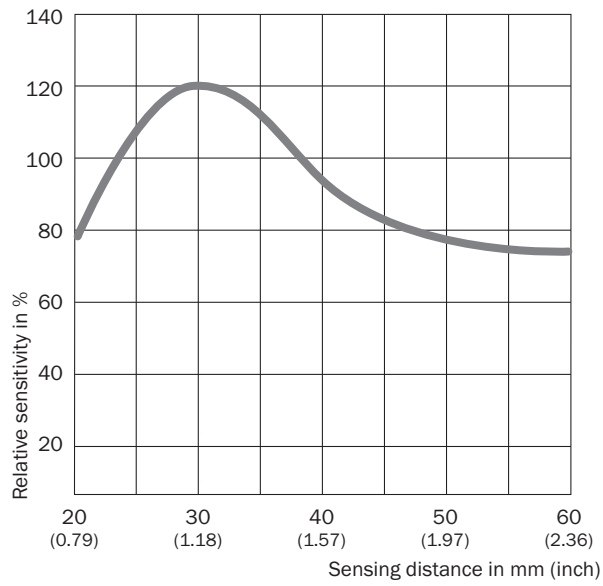
The optimum emitted light is selected automatically.

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 can also be performed 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/1026244



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