



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 03</b>	Real-time capable
<b>Application</b>	linear/rotary motion
<b>Approval/Conformity</b>	cURus CE UKCA WEEE
<b>Measuring principle</b>	incremental measuring system
<b>Series</b>	S2C

### 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>	5 m, drag chain compatible
<b>Conductor cross-section</b>	0.08 mm <sup>2</sup>
<b>Connection</b>	Cable, 5 m, PUR
<b>Connection type</b>	Cable, 5 m, PUR
<b>Connection version</b>	axial
<b>Number of conductors</b>	12
<b>Polarity reversal protected</b>	yes

### Electrical data

<b>Current consumption max. at 24 V DC</b>	80 mA
<b>Operating voltage Ub</b>	10...30 VDC
<b>Overvoltage protection</b>	no
<b>Switch-on delay max.</b>	500 ms

### Environmental conditions

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

### Functional safety

<b>MTTF (40 °C)</b>	692 a
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Magnetically Coded Sensors  
**BML-S2C0-Q53G-M600-N0-KA05**  
**Order Code: BML09MM**

**BALLUFF**

**Interface**

Differential signals	no
Error signal	no
Interface	Digital A/B (HTL)
Reference signal	without reference signal
Signal sequence	A before B = rising

**Material**

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

**Mechanical data**

Dimension	10 x 25 x 35 mm
Lateral offset (Y)	±4 mm
Mounting part	Through-hole 3.5 mm
Pitch max.	±1.0 °
Pole width	10 mm
Procedure direction	Lengthwise to tape
Roll max.	±3.0 °
Weight	11 g (excluding cable)
Yaw max. ±	3.0 °

**Range/Distance**

Edge separation min.	16 µs
Interpolation factor	1000
Non-linearity max.	±400 µm (z=1...5 mm, y=±2 mm)
Non-linearity typ.	±550 µm (z=0.01...6.5mm, y=±4mm)
Read distance	0.01...6.5 mm
Repeat accuracy	≤ 10 µm
Resolution	10 µm (edge separation A/B)
Traverse speed max.	0.5 m/s

**Wiring Diagrams**

Colour		Colour	
WH	+A	BU	GND
BN	NC	RD	U <sub>B</sub>
GN	+B	BK	GND Sense
YE	NC	VT	U <sub>B</sub> Sense
GY	NC	GYPK	NC
PK	NC	RDBU	NC