2021 PRODUCT MANUAL

THE EXPERT OF DC LINEAR POWER SUPPLY

MATRIX TECHNOLOGY INC.

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COMPANY INTRODUCTION

Founded in year 2003, MATRIX TECHNOLOGY INC. is an integration of research and development, production and sales. Since its inception, MATRIX has been focused on development and production of AC/DC power supplies, electronic loads, power meters, LCR meter and other general-purpose instruments. Due to excellent quality and fabulous service, their products have been sold to more than 80 countries and regions all over the world, and have been highly praised and recommended by majority of customers. MATRIX has obtained ISO9001, CE and other authoritative certifications. MATRIX will continue to focus on development and production of DC power supply and other related products, to provide users with more reliable, more durable, more humanized design of products.

CONTENTS

Single-channel Linear DC Power Supply

MPS-D+ Series

- Current pre-set without short circuit, namly can set the max output current directly;
- Smart fan reduce the working noise;
- Spec:30V/3A, 30V/5A, 60V/3A, 30V/10A, 60V/5A
- OTP protect your machine better;
- Output on/off function;
- Fine/coarse tuning

Model		MPS-3003D+	MPS-3005D+	MPS-3010D+	MPS-6003D+	MPS-6005D+
Input feature						
Input voltage		AC 220V/110V±10% 50Hz/60Hz				
Fuse	220V AC	3.15A	5A	8A	5A	8A
	110V AC	5A	8A	12A	8A	12A
MAX.Input power		165W	275W	520W	325 W	520W
Rated output	Voltage	0-30V	0-30V	0-30V	0-60V	0-60V
	Current	0-3A	0-5A	0-10A	0-3A	0-5A
Load regulation rate	Voltage	<0.02%+5mV	<0.02%+6mV	<0.02%+10mV	<0.02%+5mV	<0.02%+6mV
	Current	<0.2%±1digits	<0.2%±1digits	<0.2%±1digits	<0.2%±1digits	<0.2%±1digits
Line regulation rate	Voltage	<0.02%+5mV	<0.02%+6mV	<0.02%+10mV	<0.02%+5mV	<0.02%+6mV
	Current	<0.2%±1digits	<0.2%±1digits	<0.2%±1digits	<0.2%±1digits	<0.2%±1digits
Display resolution		100mV/10mA				
Display accuracy		≤0.2%+2 digits(Environment temperature: 23℃±5℃)				
Ripple	Voltage	≤2mVrms	≤2mVrms	≤3mVrms	≤2mVrms	≤2mVrms
	Current	5mArms	5mArms	10mArms	5mArms	5mArms
Temperature coefficient		300ppm/℃				
Max. output voltage		31.5V±0.5V	31.5V±0.5V	31.5V±0.5V	61.5V±0.5V	61.5V±0.5V
Max. output current		3.15A±0.05A	5.20A±0.05A	10.1A±0.05A	3.15A±0.05A	5.20A±0.05A
Working condition		Temperature 0℃ ~40 ℃Relative humidity < 80%				
Storage condition		Temperature -15℃~70 ℃Relative humidity < 80%				
Cooling method		Smart air cooling				
Size (WxHxD)		280mm*130mm*160mm				
Weight	Net weight	4.9Kg	5.7Kg	7.0Kg	5.7Kg	7.0Kg
	Gross weight	5.6Kg	6.4Kg	7.7Kg	6.4Kg	7.7Kg

Single-channel Linear DC Power Supply

MPS-H-1 Series

- 1mV/1mA resolution
- Current can be set without short circuit;
- Current and voltage output can be set in a certain range, which avoid over tuning to break tested object
- Slow startup circuit design, so that the startup current pulse is smaller
- Voltage compensation function to ensure high precision
- USB, RS-232/485 are optional
- Two groups memory, can be recalled quickly
- Current and voltage adjusting knob adopts coding switch design, easy to use, long life, low failure rate
- OVP/OCP function

≤600W Linear DC power supply

Model	Voltage	Current	Power
MPS-3010H-1	0-30V	0-10A	300W
MPS-3020H-1	0-30V	0-20A	600W
MPS-2030H-1	0-20V	0-30A	600W
MPS-6005H-1	0-60V	0-5A	300W
MPS-6010H-1	0-60V	0-10A	600W
MPS-10003H-1	0-100V	0-3A	300W
MPS-10005H-1	0-100V	0-5A	500W
MPS-16003H-1	0-160V	0-3A	480W
MPS-20002H-1	0-200V	0-2A	400W
MPS-30001H-1	0-300V	0-1A	300W

Model		MPS-3010H-1	MPS-3020H-1	MPS-2030H-1	MPS-6005H-1	MPS-6010H-1
Input voltage		AC 220V/110V±10% 50Hz/60Hz				
Rated output	Voltage	0~30V	0~30V	0~20V	0~60V	0~60V
	Current	0~10A	0~20A	0~30A	0~5A	0~10A
Load regulation rate	Voltage	≤0.01%+10mV	≤0.01%+10mV	≤0.01%+10mV	≤0.01%+5mV	≤0.01%+5mV
	Current	≤0.2%+5mA	≤0.2%+5mA	≤0.2%+5mA	≤0.2%+5mA	≤0.2%+5mA
Line regulation rate	Voltage	≤0.01%+10mV	≤0.01%+10mV	≤0.01%+10mV	≤0.01%+5mV	≤0.01%+5mV
	Current	≤0.2%+5mA	≤0.2%+5mA	≤0.2%+5mA	≤0.2%+5mA	≤0.2%+5mA
Setting resolution	Voltage	1mV	1mV	1mV	1mV	1mV
	Current	1mA	1mA	1mA	1mA	1mA
Setting accuracy	Voltage	≤0.01%+10mV	≤0.01%+10mV	≤0.01%+10mV	≤0.01%+10mV	≤0.01%+10mV
	Current	≤0.1%+5mA	≤0.1%+10mA	≤0.1%+10mA	≤0.1%+5mA	≤0.1%+5mA
Readback resolution	Voltage	1mV	1mV	1mV	1mV	1mV
	Current	1mA	1mA	1mA	1mA	1mA
Readback accuracy	Voltage	≤0.01%+10mV	≤0.01%+10mV	≤0.01%+10mV	≤0.01%+10mV	≤0.01%+10mV
	Current	≤0.1%+5mA	≤0.1%+10mA	≤0.1%+10mA	≤0.1%+5mA	≤0.1%+5mA
Ripple and noise	Voltage	≤3mV(rms)				
	Current	≤5mA(rms)				
Working temperature		0~40℃ ≤80%RH				
Size (WxHxD)	cm	250*150*330				
Weight	kg	13				

Triple channel linear DC power supply

MPS-H-3 Series

- One key series and parallel independent setting, convenient and easy to use
- In series or parallel, direct display of current and voltage values, no need to calculate
- 4 digits display, 10mV/1mA resolution
- CH1 and CH2 can be controlled independently
- Current can be set without short circuit;
- Slow startup circuit design, so that the startup current pulse is smaller
- USB, RS-232/485 are optional
- Current and voltage output can be set in a certain range, which avoid over tuning to break tested object
- Current and voltage adjusting knob adopts coding switch design, easy to use, long life, low failure rate
- OVP/OCP function

Model		MPS-3003H-3			MPS-3005H-3			MPS-3010H-3			MPS-6003H-3			MPS-6005H-3		
Parameter		CH1	CH2	CH3	CH1	CH2	CH3	CH1	CH2	CH3	CH1	CH2	CH3	CH1	CH2	CH3
Rated output	Voltage	0~30V	0~30V	5V	0~30V	0~30V	5V	0~30V	0~30V	5V	0~60V	0~60V	5V	0~60V	0~60V	5V
	Current	0~3A	0~3A	3A	0~5A	0~5A	3A	0~10A	0~10A	3A	0~3A	0~3A	3A	0~5A	0~5A	3A
Load regulation	Voltage	≤0.01%+5mV		≤15mV	≤0.01%+5mV		≤15mV	≤0.01%+8mV		≤15mV	≤0.01%+5mV		≤15mV	≤0.01%+5mV		≤15mV
	Current	≤0.1%+5mA		-	≤0.1%+5mA		-	≤0.1%+5mA		-	≤0.1%+5mA		-	≤0.1%+5mA		-
Line regulation	Voltage	≤0.01%+5mV		-	≤0.01%+5mV		-	≤0.01%+8mV		-	≤0.01%+5mV		-	≤0.01%+5mV		-
	Current	≤0.1%+5mA		-	≤0.1%+5mA		-	≤0.1%+5mA		-	≤0.1%+5mA		-	≤0.1%+5mA		-
Set resolution	Voltage	10mV		-	10mV		-	10mV		-	10mV		-	10mV		-
	Current	1mA		-	1mA		-	1mA		-	1mA		-	1mA		-
Readback resolution	Voltage	10mV		-	10mV		-	10mV		-	10mV		-	10mV		-
	Current	1mA		-	1mA		-	1mA		-	1mA		-	1mA		-
Set value accuracy	Voltage	≤0.03%+10mV		-	≤0.03%+10mV		-	≤0.03%+10mV		-	≤0.03%+10mV		-	≤0.03%+10mV		-
	Current	≤0.1%+5mA		-	≤0.1%+5mA		-	≤0.1%+5mA		-	≤0.1%+5mA		-	≤0.1%+5mA		-
Readback accuracy	Voltage	≤0.03%+10mV		-	≤0.03%+10mV		-	≤0.03%+10mV		-	≤0.03%+10mV		-	≤0.03%+10mV		-
	Current	≤0.1%+5mA		-	≤0.1%+5mA		-	≤0.1%+5mA		-	≤0.1%+5mA		-	≤0.1%+5mA		-
Parallel mode	Power effect	≤0.01%+5mV		-	≤0.01%+5mV		-	≤0.02%+8mV		-	≤0.02%+5mV		-	≤0.02%+5mV		-
	Load effect	≤0.01%+5mV		-	≤0.02%+5mV		-	≤0.02%+8mV		-	≤0.02%+5mV		-	≤0.02%+5mV		-
Serial mode	Power effect	≤0.01%+5mV		-	≤0.01%+5mV		-	≤0.01%+8mV		-	≤0.01%+5mV		-	≤0.01%+5mV		-
	Load effect	≤0.01%+5mV		-	≤0.02%+5mV		-	≤0.01%+8mV		-	≤0.01%+5mV		-	≤0.01%+5mV		-
Ripple and Noise	Voltage	≤2mV(rms)														
	Current	≤5mA(rms)														
Working temperature		0~40℃ ≤80%RH														
Size (W*H*D)	mm	250*150*330														
Weight	kg	8			9			12			9			9		

Programmable Single-channel DC Power Supply

MPS-3600LP Series

MPS3600LP series is a new generation of programmable DC power supply with high quality. Both desktop and system characteristics are available, it can be arbitrarily collocation with other instruments to integrate a test system for special functions, to complete the measurement requirements of different occasions, to store and retrieve voltage and current data quickly through panel keyboard, which brings great convenience for users, is a good replacement of the ordinary programmable power supply, high cost performance advantages.

Simultaneously control 4 instruments, automatically determine the upper and lower limits, and record the test results.

Simultaneously control 4 instruments to switch to different conditions for cyclic testing, and record the results and waveform monitoring.

Battery charging mode, can measure and record the charging waveform and charging data and capacity.

- The digital keyboard and knob adjust the voltage and current in two ways
- Voltage 10mV, current 1mA resolution
- 9 groups voltage current storage call function
- The upper and lower limits of current setting function bring alarm
- Stylish and small, affordable and cost-effective
- Linear power supply, low ripple and noise
- Standard computer interface RS-232

Model		MPS-3603LP	MPS-3605LP	MPS-3610LP	MPS-6003LP	MPS-6005LP
Rated output voltage		0~36V	0~36V	0~36V	0~60V	0~60V
Rated output current		0~3A	0~5A	0~10A	0~3A	0~5A
Voltage transforming way		Linear power supply				
Load regulation rate	Voltage	0.05%+5mV	0.05%+8mV	0.05%+10mV	0.05%+5mV	0.05%+8mV
	Current	0.1%+5mA	0.1%+5mA	0.1%+8mA	0.1%+5mA	0.1%+5mA
Line regulation	Voltage	0.05%+5mV	0.05%+8mV	0.05%+10mV	0.05%+5mV	0.05%+8mV
	Current	0.1%+5mA	0.1%+5mA	0.1%+8mA	0.1%+5mA	0.1%+5mA
Setting value resolution	Voltage	10mV				
	Current	1mA				
Accuracy of set points	Voltage	≤0.1%+2 byte				
	Current	≤0.2%+3byte	≤0.2%+3byte	≤0.2%+6byte	≤0.2%+3byte	≤0.2%+3byte
Readback value resolution	Voltage	10mV				
	Current	1mA				
Readback value accuracy	Voltage	≤0.1%+2byte	≤0.1%+2byte	≤0.1%+2byte	≤0.1%+2byte	≤0.1%+2byte
	Current	≤0.2%+3byte	≤0.2%+3byte	≤0.2%+6byte	≤0.2%+3byte	≤0.2%+3byte
Ripple	Voltage	1mVrms				
	Current	3mArms				
Temperature environment	Operation	0 to 40℃≤85RH				
	Storage	-15to70℃≤85RH				
Net weight	kg	4.5	6.7	7.5	7.5	7
Gross weight	kg	5.6	7.8	8.6	8.6	8
Instrument size (W*H*D)	mm	215*95*300	215*95*300	215*95*355	215*95*355	215*95*355
Packing size (W*H*D)	mm	310*200*420				

Programmable Single-channel DC Power Supply

MPS-3600H Series

- The digital keyboard and knob adjust the voltage and current in two ways
- Voltage 1mV, current 0.1mA resolution
- 9 groups voltage current storage call function
- The upper and lower limits of current setting function bring alarm
- Stylish and small, affordable and cost-effective
- Linear power supply, low ripple and noise
- Standard computer interface RS-232

Simultaneously control 4 instruments, automatically determine the upper and lower limits, and record the test results.

Simultaneously control 4 instruments to switch to different conditions for cyclic testing, and record the results and waveform monitoring.

Battery charging mode, can measure and record the charging waveform and charging data and capacity.

Model		MPS-3605H	MPS-6003H
Rated output voltage		0~36V	0~60V
Rated output current		0~5A	0~3A
Quota output power		180W	180W
Load regulation rate	Voltage	< 0.0 2 %+8mV	< 0.02%+5mV
	Current	< 0.02%+5mA	< 0.05%+5mA
Line regulation	Voltage	< 0.02%+8mV	< 0.02%+5mV
	Current	< 0.02%+5mA	< 0.02%+5mA
Setting value resolution	Voltage	1mV	
	Current	0.1mA	
Readback value resolution	Voltage	1mV	1mV
	Current	0.1mA	0.1mA
Setting accuracy (25℃±5℃)	Voltage	≤0.05%+8mV	≤0.05%+8mV
	Current	≤0.1%+3mA	≤0.1%+2mA
Readback accuracy (25℃±5℃)	Voltage	≤0.05%+8mV	≤0.05%+8mV
	Current	≤0.1%+3mA	≤0.1%+2mA
Ripple and noise (25℃±5℃)	Voltage	1.5mVrms	
	Current	3mArms	
Temperature Coefficient	Operation	200ppm	
	Storage	200ppm	
Net weight	kg	5.7	5.7
Gross weight	kg	6.7	6.7
Instrument size (W*H*D)	mm	215*95*355	
Packing size (W*H*D)	mm	310*200*420	

Programmable Single-channel DC Power Supply

PDS Series

PDS series is a new generation of high quality programmable DC power supply. Both desktop and system are available, can be arbitrary collocation with other instruments, integrate to the multi- functional test system, to complete the measurement requirements in different occasions, is also a good replacement of the ordinary programmable power supply, with high cost performance advantages.

