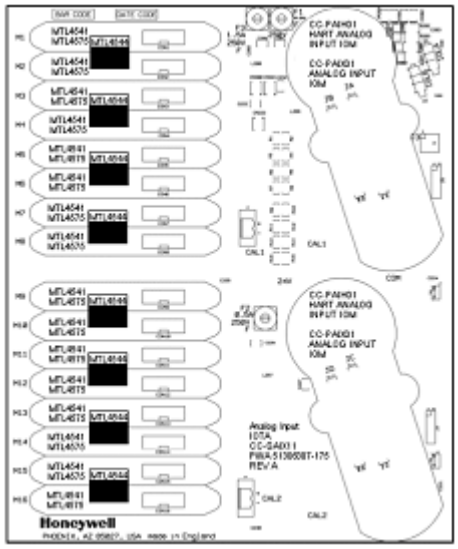
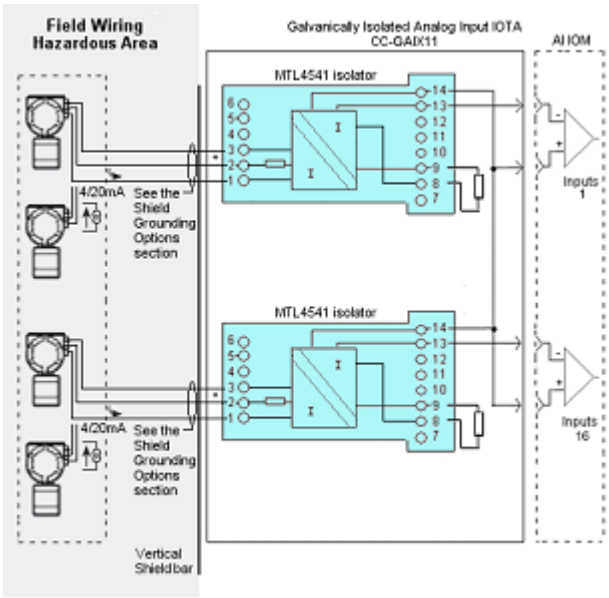
22.1.1 CC-GAIX11 Analog Input IOTA

Figure 22.1 CC-GAIX11 Analog Input IOTA



22.1.2 CC-GAIX11 Analog Input IOTA connection diagram

Figure 22.2 CC-GAIX11 Analog Input IOTA connection diagram



22.2 GI/IS Analog Input IOTA Model CC-GAIX21

The model CC-GAIX21 Analog Input IOTA accommodates up to sixteen high level dc signals. This IOTA does not support redundancy and allows galvanically isolated inputs from the MTL4544 (two

channel) isolator.

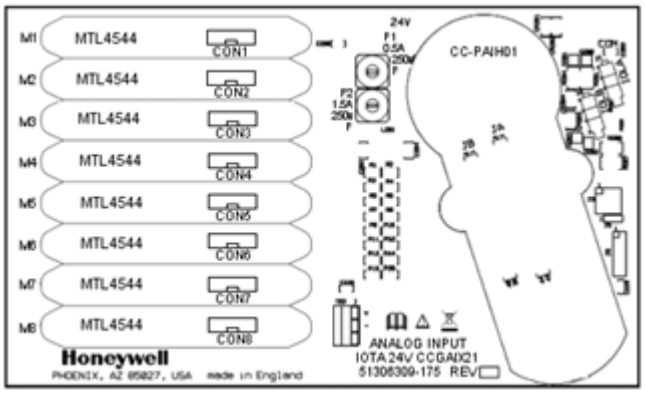
- MTL4544 - dual channel 4-to-20 mA isolator with HART®
- MTL4599 - dummy, terminates unused connectors

Refer to GI/IS IOTA models for a complete list of supported Series C IOTA and their corresponding isolators.

- CC-GAIX21 Analog Input IOTA
- CC-GAIX21 Analog Input IOTA connection diagram
- Analog Input supported isolators
- MTL4541 / 4544
- MTL4575
- Testing Temperature Converter- MTL4575
- Default configuration
- Configuration using PCS45/PCL45
- Field Wiring Input Signals

