

Table of Contents

PRTD Input Module	2
RTD Input (PRTD)	2
Compatibility	3
Installation	4
Operation	5
Connectors	5
Analog Input Hardware	5
Calibration	5
RTD Types and Ranges	7
Diagnostics	8
Configuration	9
TRTD RTD Input	11
Functional Description	11
Compatibility	11
Installation	12
Caution	12
TRTD RTD Terminal Board Wiring	13
Operation	14
Calibration	14
Specifications	15
RTD Types and Ranges	15
Diagnostics	16
Configuration	16
SRTD Simplex RTD Input	16
Functional Description	16
Installation	17
Operation	18
Calibration	18
Specifications	19
RTD Types and Ranges	20
Diagnostics	21
Configuration	21

Mr. Lucian

Sales manager

Joyoung International Trading Co., Ltd

Whatsapp/Wechat: +86 18106906650

Email: Lily@htechplc.com

Mobile: +86 18106906650

Website: www.xm-dcs.com

Address: Room 1503, Building B, Diamond Coast,
No. 96 Lujiang Road, Siming District, Xiamen Fujian

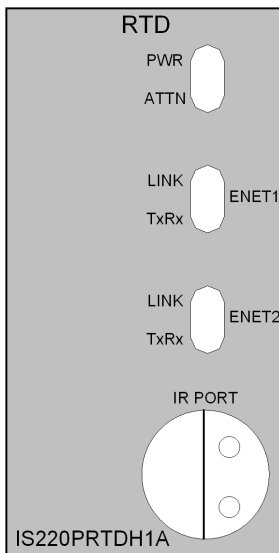
Wechat



PRTD Input Module

RTD Input (PRTD)

Functional Description



Infrared Port not Used

The Resistance Temperature Device (RTD) Input pack (PRTD) provides the electrical interface between one or two I/O Ethernet networks and a RTD input terminal board. The PRTD contains a processor board common to the distributed I/O packs and an acquisition board specific to the thermocouple input function. The I/O pack is capable of handling up to eight RTD inputs and can handle 16 RTD inputs on the TRTD terminal boards.

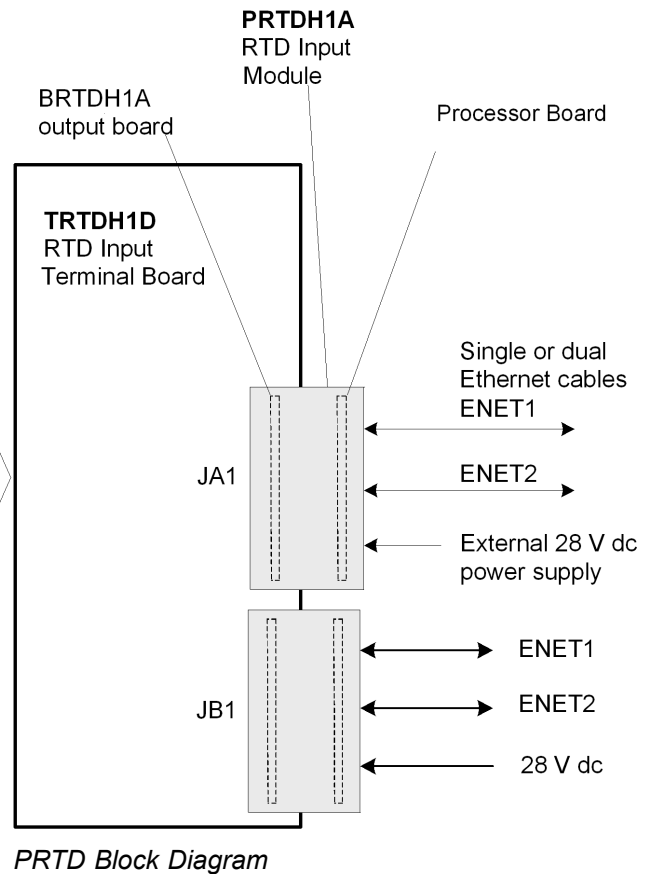
Note The PRTD I/O pack supports only simplex operation.

Input to the I/O pack is through a DC-37 pin connector that connects directly with the associated terminal board connector, and a three-pin power input. Output is through dual RJ-45 Ethernet connectors. Visual diagnostics are provided through indicator LEDs.

One PRTD module for Simplex control (use the A connector for first eight RTD inputs)

16 RTD Inputs

Two PRTD modules for Simplex control of RTDs (one module on A connector for first eight RTDs, one on B connector for second eight RTDs)



Compatibility

PRTDH1A is compatible with the RTD input terminal boards TRTDH1D, H2D, and the SRTD board, but not the DIN-rail mounted DRTD board. The following table gives details of the compatibility.

Terminal Board	Inputs		Simplex	Dual	TMR
TRTDH1D, H2D	One PRTD, 8 inputs	Two PRTDs, 16 inputs	Yes	No	No
SRTD	8 RTD inputs		Yes	No	No

Control mode refers to the number of I/O packs used in a signal path:

- Simplex uses one I/O pack with one or two network connections.
- Dual uses two I/O packs with one or two network connections.
- TMR uses three I/O packs with one network connection on each pack.

The PRTD provides galvanic isolation of the TRD input circuit. This requires changes in the terminal board transient protection, provided on the TRTDH1D and TRTDH2D boards. The H1D version of the board provides filtering compatible with the standard scan rate of PRTD. The H2D version of the terminal board provides less filtering to allow proper performance when the fast scan rate of PRTD is selected. If PRTD is mounted on an earlier revision of the TRTD board, an incompatibility will be reported, although no physical damage will occur.

