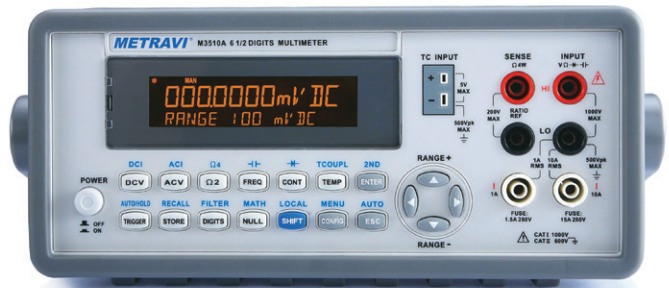


## INTRODUCTION

- Best performance / price ratio
- High-speed sampling rate (50000 Rds/sec)
- Direct thermocouple measurement (Built-In cold junction compensation to improve accuracy)
- Dual measurement & dual display (Including Thermocouple Measurement)
- Capacitance Measurement
- Several measurements & mathematic functions
- Wide range current measurement (Up to 10A)
- DCV accuracy (0.012% in 1 year)
- High sensitivity (DCV : 0.1 $\mu$ V & Resistance : 100 $\mu$  $\Omega$ )
- Plug & Play interface : Built-in USB (USBTMC)
- High Storage Memory (Up to 2000 Readings)
- Free Application Software



**Note:** The 1-year accuracy is subject to calibration accuracy.

In addition, the M3510A provides wide ranges for general measurements, such as...

1. **DCV** : 100mV, 1V, 10V, 100V & 1000V
2. **ACV** : 100mV, 1V to 750V
3. **DCI** : 10mA, 100mA, 1A, 3A & 10A (3A range not available in M-3511A)
4. **ACI** : 1A, 3A & 10A (3A range not available in M-3511A)
5. **2 & 4-wired resistance** : 100 $\Omega$ , 1K $\Omega$ , 10K $\Omega$ , 100K $\Omega$ , 1M $\Omega$ , 10M $\Omega$  & 100M $\Omega$
6. **Capacitance** : 1nF, 10nF, 100nF, 1 $\mu$ F, 10 $\mu$ F, 100 $\mu$ F, 1000 $\mu$ F & 10000 $\mu$ F
7. **Thermocouple (only in M- 3510A)** : -250 $^{\circ}$ C ~ 2316 $^{\circ}$ C
8. **RTD** : 2W & 4W
9. **Frequency & Period** : 100mV to 750V (From 3Hz to 300KHz)
10. **Diode** : 1V
11. **Continuity (for 2W)** : 1000 $\Omega$

**Some additional capabilities of M3510A include:**

- Full Math Functions - Percent, Average, Null, Limits, MX+ B, dB & dBm.
- Resolution Adjustment -0.001, 0.006, 0.02, 0.06, 0.2, 0.6, 1. 2, 10 & 100 NPLC
- USB & GPI B (Optional) remote control interface.
- Through M3510A AP software ( PT - TOOL) for simulating the real operation on PC.
- Through Microsoft Office Word & Excel (PT - LINK) for remotely storing and recalling the measured values.

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## ACCESSORIES

- One M3510A Multimeter unit. (88.8 [H] x 214.6 [W] x 280.7 [D] mm, approx. 2.23 Kg)
- One power line cord
- One USB cable
- Standard Test Leads
- One CD (including electronic User Manual and software application)
- Optional accessories (According to the Table 1-1) as you ordered

