

# Send 4-20 mA Outputs Wirelessly with the Rosemount 648

## KEY POINTS

- Application
- Overview
- Signal Conversion
- Rosemount 648 Configuration



## APPLICATION

This technique is used to capture data from a 4-20 mA source that does not have a loop connection to traditional loop control and monitoring systems. Applications include current sensor, MOVs, and anything with an active 4-20 mA output that does not require power from the 648.

## OVERVIEW

This technical note illustrates the wiring and configuration of the Rosemount 648 wireless transmitter to monitor a 4-20 mA signal through a conversion to a measurable millivolt signal.

## NOTICE

The conversion of a 4-20 mA source to a measurable millivolt signal constitutes a second power source in the terminal block of the 648 and voids the IS/Non-incendive approval. Also, this technique should not be applied to a 4-20 mA source that is currently connected to a loop control or monitoring system.

## SIGNAL CONVERSION

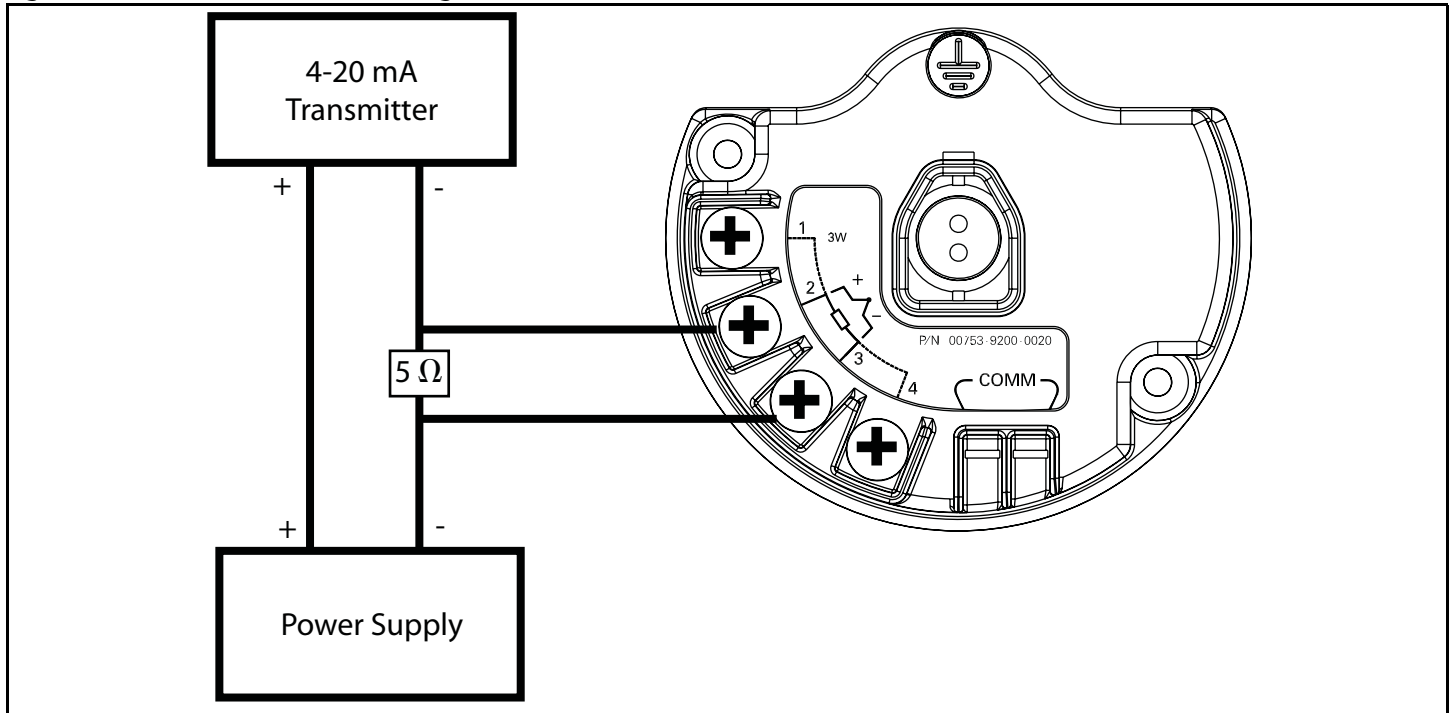
The 648 measures millivolt signals. To monitor a 4-20 mA signal, a conversion to millivolt will be required using a 5 Ohm resistor to create a 20-100 mV signal. It is optimal to use a low-error 5 Ohm resistor with stable operation over the ambient temperature range where the 648 is located. See Figure 1 on Page 2.

## ROSEMOUNT 648 CONFIGURATION

Using a 375 Hart Communicator, 1420, or AMS, reconfigure the 648 units to millivolt. Set the Lower and Upper range values to 20 and 100 to scale between 0-100%.



Figure 1: Rosemount 648 Terminal Diagram with 4-20 mA Conversion to 20-100 mV



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