Installation

For additional installation instructions in Class I Division II locations, refer to GEI-100648.

➤ To install the PRTD I/O pack

1. Securely mount the desired terminal board.
2. Directly plug one or two PRTD (for simplex control of eight or 16 RTDs) into the terminal board connectors.
3. Mechanically secure the packs using the threaded inserts adjacent to the Ethernet ports. The inserts connect with a mounting bracket specific to the terminal board type. The bracket location should be adjusted such that there is no right angle force applied to the DC-37 pin connector between the pack and the terminal board. The adjustment should only be required once in the life of the product.

Note The PRTD mounts directly to a terminal board. TRTDH1D has two DC-37 pin connectors that receive the PRTDs, one for each set of 8 RTD inputs.

4. Plug in one or two cables (depending on system configuration) to negotiate proper operation over either port. If dual connections are used the standard practice is to hook ENET1 to the network associated with the R controller.
5. Apply power to the pack by plugging in the connector on the side of the pack. It is not necessary to remove power from the cable before plugging it in because the I/O pack has inherent soft-start capability that controls current inrush on power application.
6. Use the ToolboxST* application to configure the I/O pack as necessary.



Attention

If the configuration being downloaded contains I/O packs with different module IDs than the configuration currently running, the download may install incorrect firmware to some I/O packs. If this occurs, make sure the controller is running the new configuration, restart the entire system, and then start the ToolboxST Download Wizard again.

Operation

Refer to the following sections in the chapter, *Common Module Content*:

- [*Auto-Reconfiguration*](#)
- [*Processor*](#)
- [*Processor LEDs*](#)
- [*ID Line*](#)

Connectors

The I/O pack contains the following connectors:

- A DC-37 pin connector on the underside of the I/O pack connects directly to the discrete input terminal board. The connector contains the 24 input signals, ID signal, relay coil power, and feedback multiplex command.
- An RJ-45 Ethernet connector named ENET1 on the side of the pack is the primary system interface.
- A second RJ-45 Ethernet connector named ENET2 on the side of the pack is the redundant or secondary system interface.
- A 3-pin power connector on the side of the I/O pack is for 28 V dc power for the I/O pack and terminal board.

Analog Input Hardware

The PRTD input board accepts eight three-wire RTD inputs from the RTD terminal board.

The pack supplies a 10 mA dc multiplexed (not continuous) excitation current to each RTD, which can be grounded or ungrounded. The eight RTDs can be located up to 300 meters (984 feet) from the turbine I/O cabinet with a maximum two-way cable resistance of 15 Ω .

The A/D converter in the pack samples each signal and the excitation current four times per second for normal mode scanning, and 25 times per second for fast mode scanning, using a time sample interval related to the power system frequency. Linearization for the selection of RTD types is performed in software by the processor. RTD open and short circuits are detected by out of range values. An RTD, which is determined to be out of hardware limits, is removed from the scanned inputs to prevent adverse affects on other input channels. Repaired channels are reinstated automatically in 20 seconds, or can be manually reinstated.

Calibration

RTD inputs are automatically calibrated using the filtered calibration source and null voltages.

Specifications

Item	PRTD Specification		
Number of channels	8 channels per pack (16 channels per terminal board)		
RTD types	10, 100, and 200 Ω platinum 10 Ω copper 120 Ω nickel		
Span	0.3532 to 4.054 V		
A/D converter resolution	14-bit resolution		
Scan time	Normal scan 250 ms (4 Hz) Fast scan 40 ms (25 Hz)		
Measurement accuracy	RTD Type 120 Ω Nickel 200 Ω Platinum 100 Ω Platinum 100 Ω Platinum -51 to 204°C (-60 to 400 °F) 10 Ω Copper	Group Gain Normal_ 1.0 Normal_ 1.0 Normal_ 1.0 Gain_ 2.0 10 Ω Cu_10	Accuracy at 400 °F 1.1°C (2 °F) 1.1°C (2 °F) 2.22°C (4 °F) 1.11°C (2 °F) 5.55°C (10 °F)
Temperature	-30 to 65°C (-22 to 149 °F)		
Common mode rejection	Ac common mode rejection 60 dB at 50/60 Hz, Dc common mode rejection 80 dB		
Common mode voltage range	±5 Volts		
Normal mode rejection	Rejection of up to 250 mV rms is 60 dB at 50/60 Hz system frequency for normal scan		
Maximum lead resistance	15 Ω maximum two-way cable resistance		
Temperature	-30 to 65°C (-22 to 149 °F) with TRTD: 0 to 60°C (32 to 140 °F)		

RTD Types and Ranges

The units ($^{\circ}\text{C}$ or $^{\circ}\text{F}$) are based on the RTDUnit settings. Refer to the section, [Configuration](#).

RTD inputs ranging from 34 to 405 ohms are supported over a full-scale input range of 0.3532 to 4.054 V due to the 10 mA excitation current. The following table displays the types of RTD used and the temperature ranges.

