

VS202 Smart Vibration Sensor (RS485 version)



Introductio

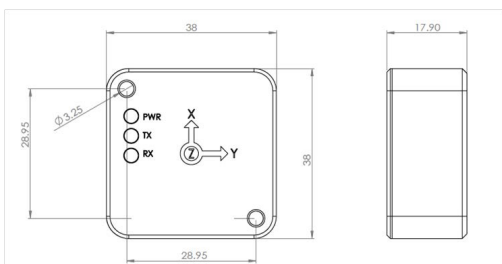
The VS202 is the highly accurate and cost-effective machine health monitoring system. It assembles several vibration sensors with built-in intelligent computing functions, which can actively sense the health status of equipment, and transmit the computing results to the field control system via open transmission protocols.

It is a RS485, triaxial (X, Y and Z), high-bandwidth, smart vibration sensor, which can instantly diagnose the health status of machine.

The built-in time domain data cleaning and RPM identification functions can handle the monitoring and diagnosis of variable frequency rotating machine and non-rotary equipment easily.

Application

Providing early warning diagnosis and remaining life estimation of components in high-speed rotating machine, motor, gearbox and non-rotary type equipment, such as robot and linear guide.



Model		VS202	
Vibration measurement capability	Measurement direction	Triaxial (X, Y and Z)	
	Amplitude	±16 g	
	Sensitivity (±5%)	0.488 mg / LSB	
	Frequency response	5 - 5 kHz	
Temperature measurement capability	ADC resolution	16 bits	
	Measurement Range	-20°C to 85 °C	
	Sensitivity (±5%)	256 LSB/°C	
Computing capability	ADC resolution	16-bit	
	CPU	Arm® Cortex®-M7 32-bit RISC	
	Clock speed	480MHz	
Environmental resistance	Flash memory	2 Mbytes	
	RAM	1 Mbyte	
Power supply	Temperature	-20°C to 85 °C	
	IP grade	IP65	
Feature extraction and fail modes identification	Power voltage	12 to 24 VDC	
	Power consumption	0.45 W	
	Reverse voltage protection	V	
Communication	Data update rate	1 set/s	
	Sampling rate	~ 26,667 Samplings/s	
	Sampling mode	Successively sampling	V ^{1*}
		Software trigger	V ^{1*}
		Hardware trigger	V ^{1*}
	Time domain data cleaning	V	
	RPM identifier	V	
	Time domain features	Overall (mm/s)	V
		Peak (mm/s)	V
		Peak to peak (mm/s)	V
		Crest factor	V
	Frequency domain features	Power in band	30 sets
Power in order		(10 sets for each X, Y and Z axis)	
Fail mode identification	Energy of fail-modes	Unbalance, Misalignment, Looseness, Bearing defect, Gear mesh defect, Van pass defect	
Failure alarm	Caution	V	
	Warning	V	
Appearance	Method	RS485	
	Protocol	Modbus	
	Distance	100m	
	Upload	Raw data	X
		Time domain features	V
		Freq. domain features	V
		Energy of fail-modes	V
		Failure alarm	V
	Download	Sampling mode	V
		Trigger mode	V
Band definition		V	
Failure alarm		V	
FOTA		X	
Device Management	Dimensions	38 x 38 x 18.1 mm	
	Housing material	Aluminum alloy	
	Water-proof method	Seal	
	Wire	Flexible, insulated, 1m of length	
	Wire connector	Pigtail v ^{2*}	
	LED for running status	V ^{3*}	
	LED for communication status	V ^{4*}	
Device Management	Acquisition mode configuration	V ^{5*}	
	Trigger mode configuration	V ^{5*}	
	Fail mode definition configuration	V ^{5*}	
	Alarm threshold configuration	V ^{5*}	
	FOTA	V ^{5*}	

1* Configurable through utility

2* RED: 12-24 VDC in, BLACK: GND, GREEN: A, YELLOW: B, BLUE: Hardware trigger (TTL), BROWN: Reset to default (TTL), Thick BLACK: Shielding

3* GREEN LED Flash

4* RED and Orange LED Flash

5* Manage through device management utility