



MLSE-0500A2TP0

MLS

MAGNETIC SENSORS

SICK
Sensor Intelligence.



Ordering information

Type	part no.
MLSE-0500A2TP0	1092499

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



Detailed technical data

Features

Detection range typ.	500 mm
Operating height	10 mm ... 70 mm
Electrical wiring	DC 4-wire
Enclosure rating	IP65, IP67, IP68 ¹⁾

¹⁾ According to EN 60529.

Mechanics/electronics

Supply voltage	9 V DC ... 30 V DC
Terminal resistor	Internal 120 Ω terminator
Protection class	III
Power consumption	600 mW
Resolution, typ.	1 mm
Repeat accuracy, typ.	1 mm
Update rate	100 Hz
Teach-in	✓
Reverse polarity protection	Yes
Short-circuit protection	Yes
Internal terminating resistor (CAN)	✓
Ambient operating temperature	-20 °C ... +70 °C
Shock and vibration resistance	30 g, 11 ms/10 Hz ... 55 Hz, 1 mm
EMC	EN 61000-6-2, EN 61000-6-4
Connection type	Cable with M8 male connector, 4-pin, 0.3 m ¹⁾

¹⁾ Do not bend below 0 °C.

Connection type Detail	
Conductor cross section	0.08 mm ²
Material	
	Housing Metal, Aluminum, plastic
	Cable PUR
UL File No.	NRKH.E181493 & NRKH7.E181493

¹⁾ Do not bend below 0 °C.

Safety-related parameters

MTTF_D	103 years
DC_{avg}	0 %
T_M (mission time)	20 years

Communication interface

Communication interface	CANopen
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Diagnosis

Orientation	
Number of axis	3
Roll Euler angle measuring range	± 180 °
Pitch Euler angle measuring range	± 90 °
Yaw Euler angle measuring range	± 180 °
Resolution	0.02 °
Roll repeatability	± 1 °
Pitch repeatability	± 1 °
Yaw repeatability	± 1 ° ¹⁾
Maximum rotation rate	2,000 °/s
Quaternion w measuring range	0 ... + 1
Quaternion x measuring range	-1 ... 1
Quaternion y measuring range	-1 ... 1
Quaternion z measuring range	-1 ... 1
Update rate	100 Hz
Limit frequency	100 Hz
Initialization time	640 ms
Sampling rate	200 Hz ²⁾
Acceleration measuring range	± 16 g ²⁾
Rotation rate measuring range	± 2,000 °/s ²⁾

¹⁾ Not long-term stable.

²⁾ Raw data.

Certificates

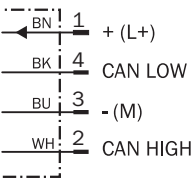
EU declaration of conformity	✓
UK declaration of conformity	✓
ACMA declaration of conformity	✓

Moroccan declaration of conformity	✓
China RoHS	✓
cULus certificate	✓
CANopen certificate	✓
Information according to Art. 3 of Data Act (Regulation EU 2023/2854)	✓

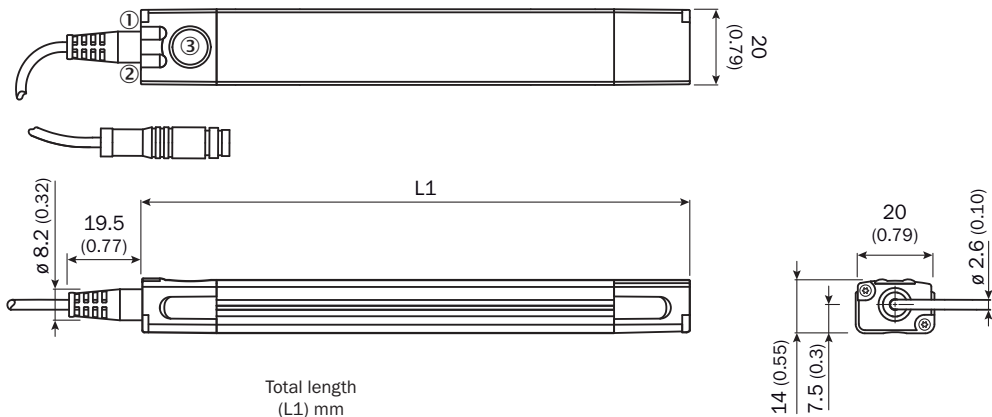
Classifications

ECLASS 5.0	27270104
ECLASS 5.1.4	27270104
ECLASS 6.0	27270104
ECLASS 6.2	27270104
ECLASS 7.0	27270104
ECLASS 8.0	27270104
ECLASS 8.1	27270104
ECLASS 9.0	27270104
ECLASS 10.0	27270104
ECLASS 11.0	27270104
ECLASS 12.0	27274301
ETIM 5.0	EC002544
ETIM 6.0	EC002544
ETIM 7.0	EC002544
ETIM 8.0	EC002544
UNSPSC 16.0901	39122230

Connection diagram Cd-396



Dimensional drawing



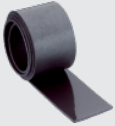
	Total length (L1) mm
MLSE-0200	217
MLSE-0300	325
MLSE-0400	397
MLSE-0500	505
MLSE-0600	613

- Dimensions in mm (inch)
- ① Function signal indicator 1
 - ② Function signal indicator 2
 - ③ Teach-Pad

