MANUFACTURER DOCUMENT PACKAGE

Manufacturer's Manual

Reference package for procurement and maintenance review

GE

IS200STAIH2ACB

SIMPLEX ANALOG TERMINAL BOARD

Used with the applicable Mark VIe configuration.

REFERENCE PACKAGE

OFFICIAL DOCUMENT

Selected official manufacturer pages follow this cover.

Source: GEH-6721G Mark VIe Control System Guide Volume II, STAI section

STAI Simplex Analog Input

Functional Description

The Simplex Analog Input (STAI) terminal board is a compact analog input terminal board that accepts 10 analog inputs and two analog outputs, and connects to the PAIC pack. The 10 analog inputs accommodate two-wire, three-wire, four-wire, or externally powered transmitters. The two analog outputs are 0-20 mA but one can be jumper configured to 0-200 mA current. Only a simplex version of the board is available.

High-density Euro-block type terminal blocks are used. An on-board ID chip identifies the board to the PAIC for system diagnostic purposes.

Mark VIe Systems

In Mark* VIe systems, the PAIC I/O pack works with the STAI. The I/O pack plugs into the D-type connector and communicates with the controller over Ethernet. Only simplex systems are supported.

All revisions of STAI are compatible with all PAICs.

Installation

The STAI plus a plastic insulator mounts on a sheet metal carrier that then mounts on a DIN-rail. Optionally, the STAI plus insulator mounts on a sheet metal assembly and then bolts directly to a cabinet. There are two types of Euro-block terminal blocks available as follows:

- STAIH1 has a permanently mounted terminal block with 48 terminals
- STAIH2 has a right angle header accepting a range of commercially available pluggable terminal blocks, with a total of 48 terminals

Typically #18 AWG wires (shielded twisted pair) are used. I/O cable shield terminal is provided adjacent to the terminal blocks.

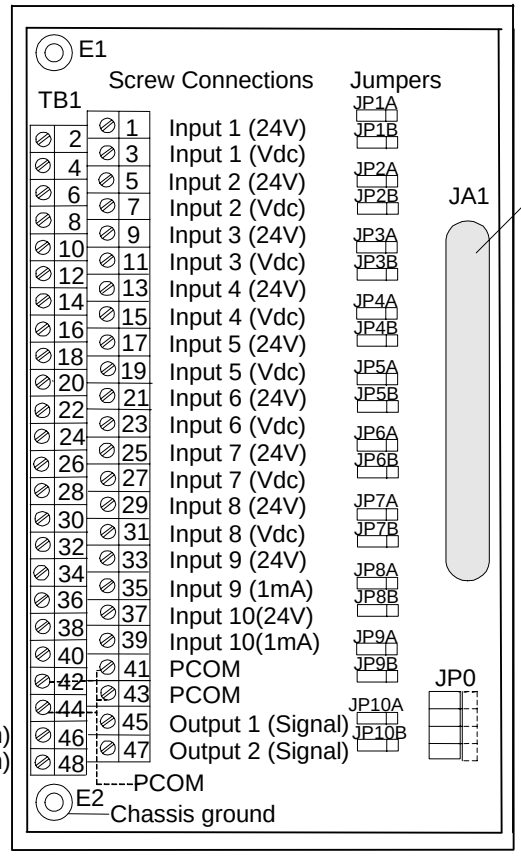
The following types of analog inputs and outputs can be accommodated:

