# 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 references channels
- ✓ Provide storage of system and alarm events
- ✓ Virtual address configuration

**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 more.

**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 Modbus through the SIM module.

**System Configuration**

The PT2060-CFG software connected via Modbus through the SIM module enables configuration of the system rack, modules, and channels.

**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
    8.0W total typical for each module

LED Indicators:
    OK / IO: green
    TRIP-MLT: red
    BYPASS: red
    CONFIG: green

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.

## *Electrical Continued*

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: > 20KΩ

Input voltage range: 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 10 kHz.

Start at 1RPM (0.0167Hz) for proximity probes

Sensors:

Proximity probes

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

Phase reference Output:

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

Output Impedance:

150Ω

Proximity Transducer Power:

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

Approvals:

CE;

CSA:

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

Certification 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)

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:

1.0 kg (2.0 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 -20~70℃

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

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
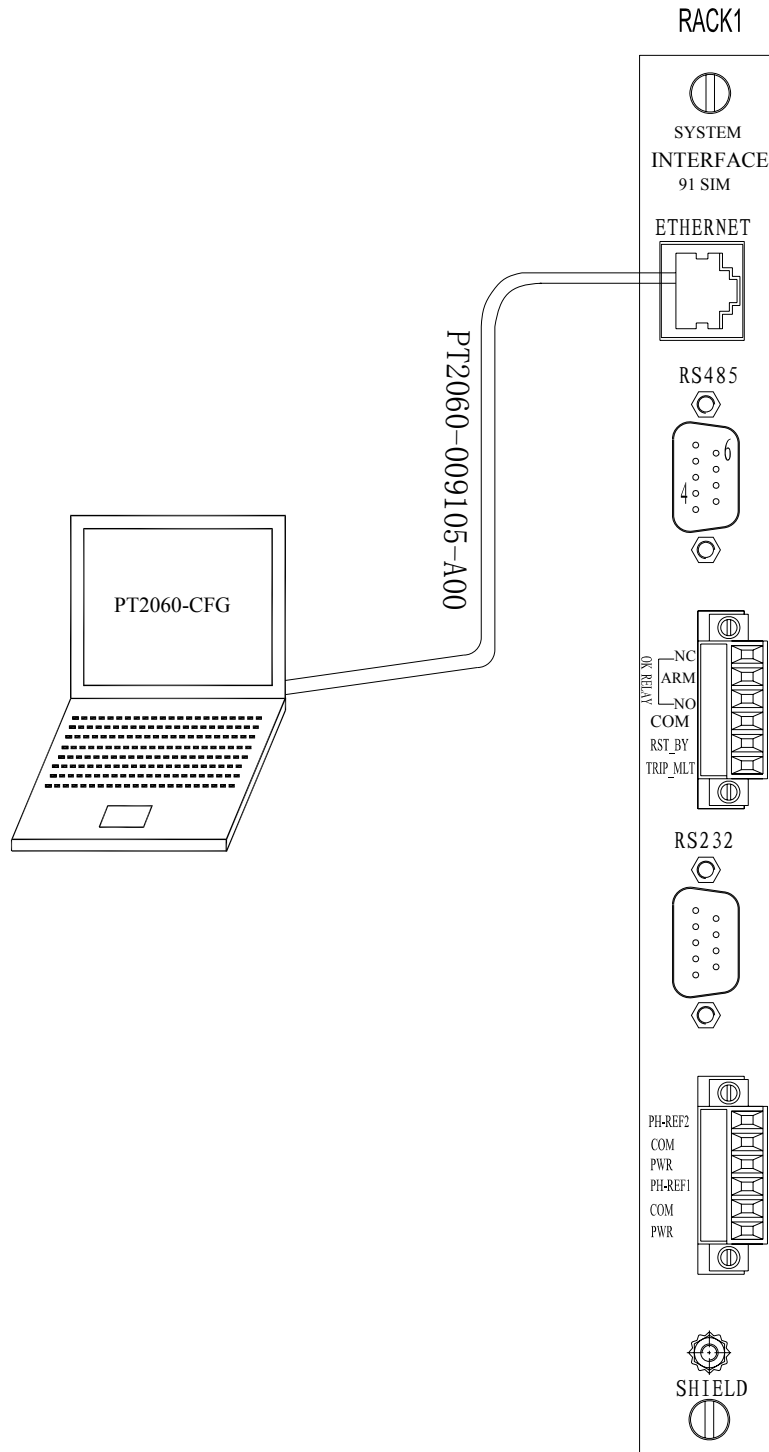


