General Specifications

VMA0055 Sensor Module

mV, V, and mA Measure & Simulate plus 24 Vdc Isolated Loop Supply for use with YPC 4000 and YPC 4010

The **VMA0055** is a dc voltage and current measurement and simulation module for use with the Yokogawa **YPC 4000 Series Multi-Function Tester**. The module features the functionality of a DVM and loop calibrator for terrific versatility. When used with other YPC functions, the VMA / YPC 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 – 24 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 or calibration activities.

VMA0055 goes far beyond the ±50 volts / mA measurement capability of the YPC base unit and has its own isolated power supply so common ground problems are note an issue. Consider the following advantages for YPC users:

- Power a transmitter directly from VMA
  - Use YPC 4000 and 4010 to calibrate transmitters anywhere, anytime.
  - Concurrently use YPC base unit V / mA meter to simultaneously check transmitter output
  - Use YPC 4010 HART® communications to commission or reconfigure unpowered transmitters
- Measure mV, V or mA as you would with a dc 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
  - Key in exact output value desired
  - Increase or Decrease output value by pre-defined increments
  - Auto-step tests are user defined for start and stop values, number of steps, dwell time, and manual or automatic advance
- Read volts or mA from YPC meter while sourcing volts or mA from VMA module
  - Test input isolation buffers with one YPC; apply mA value to buffer input with VMA and measure mA value output of buffer
  - Select mA or V measurement on YPC 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 pre-defined 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:

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

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)

YOKOGAWA

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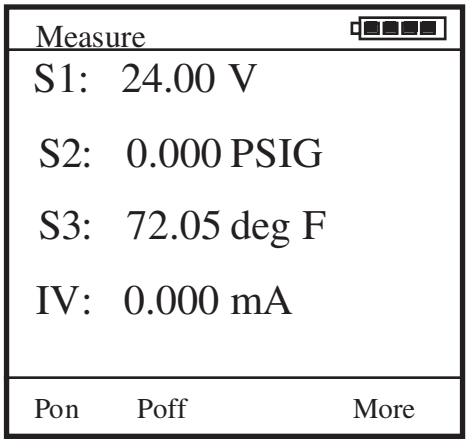
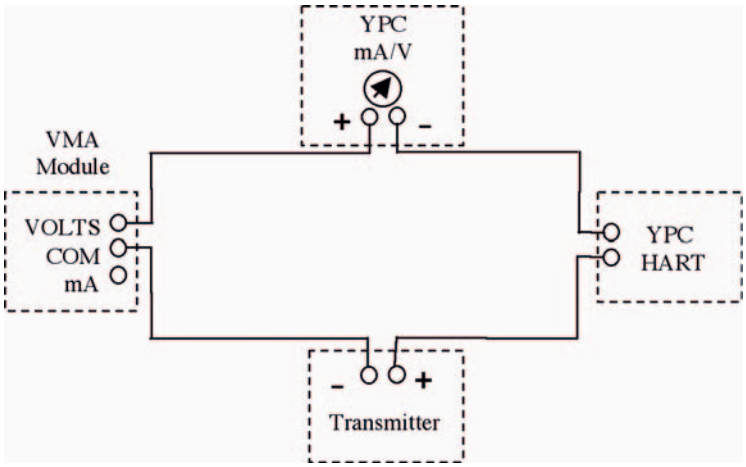
GS 61A YPCVMA-01E-A

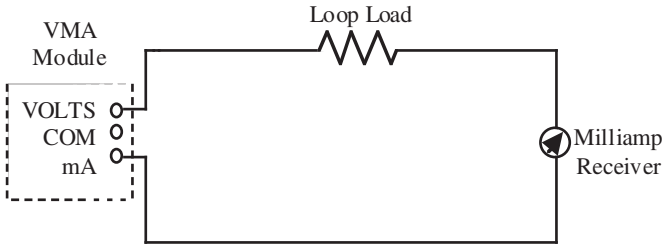
Sample YPC Displays and Wiring Diagrams for VMA0055 module with YPC 40xx

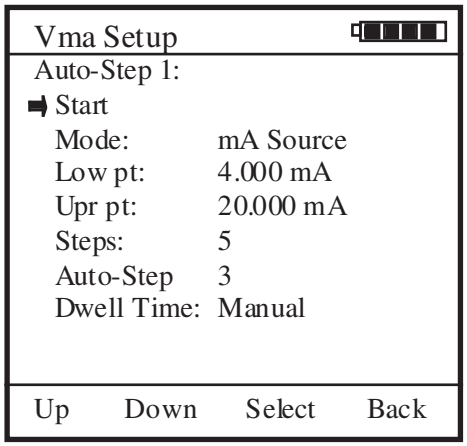
24V dc Loop Power



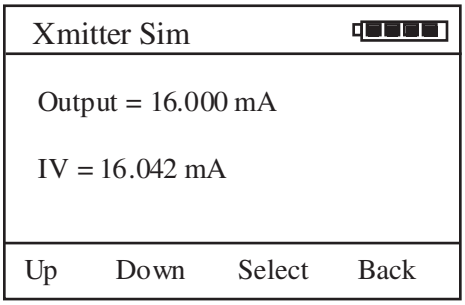


V or mA Sourcing





Transmitter Simulation Mode



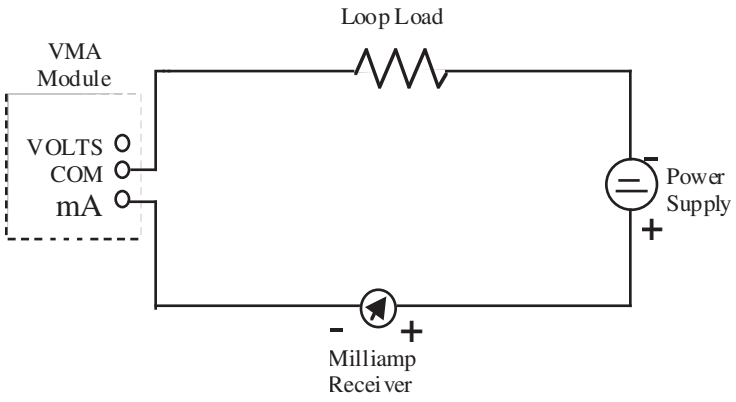


TABLE 1: VMA0055 Module Resolution, Range, Accuracy

mA dc	mA Measure Mode	mA Source Mode
Resolution	0.001 mA	0.001 mA
Range	±100.000 mA (55 Vdc compliance)	0 - 24.000 mA
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

Volts dc	V dc Measure Mode	V dc Source (Regulated) Mode
Resolution	1/100,000 counts: .001 mV; .001 V	1 / 1,000,000
Ranges	500 mV; 1, 2, 4, 8, 15, 30, 55 V	0 - 24.000 VDC
Accuracy	± (0.01% of reading + 0.05% FS)	± (0.01% of reading + 0.05% FS)
Open Circuit Voltage		24 VDC
Output Drive		15 VDC minimum @ 24 mA, Resistive load

2-wireTransmitter Simulation		mA Simulation
Resolution		0.001 mA
Range		0 - 24.000 mA
Accuracy		± (0.01% of reading + 0.015% FS)
Loop Voltage Limits		1 VDC min., 55 VDC max.

Regulated Loop Power		Regulated Power
Resolution		na
Range		24V dc
Accuracy		± (0.01% of reading + 0.015% FS)
Open Circuit Voltage		24 VDC
Output Drive		15 VDC minimum @ 24 mA, Resistive load

Notes: 1. Nominal resistance at VMA current terminal is 10 – 15 Ω
2. Output load line is linear