

1) not included in scope of delivery, 2) Distance to tape, 3) Tape, 4) Cable length, 5) Active measurement surface



### Basic features

<b>Additional features 01</b>	Analog, sin/cos
<b>Additional features 03</b>	Real-time capable
<b>Application</b>	linear motion
<b>Approval/Conformity</b>	cURus CE UKCA WEEE
<b>Measuring principle</b>	absolute measuring system
<b>Series</b>	S1H

### Electrical data

<b>Current consumption max. at 5 V DC</b>	60 mA
<b>Hysteresis H max.</b>	2 $\mu$ m
<b>Operating voltage <math>U_b</math></b>	4.75...5.25 VDC
<b>Overvoltage protection</b>	no
<b>Periods</b>	1 mm
<b>Switch-on delay max.</b>	100 ms
<b>Voltage-proof up to (GND to housing)</b>	500 V DC

### Electrical connection

<b>Bending radius min., fixed cable</b>	7.5 x D
<b>Bending radius min., flexible cable</b>	15 x D
<b>Cable diameter D</b>	4.9...5.2 mm
<b>Cable length L</b>	0.3 m, drag chain compatible
<b>Conductor cross-section</b>	0.08 mm <sup>2</sup>
<b>Connection</b>	Cable with connector, M12x1- Male, 12-pin, 0.3 m, PUR
<b>Connection type</b>	Cable with connector, 0.3 m, PUR
<b>Connection version</b>	axial
<b>Number of conductors</b>	12
<b>Polarity reversal protected</b>	no

Magnetically Coded Sensors  
**BML-S1H2-S6QC-M3CA-D0-KA00,3-S284**  
Order Code: **BML0394**

**BALLUFF**

### Environmental conditions

Altitude max.	2000 m
Ambient temperature	-20...80 °C
Cable temperature, drag chain	-25...85 °C
Cable temperature, fixed routing	-40...85 °C
Cable temperature, flexible routing	-25...85 °C
EN 55016-2-3, Radiation	Industrial areas
EN 60068-2-27, Continuous shock	100 g, 2 ms
EN 60068-2-27, Shock	100 g, 6 ms
EN 60068-2-6, Vibration	12 g, 10...2000 Hz
EN 61000-4-2, ESD	Severity Level 4
EN 61000-4-3, RFI	Severity Level 3
EN 61000-4-4, Burst	Severity Level 3
EN 61000-4-5, Surge	Severity Level 2
EN 61000-4-6, High-frequency fields	Severity Level 3
EN 61000-4-8 Magnetic fields	Severity Level 5
Ext. magnetic fields max., in operation	1 mT (no effect)
IP rating IEC 60529 (connector)	IP67
Overall system temperature coefficient	10.5 ppm/K
Relative humidity	≤ 90 %, non-condensing
Storage temperature	-30...85 °C

### Functional safety

MTTF (40 °C)	1177 a
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### Interface

Bits, number	18 Bit
Clock	RS422 differential signal
Count direction	rising
Differential signals	yes
Interface	SSI
	Analog Sin/Cos (1 Vpp ± 0,35 V)
Interface coding	Binary
Preset	configurable via software tool
Real-time signals	Analog, sin/cos
SSI clock frequency max.	4 MHz
SSI clock frequency min.	0.1 MHz
SSI data	18x position
Signal sequence	A before B = rising

### Material

Cable flame-resistant	UL94 V0 and IEC 60332/2
Housing material	Aluminium
Material jacket	PUR

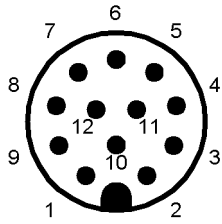
### Mechanical data

Dimension	14 x 13 x 40 mm
Lateral offset (Y)	±0.2 mm
Mounting part	M4 thread
Pitch max.	±0.3 °
Pole width	1 mm
Procedure direction	transverse to tape
Roll max.	±0.3 °
Weight	25 g (excluding cable)
Yaw max. ±	0.3 °

### Range/Distance

Interpolation factor	1024
Measuring range	256 mm
Non-linearity max.	±7 µm
Non-linearity of sensor head, max.	±2 µm
Read distance	0.01...0.35 mm
Repeat accuracy	≤ 1 µm
Resolution	0.9765625 µm (1000/1024 µm)
Traverse speed max.	7 m/s

**Connector Drawings**



**Wiring Diagrams**

Pin	
1	+B (+COS)
2	-B (-COS)
3	+Clk
4	-Clk
5	-DATA
6	+DATA

Pin	
7	GND
8	U <sub>B</sub>
9	-A (-SIN)
10	+A (+SIN)
11	GND Sense
12	U <sub>B</sub> Sense