RTD Type	Name/Standard	Range $^{\circ}\text{C}$	Range $^{\circ}\text{F}$
10 Ω copper	MINCO_CA GE 10 Ω Copper	-51 to 260	-60 to 500
100 Ω platinum	SAMA 100	-51 to 93	-60 to 1100
100 Ω platinum	MINCO_PIA	-158 to 880	-252 to 1616
	Note For 34 to 405 Ω		
100 Ω platinum	DIN 43760 IEC-751 MINCO_PD MINCO_PE PT100_DIN	-51 to 700	-60 to 1292
100 Ω platinum	MINCO_PA IPTS-68 PT100_PURE	-51 to 00	-60 to 1292
100 Ω platinum	MINCO_PB Rosemount 104 PT100_USIND	-51 to 700	-60 to 1292
120 Ω nickel	MINCO_NA N 120	-51 to 249	-60 to 480
200 Ω platinum	PT 200	-51 to 204	-60 to 400
200 Ω platinum	MINCO_PK	-51 to 268	-60 to 514
	Note For 34 to 405.2 Ω		

Diagnostics

The I/O pack performs the following self-diagnostic tests

- A power-up self-test that includes checks of RAM, Flash memory, Ethernet ports, and most of the processor board hardware
- Continuous monitoring of the internal power supplies for correct operation
- A check of the electronic ID information from the terminal board, acquisition board, and processor board to confirm that the hardware set matches, followed by a check that the application code loaded from flash memory is correct for the hardware set
- Each RTD type has hardware limit checking based on preset (non-configurable) high and low levels set near the ends of the operating range. If this limit is exceeded, a logic signal is set, and the input is no longer scanned. If any one of the 8 input's hardware limits is set it creates a composite diagnostic alarm, L3DIAG_PRTD, referring to the entire board. Details of the individual diagnostics are available from the toolbox. The diagnostic signals can be individually latched, and then reset with the RESET_DIA signal
- Each RTD input has system limit checking based on configurable high and low levels. These limits can be used to generate alarms, and can be configured for enable/disable, and as latching/non-latching. RESET_SYS resets the out of limit signals
- Details of the individual diagnostics are available from the toolbox. The diagnostic signals can be individually latched, and then reset with the RESET_DIA signal if they go healthy

Configuration

Note The following information is extracted from the ToolboxST application and represents a sample of the configuration information for this board. Refer to the actual configuration file within the ToolboxST application for specific information.

Parameter	Description	Choices
PRTD_Mod_Config		
SystemLimits	Allows user to temporarily disable all system limit checks for testing purposes. Setting this parameter to Disable will cause a diagnostic alarm to occur.	Enable (default), disable
Auto Reset	Automatic restoring of RTDs removed from scan	Enable (default), disable
GroupRate	RTD's 1-8 sample rate and n+ system frequency filter if 4 Hz sampling	4 Hz, 50 Hz filter 4 Hz, 60 Hz filter (default) 25 Hz
SwConfigDefs		
RTD Type	Select RTD type or ohms input RTDs linearizations supported by RTD, (unused inputs are removed from scanning)	Unused (default) CU10 MINCO_CA PT100_DIN MINCO_PD PT100_PURE MINCO_PA PT100_USIND MINCO_PB N120 MINCO_NA MINCO_PIA PT100_SAMA PT200 MINCO_PK Ohms
SysLim1 Enabl	Enable system limit 1 fault check Enables or disables a temperature limit for each RTD, can be used to create an alarm	Enable, disable (default)
SysLim1 Latch	Latch system limit 1 fault Determines whether the limit condition will latch or unlatch for each RTD; reset used to unlatch.	Latch (default), unlatch
SysLim1 Type	System limit 1 check type ($\geq$ or $\leq$) Limit occurs when the temperature is greater than or equal ($\geq$), or less than or equal to a preset value.	$\geq$ (default), $\leq$
System Limit 1	System limit 1 - Deg °F or Deg °C. Enter the desired value of the limit temperature	-60 to 1,300 (default)
SysLim2 Enabl	Enable system limit 2 fault check Enables or disables a temperature limit used to create an alarm	Enable, disable (default)
SysLim2 Latch	Latch system limit 2 fault Determines whether the limit condition will latch or unlatch; reset used to unlatch.	Latch (default), unlatch
SysLim2 Type	System limit 2 check type ($\geq$ or $\leq$). Limit occurs when the temperature is greater than or equal ($\geq$), or less than or equal to a preset value.	$\geq$ $\leq$ (default)
System Limit 2	System limit 2 - Deg °F or ohms. Enter the desired value of the limit temperature, Deg °F or ohms	-60 to 1,300 (default)

Parameter	Description	Choices
RTDGain	Select RTD sensor gain. Gain 2.0 is for higher accuracy if ohms <190.	Normal_1_0 (default) Gain_2_0 10 Ω Cu_10_0
RTDUnit	Temperature units in degree Celsius or degree Fahrenheit for any selected Rtd Type except Ohms and Unused. If RtdType is Ohms, this parameter does not apply. This parameter affects the native units of the controller application variable. It is only indirectly related to the tray icon and associated unit switching capability of the HMI. This parameter should not be used to switch the display units of the HMI.  Caution Do not change the RtdUnit parameter in the ToolboxST application because these changes will require corresponding changes to application code and to the Format Specification or units of the connected variable. This parameter modifies the actual value sent to the controller as seen by application code. Application code that is written to expect degrees Fahrenheit will not work correctly if this setting is changed. External devices, such as HMIs and Historians, may also be affected by changes to this parameter.	deg_F deg_C

