

Model 1201



6 1/2 Digit Digital Multimeter

Features

- Fastest Sampling Rate (2000 S/sec)
- 6 1/2 Digit Resolution DMM
- Industry Leading Stability
- 11 Measurement Functions
- Temperature Measurement
- USBTMC Compliance
- Noise Filters

Applications

- Bench R&D Users
- Automated Test Setups
- RMS Measurements
- Component Testing
- Engineering



Key Specifications

- DC Voltage —100mV - 1000V
- DC Current —10mA - 3A
- Resistance —100 Ohm - 100M Ohm
- Diode Test —1.0000V
- Continuity —1000K Ohm
- Frequency —3Hz - 300 kHz
- AC Voltage —100mV-750V
- AC Current —1.0A - 3.0A

1201 is a 6.5 digit digital multimeter. It has 0.0015% 24-hour basic DC voltage accuracy at 10V range and 0.002% 24-hour basic resistance accuracy at 10k Ω range. At 6.5 digit, the multimeter delivers 50 triggered RDGS/sec via remote interface. At the fast 4.5 digit, it reads over 2000 RDGS/sec into its internal buffer. 1201 provides wide measurement ranges:

Rear Panel



Specifications

| DC Characteristics | | | | |
|---|--------------------|-------------|------------------|----------------------------|
| Accuracy \pm (% of reading + % of range) ¹ | | | | |
| Function | Range ² | Resolution | Input Resistance | 1 Year (23°C \pm 5°C) |
| DC Voltage ³ | 100.0000 mV | 0.1 μ V | > 10G Ω | 0.0050 + 0.0035 |
| | 1.000000 V | 1.0 μ V | > 10G Ω | 0.0040 + 0.0007 |
| | 10.00000 V | 10 μ V | > 10G Ω | 0.0035 + 0.0005 |
| | 100.0000 V | 100 μ V | 10M Ω | 0.0045 + 0.0006 |
| | 1000.000 V | 1 μ V | 10M Ω | 0.0045 + 0.0010 |

| Function | Range | Resolution | Shunt Resistance | 1 Year (23°C \pm 5°C) |
|---------------------|-------------|------------|------------------|----------------------------|
| DCI (DC Current) | 10.000000mA | 10 nA | 5.1 Ω | 0.050 + 0.020 |
| | 100.00000mA | 100 nA | 5.1 Ω | 0.050 + 0.005 |
| | 1.000000A | 1 μ A | 0.1 Ω | 0.100 + 0.010 |
| | 3.00000A | 10 μ A | 0.1 Ω | 0.120 + 0.020 |

| Function | Range | Resolution | Shunt Resistance | 1 Year (23°C ± 5°C) |
|---------------------|-------------|------------|------------------|------------------------|
| DCI (DC Current) | 10.000000mA | 10 nA | 5.1Ω | 0.050 + 0.020 |
| | 100.00000mA | 100 nA | 5.1Ω | 0.050 + 0.005 |
| | 1.000000A | 1 uA | 0.1Ω | 0.100 + 0.010 |
| | 3.00000A | 10 uA | 0.1Ω | 0.120 + 0.020 |

| Function | Range | Resolution | Test Current | 1 Year (23°C ± 5°C) |
|-------------------------|-------------|------------|---------------|------------------------|
| Resistance ⁴ | 100.0000 Ω | 100 uΩ | 1 mA | 0.010 + 0.004 |
| | 1.000000 KΩ | 1 mΩ | 1 mA | 0.010 + 0.001 |
| | 10.00000 KΩ | 10 mΩ | 100 uA | 0.010 + 0.001 |
| | 100.0000 KΩ | 100 mΩ | 10 uA | 0.010 + 0.001 |
| | 1.000000 MΩ | 1 Ω | 5 uA | 0.010 + 0.001 |
| | 10.00000 MΩ | 10 Ω | 500 nA | 0.040 + 0.001 |
| | 100.0000 MΩ | 100 Ω | 500 nA 10 MΩ | 0.800 + 0.010 |
| Diode Test | 1.0000V | 10 uV | 1mA | 0.010 + 0.020 |
| Continuity | 1000.00KΩ | 10 mΩ | 1mA | 0.010 + 0.030 |

| Frequency and Period Characteristics ⁵ Accuracy ± (% of reading) | | | |
|--|---------------------|----------------|----------------------|
| Function | Range ⁶ | Frequency (Hz) | 1 Year 23° C±5° C |
| Frequency & Period | 100mV to 750V | 3-5 | 0.10 |
| | | 5-10 | 0.05 |
| | | 10-40 | 0.03 |
| | | 40-300K | 0.01 |