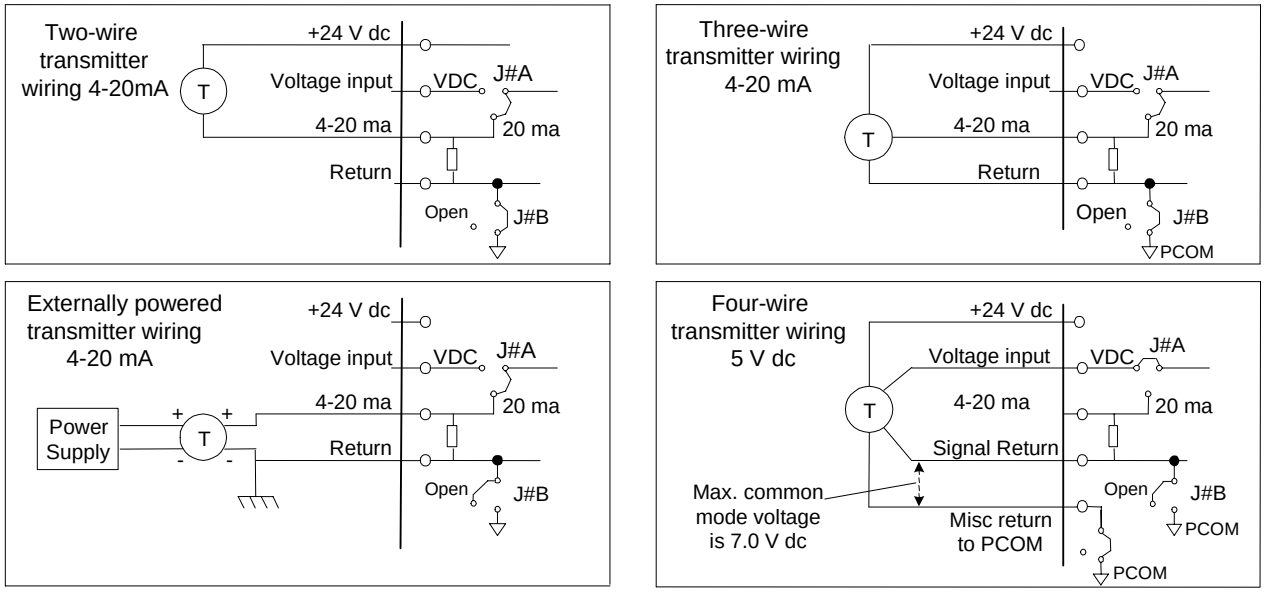
- Analog input, two-wire transmitter
- Analog input, three-wire transmitter
- Analog input, four-wire transmitter
- Analog input, externally powered transmitter
- Analog input, voltage ±5 V, ±10 V dc
- Analog output, 0-20 mA current
- Analog output, 0-200 mA current

Wiring, jumper positions, and cable connections appear on the wiring diagram.

Jumpers Vdc/20mA	Jumpers Open/Return	Circuit	Screw Connections
J1B	J1A	Input 1	Input 1 (20mA) Input 1 (Return)
J2B	J2A	Input 2	Input 2 (20mA) Input 2 (Return)
J3B	J3A	Input 3	Input 3 (20mA) Input 3 (Return)
J4B	J4A	Input 4	Input 4 (20mA) Input 4 (Return)
J5B	J5A	Input 5	Input 5 (20mA) Input 5 (Return)
J6B	J6A	Input 6	Input 6 (20mA) Input 6 (Return)
J7B	J7A	Input 7	Input 7 (20mA) Input 7 (Return)
J8B 20mA/1mA	J8A	Input 8	Input 8 (20mA) Input 8 (Return)
J9B	J9A	Input 9	Input 9 (20mA) Input 9 (Return)
J10B	J10A	Input 10	Input 10(20mA) Input 10(Return)
			PCOM PCOM
J0 No jumper	Output 1 Output 2		Output 1 (Return) Output 2 (Return)

