masibus

VT7S12E

Dual Channel Vibration Transmitter

Compact. Advanced. Affordable

VT7S12E is the most advanced & Compact Vibration Transmitter. It accepts input directly from ICP type Accelerometer, processes the signal and gives analog output in the form of standard current or voltage; the vibration measurement range is field configurable for acceleration, velocity or displacement. Optionally VT7S12E also accepts one RPM input. The output signal is usually interfaced with PLC or DCS for monitoring and protection.

VT7S12E Transmitter has two Relay outputs per channel for Alarm, Trip. Also has additional outputs like Buffered output on BNC connector for analysis purpose, and optional RS485 serial port for direct interface with PLC, DCS or SCADA

VT7S12E is aimed for balance of plant equipments like Pumps, Motors, Fans, Blowers, etc to provide monitoring and protection, the unit Employs True-RMS and calculated RMS-Peak measurement techniques, considered best for general machine condition monitoring.

The unit can be field configured and operated by means of front keyboard and display, Relay set points and logic can be set for all application types including fail-safe operation, all configured data is stored in a non-volatile memory.

Features

- Compact DIN Rail mounting
- 4 Digit LED display for Parameter Value & 1 Digit LED display for channel no
- Dual channel (optional single channel)
- Micro Controller based
- Same model Field Configurable for Acceleration, Velocity or Displacement range
- Field configurable by front keys and display
- Transmitter/Input signal health check
- Relay for Alarms/Trip
- RPM Measurement (optional)
- Serial Modbus Interface (optional)

Applications

- Balance of Plant Vibration measurement and protection
- Cooling Towers
- Pumps
- Motors
- Gear Boxes
- Blowers
- ID/ FD/ PA Fans
- Air Compressors
- Conveyors

Technical Specifications

Input

No of Channels	Two/One (Optional)

Input Type

Accelermoter Input

Type	Remote ICP piezoelectric Accelerometer
Sensitivity	100mV/g (Standard) 500mV/g (On Request)
Dynamic Range	80 g pk

Measurement Parameters

Parameter	Range (Field Selectable)	Resolution
Acceleration	0 to 50.0g (RMS, Pk)	0.1g
Velocity	0 to 100.0mm/sec (RMS, Pk)	0.1mm/sec
Displacement	0 to 2000microns (Pk-Pk)#	1 micron

 # Derived Peak

Sensor Excitation current	4 mA Approx
Scan Time	100 mSec/Channel
Frequency Range (factory set)	High Pass: 2.5Hz, 5 Hz, 10 Hz Low Pass: 1 KHz, 2.5KHz, 10KHz
Accuracy	±2% of full span (Input to Display)

RPM Input*

Type	Proximity sensor NPN/PNP, Encoder, Magnetic Sensor
Measuring Parameter	RPM
Input Frequency	0 - 166.666 Hz Max
Pulse per rotation	1 to 60 (user set)
Max Pulse input	RPM x Slots(pulse/rotation) <= 600,000
Input Signal Level	0-24V dc, min on pulse width 100 µSec
Input high	> 1 Volt
Input low	<0.2 Volt
Range	0-9999 RPM
Accuracy	±0.015% of Full Range
Resolution	1 RPM

Display & Keys

Channel number	1-Digit, 0.3", Green seven segment LED
Measuring Parameter Value	4-Digit, 0.3", Red seven segment LED
Status LEDs	Discrete/Individual RED LEDs 2 for communication, 4 LEDs for Relay, 1 LED for Auto-manual and 2 for input type of channel
Operational Keys	4 Keys (ENT, UP, DOWN & ESC)

Output

Analog Output (Isolated)

No of Outputs	One per channel
Output Types	4-20mA (standard range) Optional: 0-20mA, 1-5VDC, 0-5VDC, 0-10VDC (Factory set, any one at a time)
Load	500Ω Max (For current o/p) 3000Ω Min (For voltage o/p)
Accuracy	±0.25% of Full Scale (Display to Output)

Relay Output

No of Relays	4 nos (2 nos per channel)
Purpose	Alarm/Trip
Rating	2A@250VAC/30VDC & 5A@250VAC (optional)
Type	(1NO+1NC)
Delay for relay	05-50 sec to avoid false tripping

Communication (Isolated) - Optional

No of Port	1 no RS485
Protocol	Modbus - RTU
Baud Rate	9600, 19200

Buffered Output (Available for Vibration input type only)

No of Output	2 nos
Output Impedance	<100 ohms
Frequency Range	0.5Hz to 10KHz
Accuracy	0.25% of Full Range

Power Supply

Voltage	85 to 265VAC, 50/60Hz 18 to 36VDc (optional)
Consumption	10 VA max (230VAC) 5 VA max (24VDC)

Isolation (Withstanding voltage)

- Between primary terminals* and secondary terminals**: **At least 1500 V AC for 1 minute**
- Between primary terminals*: **At least 1500 V AC for 1 minute**
- Between secondary terminals**: **At least 500 V AC for 1 minute**

* Primary terminals indicate power terminals and Aux Supply terminals.
** Secondary terminals indicate Communication O/P and Power O/P.
Insulation resistance: 20MΩ or more at 500 V DC between power terminals and grounding terminal

Physical

Mounting	35mm DIN rail
Dimension (in mm)	75 (H) x 70(W) x 110 (D)
Weight	350g
Wiring	Terminals for 2.5mm^2 wire size
Enclosure material	ABS Plastic
Protection	IP20 (except terminals)

Environmental

Operating Temperature	0 to 55 °C
Operating Humidity	30 to 95% RH (non-condensing)
Storage Temperature	0 to 85°C
Warm up time	15 minutes

Ordering code

Model	Channel-1		Channel-2		Power Supply		Output Type		Communication o/p	
VT7S12E	X		X		X		X		X	
	1	Accelerometer i/p	N	None	A	85 to 265 VAC	N	None	N	None
			1	Accelerometer i/p	B	18 to 36 VDC	C	4-20mA	1	RS485
			2	RPM i/p*			D	0-20mA		
							E	1-5 VDC		
							F	0-5 VDC		
							G	0-10 VDC		

Compatible Sensor (Optional on-request)

Sensor Mounting:	Stud/ Pad mounting
Sensor Type:	ICP
Sensor Output:	100mV/g

* When RPM input is selected; only one Accelerometer input channel is possible

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