

## CONTRAST SENSORS



Illustration may differ



### Ordering information

Type	Part no.
KTL5W-2P16	1026006

Other models and accessories → [www.sick.com/KT5](http://www.sick.com/KT5)

### Detailed technical data

#### Features

<b>Dimensions (W x H x D)</b>	30.4 mm x 53 mm x 80 mm
<b>Sensing distance</b>	Dependent on the fiber-optic cable
<b>Housing design</b>	Rectangular
<b>Light source</b>	LED, RGB <sup>1)</sup>
<b>Wave length</b>	640 nm, 525 nm, 470 nm
<b>Adjustment</b>	Teach-in button
<b>Teach-in mode</b>	Static 2-point teach-in
<b>Output function</b>	Light/dark switching

<sup>1)</sup> Average service life: 100,000 h at T<sub>U</sub> = +25 °C.

#### Mechanics/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>	< 80 mA <sup>3)</sup>
<b>Switching frequency</b>	10 kHz <sup>4)</sup>
<b>Response time</b>	50 μs <sup>5)</sup>
<b>Switching output</b>	PNP
<b>Switching output (voltage)</b>	PNP: HIGH = U <sub>V</sub> ≤ 2 V / LOW approx. 0 V
<b>Switching mode</b>	Light/dark switching
<b>Output current I<sub>max.</sub></b>	100 mA

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

<sup>2)</sup> May not exceed or fall below U<sub>V</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>Input, teach-in (ET)</b>	PNP Teach: $U = 10\text{ V} \dots < U_V$ Run: $U < 2\text{ V}$
<b>Input, light/dark (L/D)</b>	PNP Light: $U = 0\text{ V}$ Dark: $U > 10\text{ V} \dots < U_V$
<b>Retention time (ET)</b>	25 ms, non-volatile memory
<b>Connection type</b>	Male connector M12, 5-pin
<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
<b>Enclosure rating</b>	IP67
<b>Weight</b>	400 g
<b>Housing material</b>	Metal, zinc diecast

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

<sup>2)</sup> May not exceed or fall below  $U_V$  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.

## Ambient data

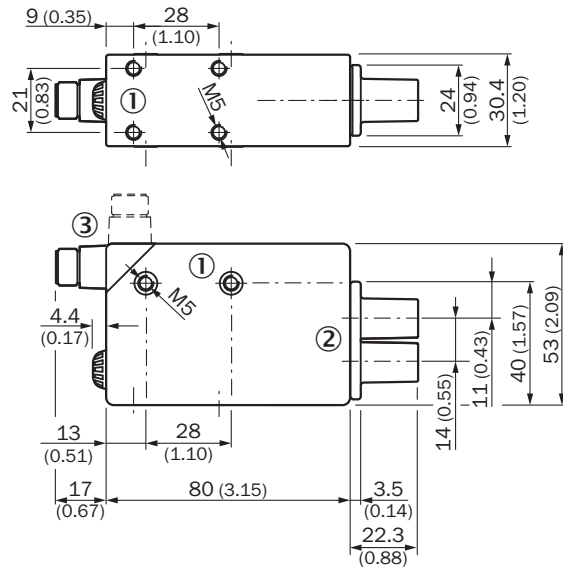
<b>Ambient operating temperature</b>	-10 °C ... +55 °C
<b>Ambient temperature, storage</b>	-25 °C ... +75 °C
<b>Shock load</b>	According to IEC 60068

## 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
<b>UNSPSC 16.0901</b>	39121528

### Dimensional drawing (Dimensions in mm (inch))

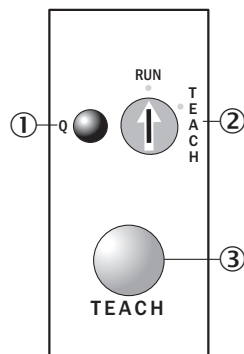
#### KTL5-2 Fiber Optic



- ① M5 threaded mounting hole, 5.5 mm deep
- ② Fiber-optic adapter (M12 x 1 internal thread)
- ③ Connector M12 (rotatable up to 90°)

