

How Does it Work?

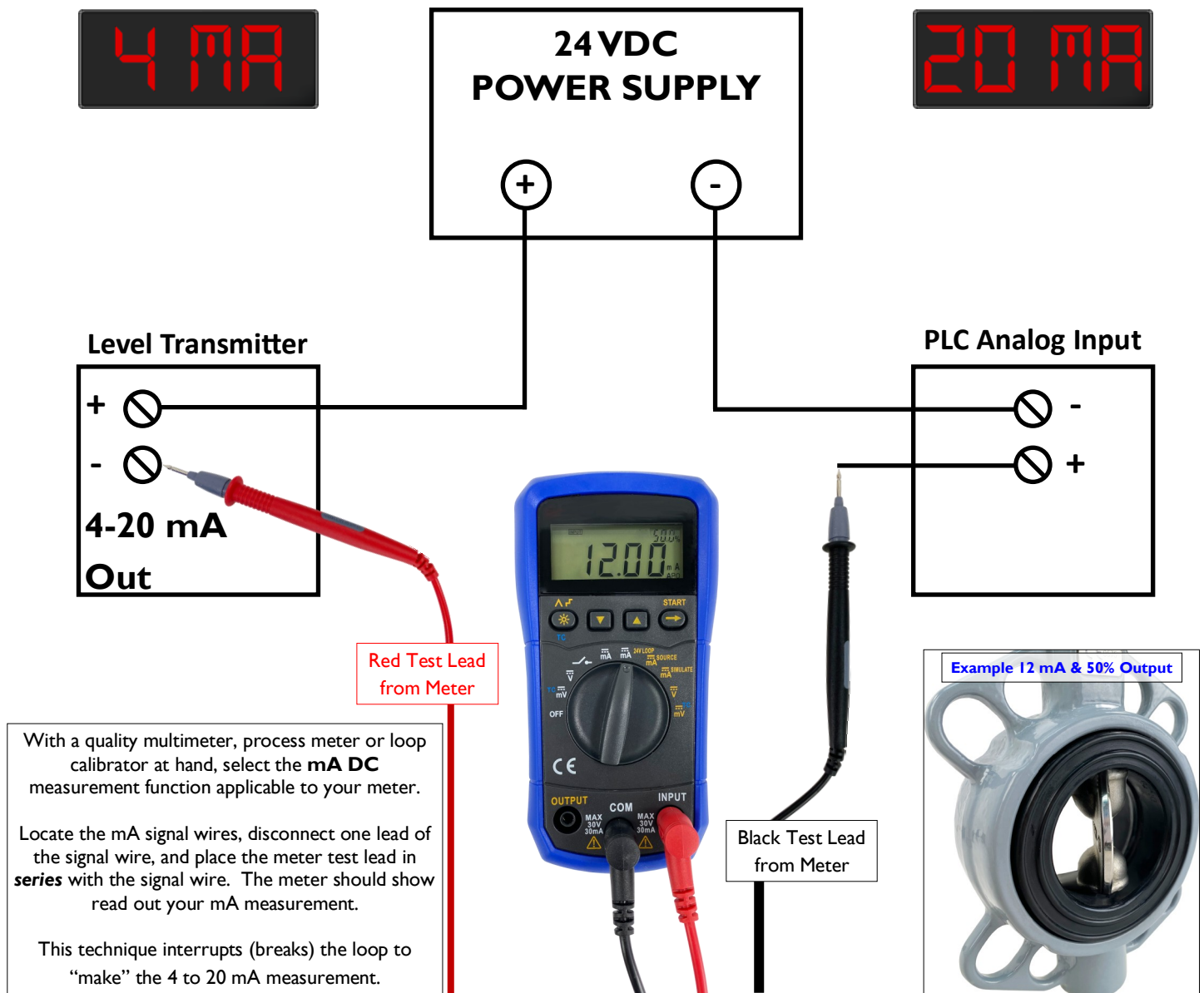
4-20mA Analog Current Control Loop

This is a condensed version of how a typical 4-20mA (milliamp) variable analog input current loop functions, as well as how it may be verified. Valworx does not provide controls, PLCs or recommended control suggestions. For detailed application questions, consult a controls expert or engineer.

In a 4-20 mA loop, often a 4 mA reading represents zero-level, 0%, or in the case of a valve, valve ball/disc fully closed. 20 mA would be the equivalent of 100% fully open and full flow.

Verifying a 4-20 mA loop is essential when troubleshooting or calibrating process systems.

Shown below is the recommended method of verifying either your signal's output reading, or your actuated valve positioner output indication (if applicable) using a multimeter.



