Case Piezoelectric Vibration Monitor Specifications

The Case Piezoelectric Vibration Monitor is designed for high reliability for your plant's most critical rotating machinery monitoring case vibration from accelerometer sensors. This 1-slot monitor is used together with other CSI 6500 monitors to build a complete API 670 machinery protection monitor. Applications include steam, gas, compressors and hydro turbo machinery.

The main functionality of the Case Peizoelectric Vibration Monitor is to accurately monitor case vibration and reliably protect machinery by comparing vibration parameters against alarm setpoints, driving alarms and relays.

Case piezoelectric vibration sensors, sometimes called case absolute (not to be confused with shaft absolute), are accelerometers, or velometers, with the output in acceleration or velocity. The case vibration monitor provides vibration monitoring for the bearing case in g's acceleration or velocity, mm/sec (in/sec). Since the sensor is mounted on the case, the resultant vibration of the case can be influenced by many different sources including rotor movement, foundation and case stiffness, blade vibration, adjacent machines, etc.

When replacing field sensors, many seismic sensors are being replaced with piezoelectric-type. The 6125 monitor is designed for the newer piezoelectric style sensors.

Case measurements are common in nuclear power applications. Case measurements with piezoelectric sensors are also common for rolling element bearing machines and gearboxes. Emerson recommends the piezoelectric sensor and piezoelectric sensor monitor for use when updating both field sensors and monitors.

The CSI 6500 is an integral part of PlantWeb® and AMS™ Suite. PlantWeb provides operations-integrated machinery health combined with the Ovation® and DeltaV™ process control system. AMS Suite provides maintenance personnel advanced predictive and performance diagnostic tools to confidently and accurately determine machine malfunctions early.

- Two-channel, 3U size, 1 slot plug in module decreases cabinet space requirements in half from traditional four-channel 6U size cards
- API 670 compliant, hot swappable module
- Remote selectable limit multiply and trip bypass
- Front and rear buffered and proportional outputs, 0/4 - 20 mA output, 0 - 10 V output
- Self-checking facilities include monitoring hardware, power input, hardware temperature, sensor and cable
- Use with piezoelectric accelerometers and velometer sensors

CSI 6500 Machinery Health™ Monitor

Transducer Inputs	
Number of inputs	Two, independent, differential inputs
Type of inputs	Piezoelectric (accelerometer or velometer)
Input resistance	>100 kΩ
Input voltage range	-5 -+15 VDC
Signal input voltage range	6125/00, 311-9500 mV peak to peak
Signal input voltage range	6125/10 16-450 mV peak to peak (special high temperature sensor)
Input frequency range (accelerometer)	High: 30-8000 Hz Med: 10-2000 Hz Low: 6-1000 Hz
Input frequency range (velometer)	High: 10-2000 Hz Med: 6-1500 Hz Low: 2-250 Hz
Sensor supply	accelerometer, constant current, 2 - 8mA, 30 VDC
Configurable parameters	Measuring range RMS or zero to peak Sensitivity Alert and Danger Filter frequency ranges
Sensor power supply	Separate buffered sensor supply Galvanically separated from all system voltages and system supply voltage Open and short circuit proof
Front Panel Outputs	
Green LED's	Two LED's, indicates channel OK separately for each channel
Red LED's	Four LED's, indicates alert and danger separately for each channel
Front panel buffered outputs	Two, identical to transducer sensor inputs, ±12 V, >100 kΩ load, freq. range 0.1- 0.075 Hz- 10 kHz -3 dB ±20%
Mini DIN configuration socket	Module interface connection for configuration and parameter and status monitoring RS-232
Handle	Easily remove card and provide plate for module and sensor identification
Analysis	
Measurement modes	Hot configurable Independent dual-channel
Accelerometer sensor (either RMS or 0 to Peak)	30-8 kHz, g's 10-2 kHz, g's or velocity 6-1 kHz, g's or velocity
Velocity sensor (either RMS or 0 to Peak)	10-2.0 kHz, velocity or displacement 6-1.5 kHz velocity or displacement 2-250 Hz velocity or displacement
Analysis parameters	½x, 1 to 10x and phase angle of same Available via ModBus TCP/IP output
CSI 4500 interface	4 channel connector designed for CSI 4500 plug & play

