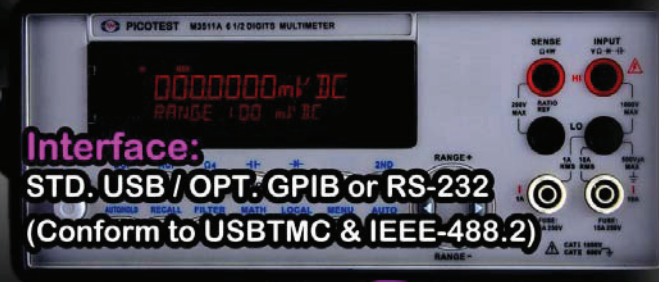


M35 Series

6.5 Digital Multimeter



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



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

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:**

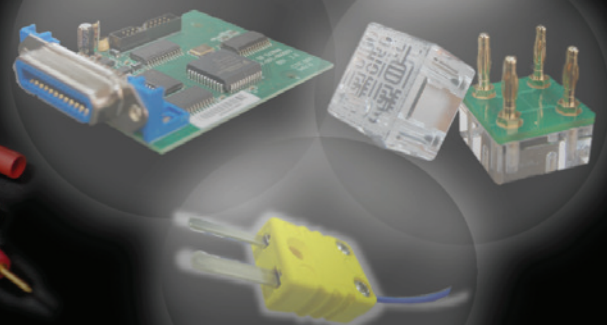
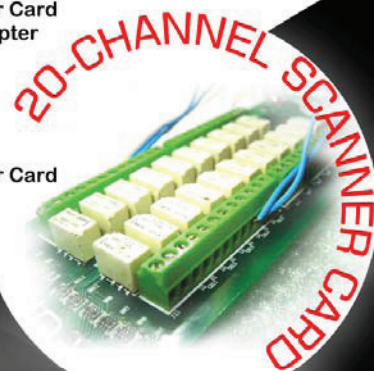
- High Speed: 50 K Readings/Sec. (M3510A)
- Dual Displays & Dual Measurements
- Capacitance Measurement
- Wide Range Current Measurement (Max. 10 A)
- Thermocouple Measurement (M3510A) (Built-In a Cold Junction Compensator)
- Basic DCV Accuracy: 0.009 % (1 Year)
- Free Software: PT-TOOL (SCPI Commands) & 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)



Dual Measurements



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 ⁶ (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		
		10 - 1 K	0.20+0.04		
1.000000 A	1 μA	1 K - 5 K	1.00+0.10		
		10 - 1 K	0.30+0.06		
		1 K - 5 K	1.50+0.15		
3.00000 A ⁵	10 μA	10 - 1 K	0.50+0.12		
		1 K - 5 K	2.50+0.20		
		10 - 1 K	0.03		
Freq. & Period	100 mV ~ 750 V	40 - 300 K	0.02		
		10 - 40	0.03		
Function	Range	Test Current	1 Year Accuracy		
Capacitance	100 mV	1 nF	2.0+0.80		
		10 nF	1.0+0.50		
		100 nF	1.0+0.50		
		1 μF	1.0+0.50		
		10 μF	1.0+0.50		
		100 μF	1.0+0.50		
		1000 μF	1.0+0.50		
		10000 μF	2.0+0.50		
		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			

For more information, please refer to the user's manuals.

The specifications are subject to change without notice due to design improvements.