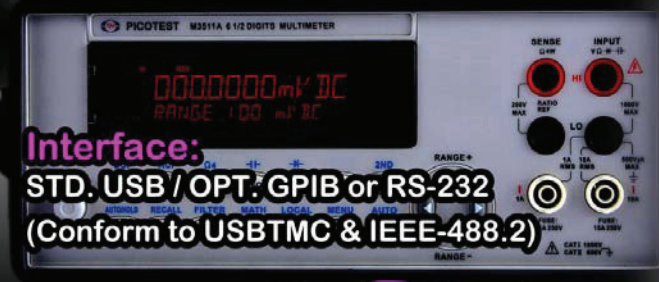


M35 Series

6.5 Digital Multimeter



Interface:
STD. USB / OPT. GPIB or RS-232
 (Conform to USBTMC & IEEE-488.2)



DENVER
 metrología electrónica, S.L.

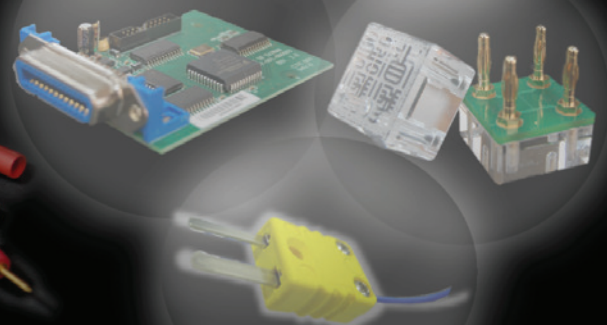
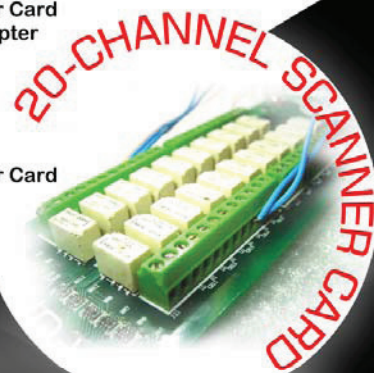


M3510A/M3511A High Speed/ Economy 6.5 Digital Multimeter

- **General Functions:**
 DCV, ACV, DCI, ACI (up to 10A), 2W Ω , 4W Ω , Frequency, Period, Capacitance, Diode, Continuity, Thermocouple, RTD, Limits, Ratio, MX+B, %, dBm, dB, Min/Max, Null, Trigger, Filter, Memory
- **Features:**
 - High Speed: 50 K Readings/Sec. (M3510A)
 - Dual Displays & Dual Measurements
 - Capacitance Measurement
 - Wide Range Current Measurement (Max. 10 A)
 - Thermocouple Measurement (M3510A) (Built-In a Cold Junction Compensator)
 - Basic DCV Accuracy: 0.009 % (1 Year)
 - Free Software: PT-TOOL (SCPI Commands) & PT-LINK
 - Rack-Mounted Compatibility
- **Dimension & Weight:** (for Rack)
 214.6(W) x 88.6(H) x 280.7(D) mm, 2230 g
- **Optional Accessories:**
 - M3500-opt04: GPIB Card
 - M3500-opt06: RS-232 Card
 - M3500-opt07: Kelvin Probe
 - M3500-opt08: 4-Wire Test Leads
 - M3500-opt10: Shorting Plug
 - M3500-opt11: K Type Thermocouple Cable (M3510A)

