

# METERS

- PORTABLE MULTIMETER
- BENCHTOP MULTIMETER
- WATTMETER
- STUDENT METER
- INFRARED RAY TEMPERATURE METER
- AND MORE...



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## WD SERIES



### Features

- .Mono-phase and tri-phase balance measures
- .Auto range selecting (WD3000)
- .Small power measure
- .Connection and operation simplicity
- .Accuracy: better than 2% at the full current and voltage scale
- .Protection against over-currents by fuses
- .Over current and over Voltage indicator

### WD2250A

#### Specifications

- .AC operation
- .Current ranges: 0.1A, 0.5A, 1A, 5A
- .Voltage ranges: 3V, 15V, 30V, 240V, 450V
- .Power measured: 0.3W~2250W (rate capacity)
- .Frequency ranges: 0~3kHz
- .LCD display: 3 1/2 digits
- .Dimensions: 235(W)×75(H)×170(D)mm
- .Weight: 0.6kg



WD2250A

### WD2250B

#### Specifications

- .Battery operation
- .Automatic shutdown of the wattmeter after 2mins with battery saver
- .The running time is about 8 hours in continuous operation
- .Current ranges: 0.1A, 0.5A, 1A, 5A
- .Voltage ranges: 3V, 15V, 30V, 240V, 450V
- .Power measured: 0.3W~2250W (rate capacity)
- .Frequency ranges: 0~3kHz
- .LCD display: 3 1/2 digits
- .Dimensions: 235(W)×75(H)×170(D)mm
- .Weight: 0.6kg



WD2250B

### WD3000

#### Specifications

- .AC operation
- .Current ranges: 0~7A
- .Voltage ranges: 0~450V
- .Power measured: 0.3W~3150W (rate capacity)
- .Frequency ranges: 0~3kHz
- .LCD display: 3 1/2 digits
- .Dimensions: 235(W)×75(H)×170(D)mm
- .Weight: 0.6kg



WD3000

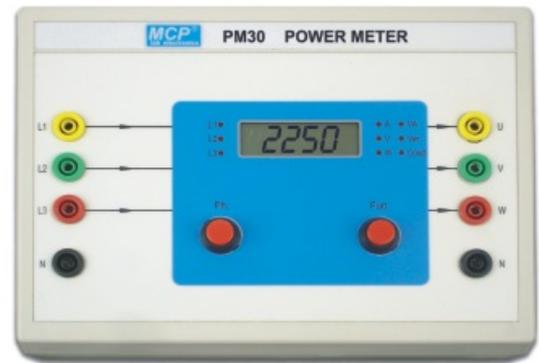
# POWER METER

PM30

NEW

## Features

- .Three phase measuring
- .Voltage, current, active/reactive/apparent powers and power factor
- .1% high accuracy
- .Excellent readability with 4 digits LCD meter
- .Mains power supply for long time use
- .Optional RS 232 interface



PM30

Technical Data	Range	Resolution	Accuracy
AC voltage	0~450V	0.1V	1%
AC current	0~5A	0.001A	1%
Reactive power	0~2250Var	1Var	1%
Active power	0~2250W	1VA 1W	1%
Power factor	0.5~1	0.001	1%
Dimensions(W×H×D)		240×80×173mm	
Weight		0.9kg	

POWER SUPPLY

TEST INSTRUMENT

EDU. INSTRUMENT

METER

ACCESSORY

## STUDENT METER

NEW

### Feature

#### .Compact size

- .Easy operation and stable work
- .Binding post or safety socket connection
- .Suitable for school experiment

### Specifications

#### Current Meter

Model	Type	Range	Connector
DCA-1	Ampere meter DC	0-50mA-500mA-5A	Binding Post
DCA-1S	Ampere meter DC	0-50mA-500mA-5A	Safety Socket
ACA-1	Ampere meter AC	0-500mA-1A-5A	Binding Post
ACA-1S	Ampere meter AC	0-500mA-1A-5A	Safety Socket



DCA-1S



DCA-1

#### Voltage Meter

Model	Type	Range	Connector
DCV-1	Volt meter DC	0-3V-30V-300V	Binding Post
DCV-1S	Volt meter DC	0-3V-30V-300V	Safety Socket
DCV-2	Volt meter DC	0-300mV-3V-30V	Binding Post
DCV-2S	Volt meter DC	0-300mV-3V-30V	Safety Socket
ACV-1	Volt meter AC	0-15V-150V	Binding Post
ACV-1S	Volt meter AC	0-15V-150V	Safety Socket



DCV-1S



DCV-1

#### Galvano Meter

Model	Type	Range	Connector
DCG-1	Galvano meter	$\pm 35 \mu A$	Binding Post
DCG-1S	Galvano meter	$\pm 35 \mu A$	Safety Socket
DCG-2	Galvano meter	$\pm 30 mA$	Binding Post
DCG-2S	Galvano meter	$\pm 30 mA$	Safety Socket



DCG-1S



DCG-1

# STUDENT METER

RM & RS SERIES

NEW

## Features:

- .Portable meter
- .Easy operation and stable work
- .Safety socket connection
- .Suitable for school experiment

## Specifications

Current meter:

Model	Type	Range	Accuracy
RM3248	Analog DC current meter	1A/10A	2.5%
RM3250	Analog AC current meter	1A/10A	2.5%
RS3248	Digital DC current meter	0~1999mA	0.5%
RS3250	Digital AC current meter	0~19.99A	1%

Dimensions: 94×150×35 mm

Weight: 150g



RM 3250



RS 3250

Voltage meter:

Model	Type	Range	Accuracy
RM3249	Analog DC voltage meter	1.5V/15V 3V/30V 25V/250V	2.5%
RM3251	Analog AC voltage meter	25V/250V 100V/1000V	2.5%
RS3249	Digital DC voltage meter	0~199.9V	0.5%
RS3251	Digital AC voltage meter	0~1000V	1%

Dimensions: 94×150×35 mm

Weight: 150g



RM 3251



RS 3251

Galvanometer:

Model	Type	Range	Accuracy
RM3252	Analog galvanometer	±0~500 μA	2.5%
RS3252	Digital galvanometer	±0~1999 μA	0.5%

