



PT2060/10 PROX Proximity Module

ProvibTech's PT2060/10 PROX proximity module is a 4 channels module which processes the incoming signal from the proximity probe system, compares it with the alarm set-point and outputs the appropriate status information for the following vibration measurements:

- ✓ Radial vibration: monitoring shaft vibration, single or dual XY **(4 channels)**
- ✓ Axial/ Thrust position: monitoring shaft thrust position, with 5mm, 8mm, and 11 mm proximity probes **(4 channels)**
- ✓ Eccentricity **(2 channels)**
- ✓ Differential expansion **(4 channels)**
- ✓ Low-frequency vibration **(4 channels)**
- ✓ Speed output **(2 channels)**
- ✓ Zero speed and speed **(2 channels)**
- ✓ Reverse rotational protection output **(2 channels)**

The PT2060/10 PROX 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 channel two can be a XY measurement for radial shaft vibration and channels three and four can be programmed to measure eccentricity.

The PT2060/10 PROX module is designed to work with virtually any proximity probe systems (including from other manufacturers). Proximity probe systems which are compatible with the PT2060/10 PROX module include: TM0105, TM0180, TM0110, TM0120, 3000, 7200, 3300 and 3300XL series of proximity probe systems with the following probe tip sizes: 5mm, 8mm, 11mm, 25mm and 50mm.

The PT2060/10 PROX module also provides additional information such as GAP voltages, module status, alarm status, alarm history and system events. This information can be accessed via Modbus or the configuration software.

The PT2060/10 PROX 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 proximity probe systems 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

Signal Input:

- Proximity probes
 - Start at 1 RPM (0.0167Hz) for proximity probes
- Magnetic pickup
 - Start at 200 RPM (3.3Hz) for magnetic pickup



Electrical continued

Input impedance:

> 20K Ω

Sensitivity:

8mm and 5mm probes: 8.0 mV/ μ m (200mV/mil)

11mm probe: 4.0 mV/ μ m (100mV/mil)

25mm probe: 0.8 mV/ μ m (20mV/mil)

Or any other Sensitivity according to probes chosen by customer

Radial Vibration Signal Conditioning:

Frequency Response:

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

Accuracy:

< $\pm 1\%$ FS @25 $^{\circ}$ C

Thrust Position Signal Conditioning:

Accuracy:

< $\pm 0.5\%$ FS @25 $^{\circ}$ C

Eccentricity Signal Conditioning:

Frequency Response:

1 to 600RPM (0.0167 to 10.0Hz), -3dB

Accuracy:

< $\pm 1\%$ FS @25 $^{\circ}$ C

Differential Expansion Signal Conditioning:

Accuracy:

< $\pm 0.5\%$ FS @25 $^{\circ}$ C

Speed / Zero speed Signal Conditioning:

Frequency Response:

The PT2060/10 module will support 1 - 255 events per revolution with a maximum full scale range of 60000 RPM and a maximum input frequency of 10 kHz. Minimum input frequency for proximity transducers is 0.0167 Hz (1 RPM for 1 event/revolution) and for magnetic pickups (Speed signal conditioning only) is 3.3 Hz.

Accuracy:

The greater of $\pm 0.01\%$ FS or ± 2 RPM @25 $^{\circ}$ C

Low Frequency Oscillation Signal Conditioning:

Frequency Response:

30 to 6,000RPM (0.5 to 100Hz), -3dB

Accuracy:

< $\pm 1\%$ FS @25 $^{\circ}$ C

Reverse rotational speed Signal Conditioning:

Frequency Response:

The PT2060/10 module will support 1 - 255 events per revolution with a maximum full scale range of 60000 RPM and a maximum input frequency of 10 kHz. Minimum input frequency for proximity transducers is 0.0167 Hz (1 RPM

for 1 event/revolution).

Accuracy:

± 0.1 RPM (< 100RPM)

± 1.0 RPM (> 100 and < 10,000RPM)

0.01% (> 10,000 and < 60,000RPM)

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.

Radial Vibration:

Direct (peak to peak), GAP, OK, Alert, Danger, Bypass, Trip-multiply

Thrust Position:

Direct (average), GAP, OK, Alert, Danger, Bypass

Differential Expansion:

Direct (average), GAP, OK, Alert, Danger, Bypass

Eccentricity:

Direct, GAP, OK, Alert, Danger, Bypass

Speed/Zero speed/ Reverse rotational speed:

Direct, GAP, OK, Alert, Danger, Bypass

Low Frequency Oscillation:

Direct (peak to peak), GAP, OK, Alert, Danger, Bypass, Trip-multiply

Overall in 4-20mA output:

Maximum distance:

300m (1000ft)

Proportional to monitor's full-scale. Each channel has its own overall vibration output. The short of the 4-20mA will not affect system performance.

Maximum load:

300 Ω

Resolution:

Less than 0.33% FS

Buffered Output:

On PT2060/10-Front panel, each channel has one BNC connector. The output is the unfiltered raw signal.

Output impedance:

550 Ω

Maximum distance:

300m (1000ft)

Transducer Power:

-24VDC, current limited. Less than 50mA each channel.