- The digital keyboard and knob adjust the voltage and current in two ways
- Voltage 1mV, current 1mA resolution
- 100 sets of voltage and current storage call
- Rear panel remote measuring terminal is used to compensate online voltage drop
- Overvoltage, current limit, overcurrent and overheat protection.
- Linear power supply, low ripple and noise
- Standard computer interface RS-232

Model	Voltage	Current	OVP	OCP
Rated DC output (0℃~40℃)				
PDS-2030	0~20V	0~30A	0.1~24V	0.1~34A
PDS-3020	0~30V	0~20A	0.1~34V	0.1~24A
PDS-6010	0~60V	0~10A	0.1~64V	0.1~12A
PDS-1560	0~15V	0~60A	0.1~18V	0.1~62A
PDS-3030	0~30V	0~30A	0.1~34V	0.1~34A
PDS-6015	0~60V	0~15A	0.1~64V	0.1~17A
PDS-8010	0~80V	0~11A	0.1~88V	0.1~12A

Power effect	Voltage	≤0.01%+10mV
	Current	≤0.2%+10mA
Load effect	Voltage	≤0.1%+5mV
	Current	≤0.2%+5mA
Ripple and noise	Voltage	2mVrms,30mVpp
	Current	≤10mArms
Setting precision	Voltage	±(0.03%of reading+10mV)(25±5℃)
	Current	±(0.3%of reading+10mA)(25±5℃)
Setting resolution		1mV / 1mA
Voltage Recovery time		≤1.5ms(50%loadchange)
Voltage Temperature coefficient		≤300ppm/℃
Accuracy of reading		±(0.02%ofreading+5mV)(25±5℃);±(0.05%ofreading+10mA)(25±5℃)
Protection		Overload protection, polarity reverse protection, overvoltage protection, overcurrent protection, overheat protection
Interface		Standard RS-232, support SCPI instruction set, analog control interface (optional)
Storage redeploymen		100 groups
Operating environment		Indoor use , altitude : ≤2000m , ambient temperature : 0~40℃ Relative humidity : ≤80% , Install level : Ⅱ , Degree of pollution : 2
Storage environment		ambient temperature : -10~70℃ , relative humidity : ≤70%
Power input		AC 220V±10%,50/60Hz
Accessories		user manual*1pc, power cord*1pc
Instrument size (W*H*D)	mm	220*150*400
Packing size (W*H*D)	mm	310*200*480
Net weight	kg	4.6
Gross weight	kg	5.6

Programmable Tri-channel DC Power Supply

MPS-X/XP Series

Tri-channel programmable DC power supply is with high resolution, high precision and high stability, Over-voltage and over-heat protection are available.Series and parallel operation are also provided .The resolution is 1 mV / 1 mA.

Applications

- Production line work bench routine test
- Lab and institute
- Electronic repair
- Automated equipment integration testing

- Three channels show and adjust current and voltage at the same time
- Intelligent temperature controlled fun to redu cethe noise
- Serial/ Parallel/ Track mode
- Low ripple and noise
- Can be calibrated and monitored through computers
- With SENSE function, can compensate for voltage drop on the line
- Output time can be set(0~99999. 9s)
- Output controlled by a switch
- 40 groups of storage can be quickly called

Model		MPS-3033X	MPS-3063X	MPS-6033X	MPS-3033XP	MPS-3063XP	MPS-6033XP
Rated output	Voltage	0~30V*2/0~6V*1	0~30V*2/0~6V*1	0~60V*2/0~6V*1	0~30V*3	0~30V*3	0~60V*3
	Current	0~3A*2/0~3A*1	0~6A*2/0~3A*1	0~3A*2/0~3A*1	0~3A*3	0~6A*3	0~3A*3
Load regulation	Voltage	≤0.01%+3mV					
	Current	≤0.01%+3mA					
Line regulation	Voltage	≤0.01%+3mV					
	Current	≤0.01%+3mA					
Set resolution	Voltage	1mV					
	Current	1mA					
Readback resolution	Voltage	1mV					
	Current	1mA					
Set value accuracy	Voltage	≤0.03%+10mV					
	Current	≤0.1%+5mA	≤0.1%+8mA	≤0.1%+5mA	≤0.1%+5mA	≤0.1%+8mA	≤0.1%+5mA
Readback accuracy	Voltage	≤0.03%+10mV					
	Current	≤0.1%+5mA	≤0.1%+8mA	≤0.1%+5mA	≤0.1%+5mA	≤0.1%+8mA	≤0.1%+5mA
Ripple and noise	Voltage (rms)	≤2mVrms					
	Current	≤5mArms					
Series / parallel set -point value accuracy	Voltage	≤0.02%+5mV	≤0.02%+10mV	≤0.02%+5mV	≤0.02%+10mV	≤0.02%+10mV	≤0.02%+5mV
	Current	≤0.1%+30mA					
Storage	Storage/Call	40 groups					
	Function	timed output off					
Timer	Time set	0.1s~99999.9s					
	Resolution	0.1s					
Interface		RS232,USB					
Working temperature		0~40℃					
Equipment size (W*H*D)	mm	255*110*380	255*110*380	255*110*380	255*110*380	255*110*380	255*110*380
Packing size (W*H*D)	mm	325*210*475	325*210*475	325*210*475	325*210*475	325*210*475	325*210*475
N.W	kg	8.5	8.5	8.5	11	11	11
G.W	kg	10	10	10	13	13	13

Programmable Tri-channel DC Power Supply

MPS-S Series

Tri-channel programmable DC power supply is with high resolution, high precision and high stability, Over-voltage and over-heat protection are available.Series and parallel operation are also provided .The resolution is 10mV / 1 mA.

Applications

- Production line work bench routine test
- Lab and institute
- Electronic repair
- Automated equipment integration testing

- Three channels show and adjust current and voltage at the same time
- Intelligent temperature controlled fun to redu cethe noise
- Serial/ Parallel/ Track mode
- Low ripple and noise
- Can be calibrated and monitored through computers
- With SENSE function, can compensate for voltage drop on the line
- Output time can be set(0~99999. 9s)
- Output controlled by a switch
- 40 groups of storage can be quickly called

Model		MPS-3033S			MPS-3063S			MPS-6033S		
Parameter		CH1	CH2	CH3	CH1	CH2	CH3	CH1	CH2	CH3
Rated output	Voltage	0~31V	0~31V	0~6V	0~31V	0~31V	0~6V	0~61V	0~61V	0~6V
	Current	0~3A	0~3A	0~3A	0~6A	0~6A	0~3A	0~3A	0~3A	0~3A
Load regulation	Voltage	≤0.01%+3mV								
	Current	≤0.01%+3mA								
Line regulation	Voltage	≤0.01%+3mV								
	Current	≤0.01%+3mA								
Set resolution	Voltage	10mV								
	Current	1mA								
Readback resolution	Voltage	10mV								
	Current	1mA								
Set value accuracy	Voltage	≤0.03%+2byte								
	Current	≤0.1%+5mA			≤0.1%+8mA			≤0.1%+5mA		
Readback accuracy	Voltage	≤0.03%+2byte								
	Current	≤0.1%+5mA			≤0.1%+8mA			≤0.1%+5mA		
Ripple and noise	Voltage (rms)	≤2mVrms								
	Current	≤5mArms								
Series / parallel set -point value accuracy	Voltage	≤0.02%+2byte								
	Current	≤0.1%+30mA								
Storage	Storage/Call	40 groups								
	Function	timed output off								
Timer	Time set	0.1s~99999.9s								
	Resolution	0.1s								
Interface		RS232,USB								
Working temperature		0~40℃								
Equipment size (W*H*D)	mm	255*110*380								
Packing size (W*H*D)	mm	325*210*475								
N.W	kg	8.5								
G.W	kg	10								

DC Power Supply

MPS-3206

- Voltage and current simultaneously display, double four-digit LED display
- High power up to 192W with small volume
- Ultra lightweight design, bare machine weight only 1.4kg
- Smart fan, unique air duct design keeps normal temperature for long time full load working
- Five sets of storage functions, greatly conve nient for users
- OVP/OCP setting function
- Encoder sets voltage and curent. Fast and longer life
- Output power switch function;

Rated operation condition

Operation voltage: AC 110V/220V ± 10% 50Hz

Operation condition:
Temperature 0~40℃
Relative humidity ⩽80%RH

Storage condition
Temperature –15℃~60℃
Relative humidity ⩽80%RH

Model	MPS–3206
Output Voltage	0–32V
Output Current	0–6.1A
Voltage	
Load regulation	⩽0.1%+5mV
Line regulation	⩽0.01%+5mV
Setting resolution	10mV
Setting accuracy	⩽0.1%+1 digits
Recall resolution	10mV
Recall accuracy	⩽0.1%+1 digits
Ripple	10mVrms
Current	
Load regulation rate	⩽0.2%+3mA
Load regulation	⩽0.2%+3mA
Line regulation	⩽0.2%+3mA
Setting resolution	1mA
Setting accuracy	⩽0.2%+3mA
Recall resolution	1mA
Recall accuracy	⩽0.2%+3 digits
Ripple	5mArms
OVP	0-32V±0.2%FS
Max. voltage	32V±0.2%
OCP	0-6.1A±0.2%FS
Max. current	0-6.1A±0.2%
Operating	0°C~40°C, ⩽80%RH
Storage	-15°C~60°C, ⩽80%RH
Cooling mode	Air cooling
Temperature	23°C ±5°C
Net weight (kg)	1.4
Gross weight (kg)	1.9
Instrument size (W*H*D)	115*96*261
Packing size (W*H*D)	167*153*317

Wide range programmable DC power supply (900W/1500W)

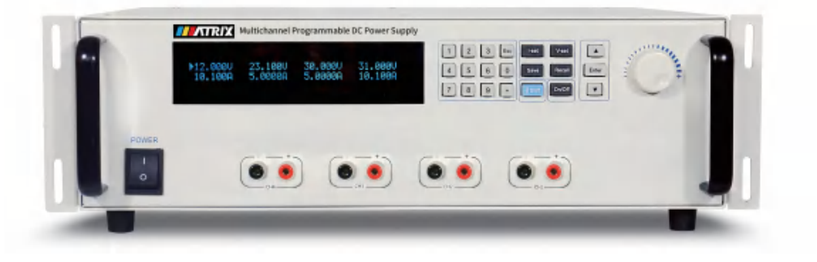
WPS series

- CV, CC, CP modes; CV / CC priority;
- 16-bit readback capability for precision V & I measurement;
- Programmable sequence waveforms;
- Voltage & current slew rate control;
- 1ms typical transient response;
- Voltage ramp function (time range: 10 ms ~ 99 hours);
- Internal resistance simulating;
- Wide range of voltage & current within the power rating of the power supply;
- Remote sense voltage compensation;
- Digital/analog composite signal monitor & control port (optional);
- OVP, OCP, OPP, OTP, LVP, etc. protections;
- Standard RS232, LAN, optional GPIB and CAN ports;
- Support SCPI, ModBus and Can-Open protocol;

Model (900W)		WPS900-40-80	WPS900-80-40	WPS900-150-20	WPS900-300-10	WPS900-600-5
Voltage		0-40V	0-80V	0-150V	0-300V	0-600V
Current		0-80A	0-40A	0-20A	0-10A	0-5A
Model (1500W)		WPS1500-40-80	WPS1500-80-40	WPS1500-150-20	WPS1500-300-10	WPS1500-600-5
Voltage		0-40V	0-80V	0-150V	0-300V	0-600V
Current		0-80A	0-40A	0-20A	0-10A	0-5A
Voltage programming	Resolution	16Bits				
	Accuracy	0.1%+0.1%F.S.				
Current programming	Resolution	16Bits				
	Accuracy	0.1%+0.2% F.S.				
External analog programming	Control voltage	0 ~ 5V corresponds to 0 ~ 100%F.S.				
	Voltage accuracy	0.2%F.S.				
	Current accuracy	0.5%F.S.				
Analog output	Output voltage	0 ~ 100%F.S. corresponds to 0 ~ 5V.				
	Voltage accuracy	0.5%F.S.				
	Current accuracy	0.5%F.S.				
Line regulation	Voltage	0.01%+0.01%F.S.				
	Current	0.02%+0.01%F.S.				
Load regulation	Voltage	0.01%+0.05%F.S.				
	Current	0.02%+0.1%F.S.				
Voltage measurement	Resolution	16Bits				
	Accuracy	0.1%+0.1%F.S.				
Current measurement	Resolution	16Bits				
	Accuracy	0.1%+0.2%F.S.				
Output noise & ripple	Ripple Vpp	40mV	60mV	80mV	150mV	300mV
	Ripple Vrms	10mV	20mV	20mV	30mV	60mV
Slew rate	Voltage	5V/ms(max)				
	Current	2A/ms(max)				
OVP setting	Range	0 ~ 110%F.S.				
	Accuracy	1%F.S.				
Transient response		Typical 1ms, voltage recover to the designed accuracy after a 50% change of load				
Efficiency		0.9(Typical)				
Communication		RS232, LAN				
INPUT		190VAC ~ 265VAC, 47Hz ~ 63Hz, PF: 0.99(Typical)				
Working temp		0℃ ~ 40℃				
Storage temp		-20℃ ~ 70℃				
Altitude		< 2000m				
Size (W*H*D)mm		215 ×88×452.5				
Weight (kg)		7				

4CH programmable DC power supply

MPS-4 Series



- 4 in 1 is easy to install and takes up little space
- Output voltage and current: 30V10A or 60V5A (30V/3A,30V/5A,60V/3A can be customized)
- Each channel is independently adjustable and isolated from each other
- Four channels simultaneously display voltage and current
- Voltage compensation function to ensure accuracy
- 1mV/0.1mA high resolution
- Linear power supply, low ripple
- Panel operation, it is convenient to be used independently

Model		MPS-30104	MPS-6054
Rated output voltage		0~30V*4CH	0~60V*4CH
Rated output current		0~10A*4CH	0~5A*4CH
Transformation method		Linear power supply	
Load regulation rate	Voltage	≤0.02%+5mV	
	Current	≤0.02%+5mA	
Line regulation	Voltage	≤0.02%+5mV	
	Current	≤0.02%+5mA	
Set value resolution	Voltage	1mV	
	Current	0.1mA	
Setting accuracy (25℃±5℃)	Voltage	≤0.05%+5 digits	
	Current	≤0.05%+2mA	
Readback resolution	Voltage	1mV	
	Current	0.1mA	
Readback accuracy	Voltage	≤0.05%+5digits	
	Current	≤0.05%+2mA	
Temperature Coefficient	Operating nvironment	0 to 40 ℃ ≤ 80 R.H.	
	Storage environment	-15 to 70 ℃ ≤ 80 R.H	
size (W*H*D)	mm	480*142*370	
weight	kg	-	

5CH programmable DC power supply

MPS-5 Series

- 5 in 1, easy to operate, small volume;
- 30V/3A, 30V/5A, 60V/3A five channel are isolated
- Voltage compensation function improves accuracy
- 1mV/0.1mA high resolution
- Linear power supply, low ripple and noise
- Panel operation, it is convenient to be used independently
- 1, 2, 3, 4, 5 channels can be chosen according to demand.

