



Condition monitoring systems



Simple to implement industrial condition monitoring



Systems for vibration monitoring and diagnostics

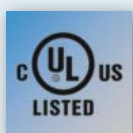


Effective, on-line condition monitoring for simple machinery

Seamless integration directly into Industrial Ethernet systems

Simple real-time indicators for automated alerts

- Raw signal capture for advanced analytics
- No control cabinet or extensive wiring required thanks to IO-Link



Real-time maintenance for industrial machines

Industrial grade machine protection integrates directly into your existing control platform. Machine condition is continually monitored for common fault conditions of impacts, component fatigue, and friction. This allows the timely and predictable scheduling of maintenance before major damage or failure and production downtime. Machines are continuously and permanently protected unlike intermittent monitoring systems.

Easy connection thanks to IO-Link

The industrial proven IO-Link system simplifies integrating Industry 4.0 technology directly into your existing control platform. Expensive secondary networks, gateways, and IT support is not needed. IO-Link masters send status signals to the controls and have as the ability to send calculated and raw vibration signals to higher level systems for advanced analytics.



Process values

The vibration sensor VVB001 internally acquires and analyzes various process values that are used to detect machine errors.

v-RMS (Machine looseness conditions)

Effective value of the vibration velocity, identifies component fatigue.

a-RMS (Machine friction conditions)

Effective value of the acceleration, identifies mechanical rubbing.

a-Peak (Machine impact conditions)

Maximum acceleration, identifies mechanical impacts.

Crest-Factor

a-Peak/a-RMS, is one of the important measures of overall machine condition.





Temperature

Identifies a rising temperature caused by excessive friction or other effects (e.g. electrical causes).


Raw data

For detailed analysis or cause analysis in case of damage, the sensor also provides raw data of the acceleration recording. These are issued on request as a BLOB (Binary Large Object) and transmitted using IO-Link. The system can record the operating condition at 4 second intervals and transmit the data during several minutes to higher level systems.

Accessories

Type	Description	Order no.
IO-Link		
	USB IO-Link master for parameter setting and analysis of units Supported communication protocols: IO-Link (4.8, 38.4 and 230 Kbits/s)	E30390
	IO-Link Bluetooth plug	E30446
	LR DEVICE (supplied on USB flash drive) Software for online and offline parameter setting of IO-Link sensors and actuators	QA0011
	IO-Link master with PROFINET interface	AL1100



The products

Type	Description	Order no.
	Industrial machines	VVB001
	Big machines, performance: > 300 kW, speed: > 600 rpm	VVB010
	Big machines, performance: > 300 kW, speed: 120 rpm to < 600 rpm	VVB011
	Small machines, performance: < 300 kW, speed: > 600 rpm	VVB020
	Small machines, performance: < 300 kW, speed: 120 rpm to < 600 rpm	VVB021

Common technical data

Operating voltage	[V DC]	18...30
Measurement range	[g]	0...50
Frequency range	[Hz]	2...10000
Ambient temperature	[°C]	-30...80
Protection rating		IP 67, IP 68, IP 69K
Housing material		Stainless steel 1.4404 / 316L
Communication interface		IO-Link 1.1 COM2 slave; 38.4 kbaud

Accessories

Type	Description	Order no.
Installation		
	Glue adapter, stainless steel M8 x 1.25 female thread	E30473
	Glue adapter, stainless steel 1/4 - 28 UNF female thread	E30474
Connection technology		
	Connection cable, M12 / M12, LED, 2 m black, PUR cable, 4 poles	EVC023
	Connection cable, M12 / M12, LED, 5 m black, PUR cable, 4 poles	EVC024
	Connection cable, M12 / M12, LED, 10 m black, PUR cable, 4 poles	EVC135
	Connection cable, M12 / M12, LED, 20 m black, PUR cable, 4 poles	EVC137