Dimensions: 94×150×35 mm

Weight: 150g



RM 3252



RS 3252

POWER SUPPLY

TEST INSTRUMENT

EDU. INSTRUMENT

METER

ACCESSORY

# D SERIES METER

D SERIES

NEW

**Features:**

- .Four ranges
- .2000 counts display
- .Simple and extremely safe to use
- .Safety sockets and dual insulation



**DAA-1**



**DAV-1**



**DDA-1**



**DDV-1**

**Specifications**

Model	Type	Range/Resolution	Accuracy	Fuse
DDV-1	DC voltage meter	200mV/0.1mV	$\pm(0.5\%+1\text{digits})(200\text{mV})$	NA
		2V/0.001V	$\pm(0.8\%+1\text{digits})(2\text{V}/20\text{V}/200\text{V})$	
		20V/0.01V		
DDA-1	DC current meter	200V/0.1V		
		2mA/0.001mA	$\pm(1\%+1\text{digits})(2\text{mA}/20\text{mA}/200\text{mA})$	5A(5A)
		20mA/0.01mA	$\pm(1.5\%+2\text{digits})(5\text{A})$	500mA(2mA/20mA/200mA)
DAV-1	AC voltage meter	5A/0.01A		
		2V/0.001V	$\pm(1\%+2\text{digits})$	NA
		20V/0.01V		
DAA-1	AC current meter	200V/0.1V		
		2mA/0.001mA	$\pm(1.2\%+2\text{digits})(2\text{mA}/20\text{mA}/200\text{mA})$	5A(5A)
		20mA/0.01mA	$\pm(1.5\%+3\text{digits})(5\text{A})$	500mA(2mA/20mA/200mA)
		200mA/0.1mA		
		5A/0.01A		

Dimensions: 190×140×80 mm

Weight: 150g

POWER SUPPLY  
TEST INSTRUMENT  
EDU. INSTRUMENT  
METER  
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# MS SERIES METER

## MS 300 SERIES



### Feature

- .Sturdy, simple and extremely safe to use
- .High accuracy and reliability
- .Combination of electronic and mechanical advantage
- .Single switch for range selection
- .Safety sockets and dual insulation
- .Moulded, water-resistant casing



Technical data	MS-301	MS-302	MS-303
Function	AC/DC Current meter	AC/DC Voltage meter	Galvano Meter
Range	AC 10mA~10A(7Steps) DC 100uA~10A(11Steps)	AC 3V~1000V(6Steps) DC 100mV~1000V(8Steps)	DC 30uA~3mA(2 Steps) DC 100mV(1Step forshunts)
Accuracy	1.5%(DC), 2%(AC)	1.5%(DC), 2%(AC)	1.5%
Operating frequency	45~400Hz	20~400Hz	
Fuse	1A and 10A	Electronic Protection	200mA
Accessories	NA	NA	NA

Dimensions: 170×165×55 mm

Weight: 200g



MS-301



MS-302



MS-303

Technical data	MS-304	MS-305	MS-306
Function	Single phase wattmeter	Single and 3-phase wattmeter	Multi-Meter
Range	AC/DC 60-120-240-480V AC/DC 0.5A/1A	AC/DC 60-120-180-240-360-480V( 1 Ph.) AC/DC 60√3 -120√3 -180√3 -240√3 V(3 Ph.)	DCV 2.5V~1000V(7 Steps) ACV 10V~1000V(6 Steps) DCA 50uA~10A(9Steps) ACA 2.5mA~10A(7Steps) Resistance 1Ω~1KΩ(4Steps)
Accuracy	2.5%(DC), 1%(AC)	2.5%(DC), 1%(AC 1 Ph.), 2%(AC 3 Ph.)	1.5%(DC), 2.5%(AC)
Operating frequency	0~500Hz	15~500Hz	20~400Hz
Fuse	1A	5A	10A and 1A
Accessories	NA	NA	Testleads × 2

Dimensions: 170×165×55 mm

Weight: 200g



MS-304



MS-305



MS-306

# MS SERIES METER

## MS 400 SERIES



### Feature

- .Sturdy, simple and extremely safe to use
- .High accuracy and reliability
- .Combination of electronic and mechanical advantage
- .Single switch for range selection
- .Safety sockets and dual insulation
- .Moulded, water-resistant casing

Technical data	MS-401	MS-402	MS-403	MS-406
Function	AC/DC Current meter	AC/DC Voltage meter	Galvano Meter	Multi-Meter
Range	AC 10mA~10A(7Steps) DC 100uA~10A(11Steps)	AC 3V~1000V(6Steps) DC 100mV~1000V(8Steps)	DC 30uA~3mA(2 Steps) DC 100mV(1Step for shunts)	DCV 2.5V~1000V(7 Steps) ACV 10V~1000V(6 Steps) DCA 50uA~10A(9 Steps) ACA 2.5mA~10A(7Steps) Resistance 1Ω~1KΩ (4Steps)
Accuracy	1.5%(DC), 2%(AC)	1.5%(DC), 2%(AC)	1.5%	1.5%(DC), 2.5%(AC)
Operating frequency	45~400Hz	20~400Hz		20~400Hz
Fuse	1A and 10A	Electronic Protection	200mA	10A and 1A
Accessories	Testleads × 2 Bag × 1	Testleads × 2 Bag × 1	Testleads × 2 Bag × 1	Testleads × 2 Bag × 1

Dimensions: 170×165×55 mm

Weight: 200g



MS-401



MS-402



MS-403



MS-406

Technical data	MS-404	MS-405
Function	Single phase wattmeter	Single and 3-phase wattmeter
Range	AC/DC 60-120-240-480V AC/DC 0.5A/1A	AC/DC 60-120-180-240-360-480V( 1 Ph.) AC/DC 60√3 -120√3 -180√3 -240√3 V(3 Ph.)
Accuracy	2.5%(DC), 1%(AC)	2.5%(DC), 1%(AC 1 Ph.), 2%(AC 3 Ph.)
Operating frequency	0~500Hz	15~500Hz
Fuse	1A	5A
Accessories	Bag × 1	Bag × 1

Dimensions: 170×165×55 mm

Weight: 200g



MS-404



MS-405

# C31 & T19 SERIES PRECISE METER

## C31 SERIES

### Features

- .High accuracy and reliability
- .Combination of electronic and mechanical advantage
- .Very wide range for measurement