Rear Outputs Available	
Mode current outputs	0/4-20 mA output for each channel proportional to main value ■ For example, RMS or 0 to peak Open/short circuit proof
Permissible load	<500 Ω
Accuracy	±1% of full scale
Settling time	Configurable, 0 to 10 seconds
Mode voltage outputs	0-10 VDC output proportional to main value for each channel ■ For example, S zero to peak or peak to peak Open/short circuit proof
Rear buffered outputs	Raw buffered output signal, 0 to 12 V peak to peak Open/short circuit proof
Frequency range	0.075 Hz-13 kHz -3 dB ±20%
Permissible load	>100 kΩ
Alarm Setpoints Alarm Time Delays	
Alert	Selectable normally open, normally closed 0-5 second delay per channel 0-36 second delay with A6740 relay card Selectable to be blocked on channel not OK Adjustable range 5 to 100% of full scale value Resolution 1% of full scale value Alarm hysteresis on decreasing signal value, 0 to 20% of full scale value
Danger	Selectable normally open, normally closed 0-5 second delay per channel 0-36 second delay with A6740 relay card Selectable to be blocked on channel not OK Adjustable range 5 to 100% of full scale value Resolution 1% of full scale value Alarm hysteresis on decreasing signal value, 0 to 20% of full scale value
OK	Self checking: ■ power supply, sensor, cable, module checking, overload, internal temperature, system watchdog (normally closed) Green LED: ■ off when not OK ■ during delay time, LED flashes ■ reason for not OK can be read from communication bus
Limit multiply	Remote, relay input, 1.00 to 4.99 factor
Trip bypass	Remote, relay input

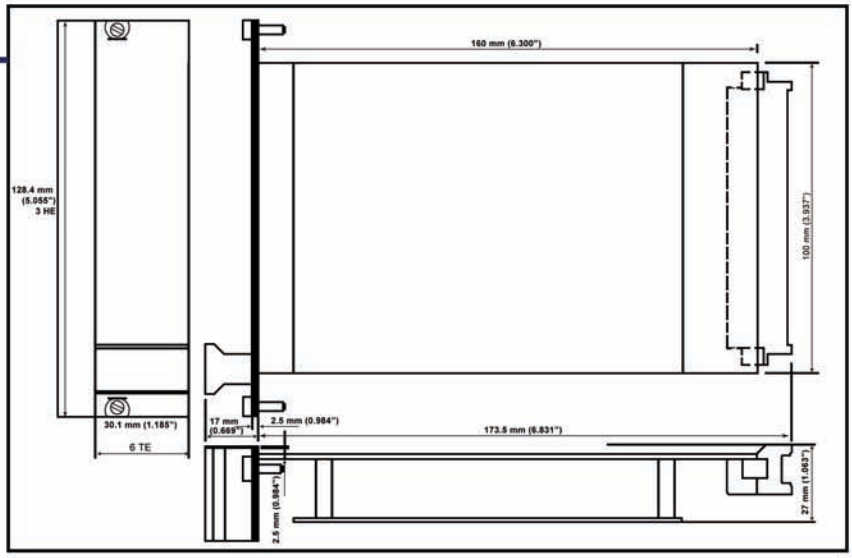
Environmental, General	
Module	IP 00, DIN 40050
Front plate	IP 21, DIN 40050
Climate	DIN 40040 class KTF
Operating temperature	0˚-65˚ C (32˚-149˚ F)
Storage temperature	-30˚-85˚ C (-22˚-185˚ F)
Relative humidity	5 to 95%, non condensing
Vibration	IEC 68-2, part 6 0.15 mm, 10-55 Hz 19.6 mm/s^2, 55 - 150 Hz
Shock	IEC 68-2, part 29 98 m/s^2 peak, 16 ms
EMC resistance	EN50081-1 / EN50082-2
Power consumption	Max. 6 W, 250 mA at 24 VDC
Configuration	Password protected

Specifications Sheet
July 2011

CSI 6500 Machinery Health™ Monitor

Dimensions:

PCB/EURO card format according to
DIN 41494, 100 x 160 mm (3.937 x 6.300 in)
Width: 30.0mm (1.181 in) (6 TE)
Height: 128.4 mm (5.055 in) (3 HE)
Length: 160.0 mm (6.300 in)
Net weight: app 320 g (0.705 lbs)
Gross weight: app 450 g (0.992 lbs)
includes standard packing
Packing volume: app 2.5 dm^3 (0.08 ft^3)
Space requirements: 1 slot
14 modules fit into each 19" rack



Ordering Information

Model Number	Product Description
A6125	Dual-channel Case Piezoelectric Vibration Monitor

Emerson Process Management
Asset Optimization Division
835 Innovation Drive
Knoxville, TN 37932 USA
T (865) 675-2400
F (865) 218-1401

POWERS PlantWeb®
Online Machinery Health Management powers PlantWeb through conditon monitoring of mechanical equipment to improve availability and performance.

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