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# 2023

## MATRIX TECHNOLOGY INC. PRODUCT MANUAL

THE EXPERT OF DC LINEAR POWER SUPPLY



# 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, our 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 CE, ROHS, KC 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.



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### Optional Accessories

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## Single Channel Linear DC Power Supply

MPS-D+ Series



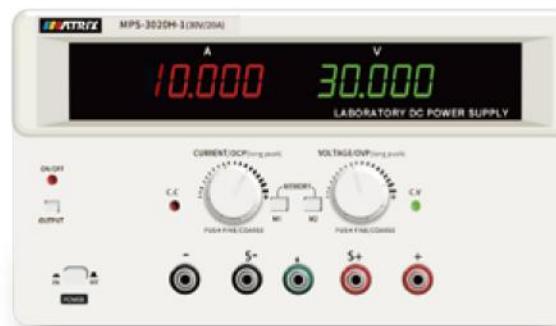
- Current pre-set without short circuit, namely can set the max output current directly
- Smart fan reduce the working noise
- Spec: 30V/3A, 30V/5A, 60V/3A, 30V/10A, 60V/5A, 15V/10A, 15V/15A
- OTP over temperature protection, more comprehensive protection;

- Output on/off function
- Fine/coarse tuning
- Input voltage 110V/220V switchable
- The smallest 300W(60V/5A,30V/10A) linear adjustable power supply in industry

Model		MPS-3003D+	MPS-3005D+	MPS-3010D+	MPS-6003D+	MPS-6005D+	MPS-1510D+	MPS-1515D+
Rated output	Voltage	0~30V	0~30V	0~30V	0~60V	0~60V	0~15V	0~15V
	Current	0~3A	0~5A	0~10A	0~3A	0~5A	0~10A	0~15A
Load regulation rate	Voltage	<0.02%+5mV	<0.02%+6mV	<0.02%+10mV	<0.02%+5mV	<0.02%+6mV	<0.02%+10mV	<0.02%+12mV
	Current	<0.2%±1digits	<0.2%±1digits	<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	<0.02%+10mV	<0.02%+12mV
	Current	<0.2%±1digits	<0.2%±1digits	<0.2%±1digits	<0.2%±1digits	<0.2%±1digits	<0.2%±1digits	<0.2%±1digits
Display resolution	Voltage	100mV						
	Current	<10A:10mA, >10A:100mA						
Display accuracy		≤0.2%+2 digits(Environment temperature: 23°C±5°C)						
Ripple	Voltage	≤2mVrms	≤2mVrms	≤3mVrms	≤2mVrms	≤2mVrms	≤2mVrms	≤2mVrms
	Current	5mA rms	5mA rms	10mA rms	5mA rms	5mA rms	10mA rms	10mA rms
Temperature Coefficient								
300ppm/°C								
Max. output voltage		31.5V±0.5V	31.5V±0.5V	31.5V±0.5V	61.5V±0.5V	61.5V±0.5V	15.5V±0.5V	15.5V±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	10.1A±0.05A	15.1A±0.05A
Input voltage								
AC 220V/110V±10% 50Hz/60Hz								
Working condition								
Temperature 0°C ~40 °C Relative humidity < 80%								
Storage condition								
Temperature -15°C ~70 °C Relative humidity < 80%								
Cooling method								
Smart air cooling								
Size (WxHxD)		mm				280*130*160		
Net weight	kg	4.9	5.7	7.0	5.7	7.0	5.7	8.4
Gross weight	kg	5.6	6.4	7.7	6.4	7.7	6.4	8.1

## 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

Standard SENSE  Optional RS-232 RS-485 USB

### ≤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-6005H-1	0~60V	0~5A	300W
MPS-6010H-1	0~60V	0~10A	600W
MPS-10003H-1	0~100V	0~3A	300W
MPS-20002H-1	0~200V	0~2A	400W
MPS-30001H-1	0~300V	0~1A	300W

Model	MPS-3010H-1	MPS-3020H-1	MPS-6005H-1	MPS-6010H-1	MPS-10003H-1	MPS-20002H-1	MPS-30001H-1	
Input voltage								
Rated output	Voltage	0~30V	0~30V	0~60V	0~60V	0~100V	0~200V	
	Current	0~10A	0~20A	0~5A	0~10A	0~3A	0~2A	
Load regulation rate								
Voltage	≤0.01%+10mV	≤0.01%+10mV	≤0.01%+5mV	≤0.01%+5mV	≤0.01%+8mV	≤0.01%+12mV	≤0.01%+12mV	
	Current	≤0.2%+5mA	≤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%+5mV	≤0.01%+5mV	≤0.01%+8mV	≤0.01%+12mV	≤0.01%+12mV	
	Current	≤0.2%+5mA	≤0.2%+5mA	≤0.2%+5mA	≤0.2%+5mA	≤0.2%+5mA	≤0.2%+5mA	
Setting resolution								
Voltage	1mV	1mV	1mV	1mV	10mV	10mV	10mV	
	Current	1mA	1mA	1mA	1mA	1mA	1mA	
Setting accuracy								
Voltage	≤0.01%+10mV	≤0.01%+10mV	≤0.01%+10mV	≤0.01%+10mV	≤0.01%+80mV	≤0.01%+80mV	≤0.01%+80mV	
	Current	≤0.1%+5mA	≤0.1%+10mA	≤0.1%+5mA	≤0.1%+5mA	≤0.1%+5mA	≤0.1%+5mA	
Readback resolution								
Voltage	1mV	1mV	1mV	1mV	10mV	10mV	10mV	
	Current	1mA	1mA	1mA	1mA	1mA	1mA	
Readback accuracy								
Voltage	≤0.01%+10mV	≤0.01%+10mV	≤0.01%+10mV	≤0.01%+10mV	≤0.01%+80mV	≤0.01%+80mV	≤0.01%+80mV	
	Current	≤0.1%+5mA	≤0.1%+10mA	≤0.1%+5mA	≤0.1%+5mA	≤0.1%+5mA	≤0.1%+5mA	
Ripple and noise								
Voltage	≤3mV(rms)							
	Current	≤5mA(rms)						
Working temperature								
0~40°C ≤80%RH								
Size (WxHxD)	cm	250*150*330						
Weight	kg	8	13	8	13	12	12	12



CE



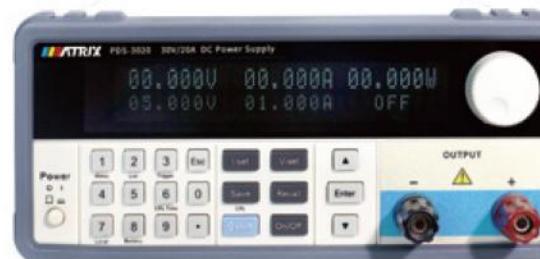
- One key series and parallel independent setting, convenient and easy to use
- In series or parallel, direct display of current and voltage values, no need to calculate
- 4 digits display, 10mV/1mA resolution
- CH1 and CH2 can be controlled independently
- Current can be set without short circuit;