**C31DA**

Technical Data	C31DV	C31DA
Function	DC voltage meter	DC current meter
Range	0.75/1.5/3/7.5/15/30/75/150/300/600V	7.5/15/30/75/150/300/750mA 1.5/3/7.5/15/30A
Accuracy	0.5%	
Operating frequency	50~60Hz	
Scale division	150	100
Dimensions(W×H×D)	220×170×95mm	
Weight	5kg	

## T19 SERIES

### Features

- .High accuracy and reliability
- .Combination of electronic and mechanical advantage
- .9 different choices for T19ADA and 6 different choices for T19ADV



**T19ADA**

Technical Data	T19ADV	T19ADA
Function	AC/DC voltage meter	AC/DC current meter
Selectable range	7.5/15V 15/30V 30/60V 75/150V 150/300V 300/600V	10/20mA 25/50mA 50/100mA 100/200mA 250/500mA 0.5/1A 1/2A 2.5/5A 5/10A
Accuracy	0.5%	
Operating frequency	50~60Hz	
Scale division	150	100
Dimensions(W×H×D)	220×170×95mm	
Weight	5kg	

POWER SUPPLY

TEST INSTRUMENT

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# JL SERIES ELECTRIC METER

JL SERIES



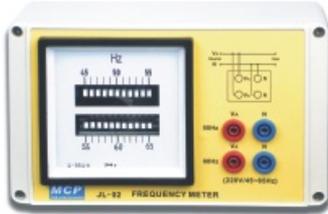
**Feature**

**Compact size**

- .Easy operation and stable work
- .Safety sockets and high reliability
- .Novel design and various types for you



**JL-01**



**JL-02**

Technical data	JL-01	JL-02
Function	Frequency meter	Frequency meter
Type	Analog	Reed
Range	45~55Hz(220V AC)	45~55Hz(220V AC) 55~65Hz(220V AC)
Accuracy	1.0%	1.0%

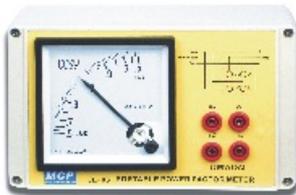


**JL-03**

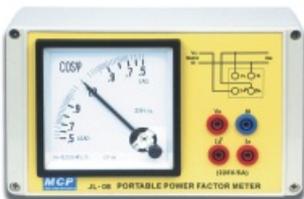


**JL-04**

Technical data	JL-03	JL-04
Function	Wattmeter	Wattmeter
Type	Single phase	Three phase
Range	0~2kW (L-N 220V/10A)	0~8kW (L-L 480V/10A)
Accuracy	1.5%	1.5%



**JL-05**



**JL-08**

Technical data	JL-05	JL-08
Function	Power factor meter	Power factor meter
Type	Three phase	Single phase
Range	0.5~1~0.5 (220V/10A)	0.5~1~0.5 (220V/10A)
Accuracy	2.5%	2.5%



**JL-06**



**JL-07**

Technical data	JL-06	JL-07
Function	AC ammeter	AC voltmeter
Range	0~10A	0~500V
Accuracy	1.5%	1.5%

POWER SUPPLY

TEST INSTRUMENT

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# PORTABLE DIGITAL MULTIMETER

MU 33 SERIES



## Features

.3 1/2 digit display (MU33A 3 3/4)

.Temperature measuring

.Various kinds of function: diode test, triode test, On/Off buzzer, square wave output and data hold



MU33A



MU33D

Technical Data		MU33A	MU33B	MU33C	MU33D
DC voltage	Range	400mV/4V/40V 400V/500V	200mV/2000mV/20V 200V/500V	200mV/2000mV/20V 200V/500V	200mV/2000mV/20V 200V/500V
	Accuracy	±(0.8% +1)	±(0.5% +2)	±(0.5% +2)	±(0.5% +2)
AC voltage	Range	4V/40V/400V/500V	200V/500V	200V/500V	200V/500V
	Accuracy	±(1.2% +3)	±(1.2% +10)	±(1.2% +10)	±(1.2% +10)
DC current	Range	400 μA/4000 μA/40mA 400mA/4A/10A	200 μA/200mA/10A	2000 μA/20mA 200mA/10A	2000 μA/20mA 200mA/10A
	Accuracy	±(1% +2)	±(1% +2)	±(1% +2)	±(1% +2)
AC current	Range	400 μA/4000 μA/40mA 400mA/4A/10A	NA	NA	NA
	Accuracy	±(1.5% +5)	NA	NA	NA
Resistance	Range	400 Ω/4k Ω/40k Ω 400k Ω/4M Ω/40M Ω	200 Ω/2000 Ω/20k Ω 200k Ω/20M Ω	200 Ω/2000 Ω/20k Ω 200k Ω/20M Ω	200 Ω/2000 Ω/20k Ω 200k Ω/20M Ω/200M Ω
	Accuracy	±(1% +2)	±(0.8% +2)	±(0.8% +2)	±(0.8% +2)
Temperature	Range	NA	NA	-40°C~1000°C	NA
	Accuracy	NA	NA	±(1% +3)	NA
Battery test	Range	NA	1.5V/9V/12V	NA	NA
	Accuracy	NA	±(2.5% +2)	NA	NA
Auto range		✓			
Diode test		✓	✓	✓	✓
On/Off buzzer		✓		✓	✓
Triode test		✓			
Square wave output					✓
Data hold			✓	✓	✓
Background light			✓	✓	✓
Low battery warning		✓	✓	✓	✓
Input resistance		≥ 10MΩ		DCV ≥ 10MΩ ACV ≥ 5MΩ	
Max display		3999	1999	1999	1999
Power supply		1.5V 7 <sup>#</sup> battery × 2		9V (6F22) battery	
Weight			156g		
Dimensions (W×H×D)			130 mm×73.5 mm×35 mm		

POWER SUPPLY

TEST INSTRUMENT

EDU. INSTRUMENT

METER

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# PORTABLE DIGITAL MULTIMETER

MU 58 SERIES



## Features

- .3 1/2 digit display (MU58E 4 1/2)
- .Capacitor, frequency, inductance and temperature measuring
- .Max.test voltage up to 1000VDC and 1000VAC
- .Various kinds of function: auto power off, diode test, triode test, On/Off buzzer and data hold



