



PT2060/91 SIM System Interface Module

ProvibTech's PT2060/91 SIM module is a communication and system interface module. This module is used to:

- ✓ Connect to a configuration station
- ✓ Communicate to PT2060 system racks
- ✓ Communicate to other control systems (PLC/DCS or Historian)
- ✓ Provides two phase reference channels
- ✓ Provide storage of system and alarm events
- ✓ Virtual address configuration
- ✓ Speed output
- ✓ Signal of phase reference output with peak to peak
- ✓ Gap voltage output

Communication with Modbus

The PT2060/91 has one active Modbus communication port, two RS232, one RS485 port and one Ethernet port. They are available for connection flexibility which can be used to communicate to: PT2060 system racks, control systems (PLC/DCS or historian) configuration station (PC loaded with PT2060-CFG software) and so on.

Note: If redundant communication or additional Modbus ports are required the PT2060/96 communication module needs to be added to the PT2060 system.

Rack Interconnection

Multiple system racks can be networked together via the SIM module, and support Modbus protocol.

System Configuration

The PT2060-CFG software can configure the modules and channels in system via connection with SIM module.

System Event and Alarm Event Storage

The PT2060/91 SIM stores up to 500 system and 500 alarm events. This historical data can be accessed through one of the Modbus ports or through PT2060 system configuration software.

Phase Reference

Dual phase reference is also provided on the SIM

module. The two phase reference channels can be used to provide phase information for all the channels on the system rack.



Specifications

Electrical

Power Supply:

Internally converted by the rack power supply module

3.7W total typical for each module

LED Indicators:

OK / IO: green

It Indicates that the PT2060/91 Module is operating correctly When the OK/IO led is Flashing. If OK/IO LED is off, please check probe driver and cable of Phase reference.

TRIP-MLT: red

It will go on when system is in Trip-MLT

BYPASS: red

It will go on when system is in BYPASS.

CONFIG: green



Electrical Continued

It will go on when the system is in CONFIG, TEST, CALIBRATION. And OK/IO LED is on but not flashes.

Modbus communication:

RS-232 (2): one on front and one on back panel.
RS-485 (1): on the back panel of module.

There is only one active Modbus communication port. The available baud rate values are: 1200, 2400, 4800, 9600, 19.2k, 38.4k and 115.2k baud. RS-485 cable can run up to maximum 1220 meters (4000ft).

Ethernet port (1): on the back panel of module.
10Mbps, IEEE802.3.

System Alarm:

There will be a dedicated relay for indication of system OK status. This is an energized relay; a de-energized indicates a system error for one of the system components.

Relays:

Seal: Epoxy
Capacity: 2A/240VAC or 2A/24VDC, resistive load
Relay Type: SPDT
Isolation: 1000VDC

Phase Reference:

Phase Reference Signal Input:
Input Impedance: > 20K Ω
Input Voltage Range:
Magnetic Pickup: +15VDC to -15VDC
Proximity Probes: 0 to -24VDC

Input Frequency:

The PT2060/91 module will support 1 - 255 events per revolution with a maximum full scale range of 60000 RPM and a maximum input frequency of 20 kHz.

Start at 1RPM (0.0167Hz) for proximity probes

Sensors:

Proximity probes

Threshold:

Auto: > 2.0 V pk-pk, 120RPM(2Hz)
Manual: > 0.6 V pk-pk, 1RPM(0.017Hz).

Trigger level can be programmed from -17VDC to -3VDC

Sensors:

Magnetic pickup
Valid Frequency: >3.3Hz (least 2Vpkpk)

Hysteresis: 0.5 - 2.5 V user selectable

Phase Reference Output:

On the front panel, each channel has one BNC connector. The output is the original signal, the output is the phase reference signal for previous vision.

Speed Output:

The PT2060/91 module provides the function to measure machine speed in RPM from the two transducers. Input range of 1 to 1,200,000 RPM (0.017 Hz to 20 kHz), The measurable RPM scale is from 1 to 60000 RPM(0.017 Hz to 1000 Hz), The real-time updating RPM can be observed from the PT2060 Configuration software.

