



VRS Smart Vibration Sensor



Used to detect vibration signals of equipment to further determine whether or not the equipment is abnormal. It includes a MEMS accelerometer combined with a microcontroller unit (MCU) and can be installed at any position by freely choosing between the wireless, wired and external types according to different needs; analysis algorithm can also be written into the sensors and be outputted through DI/O to be received by equipment controllers. It can be applied on the machines in manufacturing processes for industries of semiconductors and optoelectronics, such as the equipment that may have reduced yield or shutdown due to vibrations or produce abnormal vibrations due to malfunctions, including robot arms, motors, pumps, etc.



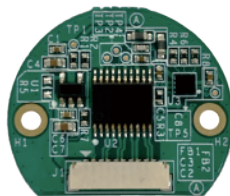
Battery Type
(Fully Wireless)



Powered Type



External Sensor
Magnet/Stud Mount



External Sensor PCB



DI/DO Control Board PCB

Scenarios

Robot arms, motors, pumps, cylinders and other components

Equipment with reduced yield or shutdown due to vibrations

Machinery with abnormal vibrations due to malfunctions

VRS Smart Vibration Sensor Specifications

Items	Battery Type (Main Board)	Powered Type (Main Board)	External Sensor
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Sensor Size	70mm * 40mm * 7 mm	71mm * 42mm * 10 mm	26mm * 20mm * 20 mm		
Weight	20g	33g	80g		
Data transfer rate	BLE (Real-time)	BLE (Real-time)	BLE (Real-time)	BLE (Stored)	USB (Real-time)
	2.4 GHz: 1 Mbps				12 Mbps
Frequency Range	~1k Hz	~1k Hz	~1k Hz	~8k Hz	~8k Hz
Sampling Frequency	~2k Hz	~2k Hz	~2k Hz	~16k Hz	~16k Hz
Simultaneous Connections	1~3	1~3	1~8	1	-
Data Type	raw data	raw data	calculated	raw data / calculated	
Durable Surface Material	Polyetheretherketone (PEEK)			316 stainless steel	
Extension Length	10m				
Dongle Size	43mm * 19mm * 9.5mm				
Dongle Weight	6g				
Principle of Sensing	MEMS				
Number of Axes	X,Y,Z - 3Axis G-Sensor				
Channel	3 (X,Y,Z)				
Sensitivity	4096/8192/16384 LSB/g (0.244/0.122/0.061 mg/LSB)				
Operating Range	Range. ±2 / 4 / 8G				
Power Input	USB Type-C (+5V ; >0.5A) / 24 VDC (>0.1A)				
Data Transfer	USB 2.0-Full Speed / Bluetooth				
Sensor Operating Temp.	-20°C ~ +85°C				
Operating System	Windows 10				
Fixed Way	Magnet / Stud Mounting / Paste				

Software

- BLE 1v1 display real-time visual feedback and can record data in a log file online system (Win10).
- BLE 1v8 multi-sensor feature values monitoring.
- Robot motion learning and monitoring.
- Protocol for collecting raw data or features.

