



PT2060/20 SEIS Seismic Module

ProvibTech's PT2060/20 SEIS seismic module will process the incoming signal from the case mounted (seismic) sensors, compare it with the alarm set-point and output the appropriate status information for the following type of vibration measurements:

- ✓ Acceleration, Velocity and Displacement **(4 channels)**
- ✓ Low Frequency Acceleration, Velocity or Displacement **(4 channels)**
- ✓ Case Expansion
 - Case Expansion Output—paired **(2 channels)**
 - Case Expansion Output—single **(4 channels)**

The PT2060/20 SEIS module has the ability to be grouped into 2 groups. Each group can be programmed independently and used for different functions. For example, channel one and two can be a velocity measurement and channels three and four can be programmed to measure case expansion.

The SEIS module has a built in integrator which converts an accelerometer input signal to velocity output or a velocity input into a displacement output. **Note:** Integrator type can not work in low frequently condition.

The PT2060/20 SEIS module is designed to work with virtually any seismic sensor (including from other manufacturers). These sensors include: accelerometers (TM0782A), velocity transducers (TM0793V) and low frequency displacement sensors (TM079VD).

The PT2060/20 SEIS module also provides additional information such as, module status, alarm status, alarm history and system events. This information can be accessed via Modbus or the configuration software.

The PT2060/20 SEIS module is also equipped with local status indication. There are three LEDs which display the status of the monitoring channels.

- ✓ OK / IO LED indicates that both the module and

the seismic sensor in the field are working.



- ✓ Alarm LED indicates the current alarm status of the module.
- ✓ Bypass LED indicates the channels have been programmed to be in the Bypass mode.

Specifications

Electrical

Power Supply:

Internally converted by the rack power supply module
8.0W total typical for this module

Current Mode Sensor Power:

4.0mA nominal @ 25°C

LVDT Sensor Power:

20VDC, current limited.
Less than 50mA on each channel

Signal Input:

Up to four sensors

Input Impedance:

> 20KΩ

Nominal Sensitivity:

Accelerometer:
100mV/g (TM0782A) or similar sensor



Electrical Continued

Velocity Sensor:

4 mV/mm/sec (100mV/in/sec). TM0793V type or similar sensor

Displacement Sensor:

4mV/μm (100 mV/mil). TM079VD type or similar sensor

LVDT Sensor:

0.4V/mm (10V/in): TM0602-A01

0.2V/mm (5V/in): TM0602-A02

0.1V/mm (2.5V/in): TM0602-A03

Any sensitivity specified.

Signal Conditioning:

Vibration Frequency Response

(normal frequency):

Acceleration: 240 to 240,000RPM
(4 to 4.0 kHz), -3dB

Velocity: 120 to 120,000RPM
(2 to 2.0 kHz), -3dB

Vibration Frequency Response

(low Frequency for Non-integral):

Acceleration: 30 to 6,000RPM
(0.5 to 100.0Hz), -3dB

Velocity: 30 to 6,000RPM
(0.5 to 100.0Hz), -3dB

Displacement: 30 to 6,000RPM
(0.5 to 100.0Hz), -3dB

Accuracy: < ±1% FS @25°C

Signal Processing:

The input signal can be processed with:

Peak

Peak to peak

RMS

DC

Static and Status Values:

Each of the options for this monitor module has been defined with static values. Those values can be accessed via the 4-20mA output or from the digital communication protocols.

Vibration:

Direct, GAP, OK, Alert, Danger, Bypass, Trip-multiply

Case Expansion:

Direct, GAP, OK, Alert, Danger, Bypass

Overall in 4-20mA Output:

Max Transfer Distance: 300m (1000ft)

Proportion to the monitor full scale. Each channel has its own overall vibration output. The short of

the 4-20mA will not affect system performance.

Maximum Load: 300Ω

Resolution: Less than 0.33% FS

Buffered Output:

On the PT2060/20-Front panel, each channel has one BNC connector. The output is the unfiltered raw signal.

Max transfer distance: 300m (1000ft)

Output Impedance: 550Ω

Alarm: Alarm Set-point:

Each channel has two alarm set-points which can be field adjusted from 0 to 100% FS.

Set-point Accuracy: Better than 0.1% FS

Set-point Repeatability: Within 0.1% FS

Alarms:

Normally latching or normally non-latching

Alarm Delay:

Alert delay can be set from 1 to 60 seconds with time interval of 1 second

Danger delay can be set from 1 to 60 seconds with time interval of 1 second

Danger delay also includes a 0.1 seconds option

LED Indicators:

OK / IO: green, on off or flash

Alarms: red

Bypass: red

Approvals:

CE;

CSA: Non-incendive, class I, div.2, Grps.ABCD, T4@Ta= -40°C to +75°C

Certificate Number: 2011996

Environmental

Temperature:

Operation: -20°C to +65°C

Storage: -40°C to +85°C

Humidity:

95% non-condensing

Physical

Each module comes with two components: the front panel assembly and the back panel assembly.

Dimensions and Location:

241mm (9.5in) X 24.5mm (0.96in)

For 19" rack, they can be mounted in any slot from 1 to 12.



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For 12" rack, they can be mounted in any slot from 1 to 6.

Weight:

1.0 kg (2.0 lbs)

Ordering Information

PT2060/20-AX

AX: Back-panel IO module

A0: Current mode accelerometers and velocity sensors

A3: Low frequency sensors (TM079VD)

A4: LVDTs

A5: Electro-magnetic Velocity sensor (Metrix5485c)

Optional Accessories:

PT2060-002000: PT2060/20 Front panel

PT2060-002001: PT2060/20 Back panel

Back Panel Connectors Layout





PT2060 Monitor

Field-wiring Diagram for Hazardous Area Application

