



# WLL24-2X230

WLL24

FIBER-OPTIC SENSORS

**SICK**  
Sensor Intelligence.

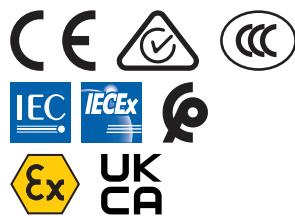


## Ordering information

Type	part no.
WLL24-2X230	1026038

Other models and accessories → [www.sick.com/WLL24](http://www.sick.com/WLL24)

Illustration may differ



## Detailed technical data

### Features

<b>Device type</b>	Fiber-optic amplifier
<b>Device type detail</b>	Stand-alone
<b>Functional principle detail</b>	Depending on the optical fiber cable used
<b>Sensing range max.</b>	Depending on the optical fiber cable used
<b>Emitted beam</b>	
Light source	LED
Type of light	Visible red light
<b>Key LED figures</b>	
Normative reference	EN 62471:2008-09   IEC 62471:2006, modified
LED risk group marking	Free group
Wave length	660 nm
Average service life	100,000 h at $T_a = +25^\circ\text{C}$
<b>Display</b>	
LED yellow	Status of digital output

### Safety-related parameters

<b>MTTF<sub>D</sub></b>	257 years
<b>DC<sub>avg</sub></b>	0 %
<b>T<sub>M</sub> (mission time)</b>	20 years

## Electronics

<b>Supply voltage <math>U_B</math></b>	5 V DC ... 15.5 V DC <sup>1)</sup>
<b>Ripple</b>	$\leq 0.4 \text{ V}_{\text{pp}}$ <sup>2)</sup>
<b>Current consumption</b>	$\geq 2.2 \text{ mA}$
<b>Protection class</b>	II
<b>Digital output</b>	
Number	1
Type	NAMUR
Switching mode	Light switching
Signal voltage PNP HIGH/LOW	Approx. $U_B$ -4 V / 2 V
Signal voltage NPN HIGH/LOW	Approx. $U_B$ -4 V / 2 V
Circuit protection outputs	Reverse polarity protected Overcurrent protected Short-circuit protected
Response time	$\leq 10 \text{ ms}$
Switching frequency	50 Hz <sup>3)</sup>

<sup>1)</sup> Limit values, supply with switching amplifier EN2Ex (internal resistor approx. 1 kOhm).

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

<sup>3)</sup> With light/dark ratio 1:1.

## Mechanics

<b>Housing</b>	Rectangular
<b>Dimensions (W x H x D)</b>	27 mm x 87.5 mm x 74.7 mm
<b>Connection</b>	Terminal connection with M16 gland <sup>1)</sup>
<b>Material</b>	
Housing	Metal, zinc diecast
<b>Weight</b>	330 g

<sup>1)</sup> Connection rotatable by 90°.

## Ambient data

<b>Enclosure rating</b>	IP65 (EN 60529)
<b>ATEX marking</b>	ATEX II 2G Ex ia op is IIC T4 Gb according to directive 2014/34/EU
<b>Ex area category</b>	2G
<b>Ambient operating temperature</b>	-20 °C ... +60 °C
<b>Ambient temperature, storage</b>	-25 °C ... +70 °C
<b>Shock resistance</b>	50 g, 11 ms (3 positive and 3 negative shocks along X, Y, Z axes, 18 total shocks (EN60068-2-27))
<b>Vibration resistance</b>	10 Hz ... 55 Hz (Amplitude 1 mm, 3 x 30 min (EN60068-2-6))
<b>Air humidity</b>	35 % ... 85 %, relative humidity (no condensation)

## Certificates

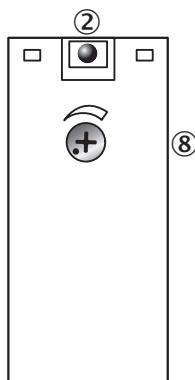
<b>EU declaration of conformity</b>	✓
<b>UK declaration of conformity</b>	✓
<b>ACMA declaration of conformity</b>	✓

<b>Moroccan declaration of conformity</b>	✓
<b>China RoHS</b>	✓
<b>CCC certificate</b>	✓
<b>ATEX certificate</b>	✓
<b>IECEx certificate</b>	✓
<b>Photobiological safety (DIN EN 62471) certificate</b>	✓

## Classifications

<b>ECLASS 5.0</b>	27270905
<b>ECLASS 5.1.4</b>	27270905
<b>ECLASS 6.0</b>	27270905
<b>ECLASS 6.2</b>	27270905
<b>ECLASS 7.0</b>	27270905
<b>ECLASS 8.0</b>	27270905
<b>ECLASS 8.1</b>	27270905
<b>ECLASS 9.0</b>	27270905
<b>ECLASS 10.0</b>	27270905
<b>ECLASS 11.0</b>	27270905
<b>ECLASS 12.0</b>	27270905
<b>ETIM 5.0</b>	EC002651
<b>ETIM 6.0</b>	EC002651
<b>ETIM 7.0</b>	EC002651
<b>ETIM 8.0</b>	EC002651
<b>UNSPSC 16.0901</b>	39121528

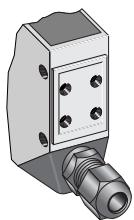
## Adjustments



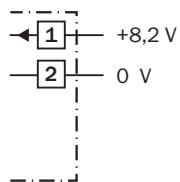
② LED signal strength indicator

⑧ sensitivity control

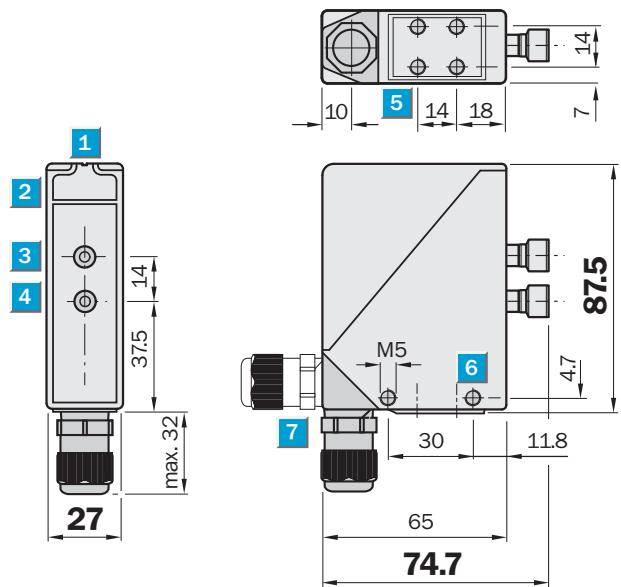
## Connection type



## Connection diagram Cd-050



## Dimensional drawing



Dimensions in mm (inch)

- ① Alignment sight
- ② LED signal strength indicator
- ③ Center of optical axis, sender
- ④ Center of optical axis, receiver
- ⑤ M5 threaded mounting hole, 6 mm deep
- ⑥ M5 threaded mounting hole, through-hole
- ⑦ M16 screw fixing and plug rotatable by 90°

## 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)