



L28S-3D2431

L28

SAFETY SINGLE-BEAM SENSORS

**SICK**  
Sensor Intelligence.



### Ordering information

Scanning range	Housing material	System part	Type	Part no.
18 m	ABS (plastic)	Sender	L28S-3D2431	2044515

Other models and accessories → [www.sick.com/L28](http://www.sick.com/L28)

### Detailed technical data

#### Features

<b>Light source</b>	LED
<b>Type of light</b>	Visible red light
<b>Scanning range</b>	18 m
<b>Number of beams</b>	1
<b>Response time</b>	0.68 ms
<b>Response time</b>	0.68 ms + Test device response time

#### Safety-related parameters

<b>Type</b>	Type 2 (IEC 61496-1) <sup>1)</sup>
<b>Safety integrity level</b>	SIL 1 (IEC 61508) <sup>1)</sup>
<b>Category</b>	Category 2 (EN ISO 13849) <sup>1)</sup>
<b>Test rate (external test)</b>	100 /s (EN ISO 13849) <sup>2)</sup>
<b>Maximum demand rate</b>	≤ 60 min <sup>-1</sup> (EN ISO 13849) <sup>3)</sup>
<b>Performance level</b>	PL c (EN ISO 13849) <sup>1)</sup>
<b>PFH<sub>D</sub> (mean probability of a dangerous failure per hour)</b>	1.0 x 10 <sup>-6</sup> (EN ISO 13849) <sup>1)</sup>
<b>T<sub>M</sub> (mission time)</b>	20 years (EN ISO 13849)

<sup>1)</sup> Only in combination with an appropriate test device, e.g., Flexi Classic or Flexi Soft.

<sup>2)</sup> The test rate shall not be exceeded.

<sup>3)</sup> Between two requirements on a safety-related response of the device, at least 100 internal or external tests must be carried out.

#### Interfaces

<b>Connection type</b>	Male connector M12, 4-pin, straight
<b>Display elements</b>	LED

#### Electrical data

<b>Protection class</b>	II (IEC 61140)
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<sup>1)</sup> The test input has a pull-up resistor to activate the sender (sender on) even when not connected. Therefore, an active-switched LOW signal is required to activate the cyclic test with test gap (sender off).

<sup>2)</sup> Signal propagation time for resistive load, for test signal application (sender) and output signal reaction (receiver).

<b>Supply voltage <math>V_s</math></b>	24 V DC (16.8 V DC ... 28.8 V DC)
<b>Power consumption</b>	≤ 35 mA
<b>Test input voltage</b>	> 15 V or not connected (Sender on) <sup>1)</sup> < 5 V (Sender off) <sup>1)</sup>
<b>Test input response time</b>	≤ 2.6 ms <sup>2)</sup>

<sup>1)</sup> The test input has a pull-up resistor to activate the sender (sender on) even when not connected. Therefore, an active-switched LOW signal is required to activate the cyclic test with test gap (sender off).

<sup>2)</sup> Signal propagation time for resistive load, for test signal application (sender) and output signal reaction (receiver).

### Mechanical data

<b>Design</b>	Rectangular
<b>Dimensions (W x H x D)</b>	17.6 mm x 87.5 mm x 33.5 mm
<b>Housing material</b>	ABS (plastic)
<b>Weight</b>	Approx. 40 g

### Ambient data

<b>Enclosure rating</b>	IP67 (EN 60529)
<b>Ambient operating temperature</b>	-40 °C ... +60 °C
<b>Storage temperature</b>	-40 °C ... +75 °C
<b>Air humidity</b>	15 % ... 95 %, Non-condensing
<b>Vibration resistance</b>	5 g, 10 Hz ... 55 Hz (IEC 60068-2-6)
<b>Shock resistance</b>	10 g, 16 ms (IEC 60068-2-29)

### Other information

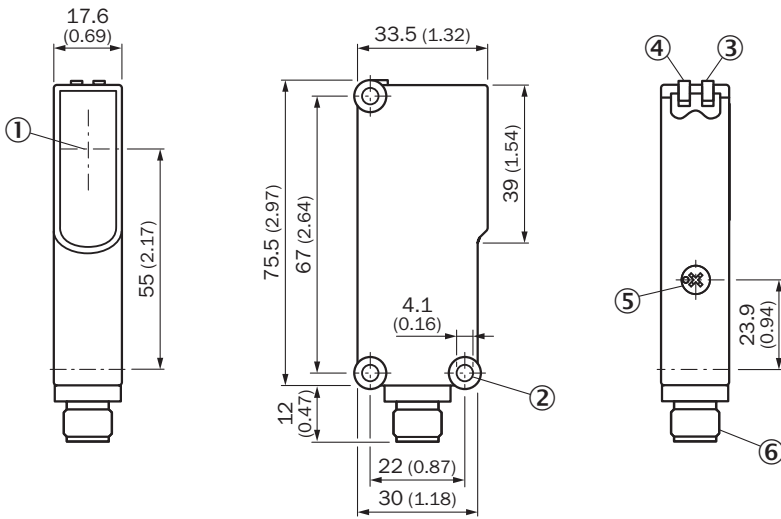
<b>Light source</b>	LED
<b>Type of light</b>	Visible red light
<b>Wave length</b>	660 nm
<b>Light spot diameter (distance)</b>	300 mm (10 m)
<b>Aperture angle/receiving angle</b>	± 5° / ± 5°

