



SEISMIC VIBRATION TRANSMITTERS (Combined Accelerometer & Signal Conditioner)

ST
SERIES

Model 5491B & 5543
w/LCD Indicator

Model 5484C & 5520
Standard Design*



5484C-1XX
only

*Optional elbow fitting shown on standard design.

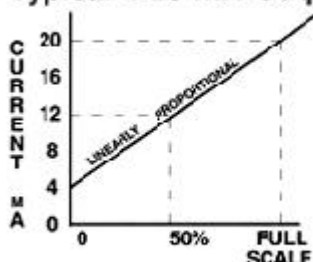
Features

- Reduces cost and complexity of vibration monitoring
- Two wire, loop powered connection simplifies field wiring
- Ideal for direct interface with DLC, DCS or 4-20 mA monitor
- Choice of 4-20 mA output for either vibration velocity or displacement

Applications

- Large Industrial Fans
- Motors & Generators
- Process Pumps
- Centrifuges
- Natural Gas/Diesel Engines
- Cooling Tower Fans

Typical 4-20 mA Output



Standard Designs: Models 5484 (Velocity) & 5520 (Displacement)

With LCD Indicator: Models 5491 (Velocity) & 5543 (Displacement)

Models 5484 and 5520

Combining a precision accelerometer vibration sensor and a signal conditioner in a single package, these units provide the ideal solution for sensing vibration level. A 4-20 mA signal proportional to velocity (Model 5484) or displacement (Model 5520) is transmitted directly to a customer's programmable logic controller (PLC) distributed control system (DCS) or other 4-20 mA input monitor.

Simply mount the transmitter into a single tapped hole in the machine case, connect two wires into a 4-20 mA current loop, and it will transmit the machine's vibration level.

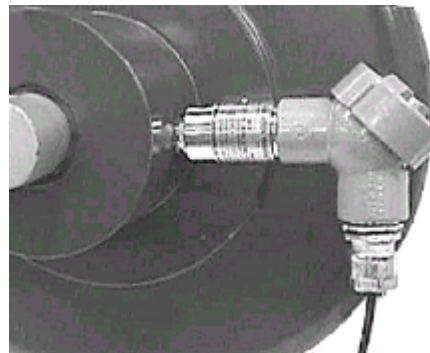
Employing no moving parts, standard transmitters are 100% solid state and epoxy encapsulated in a stainless steel housing. Each transmitter is factory calibrated to the nameplate sensitivity. However, when necessary, zero and span controls can be field adjusted.

Models 5491 & 5543

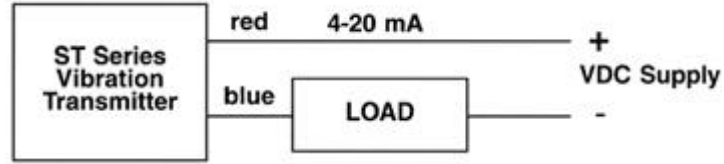
The Model 5491 (Velocity response) and Model 5543 (Displacement response) feature a local LCD digital indicator factory installed to the standard design transmitter employing a solid-state accelerometer sensor.

The LCD indicator is packaged in a sealed module that can be positioned in 90° increments within the elbow fitting to allow proper viewing when the transmitter is installed. A convenient field terminal strip is mounted on the bottom of each LCD module.

Typical Installation



User Wiring Diagrams



Specifications

Vibration Range: 4 to 20 mA linearly proportional output. See [PLC programming tips](#).

Frequency Response:

Models 5484/5491: 5-1500 Hz
 Models 5520/5543: 2- 25 Hz

Axis Orientation: Any

Supply Voltage (Vs):

Models 5484/5520: 10 to 60 VDC
 Models 5491/5543: 12 to 62 VDC

Isolation: 500Vrms, circuit to case

Electrical Connection:

Models 5484/5520: 2 wires, AWG #18, 610 mm (24 inches) long included.
 Models 5491/5543: Terminal strip on indicator (2 wires, AWG #18 max.)

Maximum Load Resistance (RL):

RL = 50 x (Vsupply-10) ohms

Isolation: 500V, circuit to case

Service Temp. Rating: See How To Order

Enclosure Materials:

Models 5484/5520: 303 SS
 Models 5491/5543: 303 SS Base; epoxy painted, aluminum indicator head

Enclosure Environmental Rating:

Models 5484/5520: NEMA 4, IP 65
 Models 5491/5543: NEMA 3R, IP 63

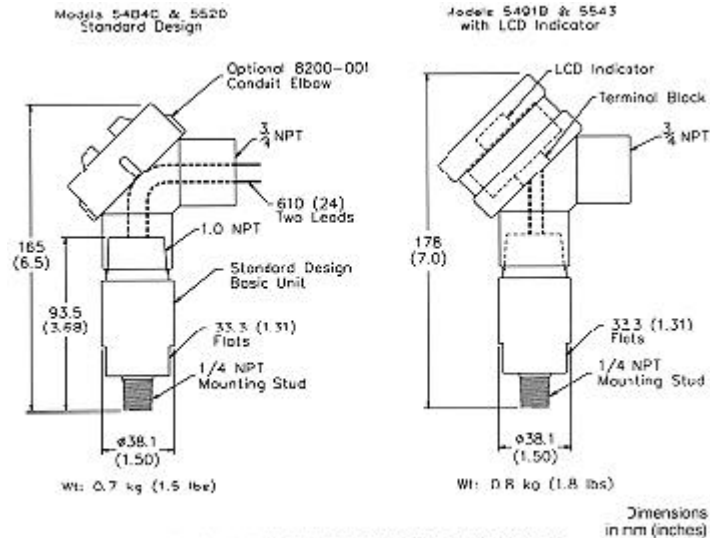
Approvals:

All models CSA and NRTL/c certified ex-proof, Class I (Grps. C&D), Div. 1; Class II (Grps. E,F&G), Div. 1. All 5484 and 5520 models are additionally certified to Class I, Group B, Div. 1. 5484C-121 and -123 are also certified CENELEC EEIa IIB T4 intrinsically safe.

System Block Diagram

SEISMIC MONITORING	SENSOR	SIGNAL CONDITIONER	ALARM MONITOR
THIS PRODUCT	VIBRATION TRANSMITTER		PLC, DCS or 4-20 mA INPUT MONITOR
MOUNTING LOCATION	MACHINE CASE BEARING HOUSING	REMOTE UP TO 1.25 km (4000 FT)	

Weights & Dimensions



How To Order... Velocity Response

MODEL	A			Velocity Range (4-20 mA Output)	Service Temperature
5 4 8 4 C (standard design)	0	2	1	0-1.0 ips (25 mm/s), pk	-10°C to +70°C
	1	2	1		-40°C to +100°C
	0	2	3	0-2.0 ips (50 mm/s), pk	-10°C to +70°C
	1	2	3		-40°C to +100°C
5 4 9 1 B	0	2	1	0-1.00 ips, pk	-10°C to
	0	2	4	0-1.99 ips, pk	

(with LCD indicator)	0	2	2	0-19.9 mm/s, pk	+70°C
	0	2	5	0-50 mm/s, pk	
Examples: MODEL 5484C - 021 MODEL 5491B - 021					

How To Order... Displacement Response

MODEL	A			Displacement Range (4-20 mA OUTPUT)	Service Temperature
5 5 2 0 (standard design)	0	0	2	0-20 mils (0.50 mm), pk-pk	-40°C to +100°C
	0	0	3	0-50 mils (1.25 mm), pk-pk	
	0	0	4	0-100 mils (2.50 mm), pk-pk	
5 5 4 3 (with LCD indicator)	0	0	2	0-19.9 mils, pk-pk	-10°C to +70°C
	0	0	3	0-50 mils, pk-pk	
	0	0	5	0-1.00 mils, pk-pk	
	0	0	6	0-1.99 mils, pk-pk	
Examples: MODEL 5520 - 003 MODEL 5543 - 003					

Accessories



8200



8201



7084



8253



8169 ↑

Part Number	Name	Used With	Description	Material
<input type="checkbox"/> 8200-001	Conduit Elbow	5484 & 5520 only	Provides junction box & physical protection for field wiring. Suitable for Class I (C & D) and Class II (E, F & G), Div. 1 hazardous areas. 3/4" reducer for customer connection included. NEMA 4.	Copper Free Aluminum
<input type="checkbox"/> 8201-001	Conduit Union		Fits between transmitter and 8200-001 conduit elbow to facilitate installation and wiring where there is not enough room to rotate the elbow. Suitable for Class I (A-D) and Class II (E-G), Div. 1 hazardous areas.	Zinc Plated Steel
<input type="checkbox"/> 7084-001	Flange Mount Adaptor	ALL	Provides a means to surface mount transmitters rather than NPT stud (1/2" NPT center hole). Three equally spaced 6.6 (.26) diameter mounting holes on 38 (1.50) diameter circle.	Stainless Steel
<input type="checkbox"/> 7084-002			Same as 7084-001 except (1/4" NPT center hole).	
<input type="checkbox"/> 8253-002	Bushing		Bushing for 1/2 NPT mount when screwed onto standard 1/4 NPT base.	
<u>8169-75-002-</u>	Cable		2 conductor (20 AWG) twisted, shielded PVC jacketed cable, with plated steel grip for cable strain relief & male 3/4 NPT end	Zinc Plated

<input type="text"/>	Assembly	For cable strain relief & more strength. Specify -XXX as length in feet. Example: 8169-75-002-010 =10 ft (3.1M).	Steel
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Once you have chosen your model and accessories you may proceed.

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