Model		MPS-3035	MPS-3055	MPS-6035
Rated output voltage		0~30V*5CH	0~30V*5CH	0~60V*5CH
Rated output current		0~3A*5CH	0~5A*5CH	0~3A*5CH
Transformation method		Linear power supply		
Load regulation rate	Voltage	≤0.02%+5mV		
	Current	≤0.02%+5mA		
Line regulation	Voltage	≤0.02%+5mV		
	Current	≤0.02%+5mA		
Set value resolution	Voltage	1mV		
	Current	0.1mA		
Setting accuracy (25℃±5℃)	Voltage	≤0.05%+5 digits		
	Current	≤0.05%+2mA		
Readback resolution	Voltage	1mV		
	Current	0.1mA		
Readback accuracy	Voltage	≤0.05%+5digits		
	Current	≤0.05%+2mA		
Temperature Coefficient	Operating nvironment	0 to 40 ℃ ≤ 80 R.H.		
	Storage environment	-15 to 70 ℃ ≤ 80 R.H		
size (W*H*D)	mm	480*142*370		
weight	kg	24.3		

Bench Switch DC Power Supply

MPS-M Series

- Plastic panel, beautiful and generous. Handle design for easy transportation.
- Coarse and fine adjustments are set for voltage and current to accurately adjust the voltage and current values
- Automatic conversion between constant voltage(CV) and constant current(CC), which can be used as a constant voltage source or as a constant current source
- Perfect protection: adjustable over voltage protection (OVP), short circuit current limit protection (OCP), over temperature protection (OTP), over power protection (OPP)
- Reasonable circuit design, original imported key components, long-term full-load use of PWM switching mode, light weight, high efficiency, energy saving and environmental protection

Application

- Production line work test
- Battery charging industry
- Inverter industry
- LED manufacturing industry

Option RS232 □

Model		MPS-M
Input voltage		220V 50Hz (default)
		110V 60Hz (customzied)
		115V/230V (Can be customized, manually switched)
Rated output	voltage	DC 0-30V Continuously adjustable
	current	DC 0-80A Continuously adjustable
Readback resolution	voltage	0.01V
	current	0.01A
Readback value accuracy		±1% ±1 digit
Voltage stability		≤0.2%+10mV
Current stability		≤0.5%+10mA
Load stability		≤0.5%
Ripple and noise		≤1% RMS
Cooling way		Intelligent temperature control fan
Interface		Optional RS232
Working environment		-10 — 40℃ Relative humidity < 80%
Storage environment		-20 — 80℃ Relative humidity < 80%
Size (W*H*D)		380(W)*160(H)*260(D)mm(Not include protrusions)

≤3kW series product selection table

型号	电压	电流	功率
MPS-3000M-400-1	0-400.0V	0-1.000A	400W
MPS-3000M-500-1	0-500.0V	0-1.000A	500W
MPS-3000M-400-2	0-400.0V	0-2.000A	800W
MPS-3000M-500-2	0-500.0V	0-2.000A	1000W
MPS-3000M-220-5	0-220.0V	0-5.000A	1100W
MPS-3000M-15-80	0-15.00V	0-80.00A	1200W
MPS-3000M-30-40	0-30.00V	0-40.00A	1200W
MPS-3000M-60-20	0-60.00V	0-20.00A	1200W
MPS-3000M-120-10	0-120.0V	0-10.00A	1200W
MPS-3000M-400-3	0-400.0V	0-3.000A	1200W
MPS-3000M-250-5	0-250.0V	0-5.000A	1250W
MPS-3000M-15-100	0-15.00V	0-100.0A	1500W
MPS-3000M-30-50	0-30.00V	0-50.00A	1500W
MPS-3000M-50-30	0-50.00V	0-30.00A	1500W
MPS-3000M-150-10	0-150.0V	0-10.00A	1500W
MPS-3000M-300-5	0-300.0V	0-5.000A	1500W
MPS-3000M-500-3	0-500.0V	0-3.000A	1500W
MPS-3000M-100-15	0-100.0V	0-15.000A	1500W
MPS-3000M-80-20	0-80.00V	0-20.00A	1600W
MPS-3000M-40-40	0-40.00V	0-40.00A	1600W
MPS-3000M-15-120	0-15.00V	0-120.0A	1800W
MPS-3000M-30-60	0-30.00V	0-60.00A	1800W
MPS-3000M-60-30	0-60.00V	0-30.00A	1800W
MPS-3000M-100-20	0-100.0V	0-20.00A	2000W
MPS-3000M-200-10	0-200.0V	0-10.00A	2000W
MPS-3000M-400-5	0-400.0V	0-5.000A	2000W
MPS-3000M-50-40	0-50.00V	0-40.00A	2000W
MPS-3000M-220-10	0-220.0V	0-10.00A	2200W
MPS-3000M-15-150	0-15.00V	0-150.0A	2250W
MPS-3000M-30-80	0-30.00V	0-80.00A	2400W
MPS-3000M-80-30	0-80.00V	0-30.00A	2400W
MPS-3000M-120-20	0-120.0V	0-20.00A	2400W
MPS-3000M-50-50	0-50.00V	0-50.00A	2500W
MPS-3000M-250-10	0-250.0V	0-10.00A	2500W
MPS-3000M-500-5	0-500.0V	0-5.000A	2500W
MPS-3000M-30-100	0-30.00V	0-100.0A	3000W
MPS-3000M-50-60	0-50.00V	0-60.00A	3000W
MPS-3000M-60-50	0-60.00V	0-50.00A	3000W
MPS-3000M-100-30	0-100.0V	0-30.00A	3000W
MPS-3000M-150-20	0-150.0V	0-20.00A	3000W
MPS-3000M-300-10	0-300.0V	0-10.00A	3000W

＞3kW series product selection table

型号	电压	电流	功率
MPS-5000M-16-200	0-16.00V	0-200.0A	3200W
MPS-5000M-60-60	0-60.00V	0-60.0A	3600W
MPS-5000M-120-30	0-120.0V	0-30.00A	3600W
MPS-5000M-30-120	0-30.00V	0-120.0A	3600W
MPS-5000M-250-15	0-250.0V	0-15.00A	3750W
MPS-5000M-50-80	0-50.00V	0-80.00A	4000W
MPS-5000M-80-50	0-80.00V	0-50.00A	4000W
MPS-5000M-200-20	0-200.0V	0-20.00A	4000W
MPS-5000M-400-10	0-400.0V	0-10.00A	4000W
MPS-5000M-100-40	0-100.0V	0-40.00A	4000W
MPS-5000M-30-150	0-30.00V	0-150.0A	4500W
MPS-5000M-150-30	0-150.0V	0-30.00A	4500W
MPS-5000M-300-15	0-300.0V	0-15.00A	4500W
MPS-5000M-60-80	0-60.00V	0-80.00A	4800W
MPS-5000M-80-60	0-80.00V	0-60.00A	4800W
MPS-5000M-120-40	0-120.0V	0-40.00A	4800W
MPS-5000M-50-100	0-50.00V	0-100.0A	5000W
MPS-5000M-100-50	0-100.0V	0-50.00A	5000W
MPS-5000M-500-10	0-500.0V	0-10.00A	5000W
MPS-5000M-250-20	0-250.0V	0-20.00A	5000W

Programmable DC Power Supply

HPS Series

- Multiple voltage series, multiple models to choose: 300V/600V/1000V
- Single power range: 3kW/5kW/10kW/15kW
- Single voltage range: 0-1000V, current range: 0-60
- 30/15kW High power density
- Supports multiple power supplies in parallel, power upt to 150kW
- High precision in measuring voltage and current
- Programmable change slope in output voltage and current
- Programmable sets of voltage and current sequences
- Remote voltage compensation, output DC-ON signal
- Perfect protection function OVP, OCP, OHP, fan faliure
- Full color LCD display, digital keyboard, make operation more convenient
- Effectively prevent current reverse irrigation
- RS232/GPIB interface
- No-load fast discharge design

Model		HPS Serise
AC input		≤3kW single phase 220V±10% ＞3kW triple phase380V±10%
DC output		Voltage0-1000V adjustable, current 0-375A, power 0-15kW adjustable
CV accuracy	Source effect	≤0.01%Effective value(Rate of change in output current caused by ±10% changed in input voltage)
	Time drift	≤0.05%Effective value(Rate of change in output current caused by the power supply working continuously for 8 hours)
	Temperature drift	≤0.1%Effective value/°C(Rate of change in output voltage caused by changes in ambient temperature in the temperature range)
	Load effect	≤0.02%Effective value(Rate of change in output voltage caused when the output current of the power supply changes from zero to the rated value)
CC accuracy	Source effect	≤0.05%Effective value(Rate of change in output current caused by ±10% changed in input voltage)
	Time drift	≤0.5%Effective value(Rate of change in output current caused by the power supply working continuously for 8 hours)
	Temperature drift	≤0.2%Effective value/°C(Rate of change in output current caused by changes in ambient temperature in the temperature range)
	Load effect	≤0.1%Effective value(Rate of change in output current caused when the output current of the power supply changes from zero to the rated value)
Output ripple	CV status	≤25mV (RMS) (Effect value)
	CC status	≤60mA (RMS) (Effect value)
Output display	Voltage acuracy	0.1%+0.1%F.S.
	Current accuracy	0.1%+0.2%F.S.
Voltage set		Digital keyboard +knob Resolution:1.7mV
Current set		Digital keyboard +knob Resolution:0.9mA
Transient response		<20ms
CV/C switch		<1ms
OVP		Built-in OVP, protection value is +10% of rated value, turn off the output after protection
OCP		Over load, short circuit is turn to CC mode output
OTP		Built-inOTP, protection value is 85°C±5%(Radiator temperature), turn off the output after protection
Output polarity		Output positive(+), negative(-)
Cooling mode		Forced air cooling
Operation environment		Indoor using desigh, temperature:0°C~40°C; humidity:10%~85%RH
Storage environment		Temperature:-20°C~70°C; humidity:10%~90%RH
Communication Interface		RS232/GPIB(Optional)

≤3kW series product selection table

Model	Voltage	Current	Power
HPS-4080A	0-40.000V	0-80.000A	1200W
HPS-6050A	0-60.000V	0-50.000A	1200W
HPS-8030A	0-80.000V	0-30.000A	1200W
HPS-10025A	0-100.00V	0-25.000A	1200W
HPS-16010A	0-160.00V	0-10.000A	1200W
HPS-40100B	0-40.000V	0-100.00A	1800W
HPS-8040B	0-80.000V	0-40.000A	1800W
HPS-10030B	0-100.00V	0-30.000A	1800W
HPS-16015B	0-160.00V	0-15.000A	1800W
HPS-30010B	0-300.00V	0-10.000A	1800W
HPS-6005B	0-600.000V	0-5.0000A	1800W
HPS-40120C	0-40.000V	0-120.00A	2400W
HPS-8050C	0-80.000V	0-50.000A	2400W
HPS-10040C	0-100.00V	0-40.000A	2400W
HPS-16020C	0-160.00V	0-20.000A	2400W
HPS-30015C	0-300.00V	0-15.000A	2400W
HPS-6008C	0-600.00V	0-8.0000A	2400W
HPS-40120D	0-40.000V	0-120.00A	3000W
HPS-8060D	0-80.000V	0-60.000A	3000W
HPS-10050D	0-100.00V	0-50.000A	3000W
HPS-16030D	0-160.00V	0-30.000A	3000W
HPS-30020D	0-300.00V	0-20.000A	3000W
HPS-60010D	0-600.00V	0-10.000A	3000W

5kW series product selection table (Three-phase input 380V)

Model	Voltage	Current	Power
HPS-32020E	0-320.00V	0-20.000A	5000W
HPS-45015E	0-450.00V	0-15.000A	5000W
HPS-60010E	0-600.00V	0-10.000A	5000W
HPS-80010E	0-800.00V	0-10.000A	5000W
HPS-10008E	0-1000.0V	0-8.0000A	5000W

10kW series product selection table (Three-phase input 380V)

Model	Voltage	Current	Power
HPS-30040F	0-300.00V	0-40.000A	10000W
HPS-45025F	0-450.00V	0-25.000A	10000W
HPS-60020F	0-600.00V	0-20.000A	10000W
HPS-80015F	0-800.00V	0-15.000A	10000W
HPS-100016F	0-1000.0V	0-16.000A	10000W

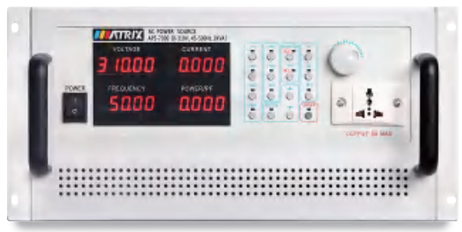
15kW series product selection table (Three-phase input 380V)

Model	Voltage	Current	Power
HPS-30060G	0-300.00V	0-60.000A	15000W
HPS-45030G	0-450.00V	0-30.000A	15000W
HPS-60030G	0-600.00V	0-30.000A	15000W
HPS-80020G	0-800.00V	0-20.000A	15000W
HPS-100020G	0-1000.0V	0-20.000A	15000W

Programmable AC Power Source

APS-7000 Series

APS-7105/7100



APS-7200/7300/7500

- The advanced direct digital frequency synthesizer (DDS) waveform is used to achieve high frequency stability, good continuity and accurate measurement
- Keyboard shortcuts: 110V, 220V, 50Hz, 60Hz shortcuts self-assembly
- Key lock function prevents inadvertent touch
- With key lock M1, M2 and M3 three sets of memory, can store the commonly used voltage V and frequency F, easy to recall them by one key
- Five display windows: voltage V, frequency F, current I, power P/power factor PF, display more accurately
- Overload capacity, 300% overload 2S
- Intelligent analysis function: automatically determine the cause of failure ,status and display the code when the alarm is reported
- With 100% loading and unloading, the stabiliz-ing reaction time is within 20ms
- RS485, RS232, Ethernet communication interface or simulation control mode (optional)
- Adopt input and output isolation mode
- Has soft start function to avoid the damage to power supply caused by the instantaneous impulse current of the load (such as motor) when power on.