22.2.1 CC-GAIX21 Analog Input IOTA

Figure 22.3 CC-GAIX21 Analog Input IOTA



22.2.2 CC-GAIX21 Analog Input IOTA connection diagram

Figure 22.4 CC-GAIX21 Analog Input IOTA connection diagram

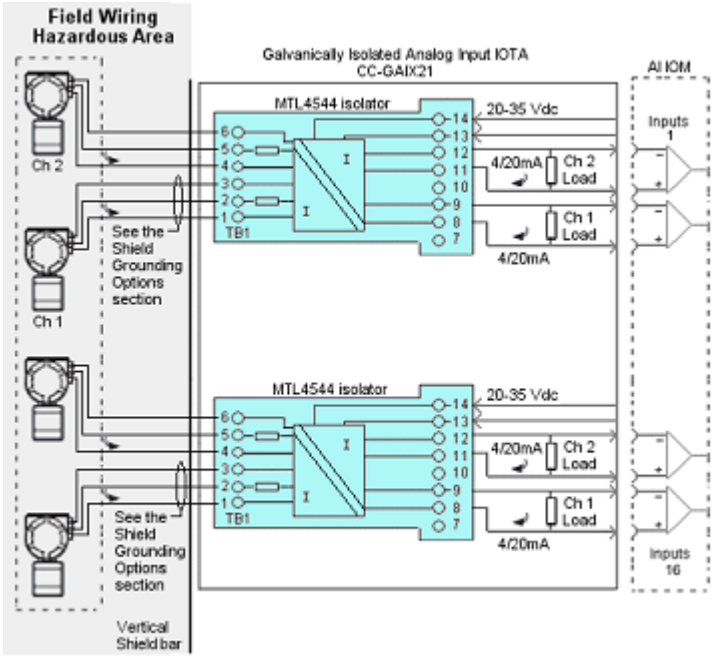
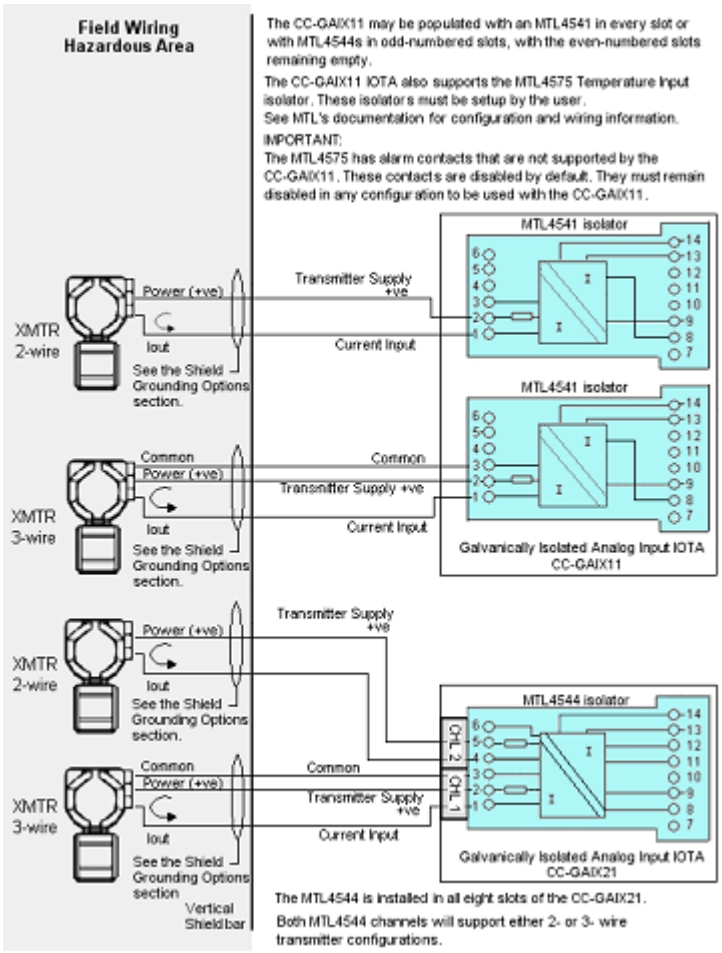


Figure 22.5 Transmitter Field Wiring to CC-GAIX11/GAIX21 IOTAs



22.2.3 Analog Input supported isolators

The following table defines important distinctions between the various isolators and the Analog Input IOTAs they support.