### Classifications

<b>ECLASS 5.0</b>	27272701
<b>ECLASS 5.1.4</b>	27272701
<b>ECLASS 6.0</b>	27272701
<b>ECLASS 6.2</b>	27272701
<b>ECLASS 7.0</b>	27272701
<b>ECLASS 8.0</b>	27272701
<b>ECLASS 8.1</b>	27272701
<b>ECLASS 9.0</b>	27272701
<b>ECLASS 10.0</b>	27272701
<b>ECLASS 11.0</b>	27272701
<b>ECLASS 12.0</b>	27272701
<b>ETIM 5.0</b>	EC001831
<b>ETIM 6.0</b>	EC001831
<b>ETIM 7.0</b>	EC001831

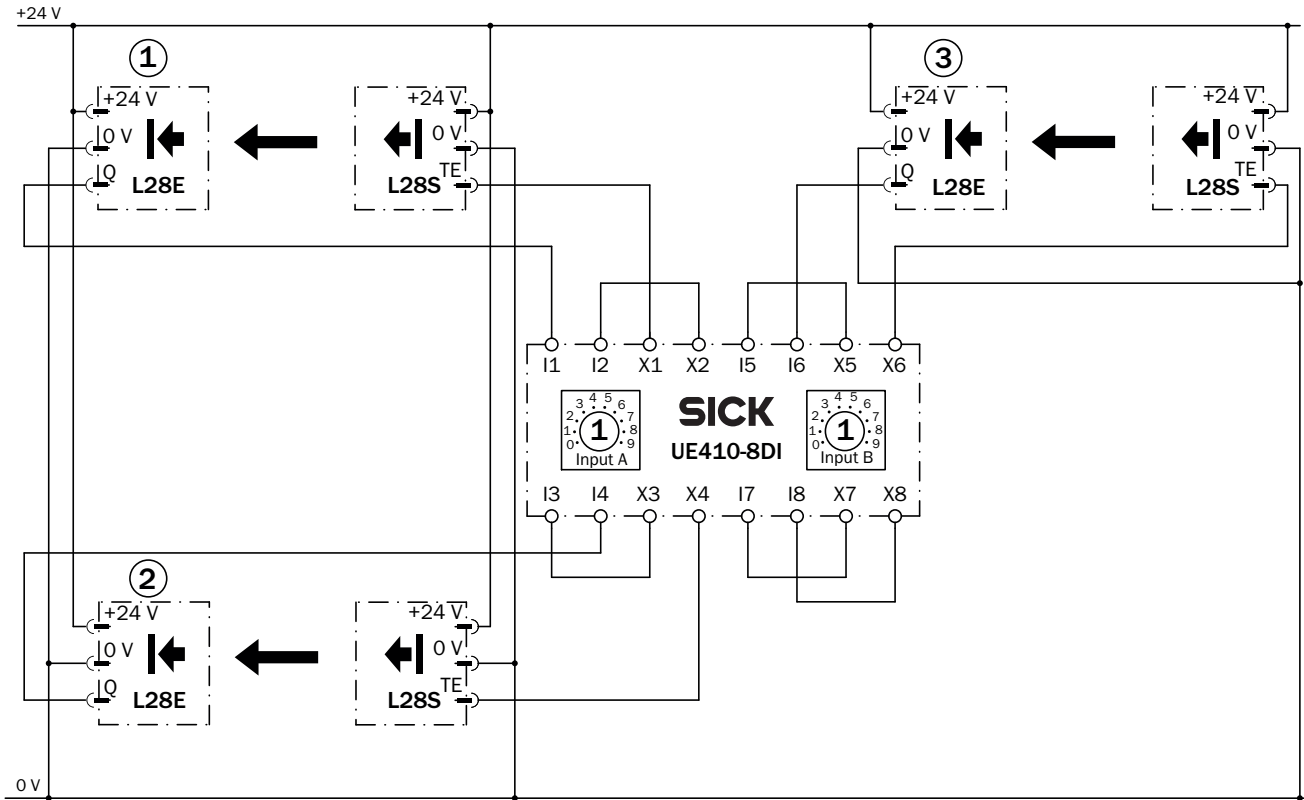
<b>ETIM 8.0</b>	EC001831
<b>UNSPSC 16.0901</b>	46171620

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



### Connection diagram




3 x L28 with a Flexi Classic UE410-8DI input expansion unit





E117084/00/2014-06-02

### Recommended accessories

Other models and accessories → [www.sick.com/L28](http://www.sick.com/L28)

	Brief description	Type	Part no.
<b>Mounting brackets and plates</b>			
	Mounting bracket with hinged arm, steel, zinc coated, mounting hardware included	BEF-WN-W18	2009317
<b>Plug connectors and cables</b>			
	<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</li> </ul>	YF2A14-050VB3XLEAX	2096235
	<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</li> </ul>	YG2A14-050VB3XLEAX	2095897

	Brief description	Type	Part no.
	<ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Female connector, M12, 4-pin, straight</li> <li>• <b>Description:</b> Unshielded, Head A: female connector, M12, 4-pin, straight, unshielded, for power supply, 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 mm<sup>2</sup></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</li> <li>• <b>Description:</b> Unshielded, Head A: female connector, M12, 4-pin, angled, unshielded, for power supply, for cable diameter 3 mm ... 6.5 mm Head B: -</li> <li>• <b>Connection systems:</b> Screw-type terminals</li> <li>• <b>Permitted cross-section:</b> ≤ 0.75 mm<sup>2</sup></li> </ul>	DOS-1204-W	6007303

## 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:

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