

Table of Contents

DTAI Simplex Analog Input/Output	2
Functional Description	2
Installation	2
Operation	4
Specifications	5
Diagnostics	5
Configuration	5

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



DTAI Simplex Analog Input/Output

Functional Description

The Simplex Analog Input/Output (DTAI) terminal board is a compact analog input terminal board designed for DIN-rail mounting. The board has 10 analog inputs and 2 analog outputs and connects to the VAIC processor board with a single cable. This cable is identical to those used on the larger TBAI terminal board. The terminal boards can be stacked vertically on the DIN-rail to conserve cabinet space.

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 a 0-200 mA current. Two DTAI boards can be connected to VAIC for a total of 20 analog inputs and 4 analog outputs. Only a simplex version of the board is available.

The functions and on-board noise suppression are the same as those on the TBAI. High-density euro-block type terminal blocks are permanently mounted to the board, with two screw connections for the ground connection (SCOM). An on-board ID chip identifies the board to the VAIC for system diagnostic purposes.

Installation

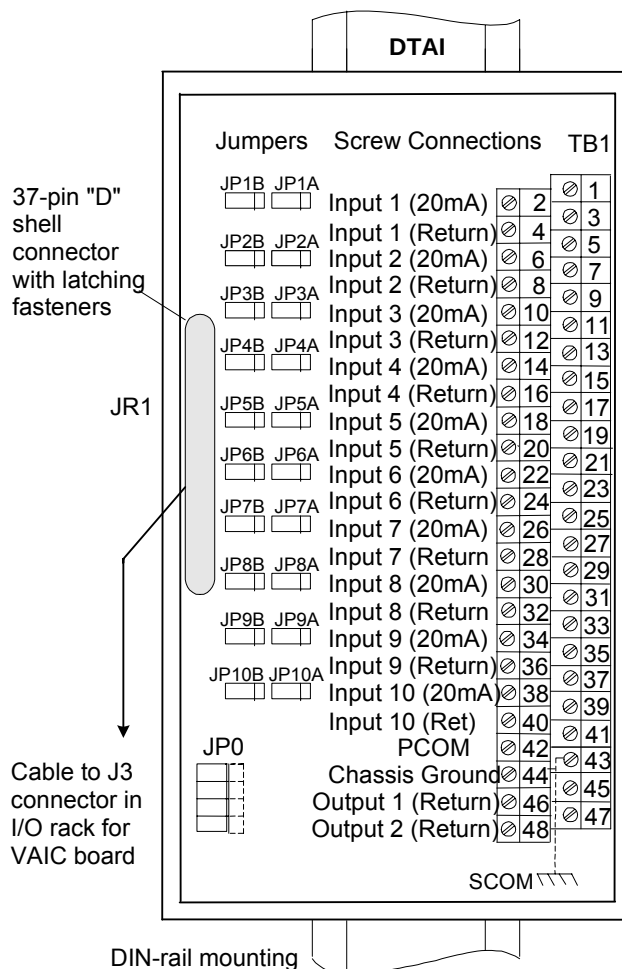
Mount the plastic holder on the DIN-rail and slide the DTAI board into place. Connect the RTD wires directly to the terminal block. The Euro-block type terminal block has 48 terminals and is permanently mounted on the board. Typically, #18 AWG wires (shielded twisted pair) are used. Two screws, 43 and 44, are provided for the SCOM (ground) connection, which should be as short a distance as possible.

Note There is no shield terminal strip with this design.