Optional: RS232/485  USB 

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	≤0.01%+5mV	≤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	-	≤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	-	≤0.01%+5mV	-	≤0.01%+5mV	-	≤0.01%+5mV	-	
	Current	≤0.1%+5mA	-	≤0.1%+5mA	-	≤0.1%+5mA	-	≤0.1%+5mA	-	≤0.1%+5mA	-	≤0.1%+5mA	-	≤0.1%+5mA	-	≤0.1%+5mA	-	
Set resolution	Voltage	10mV	-	10mV	-	10mV	-	10mV	-	10mV	-	10mV	-	10mV	-	10mV	-	
	Current	1mA	-	1mA	-	1mA	-	1mA	-	1mA	-	1mA	-	1mA	-	1mA	-	
Readback resolution	Voltage	10mV	-	10mV	-	10mV	-	10mV	-	10mV	-	10mV	-	10mV	-	10mV	-	
	Current	1mA	-	1mA	-	1mA	-	1mA	-	1mA	-	1mA	-	1mA	-	1mA	-	
Set value accuracy	Voltage	≤0.03%+10mV	-	≤0.03%+10mV	-	≤0.03%+10mV	-	≤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	-	≤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	-	≤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	-	≤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	-	≤0.02%+5mV	-	≤0.02%+5mV	-	≤0.02%+5mV	-	
	Load effect	≤0.01%+5mV	-	≤0.02%+5mV	-	≤0.02%+8mV	-	≤0.02%+5mV	-	≤0.02%+5mV	-	≤0.02%+5mV	-	≤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	-	≤0.01%+5mV	-	≤0.01%+5mV	-	≤0.01%+5mV	-	
	Load effect	≤0.01%+5mV	-	≤0.02%+5mV	-	≤0.01%+8mV	-	≤0.01%+5mV	-	≤0.01%+5mV	-	≤0.01%+5mV	-	≤0.01%+5mV	-	≤0.01%+5mV	-	
Ripple and Noise	Voltage	≤2mV(rms)													≤5mA(rms)			
	Current																	
Working temperature		0~40°C ≤80%RH																
Size (W*H*D) mm		250*150*330																
Weight kg	8	9	12	9	9													

## Programmable Single Channel DC Power Supply

PDS Series



- Output switch control, easy control
- Intelligent temperature control fan, extremely practical
- The knob adopts the code switch, which is convenient to use and has the function of preventing misadjustment
- Over voltage, over current, over temperature protection function

Standard RS-232  SENSE Optional Analog control 

- Voltage 1mV current 1mA resolution, high precision display
- Numeric keypad and knob two ways to set the voltage and current
- 100 sets of voltage and current storage call out function, convenient and quick
- Voltage compensation function ensures high precision

Model	Voltage	Current	OVP	OCP			
Rated DC output ( 0°C~40°C )							
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°C)					
	Current	±(0.3% of reading+10mA)(25±5°C)					
Setting resolution							
Voltage Recovery time							
Voltage Temperature coefficient							
Accuracy of reading							
Protection							
Interface							
Storage redeployment							
Operating environment							
Storage environment							
Power input							
Accessories							
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 Single Channel DC Power Supply

MPS-3600LP Series



- Nine sets of voltage and current storage and recall function, convenient and quick
- Output switch control, easy control
- Input voltage 110V/220V switching, universal
- Intelligent temperature control fan, extremely practical
- The knob adopts the code switch, which is convenient to use and has the function of preventing misadjustment
- LIST programme output function
- Set current and voltage regulation range
- Save last time output data and state
- External trigger function
- Pass/fail signal output function
- Standard with RS-232, SENSE, analog control is optional

### Application:

- Routine test and maintenance of production line;
- Laboratory and Research Institute;
- Simulation test of new energy vehicles;
- Automation equipment integration test

Standard RS-232  SENSE

Optional Analog control

Model	MPS-3603LP	MPS-3605LP	MPS-3610 LP	MPS-6003LP	MPS-6005LP	MPS-8002LP
Rated output voltage	0~36V	0~36V	0~36V	0~60V	0~60V	0~80V
Rated output current	0~3A	0~5A	0~10A	0~3A	0~5A	0~2A
Rated output power	108W	180W	360W	180W	300W	160W
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%+5mV
	Current	0.1%+5mA	0.1%+5mA	0.1%+8mA	0.1%+5mA	0.1%+5mA
Setting value resolution	Voltage	10mV	10mV	10mV	10mV	10mV
	Current	1mA	1mA	1mA	1mA	1mA
Readback value resolution	Voltage	10mV	10mV	10mV	10mV	10mV
	Current	1mA	1mA	1mA	1mA	1mA
Setting accuracy (25°C±5°C)	Voltage	≤0.1%+2digits	≤0.1%+2digits	≤0.1%+2digits	≤0.1%+2digits	≤0.1%+3digits
	Current	≤0.2%+3digits	≤0.2%+3digits	≤0.2%+6digits	≤0.2%+3digits	≤0.2%+3digits
Readback accuracy (25°C±5°C)	Voltage	≤0.1%+2digits	≤0.1%+2digits	≤0.1%+2digits	≤0.1%+2digits	≤0.1%+3digits
	Current	≤0.2%+3digits	≤0.2%+3digits	≤0.2%+6digits	≤0.2%+3digits	≤0.2%+3digits
Ripple	Voltage	1mVrms	1.5mVrms	2mVrms	2mVrms	3mVrms
	Current	3mA rms	3mA rms	6mA rms	3mA rms	3mA rms
Temperature Coefficient	Operation	300ppm	300ppm	300ppm	300ppm	300ppm
	Storage	300ppm	300ppm	300ppm	300ppm	300ppm
Instrument size (W*H*D)	mm	215*95*300	215*95*300	215*95*355	215*95*355	215*95*300
Packing size (W*H*D)	mm	310*200*420	310*200*420	310*200*485	310*200*485	310*200*420
Net weight	kg	4.5	6.7	7.5	5.6	7
Gross weight	kg	5.6	7.8	8.6	6.7	5.6

## Programmable Single Channel DC Power Supply

MPS-3600H Series



### Application:

- Routine test and maintenance of production line;
- Laboratory and Research Institute;
- Simulation test of new energy vehicles;
- Automation equipment integration test

- Nine sets of voltage and current storage and recall function, convenient and quick
- Output switch control, easy control
- Input voltage 110V/220V switching, universal
- Intelligent temperature control fan, extremely practical
- The knob adopts the code switch, which is convenient to use and has the function of preventing misadjustment
- LIST programme output function
- Set current and voltage regulation range
- Save last time output data and state
- External trigger function
- Pass/fail signal output function
- Standard with RS-232, SENSE, analog control is optional

Standard RS-232  SENSE

Optional Analog control

Model	MPS-3603H	MPS-3605H	MPS-3610H	MPS-6003H	MPS-6005H	MPS-8002H
Rated output voltage	0~36V	0~36V	0~36V	0~60V	0~60V	0~80V
Rated output current	0~3A	0~5A	0~10A	0~3A	0~5A	0~2A
Rated output power	108W	180W	360W	180W	300W	160W
	Load regulation rate	Voltage	0.05%+5mV	0.05%+8mV	0.05%+10mV	0.05%+5mV
Line regulation	Current	0.1%+5mA	0.1%+5mA	0.1%+8mA	0.1%+5mA	0.1%+5mA
	Voltage	0.05%+5mV	0.05%+8mV	0.05%+10mV	0.05%+5mV	0.05%+5mV
Setting value resolution	Current	0.1%+5mA	0.1%+5mA	0.1%+8mA	0.1%+5mA	0.1%+5mA
	Voltage	10mV	10mV	10mV	10mV	10mV
Readback value resolution	Current	1mA	1mA	1mA	1mA	1mA
	Voltage	10mV	10mV	10mV	10mV	10mV
Setting accuracy (25°C±5°C)	Current	1mA	1mA	1mA	1mA	1mA
	Voltage	≤0.1%+2digits	≤0.1%+2digits	≤0.1%+2digits	≤0.1%+2digits	≤0.1%+3digits
Readback accuracy (25°C±5°C)	Current	≤0.2%+3digits	≤0.2%+3digits	≤0.2%+6digits	≤0.2%+3digits	≤0.2%+3digits
	Voltage	≤0.1%+2digits	≤0.1%+2digits	≤0.1%+2digits	≤0.1%+2digits	≤0.1%+3digits
Ripple	Current	≤0.2%+3digits	≤0.2%+3digits	≤0.2%+6digits	≤0.2%+3digits	≤0.2%+3digits
	Voltage	1mVrms	1.5mVrms	2mVrms	2mVrms	3mVrms
Temperature Coefficient	Current	3mA rms	3mA rms	6mA rms	3mA rms	3mA rms
	Operation	300ppm	300ppm	300ppm	300ppm	300ppm
Storage	Operation	300ppm	300ppm	300ppm	300ppm	300ppm
	Storage	300ppm	300ppm	300ppm	300ppm	300ppm
Instrument size (W*H*D)	mm	215*95*300	215*95*300	215*95*355	215*95*355	215*95*300
Packing size (W*H*D)	mm	310*200*420	310*200*420	310*200*485	310*200*485	310*200*420
Net weight	kg	4.5	6.7	7.5	5.6	7
Gross weight	kg	5.6	7.8	8.6	6.7	5.6

## Programmable Triple Channel DC Power Supply

MPS-X/XP Series



Triple 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.

