Programmable Switching DC Power Supply

PPS series (300W~900W, 1mV/1mA)

Introduction

PPS series are high accuracy programmable DC power supply with single output. MPU control, RS-232/RS-485/USB interface for PC control, the PPS series facilitates auto test and auto control. The commands of the PPS series are compliant with SCPI commands. Users can easily develop programs to facilitate different applications in auto test and auto control. Users can also store or recall data via the USB host on front panel.

The 4.3-inch TFT LCD display gives full display for parameters and output waveforms. Digital input fulfilled by rotary dial and keypad input makes input fast and accurate. Voltage and current regulations by software, avoids human error and makes the PPS series more accurate.

Features

- ✓ High accuracy, high resolution
- ✓ Over load, over voltage, over current, over temperature and reverse polarity protections
- ✓ Constant voltage and constant current operations, auto CV and CC switch
- ✓ 5 digits 4.3-inch TFT LCD display
- ✓ High speed rotary dial and keypad input
- ✓ Built-in beeper alarm
- ✓ Panel lock and output ON/OFF function
- ✓ List mode function, 300 sets save & recall for voltage, current and time setups, easy use in auto test
- ✓ Remote sense function
- ✓ Display load resistance value
- ✓ Battery charge mode
- ✓ Standard USB host interface for data storage and recall from external USB flash driver
- ✓ Standard RS-232 interface, support SCPI commands, support Labview
- ✓ Standard 0-5V analog control
- ✓ Optional RS-232 to USB cable

New Features

- ✓ Standard RS-485 interface, support Modbus-RTU commands
- ✓ CV/CC Priority Setup
- ✓ Trigger Data Record
- ✓ Current Limit Alarm
- ✓ Voltage Limit Alarm
- ✓ Ramp output, adjustable Voltage/Current slew rate
- ✓ Optional Test Data Record Function

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Programmable Switching DC Power Supply

Product photo

PPS-3020

Selection Guide

We have different series of laboratory programmable power supplies. Each of them has their own remarkable features.

	PPA	PPS	PPW	PPM	TPM
Display	4.3-inch TFT LCD	4.3-inch TFT LCD	4.3-inch LCD	4.3-inch LCD	122*32 LCD
Rated Power	400W 850W 1500W	300W 600W 900W	300W 600W 900W	90W~375W	90W~180W
Voltage Ripple	50mVpp	30mVpp	30mVpp	1mVrms	1mVrms
Ramp output	√	√	×	×	×
USB Host	√	√	×	×	×
USB Device	×	×	×	×	√
RS232	√	√	√	√	×
RS485	√	√	Optional	Optional	×
Analog Control 0-5V	×	√	Optional	Optional	×
Remote Sensing	√	√	√	√	×
Battery Charge Mode	√	√	√	√	×
Low resistance measurement	√	√	√	√	×
List Mode	√	√	√	√	√
19-Inch Rack Compatible	√	√	√	√	×

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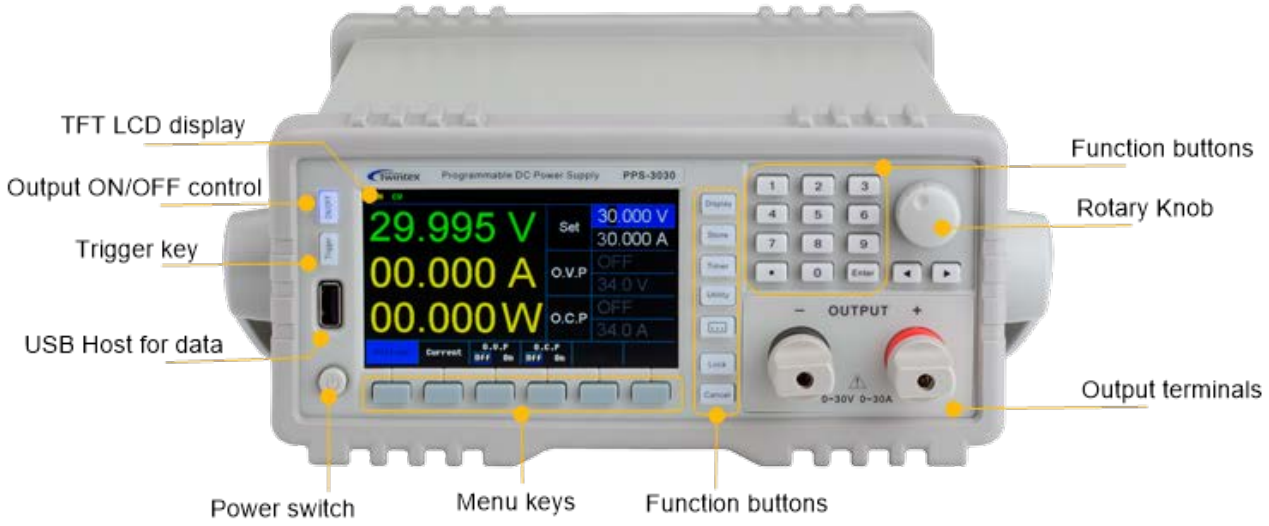
Display and Control Panel

