MANUFACTURER DOCUMENT PACKAGE

Manufacturer's Manual

Reference package for procurement and maintenance review

GENERAL ELECTRIC

IS200TRTDH1CCC

RESISTANCE TEMPERATURE INPUT TERMINAL BOARD

Used with the applicable Mark VI TRTD H1C RTD Input configuration.

REFERENCE PACKAGE

OFFICIAL DOCUMENT

Selected official manufacturer pages follow this cover.

Source: Original GEH-6721G TRTD section pp.414 to 418, H1C/VRTD distinction

Fault	Fault Description	Possible Cause
317	Controller pid [ ], exch [ ] minor sig mismatch, IONet [ ]	I/O pack outputs exchange received with minor signature different than expected
318	Controller pid [ ], exch [ ] cfg timestamp mismatch, IO-Net [ ]	I/O pack outputs exchange received with configuration timestamp different than expected
335	Code Segment CRC mismatch	Process Code Segment CRC mismatch
338	I/O pack Mapper SSI signals are not being updated	I/O pack SSI data is not being updated
339	I/O pack App SSO signals are not being received	I/O pack SSO data is not being updated
340	I/O pack Mapper static data structure CRC mismatch	Mapper static data CRC does not match
341	I/O pack Mapper I/O compatibility code mismatch	I/O pack mapper I/O Compat does not match firmware
342	I/O pack App compatibility code mismatch	I/O pack App I/O Compat does not match firmware
343	I/O pack App BOPLIB static data CRC mismatch	I/O pack application data structure CRC changed
344	I/O pack process code segment CRC mismatch	I/O pack process - code seg CRC bad
345	I/O pack App static config data CRC mismatch	I/O pack application data structure CRC changed
351	I/O pack App Periodic thread [ ] timing overrun	An I/O pack application thread over/under run
353	Sys Config Shmem CRC mismatch	Config Shmem CRC changed

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 one or more I/O processors, which convert the inputs to digital temperature values and transfer them to the controller.

There are four versions of TRTD as follows:

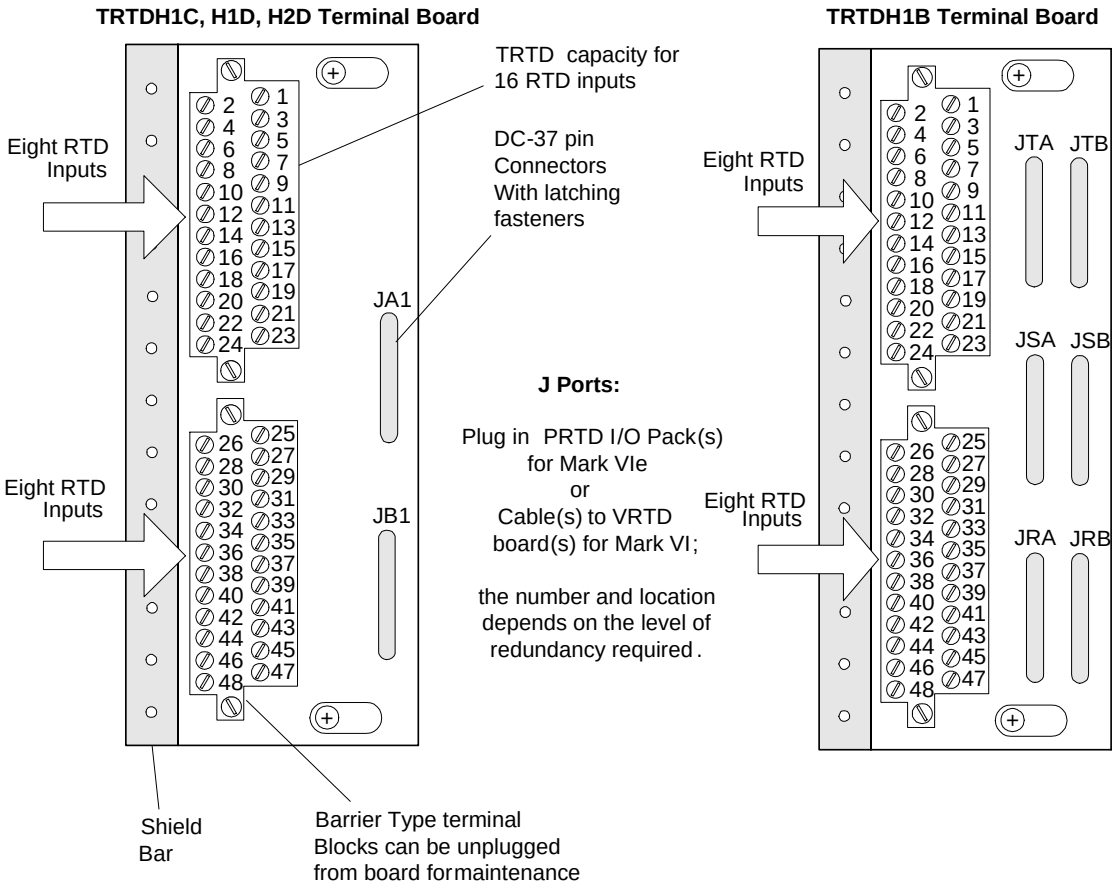
- TRTDH1B is a TMR version that fans out the signals to three VRTD boards using six DC-type connectors.
- TRTDH1C is a simplex board with two DC-type connectors for VRTD.
- TRTDH1D is a simplex board with two DC-type connectors for PRTD, normal scan.
- TRTDH2D is a simplex board with two DC-type connectors for PRTD, fast scan.