### Adjustments

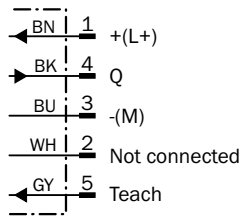
#### KTL5-2 Fiber Optic, KTL5W-xxx6



- ① Function signal indicator (yellow)
- ② Pre-selection switch
- ③ Teach-in button

## Connection diagram

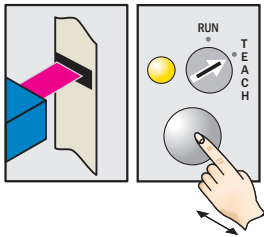
Cd-323



## Concept of operation

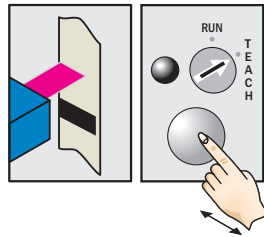
Teach-in static

### 1. Position mark



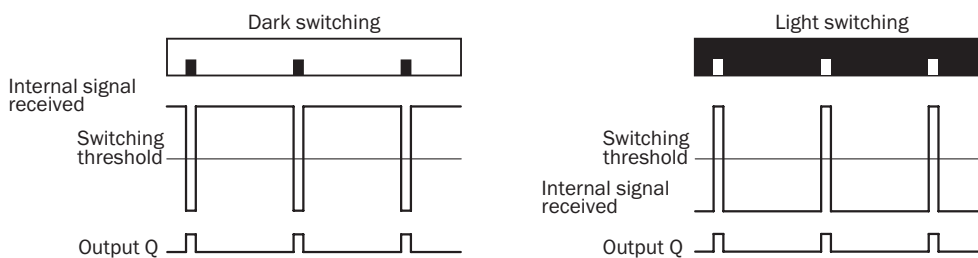
Turn rotary switch to "Teach" position. Press and hold teach-in button > 1 s. Red emitted light and yellow LED flash.

### 2. Position background



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

### Example (for both settings)

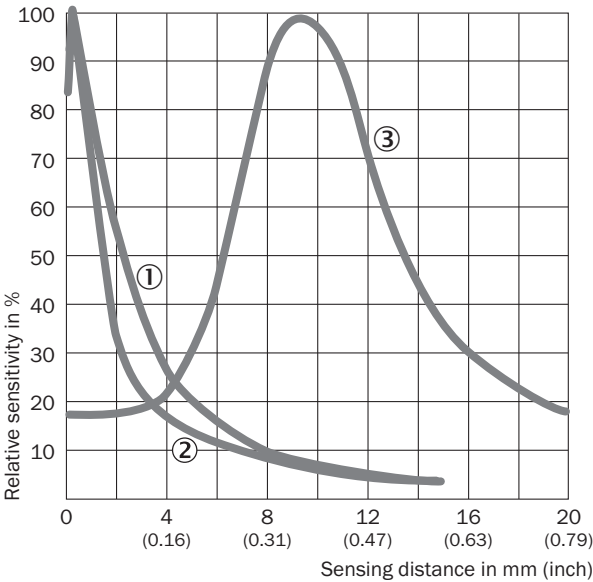


### Switching characteristics

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





Sensing distance



- ① Fiber-optic cable LBST 32900
- ② Fiber-optic cable LBSR 32900
- ③ Fiber-optic cable OCSL

Recommended accessories

Other models and accessories → [www.sick.com/KT5](http://www.sick.com/KT5)

	Brief description	Type	Part no.
Universal bar clamp systems			
	Plate G for universal clamp bracket, steel, zinc coated, Universal clamp (2022726), mounting hardware	BEF-KHS-G01	2022464
	Plate K for universal clamp bracket, steel, zinc coated, Universal clamp (2022726), mounting hardware	BEF-KHS-K01	2022718
	Universal clamp bracket for rod mounting, steel, zinc coated, without mounting hardware	BEF-KHS-KH1	2022726
	Mounting bar, straight, 200 mm, steel, steel, zinc coated, without mounting hardware	BEF-MS12G-A	4056054
	Mounting bar, straight, 300 mm, steel, steel, zinc coated, without mounting hardware	BEF-MS12G-B	4056055
	Mounting bar, L-shaped, 150 mm x 150 mm, steel, steel, zinc coated, without mounting hardware	BEF-MS12L-A	4056052
	Mounting bar, L-shaped, 250 x 250 mm, steel, steel, zinc coated, without mounting hardware	BEF-MS12L-B	4056053