Accuracy: ± 1 RPM

Display the Pk to Pk Value:

When the input frequency of transducer is more than 0.1Hz, the PT2060/91 module will automatically calculate the peak-to-peak swing of the sensor's signal, and display the Pk to Pk Value via PT2060-CFG.

Display the Gap voltage:

When frequency of the input Proximity transducer's signal is more than 0.5 Hz, the PT2060/91 module will display the gap voltage of the Proximity transducer via PT2060-CFG., otherwise, display the real time Value when frequency of the input Proximity sensor's signal is less than 0.5 Hz

Output Impedance:

150 Ω

Proximity Transducer Power:

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

Approvals:

CE;
CSA:
Non-incendive, class I, div.2, Grps.ABCD,
T4@Ta= -40 $^{\circ}$ C to +75 $^{\circ}$ C
Certificate Number: 2011996

Environmental

Temperature:

Operation: -20 $^{\circ}$ C to +65 $^{\circ}$ C
Storage: -40 $^{\circ}$ C to +85 $^{\circ}$ 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)

This module has to be located in the second slot from the right hand side of the rack. Note: there is only one SIM module per system rack.

Weight: 1.2 kg (2.6 lbs)

Ordering Information

PT2060/91-AX

- AX: System IO Type
- A0: Modbus RTU RS-485/ RS-232 module (with PT2060-009102)
- A1: Modbus TCP module (with PT2060-009105-A00)

Optional Accessories:

PT2060-009100

SCALANCE X-108: 8-port industrial unmanaged Ethernet switch, wide temp. Produced by Siemens Co., Ltd. The switch is used to connect many computers and other network device. It can provide 8 Ethernet ports, and support 10/100M. Provibtech suggests that user should choose two TM900 which provide redundancy 24VDC power for PT2060-009100(SCALANCE X-108).

Feature:

- Provides 8 Fast Ethernet ports with Auto MDI/MDI-X
- Supports 10/100Mbps Auto Negotiation
- Provides compact size with DIN-rail/Wallmount
- Supports redundant 18 - 32 VDC power input
- Diagnosis on device by means of LEDs (power, link status, data traffic) and signal contact
- Simple fault signal contact set-up using the SET button
- Supports wide operating temperatures from -20 to 70°C

PT2060-009101

USB to RS-485 Converter with PT2060-009106-A00 communication Cable.

PT2060-009102

USB to RS-232 Converter with PT2060-009107-A00 cross communication cable.

PT2060-009103

RS-485 HUB

PT2060-009104-AXX

Hub to PT2060/91/96 Ethernet internet Cable RJ45

AXX: Cable length

- A00 3 meters (9.8 feet)
- A01 15 meters (49.2 feet)
- A02 75 meters (246 feet)

PT2060-009105-AXX

PLC, DCS to Pt2060/91/96 Ethernet direct communication Cable RJ45 Port

AXX: Cable length

- A00 3 meters (9.8 feet)
- A01 15 meters (49.2 feet)
- A02 75 meters (246 feet)

PT2060-009106-AXX

USB to RS-485 Converter to PT2060/91/96 serial communication Cable RS-485

AXX: Cable length

- A00 3 meters (9.8 feet)
- A01 15 meters (49.2 feet)
- A02 100 meters (328 feet)

PT2060-009107-AXX

PC to PT2060/91/96 cross serial communication Cable RS-232

AXX: Cable length

- A00 1.5 meters (5 feet)

PT2060-009108-AXX

PT2060/91/96 to RS485 HUB cable RS-485

AXX: Cable length

- A00 3 meters (9.8 feet)
- A01 15 meters (49.2 feet)
- A02 100 meters (328 feet)

PT2060-009109-AX

AX: Panel type

- A0: PT2060/91 Modbus RTU RS-485/RS-232 Front panel
- A1: PT2060/91 Modbus TCP Front panel

PT2060-009110-AX

AX: Panel type

- A0: PT2060/91 Modbus RTU RS-485/RS-232 back panel
- A1: PT2060/91 Modbus TCP back panel



PT2060 Monitor

TM900-GX

TM900 is used to provide 24VDC power with PT2060-009100(SCALANCE X-108), please refer to appendix for detail.

GX: Mount

G0: 35mm DIN-rail mount

G1: Plate mount

Back Panel Connectors Layout



RS485 HUB



Previous version