Point Signal	Description-Point Edit (Enter Signal Connection)	Direction	Type
L3DIAG_PRTD_R	I/O diagnostic indication	Input	BIT
LINK_OK_PRTD_R	I/O link okay indication	Input	BIT
ATTN_PRTD_R	I/O attention indication	Input	BIT
IOPackTmpr_R	I/O pack temperature	Input	FLOAT
SysLim1RTD1_R	System limit 1	Input	BIT
↓	↓	Input	BIT
SysLim1RTD8_R	System limit 1	Input	BIT
SysLim2RTD1_R	System limit 2	Input	BIT
↓	↓	Input	BIT
SysLim2RTD8_R	System limit 2	Input	BIT
PS18V_PRTD_R	I/O 18 V Power Supply Indication	Input	Bool
PS28V_PRTD_R	I/O 28 V Power Supply Indication	Input	Bool

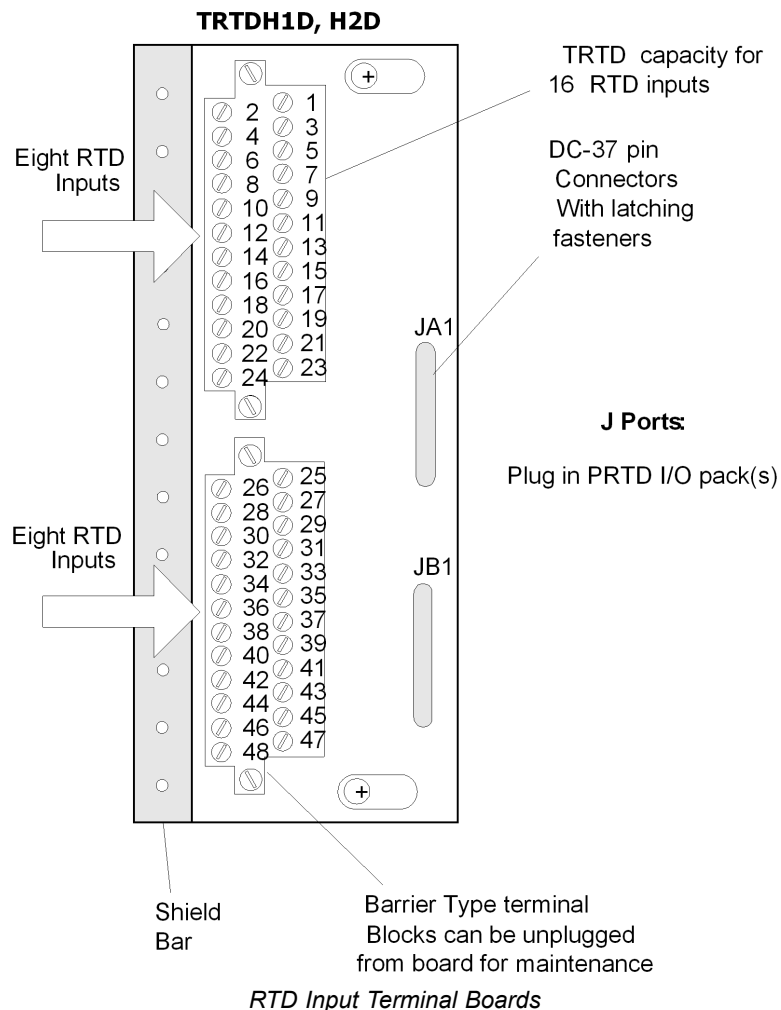
TRTD RTD Input

Functional Description

The RTD Input (TRTD) terminal board accepts 16, three-wire RTD inputs. These inputs are wired to two barrier type terminal blocks. The inputs have noise suppression circuitry to protect against surge and high frequency noise. TRTD communicates with the PRTDs, which convert the inputs to digital temperature values and transfer them to the Mark Vle controller.

Compatibility

In the Mark Vle control system, TRTDH1D and TRTDH2D work with the PRTD I/O pack and support simplex applications only. Two PRTD I/O packs plug into the TRTD for a total of 16 inputs.