MU58A



MU58E

Technical Data		MU58A	MU58B	MU58C
DC voltage	Range		200mV/2V/20V/200V/1000V	
	Accuracy		±(0.5% +1)	
AC voltage	Range		2V/20V/200V/750V	
	Accuracy		±(0.8% +3)	
DC current	Range	20 μ A/2mA/20mA/200mA/20A	2mA/20mA/200mA/20A	2mA/200mA/20A
	Accuracy		±(0.8% +1)	
AC current	Range		2mA/200mA/20A	
	Accuracy		±(1% +3)	
Resistance	Range	200 Ω/2k Ω/20k Ω 2M Ω/20M Ω/200M Ω	200 Ω/2k Ω/20k Ω 2M Ω/20M Ω/200M Ω	200 Ω/2k Ω/20k Ω/2M Ω/20M Ω
	Accuracy		±(0.8% +1)	
Capacitance	Range		2nF/200nF/100 μ F	
	Accuracy		±(4% +3)	
Temperature	Range	NA	-40°C~1000°C	-40°C~1000°C
	Accuracy	NA	±(1% +3)	
Frequency	Range	NA	NA	2kHz/20kHz
	Accuracy	NA	NA	±(1.5% +5)
Diode test		✓	✓	✓
On/Off buzzer		✓	✓	✓
Triode test		✓	✓	✓
Full character display		✓	✓	✓
Auto power off		✓	✓	✓
Data hold		✓	✓	✓
Low battery warning		✓	✓	✓
Input terminal prompting		✓	✓	✓
Input resistance			≥ 10MΩ	
Max display		1999	1999	1999
Power supply			9V (6F22) battery	
Weight			350g	
Dimensions (W×H×D)			179 mm×88 mm×39 mm	

POWER SUPPLY

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METER

ACCESSORY

# PORTABLE DIGITAL MULTIMETER

Technical Data		MU58D	MU58E
DC voltage	Range	200mV/20V/200V/1000V	200mV/2V/20V/200V/1000V
	Accuracy	±(0.5% +1)	±(0.05% +3)
AC voltage	Range	2V/200V/1000V	2V/20V/200V/1000V
	Accuracy	±(0.8% +3)	±(0.5% +10)
DC current	Range	2mA/200mA/20A	2mA/200mA/20A
	Accuracy	±(0.8% +1)	±(0.5% +5)
AC current	Range	2mA/20mA/20A	20mA/200mA/20A
	Accuracy	±(1% +3)	±(0.8% +10)
Resistance	Range	200 Ω/2k Ω/200k Ω/2M Ω/20M Ω	200 Ω/2k Ω/20k Ω/2M Ω/200M Ω
	Accuracy	±(0.8% +1)	±(0.5% +10)
Capacitance	Range	20nF/200nF/2 μ F/100 μ F	2nF/20nF/2 μ F/20 μ F
	Accuracy	±(2.5% +5)	±(3% +40)
Inductance	Range	2mH/20mH/200mH/20H	NA
	Accuracy	±(2% +10)	NA
Temperature	Range	NA	-40°C ~ 1000°C
	Accuracy	NA	±(1% +30)
Frequency	Range	NA	20kHz
	Accuracy	NA	±(1.5% +5)
Diode test		✓	✓
On/Off buzzer		✓	✓
Triode test		✓	✓
Full character display		✓	✓
Auto power off		✓	✓
Data hold		✓	✓
Low battery warning		✓	✓
Input terminal prompting		✓	✓
Input resistance		≥ 10MΩ	
Max display		1999	19999
Power supply		9V (6F22) battery	
Weight		350g	
Dimensions (W×H×D)		179 mm×88 mm×39 mm	

POWER SUPPLY

TEST INSTRUMENT

EDU. INSTRUMENT

METER

ACCESSORY

# PORTABLE DIGITAL MULTIMETER

MU 61 SERIES



## Features

.Max. Display 22000

.Capacitor, frequency and temperature measuring

.Max.test voltage up to 1000VDC and 750VAC

.Various kinds of function: auto power off, diode test, triode test, On/Off buzzer, data hold

Technical Data	MU61A	MU61B
DC voltage (Range/Accuracy)	400mV/±(0.8% +3) 4V/40V/400V/±(0.5% +1) 1000V/±(1% +3)	40mV/±(0.8% +3) 400mV/±(0.8% +3) 4V/40V/400V/±(0.5% +1) 1000V/±(1% +3)
AC voltage (Range/Accuracy)	400mV/±(1.2% +5) 4V/40V/400V/±(1% +3) 750V/±(1.2% +5)	40mV/±(1.2% +5) 400mV/±(1.2% +5) 4V/40V/400V/±(1% +3) 750V/±(1.2% +5)
DC current (Range/Accuracy)	400 μA/4000 μA/±(1% +2) 40mA/400mA/±(1.2% +3) 4A/10A/±(1.5% +3)	400 μA/4000 μA/±(1% +2) 40mA/400mA/±(1.2% +3) 4A/10A/±(1.5% +3)
AC current (Range/Accuracy)	400 μA/4000 μA/±(1.2% +5) 40mA/400mA/±(1.5% +5) 4A/10A/±(2% +5)	400 μA/4000 μA/±(1.2% +5) 40mA/400mA/±(1.5% +5) 4A/10A/±(2% +5)
Resistance (Range/Accuracy)	400 Ω/±(1.2% +2) 4k Ω/40k Ω/400k Ω/±(1% +2) 4M Ω/±(1.2% +2) 40M Ω/±(1.5% +2)	400 Ω/±(1.2% +2) 4k Ω/40k Ω/400k Ω/±(1% +2) 4M Ω/±(1.2% +2) 40M Ω/±(1.5% +2)
Capacitance (Range/Accuracy)	40nF/±(3% +5) 400nF/4 μF/40 μF/±(3% +5) 400 μF/±(4% +5) 4000 μF/only for reference	40nF/±(3% +5) 400nF/4 μF/40 μF/±(3% +5) 400 μF/±(4% +5) 4000 μF/only for reference
Temperature (Range/Accuracy)	NA	-40℃~-20℃/-(8% +5) > -20℃~0℃/±(1.2% +4) > 0℃~100℃/±(1.2% +3) > 100℃~1000℃/±(2.5% +2)
Frequency	Range Accuracy	10Hz~10MHz ±(0.1% +4)
Frequency response	45~400Hz	10Hz~10MHz ±(0.1% +4)
Duty cycle	0.1%~99.9%	45~400Hz
Auto/Manual range	✓	0.1%~99.9%
Diode test	✓	✓
On/Off buzzer	✓	✓
EF test	✓	✓
Triode test	✓	✓
Max./Min. value display	✓	✓
Simulation bar	✓	✓
Auto power off	✓	✓
Data hold	✓	✓
Low battery warning	✓	✓
Relatively testing	✓	✓
RS232	✓	✓
Input protection	✓	✓
Input resistance	10MΩ	✓
Max display	4000	✓
Power supply	9V (6F22) battery	✓
Weight	370g	✓
Dimensions (W×H×D)	180 mm×87 mm×47 mm	✓

