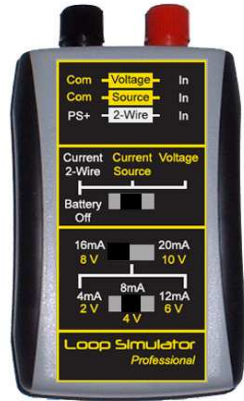


# Loop Simulator Professional



Analog Input Tester  
4-20 mA 2-Wire Device Simulator  
4-20 mA Loop Current Source  
2-10 Volt Source

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The **Loop Simulator Professional** was developed to assist maintenance personnel and integrators in analog input testing, troubleshooting and application development.

This 3-in-1 device simulates a 2-wire loop powered transmitter, provides 4 - 20mA current source and 2 - 10V voltage source.

A specific output selection made by three selector switches:

“**Mode**” (top) switch selects one of three available modes

Two “**Range**” switches select one of five preset current or voltage outputs.

**Warning: Selecting Current Source or Voltage Mode with an externally powered loop will damage simulator.**

In **Current 2-Wire** and **Source Modes** five pre-set output settings are available: **4mA, 8mA, 12mA, 16mA and 20mA** under wide range of loads from 0 to 500 Ohm.

**Voltage Mode** has five preset values: **2V, 4V, 6V, 8V and 10V**. In **Voltage Mode** load impedance below 20kOhm will cause lower than expected voltage readings.

A typical **Current 2-Wire** installation requires a loop power supply usually provided by an external 24VDC power supply.

Some sourcing Analog Input modules can provide loop power also.

Follow the Analog Input Module specification for a power supply selection

In **Current Source** and **Voltage Mode** Loop Simulator will provide the loop power and voltage signal source using internal boost converter powered by two AA Ni-MH rechargeable batteries.

Alkaline batteries can be used as an emergency source only.

**When not in use keep device in Current 2-Wire Mode to save batteries.**

**Important:** Do not use this device for an input module or instrument **calibration**. This device is a simple tester that provides current or voltage signal within a selected range.

## SPECIFICATION

**Functionality** 4-20 mA 2-Wire Device  
4-20 mA Current Source  
2-10 V Voltage Source

**Power Supply**  
2-Wire Mode 12-30V DC External  
Current Source Battery 2xAA Ni-MH  
and Voltage Mode

**Current Output**  
Output Range 4mA to 20mA  
Fixed Preset 4, 8, 12, 16, 20 mA  
Output Accuracy ±1% of full scale  
Load Range 0-500 Ohm

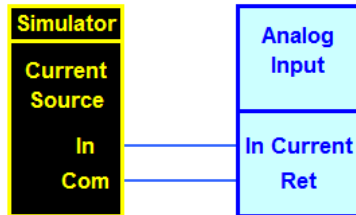
**Voltage Output**  
Output Range 2V to 10V  
Fixed Preset 2, 4, 6, 8, 10 V  
Output Accuracy ±2% of full scale  
Minimum Load 20kOhm

**Protection** Reverse Polarity

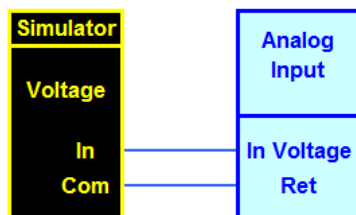


**Do Not Operate Device Unless Area Is Non-Hazardous**

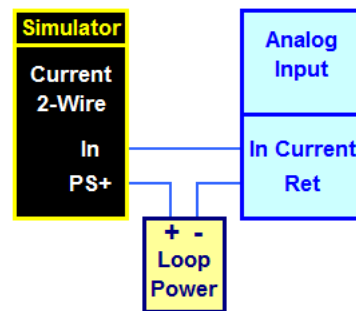
### Current Source Mode Standard Sinking Analog Input



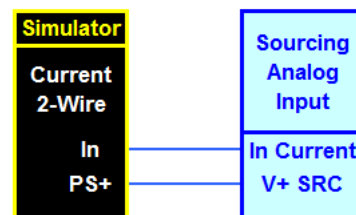
### Voltage Source Mode Standard Sinking Analog Input



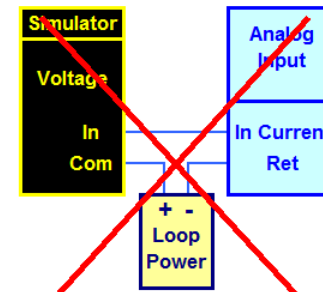
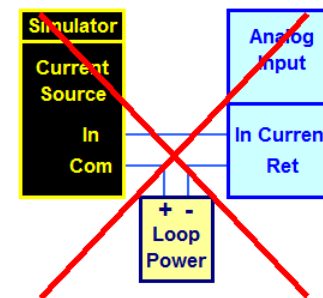
### Current 2-Wire Mode External Loop Power Supply



### Current 2-Wire Mode Sourcing Analog Input



**DO NOT Select Current Source or Voltage Mode if Loop has an External Power Supply**



## DISCLAIMER

This device is intended to provide general assistance with current loop debugging, testing and application development. It should not be permanently used in live production systems. Accordingly, production system must be tested and commissioned with real instruments to ensure safe and reliable operation.

IN NO EVENT SHALL THE DEVICE MANUFACTURER BE LIABLE FOR ANY DAMAGES OF ANY KIND INCLUDING DIRECT, INDIRECT, INCIDENTAL, CONSEQUENTIAL, LOSS OF PROFIT OR DAMAGE.

The examples and diagrams in this manual are included for illustrative purposes only. Because of the many variables and requirements associated with any particular installation, the device manufacturer cannot assume responsibility or liability for actual use based on the examples and diagrams.

Before making any decision or taking any action that might affect your equipment, you should consult a qualified professional advisor.