M3510A is provided with a Standard Test lead set, described below

### Test Lead Ratings :

IEC 61010-031 CAT III

Operating Voltage : 1000V DC

Current : 10 Amperes

UL / CE Rated

DC CHARACTERISTICS			
Function	Range	Resolution	1 year Accuracy <sup>2</sup>
DVC	100.0000 mV	0.1 $\mu$ V	0.0080 + 0.0045
	1.000000 V	1.0 $\mu$ V	0.0090 + 0.0010
	10.00000 V	10 $\mu$ V	0.0120 + 0.0020
	100.0000 V	100 $\mu$ V	0.0120 + 0.0020
	1000.000 V	1 mV	0.0200 + 0.0030
DCI	10.00000 mA	10 nA	0.050 + 0.020
	100.0000 mA	100 nA	0.050 + 0.010
	1.000000 A	1 $\mu$ A	0.150 + 0.020
	3.00000 A	10 $\mu$ A	0.200 + 0.030
	10.00000 A	10 $\mu$ A	0.0250 + 0.050
2W $\Omega^3$ / 4A $\Omega$	100.0000 $\Omega$	100 $\mu\Omega$	0.020 + 0.005
	1.000000 K $\Omega$	1 m $\Omega$	0.020 + 0.002
	10.00000 K $\Omega$	10 m $\Omega$	0.020 + 0.002
1. The specification are under 2 hour warm-up condition with the setting 10 PLC, and they're relative to the calibrator specifications in PICO TEST 2. (% of reading + % of range). (23°C 5°C) 3. The Null function must be used when the 2W $\Omega$ is selected			
	100.0000 K $\Omega$	100 m $\Omega$	0.020 + 0.002
	1.000000 M $\Omega$	1 $\Omega$	0.020 + 0.004
	10.00000M $\Omega$	10 $\Omega$	0.100 + 0.004
	100.0000 M $\Omega$	100 $\Omega$	1.500 + 0.005
DIODE	1.00000 V	10 $\mu$ V	0.020 + 0.020
CINTINUITY (for 2W $\Omega$ )	1000.00 $\Omega$	10 m $\Omega$	0.020 + 0.030

FREQUENCY & PERIOD			
Function	Range	Frequency	1 year Accuracy
FREQUENCY & PERIOD	100mV to 750V <sup>4</sup>	10-40	0.03
		40-300K	0.02

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**DC CHARACTERISTICS**

Function	Range	Resolution	Frequency	1 year Accuracy <sup>2</sup>
ACV (TRMS)	100.0000 mV	0.1 $\mu$ V	10 - 20K	0.1200 + 0.050
			20K - 50K	0.2500 + 0.050
			50K - 100K	0.6500 + 0.80
			100K - 300K	4.8000 + 0.800
	1.000000 V to 750.0000 V	1.0 $\mu$ V to 1mA	10 - 20K	0.1200 + 0.040
			20K - 50K	0.2500 + 0.050
50 K - 100K			0.6500 + 0.80	
ACI <sup>6</sup> (TRMS)	1.000000 A	1 $\mu$ A	10 - 1K	0.200 + 0.040
			1K - 5K	1.00 + 0.100
			10 - 1K	0.300 + 0.060
	3.00000 A	10 $\mu$ A	1K - 5K	1.500 + 0.150
	10.00000 A	10 $\mu$ A	10 - 1K	0.500 + 0.120
1K - 5K			2.50 + 0.20	

4. The Range 750V is limited to 100KHz

5. Bandwidth : 3Hz. Specifications are for sine wave input > 5% of range. For <50 KHz and inputs within 1% ~ 5% of range, and 03% of range additional error. For 50KHz ~ add 035% of range.

6. For 10A range, > DC 10A or AC 10Arms 30 seconds ON and 30 seconds OFF

**CAPACITANCE CHARACTERISTICS**

Function	Range	Test Current	1 year Accuracy
CAPACITANCE <sup>7</sup>	1 nF	10 $\mu$ A	2.0 + 0.80
	10 nF	10 $\mu$ A	1.0 + 0.50
	100 nF	100 $\mu$ A	1.0 + 0.50
	1 $\mu$ V	100 $\mu$ A	1.0 + 0.50
	10 $\mu$ V	100 $\mu$ A	1.0 + 0.50
	100 $\mu$ V	1 mA	1.0 + 0.50
	1000 $\mu$ V	1 mA	1.0 + 0.50
	10000 $\mu$ V	1 mA	2.0 + 0.50

**TEMPERATURE CHARACTERISTICS**

Function	Range	Test Current	1 year Accuracy
TEMPERATURE	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	1.5°C
	K	-200°C ~ 1372°C	1.5°C
	N	-200°C ~ 1300°C	1.5°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

**GENERAL SPECIFICATIONS**

item	Limitation & description
Power Supply Power Line Frequency	100V / 120V / 220V (230V) / 240V 50/60 Hz
E Power Consumption Operating Temperature	25 VA Maximum 0°C to 50°C
Operating Humidity	Maximum relative humidity 80% for temperature up to 35°C.
Storage Temperature Operating Altitude Bench Dimension for Rack (W x H x D)	- 40°C to 70°C Up to 2000 M 214.6 x 88.6 x 280.7 mm
Weight Safety EMC	2230g EN61010-1:2010 (3rd Edition) EN61010-2-030:2010 (1st Edition) Installation CAT II, Measurement CAT II 600V Pollution Degree 2 EN61326-1:2006, EN61326-2-1:2006
VIBRATION	MIL- 28800F, 3.8.4.2 VI VIBRATION, SINUSOIDAL CLASS 1,2
SHOCK	MIL- PRF-28800F, 4.5.5.4 MECHANICAL
Warranty	One Year

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