Mark VI Systems

In the Mark* VI system, TRTDH1B and TRTDH1C works with the VRTD processor and supports simplex and TMR applications. One TRTDH1C connects to the VRTD with two cables. In TMR systems, TRTDH1B connects to three VRTD processors with six cables.

Mark VIe Systems

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



RTD Input Terminal Boards

Installation

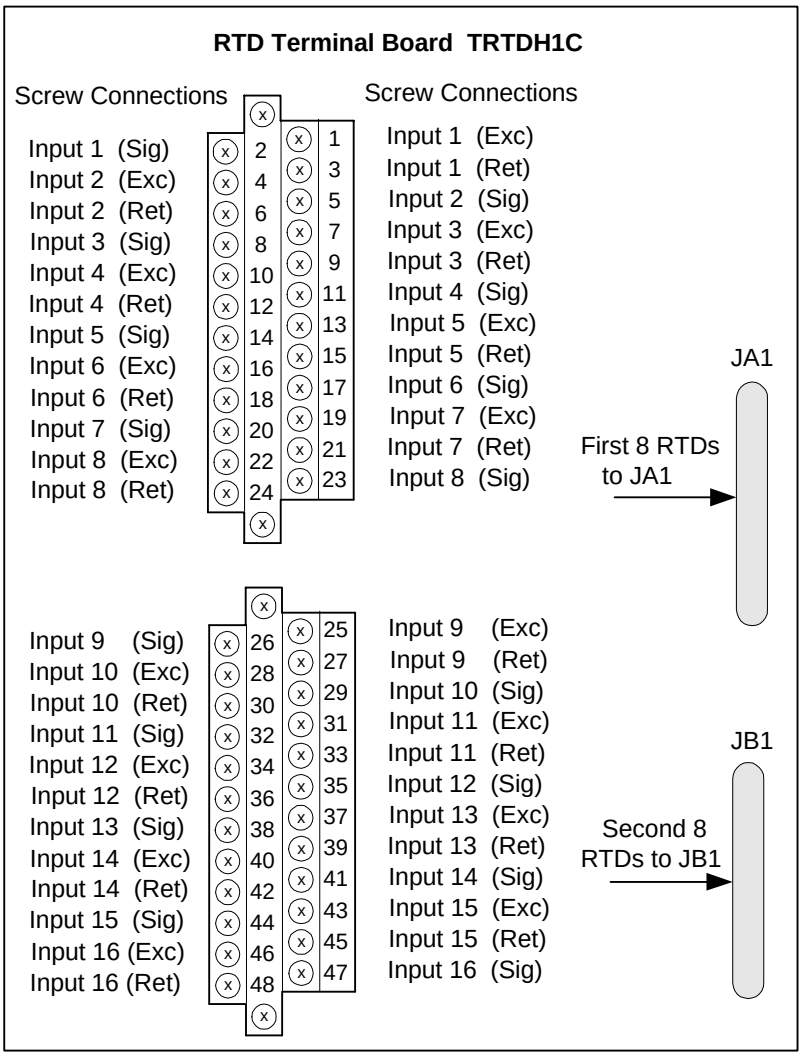
Connect the wires for the 16 RTDs directly to the two terminal blocks on the terminal board. Each block is held down with two screws and has 24 terminals accepting up to #12 AWG wires. A shield terminal strip attached to chassis ground is located immediately to the left of each terminal block.