POWER SUPPLY

TEST INSTRUMENT

EDU. INSTRUMENT

METER

ACCESSORY

# PORTABLE DIGITAL MULTIMETER



**MU61A**



**MU61E**

Technical Data		MU61C	MU61D	MU61E
DC voltage	Range	600mV/6V/60V 600V/1000V	600mV/6V/60V 600V/1000V	220mV/2.2V/22V 220V/1000V
	Accuracy	$\pm(0.5\% + 1)$	$\pm(0.5\% + 1)$	$\pm(0.1\% + 2)$
AC voltage	Range	60mV/600mV/6V 60V/600V/750V	60mV/600mV/6V 60V/600V/750V	220mV/2.2V/22V 220V/750V
	Accuracy	$\pm(1.0\% + 3)$	$\pm(1.0\% + 3)$	$\pm(0.8\% + 10)$
DC current	Range	600 $\mu$ A/6000 $\mu$ A/60mA 600mA/6A/10A	600 $\mu$ A/6000 $\mu$ A/60mA 600mA/6A/10A	200 $\mu$ A/2200 $\mu$ A/22mA 220mA/2.2A/10A
	Accuracy	$\pm(1.0\% + 3)$	$\pm(1.0\% + 3)$	$\pm(0.5\% + 10)$
AC current	Range	600 $\mu$ A/6000 $\mu$ A/60mA 600mA/6A/10A	600 $\mu$ A/6000 $\mu$ A/60mA 600mA/6A/10A	200 $\mu$ A/2200 $\mu$ A/22mA 220mA/2.2A/10A
	Accuracy	$\pm(1.2\% + 5)$	$\pm(1.2\% + 5)$	$\pm(0.8\% + 10)$
Resistance	Range	600 $\Omega$ /6k $\Omega$ /60k $\Omega$ 600k $\Omega$ /6M $\Omega$ /60M $\Omega$	600 $\Omega$ /6k $\Omega$ /60k $\Omega$ 600k $\Omega$ /6M $\Omega$ /60M $\Omega$	220 $\Omega$ /2.2k $\Omega$ /22k $\Omega$ 220k $\Omega$ /2.2M $\Omega$ /22M $\Omega$ /220M $\Omega$
	Accuracy	$\pm(1.0\% + 2)$	$\pm(1.0\% + 2)$	$\pm(0.5\% + 10)$
Capacitance	Range	40nF/400nF/4 $\mu$ F 40 $\mu$ F/400 $\mu$ F/4000 $\mu$ F	40nF/400nF/4 $\mu$ F 40 $\mu$ F/400 $\mu$ F/4000 $\mu$ F	22nF/220nF/2.2 $\mu$ F/22 $\mu$ F 220 $\mu$ F/2.2mF/22mF/220F
	Accuracy	$\pm(3.0\% + 5)$	$\pm(3.0\% + 5)$	$\pm(3.0\% + 5)$
Temperature	Range	-40°C~1000°C	NA	NA
	Accuracy	$\pm(1.2\% + 3)$	NA	NA
Frequency	Range	10Hz~10MHz	10Hz~10MHz	10Hz~220MHz
	Accuracy	$\pm(0.1\% + 4)$	$\pm(0.1\% + 4)$	$\pm(0.01\% + 5)$
Frequency response		45~1kHz	45~3kHz	45~10kHz
Duty cycle		0.1%~99.9%	0.1%~99.9%	0.1%~99.9%
Auto/Manual range		✓	✓	✓
Diode test		✓	✓	✓
RMS			✓	✓
On/Off buzzer		✓	✓	✓
Max./Min. value display		✓	✓	
Simulation bar		✓	✓	✓
Auto turn off		✓		✓
Data hold		✓	✓	✓
Low battery warning		✓	✓	✓
Background light		✓	✓	
Relatively testing		✓	✓	✓
RS232		✓	✓	✓
Input protection		✓	✓	✓
Input resistance			10M $\Omega$	
Max display		6000	6000	22000
Power supply			9V (6F22) battery	
Weight			370g	
Dimensions (W×H×D)			180 mm×87 mm×47 mm	

POWER SUPPLY

TEST INSTRUMENT

EDU. INSTRUMENT

METER

ACCESSORY

# PORTABLE DIGITAL MULTIMETER

MU 151 SERIES



## Features

- .3 1/2 digit display (MU151F/G 4 1/2)
- .Capacitor, frequency, temperature measuring and battery testing
- .Max.test voltage up to 1000VDC and 750VAC
- .Various kinds of function: auto power off, diode test, triode test, On/Off buzzer and data hold



