5534/5544 VELOCITY SIGNAL CONDITIONER

Datasheet

OVERVIEW

The 5534 and 5544 velocity signal conditioners accept signals from machine casing mounted velocity sensors and produce a 4-20 mA output proportional to the measured variable. The detection circuit is responsive to true RMS vibration but the output may be scaled either to peak or RMS units. A green LED indicates sensor and cable integrity. In the event of sensor failure, the LED extinguishes and the output current is driven below 3.6 mA, thereby signaling a malfunction. A BNC connector gives access to the buffered input signal for local analysis. Optional features for either model include filters and galvanic isolation between input, output, and power supply.

5534 5544

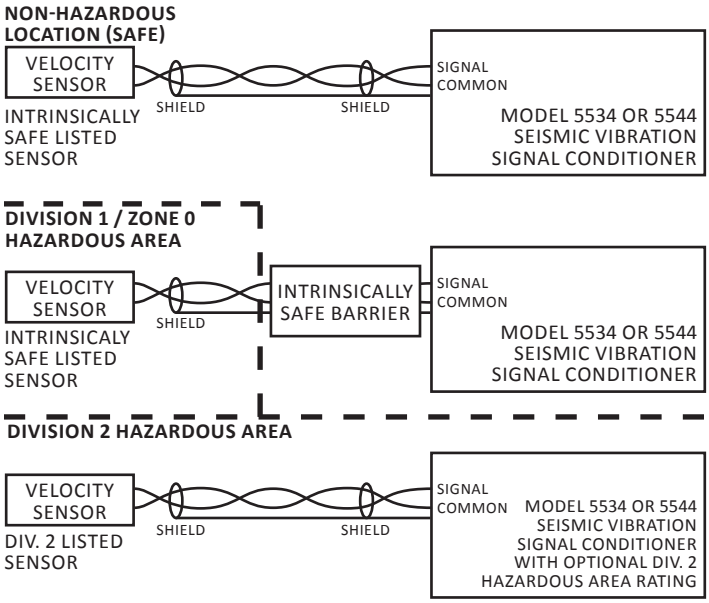
FEATURES

- Reduced cost alternatives to rack mount monitors
- Drives dynamic signals over long distances (300 m / 1000 ft)
- Interfaces a velocity sensor to a PLC, DCS, or other 4-20 mA input monitor
- Provides 4-20 mA output proportional to vibration level
- Sensor/cable input status light (Green LED)
- BNC connector for FFT analyzers and analysis of dynamic signal
- Optional indicator and/or galvanic isolation
- High, Low, and Band Pass Frequency Filters for specific machine conditions

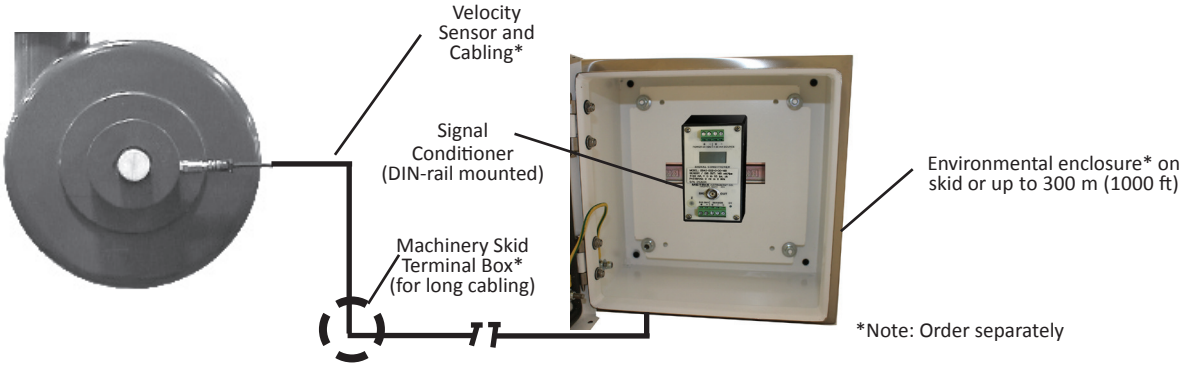
APPLICATIONS

- Industrial Fans
- Motors & Generators
- Process Pumps
- Centrifuges
- Natural Gas/Diesel Engines
- Gas Turbines