	Brief description	Type	Part no.
Plug connectors and cables			
                      	<ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Female connector, M12, 5-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, 5-wire, PVC</li> <li>• <b>Description:</b> Sensor/actuator cable, unshielded</li> <li>• <b>Application:</b> Zones with chemicals</li> </ul>	YF2A15-020VB5XLEAX	2096239
	<ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Female connector, M12, 5-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, 5-wire, PVC</li> <li>• <b>Description:</b> Sensor/actuator cable, unshielded</li> <li>• <b>Application:</b> Zones with chemicals</li> </ul>	YF2A15-050VB5XLEAX	2096240
	<ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Female connector, M12, 5-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, 5-wire, PVC</li> <li>• <b>Description:</b> Sensor/actuator cable, unshielded</li> <li>• <b>Application:</b> Zones with chemicals</li> </ul>	YF2A15-100VB5XLEAX	2096241
	<ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Female connector, M12, 5-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, 5-wire, PVC</li> <li>• <b>Description:</b> Sensor/actuator cable, unshielded</li> <li>• <b>Application:</b> Zones with chemicals</li> </ul>	YG2A15-020VB5XLEAX	2096215
	<ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Female connector, M12, 5-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, 5-wire, PVC</li> <li>• <b>Description:</b> Sensor/actuator cable, unshielded</li> <li>• <b>Application:</b> Zones with chemicals</li> </ul>	YG2A15-050VB5XLEAX	2096216
	<ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Female connector, M12, 5-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, 5-wire, PVC</li> <li>• <b>Description:</b> Sensor/actuator cable, unshielded</li> <li>• <b>Application:</b> Zones with chemicals</li> </ul>	YG2A15-100VB5XLEAX	2096217
  	<ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Female connector, M12, 5-pin, straight</li> <li>• <b>Description:</b> Unshielded, Head A: female connector, M12, 5-pin, straight, unshielded, for cable diameter 4 mm ... 6 mm Head B: -</li> <li>• <b>Connection systems:</b> Screw-type terminals</li> <li>• <b>Permitted cross-section:</b> ≤ 0.75 mm²</li> </ul>	DOS-1205-G	6009719
	<ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Female connector, M12, 5-pin, angled</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-1205-W	6009720
Fibers			
	<ul style="list-style-type: none"> <li>• <b>Device type detail:</b> Fiber suitable for WLL260</li> <li>• <b>For fiber-optic sensor:</b> WLL260</li> <li>• <b>Functional principle:</b> Proximity system</li> <li>• <b>Fiber length:</b> 900 mm</li> </ul>	LBSA32900	7020040
		LBSAA23900	7020103
		LBSAT32900	7020036
		LBSF32900	7020038
		LBSM12900	7020054
		LBSP16900	7020044
		LBSR16900	7020050
		LBSR32900	7020042
		LBSR40900	7020052

	Brief description	Type	Part no.
<ul style="list-style-type: none"><li>• <b>Device type detail:</b> Fiber suitable for WLL260</li><li>• <b>For fiber-optic sensor:</b> WLL260</li><li>• <b>Functional principle:</b> Proximity system</li><li>• <b>Fiber length:</b> 5,000 mm</li></ul> <ul style="list-style-type: none"><li>• <b>Device type detail:</b> Fiber suitable for WLL260</li><li>• <b>For fiber-optic sensor:</b> WLL260</li><li>• <b>Functional principle:</b> Proximity system</li><li>• <b>Fiber length:</b> 900 mm</li></ul> <ul style="list-style-type: none"><li>• <b>Device type detail:</b> Fiber suitable for WLL260</li><li>• <b>For fiber-optic sensor:</b> WLL260</li><li>• <b>Functional principle:</b> Through-beam system</li><li>• <b>Fiber length:</b> 900 mm</li></ul>		LBST32900	7020046
		LBSTA325000	7022348
		LBSTA32900	7020048
		LISA32900	7020039
		LISAA23900	7020102
		LISAT32900	7020035
		LISF32900	7020037
		LISM12900	7020053
		LISP16900	7020043
		LISR16900	7020049
		LISR32900	7020041
		LISR40900	7020051
		LIST32900	7020045
		LISTA32900	7020047



## 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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