MU151A



MU151F

Technical Data	MU151A	MU151B	MU151C	MU151D
DC voltage (Range/Accuracy)	200mV/2V/20V/200V/ ±(0.5% +1) 1000V/±(0.8% +2)		200mV/2V/20V/200V/ ±(0.5% +1) 1000V/±(0.8% +2)	200mV/2V/20V/200V/ ±(0.5% +1) 1000V/±(0.8% +2)
AC voltage (Range/Accuracy)	2V/20V/200V/±(0.8% +3) 750V/±(1.5% +5)		2V/20V/200V/±(0.8% +3) 750V/±(1.5% +5)	2V/20V/200V/±(0.8% +3) 750V/±(1.5% +5)
DC current (Range/Accuracy)	200 μA/2mA/±(0.8% +1) 200mA/±(1.5% +1) 20A/±(2.0% +5)		2mA/20mA/±(0.8% +1) 200mA/±(1.5% +1) 20A/±(2.0% +5)	2mA/20mA/±(0.8% +1) 200mA/±(1.5% +1) 20A/±(2.0% +5)
AC current (Range/Accuracy)	200 μA/2mA/±(1.0% +3) 200mA/±(1.8% +3) 20A/±(3.0% +5)		20mA/±(1.0% +3) 200mA/±(1.8% +3) 20A/±(3.0% +5)	20mA/±(1.0% +3) 200mA/±(1.8% +3) 20A/±(3.0% +5)
Resistance (Range/Accuracy)		200 Ω/±(1.2% +2) 2k Ω/20k Ω/200k Ω/±(1.0% +2) 2M Ω/±(1.2% +2) 20M Ω/±(1.5% +2) 200M Ω/±[5.0%(reading-10) +10]		
Capacitance (Range/Accuracy)	200 μF/±(5.0% +4) Only for reference when over 100μF	2nF/20nF/2 μF ±(4.0% +3) 100 μF/±(5.0% +4)	2nF/20nF/2 μF ±(4.0% +3) 100 μF/±(5.0% +4)	2nF/20nF/2 μF ±(4.0% +3) 100 μF/±(5.0% +4)
Battery test (Range/Accuracy)	1.5V/9V/12V/±(2.5% +2)	NA	NA	NA
Frequency (Range/Accuracy)	NA	NA	NA	2kHz±(2.0% +5) 20kHz±(1.5% +5)
Temperature (Range/Accuracy)	NA	NA	-40℃~0℃/±(3% +7) >0℃~400℃/±(1% +3) >400℃~1000℃/±2.5%	NA
Diode test	✓	✓	✓	✓
Triode test			✓	✓
Data hold			✓	✓
On/Off buzzer	✓	✓	✓	✓
hFE	0~1000	0~1000	0~1000	0~1000
Auto turn off	✓	✓	✓	✓
Low battery warning	✓	✓	✓	✓
Power supply			9V (6F22) battery	
Weight			300g	
Dimensions (W×H×D)			186 mm×91 mm×39 mm	

POWER SUPPLY

TEST INSTRUMENT

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METER

ACCESSORY

# PORTABLE DIGITAL MULTIMETER

Technical Data	MU151E	MU151F	MU151G
DC voltage (Range/Accuracy)	200mV/2V/20V/200V/ ±(0.5% +1) 1000V/±(0.8% +2)	200mV/±(0.05% +3) 2V/20V/200V/±(0.1% +3) 1000V/±(0.15% +5)	200mV/±(0.05% +3) 2V/20V/200V/±(0.1% +3) 1000V/±(0.15% +5)
AC voltage (Range/Accuracy)	2V/20V/200V/±(0.8% +3) 750V/±(1.5% +5)	2V/±(0.5% +10) 20V/200V/±(0.6% +10) 750V/±(0.8% +15)	2V/20V/200V/±(0.8% +20) 750V/±(0.8% +15)
DC current (Range/Accuracy)	20mA/±(0.8% +1) 200mA/±(1.5% +1) 20A/±(2.0% +5)	2mA/20mA/±(0.5% +5) 200mA/±(0.8% +5) 20A/±(2.0% +10)	2mA/20mA/±(0.5% +5) 200mA/±(0.8% +5) 20A/±(2.0% +10)
AC current (Range/Accuracy)	20mA/±(1.0% +3) 200mA/±(1.8% +3) 20A/±(3.0% +5)	2mA/20mA/±(0.8% +10) 200mA/±(1.2% +10) 20A/±(2.5% +10)	2mA/±(1% +30) 20mA/200mA/±(1% +20) 20A/±(2% +20)
Resistance (Range/Accuracy)	200Ω/±(1.2% +2) 2kΩ/20kΩ/200kΩ/±(1.0% +2) 2MΩ/±(1.2% +2) 20MΩ/±(1.5% +2) 200MΩ/±[5.0%(reading-10) +10]	200Ω/±(0.5% +10) 2kΩ/±(0.3% +3) 20kΩ/200kΩ/2MΩ/±(0.3% +1) 20MΩ/±(0.5% +1)	200Ω/±(0.5% +10) 2kΩ/±(0.3% +3) 20kΩ/200kΩ/2MΩ/±(0.3% +1) 20MΩ/±(0.5% +1)
Capacitance (Range/Accuracy)	2nF/20nF/2μF±(4.0% +3) 100μF/±(5.0% +4)	2nF/20nF/2μF 20μF/±(4.0% +20)	20nF/2μF 20μF/±(4.0% +20)
Frequency (Range/Accuracy)	20kHz±(1.5% +5)	20kHz±(1.5% +5)	20kHz±(1.5% +5)
Temperature (Range/Accuracy)	-40°C~0°C/±(3% +7) >0°C~400°C/±(1% +3) >400°C~1000°C/±2.5%	NA	NA
Diode test	✓	✓	✓
Triode test	✓	✓	✓
Data hold	✓	✓	✓
On/Off buzzer	✓	✓	✓
hFE	0~1000	0~1000	0~1000
Auto turn off	✓	✓	✓
Low battery warning	✓	✓	✓
Power supply		9V (6F22) battery	
Weight		300g	
Dimensions (W×H×D)		186 mm×91 mm×39 mm	

POWER SUPPLY

TEST INSTRUMENT

EDU. INSTRUMENT

METER

ACCESSORY

# PORTABLE DIGITAL MULTIMETER

MU 39 SERIES



## Features

- .3 1/2 digit display (MU39E 4 1/2)
- .Capacitor, frequency and temperature measuring
- .Max.test voltage up to 1000VDC and 750VAC
- .Various kinds of function: auto power off, diode test, triode test, On/Off buzzer and data hold



