



LMS511-20190

Bulkscan

FLOW SENSORS

SICK
Sensor Intelligence.



Illustration may differ



Ordering information

Type	part no.
LMS511-20190	1059529

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

Detailed technical data

Features

Measurement principle	Laser run time technology
Medium	Bulk solids
Communication interface	Serial, RS-232 USB, RS-422
Light source	Infrared (905 nm)
Laser class	1, eye-safe (IEC 60825-1:2014)
Aperture angle	190°
Scanning frequency	35 Hz 50 Hz 75 Hz
Bandwidth	No limit
Heating	Yes
Working range	0.5 m ... 20 m
Amount of evaluated echoes	5

Performance

Measurement accuracy	± 3 % at reference conditions
Response time	13 ms, 20 ms, 28 ms
Average filter	0 s ... 3,600 s
Max. conveyor speed	≤ 30 m/s

Interfaces

	Auxiliary interface, Serial host interface, Ethernet
Number	1, 1, 1
Protocol	USB 2.0 RS-232/RS-422 TCP/IP
Data transmission rate	500 kBaud

	500 kBaud 100 Mbit/s
Switching inputs	2 + Encoder
Switching outputs	6
Analog signals	Available with separate accessory BAM100
Optical indicators	5 LEDs Additional 7-segment display

Electronics

Supply voltage	19.2 V ... 28.8 V
Power consumption	22 W + 55 W heating (typical)
Residual ripple	± 5 %
Protection class	✓
Connection type	M12 round connector
Output signal	Ethernet Digital inputs and digital outputs USB auxiliary interface RS-232/RS-422
Enclosure rating	IP67 (IEC 60529)
MTTF	> 100 years
Switch-on peak current	2 A
Operating current scanner	≤ 1.3 A
Switch-on time	≤ 60 s

Mechanics

Weight	3.7 kg
Housing color	Gray (RAL 7032)
Dimensions	160 mm x 155 mm x 185 mm
Distance of the sensor to the bulk solid	≥ 0.5 m

Ambient data

Ambient operating temperature	-40 °C ... +60 °C
Electromagnetic compatibility (EMC)	IEC 61000-6-2:2016-08 / IEC 61000-6-3:2006-07 / EN 61000-6-2:2005 / EN 61000-6-3 / A1 2011
Ambient temperature, storage	-40 °C ... +70 °C
Ambient light immunity	70,000 lx

