



# KT3L-N3216

## KT3

CONTRAST SENSORS

**SICK**  
Sensor Intelligence.



Illustration may differ

### Ordering information

Type	part no.
KT3L-N3216	1026245

Other models and accessories → [www.sick.com/KT3](http://www.sick.com/KT3)

### Detailed technical data

#### Features

<b>Dimensions (W x H x D)</b>	12 mm x 40 mm x 22 mm
<b>Sensing distance</b>	≤ 40 mm
<b>Sensing distance tolerance</b>	± 20 mm
<b>Housing design</b>	Rectangular
<b>Light source</b>	Laser, Red <sup>1)</sup>
<b>Laser class</b>	II
<b>Wave length</b>	655 nm
<b>Light spot size</b>	1 mm x 2 mm
<b>Light spot direction</b>	Vertical <sup>2)</sup>
<b>Operating distance</b>	20 mm ... 60 mm
<b>Adjustment</b>	Teach-in button
<b>Teach-in mode</b>	Static 2-point teach-in

<sup>1)</sup> Average service life: 50,000 h at T<sub>U</sub> = +25 °C.

<sup>2)</sup> In relation to long side of housing.

#### Electronics

<b>Supply voltage</b>	10 V DC ... 30 V DC <sup>1)</sup>
<b>Ripple</b>	≤ 5 V <sub>pp</sub> <sup>2)</sup>
<b>Current consumption</b>	< 35 mA <sup>3)</sup>
<b>Switching frequency</b>	1.5 kHz <sup>4)</sup>
<b>Response time</b>	400 μs <sup>5)</sup>
<b>Switching output</b>	NPN

<sup>1)</sup> Limit values when operated in short-circuit protected network: max. 8 A.

<sup>2)</sup> May not fall below or exceed U<sub>y</sub> tolerances.

<sup>3)</sup> Without load.

<sup>4)</sup> With light/dark ratio 1:1.

<sup>5)</sup> Signal transit time with resistive load.

<sup>6)</sup> Reference voltage DC 50 V.

<b>Switching output (voltage)</b>	NPN: HIGH = approx. $U_V$ / LOW $\leq 2$ V
<b>Output current <math>I_{\max}</math></b>	100 mA
<b>Input, teach-in (ET)</b>	NPN Teach: $U < 2$ V Run: $U = U_V$
<b>Retention time (ET)</b>	25 ms, non-volatile memory
<b>Time delay</b>	None
<b>Protection class</b>	II <sup>6)</sup>
<b>Circuit protection</b>	$U_V$ connections, reverse polarity protected Output Q short-circuit protected Interference pulse suppression

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

<b>Housing material</b>	ABS
<b>Connection type</b>	Male connector M12, 4-pin
<b>Weight</b>	+ 11 g

## Ambient data

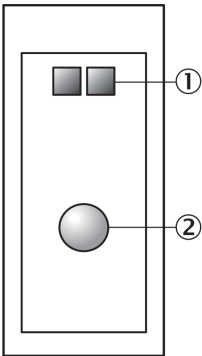
<b>Ambient operating temperature</b>	-10 °C ... +45 °C
<b>Ambient temperature, storage</b>	-20 °C ... +75 °C
<b>Shock load</b>	According to IEC 60068
<b>Enclosure rating</b>	IP67
<b>UL File No.</b>	NRKH.E181493 & NRKH7.E181493, CDRH-conform

## Classifications

<b>ECLASS 5.0</b>	27270906
<b>ECLASS 5.1.4</b>	27270906
<b>ECLASS 6.0</b>	27270906
<b>ECLASS 6.2</b>	27270906
<b>ECLASS 7.0</b>	27270906
<b>ECLASS 8.0</b>	27270906
<b>ECLASS 8.1</b>	27270906
<b>ECLASS 9.0</b>	27270906
<b>ECLASS 10.0</b>	27270906
<b>ECLASS 11.0</b>	27270906
<b>ECLASS 12.0</b>	27270906
<b>ETIM 5.0</b>	EC001820
<b>ETIM 6.0</b>	EC001820
<b>ETIM 7.0</b>	EC001820
<b>ETIM 8.0</b>	EC001820

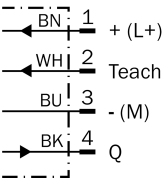
UNSPSC 16.0901	39121528
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Adjustments



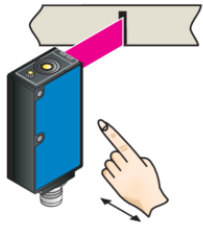
- ① LED signal strength indicator
- ② Teach-in button

