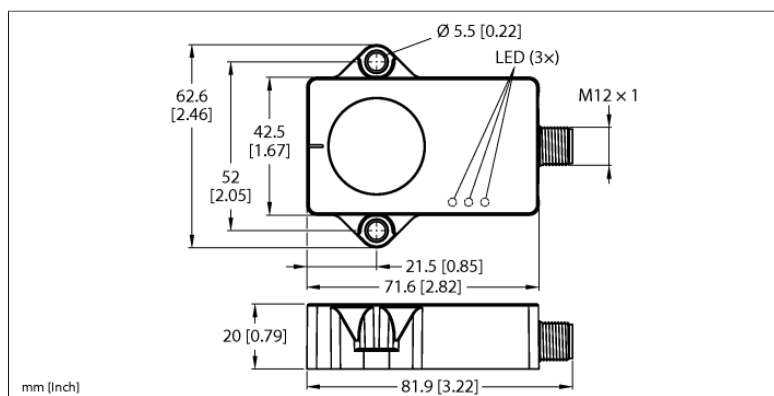


Vibration & Temperature Sensor For Condition Monitoring with IO-Link CMVT-QR20-IOLX3-H1141



Type	CMVT-QR20-IOLX3-H1141
ID	100016543

Vibration — Acceleration

Sampling rate of the acceleration measuring cell	6.6 KHz
RMS measuring range	± 16 g
RMS resolution	0.01 g
RMS linearity deviation, typical	≤ ±3 % @ 78 Hz
RMS repeatability, typical	≤ ±5 % @ 78 Hz

Vibration — Speed

RMS measuring range	0...320 mm/s at 78 Hz
RMS resolution	0.01 mm/s
RMS linearity deviation, typical	≤ ±1 % @ 78 Hz
RMS repeatability, typical	≤ ±5 % @ 78 Hz

Temperature

Temperature measuring range	-40...85 °C
Temperature linearity deviation	≤ 1 %
Temperature repeatability	≤ ± 2.4 %

Electrical data

Operating voltage	18...30 VDC
Residual ripple	≤ 10 % U _{in}
Isolation test voltage	≤ 0.5 kV
Communication protocol	IO-Link
Current consumption	< 50 mA

IO-Link

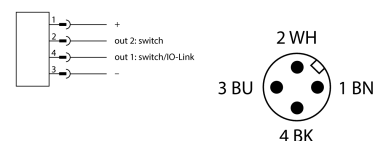
Communication mode	COM 3 (230.4 kBaud)
Function pin 4	IO-Link/SIO
Function Pin 2	SIO

Mechanical data

Design	Rectangular, QR20
Dimensions	71.6 x 62.6 x 20 mm
Housing material	Plastic, Ultem
Electrical connection	Connector, M12 × 1

- Rectangular, plastic, Ultem
- Status displayed via LED
- Acceleration and speed output RMS or peak to peak of the vibration
- Acceleration measuring range ±16 g
- Detection over 3 axes
- Temperature measuring range -40 °C to +85 °C
- High protection class IP68/IP69K
- 18...30 VDC, communication via IO-Link
- 10...30 VDC, SIO mode PNP/NPN switching outputs
- M12 × 1 male connector, 4-pin

Wiring Diagram



Functional principle

Condition monitoring sensors help to prevent unplanned downtimes and malfunctions during the production process. They monitor the condition of the machine as a preventative measure.

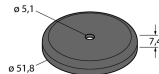
Using the CM sensors can prevent system downtime or machine damage, which in turn improves system effectiveness and allows uninterrupted operation.

The use of CMVT sensors also directly benefits the user in a quantifiable way.

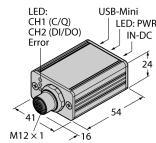
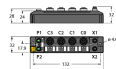
Information on vibration and temperature is output via the standardized IO-Link protocol. Warning and alarm messages are also displayed via simple switching outputs.

Environmental conditions	
Ambient temperature	-40...+85 °C
Temperature changes (EN60068-2-14)	-40... +85 °C; 20 cycles
Vibration resistance (EN 60068-2-6)	20 g; 5 h/axis; 3 axes
Shock resistance (EN 60068-2-27)	200 g; 4 ms ½ sine
Protection class	IP68 IP69K
MTTF	548 years acc. to SN 29500 (Ed. 99) 40 °C
Power-on indication	
LED, Green	
Switching state	2 × LEDs, Yellow

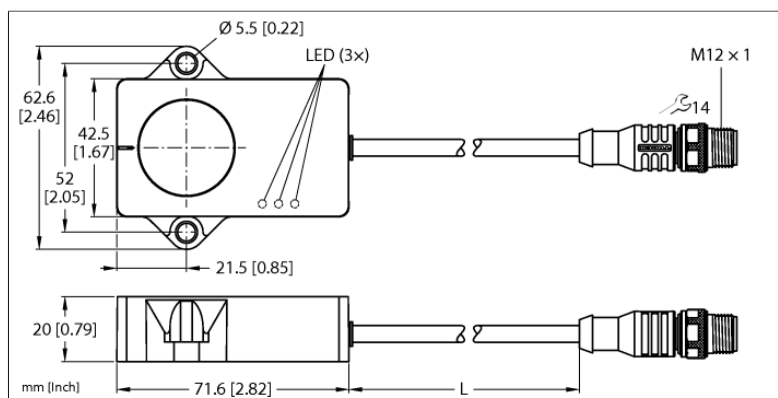
Accessories

Type code	Ident no.		Dimension drawing
SMBWLSMAG	3019574	Magnetic fixture for mounting work lights and sensors, 2 pieces	