MU39A



MU39E

Technical Data		MU39A	MU39B	MU39C	MU39E
DC voltage	Range	200mV/2V/20V/200V/1000V			
	Accuracy	±(0.5% +1)	±(0.5% +1)	±(0.5% +1)	±(0.05% +3)
AC voltage	Range	2V/20V/200V/750V			
	Accuracy	±(0.8% +3)	±(0.8% +3)	±(0.8% +3)	±(0.5% +10)
DC current	Range	20 μ A/200 μ A/2mA 20mA/200mA/10A	20 μ A/2mA/20mA 200mA/10A	2mA/200mA/20A	2mA/200mA/20A
	Accuracy	±(0.8% +1)	±(0.8% +1)	±(0.8% +1)	±(0.5% +5)
AC current	Range	200 μ A/20mA 200mA/10A	2mA/200mA/10A	2mA/200mA/20A	2mA/200mA/20A
	Accuracy	±(1% +3)	±(1% +3)	±(1% +3)	±(0.8% +10)
Resistance	Range	200 Ω/2k Ω/20k Ω 200k Ω/2M Ω/200M Ω	200 Ω/2k Ω/20k Ω 2M Ω/20M Ω/200M Ω	200 Ω/2k Ω/20k Ω 2M Ω/20M Ω	200 Ω/2k Ω/20k Ω 2M Ω/20M Ω
	Accuracy	±(0.8% +1)	±(0.8% +1)	±(0.8% +1)	±(0.3% +1)
Capacitance	Range	2 μ F	2nF/200nF/20 μ F	2nF/200nF/20 μ F	2nF/20nF/200nF/20 μ F
	Accuracy	±(4% +3)	±(4% +3)	±(4% +3)	±(4% +10)
Temperature	Range	NA	NA	-40°C~1000°C	NA
	Accuracy	NA	NA	±(2% +8)	NA
Frequency	Range	NA	NA	2kHz/20kHz	2kHz/20kHz
	Accuracy	NA	NA	±(1.5% +5)	±(1.5% +5)
Diode test		✓	✓	✓	✓
On/Off buzzer		✓	✓	✓	✓
Triode test		✓	✓	✓	✓
Auto power off		✓	✓	✓	✓
Data hold		✓	✓	✓	✓
Low battery warning		✓	✓	✓	✓
Input resistance		≥10MΩ			
Max display		1999	1999	1999	19999
Power supply		9V (6F22) battery			
Weight		310g			
Dimensions (W×H×D)		172 mm×83 mm×38 mm			

POWER SUPPLY

TEST INSTRUMENT

EDU. INSTRUMENT

METER

ACCESSORY

# PORTABLE DIGITAL MULTIMETER

MU 200 SERIES



## Features

.3 1/2 digit display (MU203 4 3/4)

### .Frequency measuring

.Max.test voltage up to 600VDC and 600VAC

.Max.test current up to 400ADC and 600AAC

.Various kinds of function: auto power off, diode test, On/Off buzzer, data hold and RMS



MU201



MU202A



MU203

Technical Data		MU201	MU202A	MU203
DC voltage	Range	200mV/2V/20V/200V/600V	200mV/2V/20V/200V/600V	400mV/4V/40V/400V/600V
	Accuracy	$\pm(0.8\% + 1)$	$\pm(0.8\% + 1)$	$\pm(0.8\% + 1)$
AC voltage	Range	2V/20V/200V/600V	2V/20V/200V/600V	4V/40V/400V/600V
	Accuracy	$\pm(1.2\% + 5)$	$\pm(1.2\% + 5)$	$\pm(1\% + 5)$
DC current	Range	N/A	N/A	40A/400A
	Accuracy	N/A	N/A	$\pm(2\% + 3)$
AC current	Range	2A/20A/200A/400A	2A/20A/600A	40A/400A
	Accuracy	$\pm(1.5\% + 5)$	$\pm(1.5\% + 5)$	$\pm(2.5\% + 5)$
Resistance	Range	200 $\Omega$ /2k $\Omega$ /20k $\Omega$ /200k $\Omega$ 2M $\Omega$ /20M $\Omega$	200 $\Omega$ /2k $\Omega$ /20k $\Omega$ /200k $\Omega$ 2M $\Omega$ /20M $\Omega$	400 $\Omega$ /4k $\Omega$ /40k $\Omega$ /400k $\Omega$ 4M $\Omega$ /40M $\Omega$
	Accuracy	$\pm(1\% + 2)$	$\pm(1\% + 2)$	$\pm(1\% + 2)$
Frequency	Range	NA	NA	10Hz~1MHz
	Accuracy	NA	NA	$\pm(0.1\% + 3)$
Duty cycle		NA	NA	0.1%~99.9%
Auto/Manual range		✓	✓	✓
Diode test		✓	✓	✓
On/Off buzzer		✓	✓	✓
Auto power off			✓	✓
Max. value hold		✓	✓	
Data hold		✓	✓	✓
Low battery warning		✓	✓	✓
Relatively testing				✓
Tested wire diameter			26mm	
Input resistance			$\geq 10M\Omega$	
Max display		1999	1999	3999
Power supply			9V (6F22) battery	
Weight		220g	200g	200g
Dimensions (W×H×D)			210 mm×75.6 mm×30 mm	

POWER SUPPLY

TEST INSTRUMENT

EDU. INSTRUMENT

METER

ACCESSORY

# INFRARED RAY TEMPERATURE METER

MU 300 SERIES



## Features

- .measuring range from  $-18^{\circ}\text{C}$  to  $380^{\circ}\text{C}$
- .Response time: from 250ms to 500ms
- .Various kinds of function: auto power off, data hold, Max./Min. value measuring, average/difference value display



**MU300A**



**MU301A**

Technical Data	MU300A	MU301A
Temperature range	$-18^{\circ}\text{C} \sim 280^{\circ}\text{C}$	$-18^{\circ}\text{C} \sim 380^{\circ}\text{C}$
Accuracy	$\pm 2\% / \pm 2^{\circ}\text{C}$	$\pm 1.8\% / \pm 1.8^{\circ}\text{C}$
Repeat accuracy	$\leq \pm 0.5\% / \leq \pm 0.5^{\circ}\text{C}$	$\leq \pm 0.5\% / \leq \pm 0.5^{\circ}\text{C}$
Resolution	0.1	0.1
D:S	10:1	12:1
Response time	500ms	250ms
Generate rate	0.95	0.1~1.0(0.01 per step)
Spectrum response range		8 $\mu\text{m}$ ~14 $\mu\text{m}$
Search		✓
Display hold	✓	✓
Max./Min. value display	✓	✓
Average/Difference value display		✓
Auto turn off	✓	✓
Tripod mounting hole		✓
Low battery warning	✓	✓
Power supply		9V (6F22) battery
Weight	185g	270g
Dimensions (W×H×D)	270 mm×90 mm×40 mm	169 mm×138 mm×53 mm

POWER SUPPLY

TEST INSTRUMENT

EDU. INSTRUMENT

METER

ACCESSORY

# BENCHTOP DIGITAL MULTIMETER

MT 3803/3804



## Features

- .3 1/2 digit display (MT3804 4 1/2)
- .Capacitor, frequency and temperature measuring
- .Max.test voltage up to 1000V
- .Various kinds of function: auto power off, diode test, triode test, On/Off buzzer and data hold



