

5.3 Non-HART Analog Input IOTA (Models CC-TAIN01, CC-TAIN11)

This Series C Analog Input IOTA board is represented by the following information and graphic.

To access the parts information for the:

- module
- IOTA
- terminal plug-in assembly, and
- fuses

associated with this board and module, refer to Analog Input in the Recommended Spare Parts section.

Series C non-HART Analog Input 6 inch, non-redundant IOTA is displayed in the following figure.

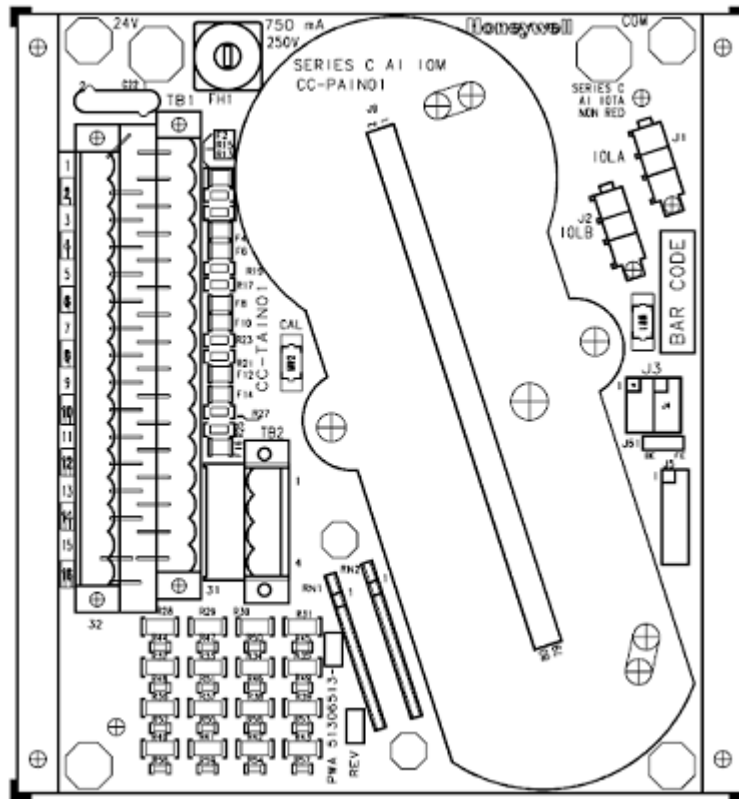


Figure 20: Series C non-HART Analog Input 6 inch, non-redundant IOTA

Note: All I/O field terminations accept up to 14 gauge stranded wire.

To properly wire your module to the Series C non-HART Analog Input IOTA with terminal block 1 (TB1) and terminal block 2 (TB2), use the following table.

Table 23: AI 6 inch, non-HART AI, non-redundant - terminal block 1

Terminal Block 1 (TB1)		
Channel	Return Screw	Power Screw(24V)
Channel 1	2	1
Channel 2	4	3
Channel 3	6	5

Terminal Block 1 (TB1)		
Channel	Return Screw	Power Screw(24V)
Channel 4	8	7
Channel 5	10	9
Channel 6	12	11
Channel 7	14	13
Channel 8	16	15
Channel 9	18	17
Channel 10	20	19
Channel 11	22	21
Channel 12	24	23
Channel 13	26	25
Channel 14	28	27
Channel 15	30	29
Channel 16	32	31

Table 24: AI 6 inch, non-HART AI, non-redundant terminal block 2

Channels	Signal screw
For channels 1 through 16	<p>Channels 1 through 16</p> <p>Channels 1 through 16</p> <p>TB1 pin 1, 3, 5, 7, 9, 11, 13 15, 17, 19, 21, 23, 25, 27, 29, 31</p> <p>TB1 pin 2, 4, 6, 8, 10, 12, 14 16, 18, 20, 22, 24, 26, 28, 30, 32</p>

5.3.1 Field wiring and module protection - non-HART Analog Input module

Individual field wiring is protected by an internal protection circuit permitting

- Short circuit protection of input for field short circuits. Protection suitable for Division 2 non-incendive / Zone 2 non-arcing.
- Each signal can be shorted in the field with no damage to module or board. Other channels on the same IOM will not be affected

5.3.2 Two-wire transmitter wiring - non-HART Analog Input module

The AI IOM/IOTA is optimized for use with classic two-wire transmitters. All 16 channels can accept inputs from two-wire transmitters without any special wiring or jumper options.

5.3.3 Standard and self-powered two-wire transmitter wiring - non-HART Analog Input module

The non-HART AI IOM/IOTA is optimized for use with classic two-wire transmitters. All 16 channels can accept inputs from two-wire transmitters. It is recommended to use channels 13 through 16, since these channels have a dedicated Series C ground screw (although it is possible to use channels 1 through 12).