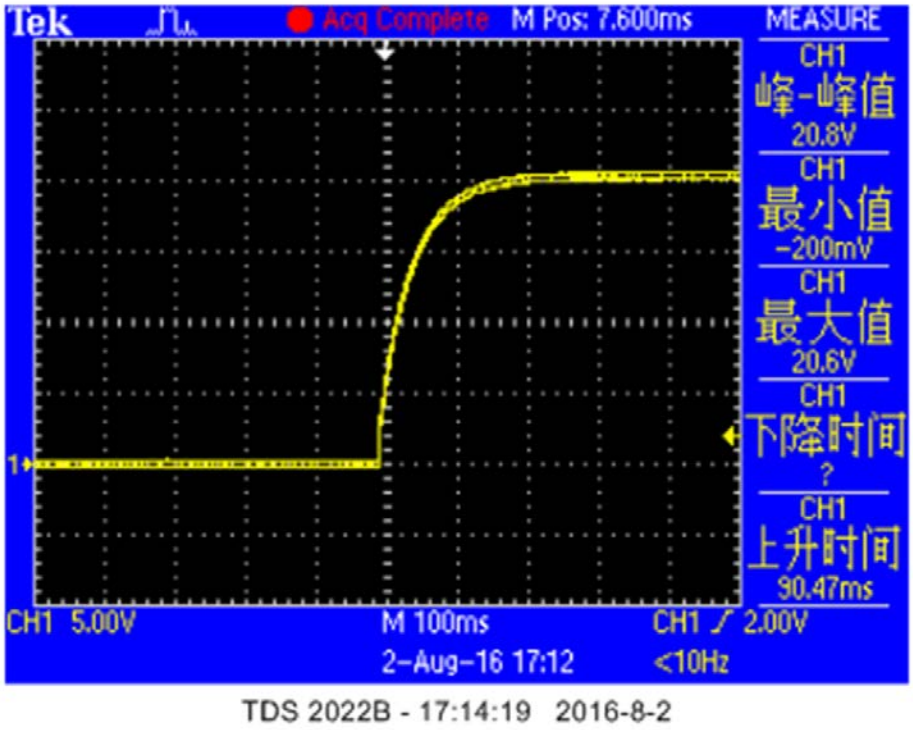
Output voltage, output current and output time can be set through digital keypad or rotary knob. Actual values of output voltage and output current can be represented in waveform display.

To prevent unintentional operations, all operation controls can be locked.



