

AC CURRENT METERS

Digital Clamp Meter

Model ST-2020



Features

- Large digital and analog display. 3,200 count and 33-segment bar graph.
- Auto/manual ranging method
- Backlit display
- Audible continuity
- Diode test
- Available continuity test
- Data hold
- Deluxe molded carrying case

This meter has been designed according to IEC-1010-2-032 concerning safety requirement for hand-held current clamps for electrical measurement and test.

Specifications

| | |
|-----------------------------------|--|
| AC volts | 3V, 30V, 300V: $\pm(1.0\% \text{ rdg} + 5 \text{ dgts})$, 750V: $\pm(1.2\% \text{ rdg} + 5 \text{ dgts})$ |
| DC volts | 3V, 30V, 300V: $\pm(0.8\% \text{ rdg} + 1 \text{ dgt})$, 1,000V: $\pm(1.0\% \text{ rdg} + 2 \text{ dgts})$ |
| AC current | <100A: $\pm(2.0\% \text{ rdg} + 10 \text{ dgts})$, 100 - 300A: $\pm(3.0\% \text{ rdg} + 25 \text{ dgts})$ 300 - 600A: $\pm(2.0\% \text{ rdg} + 5 \text{ dgts})$, 600 - 1,000A: $\pm(3.0\% + 25 \text{ dgts})$ |
| Resistance | 300 Ω , 3k Ω , 30k Ω , 300k Ω , 3M Ω : $\pm(1.5\% \text{ rdg} + 5 \text{ dgts})$ 30M Ω : $\pm(2.0\% \text{ rdg} + 5 \text{ dgts})$ |
| Frequency | 30kHz: $\pm(2.0\% \text{ rdg} + 5 \text{ dgts})$ |
| Maximum diameter for conductor is | 55mm. |
| Dimensions / weight | 11" (H) x 4 7/64" (W) x 1 29/32" (D) / 1 lb. 2 oz. |

Digital Clamp Meter

Model ST-1010



Features

- 3 1/2 digit, 2,000 count LCD
- Reads up to 1,000A
- Frequency
- Data hold
- Audible continuity
- Diode test
- Zippered case included

This meter has been designed according to IEC-1010-2-032 concerning safety requirement for hand-held current clamps for electrical measurement and test.

Specifications

| | | | |
|-----------------|---|--|-------------------------|
| AC volts | 200V, 750V | Accuracy: $\pm(1.0\% \text{ rdg} + 4 \text{ dgts})$ | Resolution 0.1V |
| DC volts | 200mV, 2V, 20V, 200V, 1,000V | 200mV - 200V: $\pm(0.5\% \text{ rdg} + 1 \text{ dgt})$, 1,000V: $\pm(0.8\% \text{ rdg} + 3 \text{ dgts})$ | Resolution 100mV |
| AC current | 20A, 200A, 1,000A | 20A: $\pm(5\% \text{ rdg} + 5 \text{ dgts})$, 200 - 400A: $\pm(2.0\% \text{ rdg} + 5 \text{ dgts})$, 400 - 1,000A: $\pm(3.0\% \text{ rdg} + 3 \text{ dgts})$ | Resolution 100mA |
| Resistance | 200 Ω , 2k Ω , 20k Ω , 200k Ω , 2M Ω | 200 Ω : $\pm(1.0\% \text{ rdg} + 3 \text{ dgts})$, 2k Ω - 2M Ω : $\pm(1.0\% \text{ rdg} + 1 \text{ dgt})$ | Resolution 0.1 Ω |
| Insulation test | 20M Ω $\pm 2\%$, 2,000M Ω $\pm 4\%$ $\leq 500\Omega$, $\pm 5\%$ $> 500\Omega$ | (Model ST-261 required) | |
| Frequency | 2kHz | Accuracy: $\pm(1.5\% \text{ rdg} + 5 \text{ dgts})$ | Resolution 1Hz |
| Accessories | Test leads, manual, case, and 9V battery included. | | |
| Dim. / weight | 9" (H) x 2 11/16" (W) x 1 1/2" (D) / 11.5 oz. | | |

ALL-IN-ONE INSTRUMENT

4-Functions-in-1 Instrument

Model MX-9300B

Features

- One instrument with four test and measuring systems:
 - 2.7GHz Frequency Counter
 - 2MHz Sweep Function Generator
 - Digital Multimeter
 - Digital Triple Power Supply
- Ideal for laboratory, production line, and R&D engineer's workbench.
- High accuracy and low cost for specialists and hobbyists.
- Unique performance to save space.
- Lightweight and attractive design.
- Simple and easy operation.
- Full overload protection.