Model		APS-7105	APS-7100	APS-7200	APS-7300	APS-7500	APS-7110
Capacity		500VA	1KVA	2KVA	3KVA	5KVA	10KVA
Working mode		SPWM					
The input							
Number of phase		1Φ2W					
Voltage		220V±10%					
Frequency		47Hz-63Hz					
The output							
Number of phase		1Φ2W					
Voltage		0-150VAC/0-310VAC AUTO (0-600V Can be customized)					
Frequency		45-500Hz (0.1Step)					
Maximum current	L=120V	4.2A	8.4A	16.8A	25A	42A	84A
	H=240V	2.1A	4.2A	8.4A	12.5A	21A	42A
Load regulation		1%					
T.H.D		2% Low grade 120V, high grade 240V, with pure resistive load					
Frequency stability		0.01%					
Display		Vrms、Arms、Fre、Wattage、PF					
Voltage resolution		0.01V					
Frequency resolution		0.01Hz					
Current resolution		0.001A					
Storage		M1(V_F_A)、M2(V_F_A)、M3(V_F_A)					
Communication interface		RS-232 standard, RS485 optional					
Set the current limit		0-MaxCurrent(P/240 Maximum current is: maximum capacity /240V is P/240)					
The output protection		OverCurrent OverTemp OverLoad ShortCircuit					
Operation environment		0-40℃ 20-80%RH					
Net weight (kg)		20.6	20.6	30.5	33.3	48	80
Gross weight (kg)		23.1	23.1	33.2	36	50.8	-
Instrument size (W*H*D)		480*135*515	480*135*515	480*225*5 3 5	480*225*535	480*240*590	430*590*810
Packing size (W*H*D)		575*255*645	575*255*645	575*255*645	575*255*645	575*255*645	-

High Power Programmable AC Power Source

APS-5000A Series

- Advanced direct digital frequency synthesizer (DDS) waveform generation technology, high frequency stability, good continuity
- Measurement precision is high, suitable for current half-sinusoid and its similar waveforms with DC component measurement
- Provide embedded intelligent PC monitoring system
- Adjustable output voltage from 0 to 150V, 0 to 300V, step distance 0.1V
- Output frequency45-200Hz (40-500Hz/0-1000Hz can be customized) , step distance 0.1 Hz
- Output current limiting function
- With 9 sets of memory, you can store commonly used parameters for easy invocation when using them
- With RS232 communication interface【IEEE488.2(GPIB) optional】, Instruction execution time is less than 10mS
- Protection mode: over voltage, over current, overload, short circuit, current limit, etc

- Provide RMS voltage, RMS current, active power, frequency, power factor, etc
- For 100% load removal, voltage stabilizing reaction time within 20ms, strong overload capacity, instantaneous current can withstand 3 times of rated current
- Voltage, frequency, time, digital key input, high precision
- The machine can set 30 sets of different voltage, frequency, rising time and running time at one time, and can test continuously for 999999 times

Single phase series						
Model	APS-5010A	APS-5015A	APS-5020A	APS-5030A	APS-5050A	APS-5100A
Output capacity	10KVA	15KVA	20KVA	30KVA	50KVA	100KVA
Working mode	SPWM					
Input power	1Φ2W 220V±10%	3Φ4W 380V±10%				
Output Frequency	45-200Hz(40-500Hz10HZ-1000HZ Need to be customized) , 0.1Step					
Frequency stability	0.01%					
Output Voltage	0-150VAC / 0-300VAC AUTO					
Output Current	84A/42A	125A/62.5A	168A/84A	250A/125A	420A/210A	840A/420A
Load Regulation	1%					
Total waveform distortion T.H.D	2% (pure resistive load)					
Ammeter LCD Module	Vrms、Arms、Fre、Wattage、PF					
Protective device	Over Current、Over Temp 、Over Load 、Short Circuit					
Operation environment	0-40℃ 20-80%RH					
Size (W*H*D)	430*700*550mm			550*700*700mm	700*1350*1418mm	
Weight	80Kg	120Kg	150Kg	250Kg	400Kg	600Kg

Three phase series (higher power can be customized)						
Model	APS-5315A	APS-5320A	APS-5330A	APS-5360A	APS-53100A	APS-53150A
Output capacity	15KVA	20KVA	30KVA	60KVA	100KVA	150KVA
Working mode	SPWM					
Input power	3Φ4W 380V±10%					
Output Frequency	45-200Hz(40-500Hz10HZ-1000HZ Need to be customized) , 0. 1Step					
Frequency stability	0.01%					
Output Voltage	0-150VAC / 0-300VAC AUTO					
Output Current	42A/21A	56A/28A	84A/42A	168A/84A	278A/139A	420A/210A
Load Regulation	1%					
Total waveform distortion T.H.D	2% (pure resistive load)					
Ammeter LCD Module	Vrms、Arms、Fre、Wattage、PF					
Protective device	Over Current、Over Temp 、Over Load 、Short Circuit					
Operation environment	0-40℃ 20-80%RH					
Size (W*H*D)	430*700*700mm	610*1030*1050mm		700*1350*1400mm		900*1730*161mm
Weight	80Kg	120Kg	150Kg	250Kg	400Kg	600Kg

Adjustable AC Power Meter

APS-6000 Series

- Output voltage AC 0-300v adjustable and power 1000VA
- A/P/PF upper and lower limit Settings, with voice alarm function
- The four Windows display V, A, P, Apk/PF/F switching
- Easy to use, safe and reliable

Model	APS-6100	APS-6200	APS-6100B
The input voltage	AC 220V		
The output voltage	AC 0-300V Adjustable		
The output current	3.3A	6.6A	3.3A
Power	1kw	2kw	1kw
Display	V / A / P / PF / F / Apk		
Display precision	0.5%+2 byte		
Upper limit setting	√		
Output switch	√		
Sound alarming	√		
Isolate the output	×	×	√
Net weight (kg)	10	10	10
Gross weight (kg)	11	11	11.8
Instrument size (W*H*D)	323*180*250	323*180*250	323*180*250
Packing size (W*H*D)	406*295*305	406*295*305	406*295*305

Programmable DC Electronic Load

PEL-8000 Series

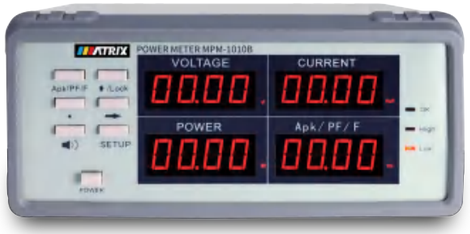
PEL series product is a new generation of DC electronic load, adopt new chip to achieve high speed and high precision design, provide 0.1 mV and 0.01 mA resolution (basic accuracy is 0.03%, the current rise of 2.5 A/us), with novel appearance, scientific and rigorous production technology, this one is more cost-effective compare to similar products. It can be widely used in the production line (phone charger, cell phone batteries, electric vehicle batteries, switch power supply, linear power supply), scientific research institutions, automotive electronics, aerospace, marine, solar batteries, fuel cells and other industries.

- CC , CV , CR , CP , short circuit, dynamic and other working modes
- Over voltage, overcurrent, overpower, overheat, polarity reverse protection
- High brightness vacuum VFD screen and display V,A,P simultaneously
- Accuracy of 0.1%
- Support external trigger input, output
- Automatic test function setting, more convenient operation
- RS - 232 interface. Optional special communication line connecting computer

Model		PEL-8150		PEL-8300	
Input Rating	Power	150W		300W	
	Current	0~30A		0~60A	
	Voltage	150V			
CC mode	Range	0-3A	0-30A	0-6A	0-60A
	Resolution	0.1mA		1mA	
	Accuracy	0.03%+0.05%			
CV mode	Range	0.1-19.999V	0.1-150V		
	Resolution	1mV	10mV	1mV	10mV
	Accuracy	0.03%+0.05%			
CR mode	Range	0.3Ω-10k	0.3Ω-5k	0.3Ω-10k	0.3Ω-5k
	Resolution	16 bits			
	Accuracy	0.2%+0.2%		0.1%+0.1%	
CW mode	Range	0-150W	0-150W	0-300W	0-300W
	Resolution	1mW	10mW	1mW	10mW
	Accuracy	0.2%+0.2%		0.1%+0.1%	
V Measurement	Voltage	0-19.999V	0-150V	0-19.999V	0-150V
	Resolution	1mV	10mV	0.1mV	1mV
	Accuracy	0.015%0.05%FS	0.015%0.05%FS	0.015%0.03%FS	0.015%0.02%FS
C Measurement	Current	0-3A	0-30A	0-6A	0-60A
	Resolution	0.1mA	1mA	0.01mA	0.1mA
	Accuracy	0.03%+0.05%FS	0.03%+0.08%FS	0.03%+0.05%FS	0.03%+0.08%FS
W Measurement	Watt	100W	150W	100W	300W
	Resolution	1mW	10mW	1mW	10mW
	Accuracy	0.2%+0.2%		0.1%+0.1%	
Battery Measruement Battery Input : 0.5-150V Max.Measruement:capacity=999/H;Resolution=0.1mA;Time=Range=1S-16HS					
Dynamic Measrument TransitionList:0-25Khz;2.5A/us ; T1&T2:60Us-999S;Accuracy:±15%offset+10%FS					
1mS;2mS;5mS;10mS;20mS;50mS;100mS;200mS;Accuracy:±15%offset+10%FS					
Short circuit	Current(CC)	3A	30A	6A	60A
	Voltage(CV)	0V			
	Resistance(CR)	55mΩ	25mΩ	300mΩ	
Temperature	Operating	0-40℃			
	Environment	-10℃~70℃			
Net weight	kg	4.1		4.9	
Gross weight	kg	5		5.8	
Instrument size (W*H*D)	mm	215*100*355			
Packing size (W*H*D)	mm	310*200*480			

High Power Meter

MPM-1010/1010B



- The six test parameters V, A, P, PF/F/Apk
- The upper and lower limit of power factor, current and power, and there is a sound light alarm, suitable for production line batch test
- The wider frequency response is 15hz-650hz, exceeding all products at the same level
- Direct way saves the wiring trouble, enhance the security and convenience
- Precision resistance sampling technology, suitable for a wider range of products

MPM-1010 high-precision power meter applies direct plug mode instead of traditional terminal posts according to customers suggestion, to improve safety and convenience. The voltage and current sampling section uses precision resistance direct sampling instead of traditional transformer sampling, which ensures the original data is undistorted and improves the accuracy of the instrument. And this machine is especially adapted to some half wave and other various waveform measurement of DC component, testing full wave resistance, the distorted wave, half wave, symmetrical and unsymmetrical square wave, triangle wave, sawtooth wave and other special waveform under AC mode. It is a high cost-effective product with novel appearance and scientific design. It is widely used in mobile phone charger, adapter, switch power, household appliance, transformer and other industries.

Model	MPM-1010	MPM-1010B
4 window display	V, A P, Apk/PF/F	V, A P, Apk/PF/F
The input voltage	1V~300V	1V~300V
Input current	2mA-10A	2mA-10A
Power range	0.3W-3000W	0.01W-3000W
Precision	0.4%RD+0.1%FS+1d	0.4%RD+0.1%FS+1d
Switch range	automatic	automatic
Power factor	-1.000/+1.000	-1.000/+1.000
Frequency response	AC:15Hz~650Hz	AC:15Hz~650Hz
Hi - Low setting	V、A、P、PF	V、A、P、PF
Sound and light alarm	√	√
The key lock	√	√
The machine electricity	110V/220V Switchable	110V/220V Switchable
Communication methods	RS-232(Optional)	RS-232
Net weight (kg)	2.5	2.5
Gross weight (kg)	3.6	3.6
Instrument size (W*H*D)	225*100*305	220*105*360
Packing size (W*H*D)	300*210*420	300*210*480

Digital Multimeter

MDM-5500

- 55,000 counts， DC voltage accuracy up to 0.05%
- Up to 65 readings per second
- True RMS AC voltage / current measurement
- Data record function, you can record the measured data into internal memory, and then read and process the recorded data with your computer
- Dual line display supported
- SCPI support
- Using our powerful and easy to use interface, you can access, store, process and manage your data, by simply displaying your results in form of a table.
- 3.7 inch high-resolution LCD, providing a clear display

MODEL	Measurement Range	Resolution	Accuracy ±(% of reading + % of range)
DC Voltage	50.000mV	0.001mV	0.1%+10
	500.00mV	0.01mV	0.05%+5
	5.0000V	0.0001V	0.05%+5
	50.000V	0.001V	0.05%+5
	500.00V	0.01V	0.1%+5
	1000.0V	0.1V	0.1%+10
AC Voltage	500mv-750v	20Hz～45Hz	1% + 30
		45Hz～65Hz	0.5% + 30
		65Hz～1KHz	0.7% + 30
DC Current	500uA	0.01uA	0.15%+20
	5000uA	0.1uA	0.15%+10
	50mA	0.001mA	0.15%+20
	500mA	0.01mA	0.15%+10
	5A	0.0001A	0.5%+10
	10A	0.001A	0.5%+10
AC Current	500uA-500mA	/	0.5%+20
	5A-10A		1.5%+20
Resistance	500Ω	0.01Ω	0.15%+10
	5KΩ	0.0001KΩ	0.15%+5
	50KΩ	0.001KΩ	0.15%+5
	500KΩ	0.01KΩ	0.15%+5
	5MΩ	0.0001MΩ	0.3%+5
	50MΩ	0.001MΩ	1%+10
Frequency	10.000Hz–60MHz	/	±(0.2%+10)
Capacitance	50nF-500uF	/	2.5%+5
	5mF-50mF		5%+10
Diode	3.0000 V	0.0001V	/
Continuity	1000 Ω	0.1Ω	Adjustable threshold
Temperature	K type，PT100		
Max Display	55,000 counts		
Logging Duration	15ms-9999.999s		
Logging Length	1,000 points		
Display Screen	3.7- inch TFT LCD with resolution 480*320		
Dimensions (W×H×D)	235 x 88x 64 (mm)		
Device Weight	Approximately 0.45kg		

Digital Multimeter

MDM-8145A/8146A/8155A

- Double - parameter display can display two parameters of one input signal
- Has duty ratio measurement function /capacitance measurement
- With manual/automatic range setting function
- Supports SCPI protocol and provides programming documentation
- Periodic and frequency measurements frequency can reach up to 20MHz
- With keyboard lock function, and provide system settings, customized setting of language, buzzer, screen brightness
- Maximum 10A current and 1000V DC voltage measurement capability
- Use 3.5-inch screen with clear reading
- Speed of measurement: FAST (6 times/second), MID (4 times/second), SLOW (1 time/second)
- Square wave output function (MDM-8145A and MDM-8146A are optional)
- Communication interface: USB Device, RS232(MDM-8145A and MDM-8146A are optional)
- AC DC voltage,AC DC current, two wire/ four-wire resistance measurement
- Provide automatic trigger, external trigger and single trigger
- It has simple external calibration function

Technical indicators

DC voltage measurement

Range	Measuring range	Resolution	Error limit		
			MDM-8145A (4 ½)	MDM-8146A (4 ½)	MDM-8155A (5½)
200mV	1uV~220.000mV	1uV	± (0.05%+4)	±(0.03% +10)	± (0.015%+4)
2V	10uV~2.20000V	10uV	± (0.05%+3)	±(0.03% +6)	± (0.015%+3)
20V	100uV~22.0000V	100uV	± (0.05%+4)	±(0.03% +6)	± (0.015%+4)
200V	1mV~220.000V	1mV	± (0.05%+3)	±(0.03% +6)	± (0.015%+3)
1000V	10mV~1000V	10mV	± (0.1%+3)	±(0.03% +6)	± (0.015%+3)