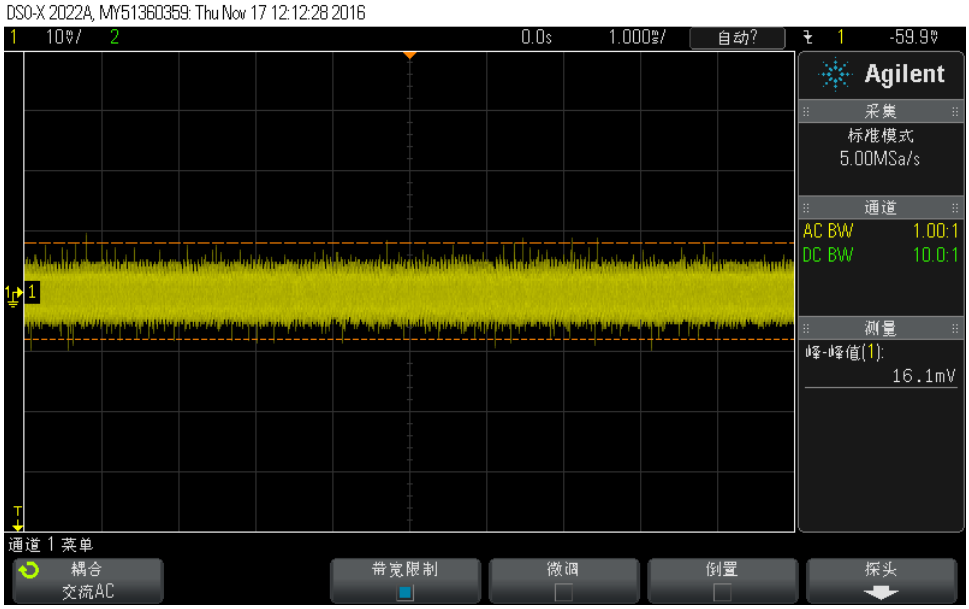
No Overshoot

This power supply has no overshoot during voltage output, giving very stable output. Stable output is key to protect devices under test (DUT).



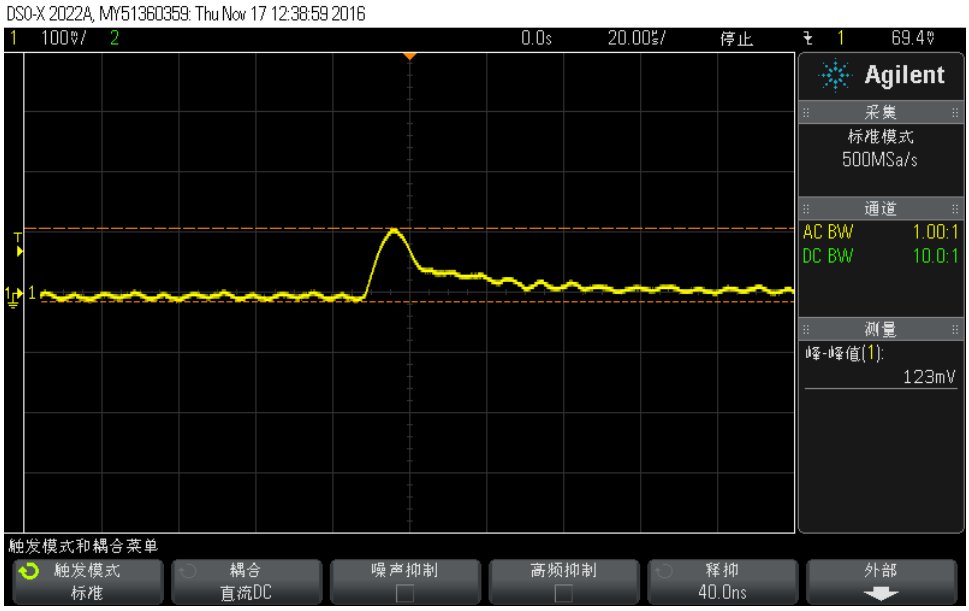
Low Ripple, Pure Output

Voltage ripple <30mVpp (load 1Ω, 30V)



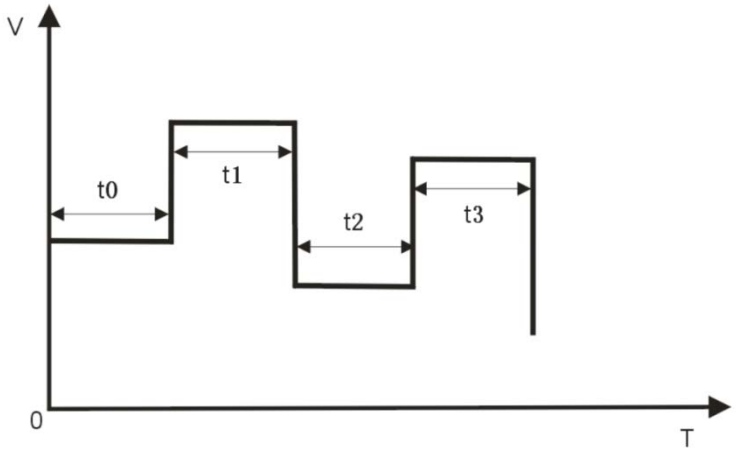
Fast Transient Response Time

This power supply has fast transient response time, <50us when 25% to 75% load change. When there is transient change on load current, the output voltage can recover to its setting value very fast, so as to ensure stable and high quality output. Some DUT, such as cell phones, WIFI, wireless sensors, its fast change is far over transient response speed of the power supply. When testing such DUT, the power supply is not able to make output as per its setting values, and more over may cause shut down or repeating restart on the DUT. With fast transient response time, our power supply ensures high quality output.

