



LMS111-10190

Bulkscan

LASER VOLUME FLOWMETER

SICK
Sensor Intelligence.



Illustration may differ



Ordering information

Type	Part no.
LMS111-10190	1093274

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

Detailed technical data

Features

Light source	Infrared (905 nm)
Laser class	1, eye-safe (IEC 60825-1:2014)
Aperture angle	190°
Scanning frequency	25 Hz 50 Hz
Bandwidth	No limit
Heating	Yes
Working range	0.5 m ... 10 m
Amount of evaluated echoes	2

Mechanics/electronics

Electrical connection	M12 round connector
Supply voltage scanner/heater	10.8 V ... 30 V
Prohibited residual ripple	± 5 %
Switch-on peak current	2 A
Operating current scanner	≤ 0.4 A
Power consumption	8 W, + 35 W heating (typical)
Housing color	Gray (RAL 7032)
Enclosure rating	IP67 (IEC 60529)
Protection class	III
Weight	1.1 kg, without cable
Dimensions	161 mm x 102 mm x 105 mm
Distance of the sensor to the bulk solid	≥ 0.5 m
Switch-on time	≤ 60 s
MTTF	> 100 years

Performance

Response time	20 ms, 40 ms
Average filter	0 s ... 3,600 s
Accuracy	± 6 %, under reference conditions and with "high" contour smoothing
Max. conveyor speed	≤ 20 m/s

Interfaces

Serial host interface	✓
Protocol	RS-232/RS-422
Data transmission rate	≤ 115.2 kBaud
Ethernet	✓
Protocol	TCP/IP
Data transmission rate	100 Mbit/s
Auxiliary interface	✓
Protocol	RS-232
Data transmission rate	≤ 115.2 kBaud
Switching inputs	2 (+ Encoder)
Switching outputs	3
Analog signals	Available with separate accessory BAM100
Communication interface	Serial host interface, 1, RS-232/RS-422, 115.2 kBaud Ethernet, 1, TCP/IP, 100 Mbit/s Auxiliary interface, 1, RS-232, 115.2 kBaud
Optical indicators	5 LEDs (Additional 7-segment display)

Ambient data

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 operating temperature	-30 °C ... +50 °C
Storage temperature	-40 °C ... +70 °C
Ambient light immunity	40,000 lx

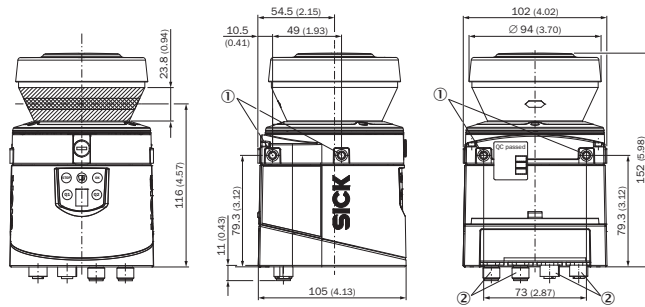
Classifications

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

Dimensional drawing (Dimensions in mm (inch))