Function accessories

Type code	Ident no.		Dimension drawing
USB-2-IOL-0002	6825482	IO-Link Master with integrated USB port	
TBEN-S2-4IOL	6814024	Compact multiprotocol I/O module, 4 IO-Link Master 1.1 Class A, 4 universal PNP digital channels 0.5 A	

Vibration & Temperature Sensor For Condition Monitoring with IO-Link CMVT-QR20-IOLX3-0.3-RS4



Type	CMVT-QR20-IOLX3-0.3-RS4
ID	100029966

Vibration — Acceleration

Sampling rate of the acceleration measuring cell 6.6 KHz

RMS measuring range $\pm 16 \text{ g}$

RMS resolution 0.01 g

RMS linearity deviation, typical $\leq \pm 3 \% @ 78 \text{ Hz}$

RMS repeatability, typical $\leq \pm 5 \% @ 78 \text{ Hz}$

Vibration — Speed

RMS measuring range 0...320 mm/s at 78 Hz

RMS resolution 0.01 mm/s

RMS linearity deviation, typical $\leq \pm 1 \% @ 78 \text{ Hz}$

RMS repeatability, typical $\leq \pm 5 \% @ 78 \text{ Hz}$

Temperature

Temperature measuring range $-40 \dots 85 \text{ }^{\circ}\text{C}$

Temperature linearity deviation $\leq 1 \%$

Temperature repeatability $\leq \pm 2.4 \%$

Electrical data

Operating voltage 18...30 VDC

Residual ripple $\leq 10 \% U_{in}$

Isolation test voltage $\leq 0.5 \text{ kV}$

Communication protocol IO-Link

Current consumption $< 50 \text{ mA}$

IO-Link

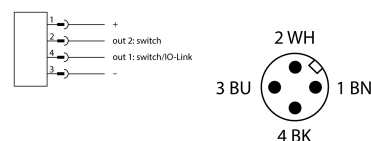
Communication mode COM 3 (230.4 kBaud)

Function pin 4 IO-Link/SIO

Function Pin 2 SIO

- Rectangular, plastic, Ultem
- Status displayed via LED
- Acceleration and speed output RMS or peak to peak of the vibration
- Acceleration measuring range $\pm 16 \text{ g}$
- Detection over 3 axes
- Temperature measuring range $-40 \text{ }^{\circ}\text{C}$ to $+85 \text{ }^{\circ}\text{C}$
- High protection class IP68/IP69K
- 18...30 VDC, communication via IO-Link
- 10...30 VDC, SIO mode PNP/NPN switching outputs
- Cable with male connector, M12 $\times$ 1, 4-pin

Wiring Diagram



Functional principle

Condition monitoring sensors help to prevent unplanned downtimes and malfunctions during the production process. They monitor the condition of the machine as a preventative measure.

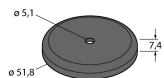
Using the CM sensors can prevent system downtime or machine damage, which in turn improves system effectiveness and allows uninterrupted operation.

The use of CMVT sensors also directly benefits the user in a quantifiable way.

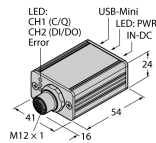
Information on vibration and temperature is output via the standardized IO-Link protocol. Warning and alarm messages are also displayed via simple switching outputs.

Mechanical data	
Design	Rectangular, QR20
Dimensions	71.6 x 62.6 x 20 mm
Housing material	Plastic, Ultem
Electrical connection	Cable with connector, M12 × 1
Cable quality	Ø 4.5 mm, PUR, 0.3 m
	Halogen free, flame retardant acc. to IEC 60332-2-2 and UL FT2
Core cross-section	4 x 0.34 mm ²
Environmental conditions	
Ambient temperature	-40...+85 °C
Temperature changes (EN60068-2-14)	-40... +85 °C; 20 cycles
Vibration resistance (EN 60068-2-6)	20 g; 5 h/axis; 3 axes
Shock resistance (EN 60068-2-27)	200 g; 4 ms ½ sine
Protection class	IP68 IP69K
MTTF	548 years acc. to SN 29500 (Ed. 99) 40 °C
Power-on indication	
	LED, Green
Switching state	2 × LEDs, Yellow

Accessories

Type code	Ident no.		Dimension drawing
SMBWLSMAG	3019574	Magnetic fixture for mounting work lights and sensors, 2 pieces	

Function accessories

Type code	Ident no.		Dimension drawing
USB-2-IOL-0002	6825482	IO-Link Master with integrated USB port	
TBEN-S2-4IOL	6814024	Compact multiprotocol I/O module, 4 IO-Link Master 1.1 Class A, 4 universal PNP digital channels 0.5 A	