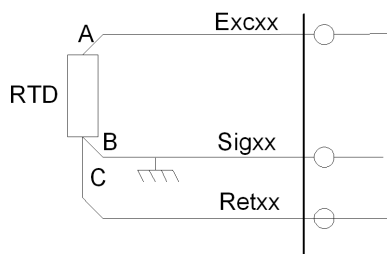
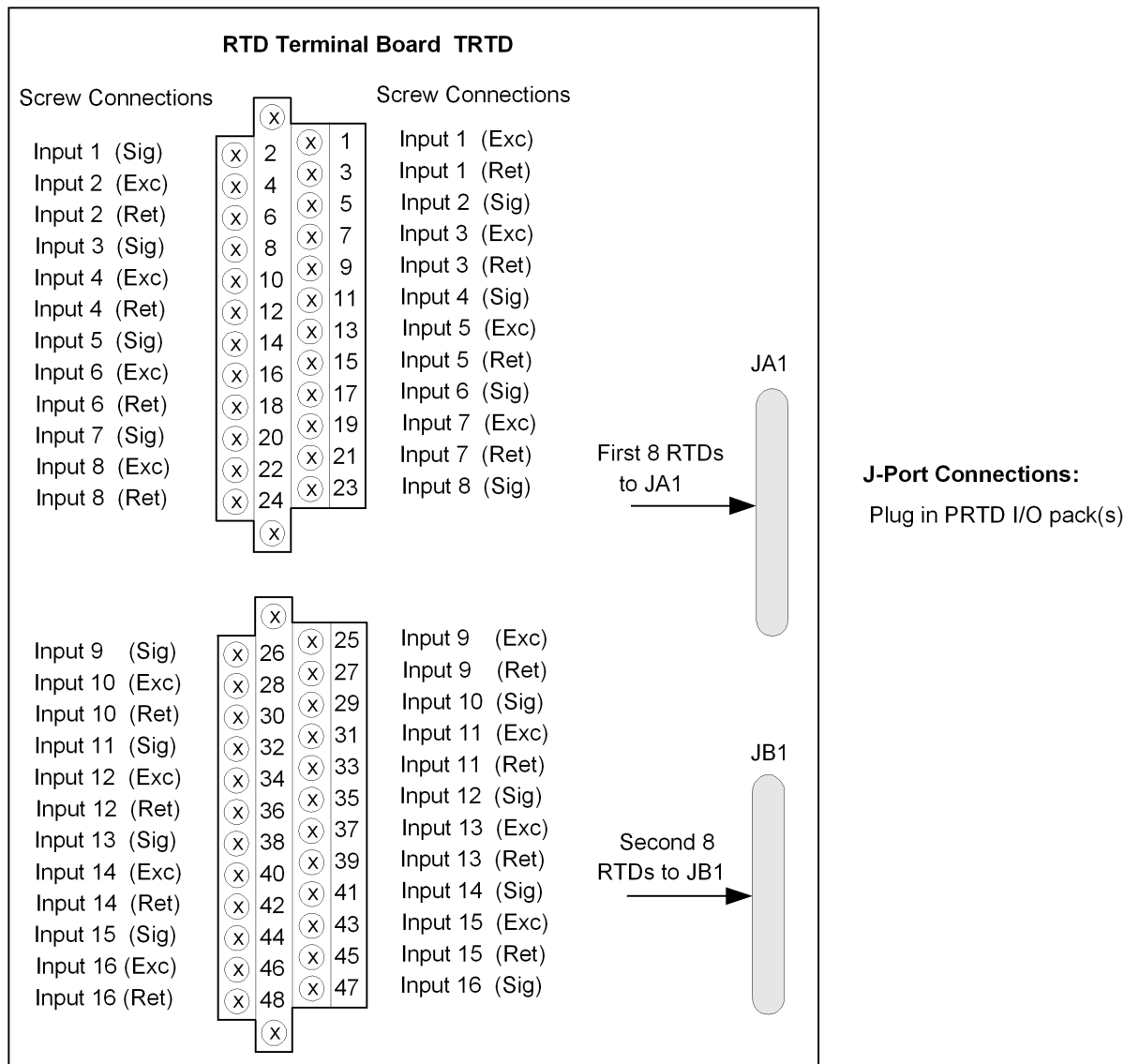
Installation

Connect the wires for the 16 RTDs directly to the two terminal blocks on the terminal board. Each block is held down with two screws and has 24 terminals accepting up to #12 AWG wires. A shield terminal strip attached to chassis ground is located immediately to the left of each terminal block.



Caution

Double-shielded wire must be used. All shields must be terminated at the shield terminal strip. Do not end shields located at the end device.

**Application Note:**

- Optional Ground: connect the B wire to ground;
- RTD Group wiring, that is sharing the B wire;
tie the B wires together at the RTDs,
tie the Sigxx signals together at the TRTD terminal
board, and interconnect with one wire.