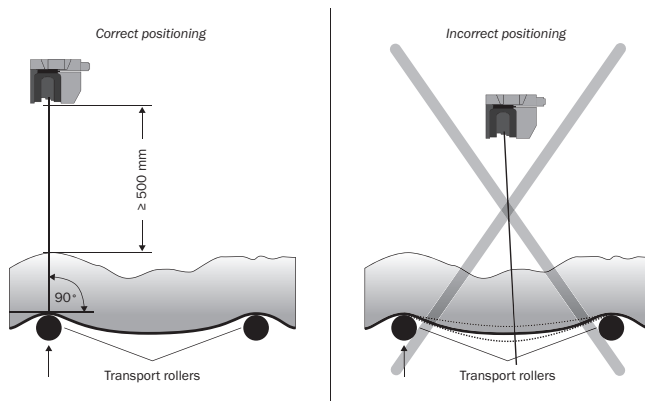
Bulkscan LMS111



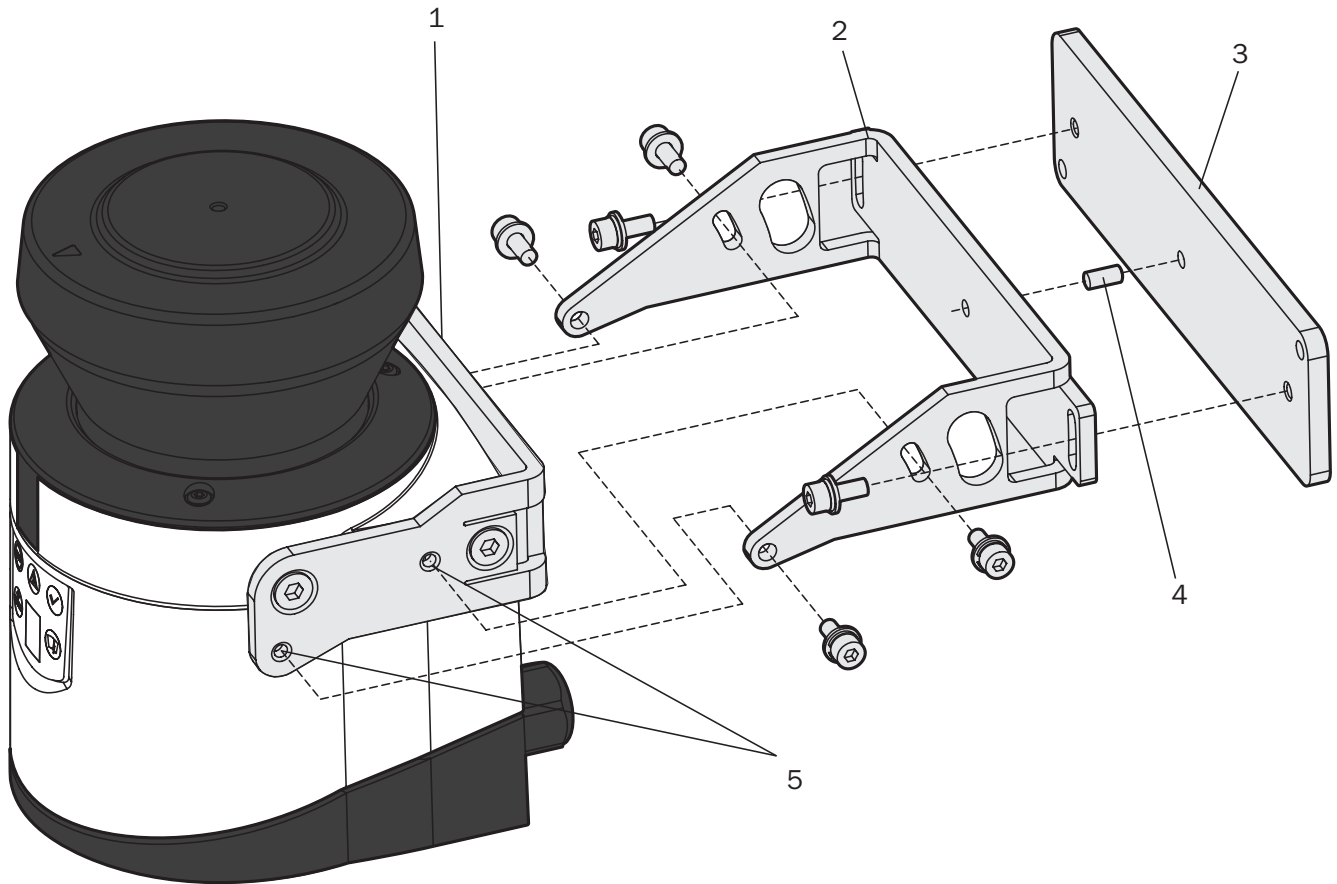
- ① Mounting hole M5 x 7.5
- ② Connector M12