Alarm:

Alarm set-point:

Each channel has two alarm set-points which



Electrical continued

can be field adjusted from 0 to 100% FS.

Set-point accuracy:

Better than 0.5% FS

Set-point repeatability:

Within 0.5% 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 second option.

LED Indicators:

OK / IO: green. On, off, flash

Alarms: red

Bypass: red

Approvals:

CE;

CSA:

Non-incendive, class I, div.2, GrpABCD, T4
-40°C to +75°C

Certification 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.

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

Weight:

1.0 kg (2.0 lbs)

Ordering Information

PT2060/10-AX

AX: Back-panel IO module

A0: Basic IO module

Optional Accessories:

PT2060-001000: PT2060/10 Front panel

PT2060-001001: PT2060/10 Back panel

Back Panel Connectors Layout

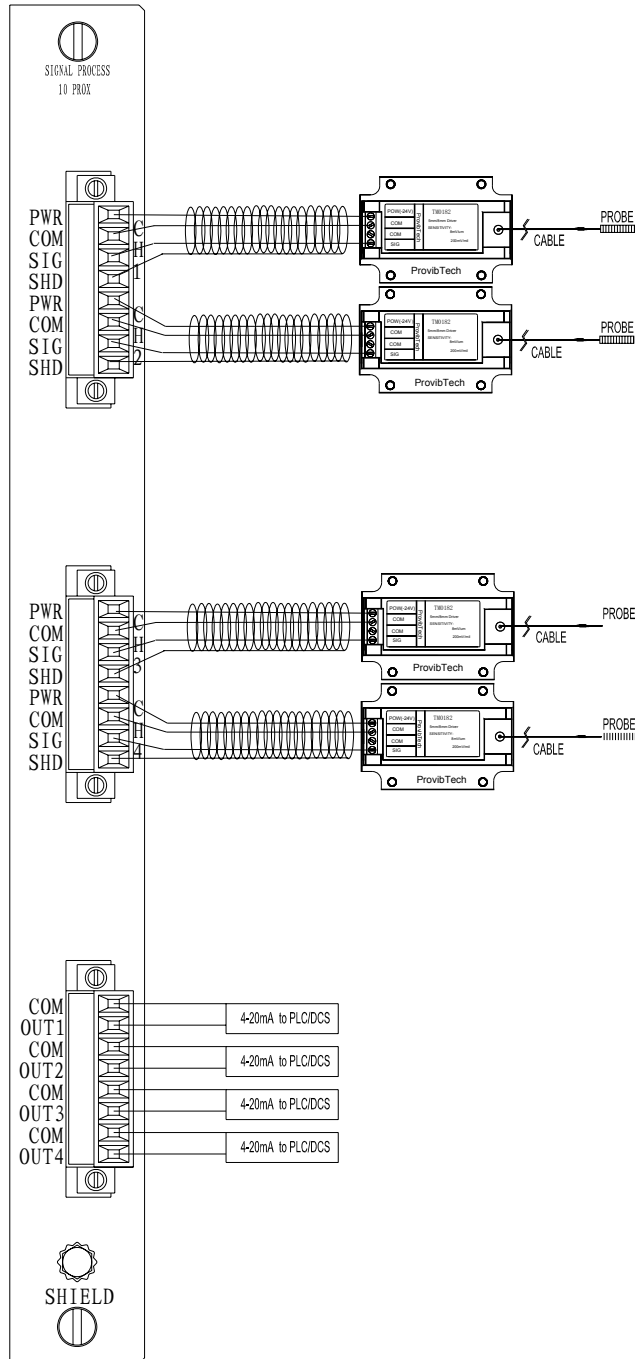




PT2060 Monitor

Field-wiring Diagram

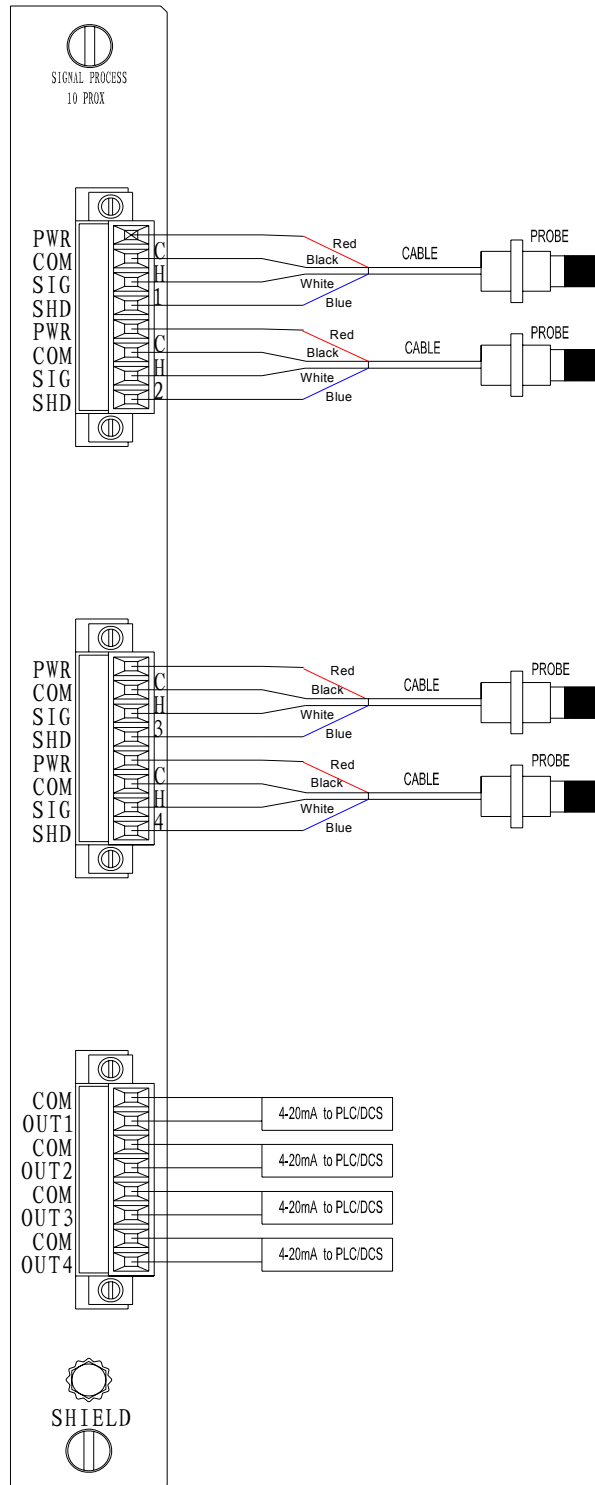
For all 5mm, 8mm and 11mm Probe Systems





PT2060 Monitor

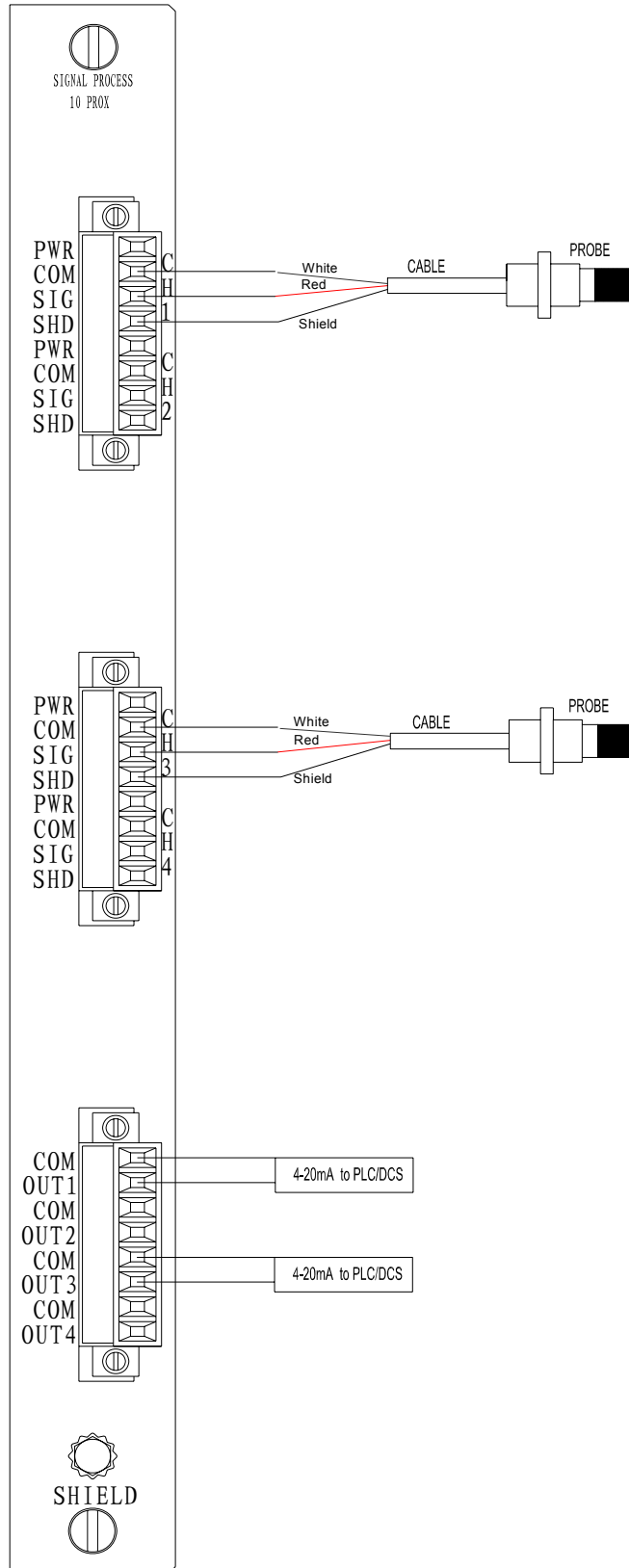
For 25mm Probe System





PT2060 Monitor

For Magnetic Pickup Systems





Field-wiring Diagram for Hazardous Area Application

TM0412 used as the barrier. For other barriers, please consult ProvibTech for tech support.