Classifications

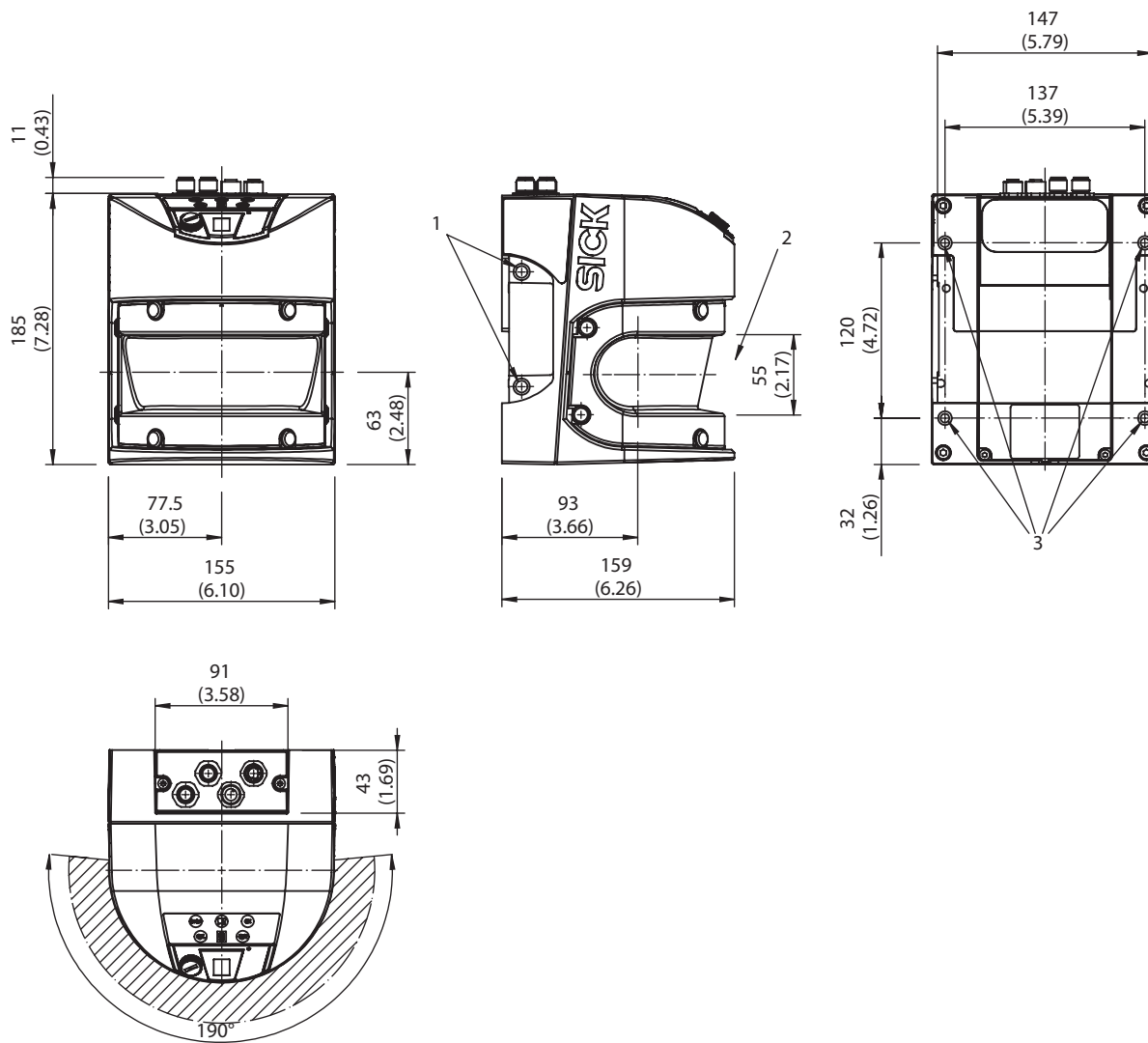
ECLASS 5.0	27200413
ECLASS 5.1.4	27200413
ECLASS 6.0	27200413
ECLASS 6.2	27200413
ECLASS 7.0	27200413
ECLASS 8.0	27200413
ECLASS 8.1	27200413
ECLASS 9.0	27200413
ECLASS 10.0	27200413
ECLASS 11.0	27200413

ECLASS 12.0	27200413
ETIM 5.0	EC002580
ETIM 6.0	EC002580
ETIM 7.0	EC002580
ETIM 8.0	EC002580
UNSPSC 16.0901	41112501

Certificates

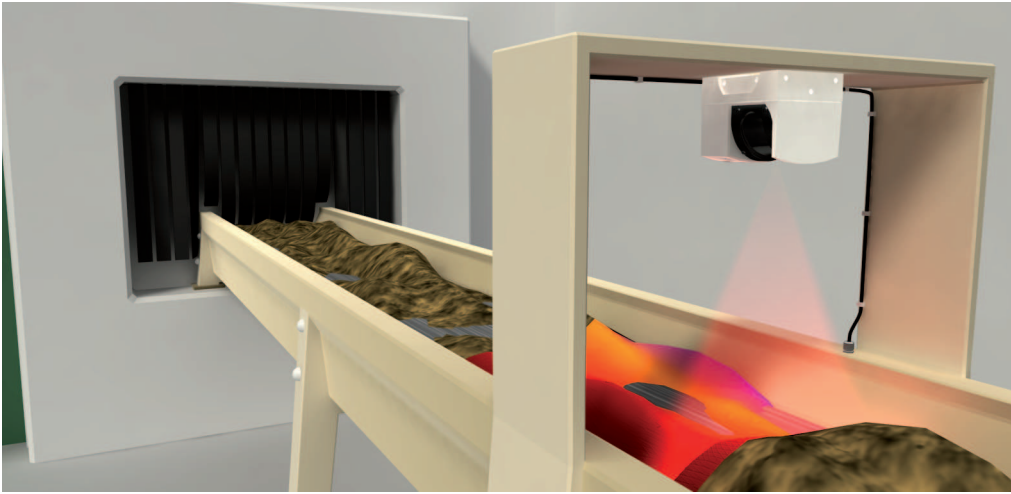
EU declaration of conformity	✓
UK declaration of conformity	✓
ACMA declaration of conformity	✓
China RoHS	✓
cTUVus certificate	✓
Information according to Art. 3 of Data Act (Regulation EU 2023/2854)	✓