Instruction for installation

Bulkscan LMS511 / Bulkscan LMS111

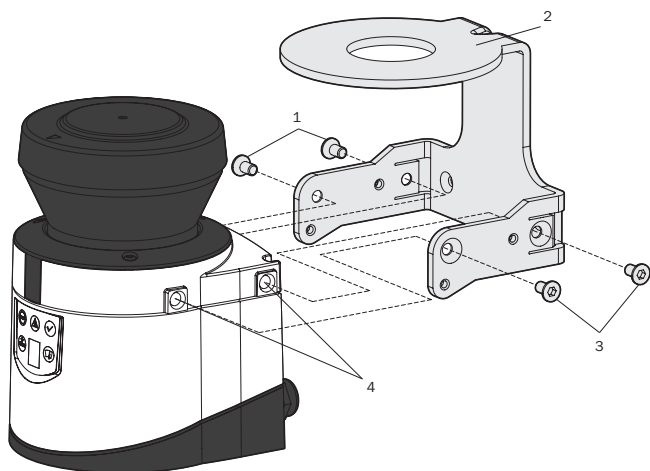


Mounting kit 2



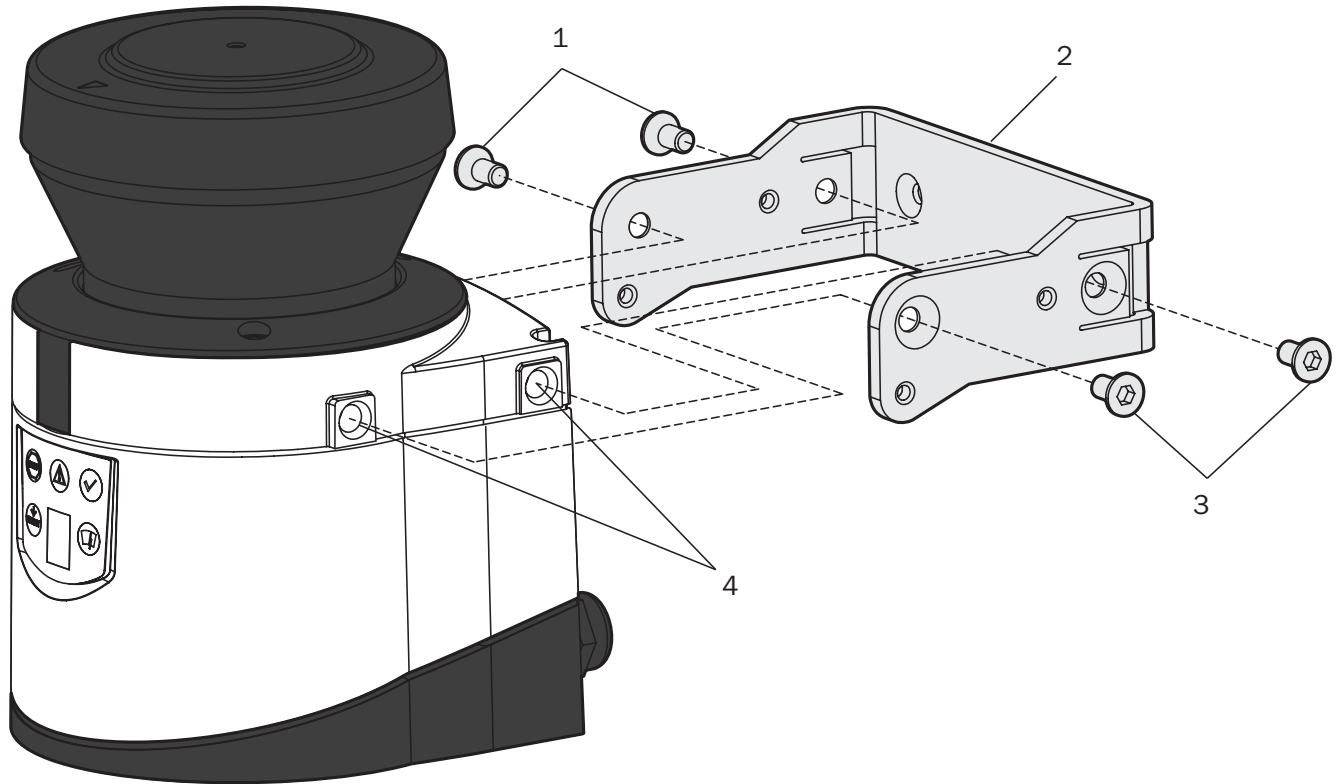
- ① Mounting kit 1a
- ② Mounting kit 2
- ③ Mounting kit 3
- ④ Centring pin
- ⑤ Threaded holes M4

Mounting kit 1b



- ① Mounting screws
- ② Mounting kit 1b
- ③ Mounting screws
- ④ Threaded holes M5x8




Mounting kit 1a



- ① Mounting screws
- ② Mounting kit 1a
- ③ Mounting screws
- ④ Threaded holes M5x8




Recommended accessories

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

	Brief description	Type	Part no.
Connection modules			
	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
Optics cloths			
	Cloth for cleaning optical surfaces	Lens cloth	4003353
Device protection (mechanical)			
	Weather hood, 190°	Weather protection cover 190°	2046459

