

TECHNICAL SUPPORT ARTICLES Grounding Analog Transmitters

Q: Can I wire a Max Flow Meter with an analog transmitter to loop power (2-wire) or a non-isolated (3-wire) system?

Max: We have many customers using Max Precision Flow Meters with the 4-20 mA Analog transmitter option that ask about alternative wiring methods to the standard 4-wire fully isolated installation shown in the manual. To download the manual for you meter, go to <u>www.maxmachinery.com/downloads</u> and select the manual for your meter from the list. Here is the wiring diagram from the manual:

4 5 3		Turck® Connector		4-Wire Isolated Ground Wiring
2	PCA Label	Pin #	Mating Cable Wire Color	
Power *	V+	1	Brown	Common Ground Signal Receiver Ground Earth Ground
Common	Com	4	Black	
Signal Output (+)	Sig	5	Grey	
Signal Output (-)**	Ret	2	White ●	
Case Ground	Case	3	Blue	

Max Precision Flow Meters are designed to be in a fully isolated electrical system for optimum performance and maximum data transfer with the least electrical interference that is possible.

If your system is not designed to take advantage of the maximum performance of your Max Flow Meter and the cost to upgrade is prohibitive, Max Meters can be used in a non-isolated (3-wire) system. Max Flow Meters will not operate in a 2-wire or loop powered system as the power requirements for the meter exceed loop power specifications. For non-isolated systems where a single ground is provided, follow the diagram below to wire in any Max Flow Meter with an analog transmitter:

4 5		Turck® Connector		3-Wire Non-Isolated Ground Wiring
2	PCA Label	Pin #	Mating Cable Wire Color	
Power *	V+	1	Brown	ICround
Common	Com	4	Black ●	
Signal Output (+)	Sig	5	Grey	
Signal Output (-)**	Ret	2	White ●	
Case Ground	Case	3	Blue 🔴	

Once you have confirmed your system is providing measurement data, be sure to verify and filter out the noise that will occur due to the shared ground. Depending upon the data stream, the application environment, and the other equipment in use, the interference may be none, little, or significant.

If you are still having trouble with the data you are collecting, you may always reach out to Max Machinery or one of our sales partners for free technical support. Go to <u>www.maxmachinery.com</u> to contact us.

Max Machinery, Inc. 33A Healdsburg Avenue Healdsburg, CA 95448

maxmachinery.cor **T** +1 707.433.266

ECH-ART-1021