PT2060/53 O-SPEED Over-speed Module

ProvibTech's PT2060/53 O-SPEED Over-speed module processes the incoming sensor signal, compares it with the alarm set-point and outputs the appropriate status information. The PT2060/53 O-SPEED module accepts both proximity probe and magnetic sensor signal inputs. It can output the following measurements:

✓ Over-speed Protection
   The following function only for channel 3 and channel 4.
✓ Radial Vibration: monitoring shaft vibration, single or dual XY **(2 channels)**
✓ Axial/ Thrust Position: monitoring shaft thrust position, with 5mm, 8mm, and 11 mm proximity probes **(2 channels)**
✓ Eccentricity **(1 channel)**
✓ Differential Expansion **(2 channels)**
✓ Low-frequency Vibration **(2 channels)**
✓ Speed Output **(1 channel)**
✓ Zero Speed **(1 channel)**
✓ Reverse Rotational Protection Output **(1 channel)**

Redundancy Requirement

If redundancy is required to reach the maximum system reliability the PT2060/53 requires a redundant power supply and a redundant PT2060/43 redundant relay module.

When PT2060/53 module works as a part of redundancy system, only channel 1 is used.

The PT2060/53 O-SPEED 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.

Note: Channel 3 and channel 4 of PT200/53 module can be used as PT2060/10 module channel.

The PT2060/53 O-SPEED 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 hardware Bypass mode

Specifications

Electrical

Power Supply:
   Internally converted by the rack power supply module
   8.0W total typically for each module

Signal Input:
   Input Impedance: > 20KΩ
   Input Voltage Range: +10 to -24VDC
   Input Frequency: The PT2060/53 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.
   Start at 1RPM (0.0167Hz) for proximity probes
   Start at 200RPM (3.3Hz) for magnetic pickup

Sensors:
   Proximity probes
   Magnetic pickups

Electrical Continued

Overall in 4-20mA Output:

Maximum Distance:

300m (1000ft)

Proportional to monitor full-scale; each channel has its own overall speed output. The short of the 4-20mA will not affect system performance.

Maximum Load: 300Ω

Accuracy:

+/-0.1RPM (< 100RPM)

+/-1.0RPM (> 100 and < 10,000RPM)

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

Threshold:

Auto:

> 1.0 V pk-pk

Manual:

> 0.5 V pk-pk. Trigger level can be programmed from -17VDC to -3VDC

Hysteresis:

0.5 - 2.5 V user selectable

Alarm Time Delay:

< 30ms for frequency (pulses) over 300Hz

Rack Space:

Require four slots for an over speed protection system.

Buffered Output:

On the front panel, each channel has one BNC connector. The output is the unfiltered raw signal.

Output impedance:

550Ω

Maximum Distance:

300m (1000ft)

Proximity Transducer Power:

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

Alarm:

Alarm Set-point:

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

Set-point accuracy:

+/-1 RPM

LED Indicators:

OK / IO: green

Alarms: red

Bypass: red

Approvals:

CE;

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

Certificate Number: 2011996

Environmental

Temperature:

Operation: -20℃ to +65℃

Storage: -40℃ to +85℃

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, mounts in any one of the following slots: 1-3, 5-7, 9-11.

For 12″ rack, mounts in slot 1-3.

Weight: 1.0kg (2.0 lbs)

Ordering Information

PT2060/53-AX

AX: Back-panel IO module

A0: Basic IO module

Optional Accessories:

PT2060-005300: PT2060/53 Front panel

PT2060-005301: PT2060/53 Back panel

Back Panel Connectors Layout