- Three channels show and adjust current and voltage at the same time
- Intelligent temperature controlled fan to reduce the noise
- Serial/ Parallel/ Track mode
- Low ripple and noise
- Can be calibrated and monitored through computers
- With SENSE function, can compensate 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 recalled

Standard RS-232  USB  SENSE

### Applications

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

Model		MPS-303X	MPS-306X	MPS-603X	MPS-303XP	MPS-306XP	MPS-603XP
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	$\leq 0.01\%+3mV$					
	Current	$\leq 0.01\%+3mA$					
Line regulation	Voltage	$\leq 0.01\%+3mV$					
	Current	$\leq 0.01\%+3mA$					
Set resolution	Voltage	1mV					
	Current	1mA					
Readback resolution	Voltage	1mV					
	Current	1mA					
Set value accuracy	Voltage	$\leq 0.03\%+10mV$					
	Current	$\leq 0.1\%+5mA$	$\leq 0.1\%+8mA$	$\leq 0.1\%+5mA$	$\leq 0.1\%+5mA$	$\leq 0.1\%+8mA$	$\leq 0.1\%+5mA$
Readback accuracy	Voltage	$\leq 0.03\%+10mV$					
	Current	$\leq 0.1\%+5mA$	$\leq 0.1\%+8mA$	$\leq 0.1\%+5mA$	$\leq 0.1\%+5mA$	$\leq 0.1\%+8mA$	$\leq 0.1\%+5mA$
Ripple and noise	Voltage (rms)	$\leq 2mVrms$					
	Current	$\leq 5mArms$					
Series / parallel set-point value accuracy	Voltage	$\leq 0.02\%+5mV$	$\leq 0.02\%+10mV$	$\leq 0.02\%+5mV$	$\leq 0.02\%+10mV$	$\leq 0.02\%+10mV$	$\leq 0.02\%+5mV$
	Current	$\leq 0.1\%+30mA$					
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°C					
Equipment size (W*H*D)	mm	255*110*380	255*110*380	255*110*380	255*110*470	255*110*470	255*110*470
Packing size (W*H*D)	mm	325*210*475	325*210*475	325*210*475	325*210*595	325*210*595	325*210*595
N.W	kg	8.5	8.5	8.5	11	11	11
G.W	kg	10	10	10	13	13	13

## Programmable Triple Channel DC Power Supply

MPS-S Series



### Applications

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

Triple 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.

- Three channels show and adjust current and voltage at the same time
- Intelligent temperature controlled fun to reduce the noise
- Serial/ Parallel/ Track mode
- Low ripple and noise
- Can be calibrated and monitored through computers
- With SENSE function, can compensate 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 recalled

Standard RS-232  USB  SENSE

Model		MPS-306S			MPS-603S		
Parameter		CH1	CH2	CH3	CH1	CH2	CH3
Rated output	Voltage	0~31V	0~31V	0~6V	0~61V	0~61V	0~6V
	Current	0~6A	0~6A	0~3A	0~3A	0~3A	0~3A
Load regulation	Voltage	$\leq 0.01\%+3mV$					
	Current	$\leq 0.01\%+3mA$					
Line regulation	Voltage	$\leq 0.01\%+3mV$					
	Current	$\leq 0.01\%+3mA$					
Set resolution	Voltage	10mV					
	Current	1mA					
Readback resolution	Voltage	10mV					
	Current	1mA					
Set value accuracy	Voltage	$\leq 0.03\%+2digits$					
	Current	$\leq 0.1\%+8mA$					
Readback accuracy	Voltage	$\leq 0.03\%+2digits$					
	Current	$\leq 0.1\%+8mA$					
Ripple and noise	Voltage (rms)	$\leq 2mVrms$					
	Current	$\leq 5mArms$					
Series / parallel set-point value accuracy	Voltage	$\leq 0.02\%+2digits$					
	Current	$\leq 0.1\%+30mA$					
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°C					
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 Series



Model	MPS-3206	MPS-3210	MPS-6205	
Rated output voltage	0~32V	0~32V	0~62V	
Rated output current	0~6A	0~10A	0~5A	
Load regulation	Voltage	< 0.1%+5mV	< 0.1%+10mV	
	Current	< 0.2%+3mA	< 0.2%+5mA	
Line regulation	Voltage	< 0.01%+5mV	< 0.01%+10mV	
	Current	< 0.2%+3mA	< 0.2%+5mA	
Setting resolution	Voltage	≤0.1%+1 bit	≤0.1%+1 bit	
	Current	≤0.2%+3mA	≤0.2%+5mA	
Setting accuracy	Voltage	≤0.1%+1 bit	≤0.1%+2 bit	
	Current	≤0.2%+3mA	≤0.2%+5mA	
Setting accuracy	Voltage	10mV	10mV	
	Current	1mA	1mA	
Ripple	Voltage	≤10mVrms	≤10mVrms	
	Current	≤5mArms	≤5mArms	
OVP	0~32V±0.2%FS	0~32V±0.2%FS	0~62V±0.2%FS	
Max. voltage	32V±0.2%	32V±0.2%	62V±0.2%	
OCP	0~6.1A±0.2%FS	0~10A±0.2%FS	0~5.1A±0.2%FS	
Max. current	6.1A±0.2%	10A±0.2%	5.1A±0.2%	
Temperature Coefficient	Operation	0 ~ 40°C≤80%RH		
	Storage	-15~70°C≤80%RH		
Instrument size (W*H*D)	mm	115*96*261		
Packing size (W*H*D)	mm	167*153*317		
Net weight	kg	1.5		
Gross weight	kg	1.9		

- 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 convenient for users
- OVP/OCP setting function
- Encoder sets voltage and current. Fast and longer life
- Output power switch function;

## Programmable DC Power Supply

MPS-P Series



Standard SENSE  RS-232、RS-485、USB

### Features

- The highest resolution of voltage 1mV and current 1mA, high-precision display of V/A/W
- Output switch control, easy to control
- Voltage compensation function to ensure high accuracy
- Sequence output function, convenient and easy to use.
- Data memory function, convenient and quick to call
- The knob adopts a coded switch, which is convenient and quick to use and has the function of preventing misadjustment
- OVP/OCP settings, complete functions
- Slow-start circuit design for start-up has low surge current and high practicability
- The current can be easily preset without short circuit, subverting your use
- V/A can be set to adjust within an interval to prevent misoperation from damaging the measured object
- Power-on state memory settings
- The buzzer can be turned off and on
- One key to restore factory settings
- Intelligent temperature control fan, extremely practical
- Input voltage 110V/220V switch, universal

Model	MPS-3030P	MPS-3040P	MPS-3050P	MPS-5030P	MPS-6020P
Input voltage	AC 220V/110V±10% 50Hz/60Hz				
Rated output	Voltage	0~30V	0~30V	0~30V	0~50V
	Current	0~30A	0~40A	0~50A	0~30A
Load regulation rate	Voltage	≤0.02%+15mV	≤0.02%+15mV	≤0.02%+15mV	≤0.02%+15mV
	Current	≤0.2%+10mA	≤0.2%+10mA	≤0.2%+10mA	≤0.2%+10mA
Power regulation rate	Voltage	≤0.02%+15mV	≤0.02%+15mV	≤0.02%+15mV	≤0.02%+15mV
	Current	≤0.2%+10mA	≤0.2%+10mA	≤0.2%+10mA	≤0.2%+10mA
Set resolution	Voltage	1mV	1mV	1mV	1mV
	Current	1mA	1mA	1mA	1mA
Setting accuracy	Voltage	≤0.01%+10mV	≤0.01%+10mV	≤0.01%+10mV	≤0.01%+10mV
	Current	≤0.1%+5mA	≤0.1%+5mA	≤0.1%+5mA	≤0.1%+5mA
Readback resolution	Voltage	1mV	1mV	1mV	1mV
	Current	1mA	1mA	1mA	1mA
Readback accuracy	Voltage	≤0.01%+10mV	≤0.01%+10mV	≤0.01%+10mV	≤0.01%+10mV
	Current	≤0.1%+5mA	≤0.1%+5mA	≤0.1%+5mA	≤0.1%+5mA
Ripple and noise	Voltage	≤10mV(rms)			
	Current	≤10mA(rms)			
Working environment	0~40°C ≤80%RH				
Dimensions (WxHxD)	cm	480*142*370			
Weight	kg	22	24	25	22
		25			

