



L40S-33MA2A, L40E-33MA2A

L4000 Systems

SINGLE-BEAM PHOTOELECTRIC SAFETY SWITCHES

SICK
Sensor Intelligence.



Ordering information

| System part | Type | Part no. |
|-------------|-------------|----------|
| Sender | L40S-33MA2A | 6027335 |
| Receiver | L40E-33MA2A | 6027336 |

Other models and accessories → www.sick.com/L4000_Systems



Detailed technical data

Features

| | |
|-----------------------------|--|
| Scanning range | 0 m ... 60 m |
| Number of beams | 1 |
| Detection capability | 30 mm |
| Optical axis | Axial |
| Response time | 0.4 ms |
| Response time | 0.4 ms + Test device response time (UE401) |

Safety-related parameters

| | |
|---|---|
| Type | Type 4 (IEC 61496) ¹⁾ |
| Safety integrity level | SIL3 (IEC 61508) ¹⁾ SILCL3 (EN 62061) ¹⁾ |
| Category | Category 4 (EN ISO 13849) ¹⁾ |
| Performance level | PL e (EN ISO 13849) ¹⁾ |
| PFH_D (mean probability of a dangerous failure per hour) | 2.9×10^{-10} (EN ISO 13849) ¹⁾ |
| T_M (mission time) | 20 years (EN ISO 13849) ¹⁾ |

¹⁾ Only in conjunction with UE401.

Interfaces

| | |
|---|---|
| Connection type | Male connector M12, 4-pin, angled |
| Diagnostic display | LED |
| Fieldbus, industrial network Integration via Flexi Soft safety controller | CANopen, DeviceNet™, EtherCAT®, EtherNet/IP™, Modbus TCP, PROFIBUS DP, PROFINET ¹⁾ |

¹⁾ For additional information on Flexi Soft -> www.sick.com/Flexi_Soft.

Electrical data

| | |
|-------------------------------------|-----------------------------------|
| Protection class | III (EN 50178) |
| Supply voltage V_S | 24 V DC (19.2 V DC ... 28.8 V DC) |
| Power consumption | 30 mA; 60 mA (depending on type) |

Mechanical data

| | |
|---------------------------------------|---------------------|
| Design | Cylindrical |
| Dimensions (diameter x length) | M30 x 100 mm |
| Housing material | Nickel-plated brass |
| Lens material | Glass |
| Weight | 212 g |

Ambient data

| | |
|--------------------------------------|--------------------------------------|
| Enclosure rating | IP67 (EN 60529) |
| Ambient operating temperature | -20 °C ... +55 °C |
| Storage temperature | -25 °C ... +75 °C |
| Air humidity | 15 % ... 95 %, Non-condensing |
| Vibration resistance | 5 g, 10 Hz ... 55 Hz (IEC 60068-2-6) |
| Shock resistance | 10 g, 16 ms (IEC 60068-2-29) |

Other information

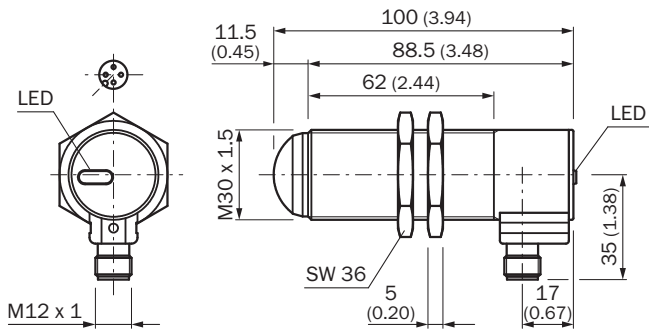
| | |
|---------------------------------------|-------------------|
| Light source | LED |
| Type of light | Visible red light |
| Wave length | 660 nm |
| Aperture angle/receiving angle | ± 2.5° / ± 2.5° |

Classifications

| | |
|-----------------------|----------|
| ECl@ss 5.0 | 27272701 |
| ECl@ss 5.1.4 | 27272701 |
| ECl@ss 6.0 | 27272701 |
| ECl@ss 6.2 | 27272701 |
| ECl@ss 7.0 | 27272701 |
| ECl@ss 8.0 | 27272701 |
| ECl@ss 8.1 | 27272701 |
| ECl@ss 9.0 | 27272701 |
| ETIM 5.0 | EC001831 |
| ETIM 6.0 | EC001831 |
| UNSPSC 16.0901 | 46171620 |