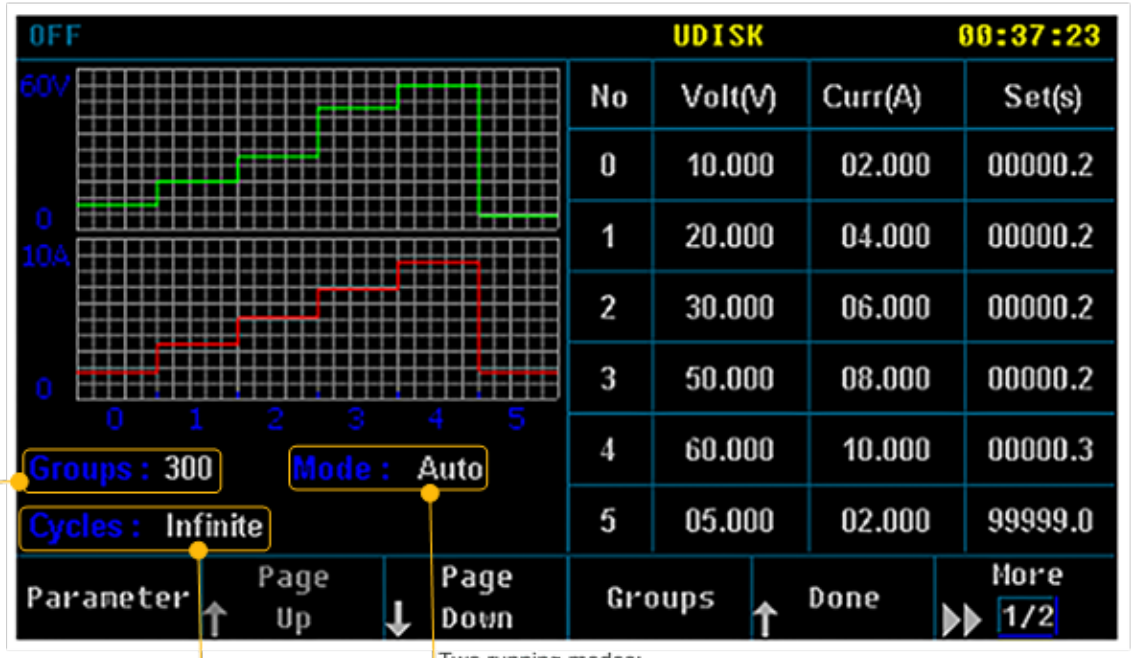


Timing Output

When the timing output is ON, the power supply outputs the preset voltage and current values (max 300 groups) to truly simulate the various kinds of running status of power supply. Output curve of timing output can be displayed in the way of waveform.



Output curve of timing output can be displayed in the way of waveform.



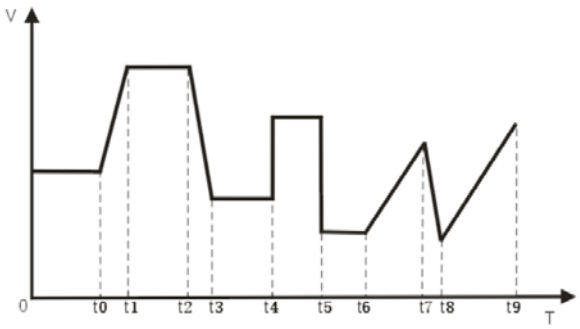
Max 300 groups

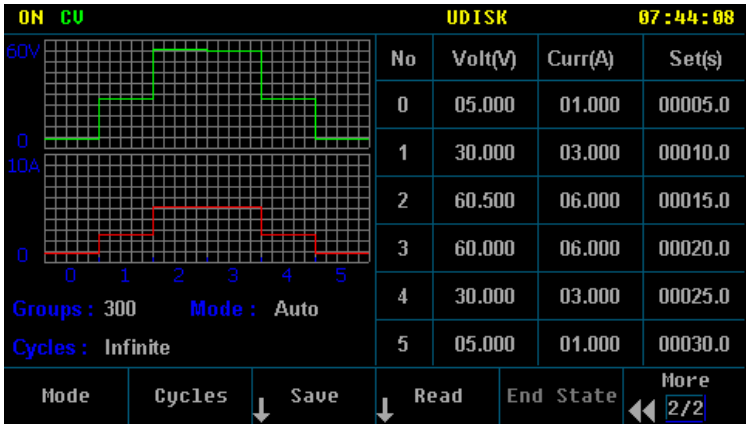
Two running modes:
AUTO: Automatically run preset cycles.
STEP: Run a single step upon a trigger.