Connection diagram Cd-092



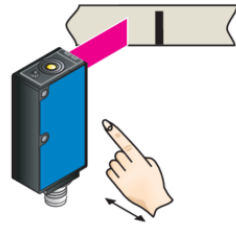
## Concept of operation Teach-in static

### 1. Position mark



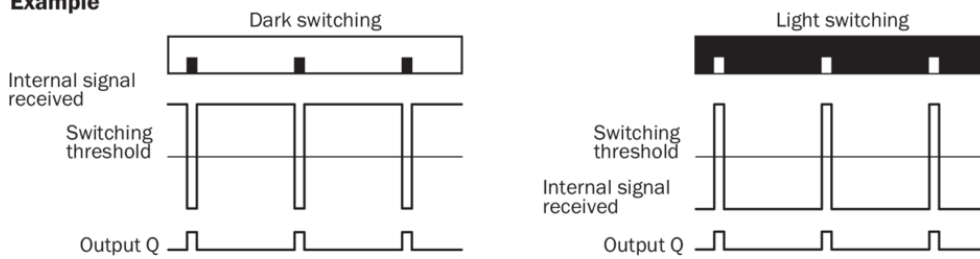
Press and hold teach-in button > 1 s.  
Yellow LED flashes slowly.

### 2. Position background



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

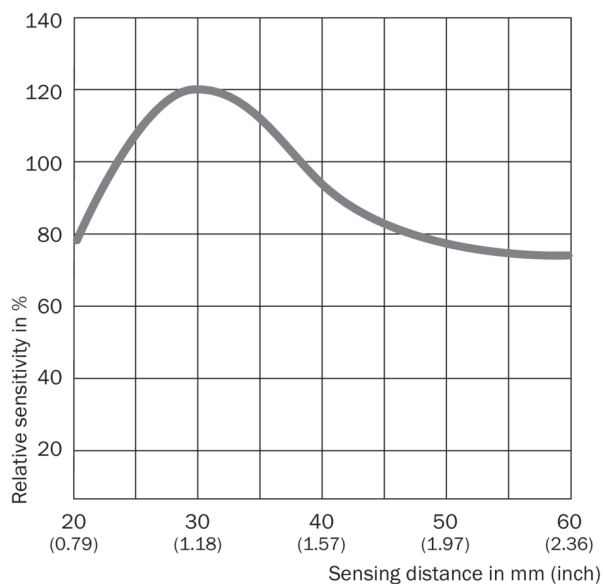
### Example



### 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




Recommended accessories

Other models and accessories → [www.sick.com/KT3](http://www.sick.com/KT3)

	Brief description	Type	part no.
Mounting systems			
	<ul style="list-style-type: none"><li>• <b>Description:</b> Mounting bracket</li><li>• <b>Material:</b> Steel</li><li>• <b>Details:</b> Steel, zinc coated</li><li>• <b>Items supplied:</b> Mounting hardware included</li><li>• <b>Suitable for:</b> W9-3</li></ul>	BEF-WN-W9-2	2022855
	<ul style="list-style-type: none"><li>• <b>Description:</b> Plate L for universal clamp bracket</li><li>• <b>Material:</b> Steel</li><li>• <b>Details:</b> Steel, zinc coated</li><li>• <b>Items supplied:</b> Universal clamp (2022726), mounting hardware</li><li>• <b>Usable for:</b> W8, W100, W140-2, W150, W160, W9-2, W250, P250, LUT2, KT3, CSM1, G6, W100-2, W250, LUT2, W9-3, W150, CSM, LUTM, G10, W8, P250, KTM Core, KTM Prime</li></ul>	BEF-KHS-L01	2023057

