

# IVC-222HP11 Voltage/Current Calibrator

## MS-420 Mini-Source Portable Calibrator

### IVC-222HP11 Voltage/Current Calibrator

Cal Lab accuracy in a hand-held calibrator

#### Features:

- ▲ Remarkable 0.015% of reading accuracy
- ▲ Four ranges: 200 mV, 2 V, 20 V, and 24 mA
- ▲ Intuitive, easy-to-use controls
- ▲ RS-232 interface allows computer control
- ▲ Built-in 24 V supply can drive 4 to 20 mA loops over 1,000 Ohms
- ▲ Rugged, lightweight, hand-held unit
- ▲ Includes test leads, carrying case, 9 V battery, NIST Certificate, and instruction manual



The Martel Electronics IVC-222HP11 Voltage/Current Calibrator is a general purpose current and voltage source that can be used in engineering, manufacturing, test, and process control applications. It combines both digital and analog circuitry to achieve its' rated specifications in a small, reliable package.

The IVC-222HP11 has the capability to store and recall up to two setpoint values using the SP1 and SP2 keys. An RS-232 port accessed via a custom cable (available from Martel) allows the calibrator to be computer controlled for automated testing.

#### Specifications

##### Output Range

Voltage 200 mV, 2 V, 20 V  
Current 24 mA

##### Resolution

Voltage 0.01 mV, 0.0001 V, 0.001V  
Current 0.001 mA

##### Accuracy

±0.015% of reading, ±2 count; 18 °C to 28 °C

##### Temp. Stability

±0.005% FS/°C

##### Load Capability

Voltage ±1 mA for rated accuracy  
Current 1,000 Ohms  
Capacitive no limitations (voltage mode only)

##### Output Protection

current limited internal RESET

##### Power Supply

9 Volt alkaline battery or optional NiCd

##### Mechanical Dimensions

Size 1.43" x 3.15" x 5.7"  
Weight 12 ounces

### MS-420 Mini-Source Portable Calibrator

#### Typical Applications:

- ▲ Chart recorder
- ▲ Panel meter
- ▲ Data acquisition
- ▲ Other process instruments



The Martel Electronics MS-420 Mini-Source Portable Calibrator is a multi-purpose process loop tool that offers high accuracy in an ultra-small, rugged package.

A single pushbutton selects one of five current outputs (4, 8, 12, 16, or 20 mA), which can drive up to 300 Ohms, or can act as a 2-wire simulator with an external loop power supply of up to 30 VDC.

Each unit is provided with a 9 V battery, NIST Certificate, and instruction manual.

#### Specifications

##### Output

Five current steps;  
4, 8, 12, 16, and 20 mA  
±0.075% of FS

##### Accuracy

##### Voltage Compliance

Source Internal 9 V battery  
Simulate External supply; up to 30 VDC

##### Power Supply

9 Volt alkaline battery

##### Battery Life

50 Hours @ 4 mA output

##### Temperature Range

Operating 0 °C to +50 °C  
Storage -25 °C to +60 °C

##### Mechanical Dimensions

Size 3.8" x 2.4" x 1.0"  
Weight 6 ounces

##### Output Terminations

Two (2), 8" leads with alligator clips

**MARTEL**  
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