The power supply makes output according to preset cycles. In each cycle output voltage, output current and output time can be set differently Numbers of cycles can be set as INFINITE or set during 1 to 99999 cycles.

Ramp Output

In Ramp Output mode, the power supply output voltage / current from low to high during preset rise time, or the power supply output voltage / current from high to low during preset fall time. After setting up output voltage, current, rise/fall time, the power supply simulates output curves of different kinds of power sources.

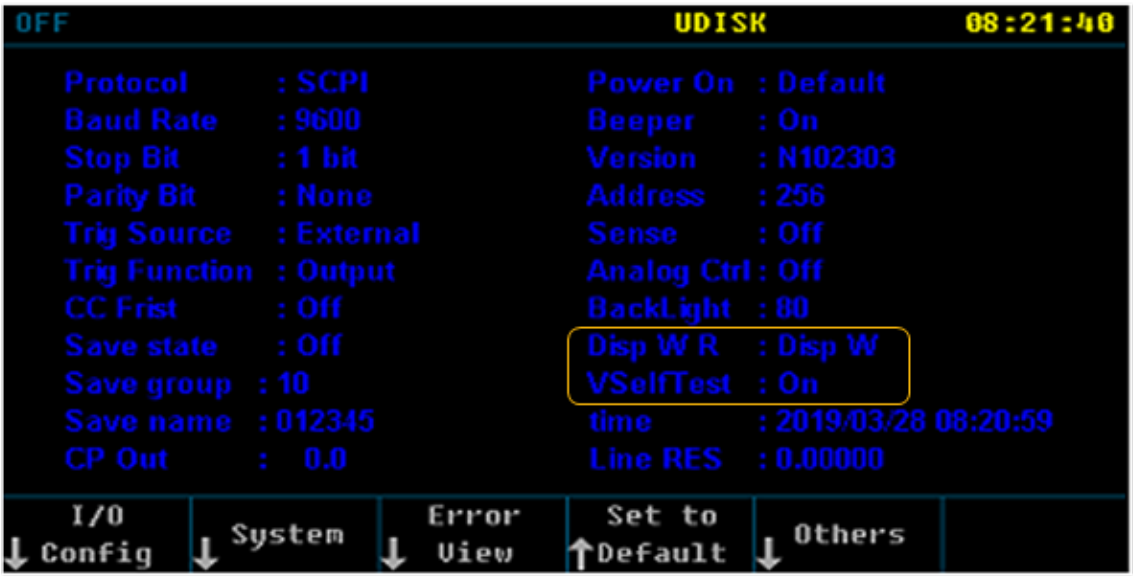




Low Resistance Measurement & Voltage Self Check