M3500A High Precision 6.5 Digital Multimeter

- **Stability & Accuracy:**
 7.5 Digits Technology
- **General Functions:**
 DCV, ACV, DCI, ACI (up to 3A), 2W Ω , 4W Ω , Frequency, Period, Diode, Continuity, Thermocouple, RTD, Limits, Ratio, MX+B, %, dBm, dB, Min/Max, Null, Trigger, Filter, Memory
- **Features:**
 - Support 10/20-Channel Scanner Card for Data Log Application
 - Data Transfer Rate: 2000 Readings/Sec.
 - Basic DCV Accuracy: 0.0035 % (1 Year)
 - Basic ACV Accuracy: 0.06 % (1 Year)
 - 6.5 Digits Measurement: 1 PLC
 - High Noise Immunity Capability
 - Free Software: PT-TOOL (SCPI Commands) & PT-LINK
 - Rack-Mounted Compatibility
- **Dimension & Weight:** (for Rack)
 213.6(W) x 88.6(H) x 370(D) mm, 3706 g
- **Optional Accessories:**
 - M3500-opt01: 10-Channel Scanner Card
 - M3500-opt03: BNC to Banana Adapter
 - M3500-opt04: GPIB Card
 - M3500-opt05: RTD Adapter
 - M3500-opt06: RS-232 Card
 - M3500-opt07: Kelvin Probe
 - M3500-opt08: 4-Wire Test Leads
 - M3500-opt09: 20-Channel Scanner Card
 - M3500-opt10: Shorting Plug



M3500A - Characteristics

| Function | Range ² | Resolution | Input Resistance | 1 Year Accuracy ¹ |
|--------------------|--------------------|----------------|------------------|------------------------------|
| DCV ³ | 100.0000 mV | 0.1 µV | > 10 GΩ | 0.0050+0.0035 |
| | 1.000000 V | 1.0 µV | > 10 GΩ | 0.0040+0.0007 |
| | 10.000000 V | 10 µV | > 10 GΩ | 0.0035+0.0005 |
| | 100.0000 V | 100 µV | 10 MΩ | 0.0045+0.0006 |
| | 1000.000 V | 1 mV | 10 MΩ | 0.0045+0.0010 |
| Function | Range | Resolution | Shunt Resistance | 1 Year Accuracy |
| DCI | 10.00000 mA | 10 nA | 5.1 Ω | 0.050+0.020 |
| | 100.0000 mA | 100 nA | 5.1 Ω | 0.050+0.005 |
| | 1.000000 A | 1 µA | 0.1 Ω | 0.100+0.010 |
| | 3.00000 A | 10 µA | 0.1 Ω | 0.120+0.020 |
| Function | Range | Resolution | Test Current | 1 Year Accuracy |
| Ohm (2&4W) | 100.0000 Ω | 100 µΩ | 1 mA | 0.010+0.004 |
| | 1.000000 KΩ | 1 mΩ | 1 mA | 0.010+0.001 |
| | 10.00000 KΩ | 10 mΩ | 100 µA | 0.010+0.001 |
| | 100.0000 KΩ | 100 mΩ | 10 µA | 0.010+0.001 |
| | 1.000000 MΩ | 1 Ω | 5 µA | 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 | 1.00000 V | 10 µV | 1 mA | 0.010+0.020 |
| Continuity | 1000.00 Ω | 10 mΩ | 1 mA | 0.010+0.030 |
| Function | Range | Resolution | Frequency (Hz) | 1 Year Accuracy |
| ACV (TRMS) | 100.0000 mV | 0.1 µV | 3 - 5 | 1.00+0.04 |
| | | | 5 - 10 | 0.35+0.04 |
| | | | 10 - 20 K | 0.06+0.04 |
| | 1.000000 V | 1.0 µV | 20 K - 50 K | 0.12+0.05 |
| | | | 50 K - 100 K | 0.60+0.08 |
| | | | 100 K - 300 K | 4.00+0.50 |
| 750.0000 V | 1 mV | 3 - 5 | 1.00+0.03 | |
| | | 5 - 10 | 0.35+0.03 | |
| | | 10 - 20 K | 0.06+0.03 | |
| 1.000000 A | 1 µA | 20 K - 50 K | 0.12+0.05 | |
| | | 50 K - 100 K | 0.60+0.08 | |
| | | 100 K - 300 K | 4.00+0.50 | |
| 3.000000 A | 10 µA | 3 - 5 | 1.00+0.04 | |
| | | 5 - 10 | 0.30+0.04 | |
| | | 10 - 5 K | 0.10+0.04 | |
| Function | Range | Frequency (Hz) | 1 Year Accuracy | |
| Frequency & Period | 100 mV | 3 - 5 | 0.10 | |
| | | 5 - 10 | 0.05 | |
| | | 10 - 40 | 0.03 | |
| | | 40 - 300 K | 0.01 | |

