



# KT5G-2P1221

KT5

CONTRAST SENSORS

**SICK**  
Sensor Intelligence.



### Ordering information

Type	Part no.
KT5G-2P1221	1016001

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>	20 mm <sup>1)</sup>
<b>Sensing distance tolerance</b>	± 3 mm
<b>Housing design (light emission)</b>	Rectangular
<b>Light source</b>	LED, green <sup>2)</sup>
<b>Wave length</b>	520 nm
<b>Light emission</b>	Long and short side of housing, exchangeable
<b>Light spot size</b>	1.5 mm x 5.5 mm
<b>Light spot direction</b>	Vertical <sup>3)</sup>
<b>Adjustment</b>	Potentiometer
<b>Output function</b>	Light/dark switching

<sup>1)</sup> From front edge of lens.

<sup>2)</sup> Average service life: 100,000 h at T<sub>J</sub> = +25 °C.

<sup>3)</sup> In relation to long side of housing.

#### 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>Power consumption</b>	< 80 mA <sup>3)</sup>
<b>Switching frequency</b>	10 kHz <sup>4)</sup>

<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> Short-circuit protected.

<sup>7)</sup> Reference voltage DC 50 V.

<b>Response time</b>	50 $\mu$ s <sup>5)</sup>
<b>Switching output</b>	PNP
<b>Switching output (voltage)</b>	PNP: HIGH = $V_S - \leq 2$ V / LOW approx. 0 V
<b>Switching output</b>	Light/dark switching
<b>Output current <math>I_{max}</math></b>	100 mA <sup>6)</sup>
<b>Time delay</b>	20 ms
<b>Connection type</b>	Male connector M12, 4-pin
<b>Protection class</b>	II <sup>7)</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>	Zinc diecast

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

2) May not exceed or fall below  $U_V$  tolerances.

3) Without load.

4) With light/dark ratio 1:1.

5) Signal transit time with resistive load.

6) Short-circuit protected.

7) Reference voltage DC 50 V.

#### Ambient data

<b>Ambient operating temperature</b>	-10 °C ... +55 °C
<b>Ambient storage temperature</b>	-25 °C ... +75 °C
<b>Shock load</b>	According to IEC 60068
<b>UL File No.</b>	NRKH.E181493 & NRKH7.E181493

#### Classifications

<b>ECl@ss 5.0</b>	27270906
<b>ECl@ss 5.1.4</b>	27270906
<b>ECl@ss 6.0</b>	27270906
<b>ECl@ss 6.2</b>	27270906
<b>ECl@ss 7.0</b>	27270906
<b>ECl@ss 8.0</b>	27270906
<b>ECl@ss 8.1</b>	27270906
<b>ECl@ss 9.0</b>	27270906
<b>ETIM 5.0</b>	EC001820
<b>ETIM 6.0</b>	EC001820
<b>UNSPSC 16.0901</b>	39121528

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

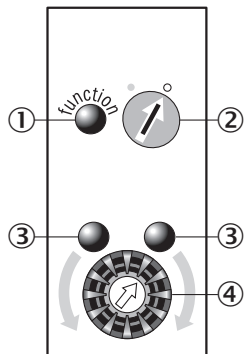
#### KT5-2 Potentiometer



- ① Lens (light transmission), can be exchanged for pos. 4
- ② M5 threaded mounting hole, 5.5 mm deep
- ③ See dimensional drawings of lenses
- ④ Blind screw can be replaced by pos. 1
- ⑤ Connector M12 (rotatable up to 90°)

### Adjustments

#### KT5-2 Potentiometer



- ① Function signal indicator (yellow)
- ② Pre-selection switch (light/dark switching)
- ③ Switching threshold adjustment
- ④ Installation aid (green)

## Connection diagram

cd-327



## Concept of operation

KT5-2 Potentiometer

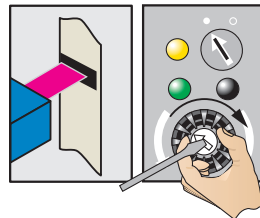
### 1. Select switching function (light/dark)



Turn the rotary switch to the desired position.