AC voltage measurement (true value of validity)

Range	Resolution	Error limit (MDM-8155A)			
		40Hz~5kHz	5~30kHz	30~50kHz	50~100kHz
200mV	1uV	±(0.2%+100)	±(0.2%+100)	±(0.5%+200)	±(0.8%+200)
2V	10uV	±(0.2%+100)	±(0.2%+100)	±(0.5%+200)	±(0.8%+200)
20V	100uV	±(0.2%+100)	±(0.8%+300)	±(2.5%+500)	±(5%+500)
200V	1mV	±(0.2%+200)	±(0.8%+450)		
750V	10mV	40Hz~1kHz	1~2kHz		
		±(0.3%+200)	±(0.4%+200)		

Range	Resolution	Error limit (MDM-8145A frequency range : 50Hz~1kHz)
200mV	10uV	± (0.8%+80)
2V	100uV	± (0.8%+80)
20V	1000uV	± (0.8%+80)
200V	10mV	± (0.8%+80)
750V	100mV	± (1%+50)

Range	Resolution	Error limit (MDM-8146A)		
		40Hz—1KHz	1KHz—10KHz	10KHz—20KHz
200mV	10uV	±(0.5% +40)	±(1% +40)	±(2.5% +40)
2V	100uV	±(0.5% +40)	±(1% +40)	±(2.5% +40)
20V	1000uV	±(0.5% +40)	±(1% +40)	±(2.5% +40)
200V	10mV	±(0.5% +40)	±(1% +40)	Unspecified
750V	100mV	±(0.5% +40)	Unspecified	Unspecified

Technical indicators

DC current measurement

Range	Measuring range	Resolution	Error limit		
			MDM-8145A (4 ½)	MDM-8146A (4 ½)	MDM-8155A (5½)
200uA	0.001uA~220.000uA	0.001uA	± (0.35%+10)	±(0.15% +15)	± (0.05%+10)
2mA	0.01uA~2.20000mA	0.01uA	± (0.35%+10)	±(0.15% +10)	± (0.05%+10)
20mA	0.1uA~22.0000mA	0.1uA	± (0.35%+10)	±(0.15% +10)	± (0.05%+10)
200mA	1uA~220.000mA	1uA	± (0.35%+10)	±(0.15% +10)	± (0.05%+10)
2A	0.01mA~2.20000A	10uA	± (0.3 5%+10)	± (0.35%+10)	± (0.05%+10)
10A	0.1mA~10A	100uA	± (0.8%+60)	±(0.5% +10)	± (0.2%+60)

AC current measurement (MDM8155A frequency range 40~5kHz, the rest is 40~1kHz)

Range	Measuring range	Resolution	Error limit		
			MDM-8145A (4 ½)	MDM-8146A (4 ½)	MDM-8155A (5½)
200uA	0.001uA~220.000uA	0.001uA	± (0.8%+80)	±(0.75% +20)	± (0.3%+400)
2mA	0.01uA~2.20000mA	0.01uA	± (0.8%+80)	±(0.75% +10)	± (0.3%+400)
20mA	0.1uA~22.0000mA	0.1uA	± (0.8%+80)	±(0.75% +20)	± (0.3%+400)
200mA	1uA~220.000mA	1uA	± (0.8%+80)	±(0.75% +10)	± (0.3%+400)
2A	0.01mA~2.20000A	10uA	± (0.8%+80)	±(0.75% +20)	± (0.3%+400)
10A	0.1mA~10A	100uA	± (1%+50)	±(1.0% +10)	± (1%+20)

Resistance measurement

Range	Measuring range	Resolution	Error limit		
			MDM-8145A	MDM-8146A	MDM-8155A
200Ω	0.001Ω~220.000Ω	0.001Ω	± (0.1%+20)	±(0.08% +10)	± (0.08%+50)
2kΩ	0.01Ω~2.20000kΩ	0.01Ω	± (0.1%+20)	±(0.08% +5)	± (0.02%+6)
20kΩ	0.1Ω~22.0000kΩ	0.1Ω	± (0.1%+6)	±(0.08% +5)	± (0.02%+6)
200kΩ	1Ω~220.000kΩ	1Ω	± (0.1%+6)	±(0.08% +5)	± (0.02%+6)
2MΩ	10Ω~2.20000MΩ	10Ω	± (0.4%+10)	±(0.2% +10)	± (0.04%+8)
20MΩ	100Ω~22.0000MΩ	100Ω	± (0.4%+15)	±(0.35% +10)	± (0.25%+6)

Capacitance measurement

Range	Measuring range	Resolution	Error limit		
			MDM-8145A (4 ½)	MDM-8146A (4 ½)	MDM-8155A (5½)
2nF	0.001nF~2.200nF	0.001nF	± (3.5%+30)	± (2%+5)	± (2%+5)
20nF	0.01nF~22.00nF	0.01nF	± (3.5%+30)	± (2%+5)	± (2%+5)
200nF	0.1nf~220.0Nf	0.1nF	± (3.5%+30)	± (2%+5)	± (2%+5)
2uF	1nF~2.200uF	1nF	± (3.5%+30)	± (2%+5)	± (2%+5)
20uF	0.01uF~22.00uF	0.01uF	± (3.5%+30)	± (3%+5)	± (3%+5)
200uF	0.1uF~220.0uF	0.1uF	± (3.5%+30)	± (3%+5)	± (3%+5)
2mF	1uF~2.200mF	1uF	± (4%+10)	± (3%+5)	± (3%+5)

Frequency measurement

Range	Measuring range	Resolution	Error limit		
			MDM-8145A (4 ½)	MDM-8146A (4 ½)	MDM-8155A (5½)
200Hz	0.001Hz~220.000Hz	0.001Hz	± (0.2%+10)	± (0.2%+10)	± (0.1%+3)
2kHz	0.01Hz~2.20000kHz	0.01Hz	± (0.2%+10)	± (0.2%+10)	± (0.1%+3)
20kHz	0.1Hz~22.0000kHz	0.1Hz	± (0.2%+10)	± (0.2%+10)	± (0.1%+3)
200kHz	1Hz~220.000kHz	1Hz	± (0.2%+10)	± (0.2%+10)	± (0.1%+3)
2MHz	10Hz~2.20000MHz	10Hz	± (0.2%+10)	± (0.2%+10)	± (0.1%+3)
20MHz	100Hz~22.0000MHz	100Hz	± (0.2%+10)	± (0.2%+10)	± (0.1%+3)
Duty cycle	5.0%~95.0% (error is within 10 words)				

Diode measurement

Range	Measuring range	Input protection	Remarks
200Ω	0~2V	250Vp	input current is about 0.75mA

Open and off measurement

Range	Measuring range	输入保护 Input protection	Remarks
200Ω	0~30Ω	250Vp	The input current is about 0.75mA, when the resistance is lower than 30Ω The input current is about 0.75mA,When the resistance is below 30 Omega, the buzzer is sound

Square wave output

Output	Output frequency	Output amplitude
Square wave	1Hz~100kHz	3V

Net weight	kg	2.6
Gross weight	kg	3.15
Instrument size (W*H*D)	mm	265*105*305
Packing size (W*H*D)	mm	335*210*435

Digital Multimeter

MDM-8165/8165A

- 6 1/2 resolution (MDM-8165A/MDM-8165)
- 3.5-inch color display screen (resolution ratio 320*480)
- Graphic display
- Double parameter display
- GPIB,RS-232, LAN ,USB interface are optional. functions of trigger input and output of measuring completion.
- Software could be updated by customers
- two-wire and four -wire resistance measurement , temperature measurement
- 10Ω and 1GΩ 's extension range current measurement capacity reaches up to 12A
- Many math functions
- Measuring speed: 0.02NPLC- 100NPLC
- Support SCPI language

Model		MDM-8165 (6 ½)	MDM-8165A (6 ½)
Display		3.5-inch color screen (resolution 320*480)	
Signal terminal		Front-end/back-end	Front-end
Maximum measurement speed		2500 readings per second	
Function	Items	Uncertainty,±(% measurement + % range)	
DCV	Uncertainty	0.0035+ 0.0005	
	Measuring Range	0 mV~1000 V	
	Maximum Resolution	100nV	
ACV	Uncertainty	0.06 + 0.03	
	Measuring Range	1 mV~750 V	
	Maximum Resolution	100nV	
	Frequency range	3 Hz ~ 300 kHz	
DCI	Uncertainty	0.05 + 0.006	
	Measuring range	0 μA ~ 12 A	
	Maximum resolution	10 pA	
Resistance	Uncertainty	0.10 + 0.04	
	Measuring range	1 μA ~ 12 A	
	Maximum resolution	100 pA	
	Frequency range	3 Hz ~ 10 kHz	
Frequency /period	Uncertainty	0.01%	
	Measuring range	3 Hz ~ 1 MHz	
	Maximum resolution	1 μHz	
Capacitance	Uncertainty	1 + 0.3	
	Measuring range	0 nF ~ 100 mF	
	Maximum resolution	1 pF	
On- off/diode		yes	
Proportion (DC:DC)	Reference range	100mV ~ 10 V	
	Input range	100mV ~ 1000 V	
Temperature	Type	Platinum resistance, thermistor, custom sensor	
	Maximum resolution	0.001℃	
Mathematical functions		Relative to (ax + b), maximum/minimum/average, standard deviation, dB, dBm, read retention, limit test	
Graphics		Histogram, trend graph	
Interface		RS-232,IEEE 488,LAN,USB Device,USB Host,Trig IN/OUT	
Programming language		SCPI Compatible with Agilent 34401A ,34410 and Fluke 45	
Data storage capacity		512K	
Net weight		2.6	
Gross weight		3.15	
Instrument size (W*H*D)		265*105*305	
Packing size (W*H*D)		335*210*435	

Digital Multimeter

MDM-200 Series

Multi-function

A good helper of engineers

- True RMS measurement
- Intelligent burn resistant design
- NCV non-contact voltage interaction
- Double quakeproof protection design
- Maximum display 9999 digits

Model	MDM-201	MDM-202	MDM-203	MDM-204
DC Voltage	0.1mV~600V ±(0.5%+2)	0.1mV~600V ±(0.8%+5)	0.01uV~600V ±(0.5%+2)	0.6V~600V ±(0.5%+3)
AC Voltage	0.1V~600V ±(1.2%+10)	1mV~600V ±(1.0%+3)	0.01uV~600V ±(1.0%+3)	0.6V~600V ±(1.0%+3
DC Current	1uA~10A ±(1.0%+2)	0.01uA~10A ±(1.0%+2)	0.01uA~10A ±(1.0%+2)	1uA~600mA ±(1.2%+10)
AC Current	/	0.01uA~10A ±(1.0%+5)	0.01uA~10A ±(1.0%+5)	1uA~600mA ±(1.2%+10)
Resistance	0.1Ω~20MΩ ±(0.8%+3)	0.1Ω~60MΩ ±(0.8%+2)	0.1Ω~100MΩ ±(0.8%+2)	0.1Ω~60MΩ ±(0.8%+10)
Capacitance	/	1nF~60000μF ±(3.0%+5)	1nF~100000μF ±(3.0%+10)	6nF~60000μF ±(3.5%+20)
Frequency	/	10~10MHz ±(0.1%+5)	10~10MHz ±(0.1%+3)	40~10MHz ±(0.1%+3)
Diode	√ 2.2V	√ 3.2V	√ 3.2V	√ 3V
NVC Response	√	√	√	√
VFCMM			√	
Intelligent prevent buring	√	√	√	
True RMS	√	√	√	
Backlight display	√	√	√	
On and off alarming	√	√	√	
Value lock	√	√	√	
Auto-power off	√	√	√	√
Maximum display	1999	5999	9999	5999
Input resistance		10MΩ	10MΩ	10MΩ
Sample rate	About 3 times/second			
Power	1.5V*2pc (AAA battery)			
Net weight (kg)	0.2			
Gross weight (kg)	0.3			
Instrument size (W*H*D)	105*45*70			
Packing size (W*H*D)	150*55*75			

Function Arbitrary Waveform Generator

MFG-2000 Series

- Use 3.5 inch 480x320TFT LCD, with a clear graphical interface
- Dual channel output
- Two channels are independent and have phase synchronization function
- Build-in 5 sets of basic waveform and 32 types of arbitrary waveform
- Edge time adjustable pulse wave output
- Output of linear/logarithmic sweep frequency and pulse string waveform
- Equipped with multi-function arbitrary waveform editing software
- Support Chinese and English menu
- File management, support USB drives and local storage
- 160MSa/S sampling rate, 12bits vertical resolution, 16k storage depth
- Waveform storage: supports 10 groups of user-defined editing waveforms
- Internal/external AM, FM, FSK modulation function
- with 160MHz high precision frequency meter
- RS232 interface, USB Device, USB Host interface

Model	MFG-2125	MFG-2140	MFG-2160
Frequency characteristics			
Waveform types	Sine wave, square wave, triangle wave, pulse, noise, arbitrary wave (including DC)		
Sine wave	1uHz ~ 25MHz	1uHz ~ 40MHz	1μHz-60MHz
Square wave	1uHz ~ 5MHz	1uHz ~ 10MHz	1μHz-10MHz
Triangle wave	1uHz ~ 500kHz	1uHz ~ 1MHz	1μHz-2MHz
Noise (-3db)	7MHz	7MHz	7MHz
Pulse	1uHz ~ 5MHz	1uHz ~ 10MHz	1μHz-10MHz
Arbitrary wave	1uHz ~ 5MHz	1uHz ~ 10MHz	1μHz-10MHz
Frequency resolution	1uHz		
Frequency accuracy	±5ppm		
Sine wave properties			
CH1 Harmonic distortion > 1Vpp	0~1MHz: < -45dBc ; 1MHz~10MHz: < -40dBc ; 10MHz~20MHz: < -30dBc ; 20MHz~40MHz: < -25dBc ; 40MHz~70MHz: < -20dBc ;		
CH2 Harmonic distortion > 1Vpp	0~1MHz: < -45dBc ; 1MHz~40MHz: < -40dBc ; 40MHz~70MHz: < -35dBc ;		
Total harmonic distortion	< 0.2% (20Hz-20kHz , 1Vpp)		
Square wave signal characteristics			
Rise/fall time	< 20ns		
Overshoot	< 5%		
Duty cycle	1%~99%≤100kHz ; 20%~80%≤5MHz ; 40%~60%≤10MHz (resolution 0.1%)		
Asymmetry(50%duty cycle)	1% period + 5ns		
Serration			
Linearity	Less than 0.5% of the peak output (typical values, 1kHz, 1Vpp, symmetry 100%)		
Symmetry	0.0~100.0% (resolution 0.1%)		
Impulse wave characteristics			
The pulse width	≥20ns		
Edge jump time	≥20ns		
Overshoot	< 5%		
Arbitrariness	CH1	CH2	
Sampling rate	160MSa/S	160MSa/S	
Wave amplitude resolution	12bits	10bits	
The wave length	16k	4k	
Minimum rise / fall time	< 20ns	< 20ns	
Storage quantity	10 waveforms	10 waveforms	

