

3500/42M Proximator Seismic Monitor

Datasheet

Bently Nevada Machinery Condition Monitoring

143694 Rev. AC

Description

The 3500/42M Proximator Seismic Monitor:

- Protects machinery by continuously comparing monitored parameters against configured alarm setpoints to drive alarms.
- Communicates essential machine information to both operations and maintenance personnel.

The 3500/42M Proximator Seismic Monitor is a four-channel monitor that accepts input from proximity and seismic transducers. It conditions the signal to provide vibration and position measurements and compares the conditioned signals with user-programmable alarms.

You can program each channel using the 3500 Rack Configuration Software to monitor and report:

- | | | |
|--------------------|------------------------------|-------------------|
| - Radial vibration | - REBAM | - Thrust position |
| - Acceleration | - Differential expansion | - Shaft absolute |
| - Eccentricity | - Circular acceptance region | - Velocity |



The monitor channels are programmed in pairs and can perform up to two of the listed functions at a time. For example, Channels 1 and 2 can perform one function while channels 3 and 4 perform another or the same function.

Each channel, depending on configuration, typically conditions its input signal to generate various parameters called **static values**. You can configure **alert setpoints** for each active static value and danger setpoints for any two of the active static values.



Specifications

Inputs

Signal	Accepts from 1 to 4 proximity, velocity or acceleration transducer signals
Power consumption	7.7 watts, typical

Input Impedance

Standard I/O	10 kΩ (Proximitors and acceleration inputs)
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Sensitivity

Radial Vibration	3.94 mV/μm (100 mV/mil) or 7.87 mV/μm (200 mV/mil)
Thrust	3.94 mV/μm (100 mV/mil) or 7.87 mV/μm (200 mV/mil)
Eccentricity	3.94 mV/μm (100 mV/mil) or 7.87 mV/μm (200 mV/mil)
Differential Expansion	0.394 mV/μm (10 mV/mil) or 0.787 mV/μm (20 mV/mil)
REBAM	40 mV/μm (1000 mV/mil) or 80 mV/μm (2000 mV/mil)
Acceleration & Acceleration ²	10 mV/ (m/s ²) (100 mV/g)
Velocity & Velocity ²	20 mV/ (mm/s) pk (500 mV/ (in/s) pk) or 5.8 mV/ (mm/s) pk (145 mV/ (in/s) pk) or 4 mV/ (mm/s) pk (100 mV/ (in/s) pk)
Shaft Absolute, Radial Vibration	3.94 mV/μm (100 mV/mil) or 7.87 mV/μm (200 mV/mil)
Shaft absolute, Direct	3.94 mV/μm (100 mV/mil) or 7.87 mV/μm (200 mV/mil)

Shaft absolute, Velocity	20 mV/ (mm/s) pk (500 mV/ (in/s) pk) or 5.8 mV/ (mm/s) pk (145 mV/ (in/s) pk) or 4 mV/ (mm/s) pk (100 mV/ (in/s) pk)
Circular Acceptance Region	See Radial Vibration on page 4.

Outputs

Front Panel LEDs	
OK LED	Indicates when the 3500/42M Proximitor Seismic Monitor is operating properly.
TX/RX LED	Indicates when the 3500/42M Proximitor Seismic Monitor is communicating with other modules in the 3500 rack.
Bypass LED	Indicates when the 3500/42M Proximitor Seismic Monitor is in Bypass Mode.
Buffered Transducer Outputs	The front of each monitor has one coaxial connector for each channel. Each connector is short-circuit protected.
Output Impedance	550 Ω
Transducer Power Supply	-24 Vdc
Recorder	+4 to +20 mA Values are proportional to monitor full-scale. The monitor provides individual recorder values for each channel. Monitor operation is unaffected by short circuits on recorder outputs.
Voltage Compliance (current output)	0 to +12 Vdc range across load Load resistance is 0 to 600 Ω .

Front Panel LEDs	
Resolution	0.3662 μ A per bit \pm 0.25% error at room temperature \pm 0.7% error over temperature range Update rate approximately 100 ms or less
Shaft Absolute Buffered Outputs	The Shaft Absolute I/O modules have one output for each channel group. Each output is short-circuit protected.
Shaft Absolute Output Impedance	300 Ω
Output supply parameters	See Output Supply Parameters on page 13.