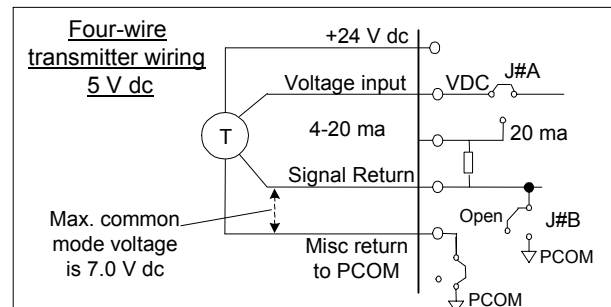
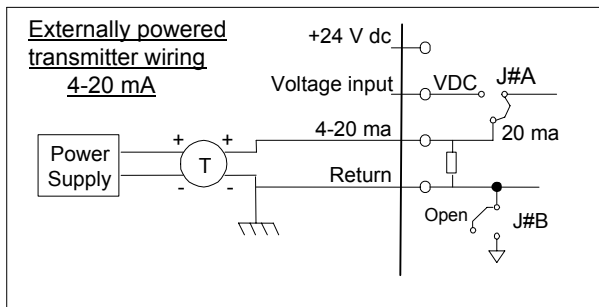
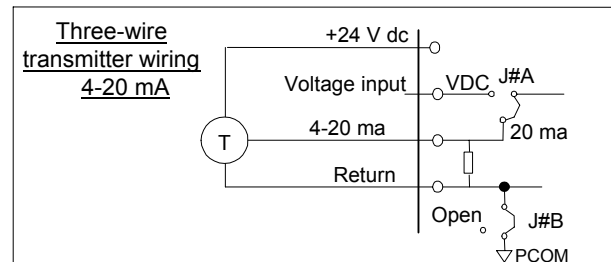
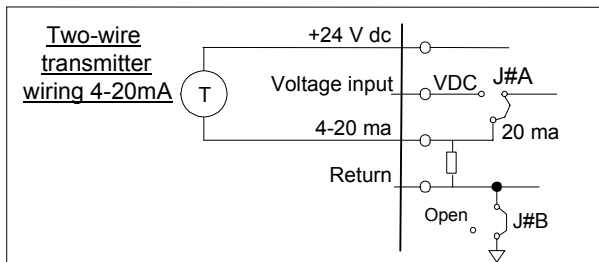
DTAI accommodates the following analog I/O types:

- 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

Note SCOM, terminal 43, must be connected to chassis ground.