Dimensional drawing Bulkscan LMS511

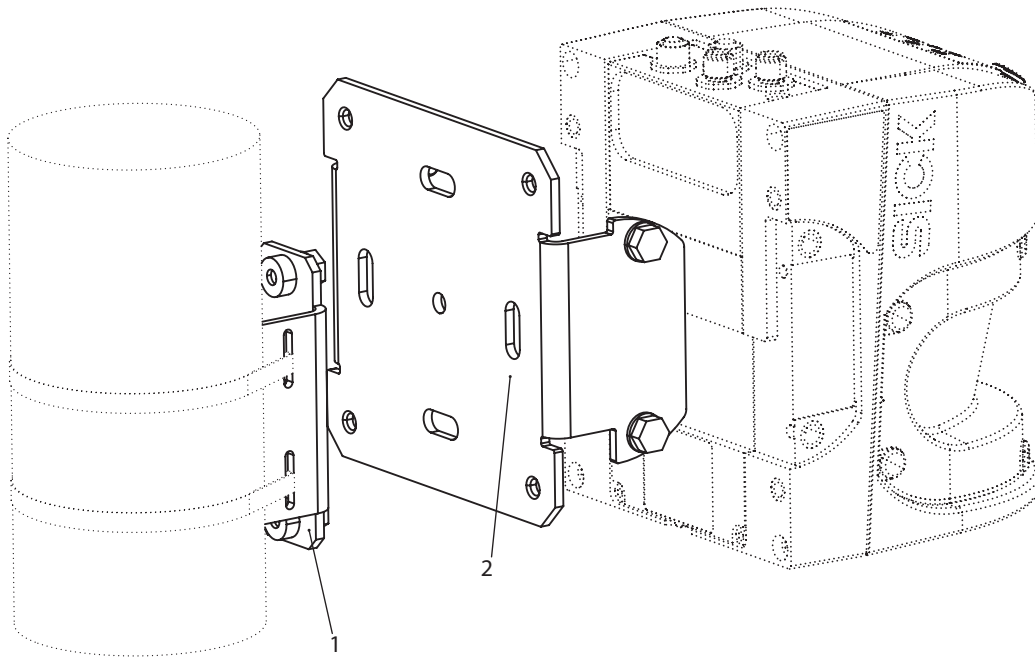


- Dimensions in mm (inch)
- ① 4 screw holes M8 x 9
 - ② do not block front screen
 - ③ 4 screw holes M6 x 8