Recommended accessories

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

	Brief description	Type	part no.
Mounting systems			
	Description: Bracket for lateral mounting Material: Stainless steel, brass Details: Stainless steel V2A (bracket/mounting screw), Brass (fixing screw) Usable for: MPA-107 mm ... 251 mm (sensor measuring range), 2 (recommended number of brackets), MPA-287 mm ... 431 mm (measuring range sensor), 3 (recommended number mounting brackets), MPA-467 mm ... 647 mm (measuring range sensor), 4 (recommended number mounting brackets), MPA-683 mm ... 791 mm (measuring range sensor), 5 (recommended number mounting brackets), MPA-827 mm ... 1007 mm (measuring range sensor), 6 (recommended number mounting brackets)	BEF-WNZ01MPA	2065577
	Description: Bracket for low mounting Material: Stainless steel, brass Details: Stainless steel V2A (bracket/mounting screw), Brass (fixing screw) Usable for: MPA-107 mm ... 251 mm (sensor measuring range), 2 (recommended number of brackets), MPA-287 mm ... 431 mm (measuring range sensor), 3 (recommended number mounting brackets), MPA-467 mm ... 647 mm (measuring range sensor), 4 (recommended number mounting brackets), MPA-683 mm ... 791 mm (measuring range sensor), 5 (recommended number mounting brackets), MPA-827 mm ... 1007 mm (measuring range sensor), 6 (recommended number mounting brackets)	BEF-WNL01MPA	2065973

	Brief description	Type	part no.
magnets			
	Product segment: Magnets Product: Magnetic tapes Description: Magnetic tape, North is top side, adhesive, width 25 mm, length 50 m	MAGNETIC TAPE	5337613
	Product segment: Magnets Product: Magnetic tapes Description: Magnetic tape, South is top side, adhesive, width 25 mm, length 50 m	MAGNETIC TAPE	5337614
	Product segment: Magnets Product: Magnetic tapes Description: Magnetic tape, north pole on top, self-adhesive, width = 25mm, external length = 524 mm, internal length = 511 mm, radius = 1000 mm, 30° section	Magnetic tape, curved	5344198
	Product segment: Magnets Product: Magnetic tapes Description: Magnetic tape, South is top side, adhesive, width 25 mm, length 50 m	MAGNETIC TAPE	5350884
	Product segment: Magnets Product: Magnetic tapes Description: Magnetic tape, North is top side, adhesive, width 25 mm, length 50 m	MAGNETBAND	5350883
Commissioning aids and test equipment			
	Product: Alignment aids Description: Positioning device for magnetic markers (5337613, 5337614) for MLS	TEMPLATE	4097520

	Brief description	Type	part no.
connectors and cables			
	Connection type head A: Female connector, M8, 4-pin, straight, A-coded Connection type head B: Flying leads Signal type: Sensor/actuator cable Cable: 2 m, 4-wire, PUR, halogen-free Description: Sensor/actuator cable, unshielded Application: Uncontaminated zones, Zones with oils and lubricants, Robot, Drag chain operation	YF8U14-020UA3XLEAX	2094791
	Connection type head A: Female connector, M8, 4-pin, straight, A-coded Connection type head B: Flying leads Signal type: Sensor/actuator cable Cable: 5 m, 4-wire, PUR, halogen-free Description: Sensor/actuator cable, unshielded Application: Uncontaminated zones, Zones with oils and lubricants, Robot, Drag chain operation	YF8U14-050UA3XLEAX	2094792
	Connection type head A: Female connector, M8, 4-pin, angled, A-coded Connection type head B: Flying leads Signal type: Sensor/actuator cable Cable: 2 m, 4-wire, PUR, halogen-free Description: Sensor/actuator cable, unshielded Application: Uncontaminated zones, Zones with oils and lubricants, Robot, Drag chain operation	YG8U14-020UA3XLEAX	2095589
	Connection type head A: Female connector, M8, 4-pin, angled, A-coded Connection type head B: Flying leads Signal type: Sensor/actuator cable Cable: 5 m, 4-wire, PUR, halogen-free Description: Sensor/actuator cable, unshielded Application: Uncontaminated zones, Zones with oils and lubricants, Robot, Drag chain operation	YG8U14-050UA3XLEAX	2095590
	Application: Zones with chemicals, Uncontaminated zones	YF8U14-011VA3FYDN2	2098412
	Connection type head A: Female connector, M8, 4-pin, straight, A-coded Connection type head B: Flying leads Signal type: Sensor/actuator cable Cable: 0.6 m, 4-wire, PUR, halogen-free Description: Sensor/actuator cable, unshielded Application: Uncontaminated zones, Zones with oils and lubricants, Robot, Drag chain operation	YF8U14-C60UA3XLEAX	2145825
	Connection type head A: Female connector, M8, 4-pin, straight, A-coded Connection type head B: Flying leads Signal type: Sensor/actuator cable Cable: 1 m, 4-wire, PUR, halogen-free Description: Sensor/actuator cable, unshielded Application: Uncontaminated zones, Zones with oils and lubricants, Robot, Drag chain operation	YF8U14-010UA3XLEAX	2145826
integration modules and adapters			
	Description: CAN-USB Adapter to connect MLS with a PC	AKA-NXL1BxB12KX	6067651

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.”

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