TRTD RTD Terminal Board Wiring

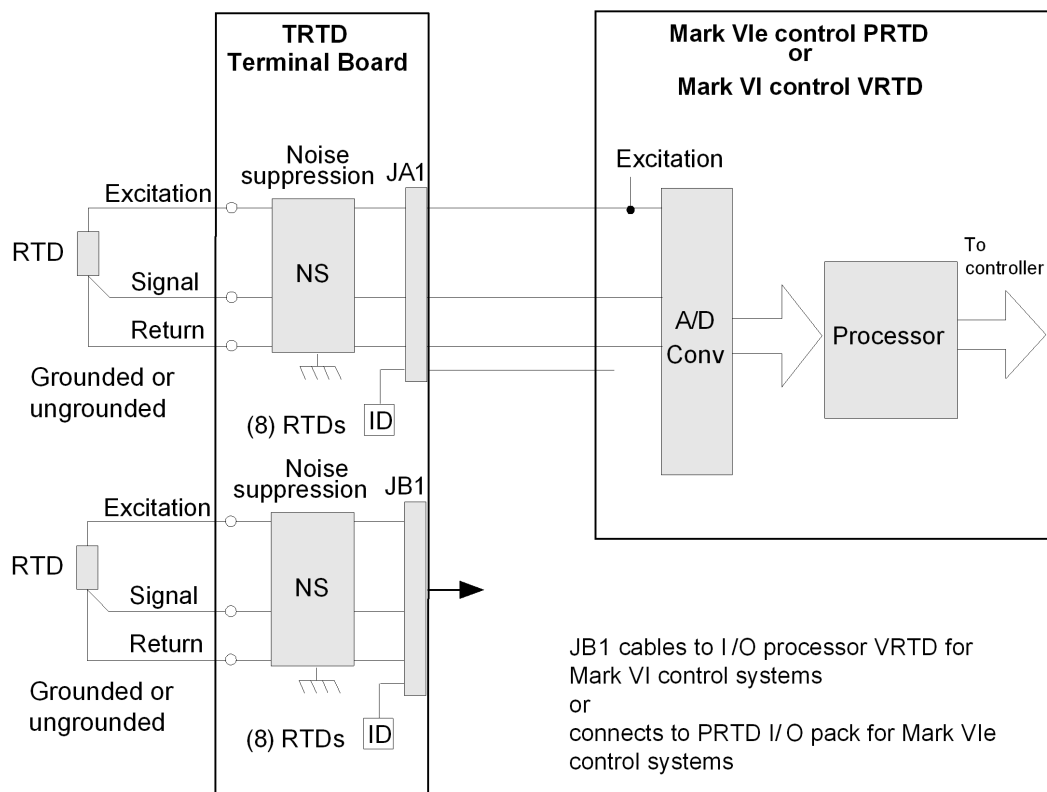
Operation

TRTD supplies a 10 mA dc multiplexed (not continuous) excitation current to each RTD, which can be grounded or ungrounded. The 16 RTDs can be located up to 300 m (984 ft) from the turbine control cabinet with a maximum two-way cable resistance of 15 Ω .

The A/D converter in the PRTD samples each signal and the excitation current four times per second for normal mode scanning and 25 times per second for fast mode scanning, using a time sample interval related to the power system frequency. Software performs the linearization for the selection of 15 RTD types.

RTD open and short circuits are detected by out-of-range values. An RTD that is determined to be outside the hardware limits is removed from the scanned inputs to prevent adverse effects on other input channels. Repaired channels are reinstated automatically in 20 seconds or can be manually reinstated.

All RTD signals have high-frequency decoupling to ground at signal entry. RTD multiplexing in the PRTD is coordinated by redundant pacemakers so that the loss of a single cable or PRTD does not cause the loss of any RTD signals in the control database.



TRTD (Simplex) Inputs and Signal Processing

Calibration

RTD inputs are automatically calibrated using the filtered calibration source and null voltages.

Specifications

Item	Specification
Number of channels	Eight channels per terminal board
RTD types	10, 100, and 200 Ω platinum
	10 Ω copper
	120 Ω nickel
Span	0.3532 to 4.054 V
Maximum lead resistance	15 Ω maximum two-way cable resistance
Fault detection	High/low (hardware) limit check
	High/low (software) system limit check
	Failed ID chip
Temperature	-30 to 65°C (-22 to 149 °F)

RTD Accuracy

RTD Type	Group Gain	Accuracy at 400 °F
120 Ω nickel	120 Ω nickel	2 °F
200 Ω platinum	Normal_ 1.0	2 °F
100 Ω platinum	Normal_ 1.0	4 °F
100 Ω platinum -51 to 240°C (-60 to 400 °F)	Gain_ 2.0	2 °F
10 Ω copper	10 Ω Cu_10	10 °F

RTD Types and Ranges

RTD inputs are supported over a full-scale input range of 0.3532 to 4.054 V. The following table displays the types of RTD used and the temperature ranges.

RTD Type	Name/Standard	Range °C	Range °F
10 Ω copper	MINCO_CA GE 10 Ω Copper	-51 to 260	-60 to 500
100 Ω platinum	SAMA 100	-51 to 593	-60 to 1100
100 Ω platinum	DIN 43760 IEC-751 MINCO_PD MINCO_PE PT100_DIN	-51 to 700	-60 to 1292
100 Ω platinum	MINCO_PA IPTS-68 PT100_PURE	-51 to 700	-60 to 1292
100 Ω platinum	MINCO_PB Rosemount 104 PT100_USIND	-51 to 700	-60 to 1292
120 Ω nickel	MINCO_NA N 120	-51 to 249	-60 to 480
200 Ω platinum	PT 200	-51 to 204	-60 to 400

Diagnostics

Diagnostic checks include the following:

- Each RTD type has hardware limit checking based on preset (non-configurable) high and low levels set near the ends of the operating range. If this limit is exceeded, a logic signal is set and the input is no longer scanned. If any one of the input's hardware limits is set, it creates a composite diagnostic alarm, L3DIAG_XXXX, referring to the entire board. Details of the individual diagnostics are available from the toolbox. The diagnostic signals can be individually latched, and then reset with the RESET_DIA signal.
- Each RTD input has system limit checking based on configurable high and low levels. These limits can be used to generate alarms, and can be configured for enable/disable, and as latching/non-latching. RESET_SYS resets the out of limit signals. In TMR systems, limit logic signals are voted and the resulting composite diagnostic is present in each controller.
- The resistance of each RTD is checked and compared with the correct value, and if high or low, a fault is created.
- Each connector has its own ID device, which is interrogated by the I/O processor board. The terminal board ID is coded into a read-only chip containing the terminal board serial number, board type, revision number, and the connector location. If a mismatch is encountered, a hardware incompatibility fault is created.

Configuration

There are no jumpers or hardware settings on the terminal board.

