



## Voltage, Current Measure & Simulate and 24 V DC Isolated Loop Power for MFT 4000 Series Calibrator

The VMA0055 is a DC voltage and current measurement and simulation module for use with the Meriam MFT 4000 Series Multi-Function Tester. The module features the functionality of a DVM and loop calibrator for terrific versatility. When used with other MFT functions, the VMA / MFT combination provides valuable functionality not available in other devices. Measurement ranges include  $\pm 500$  mV,  $\pm 55$  V, and  $\pm 100$  mA. Sourcing capabilities include  $\pm 1000$  mV, 0 – 24 V and 0 – 22 mA. The VMA module will also simulate transmitter outputs when connected to a loop or it can be used to temporarily supply 24V DC loop power to unpowered devices during commissioning, outages or calibration activities.

VMA0055 goes far beyond the  $\pm 50$  volts / mA measurement capability of the MFT base unit and has its own isolated power supply so common ground problems are not an issue. Consider the following advantages for MFT users:

### Power a transmitter directly from VMA

- Use MFT 4000 and 4010 to calibrate transmitters anywhere, anytime
- Concurrently use MFT base unit V / mA meter to simultaneously check transmitter output
- Use MFT 4010 HART® communications to commission or reconfigure unpowered transmitters

### Measure mV, V or mA as you would with a DVM

- Reduce the number of tools the technician carries
- Resolution to 1/100,000 counts
- Select desired V range for best possible accuracy

### Source precise voltage or mA signals to check calibration or operation of receiving devices or step a positioner

- Key in exact output value desired
- Increase or Decrease output value by predefined increments
- Auto-step tests are user defined for start and stop values, number of steps, dwell time, and manual or automatic advance

### Available certifications include:

- CE Mark
- NIST traceable – standard
- Intrinsically Safe – MET Laboratories per CSA C22.2 & UL 913 Class I Division I, Groups A, B, C & D



### Read volts or mA from MFT meter while sourcing volts or mA from VMA module

- Test input isolation buffers with one MFT; apply mA value to buffer input with VMA and measure mA value output of buffer
- Select mA or V measurement on MFT meter from the VMA output display without interruption of output

### Simulate transmitter output in externally powered loop

- VMA modulates loop current to any selected value
- Increase or Decrease simulated value by predefined increments
- Auto-step tests are user defined for start and stop values, number of steps, dwell time, and manual or automatic advance

### I/P Device and switch testing

- Combined with a pressure module, perform I/P testing
- Use VMA power source to wet switch contacts and use pressure and temperature modules for pressure and temperature switch testing

VMA0055

### Approvals

Intrinsically Safe Certification from MET Laboratories. MET Laboratories is a Nationally Recognized Test Lab (NRTL). The module is certified by MET Laboratories to comply with standards CSA C22.2 No.1010.1, CSA C22.2 No. 157-92, and UL913 Fifth Edition Rev 2/21/97 for Class I, Division I, Groups A, B, C, and D, T5 hazardous areas. Restrictions apply – see the Intrinsically Safe Control Drawing shipped with each MFT Modular Calibrator for more details.

## Resolution, Range, and Accuracy Specification for VMA0055 Module

Ambient temperature limits: -10° C to +50° C

Accuracy statements are for ambient temperatures of 18° C to 28° C.

Apply the Temperature Coefficient for ambient temperatures below 18° C and above 28° C



### DC Current (mA) Measure and Source Modes

Specification	Measure Mode	Source Mode (No External Power)
Resolution	.001 mA	.001 mA
Range	±100.000 mA (55 Vdc compliance)	0 - 22.000 mA (See Note 3 below)
Accuracy	± (0.01% of reading + 0.015% FS)	± (0.01% of reading + 0.015% FS)
Open Circuit Voltage		24 VDC
Output Drive		15 VDC minimum @ 24 mA, Resistive load
Temperature Coefficient	± (0.001% Rdg + 0.002% FS) / °C	± (0.003% Rdg + 0.003% FS) / °C

### Volts DC Measure and Source Modes

Specification	Measure Mode	Source Mode (No External Power)
Resolution	1/100,000 counts: .001 mV; .001 V	1/100,000
Range	500 mV; 1, 2, 4, 8, 15, 30, 55 V	0 - 24.000 VDC
Accuracy	± (0.025% of reading + 0.005% FS)	± (0.01% of reading + 0.05% FS)
Open Circuit Voltage		24 VDC
Output Drive		15 VDC minimum @ 24 mA, Resistive load
Temperature Coefficient	± (0.001% Rdg + 0.0015% FS) / °C	± (0.0025% Rdg + 0.0035% FS) / °C

### 2-Wire Transmitter Simulation Mode

Specification	Simulation (External Power)
Resolution	.001 mA
Range	0 – 24.000 mA
Accuracy	± (0.01% of reading + 0.015% FS)
Loop Voltage Limits	1 VDC min., 55 VDC max.
Temperature Coefficient	± (0.003% Rdg + 0.003% FS) / °C

### Loop Power Mode

Specification	Regulated Power Source
Range	24 VDC
Open Circuit Voltage	24 VDC
Output Drive	15 VDC Min. @ 24mA, Resistive load

#### Notes:

1. Nominal resistance at VMA current terminal is 10 – 15 Ω
2. Output load line is linear
3. Unit operating time de-rated at high temp and high current as follows:
  - Continuous operation @ 50C and 20mA
  - 15 minutes typical @ 50C and 24mA (unit will shut down to prevent thermal damage)

### Ordering Information

VMA0055-11-1      VMA Module

#### Accessories

P/N A900529-00015: VMA Test Lead Kit: banana plugs on 9" breakouts (both ends), assorted connectors (required for source and simulate functions)

To place an order, or request additional information, please contact us at 800-817-7849. For a full list of Meriam's Representatives worldwide, visit us at [www.meriam.com](http://www.meriam.com).