STAI Analog Input Terminal Board





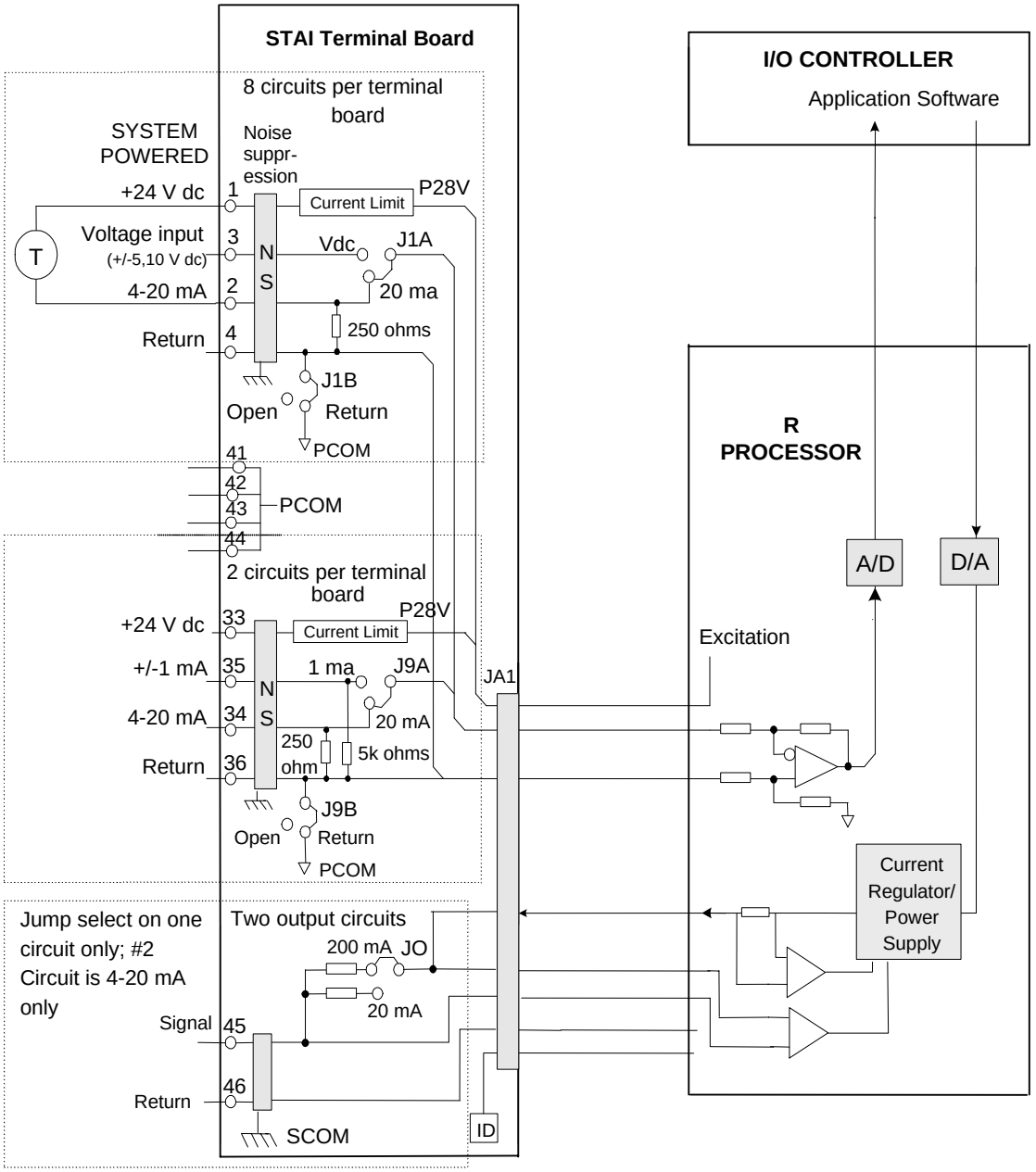
STAI Wiring, Cabling, and Jumper Positions

Operation

24 V dc power is available on the terminal board for all the transmitters (transducers). There is a choice of current or voltage inputs using jumpers. One of the two analog output circuits is 4-20 mA, and the other can be jumper configured for 4-20 mA or 0-200 mA. There is only one cable connection, so the terminal board cannot be used for TMR applications as with TBAI.

The following table displays the analog input/output capacity of the STAI terminal board.

Quantity	Analog Input Types	Quantity	Analog Output Types
8	±10 V dc, or ±5 V dc, or 4-20 mA	1	0-20 mA, or 0-200 mA
2	4-20 mA, or ±1 mA	1	0-20 mA



STAI Terminal Board

Specifications

Item	Specification
Number of channels	12 channels (10 AI, 2 AO)
Input span, transmitters	1 - 5 V dc across a precision resistor (usually 250 Ω)
Maximum lead resistance	15 Ω maximum two-way cable resistance, cable length up to 300 m (984 ft).
Outputs	24 V dc outputs rated at 21 mA each
Load on output currents	800 Ω burden for 4-20 mA output with PAIC pack 50 Ω burden for 200 mA output
Physical	
Size	15.9 cm high x 10.2 cm wide (6.25 in. x 4.0 in.)
Temperature	-30 to +65ºC (-22 to +149 ºF)
Technology	Surface mount

Diagnostics

Diagnostic tests are made on the terminal board as follows:

- The board provides the voltage drop across a series resistor to indicate the output current. The I/O processor creates a diagnostic alarm (fault) if any one of the two outputs goes unhealthy.
- Each cable connector on the terminal board has its own ID device that is interrogated by the I/O controller. The ID device is a read-only chip coded with the terminal board serial number, board type, revision number, and the JR, JS, JT connector location. When this chip is read by the I/O controller and a mismatch is encountered, a hardware incompatibility fault is created.

Configuration

The terminal board is configured by jumpers. For the location of these jumpers, refer to the installation diagram. The jumper choices are as follows:

- Jumpers J1A through J8A select either current input or voltage input.
- Jumpers J1B through J8B select whether the return is connected to common or is left open.
- Jumpers J9A and J10A select either 1 mA or 20 mA input current.
- Jumpers J9B and J10B select whether the return is connected to common or is left open.
- Jumper J0 sets output 1 to either 20 mA or 200 mA.