RS485 HUB

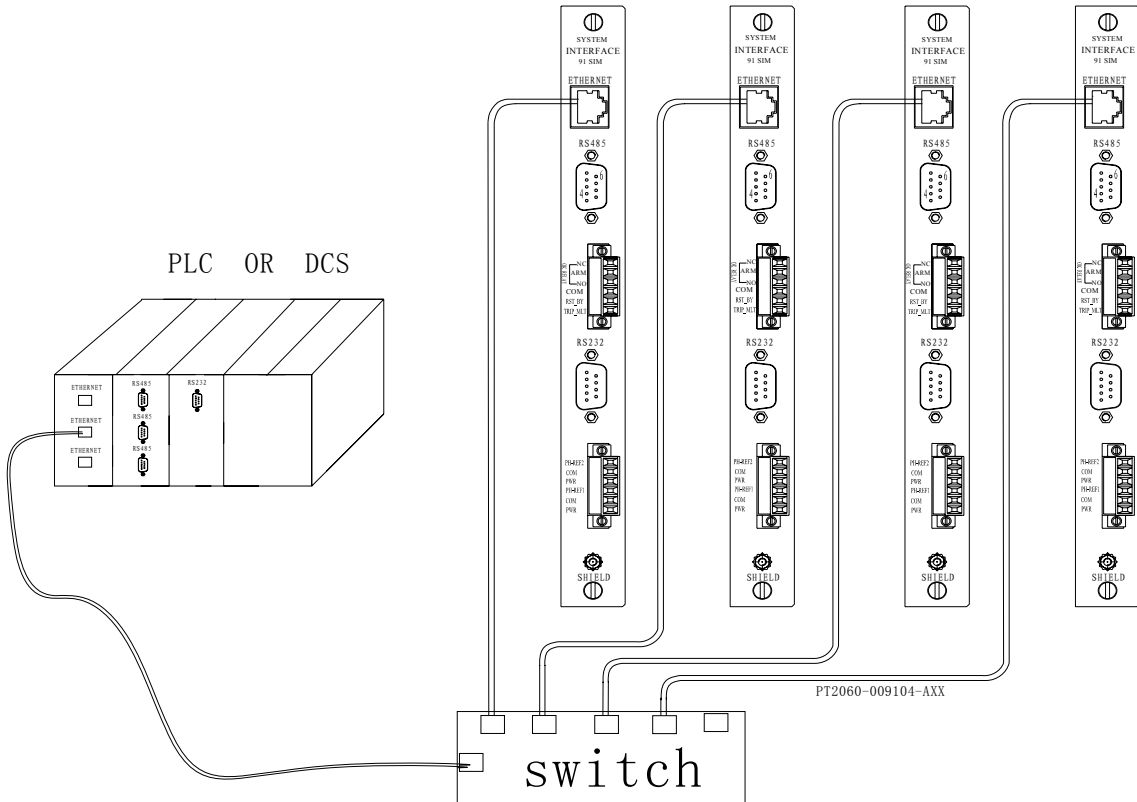## *Back Panel Connectors Layout*

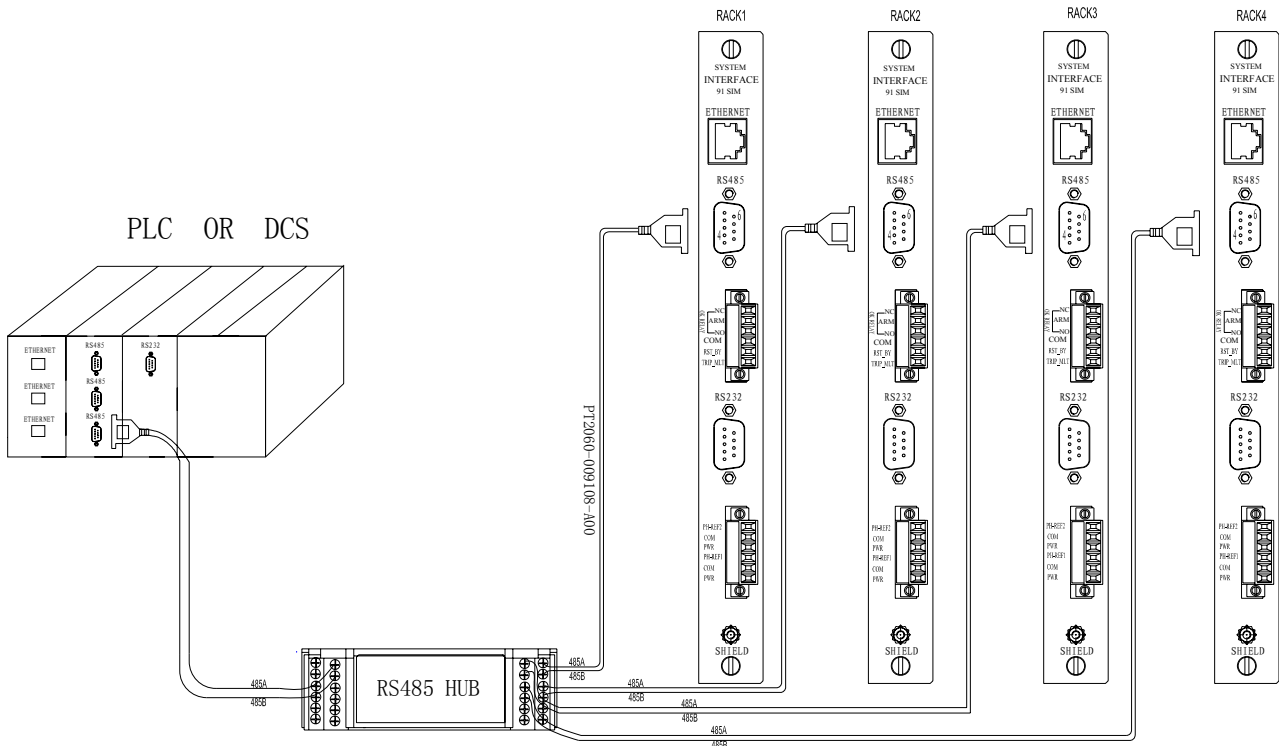## *Field-wiring Diagram*

### *Modbus TCP for System Configuration*

RACK1

SYSTEM
INTERFACE
91 SIM

ETHERNET

RS485

PT2060-009105-A00

PT2060-CFG

NC
OK RELAY
ARM
NO
COM
RST_BY
TRIP_MLT

RS232

PH-REF2
COM
PWR
PH-REF1
COM
PWR

SHIELD

**Modbus TCP for DCS, PLC Communication**



**Modbus RS-485 for DCS, PLC Communication**

**Modbus RS-232 for System Configuration**

RACK1

PT2060/91 Sim

OK/IO
TRIP-MLT
BYPASS
CONFIG

RESET

RS232 PORT

PT2060-CFG

USB-RS232
Converter

PT2060-009107-A00

PM-REF1

PM-REF2