



1) Membrane, 2) LED orange, 3) LED green, 4) Cable length



**Basic features**

<b>Approval/Conformity</b>	CE cULus WEEE
<b>Function</b>	Vibration Velocity Vibration Acceleration Vibration Severity Zone Contact Temperature Relative Humidity Ambient Pressure Sensor Self-Awareness
<b>Principle of operation</b>	Condition Monitoring Sensors
<b>Series</b>	R15

**Display/Operation**

<b>Display</b>	Run - LED green Communication - LED green, slow flashing (1 Hz) Ping - LED green, asynchronous very fast flashing (4 Hz) and fast flashing (2 Hz) Event - LED orange, fast flashing (2 Hz)
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**Electrical connection**

<b>Bending radius min., fixed cable</b>	3 x D
<b>Bending radius min., flexible cable</b>	5 x D
<b>Cable diameter D</b>	2.9 mm +0.1/-0.05 mm
<b>Conductor cross-section</b>	0.14 mm <sup>2</sup>
<b>Connection</b>	Cable with connector, M12x1-Male, 3-pin, 1.5 m, PUR
<b>Number of conductors</b>	3
<b>Polarity reversal protected</b>	yes
<b>Protection against device mix-ups</b>	yes
<b>Short-circuit protection</b>	yes

**Electrical data**

<b>Current draw max.</b>	10 mA
<b>Operating voltage U<sub>b</sub></b>	18...30 VDC
<b>Protection class</b>	III
<b>Rated operating voltage U<sub>e</sub> DC</b>	24 V
<b>Ready delay t<sub>v</sub> max.</b>	1.5 s

**Environmental conditions**

<b>Ambient temperature</b>	0...70 °C
<b>EN 61000-4-2, ESD</b>	Severity Level 2
<b>EN 61000-4-3, RFI</b>	Severity Level 3
<b>EN 61000-4-4, Burst</b>	Severity Level 4
<b>EN 61000-4-6, High-frequency fields</b>	Severity Level 3
<b>Protection degree</b>	IP67
<b>Storage temperature</b>	-20...70 °C

Condition Monitoring Sensors  
**BCM R15E-002-DI00-01,5-S4**  
Order Code: BCM0002

**BALLUFF**

**Function module ambient pressure**

Ambient pressure, measuring range	300...1100 hPa
Ambient pressure, non-linearity	±0.1 %FS
Ambient pressure, resolution	0.15 hPa

**Function module contact temperature**

Contact temperature, measuring error	±2 %FS
Contact temperature, measuring range	0...70 °C
Contact temperature, non-linearity	±0.75 %FS
Contact temperature, resolution	0.1 °C
Contact temperature, settling time	5 min

**Function module relative humidity**

Relative humidity, measuring range	5...95 %rF
Relative humidity, non-linearity	±2.5 %FS
Relative humidity, resolution	1 %rF
Relative humidity, settling time	5 min

**Function module vibration**

Vibration, frequency range	2...3200 Hz
Vibration, measuring principle	MEMS
Vibration, number of measuring axes	3
Vibration, sampling rate	6400 Hz

**Function module vibration acceleration**

Vibration acceleration, measuring error RMS	±5 %FS @79.4 Hz
Vibration acceleration, measuring range RMS	0...16 g
Vibration acceleration, non-linearity RMS	±2 %FS @79.4 Hz
Vibration acceleration, resolution RMS	0.006 g @79.4 Hz
Vibration acceleration, statistical evaluation variables [for each measuring axis]	RMS Peak to Peak

**Function module vibration velocity**

Vibration velocity, evaluation variables [for each measuring axis]	RMS Peak to Peak Mean Standard Deviation Crest Factor Skewness Kurtosis
Vibration velocity, measuring error RMS	±5 %FS @79.4 Hz
Vibration velocity, measuring range RMS	0...220 mm/s @79.4 Hz
Vibration velocity, non-linearity RMS	±2 %FS @79.4 Hz
Vibration velocity, resolution RMS	0.42 mm/s @79.4 Hz

**Material**

Housing material	Stainless steel (1.4404), Membrane: ePTFE with nylon fleece
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**Mechanical data**

Dimension	20 x 10 x 32 mm
Mounting	Screw M3 (2x)
Weight	30 g

**Output/Interface**

Baud rate	COM3 (230,4 kBaud)
Interface	IO-Link 1.1
Interface setting option	Flexible process data configuration Vibration measurement based on ISO 10816-3 Data preprocessing (statistics) Events (pre-alarms and main alarms) Delay times for alarms Search function with LED display (ping)
Process data IN	20 bytes
Process data OUT	0 bytes
Process data cycle min.	10 ms

**Remarks**

For additional information, refer to user's guide.  
Order accessories separately.

For more information about MTTF and B10d see MTTF / B10d Certificate

Indication of the MTTF- / B10d value does not represent a binding composition and/or life expectancy assurance; these are simply experiential values with no warranty implications. These declared values also do not extend the expiration period for defect claims or affect it in any way.

## Connector Drawings



## Wiring Diagrams

Pin	Color	Signal
1	BN	+24V
3	BU	GND
4	BK	C/Q