Model	MFG-2125	MFG-2140	MFG-2160
Output characteristic			
Amplitude	50Ω		
Range	1mVpp~10Vpp ≤20MHz 1mVpp~5Vpp > 20MHz	1mVpp~3Vpp ≤20MHz 1mVpp~1.5Vpp > 20MHz	
Accuracy	±1% setting ±1mVpp (1kHz sine wave, 0 offset, >10mVpp)		
Resolution	1mV or 3 digits		
Flatness (relative to 1k sine wave, 1Vpp)	±0.1dB , ≤100kHz ; ±0.3dB , ≤5MHz ; ±0.4dB , ≤25MHz		
Offset	50Ω		
Range	±5Vpk , AC + DC	±1.5Vpk , AC + DC	
Accuracy	± (2% setting + 5mV + 0.5% amplitude)		
Output impedance	50Ω		
Protect	short-circuit protection , automatically disable waveform output when overload		
SYNC output			
level	TTL compatible		
Impedance	50Ω		
AM modulation (CH1)			
Carrier	Sine wave, square wave, sawtooth wave, pulse wave, arbitrary wave (except DC)		
Source	Internal / external		
Modulation wave	Sine wave, square wave, triangle wave, Xie Bo		
Modulation frequency	2mHz~20kHz		
Modulation depth	0%~120%		
FM modulation (CH1)			
Carrier	Sine wave, square wave, sawtooth wave, pulse wave, arbitrary wave (except DC)		
Source	Internal / external		
Modulation wave	Sine wave, square wave, triangle wave, Xie Bo		
Modulation frequency	2mHz~20kHz		
Frequency offset	0~Maximum carrier frequency		
FSK modulation (CH1)			
Carrier	Sine wave, square wave, sawtooth wave, pulse wave, arbitrary wave (except DC)		
Source	Internal / external		
Modulation wave	square wave with 50% duty ratio		
Keying frequency	2mHz~1MHz		
Sweep (CH1)			
Carrier	Sine wave, square wave, sawtooth wave, pulse wave, arbitrary wave (except DC)		
Type	Linear / logarithm		
Starting / cut-off frequency	1uHz~ maximum carrier frequency		
Scavenging time	1ms~500s		
Trigger source	Manual, internal, and external		
Pulse string characteristics (CH1)			
Carrier	Sine wave, square wave, sawtooth wave, pulse wave, noise, arbitrary wave (except DC)		
Pulse count	1~65535 or infinity, gate control		
Start / stop phase	0~360°		
Internal cycle	1us~500s		
Gate control source	External		
Trigger source	Manual, internal, and external		
Frequency meter			
Frequency range	1Hz~160MHz		
Frequency resolution	6 bits / s		
Voltage range	100mVpp~5Vpp		
Input impedance	1MΩ		
Trigger input			
Level	TTL compatible		
Slope	rise/fall		
Pulse width	> 100ns		
Input impedance	> 10kΩ , DC coupling		
Reaction time	< 500ns (pulse string) ; < 10us (sweep)		
General technical specifications			
Supply voltage	100~240V , 45~65Hz		
Power waste	<40W		
Interface	RS232 , USB Host , USB Device		
Net weight (kg)	2.6		
Gross weight (kg)	3.8		
Instrument size (W*H*D)	265*105*305		
Packing size (W*H*D)	335*210*435		

MFG-2000 Series
Function Arbitrary Waveform Generator

Two-channel Function/ Arbitrary Waveform Generator

MFG-3000 Series

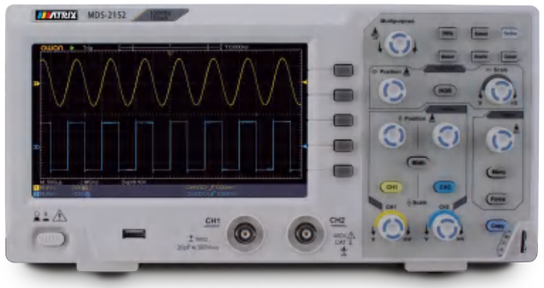
- 3.5-inch 480×320TFT LCD with clear graphic interface
- Sampling rate: 200MSa/S, vertical resolution: 13 bit and storage depth: 8k
- 5 basic waveforms and 32 arbitrary waveforms in-built
- Internal/external AM, FM, PM, ASK, FSK and PSK modulation function
- With RS232 interface, USB Device, USB Host interface supporting USB flash disk storage (USB Host Optional)

Frequency Characteristics	MFG-3215	MFG-3225	MFG-3240	MFG-3260
MODEL	15M type	25M type	40M type	60M type
Sine	1μHz ~ 15MHz	1μHz ~ 25MHz	1μHz ~ 40MHz	1μHz ~ 60MHz
Square	1μHz ~ 15MHz	1μHz ~ 15MHz	1μHz ~ 15MHz	1μHz ~ 15MHz
Triangle	1μHz ~ 15MHz	1μHz ~ 15MHz	1μHz ~ 15MHz	1μHz ~ 15MHz
Pulse	100μHz ~ 6MHz	100μHz ~ 6MHz	100μHz ~ 6MHz	100μHz ~ 6MHz
Arbitrary	1μHz ~ 6MHz	1μHz ~ 6MHz	1μHz ~ 6MHz	1μHz ~ 6MHz
Noise （-3dB）	7MHz Bandwidth			
Frequency Resolution	1μHz			
Frequency Accuracy	±5ppm			
Frequency Stability	±1ppm/3hour			
Frequency Characteristics				
Waveform Types	Sine, square, triangle, pulse, noise and arbitrary waves (including DC). There are 32 kinds of arbitrary waves and 50 kinds of user-defined waves.			
Waveform Length	8192 points			
Waveform Sampling Rate	200 MSa/s			
Waveform Vertical Resolution	13 bits			
Sine Wave Characteristics				
Sine Wave	Harmonic Distortion	⩾45dBc(<1MHz); ⩾40dBc(1MHz~20MHz)		
	Total Harmonic Distortion	<0.8%(20Hz ~ 20kHz, 0dBm)		
Square Wave Signal Characteristics				
Square Wave	Rise/Fall	<20ns		
	Overshoot	<5%		
	Duty Cycle	freq<100kHz: 1%~99%; 100kHz⩽freq<5MHz: 20% ~ 80%; 5MHz⩽freq: 40% ~ 60%(0.1% resolution)		

Pulse Wave Characteristics			
Pulse Wave	Pulse Width	Min 20ns; 1ns resolution	
	Edge Transition Time	Min 20ns;	
	Overshoot	<5%	
	Jitter	6ns+0.1% Period	
Ramp Wave Characteristics			
Ramp Wave	Linearity Degree	⩾98%(0.01Hz~10kHz)	
	Symmetry	0.0 ~ 100.0%(resolution 0.1%)	
Output Characteristics			
Amplitude			
Amplitude Range	freq < 10MHz	10MHz⩽freq < 30MHz	30MHz⩽freq
	2mVpp ~ 20Vpp	2mVpp ~10Vpp	2mVpp ~5Vpp
Amplitude Resolution	1mV		
Amplitude Stability	±1% set value±1mVpp（1kHz Sine，0 offset，>10mVpp）		
Amplitude Flatness (relative to 1K Sine, 1 Vpp)	±0.4dB <10MHz ； ±1.0dB ⩾10MHz。		
Output Impedance	50Ω±10%（Typical）		
Protection	All the signal output terminal can be shorted within 60s		
DC Offset			
	Output Amplitude>0.1V	2mV<Output Amplitude⩽0.1V	
Offset Adjusting Range	±10Vpk，ac + dc	±0.250Vpk，ac + dc	
Offset Resolution	1mV		
Phase characteristics			
Phase Adjusting Range	0~359.9°		
Phase Resolution	0.1°		
External Measurement Function			
Frequency Meter	Frequency measurement range	1Hz ~ 100MHz	
	Measurement accuracy	Gate time continuously adjusted between0.01s~10s	
Counter Function	Counting region	0 ~ 4294967295	
	Control mode	Manual operation	
Input Signal Voltage Range	2Vpp~20Vpp		
Coupled Mode	AC or DC		
Pulse Width Measurement	1ns (resolution), 20s (MAX measuring time)		
Period Measurement	1ns (resolution), 20s (MAX measuring time)		
SYNC Output			
Output Channel	CH1 or CH2, default CH1		
Level	TTL		
Impedance	50Ω		
Rise/Fall Time	< 25ns		
Maximum Frequency	25MHz		

Super- economical type digital storage oscilloscope

MDS-2000 Series

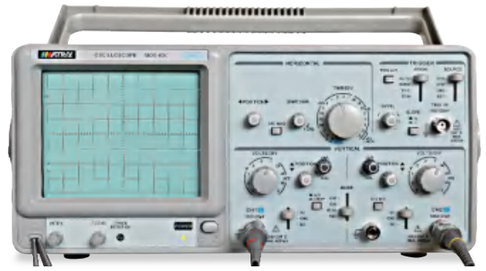


- Bandwidth : 150MHz/250MHz
- 2-Channel + Sample rate : 1GS/s
- Ultra-thin body + 7 inch high resolution LCD
- SCPI, and LabVIEW supported

Model	MDS-2152	MDS-2252
Bandwidth	Up to 150MHz	Up to 250MHz
Sample Rate	1GS/s	
Horizontal Scale (s/div)	2ns/div - 1000s/div, step by 1 - 2 - 5	
Rise Time (at input, typical)	≤3.5ns	≤1.7ns
Channel	2	
Display	7" color LCD, 800 x 480 pixels	
Input Impedance	1MΩ ± 2%, in parallel with 20pF±5pF	
Channel Isolation	50Hz : 100 : 1, 10MHz : 40 : 1	
Max Input Voltage	400V (PK - PK) (DC+AC, PK - PK)	
DC Gain Accuracy	±3%	
Record Length	10K	
DC Accuracy (average)	Average≥16: ±(3% reading + 0.05 div) for △V	
Probe Attenuation Factor	1X, 10X, 100X, 1000X LF Respond (AC, -3dB)	
LF Respond (AC, -3dB)	≥10Hz (at input, AC coupling, -3dB)	
Sample Rate / Relay Time Accuracy	±100ppm	
Interpolation	sin (x) / x	
Interval (△T) Accuracy (full bandwidth)	Single : ±(1 interval time + 100ppm x reading + 0.6ns), Average>16 : ±(1 interval time + 100ppm x reading + 0.4ns)	
Input Coupling	DC, AC , and GND	
Vertical Resolution (A/D)	8 bits (2 channels simultaneously)	
Vertical Sensitivity	5mV/div - 5V/div (at input)	
Trigger Type	Edge, Video	
Trigger Mode	Auto, Normal, and Single	
Trigger Level	±5 divisions from screen center	
Line / Field Frequency (video)	NTSC, PAL and SECAM standard	
Cursor Measurement	△V, and △T between cursors	
Automatic Measurement	Vpp, Vavg, RMS, Frequency, Period, Vmax, Vmin, Vtop, Vbase, Width, Overshoot, Pre-shoot, Rise time, Fall time, +Width, -Width, +Duty, -Duty, Delay A→B , Delay A→B , area, cycle area	
Waveform Math	+ , - , x, ÷, invert, FFT	
Waveform Storage	16 waveforms	
Lissajous	Full bandwidth	
Figure	±3 degrees	
Communication Interface	USB host, USB device	
Frequency Counter	available	
Power Supply	100V - 240V AC, 50/60Hz, CAT II	
Power Consumption	< 15W	
Fuse	2A, T class, 250V	
Dimension (W x H x D)	301 x 152 x 70 mm	
Device Weight	1.10 kg	

Dual channel analog oscilloscope

MOS-620



- Dual channel 20MHz
- Sweep X10 times
- TV synchronization, X-Y mode
- High luminance, internal calibrated CRT
- Japanese electronic code switch, light and reliable
- Sealed attenuation switch is durable
- ALT trigger function, can measure two irrelevant signals

Model	MOS-620
Vertical system	**Trigger**
Sweep time: 0.2μSec~0.5Sec/DIV , 20 steps in 1-2-5 sequence	Trigger source: CH1, CH2, LINE,EXT
Accuracy: ±3%	Trigger Coupling: AC: 20Hz to full bandwidth
Fine: ≤1/2/5 panel indication scale	Trigger slope: +/-
Sweeping magnification: 10 times	Sensitivity: 20Hz~2MHz: 1DIV TRIG-ALT: 2DIV EXT:200mV
X10MAG sweep time accuracy: ±5% (20nSec~50nSec not calibrated)	2MHz~20MHz: 1.5DIV TRIG-ALT: 3DIV EXT:800mV
Linear: ±5%X10MAG: ±10% (0.2s~1μs)	TV: Sync pulse > 1DIV(EXT:1V)
Displacement caused by X10MAG: < 2DIV at the center of CRT	Trigger mode: AUTD: AUTO NORM: NORM
X-Y mode	TV field: when you want to observe a TV signal;
Sensitivity: same as vertical axis	TV line: (only when the sync signal is negative pulse, the TV field and TV line can be synchronized)
Frequency range: DC~500kHz	External trigger mode model
X-Y phase error: ≤3° (DC~50kHz)	Input impedance: Approx. 1MΩ/25pF
Horizontal system	Max. Input voltage: 300V(DC+AC peak) AC frequency: 1kHz or lower
Sensitivity: 5mV~5V/DIV, 10 steps in 1-2-5 sequence	**Calibration signal**
Sensitivity and accuracy: ≤3%; 1/2.5 or smaller than the panel indicating scale	Waveform: Square wave
Frequency range: DC~20MHz	Freq.: Approx.1kHz
AC coupling: < 10Hz (100kHz 8DIV frequency response:-3dB)	Duty cycle: <48: 52
Rise time: Approx. 17.5nS	Output voltage: 2Vp-p±2%
Input resistance: Approx. 1M/25pF	Output impedance: Approx.1kΩ
DC balance movement: 5mV~5VDIV: ±0.5DIV	**CRT oscilloscope tube**
Linear: When the waveform moves vertically in the center of the grid (2DIV)	Model : 6 inch rectangular internal graticule
Amplitude change < ±0.1DIV	Phosphor powder specifications: P31
Vertical mode: CH1; CH2; DUAL: CH1 and CH2 display simultaneously; Speed can be selected alternately or intermittently	Acceleration voltage: Approx. 2kV (20MHz)
ADD: CH1 and CH2 do algebraic addition	Valid display: 8X10DIV [1DIV=10mm(0.39in)]
Intermittent repetition frequency: Approx. 250kHZ	Graticule: internal
Input coupling: AC GND DC	Trace rotation: adjustable at front panel
Maximum input voltage: 300V peak (AC : Freq.≤1kHz)	**Technical characteristic**
Common mode rejection ratio: >50:1 at 50kHz sine wave (Set the sensitivity of CH1 and CH2 the same)	Power source: AC 220C±10% (standard) , AC 110V/220V
Insulation between 2 channels (in the range of 5mV/DIV):	±10% (optional) 50Hz/60Hz, 35VA Maximum
> 1000:1 50kHz; > 30:1 15MHz / > 30:1 35MHz; > 30:1 45MHz	Dimension: 455 (W) *150(H)*310(D)mm
CH2 INV BAL: Balance point change rate ≤ 1DIV (corresponding to the scale center)	Weight: Approx. 8kg