M3500A - General Specifications

| Item | Description | Item | Description |
|-----------------------|---|--------------|--------------------------------------|
| Power Supply | 100V/120V/220V/240V ±10 % | Warm-Up Time | 2 Hours |
| Power Cord Freq. | 50Hz/60Hz ±10 % | Language | SCPI-1993, IEEE-488.2 |
| Power Consumption | 25 VA Max. (16 W Average) | Dimension | 213.6(W) x 88.6(H) x 370.0(D) mm |
| Operating Environment | 0 ~ 40°C | Weight | 3706 g |
| Storage Environment | -40°C ~ 70°C | Safety | IEC61010-1 EN61010-1 UL61010-1 |
| Operating Altitude | Up to 2000 m | EMC | EN61326 |
| Operating Humidity | Max. Relative Humidity 80 % for Temp. up to 31°C Decreasing Linearly to 50 % Relative Humidity at 40°C | Interface | STD. USB OPT. GPIB or RS-232 |
| | | Warranty | 1 Year |
| | | Certificate | CE & UL |
| Recycle Level | | | |

- ± (% of Reading + % of Range, 23°C±5°C), at 6 1/2 digits with 2-hour warm-up.
- Measurement over 20 % at all ranges is allowable except the ranges 750 ACV, 1000 DCV & 3 A/10 A (M3510A & M3511A). The range 750V is limited to 100 KHz.
- Use continuous integrating A/D converter. Input bias current: Less than 30 pA at 25°C. Input protection: 1000 V at all ranges.
- The specifications are for 2-hour warm-up condition, 10 PLC and they're relative to calibration standards. The accuracy is ± (% of Reading + % of Range, 23°C±5°C).
- M3511A neither provides the selection of the range 3A, nor supports the thermocouple measurement.
- Bandwidth: 3 Hz. Specifications are for sine wave input > 5 % of range. For < 50 KHz and inputs within 1 % to 5 % of range, the error 0.3 % of range must be added. For inputs within 50 KHz to 100 KHz, the 0.35 % of range must be added.