This technical bulletin is an overview and simplified version. For troubleshooting, consult data sheets and installation instructions for more detailed specifications. Appropriate meters should only be selected and used by qualified and experienced electrical technicians.

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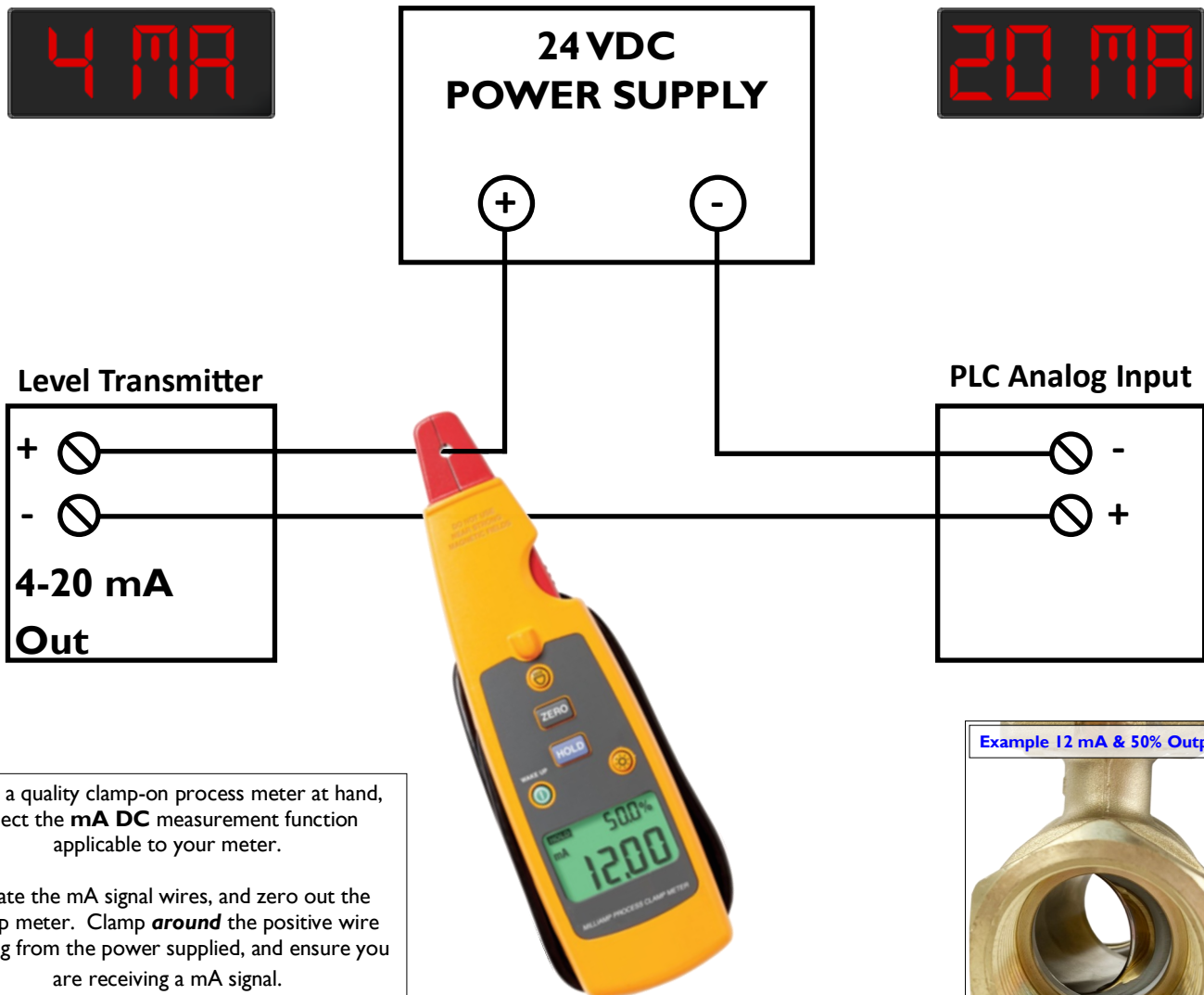
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Shown below is the recommended method of verifying either your signal's output reading, or your actuated valve positioner output indication (if applicable) using a clamp-on meter.



Example 12 mA & 50% Output



With a quality clamp-on process meter at hand, select the **mA DC** measurement function applicable to your meter.

Locate the mA signal wires, and zero out the clamp meter. Clamp **around** the positive wire coming from the power supplied, and ensure you are receiving a mA signal.

This technique does not interrupt (break) the feedback loop to “make” the 4 to 20 mA measurement.

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