Application

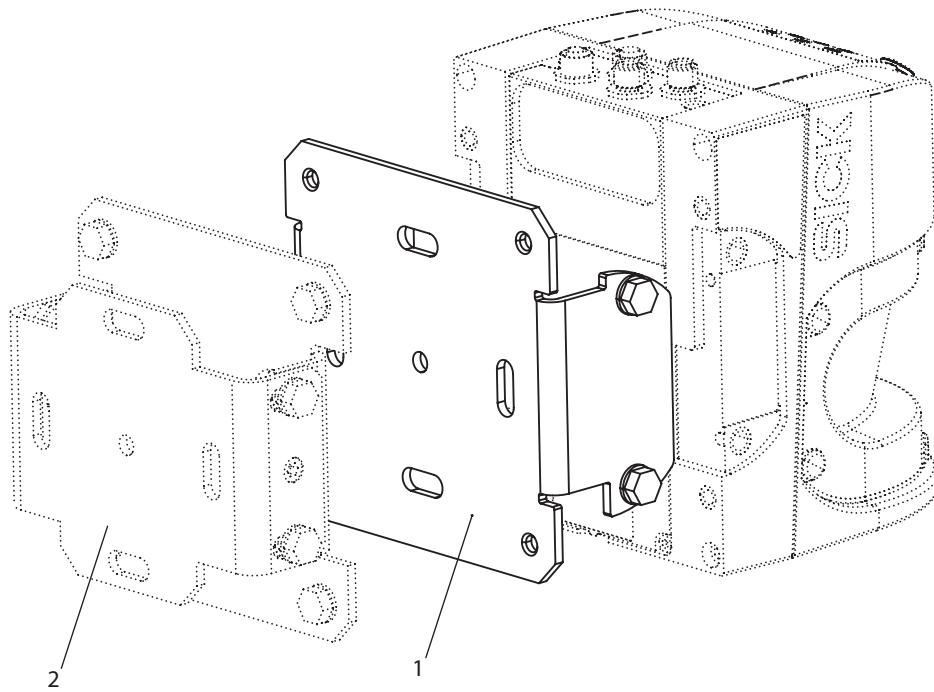


Instruction for installation Post bracket



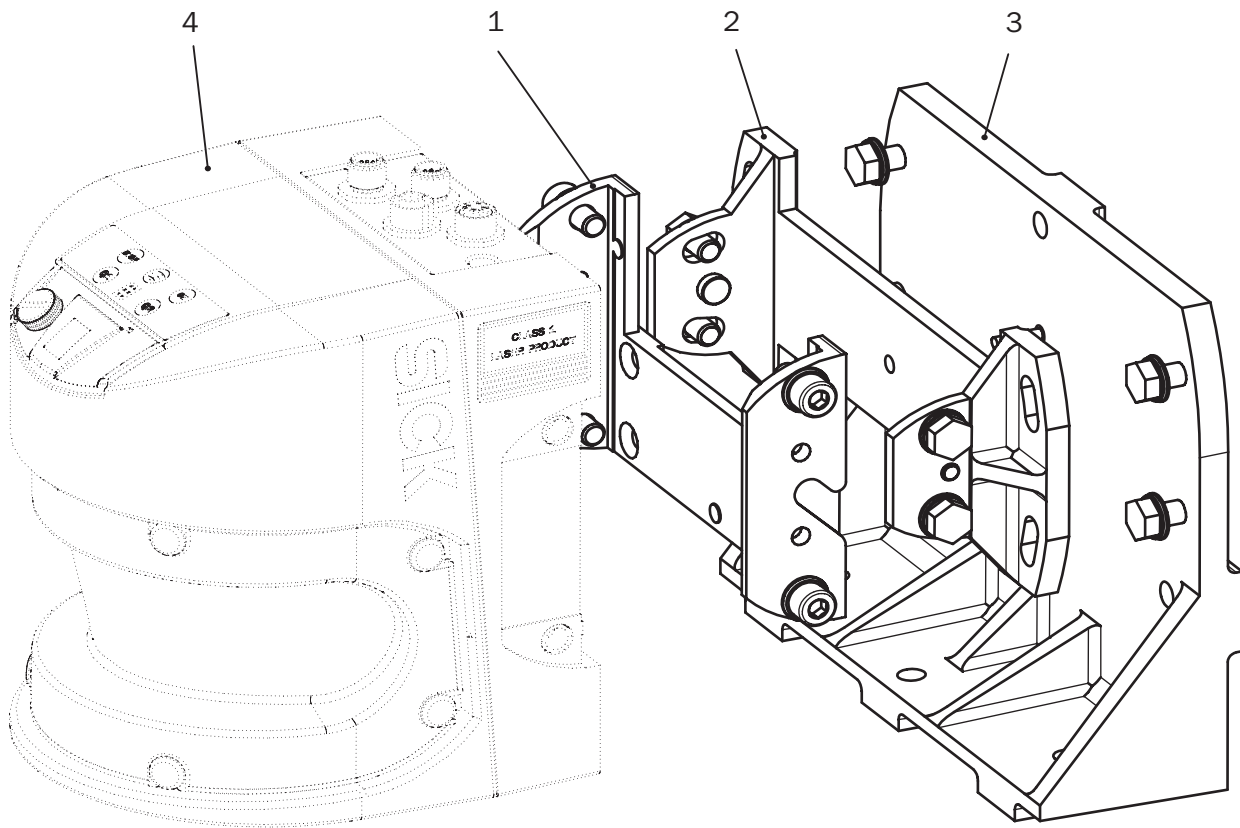
- ① Post bracket
- ② Adapter bracket

Instruction for installation Mounting bracket



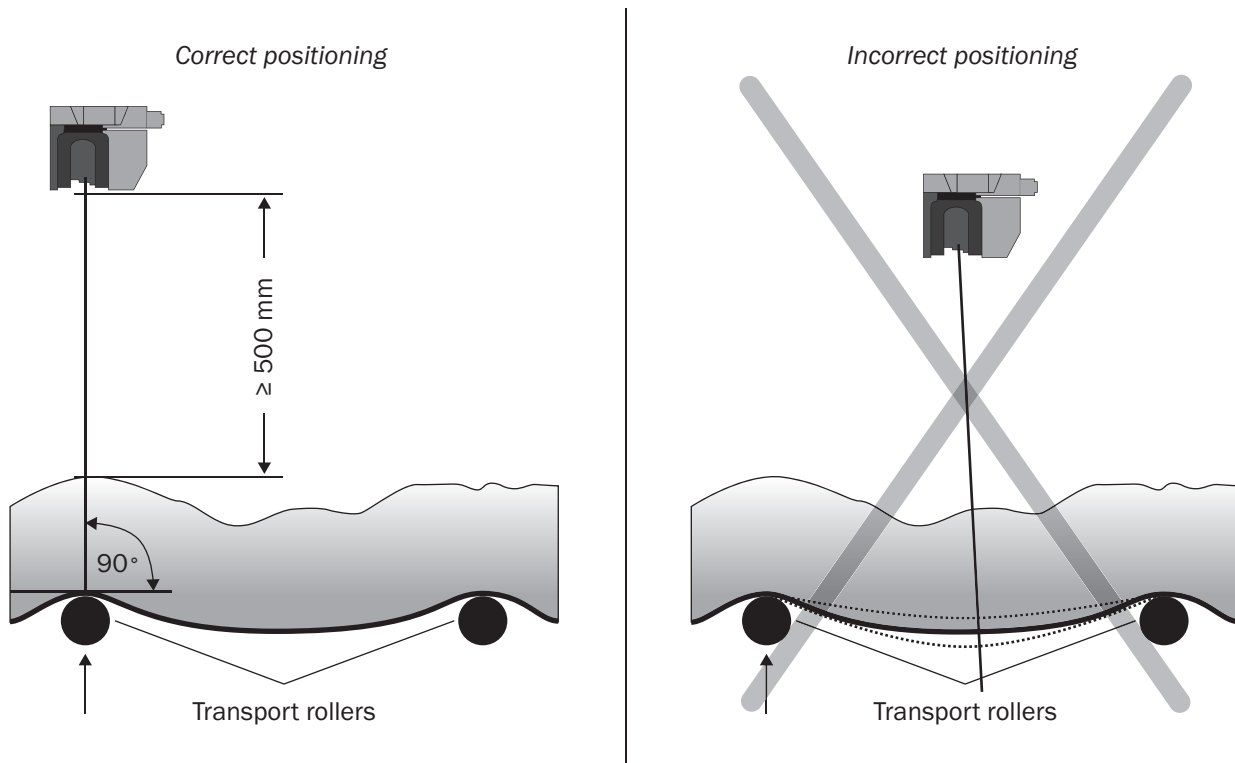
- ① mounting bracket
- ② Mounting set for LMS2xx Part no. 2018303

Instruction for installation Mounting bracket



- ① Mounting kit 1
- ② Mounting kit 2
- ③ Mounting kit 3
- ④ Device



Instruction for installation Bulkscan LMS511 / Bulkscan LMS111



Recommended accessories

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

	Brief description	Type	part no.
Mounting systems			
	<ul style="list-style-type: none"> Description: Pole bracket requires additionally adapter bracket (2059271) or mounting set (2018303) 	Mast mounting bracket	2018304
	<ul style="list-style-type: none"> Description: Strap for mast bracket (sold by meter) 	Tension strap	5306222
	<ul style="list-style-type: none"> Description: Strap lock 	Adjustable strap lock	5306221
	<ul style="list-style-type: none"> Description: Spring arm / mounting arm for DFV60 	DFV60 spring arm	2056155
	<ul style="list-style-type: none"> Description: Mounting bracket for LMS5xx (for retrofitting, if 2018303 is already in use) Material: Stainless steel Details: Stainless steel V2A (1.4301) 	Mounting bracket	2059271
	<ul style="list-style-type: none"> Description: Mounting bracket for direct mounting, from the rear, on wall or machine, not adjustable Material: Aluminum Details: Aluminum Packing unit: 1 piece 	Mounting kit 1	2015623
	<ul style="list-style-type: none"> Description: Mounting bracket for rear mounting on wall or machine, adjustable longitudinal and lateral axes, only in conjunction with mounting kit 1 (2015623) Material: Aluminum Details: Aluminum Packing unit: 1 piece 	Mounting kit 2	2015624
	<ul style="list-style-type: none"> Description: Mounting bracket for rear mounting on wall, floor, or machine, adjustable longitudinal and lateral axes, only in conjunction with mounting kit 1 (2015623) and 2 (2015624) Material: Aluminum Details: Aluminum Packing unit: 1 piece 	Mounting kit 3	2015625
Power supply units and power supply cables			
	<ul style="list-style-type: none"> Output voltage: 24 V DC Output current: 10 A Description: Power supply unit 24 V DC / 10 A 	Power supply	6020875