Caution

For CE mark applications, double-shielded wire must be used. All shields must be terminated at the shield terminal strip. Do not terminate shields located at the end device.

In a TMR Mark VI system, TRTDH1B provides redundant RTD inputs by fanning the inputs to three VRTD boards in the R, S, and T racks. The inputs meet the same environmental, resolution, suppression, and function requirements and codes as the TRTDH1C terminal board; however, the fast scan is not available.



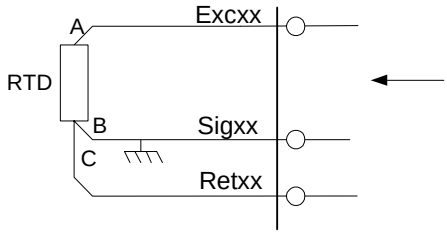
J-Port Connections:

Plug in PRTD I/O Pack(s) for Mark VIe

or

Cable to VRTD I/O board(s) for Mark VI;

The number and location depends on the number of inputs required.



Application Note:

- Optional Ground: connnect 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.

TRTDH1C RTD Terminal Board Wiring

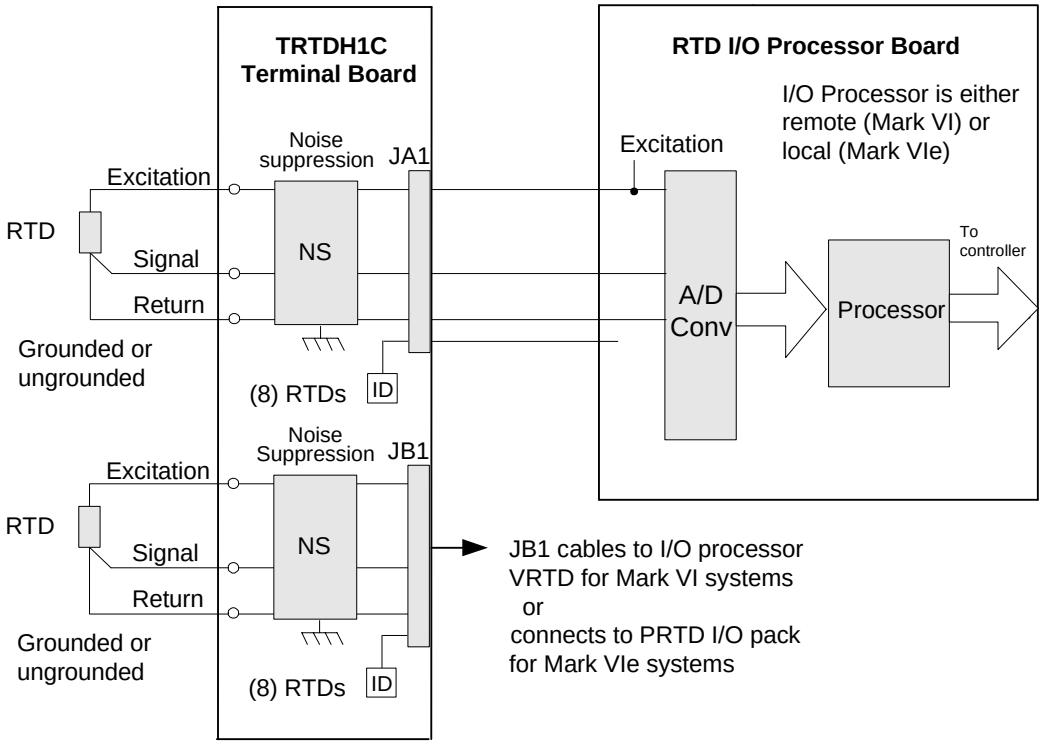
Operation

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 I/O processor 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 I/O processor is coordinated by redundant pacemakers so that the loss of a single cable or I/O processor does not cause the loss of any RTD signals in the control database.



TRTD (Simplex) Inputs and Signal Processing