SRTD Simplex RTD Input

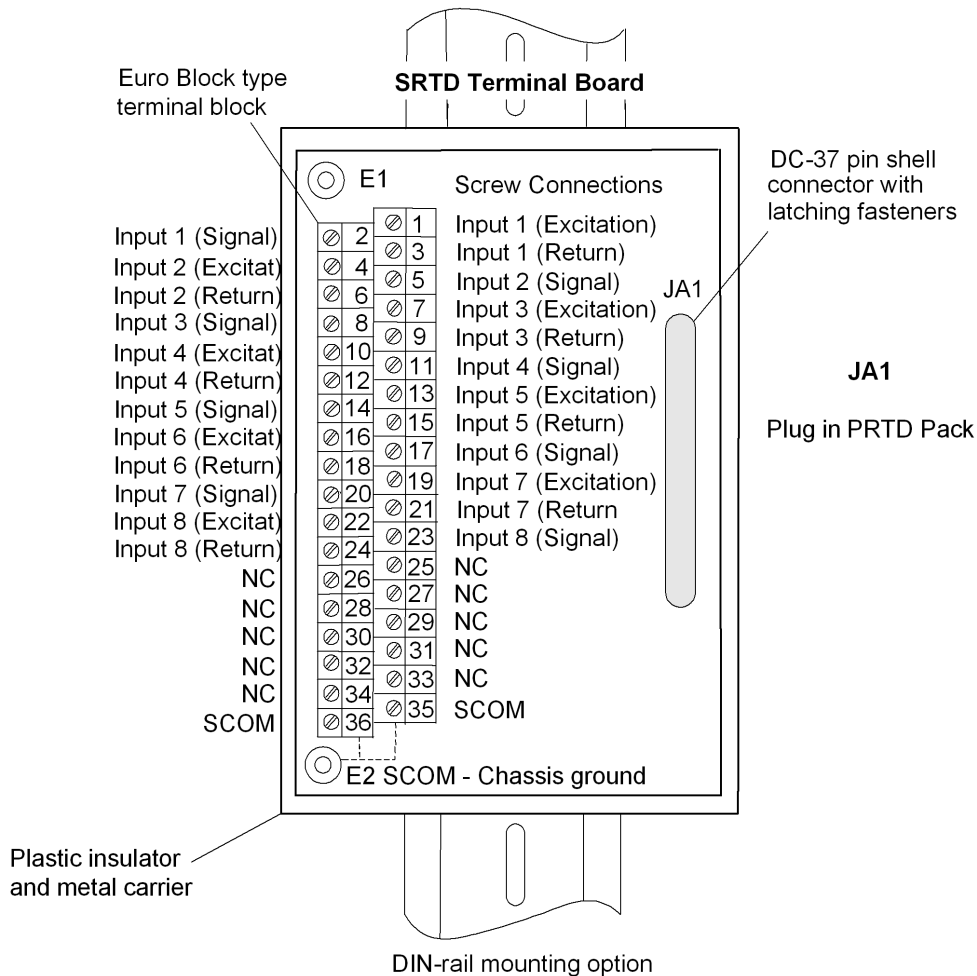
Functional Description

The Simplex Resistance Temperature Device (RTD) Input (SRTD) terminal board is a compact RTD terminal board, designed for DIN-rail or flat mounting. The board has eight RTD inputs and connects to the PRTD I/O processor. High-density Euro-block type terminal blocks are mounted to the board. An on-board ID chip identifies the board to the I/O processor for system diagnostic purposes.

In the Mark* VIe systems, the PRTD I/O pack works with the SRTD. The I/O pack plugs into the DC-37 pin connector and communicates with the controller over Ethernet. Only simplex systems are supported.

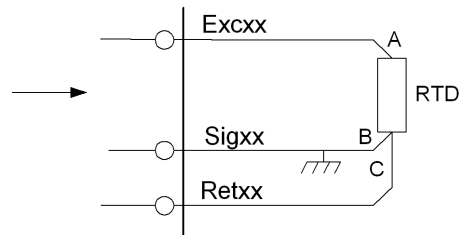
Installation

The SRTD and a plastic insulator mount on a sheet metal carrier which mounts on a DIN rail. Optionally the SRTD and insulator mount on a sheet metal assembly that bolts directly to a cabinet. The eight RTDs are wired directly to the Euro-style box type terminal block, which has 36 terminals and is available in two types. Typically #18 AWG wires (shielded twisted triplet) are used. I/O cable shield terminal uses an external mounting bracket supplied by GE or the customer. Terminals 25 through 34 are not connected. E1 and E2 are mounting holes for the chassis ground screw connection (SCOM).



Application Notes:

- Optional Ground: connect the B wire to ground;
- RTD Group wiring, that is sharing the B wire; tie the B wires together at the RTDs, tie the Sigxx signals together at the RTD terminal board, and interconnect with one wire.