	Brief description	Type	part no.
connectors and cables			
	<ul style="list-style-type: none"> <li><b>Connection type head A:</b> Female connector, M12, 4-pin, straight, A-coded</li> <li><b>Description:</b> Unshielded</li> <li><b>Connection systems:</b> Screw-type terminals</li> <li><b>Permitted cross-section:</b> ≤ 0.75 mm²</li> </ul>	DOS-1204-G	6007302
	<ul style="list-style-type: none"> <li><b>Connection type head A:</b> Female connector, M12, 4-pin, angled, A-coded</li> <li><b>Description:</b> Unshielded</li> <li><b>Connection systems:</b> Screw-type terminals</li> <li><b>Permitted cross-section:</b> ≤ 0.75 mm²</li> </ul>	DOS-1204-W	6007303
	<ul style="list-style-type: none"> <li><b>Connection type head A:</b> Female connector, M12, 4-pin, straight, A-coded</li> <li><b>Connection type head B:</b> Flying leads</li> <li><b>Signal type:</b> Sensor/actuator cable</li> <li><b>Cable:</b> 2 m, 4-wire, PVC</li> <li><b>Description:</b> Sensor/actuator cable, unshielded</li> <li><b>Application:</b> Zones with chemicals, Uncontaminated zones</li> </ul>	YF2A14-020VB3XLEAX	2096234
	<ul style="list-style-type: none"> <li><b>Connection type head A:</b> Female connector, M12, 4-pin, straight, A-coded</li> <li><b>Connection type head B:</b> Flying leads</li> <li><b>Signal type:</b> Sensor/actuator cable</li> <li><b>Cable:</b> 5 m, 4-wire, PVC</li> <li><b>Description:</b> Sensor/actuator cable, unshielded</li> <li><b>Application:</b> Zones with chemicals, Uncontaminated zones</li> </ul>	YF2A14-050VB3XLEAX	2096235
	<ul style="list-style-type: none"> <li><b>Connection type head A:</b> Female connector, M12, 4-pin, straight, A-coded</li> <li><b>Connection type head B:</b> Flying leads</li> <li><b>Signal type:</b> Sensor/actuator cable</li> <li><b>Cable:</b> 10 m, 4-wire, PVC</li> <li><b>Description:</b> Sensor/actuator cable, unshielded</li> <li><b>Application:</b> Zones with chemicals, Uncontaminated zones</li> </ul>	YF2A14-100VB3XLEAX	2096236
	<ul style="list-style-type: none"> <li><b>Connection type head A:</b> Female connector, M12, 4-pin, straight, A-coded</li> <li><b>Connection type head B:</b> Flying leads</li> <li><b>Signal type:</b> Sensor/actuator cable</li> <li><b>Cable:</b> 15 m, 4-wire, PVC</li> <li><b>Description:</b> Sensor/actuator cable, unshielded</li> <li><b>Application:</b> Zones with chemicals, Uncontaminated zones</li> </ul>	YF2A14-150VB3XLEAX	2096237
	<ul style="list-style-type: none"> <li><b>Connection type head A:</b> Female connector, M12, 4-pin, angled, A-coded</li> <li><b>Connection type head B:</b> Flying leads</li> <li><b>Signal type:</b> Sensor/actuator cable</li> <li><b>Cable:</b> 2 m, 4-wire, PVC</li> <li><b>Description:</b> Sensor/actuator cable, unshielded</li> <li><b>Application:</b> Zones with chemicals, Uncontaminated zones</li> </ul>	YG2A14-020VB3XLEAX	2095895
	<ul style="list-style-type: none"> <li><b>Connection type head A:</b> Female connector, M12, 4-pin, angled, A-coded</li> <li><b>Connection type head B:</b> Flying leads</li> <li><b>Signal type:</b> Sensor/actuator cable</li> <li><b>Cable:</b> 5 m, 4-wire, PVC</li> <li><b>Description:</b> Sensor/actuator cable, unshielded</li> <li><b>Application:</b> Zones with chemicals, Uncontaminated zones</li> </ul>	YG2A14-050VB3XLEAX	2095897
	<ul style="list-style-type: none"> <li><b>Connection type head A:</b> Female connector, M12, 4-pin, angled, A-coded</li> <li><b>Connection type head B:</b> Flying leads</li> <li><b>Signal type:</b> Sensor/actuator cable</li> <li><b>Cable:</b> 10 m, 4-wire, PVC</li> <li><b>Description:</b> Sensor/actuator cable, unshielded</li> <li><b>Application:</b> Zones with chemicals, Uncontaminated zones</li> </ul>	YG2A14-100VB3XLEAX	2095898
	<ul style="list-style-type: none"> <li><b>Connection type head A:</b> Female connector, M12, 4-pin, angled, A-coded</li> <li><b>Connection type head B:</b> Flying leads</li> <li><b>Signal type:</b> Sensor/actuator cable</li> <li><b>Cable:</b> 0.6 m, 4-wire, PVC</li> <li><b>Description:</b> Sensor/actuator cable, unshielded</li> <li><b>Application:</b> Zones with chemicals, Uncontaminated zones</li> </ul>	YG2A14-C60VB3XLEAX	2145709
	<ul style="list-style-type: none"> <li><b>Connection type head A:</b> Female connector, M12, 4-pin, angled, A-coded</li> <li><b>Connection type head B:</b> Flying leads</li> <li><b>Signal type:</b> Sensor/actuator cable</li> <li><b>Cable:</b> 1 m, 4-wire, PVC</li> <li><b>Description:</b> Sensor/actuator cable, unshielded</li> </ul>	YG2A14-010VB3XLEAX	2145710

	Brief description	Type	part no.
	<ul style="list-style-type: none"><li>• <b>Application:</b> Zones with chemicals, Uncontaminated zones</li><li>• <b>Connection type head A:</b> Female connector, M12, 4-pin, straight, A-coded</li><li>• <b>Connection type head B:</b> Flying leads</li><li>• <b>Signal type:</b> Sensor/actuator cable</li><li>• <b>Cable:</b> 0.6 m, 4-wire, PVC</li><li>• <b>Description:</b> Sensor/actuator cable, unshielded</li><li>• <b>Application:</b> Zones with chemicals, Uncontaminated zones</li></ul>	YF2A14-C60VB3XLEAX	2145707
	<ul style="list-style-type: none"><li>• <b>Connection type head A:</b> Female connector, M12, 4-pin, straight, A-coded</li><li>• <b>Connection type head B:</b> Flying leads</li><li>• <b>Signal type:</b> Sensor/actuator cable</li><li>• <b>Cable:</b> 1 m, 4-wire, PVC</li><li>• <b>Description:</b> Sensor/actuator cable, unshielded</li><li>• <b>Application:</b> Zones with chemicals, Uncontaminated zones</li></ul>	YF2A14-010VB3XLEAX	2145708



## 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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