Online data sheet



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

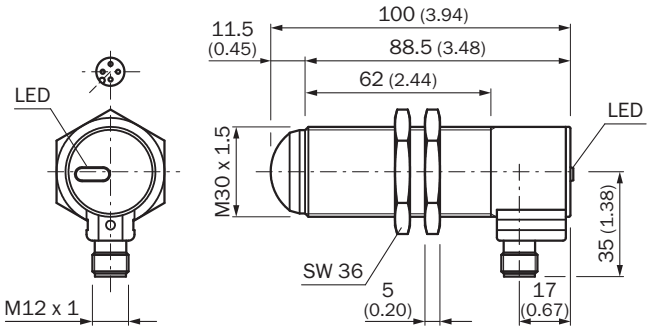
Light source	LED
Type of light	Visible red light
Wave length	660 nm
Aperture angle/receiving angle	± 2.5° / ± 2.5°

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

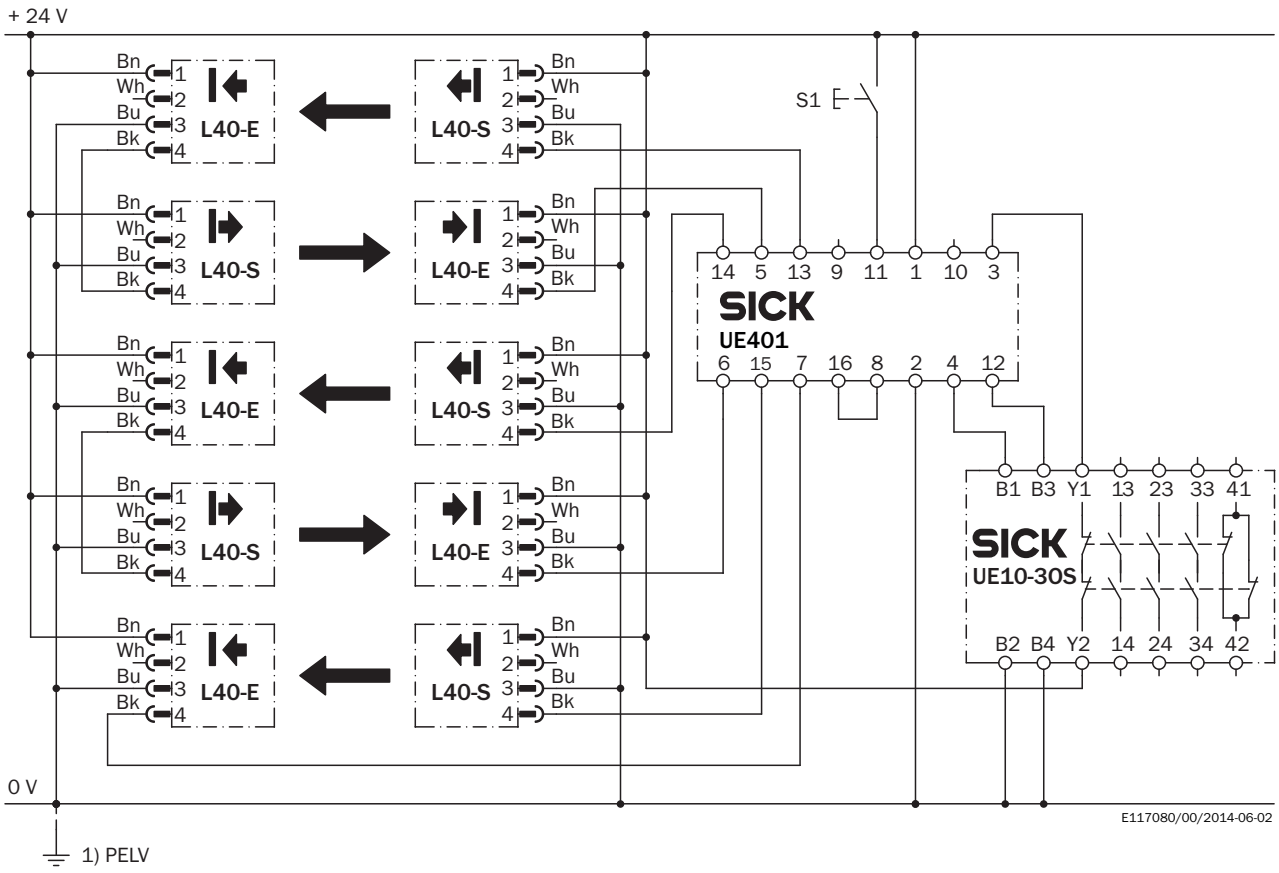
Dimensional drawing (Dimensions in mm (inch))

M30 axial



Connection diagram

5 x L4000 (two pairs cascaded) on UE401 with UE10-3OS



Task

Integrate five single-beam L400/L4000 photoelectric safety switches (2 pairs cascaded) with a UE401 safety evaluation device and a UE10-3OS 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

	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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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.

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