SRTD Terminal Board Wiring and Cabling

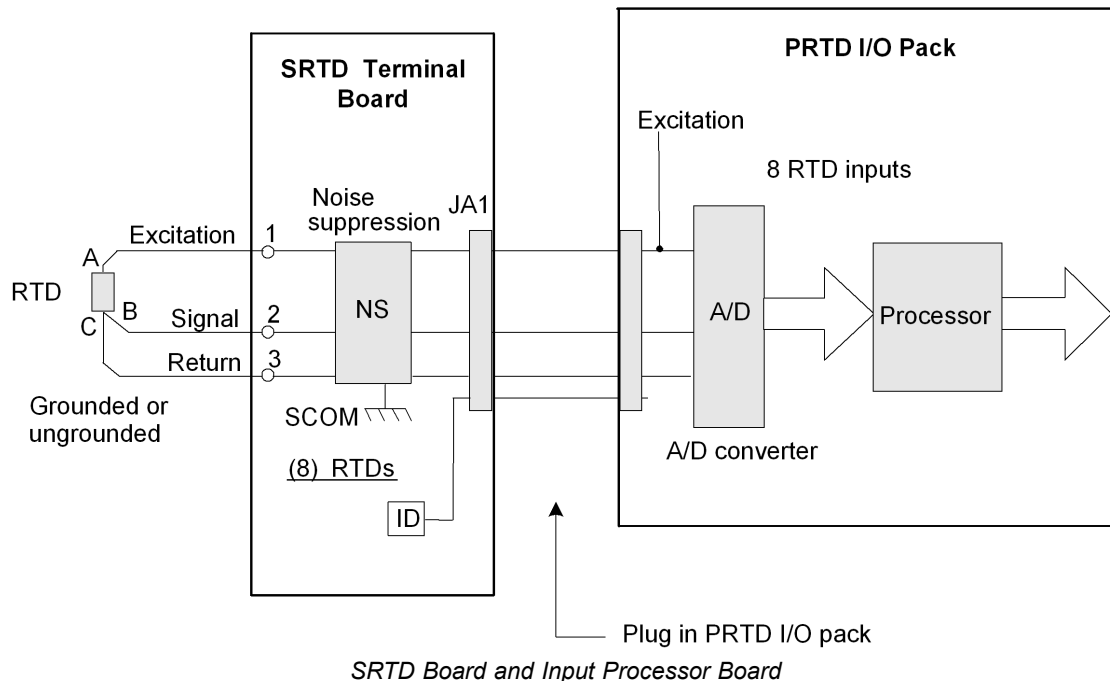
Two types of Euro-style box type terminal blocks are available:

- Terminal board SRTDH1 has a permanently mounted terminal block with 36 terminals.
- Terminal board SRTDH2 has a right-angle header accepting a range of commercially available pluggable terminal blocks, with a total of 36 terminals.

Operation

The terminal board supplies a 10 mA dc multiplexed (not continuous) excitation current to each RTD, which can be grounded or ungrounded. The eight RTDs can be located up to 300 m (984 ft) from the turbine control cabinet with a maximum two-way cable resistance of 15 Ω . The on-board noise suppression is similar to that on the TRTD. The RTD inputs and signal processing are illustrated in the figure.

The A/D converter in the PRTD pack samples each signal and the excitation current four times per second for normal mode scanning, and 25 times per second for fast mode scanning, using a time sample interval related to the power system frequency. Linearization for the selection of 15 RTD types is performed by the processor.



RTD open and short circuits are detected by out-of-range values. An RTD that is determined to be out of hardware limits is removed from the scanned inputs to prevent adverse affects on other input channels. Repaired channels are reinstated automatically in 20 seconds, or can be manually reinstated.

Calibration

RTD inputs are automatically calibrated using the filtered calibration source and null voltages.

Specifications

Item	Specification
Number of channels	Eight channels per terminal board
RTD types	10, 100, and 200 Ω platinum 10 Ω copper 120 Ω nickel
Span	0.3532 to 4.054 V
Maximum lead resistance	15 Ω maximum two-way cable resistance
Fault detection	High/low (hardware) limit check High/low (software) system limit check Incorrect ID chip
Temperature	-30 to 65°C (-22 to 149 °F)

RTD Accuracy

RTD Type	Group Gain	Accuracy at 400 °F
120 Ω nickel	120 Ω nickel	2 °F
200 Ω platinum	Normal_ 1.0	2 °F
100 Ω platinum	Normal_ 1.0	4 °F
100 Ω platinum -51 to 240°C (- 60 to 400 °F)	Gain_ 2.0	2 °F
10 Ω copper	10 Ω Cu_10	10 °F

RTD Types and Ranges

RTD inputs are supported over a full-scale input range of 0.3532 to 4.054 V. The following table displays the types of RTD used and the temperature ranges.

RTD Type	Name/Standard	Range °C	Range °F
10 Ω copper	MINCO_CA GE 10 Ω Copper	-51 to 260	-60 to 500
100 Ω platinum	SAMA 100	-51 to 593	-60 to 1100
100 Ω platinum	DIN 43760 IEC-751 MINCO_PD MINCO_PE PT100_DIN	-51 to 700	-60 to 1292
100 Ω platinum	MINCO_PA IPTS-68 PT100_PURE	-51 to 700	-60 to 1292
100 Ω platinum	MINCO_PB Rosemount 104 PT100_USIND	-51 to 700	-60 to 1292
120 Ω nickel	MINCO_NA N 120	-51 to 249	-60 to 480
200 Ω platinum	PT 200	-51 to 204	-60 to 400

Diagnostics

Diagnostic checks include the following:

- Each RTD type has hardware limit checking based on preset (non-configurable) high and low levels set near the ends of the operating range. If this limit is exceeded, a logic signal is set and the input is no longer scanned. If any one of the input's hardware limits is set, it creates a composite diagnostic alarm, L3DIAG_XXXX, referring to the entire board. Details of the individual diagnostics are available from the toolbox. The diagnostic signals can be individually latched, and then reset with the RESET_DIA signal.
- Each RTD input has system limit checking based on configurable high and low levels. These limits can be used to generate alarms, and can be configured for enable/disable, and as latching/non-latching. RESET_SYS resets the out of limit signals. In TMR systems, limit logic signals are voted and the resulting composite diagnostic is present in each controller.
- The resistance of each RTD is checked and compared with the correct value, and if high or low, a fault is created.
- Each connector has its own ID device, which is interrogated by the I/O processor board. The terminal board ID is coded into a read-only chip containing the terminal board serial number, board type, revision number, and the connector location. If a mismatch is encountered, a hardware incompatibility fault is created.

Configuration

There are no jumpers or hardware settings on the terminal board.