## 4CH Programmable DC Power Supply

MPS-4 Series



- 4 in 1, easy to install and takes up small space
- Output voltage and current: 30V/5A; 30V/10A or 60V/3A; 60V/5A (30V/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

Standard RS-232 SENSE

Model	MPS-3054	MPS-30104	MPS-6034	MPS-6054
Rated output voltage	0~30V*4CH	0~30V*4CH	0~60V*4CH	0~60V*4CH
Rated output current	0~5A*4CH	0~10A*4CH	0~3A*4CH	0~5A*4CH
Transformation method	Linear power supply			
Load regulation rate	Voltage	$\leq 0.02\% + 5\text{mV}$		
	Current	$\leq 0.02\% + 5\text{mA}$		
Line regulation	Voltage	$\leq 0.02\% + 5\text{mV}$		
	Current	$\leq 0.02\% + 5\text{mA}$		
Set value resolution	Voltage	1mV		
	Current	0.1mA		
Setting accuracy (25°C±5°C)	Voltage	$\leq 0.05\% + 5\text{digits}$		
	Current	$\leq 0.05\% + 2\text{mA}$		
Readback resolution	Voltage	1mV		
	Current	0.1mA		
Readback accuracy	Voltage	$\leq 0.05\% + 5\text{digits}$		
	Current	$\leq 0.05\% + 2\text{mA}$		
Ripple and noise	Voltage	$\leq 2\text{mV(rms)}$	$\leq 5\text{mV(rms)}$	$\leq 2\text{mV(rms)}$
	Current	$\leq 5\text{mA(rms)}$	$\leq 5\text{mA(rms)}$	$\leq 5\text{mA(rms)}$
Temperature Coefficient	Operating environment	0 ~ 40 °C ≤ 80% RH		
	Storage environment	-15 ~ 70 °C ≤ 80% RH		
Interface	Standard	RS232		
size (W*H*D)	mm	480*142*370		
weight	kg	23	28	23
				28

## 5CH Programmable DC Power Supply

MPS-5 Series



- 5 in 1, easy to operate, small volume;
- 30V/5A, 60V/3A output 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

Standard RS-232 SENSE

Model	MPS-3055	MPS-6035
Rated output voltage	0~30V*5CH	0~60V*5CH
Rated output current	0~5A*5CH	0~3A*5CH
Transformation method	Linear power supply	
Load regulation rate	Voltage	$\leq 0.02\% + 5\text{mV}$
	Current	$\leq 0.02\% + 5\text{mA}$
Line regulation	Voltage	$\leq 0.02\% + 5\text{mV}$
	Current	$\leq 0.02\% + 5\text{mA}$
Set value resolution	Voltage	1mV
	Current	0.1mA
Setting accuracy (25°C±5°C)	Voltage	$\leq 0.05\% + 5\text{digits}$
	Current	$\leq 0.05\% + 2\text{mA}$
Readback resolution	Voltage	1mV
	Current	0.1mA
Readback accuracy	Voltage	$\leq 0.05\% + 5\text{digits}$
	Current	$\leq 0.05\% + 2\text{mA}$
Ripple and noise	Voltage	$\leq 2\text{mV(rms)}$
	Current	$\leq 5\text{mA(rms)}$
Temperature Coefficient	Operating environment	0 ~ 40 °C ≤ 80% RH
	Storage environment	-15 ~ 70 °C ≤ 80% RH
Interface	Standard	RS232
size (W*H*D)	mm	480*142*370
weight	kg	25

## 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: 0-60A
- 30/15kW High power density
- Supports multiple power supplies in parallel, power up 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 failure
- Full color LCD display, digital keyboard, make operation more convenient
- Effectively prevent current reverse
- Standard RS-232, optional GPIB
- No-load fast discharge design

Standard RS-232

Optional GPIB

Model	HPS Serie	
AC input	<3kW single phase 220V±10% >3kW triple phase 380V±10%	
DC output	Voltage 0-1000V 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 accuracy	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-in OTP, 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 design, 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

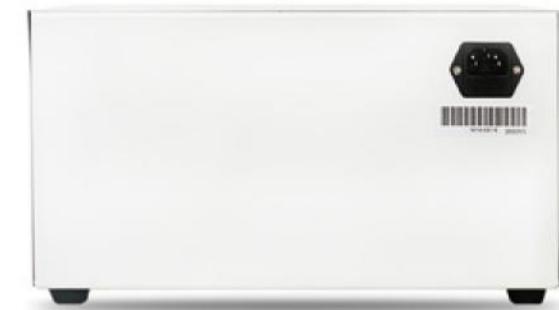


- The advanced direct digital frequency synthesizer (DDS) waveform is used to achieve high frequency stability, good continuity and accurate measurement
- Keyboard shortcuts: 110V, 220V, 50Hz, 60Hz shortcuts self-assemble
- Key LOCK function prevents inadvertent touch
- With key lock M1, M2,M3,M4 and M5 five sets of memory, can store the commonly used voltage V and frequency F, easy to recall them by one key
- Push-down infinite coding knob switch, adjusting cursor position by pressing the knob.
- Four window five digit display, display voltage V, frequency F, current I, power P, power factor PF simultaneously, and more accurate.

Model	APS-4000A	APS-4000B	APS-4000C
Capacity	350VA	700VA	1200VA
Working mode	SPWM		
The input			
Number of phase	1Φ2W		
Voltage	220V±10%		
Frequency	45Hz-250Hz		
The output			
Number of phase	1Φ2W		
Voltage	0-150VAC/0-300VAC AUTO		
Frequency	45-250Hz (0.1Step)		
Maximum current L=120V	3A	6A	10A
	H=240V	1.5A	3A
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-232C		
Set the current limit	0-MaxCurrent(P/240 Maximum current is: maximum capacity /240V is P/240)		
The output protection	OverCurrent	OverTemp	OverLoad
Operation environment	0-40°C 20-80%RH		
Net weight (kg)	12.7	15	18.5
Gross weight (kg)	14.5	16.7	20
Instrument size (W*H*D)	365*150*430	365*150*430	365*150*430
Packing size (W*H*D)	510*255*550	510*255*550	510*255*550

## 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 digits		
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

# AC Power Source

## APS-50000 Series



- Input and output are completely isolated
- Output voltage: phase voltage 0V-150VAC/0V-300VAC or line voltage 0V-520V (voltage can be customized 600V, 1000V or more)
- Output frequency: 40Hz-250Hz continuously adjustable
- Output high and low gears: automatic switching of high and low gears, safe and convenient
- Voltage, frequency, current, power/power factor, four windows simultaneously display
- 5 groups of storage one-key calling function
- No radiation interference, low harmonic content, and special treatment, low interference
- Pure and stable sine wave output
- Strong overload capacity, instantaneous current can withstand 3 times the rated current
- With over current, over temperature, over voltage, short circuit, overload, current limit, instantaneous power failure protection and warning device
- Suitable for resistive, capacitive, inductive and other non-linear loads

Standard RS-232

Model	APS51005	APS51008	APS51010	APS51015	APS51020	APS51030	APS51050	APS51075	APS51100	
Capacity	5KVA	8KVA	10KVA	15KVA	20KVA	30KVA	50KVA	75KVA	100KVA	
The output voltage	0-150V/0-300V automatic switching between high and low gears									
Output current	L=120V H=240V	42A 21A	67A 33.5A	84A 42A	126A 63A	168A 84A	252A 126A	416A 208A	626A 313A	840A 420A
frequency	40-250Hz(0.01Step)									
Size (W*H*D)	430*425*550		680*450*650		800*450*650		1020*610*930		1620*750*1200	
Weight (kg)	50	70	90	110	140	210	290	410	540	