MT 3804

Technical Data		MT3803	MT3804
DC voltage	Range	200mV/2V/20V/200V/1000V	200mV/2V/20V/200V/1000V
	Accuracy	± (0.5%+2)	± (0.1%+3)
AC voltage	Range	2V/20V/200V/1000V	2V/20V/200V/1000V
	Accuracy	± (0.8%+3)	± (0.5%+20)
DC current	Bandwidth	45Hz~400Hz	45Hz~400Hz
	Range	200 μ A/2mA/20mA/200mA/10A	200 μ A/2mA/20mA/200mA/10A
AC current	Accuracy	± (0.8%+2)	± (0.5%+20)
	Range	2mA/20mA/200mA/10A	2mA/20mA/200mA/10A
Resistance	Accuracy	± (1.0%+3)	± (0.8%+40)
	Bandwidth	45Hz~400Hz	45Hz~400Hz
Capacitor	Range	200Ω/2kΩ/20kΩ/200kΩ 2MΩ/20MΩ/200MΩ	200Ω/2kΩ/20kΩ/200kΩ 2MΩ/20MΩ/200MΩ
	Accuracy	± (0.8%+3)	± (0.5%+10)
Temperature	Test Current	0.7 μ A~1mA	0.7 μ A~1mA
	Range	-40°C~1000°C	-40°C~1000°C
Frequency	Accuracy	± (1.2%+3)	± (1.2%+25)
	Range	2kHz/200kHz	2kHz/200kHz
Diode test	Accuracy	± (1.5%+5)	± (1.2%+10)
	Input Sencitivity	40mVrms	40mVrms
On/Off buzzer		✓	✓
Triode test		✓	✓
Data hold		✓	✓
Background light		✓	✓
Low battery warning		✓	✓
Max display		1999	19999
Power supply		AC 220V/50Hz or R14 1.5V*6	
Weight		1.5kg	
Dimensions (W×H×D)		240×105×370mm	

POWER SUPPLY

TEST INSTRUMENT

EDU. INSTRUMENT

METER

ACCESSORY

# BENCHTOP DIGITAL MULTIMETER

MT 3805



## Features

- .5 1/2 digit display
- .USB and RS232 interface
- .Capacitor and frequency measuring
- .Max.test voltage up to 1000VDC and 750VAC
- .Various kinds of function: auto measuring range diode test, triode test, On/Off buzzer and data hold



**MT 3805**

### Technical Data

### MT3805

DC voltage	Range	200mV/2V/20V/200V/1000V
	Accuracy	±(0.006%+2)
AC voltage	Range	200mV/2V/20V/200V/750V
	Accuracy	±(0.1%+100)
	Bandwidth	40Hz~100kHz
DC current	Range	2mA/200mA/10A
	Accuracy	±(0.03%+10)
	Range	2mA/200mA/10A
AC current	Accuracy	±(0.3%+100)
	Bandwidth	40Hz~5kHz
	Range	200Ω/2kΩ/20kΩ/200kΩ/2MΩ/20MΩ
Resistance	Accuracy	±(0.01%+8)
	Range	6nF/60nF/600nF/6μF/60μF/600μF/6mF
Capacitor	Accuracy	±(2%+5)
	Range	10Hz~60MHz
	Accuracy	±(0.1%+3)
Frequency	Input range	1Hz~1MHz: 150mV~30Vrms >1MHz~10MHz: 300mV~30Vrms >10MHz~50MHz: 600mV~30Vrms >50MHz: Not Specified
	Diode test	✓
On/Off buzzer		✓
Triode test		✓
Data hold		✓
Auto measuring range		✓
RS232C		✓
USB		✓
Full character display		✓
Sleep mode		✓
Input resistance	Range 200mV and 2V: 1GΩ, other range: 10MΩ	
Max display	220000	
Power supply	AC 220V/50Hz	
Weight	2.9kg	
Dimensions (W×H×D)	240×105×370mm	

POWER SUPPLY

TEST INSTRUMENT

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# SCOPE DIGITAL MULTIMETER

SMM81 SERIES



## Features

- .Scope and digital multimeter in one unit
- .Compact design for easy carrying and operating



**SMM81B**

Technical Data	Range	Best accuracy	
		SMM81A	SMM81B
DC voltage	400mV/4V/40V/400V/1000V	±(0.8%+8)	±(0.8%+8)
AC voltage	4V/40V/400V/750V	±(1%+15)	±(1%+15)
DC current	400 μ A/4mA/40mA/400mA/4A/10A	±(1%+8)	±(1%+8)
AC current	400 μ A/4mA/40mA/400mA/4A/10A	±(1.5%+8)	±(1.5%+8)
Resistance	400Ω/4kΩ/40kΩ/400kΩ/4MΩ/40MΩ	±(1%+5)	±(1%+5)
Capacitance	40nF/400nF/4 μ F/40 μ F/100 μ F	±(3%+8)	±(3%+8)
Frequency	10Hz~10MHz	±(0.1%+3)	±(0.1%+3)
Vertical accuracy		±(5%+1)	±(5%+1)
Input sensitivity	20mV/div~500Vdiv (1-2-5)	√	√
Horizontal accuracy		±(0.01%+1)	±(0.01%+1)
Timebase range	100ns/div~5s/div (1-2-5)	√	√
Bandwidth		2MHz	8MHz
Display resolution	160×160	√	√
Real-time sample rate		20MSa/s	40MSa/s
Duty cycle	0.1%~99.9%	√	√
<b>Special functions</b>			
Diode		√	√
Continuity buzzer		√	√
Display	160×160 monochrome	√	√
Trigger types	Free run/normal/single shot	√	√
Memory	10 screens and setups	√	√
Contrast and bridge setup		√	√
Input impedance for DC voltage measurement	Around 10MΩ	√	√
Sleep mode		√	√
Low battery display		√	√
Display backlight		√	√
USB		√	√
DMM Max. display	3999	√	√
Power	1.5V battery (R6)×4		
LCD size	60×60mm		
Dimensions(W×H×D)	200×100×48mm		
Weight	0.5kg		
Standard accessories	Test lead, battery, manual, alligator clip, USB interface cable, software, carrying bag (SMM81B), power adaptor (SMM81B)		
Optional accessories	Scope probe, BNC probe, power adaptor (SMM81A)		

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