Specifications

| Frequency Counter | Function Generator | Function Generator (continued) | Digital Multimeter (continued) | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|--|---|--|------------|------------|------------|----------------|---------|----------|-----------|-------------|--------|----|----|--------|----------|----------|----------|-----------------|------------|-------------|-------------|-----------------|------------|-------------|-------------|----------------|-------|------|------|
| Measuring range Channel A: 1Hz to 20MHz LED display depending on gate time and input signal. At least 7 digits are displayed per each second of gate time. Channel B: 20MHz to 2.7GHz Input sensitivity Channel A: 20mV rms sinewave or 100mVp Channel B: 40mV rms sinewave for 20MHz to 1.3GHz or 70mV rms sinewave for 1.3MHz to 2.7GHz Maximum input voltage: 3V Channel A: 35mVpp Channel B: 3mVpp Input impedance Channel A: 1M Ω Channel B: 50 Ω Selectable time base: Channel A, B: Switch selectable | Waveforms: Sine, square, triangle, skewed sine, ramp, pulse, TTL level square Frequency: 0.2Hz to 2MHz VCF voltage level: 0 to 10VDC Output impedance: Selectable 50 Ω $\pm 10\%$, 600 Ω $\pm 10\%$ Output amplitude: 2Vpp to 20Vpp open load 1Vpp to 10Vpp (50 Ω load) Attenuator: -20dB Sine wave: Distortion less than 1% (at 1kHz), flatness +0.3dB Square wave: Symmetry less than +3% (at 1kHz) Rise & fall time less than 150nS (at 1kHz) Triangle wave linearity: Less than 1% (up to 100kHz), 5% (100kHz to 20MHz) TTL output: Rise & fall time - less than 30nS (at 1kHz) Output level - more than 3V | Frequency sweep: Sweep time 20mS to 2S. Internal sweep mode: linear, logarithmic Sweep width: More than 100:1 Digital Multimeter Range of measurement: DC voltage: 4 (400mV to 400V) $\pm 0.3\% + 1\text{dgt}$ 1 (1000V) $\pm 0.5\% + 1\text{dgt}$ AC voltage: 4 (400mV to 400V) $\pm 0.8\% + 3\text{dgts}$ (40Hz - 10kHz) 1 (750V) $\pm 1.0\% + 3\text{dgts}$ (40Hz - 1kHz) DC current: 2 (40mA to 400mA) $\pm 0.8\% + 3\text{dgts}$ 1 (20A) $\pm 1.0\% + 3\text{dgts}$ AC current: 2 (40mA to 400mA) $\pm 1.5\% + 3\text{dgts}$ (40Hz - 10kHz) 1 (20A) $\pm 2.0\% + 5\text{dgts}$ (40Hz - 1kHz) Resistance: 5 (400M Ω to 4M Ω) $\pm 0.5\% + 1\text{dgt}$ 1 (40M Ω) $\pm 1.0\% + 2\text{dgts}$ | Capacitance: 3 (4nF to 400nF) $\pm 2.0\% + 3\text{dgts}$ 3 (4 μ F to 200 μ F) $\pm 3.0\% + 5\text{dgts}$ Diode Power Supply (3 1/2 Digit LCD with Backlight) <table border="1"> <thead> <tr> <th></th> <th>Terminal 1</th> <th>Terminal 2</th> <th>Terminal 3</th> </tr> </thead> <tbody> <tr> <td>Output voltage</td> <td>0 - 30V</td> <td>5V Fixed</td> <td>15V Fixed</td> </tr> <tr> <td>Output amps</td> <td>0 - 3A</td> <td>2A</td> <td>1A</td> </tr> <tr> <td>Ripple</td> <td>1mV max.</td> <td>2mV max.</td> <td>2mV max.</td> </tr> <tr> <td>Load regulation</td> <td>0.1% + 5mV</td> <td>0.1% + 70mV</td> <td>0.1% + 35mV</td> </tr> <tr> <td>Line regulation</td> <td>0.1% + 5mV</td> <td>0.1% + 30mV</td> <td>0.1% + 30mV</td> </tr> <tr> <td>Output current</td> <td>2A/3A</td> <td>2.2A</td> <td>1.2A</td> </tr> </tbody> </table> General Features Power source: Line voltage 110V/120V or 220V/240V AC at 50Hz ~ 60Hz DMM section: Single 9V battery Dimensions: 6 1/2" (H) x 14 1/2" (W) x 12 1/2" (D) Weight: 39lbs. Accessories: AC power cord, DMM test leads, manual | | Terminal 1 | Terminal 2 | Terminal 3 | Output voltage | 0 - 30V | 5V Fixed | 15V Fixed | Output amps | 0 - 3A | 2A | 1A | Ripple | 1mV max. | 2mV max. | 2mV max. | Load regulation | 0.1% + 5mV | 0.1% + 70mV | 0.1% + 35mV | Line regulation | 0.1% + 5mV | 0.1% + 30mV | 0.1% + 30mV | Output current | 2A/3A | 2.2A | 1.2A |
| | Terminal 1 | Terminal 2 | Terminal 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Output voltage | 0 - 30V | 5V Fixed | 15V Fixed | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Output amps | 0 - 3A | 2A | 1A | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Ripple | 1mV max. | 2mV max. | 2mV max. | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Load regulation | 0.1% + 5mV | 0.1% + 70mV | 0.1% + 35mV | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Line regulation | 0.1% + 5mV | 0.1% + 30mV | 0.1% + 30mV | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Output current | 2A/3A | 2.2A | 1.2A | | | | | | | | | | | | | | | | | | | | | | | | | | | | |