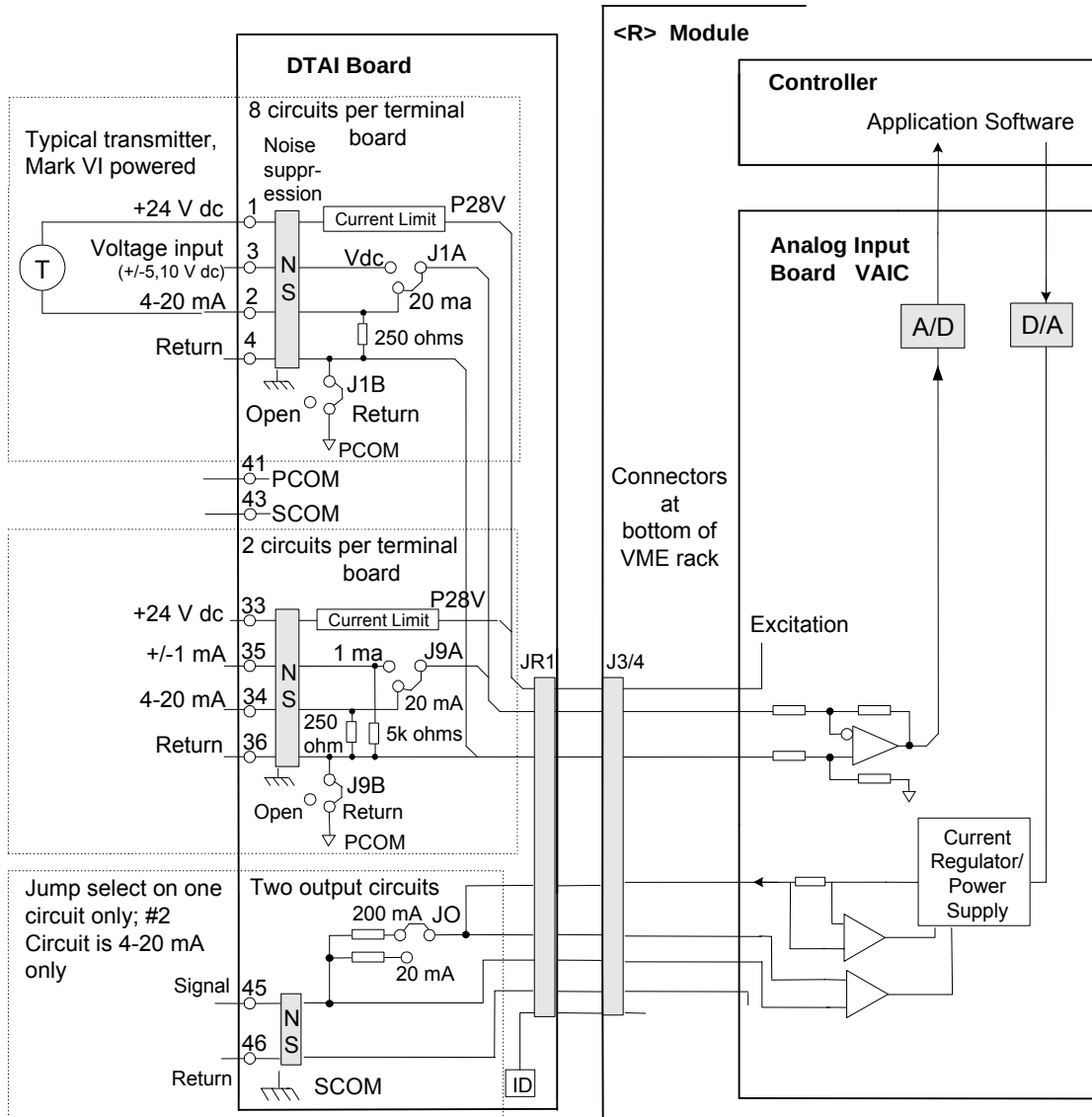
Screw Connections	Circuit	Jumpers	
		Open/Return 20mA/V dc	
Input 1 (24V)	Input 1	J1B	J1A
Input 1 (Vdc)			
Input 2 (24V)	Input 2	J2B	J2A
Input 2 (Vdc)			
Input 3 (24V)	Input 3	J3B	J3A
Input 3 (Vdc)			
Input 4 (24V)	Input 4	J4B	J4A
Input 4 (Vdc)			
Input 5 (24V)	Input 5	J5B	J5A
Input 5 (Vdc)			
Input 6 (24V)	Input 6	J6B	J6A
Input 6 (Vdc)			
Input 7 (24V)	Input 7	J7B	J7A
Input 7 (Vdc)			
Input 8 (24V)	Input 8	J8B	J8A
Input 8 (Vdc)			
Input 9 (24V)	Input 9	J9B	J9A
Input 9 (1mA)			
Input 10 (24V)	Input 10	J10B	J10A
Input 10 (1mA)			
PCOM			
Chassis Ground			
Output 1 (Signal)	Output 1	J0	
Output 2 (Signal)	Output 2	No jumper	



DTAI Wiring, Cabling, and Jumper Positions

Operation

24 V dc power is available on DTAI for all the transducers and the inputs can be configured as 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. DTAI has only one cable connection so it cannot be used for TMR applications as with TBAI.



DTAI Terminal Board and VAIC I/O Processor

The following table displays the analog I/O capacity of DTAI.

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

Specifications

Item	Specification
Number of channels	12 channels (10 AI, 2 AO)
Input span, transmitters	1 - 5 V dc from 4-20 mA current input
Maximum lead resistance to transmitters	15 Ω maximum two-way cable resistance, cable length up to 300m (984 ft)
Outputs	24 V outputs provide 21 mA for each connection
Maximum lead resistance	15 Ω maximum two-way cable resistance, cable length up to 300m (984 ft).
Output load	500 Ω for 4-20 mA output. 50 Ω for 200 mA output with VAICH1C
Fault detection	Monitor output current Check ID chip on connector
Physical	
Temperature	0 to 60°C (32 to 140 °F)
Size, with support plate	8.6 cm wide x 16.2 cm high (3.4 in x 6.37 in)

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.