Following figure illustrates an example jumper configuration for channel 1 of non-redundant 9 inch IOTA.

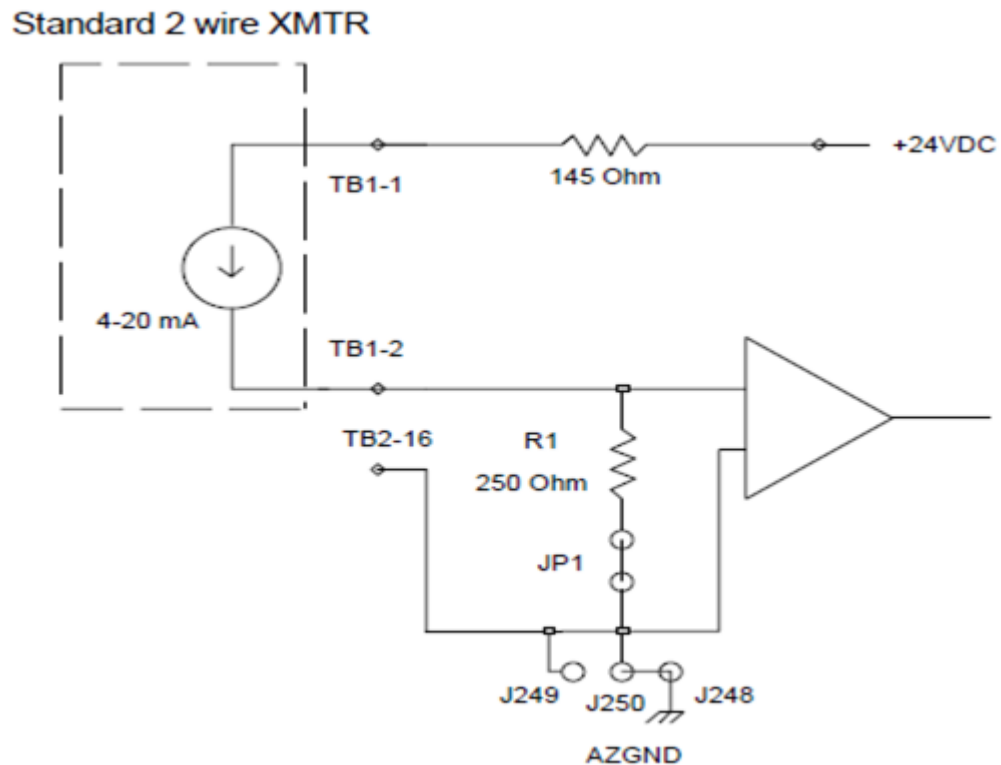


Figure 21: Non-redundant Analog Input 9 inch, standard 2-wire transmitter wiring

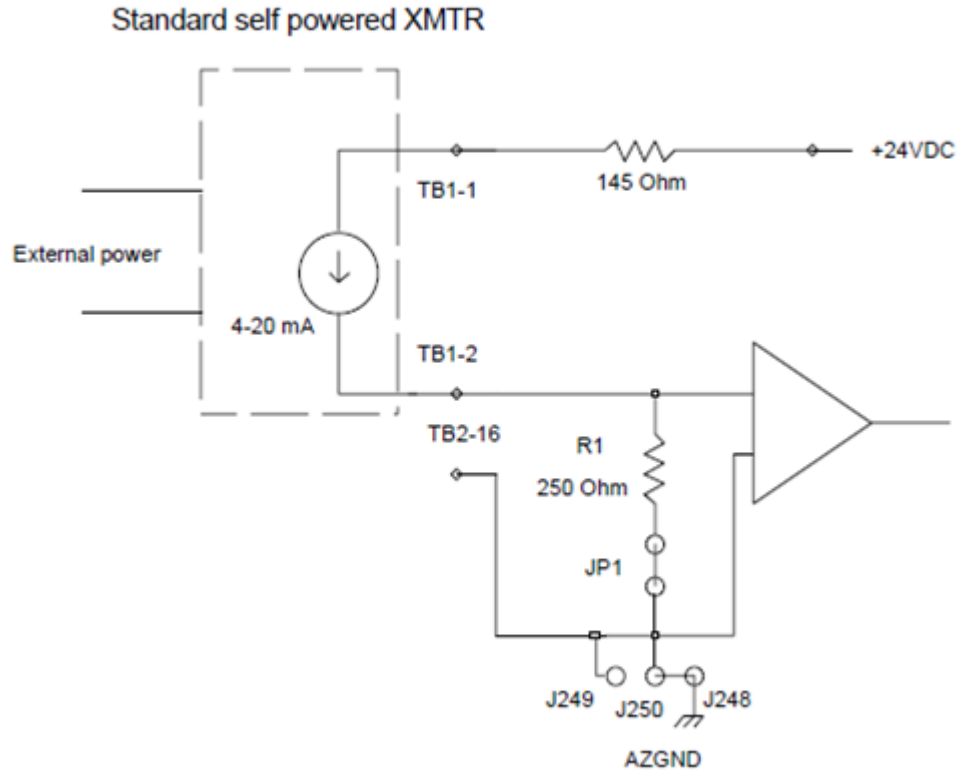


Figure 22: Non-redundant Analog Input 9 inch, self-powered 2-wire transmitter wiring

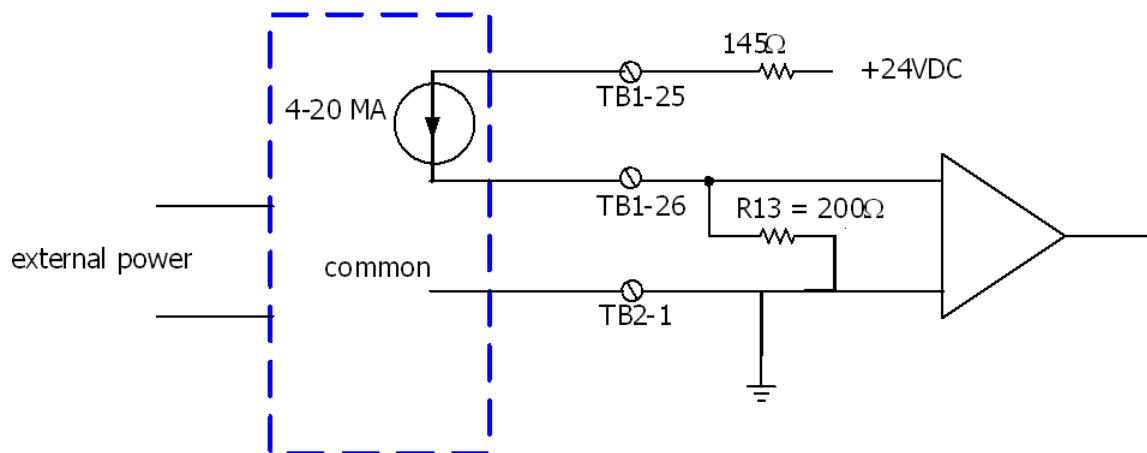
5.3.4 Self-powered 3-wire transmitter (system ground) - non-HART Analog Input module

It is recommended to use channels 13 through 16, since these channels have 3 screws per channel (although it is possible to use channels 1 through 12).

For the following example:

- Channel 13 is used
- The three wires are terminated to TB1-25, TB1-26 and TB2-1

Self Powered 3 Wire XMTR



Note: TB1: This is done through a 145 ohm resistor inline with a Positive Temperature Coefficient (PTC) device that acts like a fuse (but never needs replacement). Thus, these field terminals can be permanently shorted to ground without damage. This is an improvement over Process Manager due to the inclusion of the PTC device.

5.3.5 Non-HART Analog Input module wiring reference table

The following table summarizes the possible Analog Input wiring connections.

Table 25: Summary - Analog Input wiring connections

Input style	Connection characteristics