Table 22.1 AI IOTAs and their supporting isolators

Item	MTL4541 CC-GAIX11	MTL4544 CC-GAIX11 CC-GAIX21	MTL4575 CC-GAIX11
Maximum current consumption (with 20mA signal)	51mA at 24V	95mA at 24V	60mA at 24V 50mA at 20V 35mA at 35V
Maximum power dissipation within isolator (with 20mA signal)	0.7W at 24V	1.4W at 24V	0.7W at 24V 1.2W at 35V
Isolation	250V ac between hazardous area and safe/power supply circuits 100V ac between safe and power supply circuits	250V ac between hazardous area and safe/power supply circuits 100V ac between safe and power supply circuits	Three port isolation 250V ac between safe- and hazardous-area circuits. Input circuit's floating.
Temperature drift	<0.8µA/degrees C	<0.8µA/degrees C	**Inputs:** mV/THC: ±0.003% of input value/°C THC line resistance:600Ωmax RTD: ±7mΩ/°C Output: ±0.6µA/°C
Safety description	**Terminals 2 to 1 and 3:** Vo=28V Io=93mA Po=651mW Um = 253V rms or dc **Terminals 1 to 3:** Non-energy-storing apparatus ≤1.2V, ≤0.1A, ≤20µJ and ≤25mW;can be connected without further certification into any IS loop with an open-circuit voltage <28V	**Terminals 2 to 1 and 3, and 5 to 4 and 6:** Vo=28V Io=93mA Po=651mW Um = 253V rms or dc **Terminals 1 to 3 and 4 to 6** Non-energy-storing apparatus ≤1.2V, ≤0.1A, ≤20µJ and ≤25mW;can be connected without further certification into any IS loop with an open-circuit voltage <28V	**Terminals 5 and 6** Non-energy-storing apparatus ≤1.2V, ≤0.1A, ≤20µJ and ≤25mW.Can be connected without further certification into any IS loop with an open-circuit voltage not more than 10V. **Terminals 1 and 2** Vo=7.2V Io=8mA Po=144mW Um = 253V rms or = dc **Configuration socket** Vi=11.2V Ii=12mA Pi=280mW Vo=7.2V Io=14.5mA Po=26mW

22.2.4 MTL4541 / 4544

The following isolators are available for Analog Input GI/IS IOTAs.

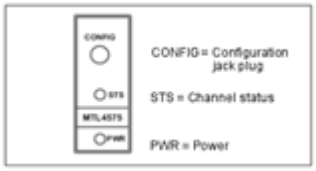
Figure 22.6 Analog Input - MTL4541 and MTL4544 isolator LED indicators



22.2.5 MTL4575

Before placing the isolator into operation, the interface unit must be configured for the particular application

Figure 22.7 Temperature - MTL4575 isolator LED indicators



22.2.6 Testing Temperature Converter- MTL4575

1. Connect a link between terminals 1 and 5.
2. Connect 2-wire transmitter between terminals 2(+ve) and 4(-ve). Both outputs will now repeat the current in the transmitter loop.

> **NOTE**
> HART data is transferred through channel 1

3. This completes this procedure.

The following table lists the isolator's LED status and description.

Table 22.2 MTL4575, power and status information

LED status	Description
ON	Unit working normally
Slow flash	Output of 1mA, module in low alarm or downscale drive
Fast flash	Output of 21mA, module in high alarm or upscale drive
Off	No power to unit

22.2.7 Default configuration

Unless ordered differently, every MTL4575 module is supplied with the following default configuration.

- Input Type K thermocouple
- Linearization enabled
- Units degrees C
- CJ Compensation enabled
- Damping value 0 seconds
- Smoothing value 0 seconds
- Output zero 0 degrees C
- Output span 250 degrees C
- Tag and description fields blank
- Open circuit alarm set high (upscale)
- Transmitter failure alarm set low (downscale)
- CJ failure alarm set low (downscale)
- Line frequency 50Hz

22.2.8 Configuration using PCS45/PCL45

The PCS45 software, used in conjunction with PCL45 serial link, is the method to configure the MTL4575 isolators. Instructions are contained within the configuration software.

Refer to the following: PCS45 Configuration Software.

22.2.9 Field Wiring Input Signals

Each Galvanic Isolation Module on the AI IOTA provides a floating dc source for energizing conventional 2-wire or 3-wire, 4-20 mA transmitters. The Galvanic Isolation Module accurately converts the input current into a 1 to 5 volt output signal to the associated IOM.

22.2.10 Field Wiring Input Signals

Each Galvanic Isolation Module on the AI IOTA provides a floating dc source for energizing conventional 2-wire or 3-wire, 4-20 mA transmitters. The Galvanic Isolation Module accurately converts the input current into a 1 to 5 volt output signal to the associated IOM.

22.3 Analog Output GI/IS IOTAs

The galvanically isolated Analog Output (AO) IOTAs isolate up to sixteen 4-20 mA signals that can drive current-to-pressure (I/P) transducers, position actuators, or any load between 90 and 800