	Brief description	Type	part no.
device protection and care			
	<ul style="list-style-type: none"> • Product family: Cleaning agents • Description: Cloth for cleaning optical surfaces 	Lens cloth	4003353
	<ul style="list-style-type: none"> • Description: Weather protection hood (180°), vertical mounting. In applications with high shock/vibration requirements, the optics cover must be checked regularly for damage. • Material: Aluminum (powder-coating) • Items supplied: Weather hood, 8 x M6 x 10 screws, stainless steel, 8 x D6.4 washers, stainless steel • Suitable for: LMS511, LMS531, LMS581 	Weather protection hood	2133702

	Brief description	Type	part no.
connectors and cables			
	<ul style="list-style-type: none"> • Connection type head A: Male connector, M12, 4-pin, straight, D-coded • Connection type head B: Male connector, RJ45, 8-pin, straight • Signal type: Ethernet • Cable: 20 m, 4-wire, AWG26, PUR, halogen-free • Description: Ethernet, twisted pair, shielded 	YM2D24-200EA1M-RJA4	6036158
	<ul style="list-style-type: none"> • Description: Power, shielded • Connection type head A: Female connector, M12, 5-pin, straight, A-coded • Connection type head B: Flying leads • Signal type: Power • Cable: 5 m, 4-wire, PUR, halogen-free • Connection systems: Flying leads 	YF2A64-050XXXXLEAX	6036159
	<ul style="list-style-type: none"> • Description: Power, shielded • Connection type head A: Female connector, M12, 5-pin, straight, A-coded • Connection type head B: Flying leads • Signal type: Power • Cable: 20 m, 4-wire, PUR, halogen-free • Connection systems: Flying leads • Application: Uncontaminated zones, Zones with oils and lubricants, Robot, Drag chain operation 	YF2Z15-200UE1XLEAX	6042564
	<ul style="list-style-type: none"> • Description: Power, shielded • Connection type head A: Female connector, M12, 5-pin, straight, A-coded • Connection type head B: Flying leads • Signal type: Power • Cable: 10 m, 4-wire, PUR, halogen-free • Connection systems: Flying leads • Application: Uncontaminated zones, Zones with oils and lubricants, Robot, Drag chain operation 	YF2Z15-100UE1XLEAX	6042565
	<ul style="list-style-type: none"> • Connection type head A: Male connector, M12, 4-pin, straight, D-coded • Connection type head B: Male connector, RJ45, 4-pin, straight • Signal type: Ethernet, PROFINET • Cable: 5 m, 4-wire, PUR, halogen-free • Description: Ethernet, shielded, PROFINET • Application: Drag chain operation, Zones with oils and lubricants 	YM2D24-050P-N1MRJA4	2106184
	<ul style="list-style-type: none"> • Connection type head A: Male connector, M12, 4-pin, straight, D-coded • Connection type head B: Male connector, RJ45, 4-pin, straight • Signal type: Ethernet, PROFINET • Cable: 10 m, 4-wire, PUR, halogen-free • Description: Ethernet, shielded, PROFINET • Application: Drag chain operation, Zones with oils and lubricants 	YM2D24-100P-N1MRJA4	2106185
	<ul style="list-style-type: none"> • Description: Sensor/actuator cable, shielded • Connection type head A: Male connector, M12, 12-pin, straight, A-coded • Connection type head B: Flying leads • Signal type: Sensor/actuator cable • Cable: 5 m, 12-wire, PUR, halogen-free • Application: Drag chain operation, Zones with oils and lubricants, Robot, Drag chain operation 	YM2A2B-050UD3XLEAX	2131093
	<ul style="list-style-type: none"> • Description: Sensor/actuator cable, shielded • Connection type head A: Male connector, M12, 12-pin, straight, A-coded • Connection type head B: Flying leads • Signal type: Sensor/actuator cable • Cable: 10 m, 12-wire, PUR, halogen-free • Application: Drag chain operation, Zones with oils and lubricants, Robot, Drag chain operation 	YM2A2B-100UD3XLEAX	2131094
	<ul style="list-style-type: none"> • Description: Sensor/actuator cable, shielded • Connection type head A: Male connector, M12, 12-pin, straight, A-coded • Connection type head B: Flying leads • Signal type: Sensor/actuator cable • Cable: 20 m, 12-wire, PUR, halogen-free • Application: Drag chain operation, Zones with oils and lubricants, Robot, Drag chain operation 	YM2A2B-200UD3XLEAX	2131095
	<ul style="list-style-type: none"> • Description: Sensor/actuator cable, shielded • Connection type head A: Female connector, M12, 12-pin, straight, A-coded • Connection type head B: Flying leads • Signal type: Sensor/actuator cable • Cable: 5 m, 12-wire, PUR, halogen-free • Application: Drag chain operation, Zones with oils and lubricants, Robot, Drag chain operation 	YF2A2B-050UD3XLEAX	2131096
	<ul style="list-style-type: none"> • Description: Sensor/actuator cable, shielded • Connection type head A: Female connector, M12, 12-pin, straight, A-coded • Connection type head B: Flying leads • Signal type: Sensor/actuator cable • Cable: 10 m, 12-wire, PUR, halogen-free 	YF2A2B-100UD3XLEAX	2131098