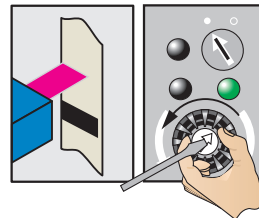
- = light switching
- = dark switching

### 2. Position mark

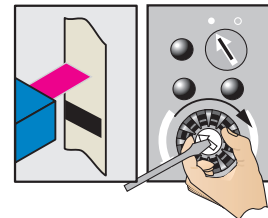


Turn potentiometer in the direction shown (green LED illuminates) until the yellow LED status changes and the green LED opposite illuminates.

### 3. Position background



Gradually turn back the potentiometer (count the number of turns) until the yellow LED changes status again and illuminates.



Turn the potentiometer forward again by half the number of turns to ensure that the switching threshold is optimally set.

## Example

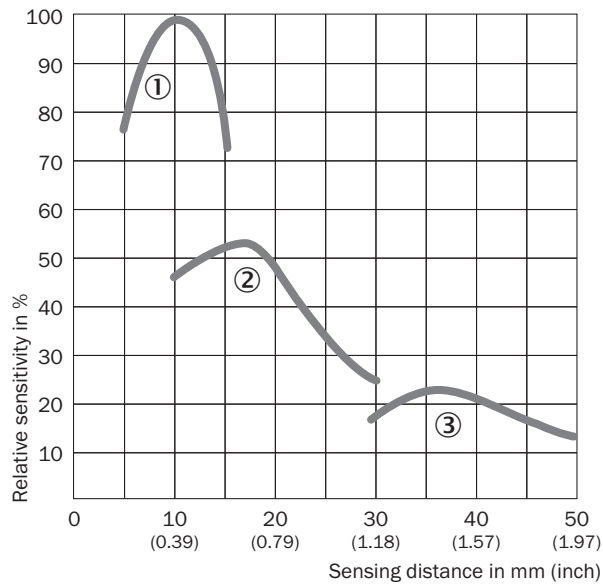


## Switching characteristics

The switching threshold is set in the center between the background and the mark.

### Characteristic curve






KT5-2 Teach-in, KT5G, KT5W, KT5-2 Display



- ① Sensing distance 10 mm
- ② Sensing distance 20 mm
- ③ Sensing distance 40 mm

### Recommended accessories

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

	Brief description	Type	Part no.
<b>Universal bar clamp systems</b>			
	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.
<b>Plug connectors and cables</b>			
	Head A: female connector, M12, 4-pin, straight, A-coded Head B: Flying leads Cable: Sensor/actuator cable, PVC, unshielded, 2 m	YF2A14-020VB3XLEAX	2096234
	Head A: female connector, M12, 4-pin, straight, A-coded Head B: Flying leads Cable: Sensor/actuator cable, PVC, unshielded, 5 m	YF2A14-050VB3XLEAX	2096235
	Head A: female connector, M12, 4-pin, straight, A-coded Head B: Flying leads Cable: Sensor/actuator cable, PVC, unshielded, 10 m	YF2A14-100VB3XLEAX	2096236
	Head A: female connector, M12, 4-pin, straight, A-coded Head B: Flying leads Cable: Sensor/actuator cable, PVC, unshielded, 15 m	YF2A14-150VB3XLEAX	2096237
	Head A: female connector, M12, 4-pin, angled, A-coded Head B: Flying leads Cable: Sensor/actuator cable, PVC, unshielded, 2 m	YG2A14-020VB3XLEAX	2095895
	Head A: female connector, M12, 4-pin, angled, A-coded Head B: Flying leads Cable: Sensor/actuator cable, PVC, unshielded, 5 m	YG2A14-050VB3XLEAX	2095897
	Head A: female connector, M12, 4-pin, angled, A-coded Head B: Flying leads Cable: Sensor/actuator cable, PVC, unshielded, 10 m	YG2A14-100VB3XLEAX	2095898
	Head A: female connector, M12, 4-pin, straight Head B: - Cable: unshielded	DOS-1204-G	6007302
	Head A: female connector, M12, 4-pin, angled Head B: - Cable: unshielded	DOS-1204-W	6007303
<b>Lenses and accessories</b>			
	Lens, 40 mm sensing distance, M20 x 0.75	OBJ-210	2010945
	Lens, 10 mm sensing distance, M20 x 0.75	OBJ-211	1004936
	Lens, 20 mm sensing distance, M20 x 0.75	OBJ-212	1011506

## 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.”

## WORLDWIDE PRESENCE:

Contacts and other locations –[www.sick.com](http://www.sick.com)