Standard 2-wire transmitter	<ul style="list-style-type: none"> • Can use any of the 16 channels. • No custom wiring required.
Standard self-powered transmitter	<ul style="list-style-type: none"> • Can use any of the 16 channels. • No custom wiring required.
Self-powered transmitter with loop power(system ground)	<ul style="list-style-type: none"> • Can use any of the 16 channels. • Custom wiring is required for channels 1-12: you must find a screw terminal at Series C ground for one leg of the transmitter.
Self-powered 3-wire transmitter (system ground)	<ul style="list-style-type: none"> • Can use any of the 16 channels. • Custom wiring is required for channels 1-12: you must find a screw terminal at Series C ground for one leg of the transmitter.

5.3.6 Allowable field wiring resistance - non-HART Analog Input module

The maximum allowable field wiring resistance between the transmitter and the IOTA connection terminal is dependent upon the voltage requirement of the transmitter. The formula for calculating the max wiring resistance for the Series C Analog Input is given by the following equation.

$$R_{max} = [(13.0 - V_{tx}) / (0.022)]$$

where: V_{tx} = Voltage required at the transmitter terminal

5.3.7 IOTA board and connections - non-HART Analog Input module

Series C Analog Input 6 inch, non-redundant IOTA and field wiring connection is displayed in the following image.