

Bristol® ControlWave® Loop Power Supply

Overview

The External Loop Supply is a convenient panel or DIN rail mountable module that provides four 24 Vdc outputs to power field devices such as transmitters. The Loop Supply is also available as a Snap Track mountable version for use in the Bristol® ControlWave® EFM and GFC measurement product enclosures from Emerson Process Management.

Benefits

The Loop Supply provides field power distribution using four pairs of wiring terminals for 24 V field devices. The unit operates from 9 to 30 Vdc allowing input voltage flexibility for the most common 12 or 24 V systems. Many RF systems are designed to operate at 12 Vdc for the radio. 12 V systems are also commonly used so that battery backup can be accomplished with a single 12 V battery rather than two that would be required for a 24 V system.

- 4 loop power terminal pairs provide field device wiring convenience
- Eliminates the need for additional loop power terminal blocks
- 9 – 30 Vdc input allows installation flexibility
- 200 mA @ 24 Vdc able to power up to (8) 4-20 mA loops
- Convenient non-isolated, feed-through wiring terminal to power RTU
- Panel, DIN rail or Snap Track mounting
- Small footprint minimizes panel space requirements
- LED provides visual indication of 24 V loop power output availability

Wiring Examples

ControlWave Micro and EFM

The ControlWave Micro and EFM products have both isolated and non-isolated AI and AO module options. The isolated analog I/O modules have built-in loop supplies and do not require an external loop power source. The non-isolated analog modules do however require an external loop power source such as the ControlWave Loop Power Supply.

When using the Loop Supply with ControlWave Micro or EFM, connect the transmitter positive (+) power wire directly to the Loop Supply positive (+) terminal. The Loop Supply negative (-) terminal is wired to the I/O module GND terminal. Connect the Transmitter negative (-) wire to the I/O module positive (+) terminal.

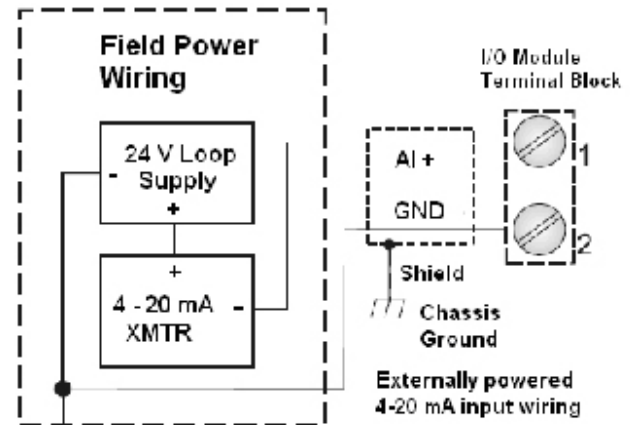


Fig. 1 ControlWave Micro & EFM non-isolated Analog Inputs

The non-isolated Analog Output module has field loop power terminals allowing local connection of the loop supply.

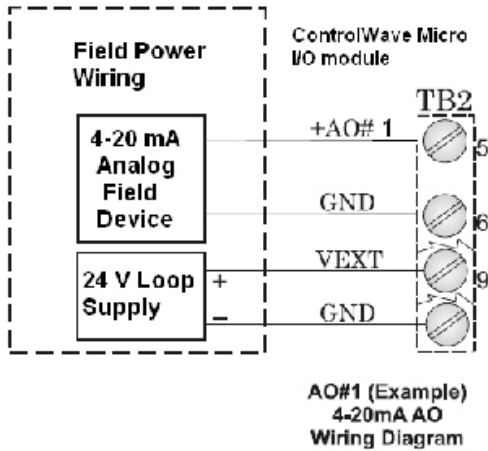


Fig. 2 ControlWave Micro & EFM non-isolated Analog Outputs

ControlWave Express, ExpressPAC and GFC

The ControlWave Express, ExpressPAC and GFC also have non-isolated AI and AO but the input and output loops may be internally or externally powered. With 24 Vdc powered Express RTUs, the loop power may be sourced directly from the Express power supply input.

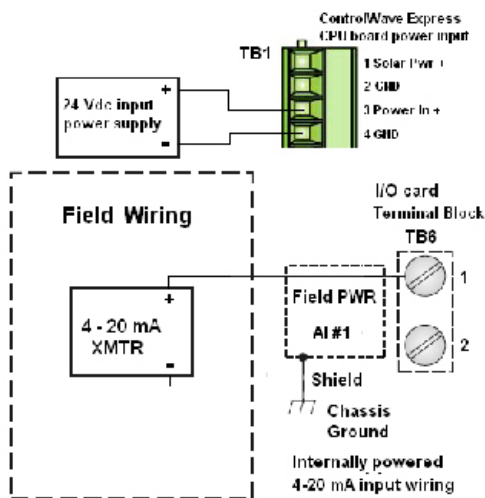


Fig. 3 ControlWave Express non-isolated Analog Inputs. Internally sourced from power input

With 6 or 12 Vdc powered Express RTUs, the analog input and output loops are powered with the external 24 V Loop Supply through the EXT. POWER input on the Analog Output terminal block.

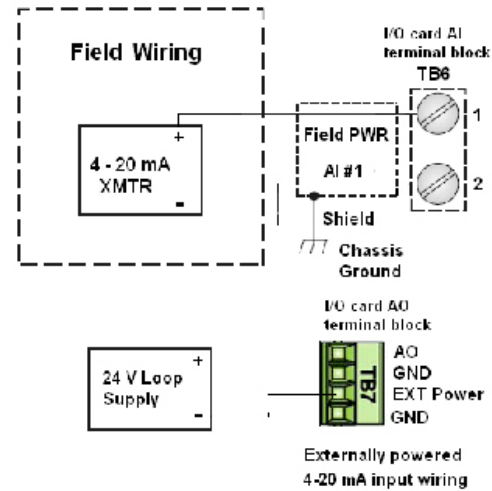


Fig. 4 ControlWave Express non-isolated Analog Inputs. Externally sourced from loop power supply

Specifications

- **Input range:** 9 – 30 Vdc
- **Output voltage:** Regulated 24 Vdc +/- 5% from no load to full load
- **Output current:** 200 mA maximum current capacity for all four outputs
1 non-isolated output - Feedthrough from input supply
- **Output current limiting:** 300 mA
- **Fusing:** 2A slow acting 5x20mm fuse in input line
- **Electrical isolation:** 500 Vdc MOV between 24V return and chassis
- **Surge suppression:** Meets C37.90-1978; 30 Vdc transorb between voltage input and ground

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Housing

- **Dimensions:** 4.1" W x 3.5" H x 1.2"D (10.5 cm x 8.9 cm x 3.0 cm)
- **Mounting:** Panel mount, Snap Track or optional 35 mm DIN rail mount

Environmental Specifications

- **Operating Temperature range:** -40 to 70°C (-40 to 158°F), storage up to 85°C
- **Relative Humidity:** 15-95% non-condensing
- **Vibration:** 1.0g for 10-150 Hz - 0.5g for 150Hz to 2000Hz

Ordering Information

Part numbers:

400095-01-7 Snap track mounting for
ControlWave EFM and GFC

721708-01-3 Panel mount

721708-02-1 Din rail mount

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