Specifications									
Working mode	SPWM (Sine Pulse Width Modulation)								
Input phase number	1Φ2W 220V±15% or 3Φ4W 380V±15%								
Output	<table border="1"> <tr> <td>Phase</td><td>1Φ2W</td></tr> <tr> <td>Voltage</td><td>0-150V/0-300V automatic switching between high and low gears</td></tr> <tr> <td>Current</td><td>42A-840A</td></tr> <tr> <td>frequency</td><td>40-250Hz(0.01Step)</td></tr> </table>	Phase	1Φ2W	Voltage	0-150V/0-300V automatic switching between high and low gears	Current	42A-840A	frequency	40-250Hz(0.01Step)
Phase	1Φ2W								
Voltage	0-150V/0-300V automatic switching between high and low gears								
Current	42A-840A								
frequency	40-250Hz(0.01Step)								
LED display	Voltage Vrms, current Arms, frequency Fre, power Wattage, power factor PF								
Voltage resolution	0.01V								
Current resolution	Output <10A, resolution 0.001A; output 10A-100A, resolution 0.01A; Output 100A-1000A, resolution 0.1A; output ≥1000A, resolution 1A;								
Frequency resolution	0.01Hz								
Power regulation rate	≤1%								
Load stability	≤1%								
Load regulation rate	≤1%								
Frequency stability	0.01%								
Waveform distortion	≤1%(Pure resistance load,other resistance 3%)								
Measurement	<table border="1"> <tr> <td>Voltage</td><td>0.5%FS+5dgt</td></tr> <tr> <td>Current</td><td>0.5%FS+5dgt</td></tr> <tr> <td>frequency</td><td>0.01%FS+5dgt</td></tr> <tr> <td>power</td><td>0.5%FS+5dgt</td></tr> </table>	Voltage	0.5%FS+5dgt	Current	0.5%FS+5dgt	frequency	0.01%FS+5dgt	power	0.5%FS+5dgt
Voltage	0.5%FS+5dgt								
Current	0.5%FS+5dgt								
frequency	0.01%FS+5dgt								
power	0.5%FS+5dgt								
Accuracy	<table border="1"> <tr> <td>Voltage</td><td>0.2%FS</td></tr> <tr> <td>Current</td><td>0.1%FS</td></tr> </table>	Voltage	0.2%FS	Current	0.1%FS				
Voltage	0.2%FS								
Current	0.1%FS								
set up	<table border="1"> <tr> <td>Voltage</td><td>0-MAX Current</td></tr> <tr> <td>Current</td><td>0-MAX Current</td></tr> </table>	Voltage	0-MAX Current	Current	0-MAX Current				
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Voltage	0.2%FS								
Current	0.1%FS								
Current limit setting	0-MAX Current								
storage	5 groups of storage: M1 (V/F/A), M2 (V/F/A), M3 (V/F/A), M4 (V/F/A), M5 (V/F/A)								
protect	Over Current, Over Temp, Over Load, Short Circuit								
cooling method	Forced cooling by fan								
Operating environment	0-40°C/10-90%RH								

Model	Capacity	The output voltage	Output current (L120V/H240V)	Frequency	Size (W*H*D)	Weight (kg)
APS53005	5KVA	0-150V/0-300V Automatic switching between high and low gears (Line voltage: 0-260V/0-520V)	14A/7A	40-250Hz (0.01Step)	800*450*650	110
APS53010	10KVA		28A/14A			130
APS53015	15KVA		42A/21A			160
APS53020	20KVA		58A/29A			210
APS53030	30KVA		84A/42A			280
APS53050	50KVA		140A/70A			360
APS53075	75KVA		210A/105A			510
APS53100	100KVA		280A/140A			660
APS53150	150KVA		420A/210A			710
APS53200	200KVA		588A/294A			910
APS53300	300KVA		840A/420A			1200
APS53500	500KVA		1390A/695A			1800

Specifications									
Working mode	SPWM (Sine Pulse Width Modulation)								
Input phase number	3Φ4W 380V±15% (5KVA , 10KVA Optional 1Φ2W 220V±15%)								
Output	<table border="1"> <tr> <td>Phase</td><td>3Φ4W</td></tr> <tr> <td>Voltage</td><td>0-150V/0-300V automatic switching between high and low gears (line voltage: 0-260V/0-520V)</td></tr> <tr> <td>Current</td><td>14A-1390A</td></tr> <tr> <td>Frequency</td><td>40-250Hz(0.01Step)</td></tr> </table>	Phase	3Φ4W	Voltage	0-150V/0-300V automatic switching between high and low gears (line voltage: 0-260V/0-520V)	Current	14A-1390A	Frequency	40-250Hz(0.01Step)
Phase	3Φ4W								
Voltage	0-150V/0-300V automatic switching between high and low gears (line voltage: 0-260V/0-520V)								
Current	14A-1390A								
Frequency	40-250Hz(0.01Step)								
LED display	Each phase voltage Vrms, current Arms, frequency Fre, power Wattage, power factor PF								
Voltage resolution	0.01V								
Current resolution	Output <10A, resolution 0.001A; output 10A-100A, resolution 0.01A; Output 100A-1000A, resolution 0.1A; output ≥1000A, resolution 1A;								
Frequency resolution	0.01Hz								
Power regulation rate	≤1%								
Load stability	≤1%								
Load regulation rate	≤1%								
Frequency stability	0.01%								
Waveform distortion	≤1%(Pure resistance load,other resistance 3%)								
Measurement	<table border="1"> <tr> <td>Voltage</td><td>0.5%FS+5dgt</td></tr> <tr> <td>Current</td><td>0.5%FS+5dgt</td></tr> <tr> <td>frequency</td><td>0.01%FS+5dgt</td></tr> <tr> <td>power</td><td>0.5%FS+5dgt</td></tr> </table>	Voltage	0.5%FS+5dgt	Current	0.5%FS+5dgt	frequency	0.01%FS+5dgt	power	0.5%FS+5dgt
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Current	0.5%FS+5dgt								
frequency	0.01%FS+5dgt								
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Accuracy	<table border="1"> <tr> <td>Voltage</td><td>0.2%FS</td></tr> <tr> <td>Current</td><td>0.1%FS</td></tr> </table>	Voltage	0.2%FS	Current	0.1%FS				
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Voltage	0.2%FS								
Current	0.1%FS								
Current limit setting	0-MAX Current								
storage	5 groups of storage: M1 (V/F/A), M2 (V/F/A), M3 (V/F/A), M4 (V/F/A), M5 (V/F/A)								
protect	Over Current, Over Temp, Over Load, Short Circuit								
cooling method	Forced cooling by fan								
Operating environment	0-40°C/10-90%RH								

## Programmable AC Power Source

APS-7000 Series



APS-7105/7100

- 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

Standard RS-232  Synchronous signal output

Optional RS485



APS-7200/7300

- 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 stabilizing 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	
Capacity	500VA	1KVA	2KVA	3KVA	
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 H=240V	4.2A 2.1A	8.4A 4.2A	16.8A 8.4A	25A 12.5A
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°C 20-80%RH				
Net weight (kg)	20.6	20.6	30.5	33.3	
Gross weight (kg)	23.1	23.1	33.2	36	
Instrument size (W*H*D)	480*135*515	480*135*515	480*225*535	480*225*535	
Packing size (W*H*D)	575*255*645	575*255*645	575*255*645	575*255*645	

## Programmable DC Electronic Load

PEL-8000 Series



- CC , CV , CR , CP , short circuit, dynamic and other working modes
- Over voltage, overcurrent, overpower, overheating, polarity reverse protection
- High brightness vacuum VFD screen and display V,A,P simultaneously

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.