	Brief description	Type	Part no.
Mounting brackets and plates			
	Spring arm / mounting arm for DFV60	DFV60 spring arm	2056155
	Standard mounting set for weather hood	Mounting bracket	2046025
	1 piece, mounting bracket for rear mounting on wall or machine	Mounting kit 1a	2034324
	1 piece, mounting bracket for rear mounting on wall or machine with protection of optics hood	Mounting kit 1b	2034325
	1 piece, mounting bracket, adjustable lateral axis, only in conjunction with mounting kit 1a (2034324) or 1b (2034325)	Mounting kit 2	2039302
	1 piece, mounting plate, adjustable longitudinal axis, only in conjunction with mounting kit 2 (2039302)	Mounting kit 3	2039303
Other mounting accessories			
	Strap lock	Adjustable strap lock	5306221
	Strap for mast bracket (sold by meter)	Tension strap	5306222
Plug connectors and cables			
	<ul style="list-style-type: none"> • Connection type head A: Female connector, M12, 8-pin, straight, A-coded • Connection type head B: Flying leads • Signal type: RS-232, RS-422 • Cable: 10 m, 8-wire • Description: RS-232, RS-422, shielded • Connection systems: Flying leads 	Connecting cable (female connector - open)	6028420
	<ul style="list-style-type: none"> • Connection type head A: Female connector, M12, 8-pin, straight, A-coded • Connection type head B: Flying leads • Signal type: Sensor/actuator cable • Cable: 5 m, 8-wire, PUR, halogen-free • Description: Sensor/actuator cable, shielded • Application: Zones with oils and lubricants, Drag chain operation 	YF2A28-050UA6XLEAX	2095835
	<ul style="list-style-type: none"> • Connection type head A: Female connector, M12, 8-pin, straight, A-coded • Connection type head B: Flying leads • Signal type: RS-232, RS-422 • Cable: 20 m, 8-wire • Description: RS-232, RS-422, shielded • Connection systems: Flying leads 	YF2A28-200UA6XLEAX	6036154
	<ul style="list-style-type: none"> • 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 • Description: Power, shielded • Connection systems: Flying leads 	YF2A64-050XXXXLEAX	6036159

	Brief description	Type	Part no.
	<ul style="list-style-type: none"> • 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 • Description: Power, shielded • Connection systems: Flying leads 	YF2Z15-100UE1XLEAX	6042565
	<ul style="list-style-type: none"> • 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 • Description: Power, shielded • Connection systems: Flying leads 	YF2Z15-200UE1XLEAX	6042564
	<ul style="list-style-type: none"> • Connection type head A: Male connector, M12, 8-pin, straight, A-coded • Connection type head B: Flying leads • Signal type: Sensor/actuator cable • Cable: 5 m, 8-wire, PUR, halogen-free • Description: Sensor/actuator cable, shielded • Connection systems: Flying leads • Application: Zones with oils and lubricants, Drag chain operation 	YM2A28-050UA6XLEAX	6036155
	<ul style="list-style-type: none"> • Connection type head A: Male connector, M12, 8-pin, straight, A-coded • Connection type head B: Flying leads • Signal type: Sensor/actuator cable • Cable: 10 m, 8-wire, PUR, halogen-free • Description: Sensor/actuator cable, shielded • Connection systems: Flying leads 	YM2A28-100UA6XLEAX	6036156
	<ul style="list-style-type: none"> • Connection type head A: Male connector, M12, 8-pin, straight, A-coded • Connection type head B: Flying leads • Signal type: Sensor/actuator cable • Cable: 20 m, 8-wire, PUR, halogen-free • Description: Sensor/actuator cable, shielded • Connection systems: Flying leads 	YM2A28-200UA6XLEAX	6036157
	<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, PROFINET, shielded • Application: Drag chain operation, Zones with oils and lubricants 	YM2D24-050PN1MRJA4	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, 8-pin, straight • Signal type: Ethernet • Cable: 10 m, 4-wire, AWG26, PUR, halogen-free • Description: Ethernet, twisted pair, shielded 	YM2D24-100EA1MRJA4	6030928
	<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 	YM2D24-200EA1MRJA4	6036158
Terminal and alignment brackets			
	Pole bracket requires additionally adapter bracket (2059271) or mounting set (2018303)	Mast mounting bracket	2018304
	Quick-action lock system for weather hood	Quick release	2046989
	Power supply DC 24 V / 10 A	Power supply	6020875

	Brief description	Type	Part no.
Incremental encoders			
	<ul style="list-style-type: none"> • Mechanical design: Blind hollow shaft 15 mm • 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
	<ul style="list-style-type: none"> • Mechanical design: Solid shaft face mount flange 10 mm x 19 mm • 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
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 • 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 • Connection type: Cable, 8-wire, universal, 1.5 m • Resolution in pulses/mm: 3.41 	DFV60E-22EK01024	1060309

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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