WIRING DIAGRAMS



TYPICAL INSTALLATION DIAGRAM

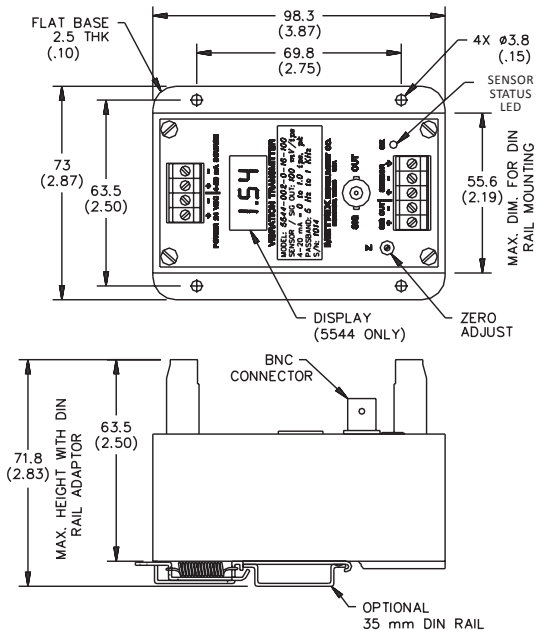


*Note: Order separately

SPECIFICATIONS

Input signal	100 to 500 mV/ips
Sensor Excitation Provided	Required only for piezo-velocity sensor input types: 19 VDC, 4 mA constant current standard; 19 VDC, 10 mA is field selectable via internal jumper.
Output	4-20 mA dc (source)
Vibration Range	See “Ordering Option B”
Maximum Load Resistance	600 Ω
Frequency Response	2 Hz to 2 kHz
Sensor Malfunction	Output current driven below 3.6 mA and sensor status green LED turns off when sensor/cable not OK
Dynamic Signal Output	Buffered input signal at BNC and terminal block
Filters	Optional low-pass and high-pass filters (36 db/octave). Filter section does not affect dynamic signal. See “Ordering Option D & E”
Vibration Indicator (for Model 5544)	3-digit LCD display of vibration level in engineering units
Isolation	500 Vrms, circuit to ground. Optional 600 V galvanic isolation between input, output and power. See “Ordering Option C”
Temperature Limits	5534: -40° to +66°C (-40° to +150°F) 5544: -10° to +66°C (+14° to +150°F)
Input Power	20 to 30 Vdc. Reverse polarity and electrical transient protection provided
Hazardous Area Certification	Available safety certification for CSA & NRTL/C Class I (A, B, C & D), Div. 2. See “Ordering Option G”
Electromagnetic Compatibility	CE mark
Housing	Polymer internally coated for RFI/EMI protection.

WEIGHT & DIMENSIONS



Weight: 0.5 kg
(1.1 lb)

Dimensions in
mm [inches]

ORDERING INFORMATION

5534/5544 SIGNAL CONDITIONER SENSORS
MODEL 55 A 4 - B B B - C - D E - F F F - G
55□4 -□□□-□-□□-□□□- S

A		LCD Digital Indicator
	3	None
	4	Built-in 3-digit LCD display

B				Sensor Input Type/Mounting Style/Range Code	
Input Velocity Sensor Type				Vibration Range (4-20 mA Output)	Output Measure
E/M[1] Types: Metrix Model 5485C		Piezo-Velocity: Metrix Model SV6300			
002	102	402	502	0 - 1.0 ips, pk	Velocity/ English System
032	132	432	532	0 - 1.0 ips, rms	
003	103	403	503	0 - 2.0 ips, pk	
033	133	433	533	0 - 2.0 ips, rms	
005	105	405	505	0 - 10 mils, pk-pk	Displacement/ English System
006	106	406	506	0 - 20 mils, pk-pk	
202	302	602	702	0 - 20 mm/s, pk	Velocity/ Metric System
232	332	632	732	0 - 20 mm/s, rms	
203	303	603	703	0 - 50 mm/s, pk	
233	333	633	733	0 - 50 mm/s, rms	
205	305	605	705	0 - 200 um, pk-pk	Displacement/ Metric System
206	306	606	706	0 - 500 um, pk-pk	
Base Plate	DIN rail	Base Plate	DIN rail		
Mounting Style					

C		Galvanic Isolation
	0	None
	1	Isolation between input, output and power

D		Hi-Pass Filter[2]
	0	No filter
	1	5 Hz
	2	10 Hz
	3	20 Hz
	4	50 Hz
	5	100 Hz
	6	200 Hz
	7	500 Hz
	8	1 KHz

E		Lo-Pass Filter[2]
	0	No filter
	1	20 Hz
	2	50 Hz
	3	100 Hz
	4	200 Hz
	5	500 Hz
	6	1 KHz

F				Sensor Input in mV/ps	
	1	0	0	100 mV/ips (3.9 mV/mm/s)	SV6300A recommended
	1	0	5	105 mV/ips (4.1 mV/mm/s)	5485C recommended
	1	4	5	145 mV/ips (5.7mV/mm/s)	
	1	5	0	150 mV/ips (5.9 mV/mm/s)	
	2	0	0	200 mV/ips (7.9 mV/mm/s)	
	5	0	0	500 mV/ips (19.7 mV/mm/s)	

G		Hazard Area Certification
	S	CSA & NRTL/C Class 1, Grps A,B,C,D, Div. 2[3] Leave Blank for Ordinary Location (No hazard)

NOTES:
1. E/M = Electro-Mechanical (self-generating)
2. Standard is D & E = 0 ; Small price adder for optional filters; D - E must be > 0 Hz; Filters affect 4-20 mA output but have no effect on dynamic output.
3. When connected & wired w/approved Metrix sensor. Request Application Wiring Drawing 9031 for details.

Ordering Example: 5534-102-0-00-200
No LCD digital indicator, DIN rail with 0-1.0 ips, pk range, no isolation, no filters, 200 mV/ips (7.9 mV/mm/s), no hazardous area certification.