- Accuracy of 0.1%  Standard RS-232  SENSE
- 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			
	Resolution	0.1mA					
	Accuracy	0.03%+0.05%					
CV mode	Range	0.1-19.999V					
	Resolution	1mV	10mV	1mV			
	Accuracy	0.03%+0.05%					
CR mode	Range	0.3Ω-10k	0.3Ω-5k	0.3Ω-10k			
	Resolution	16 bits					
	Accuracy	0.2%+0.2%					
CW mode	Range	0-150W	0-150W	0-300W			
	Resolution	1mW	10mW	1mW			
	Accuracy	0.2%+0.2%					
V Measurement	Range	0-19.999V	0-150V	0-19.999V			
	Resolution	0.1mV	1mV	0.1mV			
	Accuracy	0.015%0.05%FS	0.015%0.05%FS	0.015%0.03%FS			
C Measurement	Current	0-3A	0-30A	0-6A			
	Resolution	0.1mA	1mA	0.1mA			
	Accuracy	0.03%+0.05%FS	0.03%+0.08%FS	0.03%+0.05%FS			
W Measurement	Watt	100W	150W	100W			
	Resolution	1mW	10mW	1mW			
	Accuracy	0.2%+0.2%					
Battery Measurement Battery Input : 0.5-150V Max.Measurement:capacity=999/H;Resolution=0.1mA;Time=Range=1S-16HS							
Dynamic Measurement 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			
	Voltage(CV)	0V					
	Resistance(CR)	55mΩ	25mΩ	300mΩ			
Temperature	Operating	0-40°C					
	Environment	-10°C~70°C					
Net weight	kg	4.1					
Gross weight	kg	5					
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



Standard RS-232

- 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	20Hz~45Hz		1% + 30
	500mv-750v	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)
200mV	1uV~220.000mV	1uV	± (0.05%+4)	±(0.03% +10)
2V	10uV~2.2000V	10uV	± (0.05%+3)	±(0.03% +6)
20V	100uV~22.000V	100uV	± (0.05%+4)	±(0.03% +6)
200V	1mV~22.000V	1mV	± (0.05%+3)	±(0.03% +6)
1000V	10mV~1000V	10mV	± (0.1%+3)	±(0.03% +6)
AC voltage measurement (true value of validity)				
Range	Resolution	Error limit (MDM-8155A)		
		40Hz~5kHz	5~30kHz	30~50kHz
200mV	1uV	±(0.2%+100)	±(0.2%+100)	±(0.5%+200)
2V	10uV	±(0.2%+100)	±(0.2%+100)	±(0.8%+200)
20V	100uV	±(0.2%+100)	±(0.8%+300)	±(2.5%+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)		
		± (0.8%+80)		
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)				
200uA	0.001uA~220.000uA	0.001uA	± (0.35%+10)	±(0.15% +15)				
2mA	0.01uA~2.2000mA	0.01uA	± (0.35%+10)	±(0.05% +10)				
20mA	0.1uA~22.000mA	0.1uA	± (0.35%+10)	±(0.15% +10)				
200mA	1uA~220.000mA	1uA	± (0.35%+10)	±(0.15% +10)				
2A	0.01mA~2.20000A	10uA	± (0.3 5%+10)	± (0.05% +10)				
10A	0.1mA~10A	100uA	± (0.8%+60)	±(0.5% +10)				
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)				
200uA	0.001uA~220.000uA	0.001uA	± (0.8%+80)	±(0.75% +20)				
2mA	0.01uA~2.2000mA	0.01uA	± (0.8%+80)	±(0.75% +10)				
20mA	0.1uA~22.000mA	0.1uA	± (0.8%+80)	±(0.75% +20)				
200mA	1uA~220.00mA	1uA	± (0.8%+80)	±(0.75% +10)				
2A	0.01mA~2.20000A	10uA	± (0.8%+80)	±(0.75% +20)				
10A	0.1mA~10A	100uA	± (1%+50)	±(1.0% +10)				
Resistance measurement								
Range	Measuring range	Resolution	Error limit					
			MDM-8145A	MDM-8146A				
200Ω	0.001Ω~220.000Ω	0.001Ω	± (0.1%+20)	±(0.08% +10)				
2kΩ	0.01Ω~2.2000kΩ	0.01Ω	± (0.1%+20)	±(0.08% +5)				
20kΩ	0.1Ω~22.000kΩ	0.1Ω	± (0.1%+6)	±(0.08% +5)				
200kΩ	1Ω~220.000kΩ	1Ω	± (0.1%+6)	±(0.08% +6)				
2MΩ	10Ω~2.2000MΩ	10Ω	± (0.4%+10)	±(0.2% +10)				
20MΩ	100Ω~22.000MΩ	100Ω	± (0.4%+15)	±(0.35% +10)				
Capacitance measurement								
Range	Measuring range	Resolution	Error limit					
			MDM-8145A (4 ½)	MDM-8146A (4 ½)				
2nF	0.001nF~2.200nF	0.001nF	± (3.5%+30)	±(2%+5)				
20nF	0.01nF~22.00nF	0.01nF	± (3.5%+30)	±(2%+5)				
200nF	0.1nF~220.0nF	0.1nF	± (3.5%+30)	±(2%+5)				
2uF	1nF~2.200uF	1nF	± (3.5%+30)	±(2%+5)				
20uF	0.01uF~22.00uF	0.01uF	± (3.5%+30)	±(3%+5)				
200uF	0.1uF~220.0uF	0.1uF	± (3.5%+30)	±(3%+5)				
2mF	1uF~2.200mF	1uF	± (4%+10)	±(3%+5)				
Frequency measurement								
Range	Measuring range	Resolution	Error limit					
			MDM-8145A (4 ½)	MDM-8146A (4 ½)				
200Hz	0.001Hz~220.000Hz	0.001Hz	± (0.2%+10)	±(0.2% +10)				
2kHz	0.01Hz~2.2000kHz	0.01Hz	± (0.2%+10)	±(0.1%+3)				
20kHz	0.1Hz~22.000kHz	0.1Hz	± (0.2%+10)	±(0.2% +10)				
200kHz	1Hz~220.000kHz	1Hz	± (0.2%+10)	±(0.1%+3)				
2MHz	10Hz~2.2000MHz	10Hz	± (0.2%+10)	±(0.2% +10)				
20MHz	100Hz~22.000MHz	100Hz	± (0.2%+10)	±(0.2% +10)				
Duty cycle								
5.0%~95.0% (error is within 10 words)								
Diode measurement								
Range	Measuring range	Input protection	Remarks					
			250Vp					
The input current is about 0.75mA								
Open and off measurement								
Range	Measuring range	Input protection	Remarks					
			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 30Ω, the buzzer is sound								
Square wave output								
Output	Square wave	Output frequency	Output amplitude					
			1Hz~100kHz					
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-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 1/2)	MDM-8165A (6 1/2)
Display		3.5-inch color screen (resolution 320*480)	
Signal terminal		Front-end/back-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°C	
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	

MDM-8165/8165A

**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%+10)	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 burning	✓	✓	✓	
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			

## 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)

Standard RS-232  USB Device

Optional USB Host

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			
<b>Frequency Characteristics</b>				
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			
<b>Sine Wave Characteristics</b>				
Sine Wave	Harmonic Distortion	≥45dBc(<1MHz); ≥40dBc(1MHz~20MHz)		
	Total Harmonic Distortion	<0.8%(20Hz ~ 20kHz, 0dBm)		
<b>Square Wave Signal Characteristics</b>				
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
	2mVpp ~ 20Vpp	2mVpp ~10Vpp
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
Offset Adjusting Range		2mV<Output Amplitude≤0.1V
Offset Resolution		±10Vpk, ac + dc
±0.250Vpk, ac + dc		
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 between 0.01s~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		
Size (W*H*D)		
265×105×305		
Weight (kg)		
2.6		

## Programmable Electrical Safety Tester

MST-8101/8103

Standard RS-232



- 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  $0.1\mu\text{A}$ , accurate
- Automatic discharge function after the test is over
- Up to  $10\text{G}\Omega$  insulation resistance test range
- $100\text{VA}$  capacity