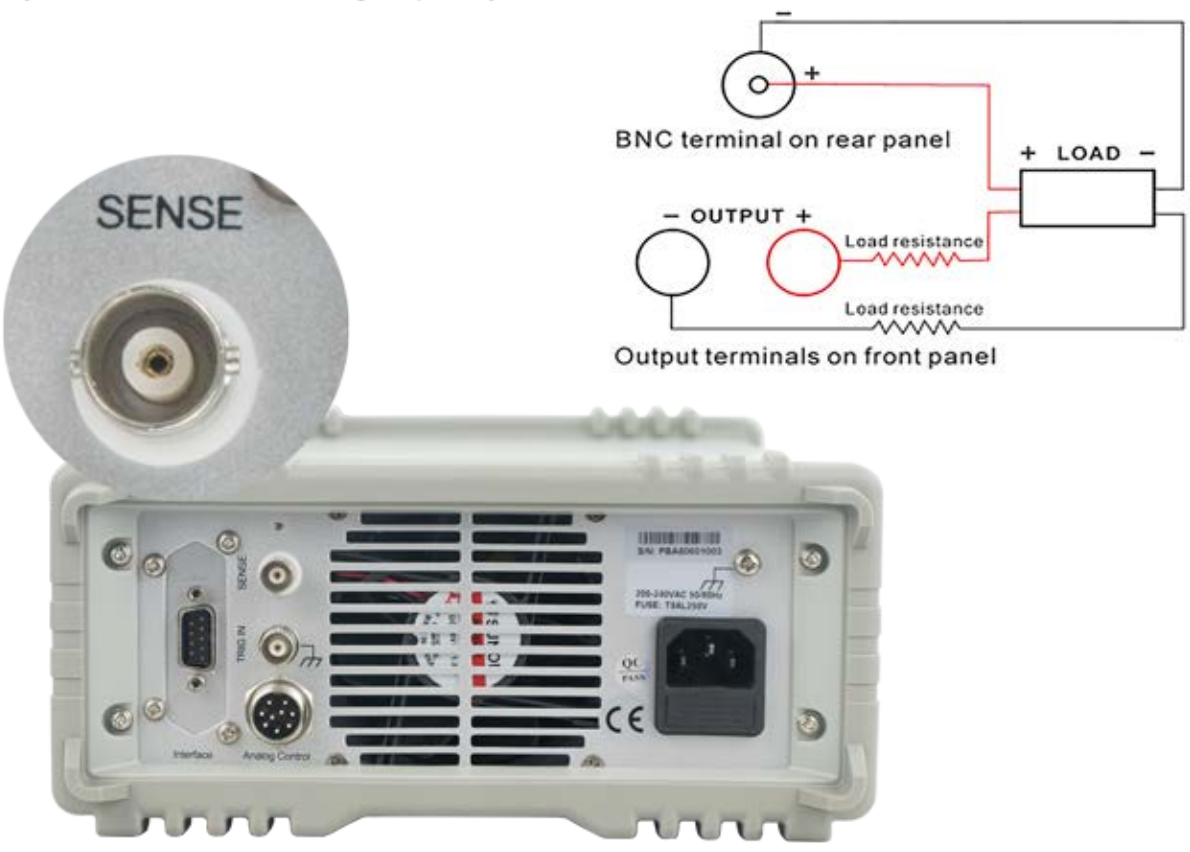
When output voltage self test is ON, the power supply will monitor output voltage at output terminal and adjust output voltage to minimize the error between real output value and preset output value.

The power supply can measure load resistance and display it on screen.



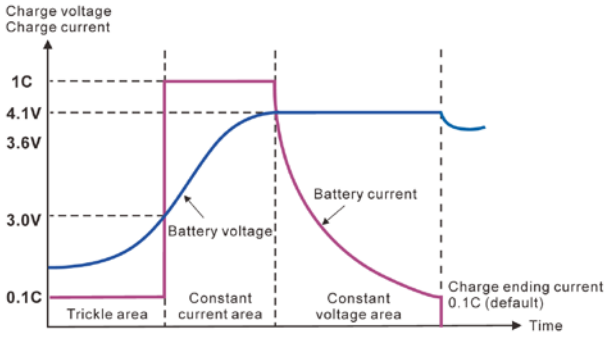
Remote Sense

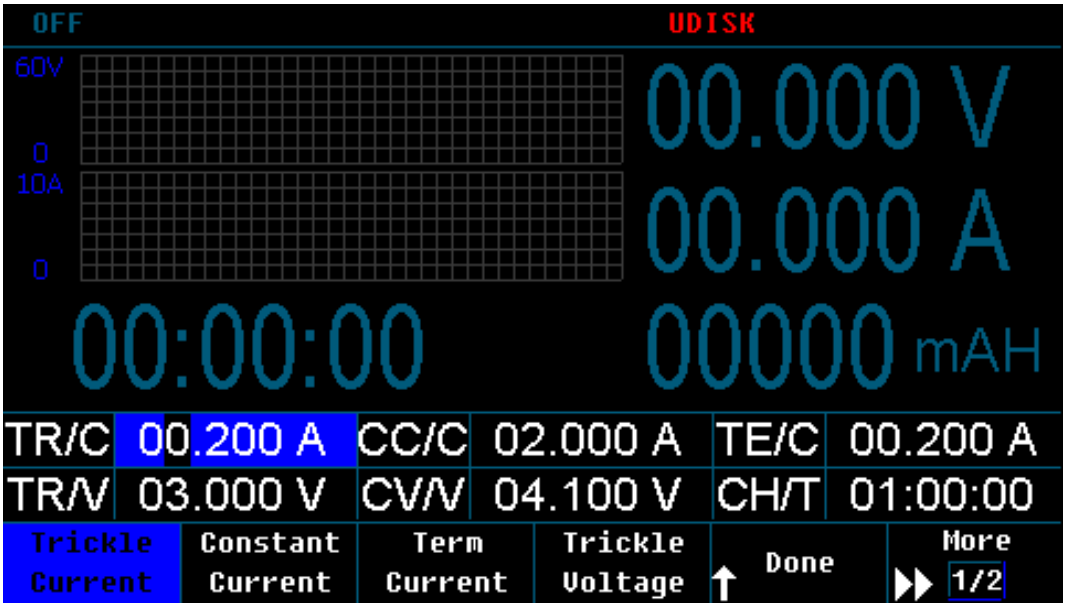
The power supply can automatically compensate for the voltage drop caused by the load lead to ensure that the power supply output value set by users is consistent with the voltage acquired by the load.