AC Characteristics

Accuracy \pm (% of reading + % of range)⁷

| Function | Range ⁸ | Resolution | Frequency (Hz) | 1 Year (23°C \pm 5°C) |
|-------------------------------------|--------------------|-------------|--------------------------|-------------------------|
| ACV (AC TRMS Voltage) ⁹ | 100.0000mV | 0.1 μ V | 3-5 | 1.00 + 0.04 |
| | | | 5-10 | 0.35 + 0.04 |
| | | | 10-20K | 0.06 + 0.04 |
| | | | 20-50K | 0.12 + 0.05 |
| | | | 50K - 100K | 0.60 + 0.08 |
| | | | 100K - 300K | 4.00 + 0.50 |
| | | | 3-5 | 1.00 + 0.03 |
| | | | 5-10 | 0.35 + 0.03 |
| | | | 10-20K | 0.06 + 0.03 |
| | | | 20-50K | 0.12 + 0.05 |
| | | | 50K - 100K ¹⁰ | 0.60 + 0.08 |
| | | | 100K - 300K | 4.00 + 0.50 |
| ACI (AC TRMS Current) ¹¹ | 1.000000A | 1 μ V | 3-5 | 1.00 + 0.04 |
| | | | 5-10 | 0.30 + 0.04 |
| | | | 10-5K | 0.10 + 0.04 |
| | 3.000000A | 10 μ V | 3-5 | 1.10 + 0.06 |
| | | | 5-10 | 0.35 + 0.06 |
| | | | 10-5K | 0.15 + 0.06 |

- 1 Specifications are for 6 ½ digits and two hours warm up.
- 2 20% over range on all ranges except 1000Vdc and 3 A range.
- 3 a. Using continuous integrating A/D converter.
b. Input bias current: less than 30 pA at 25° C.
c. Input protection: 100 V, all range.
- 4 a. Specifications are for 4-wire ohms. For 2-wire ohms, use Math Null function
b. Max. Lead Resistance: 10% of range per lead for 100Ω and 1KΩ ranges; 1kΩ per lead for all other ranges.
c. Input protection: 1000 V, all ranges.
- 5 Specifications are for 6 ½ digits and two hours warm up.
- 6 20% over range on all ranges except 750 Vac range.
- 7 Specifications are for 6 ½ digits and two hours warm up, slow AC filter (3 Hz Bandwidth), sine wave input.
- 8 20% over range on all ranges except 750 Vac range.
- 9 Specifications are for sine wave input >5% of range. When the inputs are from 1% to 5% of range and <50 KHz, add the additional error for 0.1% of range. For 50 KHz to 100 KHz, add 0.13% of range.
- 10 750Vac range is limited to 100 KHz.
- 11 Specifications are for sine wave input >5% of range. When the inputs are from 1% to 5% of range and <50 KHz, add the additional error for 0.1% of range. For 50 KHz to 100 KHz, add 0.13% of range.

General Specifications

| item | Limitation & description |
|--------------------------|---|
| Power Supply | 100V/120V/220V/240V ± 10% |
| Power Line Frequency | 50~60 Hz ± 10% |
| Power Consumption | 25 VA peak (16 W average) |
| Operating Temperature | 5 °C to 40 °C |
| Operating Humidity | Maximum relative humidity 80% for temperature up to 31 °C decreasing linearly to 50% relative humidity at 40°C |
| Storage Temperature | - 40 °C to 70 °C |
| Operating Altitude | Up to 2000m |
| Bench Dimensions (WxHxD) | 224mm x 113mm x 373mm |
| Weight | 4.36 kg |
| Safety | IEC61010-1:2001/EN61010-1:2001 (2 nd Edition) UL61010-1:2004 Measurement CAT II 600V, CAT I 1000V Pollution Degree 2 |
| EMC | EN61326:1997+A1:1998+A2:2001+A3:2003 EMI: CISPR 11:1997+A1:1999+A2:2002 Class B IEC61000-3-2:2000 IEC61000-3-3:1994+A1:2001 EMS: IEC61000-4-2:1995+A1:1998+A2:2000 IEC61000-4-3:2002 IEC61000-4-4:2004 IEC61000-4-5:1995+A1:2000 IEC61000-4-6:1996+A1:2000 IEC61000-4-8:1993+A1:2000 IEC61000-4-11:1994+A1:2000 |