	Brief description	Type	part no.
	<ul style="list-style-type: none"> • Application: Drag chain operation, Zones with oils and lubricants, Robot, Drag chain operation • Description: Sensor/actuator cable, shielded • Connection type head A: Female connector, M12, 12-pin, straight, A-coded • Connection type head B: Flying leads • Signal type: Sensor/actuator cable • Cable: 20 m, 12-wire, PUR, halogen-free • Application: Drag chain operation, Zones with oils and lubricants, Robot, Drag chain operation 	YF2A2B-200UD3XLEAX	2131099
integration modules and adapters			
	<ul style="list-style-type: none"> • Description: BAM100 analog module for Bulkscan, by Beckhoff, 24 V DC supply voltage (-15% / + 20%), rail mounting on 35 mm C rail, according to EN 50022 with interlocking, Ethernet TCP/IP interface (RJ45), CoLa communication, 3 x IN: 4 mA ... 20 mA, 4 x OUT: 4 mA ... 20 mA 	BAM100-HE44K	2073296
Measuring wheel encoders			
	<ul style="list-style-type: none"> • Measuring wheel circumference: 300 mm • Measuring wheel surface: O-ring NBR70 • Communication interface: 10 V ... 32 V, Incremental, HTL, Push pull • Supply voltage: 10 V ... 32 V • Pulses per revolution: 1,024 • Connection type: Male connector, M12, 8-pin, radial • Resolution in pulses/mm: 3.41 	DFV60E-22EC01024	1060308
	<ul style="list-style-type: none"> • Measuring wheel circumference: 300 mm • Measuring wheel surface: O-ring NBR70 • Communication interface: 10 V ... 32 V, Incremental, HTL, Push pull • Supply voltage: 10 V ... 32 V • Pulses per revolution: 1,024 • Connection type: Cable, 8-wire, universal, 1.5 m • Resolution in pulses/mm: 3.41 	DFV60E-22EK01024	1060309
Incremental encoders			
	<ul style="list-style-type: none"> • Mechanical design: Solid shaft face mount flange 10 mm x 19 mm (With flat) • Communication interface: 10 V ... 32 V, HTL, Push pull • Connection type: Cable, 8-wire, universal, 1.5 m • Pulses per revolution: 1,024 	DFS60E-S4EK01024	1037534
	<ul style="list-style-type: none"> • Mechanical design: Blind hollow shaft 15 mm (Front clamp) • Communication interface: 10 V ... 32 V, HTL, Push pull • Connection type: Male connector, M12, 8-pin, radial • Pulses per revolution: 1,024 	DFS60E-BHEC01024	1036541
Commissioning aids and test equipment			
	<ul style="list-style-type: none"> • Product: Alignment aids • Description: Alignment aid for detecting the infrared light (wavelength 780 nm to 1050 nm) of SICK sensors 	Alignment aid	2101720

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:

Contacts and other locations –www.sick.com