



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>    | CE<br>UKCA<br>cURus<br>WEEE  |
| <b>Measuring principle</b>    | incremental measuring system |
| <b>Series</b>                 | S2C                          |

### Electrical connection

|                                            |                      |
|--------------------------------------------|----------------------|
| <b>Bending radius min., fixed cable</b>    | 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                  |
| <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>                | 8                    |
| <b>Polarity reversal protected</b>         | no                   |

### Electrical data

|                                           |                 |
|-------------------------------------------|-----------------|
| <b>Current consumption max. at 5 V DC</b> | 100 mA          |
| <b>Operating voltage U<sub>b</sub></b>    | 4.75...5.25 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, fixed routing</b>        | -40...80 °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> | 1409 a |
|---------------------|--------|

Magnetically Coded Sensors  
**BML-S2C0-Q61L-M600-N0-KF05**  
**Order Code: BML05EU**

**BALLUFF**

**Interface**

|                      |                          |
|----------------------|--------------------------|
| Differential signals | yes                      |
| Error signal         | no                       |
| Interface            | Digital A/B (RS422)      |
| Reference signal     | without reference signal |
| Signal sequence      | A before B = rising      |

**Material**

|                       |              |
|-----------------------|--------------|
| Cable flame-resistant | UL758/UL1581 |
| 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 | 100                              |
| 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      | ≤ 100 µm                         |
| Resolution           | 100 µm (edge separation A/B)     |
| Traverse speed max.  | 4.88 m/s                         |

**Wiring Diagrams**

|       |                |
|-------|----------------|
| Color |                |
| WH    | +A             |
| BN    | -A             |
| GN    | +B             |
| YE    | -B             |
| GY    | NC             |
| PK    | NC             |
| BU    | GND            |
| RD    | U <sub>B</sub> |
| TR    | PE             |