Model	MST-8101	MST-8103
Function Description	AC	AC/DC/IR
Withstand voltage test		
AC	voltage range 0.050kV—5.000kV Voltage waveform Sine wave Distortion < 3% working frequency 50, 60Hz optional Frequency accuracy $\pm 1\%$ Output Power 100VA ( 20mA) Voltage regulation rate $\pm (1.0\% + 50V)$ ( rated power )	0.050kV—5.000kV Sine wave < 3% 50, 60Hz optional $\pm 1\%$ 100VA ( 20mA ) $\pm (1.0\% + 50V)$ ( rated power )
DC	voltage range - Signal source frequency - Output Power 50VA ( 10mA ) Voltage regulation rate - Voltage resolution 1V Voltage test accuracy $\pm 2\%$ Voltage generation method DDS signal source plus class AB power amplifier	0.050 kV—6.00kV 600Hz - 50VA ( 10mA ) $\pm (1.0\% + 100V)$ ( rated power ) 1V $\pm 2\%$ DDS signal source plus class AB power amplifier
Electricity Pressure	voltage range 0.001mA—20.00 mA Short circuit current (momentary) >40 mA Current resolution 0.001 mA Current accuracy $\pm (2\% \text{ reading} + 2 \text{ words})$ Actual current OFF-0.001 mA-20 mA	0.001mA—20.00 mA >40 mA 0.001 mA $\pm (2\% \text{ reading} + 2 \text{ words})$ OFF-0.001 mA-20 mA
test Fan	Current range - Current accuracy - Discharge function	0.1uA—10.00mA $\pm (2\% \text{ reading} + 2 \text{ digits})$ Automatic discharge after the test ( DCW )
Surround		
Insulation resistance test ( MST-8103 only )		
The output voltage	0.050V—1.000kV	
Voltage resolution	1V	
Voltage test accuracy	$\pm 2\%$	
Maximum output current	10mA	
Maximum output power	10VA ( 1000V/10mA )	
Output instantaneous short-circuit current	>20mA	
Load Regulation	$\leq 1\%$ ( rated power )	
Ripple ( 1kV )	$\leq 3\%$ ( 1kV , no load )	
Discharge function	Automatic discharge after the test	
Resistance measurement range	0.1MΩ— 10GΩ	
Resistance measurement accuracy	Voltage < 500V: $0.2\text{M}\Omega \sim 1\text{G}\Omega$ accuracy: [ $\pm 10\%$ reading + 5 words ] $1\text{G}\Omega \sim 10\text{G}\Omega$ accuracy: [ $\pm 20\%$ reading + 5 words ] Voltage > 500V: $0.2\text{M}\Omega \sim 1\text{G}\Omega$ accuracy: $\pm 3\%$ reading + 5 words ] $1\text{G}\Omega \sim 10\text{G}\Omega$ accuracy: $\pm [7\% \text{ reading} + 5 \text{ words}]$	
Arc detection	MST-8101	MST-8103
Measuring range	AC, DC	AC:1mA—20mA ( 9 gears, fine-tuning )
Comparators		AC, DC:1mA—20mA(9 gears, fine-tuning )
Discrimination method		Window comparator mode I at the ON : When $I_x < I_{\text{on}}$ , the PASS ; when $I_x \leq I$ or under $I_x \geq I_{\text{on}}$ , FAIL ( article items I at <I on) I down OFF : when $I_x < I_{\text{up}}$ , PASS ; when $I_x \geq I_{\text{up}}$ , FAIL ; the insulation resistance judgment method is the same as above
Capping current I on	AC, DC	AC: 0.001mA—20mA
Current upper limit setting I under	AC, DC	AC: 0.001mA—20mA
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	$\pm (0.2\% \text{ setting value} \pm 0.1\text{s})$	
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



- 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
- $30\Omega$  ,  $100\Omega$  two types of different signal source output resistance
- Built - in comparator, 5 grade flexible quantified and defective alarming mode shutdown automatically save test conditions, humanized operation

Model	MCR-5010	MCR-5030	MCR-5100	MCR-5200
Test parameter	L,C, R,   Z , D, Q , X , ESR , $\theta(\text{Deg}), \theta(\text{Rad})$			
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 , 12.4kHz, 15.4kHz, 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 12.4kHz, 15.4kHz, 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 ( $\geq 1\text{kHz}$ )	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 , $\Delta\%$ , V/I ( Measured voltage/current monitoring)			
Displayler	5 digit display of main and minor parameters , 4.3 inch true color LCD displayer			
Output impedance	30 $\Omega$ , 100 $\Omega$ optional			
Display range				
Z , R , X , ESR	0.1mΩ — 99.999MΩ			
C	0.01 pF — 9.9999F			
L	0.01 $\mu\text{H}$ — 9999 H			
D	0.0001 — 9.9999			
Q	0.0001 — 9999.9			
$\theta$ ( Deg )	-179.99° — 179.99°			
$\theta$ ( Rad )	-3.1416 — 3.1416			
$\Delta\%$	-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			

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

Standard RS-232  USB Host  Handler(MCR5100/5200)

Optional USB Device  GPIB  Earphone Jack  Foot Pedal

## High Precision LCR Meter

MCR-6000A Series



- 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% basic 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

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	30Ω, 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		

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.

Standard RS-232  USB Host  USB Device  Handler

Optional GPIB  Headphone Jack  Foot Pedal

## 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% basic 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

Standard RS-232  USB Host  USB Device  Handler  Headphone Jack  Foot Pedal

Optional GPIB

- 30Ω , 50Ω, 100Ω, 10/CC four different signal output 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-8200H	MCR-8500H
Test parameter	Z ,  Y , C, L, X, B, R, G, D, Q, θ ,DCR		
Test frequency	20Hz-1MHz , 0.01Hz resolution	20Hz-2MHz,0.01Hz resolution	20Hz - 5 MHz , 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 , Δ% , V/I ( Measured voltage/current monitoring)		
Displayer	800*480 RGB 7 inch 16 : 9 TFT LCD display		
Testing signal			
Output impedance	30Ω, 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



Standard RS-232  USB Host  USB Device  Handler  Headphone Jack  Foot Pedal

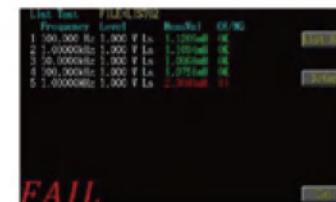
Optional GPIB

- Signal source frequency range: DC, 10Hz~5/10/20/30MHz
- Source position: variable voltage 10mV~2V/Variable current 200 $\mu$ A~20mA
- Basic impedance measuring accuracy:  $\pm 0.05\%$
- Automatic level control(ALC)function
- Output impedance 25 $\Omega$ /100 $\Omega$  switchable
- High cost efficient. Have basic measuring, drawing analysis function, also have support dielectric and permeability measurement

- High measuring speed<3mS(fastest)
- Open circuit/ short circuit/ load correction function
- Up to four component parameters can be selected in the meter mode. and the inductance value and DCR value can be measured and displayed simultaneously
- Automatic component classification :Comparator 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

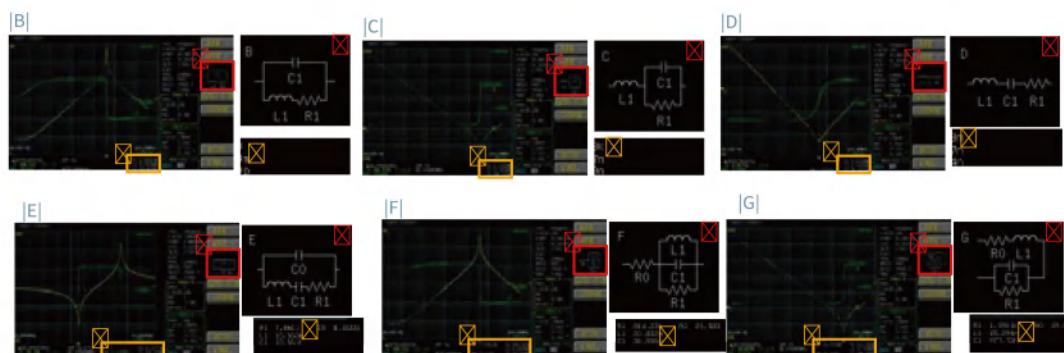
### Select the scan function to display the curve chart