Multichannel Temperature Measuring Instrument

MR-3000

- Fully isolated general input, can input multiple signals at the same time, no need to replace the module, directly set on the instrument
- The data range of display quantity is wider, which can display 6 digits: -999, 99~1999.999
- Additional measuring units may be added up to 64CH
- Display 8 kinds of colorful screen
- High brightness touch color TFT LCD, CCFL backlight, clear picture
- Display accuracy is high, the basic error is ±0.2%F·S
- Using ARM microprocessor, it can realize multi-channel (up to 64 channels inside the instrument) signal acquisition, recording, display and alarm at the same time
- Using 70MB large capacity flash memory chip to save history data to ensure data integrity even power cut
- With flashing alarm display, indicating the lower and lower limit, lower limit, upper limit and upper upper limit alarm of each channel at the same time; 8 relay alarm output
- Single 8-64 channel free combination, RS232, RS485, USB, GPIB, Ethernet a variety of communication modes

Model		MR-3000
Display		7 type TFT LCD 800*480 (VGA)
The subject cache capacity		70MB
Expanding memory		USB USB flash memory
Interface	Ethernet	100Base-TX
	communication	RS-232/RS-485/USB/GPIB/Zigbee (RS232 standard, others optional)
Number of units that can be connected	Measuring unit	1 pc
	I/O unit	1 pc
Maximum number of measured frequency bands	Temperature/voltage	64 channels
	Pulse	4 ch
	Modbus	16 ch
	Calculation	8 ch
Maximum input-output points	Input	32 points (64 points without output)
	Output	32 points
Precision of time axis		±5 ppm
Calendar timer accuracy		±15 second/month (25°C)
Language		English/Simplified Chinese/Traditional Chinese
Networking		FTP terminal/FTP server , SMTP terminal (E-mail) , HTTP server (Web server) , DHCP terminal SNTP server/SNTP terminal , Modbus TCP (terminal/server) 4 , Modbus RTU (initiative/follower)
Withstand voltage	Between power port-FG port	1500VAC (50/60Hz)1 minute
Insulation resistance	Between power port-FG port	Above 5MΩ (500VDC)
Touch screen	Pressure strength	Below 0.8N
	Lifetime	More than 10Millian times
Backlight life		About 75000 hours
Panel thickness		2mm to 26mm
Adaptive capacity to environment	Protective Structure	IP65 5.
	Quakeproof	According to JIS B 3502 (IEC61131-2)
	Operation temperature	0°C to +50°C
	Operation humidity	20% to 85%RH (no condensation)
Rated	Power voltage	(90-240AC±10%) or (24VDC±10%)、fluctuate within 10% (P-P)
	Maximum consumption current	Below 0.45A
Net weight	kg	3.2
Gross weight	kg	4.8
Instrument size (W*H*D)	mm	290*290*180
Packing size (W*H*D)	mm	400*360*290

Infrared Thermometer

MTM-300 Series

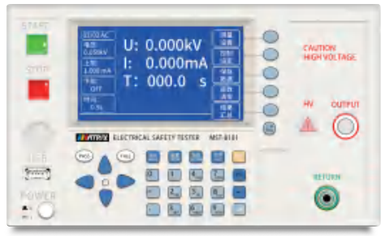
Choose high-quality electronic components, adopt aluminum alloy sensor, accurately receive temperature signal measurement , pay attention to the details of customers, to provide customers with more professional measurement experience

- High and low temperature sound and light alarming, high and low temperature alarm value can be set according to the use requirement
- HD VA color backlight display, clear reading
- Laser 9 point positioning measurement leads to more accurate measuring
- The emissivity is adjustable, higher precision measurement for different material surface
- Alarming sound can be open or close
- It can be collected with K type probe for temperature measurement (only:MTM-304)
- Environment temperature and humidity display (only:MTM-304)
- Temperature unit conversion
- 0.5 second fast response, maximum value, auto turn-off, over-range tip etc

Model	MTM-301	MTM-302	MTM-304
Temperature measurement range	-50°C~480°C	-50°C~680°C	-50°C~880°C
Measurement accuracy	(1.5%+1°C) (1.5%+5°F)		
Repeat accuracy	±0.5% or ±1°C (2°F)		
Display resolution	0.1°C (0.1°F)		
Resolution	0.1~1.00 adjustable		
Measure the distance ratio	12:1		
°C/°F temperature unit conversion	√		
Backlight display/ auto shutdown	√		
Overrange display	"LO" or "HI"		
Screen display mode	VA color screen		
K type probe measure temperature	×	×	×
Ambient temperature and humidity display	×	×	×
Power supply	1.5V*2AAA (seventh battery)		
Operation temperature/humidity	0°C~50°C ; 10~95%RH no condensation		
Net weight (kg)	0.15		
Gross weight (kg)	0.25		
Instrument size (W*H*D)	150*40*95		
Packing size (W*H*D)	190*52*123		

Programmable Electronical Safety Tester

MST-8101/8103



- 4.3-inch TFT color screen display, clear at a glance
- 105 test files can be compiled, and 25 test steps can be set for each file
- Current resolution up to 0.1μA, accurate
- Automatic discharge function after the test is over
- Up to 10GΩ insulation resistance test range
- 100VA capacity

Model			MST-8101	MST-8103
Function Description			AC	AC/DC/IR
Withstand voltage test				
Iose Out Electricity Pressure	AC	voltage range	0.050kV—5.000kV	0.050kV—5.000kV
		Voltage waveform	Sine wave	Sine wave
		Distortion	< 3%	< 3%
		working frequency	50、60Hz optional	50、60Hz optional
		Frequency accuracy	±1%	±1%
		Output Power	100VA （20mA）	100VA （20mA）
		Voltage regulation rate	± （1.0% +50V) (rated power)	± （1.0% +50V) (rated power)
	DC	voltage range	-	0.050 kV—6.00kV
		Signal source frequency	-	600Hz
		Output Power	-	50VA （10mA）
		Voltage regulation rate	-	± （1.0% +100V) (rated power)
	Voltage resolution		1V	1V
	Voltage test accuracy		±2%	±2%
	Voltage generation method		DDS signal source plus class AB power amplifier	DDS signal source plus class AB power amplifier
Electricity flow Measurement test Fan Surround	AC	Current range	0.001mA – 20.00 mA	0.001mA – 20.00 mA
		Short circuit current (momentary)	>40 mA	>40 mA
		Current resolution	0.001 mA	0.001 mA
		Current accuracy	± (2% of reading + 2 words)	± (2% of reading + 2 words)
		Actual current	OFF-0.001 mA-20 mA	OFF-0.001 mA-20 mA
	DC	Current range	-	0.1uA – 10.00mA
		Current accuracy	-	± (2% reading + 2 digits)
	Discharge function			Automatic discharge after the test (DCW)
Insulation resistance test (MST-8103 only)				
The output voltage			0.050V – 1.000kV	
Voltage resolution			1V	
Voltage test accuracy			±2%	
Maximum output current			10mA	
Maximum output power			10VA （1000V/10mA）	
Output instantaneous short-circuit current			>20mA	
Load Regulation			≤ 1 % (rated power)	
Ripple (1kV)			≤ 3% (1kV , no load)	
Discharge function			Automatic discharge after the test	
Resistance measurement range			0.1MΩ– 10GΩ	
Resistance measurement accuracy			Voltage < 500V: 0.2M Ω ~ 1G Ω accuracy: [± 10% reading + 5 words] 1G Ω ~ 10G Ω accuracy: [± 20% reading + 5 words] Voltage > 500V: 0.2M Ω ~ 1G Ω accuracy: ± [3% reading + 5 words] 1G Ω ~ 10G Ω accuracy: ± [7% reading + 5 words]	
Arc detection			MST-8101	MST-8103
Measuring range	AC、DC		AC:1mA – 20mA (9 gears, fine-tuning)	AC、DC:1mA – 20mA(9 gears, fine-tuning)
Comparators				
Discrimination method			Window comparator mode I at the ON : When I at <Ix <I on, the PASS ; when Ix is ≤ I or under Ix is ≥ I on, FAIL (article items I at <I on) I down OFF : when Ix< I up, PASS ; when Ix ≥ I up, FAIL; the insulation resistance judgment method is the same as above	
Capping current I on	AC、DC		AC: 0.001mA – 20mA	AC: 0.001mA – 20mA DC: 0.1uA – 10mA
Current upper limit setting I under	AC、DC		AC: 0.001mA – 20mA	AC: 0.001mA – 20mA DC: 0.1uA – 10mA
Resistance upper limit setting			OFF - 0.2MΩ - 10GΩ	
Resistance lower limit setting			0.2MΩ– 10GΩ	
Parameter setting				
Voltage rise time			0.1s – 999.9s	
Voltage drop time			0 s – 999.9s , (only after the withstand voltage PASS)	
Voltage waiting time			0.3s - 999.9s (only DC withstand voltage, and meet the rise time + test time > waiting time)	
Test time setting			0.3s - 999.9s (when TIMER ON)	
Time accuracy			±(0.2% setting value ± 0.1s)	
Protocol			SCPI , Modbus	
storage			105 test files can be programmed , and 25 test steps can be set for each file	
interface			HANDLER , SINGAL , RS232C , RS485 (optional)	
Size (W*H*D)		mm	215*143*405 (without terminal)	
weight		kg	12	

Digital LCR Meter

MCR-5000 Series

CE

MCR5000 series is a multifunctional LCR precision meter used for testing various electronic components. Adopt 4.3-inch TFT LCD display, simple display, elegant layout. It is a high speed, wide band, 5 bit test resolution impedance measuring instrument with 40hz-200khz multiple frequency points and 0.1% accuracy, which can meet the requirements of component parameter detection in various occasions. Is a high - quality cost-effective tester

- With new 32-bit core processor, the data is as good as the one of foreign first-class equipment
- 4.3 inch true color TFT display
- 30Ω , 100Ω two types of different signal source output resistance
- Built - in comparator, 5 grade flexible quanlified and defective alarming mode shutdown automatically save test conditions, humanized operation
- Internal more than 100 sets of settings files, U disk extension to save multiple groups of test or recall simplified Chinese, English is optional
- U disk copy screen function, test data saving function, support FAT16 format, FAT32 file system,standard with RS232, USB HOST
- USB DEVICE, headphone interface, foot pedal interface and GPIB are optional

Model	MCR-5010	MCR-5030	MCR-5100	MCR-5200
Test parameter	L,C, R, |Z|, D, Q , X , ESR , θ(Deg),θ(Rad)			
Test frequency	100Hz、120Hz、1kHz、10kHz	100Hz、120Hz、1kHz、10kHz、20kHz、30kHz	40Hz、50Hz、60Hz、75Hz、100Hz、120Hz、150Hz、200Hz、250Hz、300Hz、400Hz、500Hz、600Hz、750Hz、800Hz、1kHz、1.5kHz、2kHz、2.5kHz、3kHz、4kHz、5kHz、6kHz、7.5kHz、10kHz、12kHz、15kHz、15.7kHz、16.2kHz、20kHz、25kHz、30kHz、40kHz、50kHz、60kHz、66.6kHz、75kHz、100kHz in total 38 frequency points	40Hz、50Hz、60Hz、75Hz、100Hz、120Hz、150Hz、200Hz、250Hz、300Hz、400Hz、500Hz、600Hz、750Hz、800Hz、1kHz、1.5kHz、2kHz、2.5kHz、3kHz、4kHz、5kHz、6kHz、7.5kHz、10kHz、12kHz、15kHz、15.7kHz、16.2kHz、20kHz、25kHz、30kHz、40kHz、50kHz、60kHz、66.6kHz、75kHz、100kHz、120kHz、150kHz、200kHz in total 41 frequency points
Basic measurement accuracy	0.15%	0.1%		
Test signal level	0.05V, 0.1V、0.2V, 0.25V,0.3V、0.3V, 0.4V, 0.5V, 1V			
Equivalent circuit	In series, in parallel			
Mathematical functions	Percentage deviation			
Range way	Automatic, hold, manual selection			
Trigger mode	Internal, manual, external, bus			
Measure speed (≥1kHz)	High speed: The fastest is 30 times/second, middle speed: 10times/second,low speed: 3times/second			
Average time	1—255			
Delay time	0—6s, step is 1ms			
Calibration function	Open circuit/ short circuit / quick reset			
Display mode	Direct reading , Δ% , V/I (Measured voltage/current monitoring)			
Displayer	5 digit display of main and minor parameters , 4.3 inch true color LCD displayer			
Output impedance	30 Ω, 100Ω optional			
Display range				
|Z|, R , X , ESR	0.1mΩ — 99.999MΩ			
C	0.01 pF — 9.9999F			
L	0.01 μH — 99999 H			
D	0.0001 — 9.9999			
Q	0.0001 — 9999.9			
θ (Deg)	-179.99° — 179.99°			
θ (Rad)	-3.1416 — 3.1416			
Δ%	-999.99% — 999.99%			
Others				
Comparator function	5 grades of sorting function((Except MCR5010))			
Storage	More than 100 sets of internal instrument settings for storage/call, U disk extension of more than 500 sets			
Port	RS232、HANDLER(Except MCR5010/5030)、USB HOST are standard			
Net weight (kg)	3.5			
Gross weight (kg)	4.5			
Instrument size (W*H*D)	240*100*330			
Packing size (W*H*D)	330*210*425			

High Precision LCR Meter

MCR-6000A Series

LCR 6000A series high-precision digital bridge is a multi-function component parameter tester for detecting various electronic components. Tell, stable, 12Hz-600kHz continuous frequency point and 0.05% accuracy, can meet the requirements of production line quality control, purchase inspection and laboratory measurement, etc.

- With new 32-bit core, as good as first class equipments
- 4. 3inch true color TFT display
- 12Hz-600kHz testing frequency, frequency point continuously adjustable
- 0.05% bacis testing accuracy, high speed in testing
- 0V,1.5V, 2V, Internal DC bias. Accuracy: 1%
- Automatic level control function
- 30Ω, 50Ω, 100Ω, 10/CC four different signal output impedance
- Built-in comparator, 11 files sorting and file counting function
- 10-point list scan function
- The software upgrade and update of the machine can be realized through the U disk
- U disk copy screen function can save data, support FAT32 data system
- Standard with RS232C, USB HOST, USB DEVICE HANDLER
- Matching GPIB, headphone jack.

