



## Single-beam photoelectric safety switch L28

L28E-3P2431, L28S-3D2431



#### receiver

Model Name [> L28E-3P2431](#)  
Part No. [> 2044516](#)



#### sender

Model Name [> L28S-3D2431](#)  
Part No. [> 2044515](#)



#### At a glance

- Type 2 (IEC 61496), PL c (EN ISO 13849), only in conjunction with suitable testing device, e.g., Flexi Classic or Flexi Soft
- Compact size with ranges up to 18 m
- Plastic housing, ABS
- Enclosure rating IP 67
- Temperature range from -40 °C to +60 °C

#### Your benefits

- Easy integration due to small, compact versions with maximum range
- Directly connect to a safety controller - without a separate evaluation unit, reducing costs
- Flexible device integration makes it possible to set up individual protective fields
- Well suited to withstand extreme ambient conditions such as heat, cold or moisture



#### Applications

Access protection (vertical): 1

#### Technical Data-Sender

|                                 |                                   |
|---------------------------------|-----------------------------------|
| Typical range:                  | ≥ 0 m/2 m                         |
| Maximum scanning range:         | 0 m ... 18 m                      |
| Number of beams:                | 1                                 |
| Light spot diameter (distance): | 300 mm (10 m)                     |
| Aperture angle/receiving angle: | according to type 2 (IEC 61496-2) |
| Light sender/type of light:     | LED/visible red light             |
| Wave length:                    | 660 nm                            |
| Average service life (TA):      | 100,000 h (25 °C)                 |
| Protection class:               | II (EN 50178)                     |

|                                   |                                                    |
|-----------------------------------|----------------------------------------------------|
| Enclosure rating:                 | IP 67 (IEC 60529)                                  |
| Type:                             | Type 2 (EN 61496) <sup>1)</sup>                    |
| Safety integrity level:           | SIL1 (IEC 61508) SILCL1<br>IEC 62061 <sup>2)</sup> |
| Category:                         | category 2 (EN ISO 13849) <sup>3)</sup>            |
| Test rate (external test):        | 100 /s (EN ISO 13849) <sup>4)</sup>                |
| Maximum demand rate:              | 60 /min (EN ISO 13849) <sup>5)</sup>               |
| Performance level:                | PL c (EN ISO 13849) <sup>6)</sup>                  |
| PFHd:                             | $10^{-6}$ * 1E-06                                  |
| TM (mission time):                | 20 a                                               |
| Supply voltage typical, from, to: | 24 V DC, 16.8 V DC, 28.8 V DC <sup>8)</sup>        |
| Maximum power consumption:        | ≤ 35 mA                                            |
| Diagnostic display:               | LED                                                |
| Design:                           | Rectangular                                        |
| Dimensions (W x H x D):           | 75.5 mm x 17.6 mm x 33.5 mm                        |
| Connection type:                  | connector M12, 4-pin                               |
| Housing material:                 | ABS                                                |
| Weight:                           | 40 g                                               |
| Ambient operating temperature:    | -40 °C ... 60 °C                                   |
| Storage temperature:              | -40 °C ... 75 °C                                   |

1) 2) 3) 6) 7) Only in conjunction with suitable testing device, e.g., Flexi Classic, DeviceNet Safety <sup>4)</sup> The test rate shall not be exceeded <sup>5)</sup> Between two demands on a safety-related response of the device, at least 100 internal or external tests must be carried out. <sup>8)</sup> Reverse polarity protected

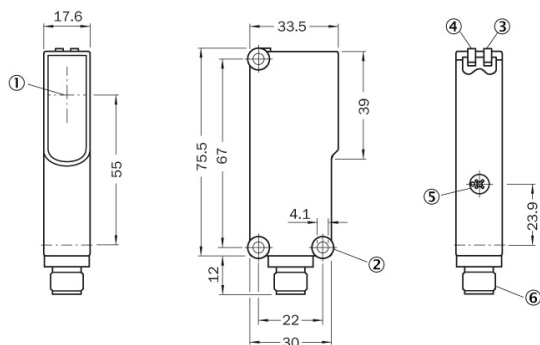
#### Technical Data-Receiver

|                                   |                                                    |
|-----------------------------------|----------------------------------------------------|
| Typical range:                    | ≥ 0 m12 m                                          |
| Maximum scanning range:           | 0 m ... 18 m                                       |
| Number of beams:                  | 1                                                  |
| Light spot diameter (distance):   | 300 mm (10 m)                                      |
| Aperture angle/receiving angle:   | according to type 2 (IEC 61496-2)                  |
| Protection class:                 | II (EN 50178)                                      |
| Enclosure rating:                 | IP 67 (IEC 60529)                                  |
| Type:                             | Type 2 (EN 61496) <sup>1)</sup>                    |
| Safety integrity level:           | SIL1 (IEC 61508) SILCL1<br>IEC 62061 <sup>2)</sup> |
| Category:                         | category 2 (EN ISO 13849) <sup>3)</sup>            |
| Test rate (external test):        | 100 /s (EN ISO 13849) <sup>4)</sup>                |
| Maximum demand rate:              | 60 /min (EN ISO 13849) <sup>5)</sup>               |
| Performance level:                | PL c (EN ISO 13849) <sup>6)</sup>                  |
| PFHd:                             | $10^{-6}$ * 1E-06                                  |
| TM (mission time):                | 20 a                                               |
| Supply voltage typical, from, to: | 24 V DC, 16.8 V DC, 28.8 V DC <sup>8)</sup>        |
| Switching outputs:                | PNP, Q and Q not <sup>9)</sup>                     |
| Maximum switching current:        | 100 mA                                             |
| Maximum power consumption:        | ≤ 25 mA                                            |
| Diagnostic display:               | LED                                                |
| Design:                           | Rectangular                                        |
| Dimensions (W x H x D):           | 75.5 mm x 17.6 mm x 33.5 mm                        |
| Connection type:                  | connector M12, 4-pin                               |
| Housing material:                 | ABS                                                |

Weight: 40 g  
 Ambient operating temperature: -40 °C ... 60 °C  
 Storage temperature: -40 °C ... 75 °C  
 Switching frequency: 1,000 Hz

1) 2) 3) 6) 7) Only in conjunction with suitable testing device, e.g., Flexi Classic, DeviceNet Safety 4) The test rate shall not be exceeded 5) Between two demands on a safety-related response of the device, at least 100 internal or external tests must be carried out. 8) Reverse polarity protected 9) Short-circuit protected, interference suppression

## Dimensional drawing



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