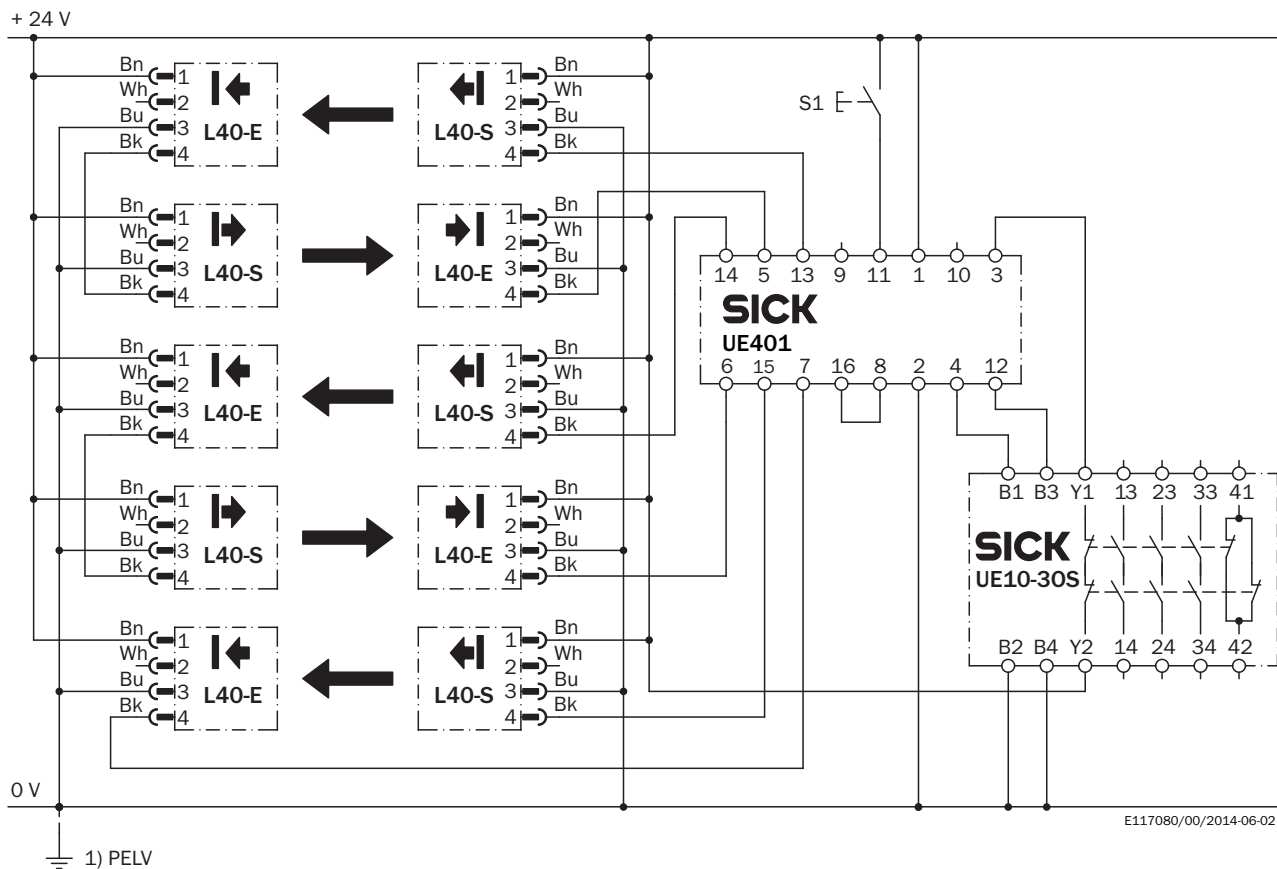
Dimensional drawing (Dimensions in mm (inch))

M30 axial



Connection diagram

5 x L4000 (two pairs cascaded) on UE401 with UE10-30S



Task

Integrate five single-beam L400/L4000 photoelectric safety switches (2 pairs cascaded) with a UE401 safety evaluation device and a UE10-30S safety relay.

Operating mode: with restart interlock and external device monitoring.

Function

When the light path is clear and the UE10 is de-energized and functioning correctly, the yellow LED on the UE401 flashes. The system is ready to be switched on. The system is ready to be switched and is enabled when the S1 button is pressed and released. OSSD1 and OSSD2 outputs are then live and the UE10 is switched on. If one of the light beams is interrupted, the UE10 is deactivated as the OSSD1 and OSSD2 output signals drop out.

Possible faults

OSSD cross-circuits and short-circuits are detected and lead to the inhibited state (lock-out). The incorrect functioning of the UE10 will be detected and will not result in the loss of the shutdown function. Jamming of the S1 button prevents output circuit to enable.











Comments

¹⁾ PELV as required in EN 60204-1 / 6.4

The related operating instructions for the integrated devices must be observed!


Recommended accessories

Other models and accessories → www.sick.com/L4000_Systems

| | Brief description | Type | Part no. |
|---|--|---------------------------|----------|
| Mounting brackets and plates | | | |
|  | Mounting bracket for M30 sensors, steel, zinc coated, without mounting hardware | BEF-WN-M30 | 5308445 |
| Switching amplifiers | | | |
|  | UE401 evaluation unit | UE401-A0010 | 6027343 |
| Plug connectors and cables | | | |
|  | Head A: female connector, M12, 4-pin, straight Head B: cable Cable: PVC, unshielded, 5 m | DOL-1204-G05M | 6009866 |
|  | Head A: female connector, M12, 4-pin, angled Head B: cable Cable: PVC, unshielded, 5 m | DOL-1204-W05M | 6009867 |
|  | 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 |
| Alignment aids | | | |
|  | Laser alignment aid for various sensors, laser class 2 (IEC 60825). Do not look into the beam! | AR60 | 1015741 |
|  | Adapter AR60 for M30 sensors (L4000 Systems, L41 and L21) | AR60 adapter, M30 sensors | 5311529 |
| Deflector mirrors | | | |
|  | Horizontal deflection, 75 mm x 80 mm reflector surface, Glass, Incl. mounting kit (2 x swivel mount) | PNS75-008 | 1026647 |
|  | Horizontal deflection, 96 mm x 124 mm reflector surface, Glass | PSK1 | 1005229 |

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| | Brief description | Type | Part no. |
|---|--|-------|----------|
|  | Deflector mirror for 90° deflection, mirror surface 97 mm x 80 mm, not suitable for column mounting. Glass, mounting hardware included | PSK45 | 5306053 |

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