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



### 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)



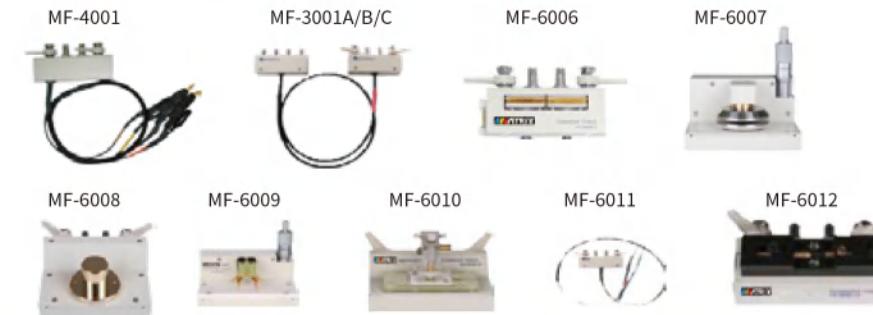
## Standard accessories

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)
- High frequency 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)



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	200 $\mu$ A~200mAmps			
Minimum resolution current	10 $\mu$ A			
Accuracy	ALC OFF:10%* Set current ±20 $\mu$ A      ALC ON:6%* Set current ±20 $\mu$ A			
Measuring speed (fastest)	<3ms			
Output impedance	Switchable 25 $\Omega$ , 100 $\Omega$			
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	Lcr 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~999.99kS	D	0.00000~9999.99
	G,B	±0.00000μS~999.99kS	Q	±0.00~9999.99
	ΘRAD	±0.00000~3.14159	△	±0.00%~9999.99%
	ΘDEG	±0.00°~180.00°	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	GPIO		
Display	7.0 "TFT , 800*480 color display			
Operating environment	Temperature : 10°C~40°C , 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			



**Standard:** RS-232C / USB HOST / USB DEVICE

**Standard:** temperature port / HANDLER

**Optional:** GPIB

Standard RS-232  USB Host  USB Device

### Features

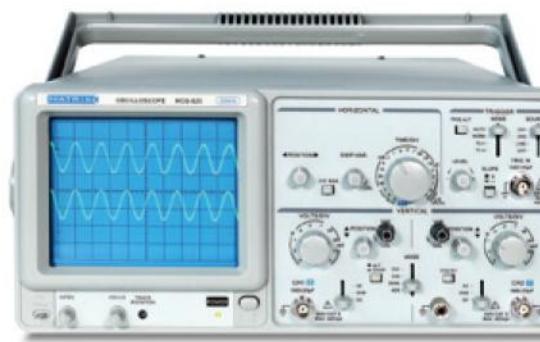
- The new 32-bit core processor, the data is completely compared with foreign first-class equipment
- 4.3inch true color TFT display
- U disk saves the test result directly, which is more convenient to save
- Maximum basic measurement accuracy of 0.05%
- Temperature compensation function, temperature conversion function
- Basic accuracy of temperature 0.1°C
- Statistical function, providing CpK, Cp and other statistics
- Built-in comparator, sorting HI, LO, IN
- Internal more than 100 groups of setting files, U disk can expand more than 500 groups of test files to save or recall
- The software version of the instrument can be upgraded and updated through USB HOST
- The USB flash drive supports FAT16 and FAT32 file systems

Optional  GPIB

Model	MOM-804	MOM-805
<b>Precision and function</b>		
R basic accuracy	0.08%+2digit	0.05%+2digit
<b>Testing speed</b>		
	Power at 50Hz, high speed: 22ms, intermediate speed: 42 ms, low speed: 102 ms, high speed2: 7ms; when power at 60Hz, high speed: 18.5ms, middle speed: 35 ms, low speed: 102 ms, high speed2: 7ms; Above is the speed when the display is closed, When the display is on, an additional display time of 10ms is added.	
<b>Statistics</b>		
Measure way	Auto, Hold, manual selection	
Trigger	Internal, external	
Average time	1—255	
Delay time	0—9999ms, 1ms Step	
Calibration function	Short circuit clearing, return to zero, load correction	
Test Side Configuration	Four terminal	
Display way	Direct read, Δ%	
	1μΩ~20kΩ	10μΩ~200kΩ
<b>Range and test current</b>	20mΩ (1A) : 1μΩ~20mΩ	200 mΩ (100mA) : 10μΩ~200 mΩ
	200 mΩ (100mA) : 20mΩ~200 mΩ	2Ω (100mA) : 200mΩ~2Ω
	2Ω (100mA) : 200mΩ~2Ω	20Ω (10mA) : 2Ω~20Ω
	20Ω (10mA) : 2Ω~20Ω	200Ω (1mA) : 20Ω~200Ω
	200Ω (1mA) : 20Ω~200Ω	2kΩ (100μA) : 200Ω~2kΩ
	2kΩ (100μA) : 200Ω~2kΩ	20kΩ (100μA) : 2kΩ~20kΩ
	20kΩ (100μA) : 2kΩ~20kΩ	200kΩ (10μA) : 20kΩ~200kΩ
<b>comparator</b>		
Sorting	HI, LO, IN	
<b>Temperature measurement(MOM-805 )</b>		
Basic accuracy	0. 1°C	
Measure time	100±10ms	
	Pt, measure range -10.0°C ~ 99.9°C	
Temperature sensor	Analog input: 0 ~ 2V, range: -99.9°C ~ 999.9°C	
Temperature compensation function	Convert to the resistance value at set temperature	
Temperature conversion function	A change in resistance value is converted to a change in temperature	
<b>Others</b>		
Display	24-bit true color TFT LCD with 480×272 resolution	
Storage	More than 100 groups of internal storage, U disk more than 500 groups	
Interface	Standard HANDLER, USB HOST, USB DEVICE, temperature interface (only IOM2518B), RS232C,GPIB is optional	
Machine size (W*H*D) mm	240*100*330	
Packing size (W*H*D) mm	335*210*425	
Net weight (kg)	3.6	
Gross weight( kg)	4.9	

### 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	
<b>Vertical system</b>	<b>Trigger</b>	
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	
	Max. Input voltage: 300V(DC+AC peak) AC frequency: 1kHz or lower	
<b>Horizontal system</b>	<b>Calibration signal</b>	
Sensitivity: 5mV~5V/DIV, 10 steps in 1-2-5 sequence	Waveform: Square wave	
Sensitivity and accuracy: ±3%; 1/2.5 or smaller than the panel indicating scale	Freq.: Approx.1kHz	
Frequency range: DC~20MHz	Duty cycle: <48: 52	
AC coupling: < 10Hz (100kHz 8DIV frequency response:-3dB)	Output voltage: 2Vp-p±2%	
Rise time: Approx. 17.5ns		
Input resistance: Approx. 1M/25pF	Output impedance: Approx. 1kΩ	
DC balance movement: 5mV~5V/DIV: ±0.5DIV	<b>CRT oscilloscope tube</b>	
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	
CH1: CH2: DUAL : CH1 and CH2 display simultaneously	Acceleration voltage: Approx. 2kV (20MHz)	
Vertical mode: Speed can be selected alternately or intermittently	Valid display: 8X10DIV [ 1DIV=10mm(0.39in) ]	
ADD: CH1 and CH2 do algebraic addition	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)	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	

## Super-Economical 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	

## 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

- 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		

## 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 10pF 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°C 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 accuracy < 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°C 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 100kHz : > -60dB 3.2MHz: -40dB 100MHz : -30dB	DC: > -80 dB 100kHz : > -60dB 3.2MHz: -40dB 100MHz : -30dB

## Optional Accessories



SMD Four-terminal test cable



SMD Four-terminal test cable



SMD Test pliers



SMD Test box



Four-terminal test box



Four-terminal test box



Ohmmeter Test pen



Gold plated short circuit



Gold plated short circuit



Temperature module



Power supply test lead



RS-232 cable

## Certification