M3510A & M3511A - Characteristics

| Function | Range | Resolution | Input Resistance | 1 Year Accuracy ¹ | |
|------------------------|-----------------|---------------------------|------------------|------------------------------|-----------------|
| DCV | 100.0000 mV | 0.1 µV | 10 MΩ | 0.0080+0.0045 | |
| | 1.000000 V | 1.0 µV | 10 MΩ | 0.0090+0.0010 | |
| | 10.000000 V | 10 µV | 10 MΩ | 0.0120+0.0020 | |
| | 100.0000 V | 100 µV | 10 MΩ | 0.0120+0.0020 | |
| | 1000.000 V | 1 mV | 10 MΩ | 0.0200+0.0030 | |
| Function | Range | Resolution | Shunt Resistance | 1 Year Accuracy | |
| DCI | 10.00000 mA | 10 nA | 5.1 Ω | 0.050+0.020 | |
| | 100.0000 mA | 100 nA | 5.1 Ω | 0.050+0.010 | |
| | 1.000000 A | 1 µA | 0.1 Ω | 0.150+0.020 | |
| | 3.00000 A | 10 µA | 0.1 Ω | 0.200+0.030 | |
| 10.00000 A | 10 µA | 0.005 Ω | 0.250+0.050 | | |
| Function | Range | Resolution | Test Current | 1 Year Accuracy | |
| Ohm (2&4W) | 100.0000 Ω | 100 µΩ | 1 mA | 0.020+0.005 | |
| | 1.000000 KΩ | 1 mΩ | 1 mA | 0.020+0.002 | |
| | 10.00000 KΩ | 10 mΩ | 100 µA | 0.020+0.002 | |
| | 100.0000 KΩ | 100 mΩ | 10 µA | 0.020+0.002 | |
| | 1.000000 MΩ | 1 Ω | 1 µA | 0.020+0.004 | |
| | 10.00000 MΩ | 10 Ω | 0.1 µA | 0.100+0.004 | |
| 100.0000 MΩ | 100 Ω | 0.1 µA/10 MΩ | 1.500+0.005 | | |
| Diode | 1.00000 V | 10 µV | 1 mA | 0.020+0.020 | |
| Continuity | 1000.00 Ω | 10 mΩ | 1 mA | 0.020+0.030 | |
| Function | Range | Resolution | Frequency (Hz) | 1 Year Accuracy | |
| ACV (TRMS) | 100.0000 mV | 0.1 µV | 10 - 20 K | 0.12+0.05 | |
| | | | 20 K - 50 K | 0.25+0.05 | |
| | | | 50 K - 100 K | 0.65+0.08 | |
| | 1.000000 V | 1.0 µV | 100 K - 300 K | 4.80+0.80 | |
| | | | 10 - 20 K | 0.12+0.04 | |
| | | | 20 K - 50 K | 0.25+0.05 | |
| 750.0000 V | 1 mV | 50 K - 100 K | 0.65+0.08 | | |
| | | 100 K - 300 K | 4.80+0.80 | | |
| | | 1.000000 A | 1 µA | 10 - 1 K | 0.20+0.04 |
| 1 K - 5 K | 1.00+0.10 | | | | |
| 3.00000 A ⁵ | 10 µA | | | 10 - 1 K | 0.30+0.06 |
| | | 1 K - 5 K | 1.50+0.15 | | |
| | | 10.00000 A | 10 µA | 10 - 1 K | 0.50+0.12 |
| 1 K - 5 K | 2.50+0.20 | | | | |
| Function | Range | | | Frequency (Hz) | 1 Year Accuracy |
| Freq. & Period | 100 mV ~ 750 V | 10 - 40 | 0.03 | | |
| | | 40 - 300 K | 0.02 | | |
| Function | Range | Test Current | 1 Year Accuracy | | |
| Capacitance | 750 V | 1 nF | 10 µA | 2.0+0.80 | |
| | | 10 nF | 10 µA | 1.0+0.50 | |
| | | 100 nF | 100 µA | 1.0+0.50 | |
| | | 1 µF | 100 µA | 1.0+0.50 | |
| | | 10 µF | 100 µA | 1.0+0.50 | |
| | | 100 µF | 1 mA | 1.0+0.50 | |
| | | 1000 µF | 1 mA | 1.0+0.50 | |
| | | 10000 µF | 1 mA | 2.0+0.50 | |
| | | Function | Type | Range | 1 Year Accuracy |
| | | Thermocouple ⁵ | B | 600°C ~ 1820°C | 1.5°C |
| C | 0°C ~ 2316°C | | 1.5°C | | |
| E | -250°C ~ 1000°C | | 1.5°C | | |
| J | -210°C ~ 1200°C | | 1.0°C | | |
| K | -200°C ~ 1372°C | | 1.0°C | | |
| N | -200°C ~ 1300°C | | 1.0°C | | |
| R | 0°C ~ 1767°C | | 1.5°C | | |
| S | 0°C ~ 1767°C | | 1.5°C | | |
| T | -250°C ~ 400°C | | 1.5°C | | |

M3510A & M3511A - General Specifications

| Item | Description | Item | Description |
|-----------------------|---------------------------|--------------|---|
| Power Supply | 100V/120V/220V/240V ±10 % | Warm-Up Time | 2 Hours |
| Power Cord Freq. | 50Hz/60Hz ±10 % | Language | SCPI-1993, IEEE-488.2 |
| Power Consumption | 25 VA Max. (5 W Average) | Dimension | 214.6(W) x 88.6(H) x 280.7(D) mm |
| Operating Environment | 0 ~ 50°C | Weight | 2230 g |
| Storage Environment | -40°C ~ 70°C | Safety | IEC61010-1, EN61010-1, Meas. CAT II 600 V, CAT I 1000 V, Pollution Degree 2 |
| Operating Altitude | Up to 2000 m | EMC | EN61326 |
| Operating Humidity | The Same as M3500A | Interface | STD. USB OPT. GPIB or RS-232 |
| | | Warranty | 1 Year |
| | | Certificate | CE |
| Recycle Level | | | |