Model		MCR-6100A	MCR-6200A	MCR-6600A
Test parameter		|Z|, |Y|, C, L, X, B, R, G, D, Q, θ ,DCR		
Test frequency		12Hz-100kHz	12Hz-200kHz	12Hz-600kHz
Basic testingf accuracy		0.05%		
Equivalent circuit		In series, in parallel		
Mathematical functions		Percentage deviation		
Range way		Automatic, hold, manual selection		
Trigger mode		Internal, manual, external, bus		
Measure speed (≥1kHz)		High speed: The fastest is 75 times/second (customizable) , middle : 12times/second,low: 3times/second		
Average time		1—255		
Delay time		0—6s, step is 1ms		
Calibration function		Open circuit/ short circuit / quick reset		
Display mode		Direct reading , Δ , Δ% , V/I (Measured voltage/current monitoring)		
Displayer		5 digit display of main and minor parameters , 4.3 inch true color LCD displayer		
Testing signal				
Output impedance		30 Ω , 100Ω , 10/100 , 10/CC optional		
Test signal level		Normal : 5mV~2V Accuracy : 10% , 1mV step Constant level : 10mV~1V Accuracy : 5% , 1mV step See product manual for details		
DC bias source	Internal	0V , 1.5V , 2V , Accuracy 1%		
	Matching	IV1A:0~1A DC bias source option		
Display range				
|Z|, R , X		0.01mΩ — 99.9999 MΩ		
DCR		0.001 mΩ — 99.9999 MΩ		
|Y|, G , B		0.00001μS — 99.9999S		
C		0.00001pF — 9.9999F		
L		0.00001μH — 99.9999kH		
D		0.00001 — 9.9999		
Q		0.00001 — 9999.9		
θ (DEG)		-179.999° — 179.999°		
θ (RAD)		-3.14159 — 3.14159		
Comparator function		10 grade: (9 grades qualified, 1 grades not qualified), otherwise with AUX grade		
Multiparameter		Four parameters can be selected for simultaneous measurement and display		
Curve scan function		Under various test conditions, perform graphic scanning analysis on the test piece		
Storage		More than 100 sets of internal instrument settings for storage /call, U disk extension of more than 500 sets		
Interface		Standard with RS232C, HANDLER, USB HOST, USB DEVICE, Headphone jack, Foot pedal interface; Matching with GPIB, LAN		
Instrument size (W*H*D)		265*100*340		
Packing size (W*H*D)		335*210*420		
Net weight (kg)		4.5		
Gross weight (kg)		5.8		

High Precision LCR Meter

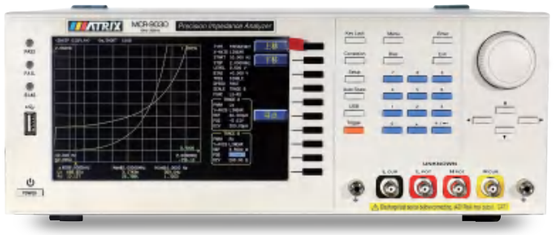
MCR-8000H Series

- With new 32-bit core, as good as first class equipments
- 7 inch true color TFT display
- 20Hz-5MHz testing frequency, frequency point continuously adjustable
- 0.05% bacis testing accuracy, high speed in testing.
- -5V~+5V(-100mA~+100mA)Internal DC bias
- Automatic level control function
- Graphic scan analysis function, support frequency / level/offset scanning, display the characteristics
- 30Ω , 50Ω, 100Ω, 10/CC four different signal outp out impedance
- Built-in comparator, 10 files sorting and file counting function
- 10-point list scan function
- The software upgrade and update of the machine can be realized through the U disk
- U disk copy screen function can save data, support FAT32 data system
- Standard with RS232C, USB HOST, USB DEVICE HANDLER, headphone jack, foot pedal interface
- Matching GPIB

Model		MCR-8100H	MCR-8500H
Test parameter		|Z|, |Y|, C, L, X, B, R, G, D, Q, θ ,DCR	
Test frequency		20Hz-1MHZ , 0.01Hz resolution	20Hz - 5MHz , 0.01Hz resolution
Basic testingf accuracy		0.05%	
Equivalent Circuit		In series, in parallel	
Mathematical functions		Absolute deviation , percentage deviation	
Range way		Automatic, hold, manual selection	
Trigger mode		Internal, manual, external, bus	
Measure speed (≥1kHz)		High speed: The fastest is 200 times/second (customizable) , middle : 12times/second,low: 3times/second	
Average time		1—255	
Delay time		0—6s, step is 1ms	
Calibration function		Open circuit/ short circuit / load	
Display mode		Direct reading , Δ% , V/I (Measured voltage/current monitoring)	
Displayer		800*480 RGB 7 inch 16 : 9 TFT LCD display	
Testing signal			
Output impedance		30 Ω , 100Ω , 10/100 , 10/CC optional	
Test signal level		Normal : 5mV~5V Accuracy : 10% , 1mV step Constant level : 10mV~1V Accuracy : 5% , 1mV step	
DC bias source	Internal	-5V~+5V(-100mA~+100mA)Built-in bias current source , 5% , 1mV step	
	Matching	IV100mA:±10V(±100mA)DC bias source option	
		IV1A:0~1 DC bias source option	
Display range			
|Z|, R , X		0.01mΩ — 99.9999 MΩ	
DCR		0.01 mΩ — 99.9999 MΩ	
|Y|, G , B		0.00001μS — 99.9999S	
C		0.00001pF — 9.9999F	
L		0.00001μH — 99.9999kH	
D		0.00001 — 9.9999	
Q		0.00001 — 9999.9	
θ (DEG)		-179.999° — 179.999°	
θ (RAD)		-3.14159 — 3.14159	
Comparator function		10 grade: (9 grades qualified, 1 grades not qualified), otherwise with AUX grade	
Storage		More than 100 sets of internal instrument settings for storage/call,U disk extension of more than 500 sets	
Interface		Standard with RS232C, HANDLER, USB HOST; Matching with USB DEVICE, Headphone jack, Foot pedal interface,GPIB	
Instrument size (W*H*D)		370*125*340	
Packing size (W*H*D)		445*260*495	
Net weight (kg)		7.4	
Gross weight (kg)		9.7	

Precision Impedance Analyzer

MCR-9000 Series



- Signal source frequency range: DC,10Hz~5/10/20/30MHz
- Source position: variable voltage 10mV~2V/Variable current 200μA~20mA
- Basic impedance measuring accuracy: ±0.05%
- Automatic levle control(ALC)function
- Output impedance 25Ω/100Ω switchable
- High cost efficient. Have basic measuring, drawing analysis function, also have support dielectric and permeability measurement
- High meauring speed<3mS(fastest)
- Open circuit/ short circuit/ load correction function
- Up to four component parameters can be selectedin the meter mode. and the inductance value and DCR value can be measured and dissplayed simultaneously
- Automatic component classification :Conparator and Bin classification function of HANDLER interface
- Built-in DC bias voltage -12V ~+12V(6632)
- USB/GPIB/RS232/LAN Interface, Optional PC connection data analysis software can be purchased for fast automation and data access
- Ultra low power consumption<30W, fanless design, zero noise

Select the scan function to display the curve chart

The graph displays the measurement information on the screen as a graph. Through the graph scanning function, the electrical characteristics of the component can be analyzed quickly

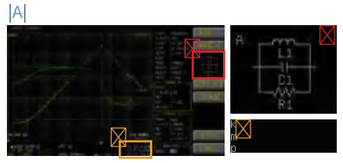
The multi-step list tests the automatic programming capabilities

The customer can perform a series of measurements on the component according to a self-defined sequence of steps When all the test steps are completed, the screen will display the test results of the parameters selected for each step (PASS/HI/LO)or upload the data to the computer

Seven types, equivalent line analysis(optional)

Modeling and curve simulation of various equivalent circuit models. seven different models. combined with different types of parameters(resistance, inductance, capacitance), can see three or four component values, as well as the self-resonance frequency(SRF)

|A|



|B|

|C|

|D|

|E|

|F|

|G|

Standard accessories

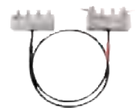
High frequency DIP fixture （MF-619）

Optional accessories

- Kelvin testing lead （MF-4001）
- BNC test extension cord （MF-3001A/B/C）
- High frequency DIP component test fixture （MF-6006）
- Dielectric constant fixture （MF-6007）
- Permeability coefficient fixture （MF-6008）
- Material test fixture （MF-6009）
- High0frequency precision down-pressure SMD test fixture （MF-6010）
- High frequency precision tweezers type test wire clamp （MF-6011）
- High frequency precision SMD test fixture （MF-6012）
- (Liquid Dielectric Material Test Fixture) (MF-6020)

MF-4001

MF-3001A/B/C



MF-6006

MF-6007

MF-6008

MF-6009

MF-6010

MF-6011

MF-6012

Model	MCR-9005	MCR-9010	MCR-9020	MCR-9030
Test parameter	|Z|, |Y|, C, L, X, B, R, G, D, Q, θ ,DCR , Vdc-Idc , ESR , μr , εr			
Test frequency	10Hz-5MHz	10Hz-10MHz	10Hz-20MHz	10Hz-30MHz
Minimum resolution	100MHz, 6-digit frequency input			
Accuracy	7ppm±100mHz			
Basic measurement accuracy	0.08%			
AC measuring				
Test signal voltage range	10mV~2Vrms			
Minimum voltage resolution	1mV			
Accuracy	ALC OFF:10%* Set voltage ±2mV ALC ON:6%* Set voltage±2mV			
Test signal current range	200μA~200mArms			
Minimum resolution current	10μA			
Accuracy	ALC OFF:10%* Set current ±20μA ALC ON:6%* Set current ±20μA			
Measuring speed (fastest)	<3ms			
Output impedance	Switchable 25Ω , 100Ω			
Measurement mode	Meter mode,Multi-step list,Graphics scan			
Calibration function	Open circuit / short circuit / load			
Equivalent Circuit	Series , Parallel			
Equivalent model analysis (optional)	Three components(4 models), four components (3 models)			
Multi-step list test	15 test steps			
Built-in DC bias voltage	-12~+12V , 100Hz~30MHz			
PC LINK / CPK report environment	Optional			
Internal storage memory	100 groups of LCR meter setting files , 50 groups of multi-step test setup(each group have 15 test steps)			
External USB memory	Icr meter setting files, BPM image,multi-step test configuration file,scan image and data			
Parameter measuring range	|Z|	0.000mΩ~9999.99MΩ	Cs,Cp	0.00000pF~9999.99F
	R,X	±0.000mΩ~9999.99MΩ	Ls,Lp	±0.000nH~9999.99kH
	|Y|	0.00000μS~999.999kS	D	0.00000~9999.99
	G,B	±0.00000μS~999.999kS	Q	±0.00~9999.99
	θRAD	±0.00000~3.14159	Δ	±0.00%~9999.99%
	θDEG	±0.000°~180.000°	Rdc	0.00mΩ~99.999MΩ
	εr ' εr'	0~100000	μr' μr'	0~100000
interface	I/O interface	HANDLER		
	Serial communication interface	USB、RS232、LAN		
	Parallel communication interface	GPIB		
Display	7.0 "TFT , 800*480 color display			
Operating environment	Temperature : 10℃~40℃ , Humidity≤80%RH			
Input power supply	Voltage	90~264Vac	Frequency	47~63Hz
Instrument size (W*H*D)	359*147*343			
Packing size (W*H*D)	495*280*480			
Net weight (kg)	3.95			
Gross weight (kg)	6.3			

Oscilloscope Probe

Essentially, an oscilloscope probe establishes a physical and electrical connection between a test point or source and an oscilloscope; in fact, an oscilloscope probe is a type of device or network that connects a signal source to an oscilloscope input, There are three key issues with the degree of connectivity: physical connectivity, impact on circuit operation, and signal transmission.

◆ General Oscilloscope Probe

IP-100/200/1110/2210/2220/2230

Model	IP-100	IP-200	IP-1110	IP-1120	IP-2210	IP-2220	IP-2230
Bandwidth	DC-100MHz	DC-200MHz	DC-100MHz	DC-200MHz	DC-100MHz	DC-200MHz	DC-.300MHz
Attenuation	X1 / X10						
Input resistance	About 1MΩ for X1 and about 10MΩ for X10						
Input capacitance	About 105pF for X1 and about 15pF for X10		About 95pF for X1 and about 13pF for X10		About 95pF for X1 and about 12pF for X10		
Maximum output Voltage	X1 150V DC +Peak AC X10 300Vrms						
Compensation range	10-20pF		10-25pF		10-30pF		
Test line length	About 1.2m						
Operating environment	0-50℃ 0-80%RH						

◆ P6139 Series Oscilloscope Probe

P-6139/P6139A/P6139B

- Miniature probe tip: easier to connect into tested circuit
- Frequency width DC-500MHz
- P6139B With automatic identification function
- Parts combination : more flexible usage , adapt to more test occasions

Model	P-6139	P-6139A	P-6139B
Bandwidth	500MHz	500MHz	500MHz
Attenuation	10X / 1X	10X	10X
Rise Time	<700Ps	<700Ps	<700Ps
Maxinput Voltage	300VCATII	300VCATII	300VCATII
Input Resistance	10MΩ/1MΩ	10MΩ	10MΩ
Input Capacitance	11pF/95pF	9pF	9pF
Auto-ID	No	No	Yes
Cable Length(meter)	1.4m		

◆ Oscilloscope High Voltage Probe

IP-2100/P3100/IP3100A/P5100A

- Frequency width DC-250MHz
- Automatically identification function
- Voltage withstand as high as 3000VpK
- High precision accuaracy < 1%

Model	IP-2100	P-3100	IP-3100A	P-5100A
Bandwidth	100MHz	100MHz	250MHz	250MHz
Attenuation	100X	100X	100X	100X
Rise Time	< 3.50ns	< 3.50ns	< 1.4ns	< 1.4ns
Maxinput Voltage	2000Vpk	2000Vpk	2000Vpk	3000Vpk
Input Resistance	100MΩ	100MΩ	100MΩ	100MΩ
Input Capacitance	12pF	10pF	10pF	3pF
Cable Length(meter)	1.2m	1.2m	1.2m	2m
Operating environment	0-50℃ 0-80%RH			

◆ Differential Probe

P-5205A/5210A

- Separate design
- Adopt large scale integrated circuit , SMT process , with better reliability and stability
- 4MΩ high resistance
- Super high speed test probe , rising time can reach to 3.5ns

Model	P-5205A	P-5210A
Bandwidth	50MHz	100MHz
Attenuation	500X / 50X	500X / 50X
Rise Time	< 7ns	< 3.50ns
Differential voltage	+/-1300V(500X)	+/-1300V(500X)
Common mode voltage	1000VRms	1000VRms
Input resistance	8MΩ/4MΩ	8MΩ/4MΩ
Input capacitance	7pF	7pF
Common mode dump ratio	DC: > -80 dB 100 kHz : > -60dB 3.2 MHz:-40dB 100 MHz : -30dB	DC: > -80 dB 100 kHz : > -60dB 3.2 MHz:-40dB 100 MHz : -30dB

Optional Accessories


LCR-001

SMD Four-terminal test cable


LCR-002

SMD Four-terminal test cable


LCR-003

SMD Test pliers


LCR-004

SMD Test box

LCR-005

Four-terminal test box

LCR-006

Four-terminal test box


IOM002

Ohmmeter Test pen


IV-26010A

Gold plated short circuit


IV-26010

Gold plated short circuit


IV-08

Temperature module


IV-309

Power supply test lead


ITE-131

RS-232 cable

Certification