



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 ± 500 mV, ± 55 V, and ± 100 mA. Sourcing capabilities include ± 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 ± 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

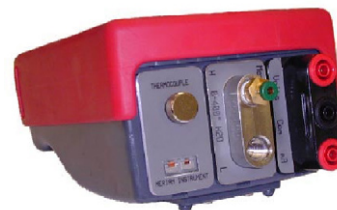
Intrinsically Safe Certification from MET Laboratories. MET Laboratories is a Nationally Recognized Test Lab (NRTL). The module is certified by MET Laboratories to comply with standards CSA C22.2 No.1010.1, CSA C22.2 No. 157-92, and UL913 Fifth Edition Rev 2/21/97 for Class I, Division I, Groups A, B, 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.



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