Battery Curved Charge

Instead of same charging voltage and current through out the whole charging operation, a curved charge operation can perfectly protect batteries under charge.

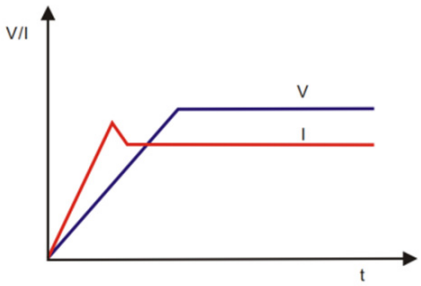




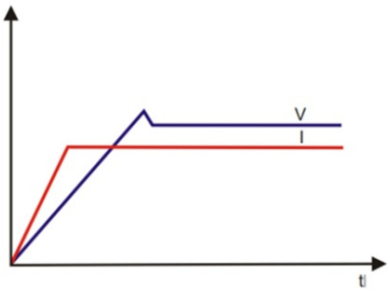
CC First

In normal operation, the power supply is in CV mode during output startup. A surge current is generated during output startup. The surge current always exceeds rated current, which may have influence to the testing devices. When “CC First” function is turned on, the surge current can be avoided and therefore the testing devices will be protected.

CV First



CC First

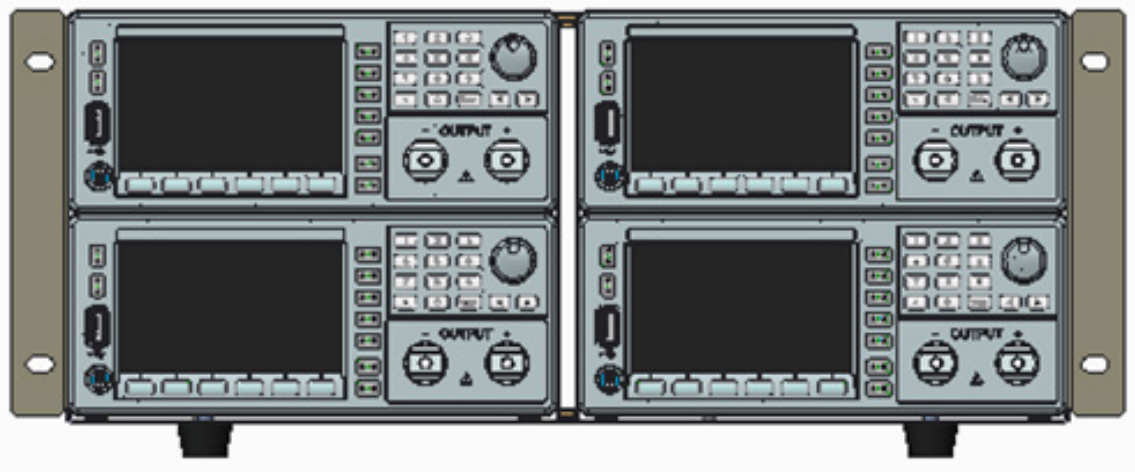


USB Host for Data

USB Host on front panel can be used for test data upload and download.

Rack Mount Compatible

The power supply units can be locked onto 19-inch cabinet, providing 3U rack panel or 4U rack panel.



Programmable Switching DC Power Supply

Specifications (300W/600W)

(0℃~40℃)		PPS-3010	PPS-2030	PPS-3020	PPS-6010	PPS-8008
Rated Output	Voltage	0~31V	0~20.5V	0~31V	0~60.5V	0~80.5V
	Current	0~10.5A	0~30.5A	0~21A	0~10.5A	0~8.0A
Line regulation	Voltage	≤0.01%+4mV				
	Current	≤0.1%+3mA				
Load regulation	Voltage	≤0.1%+5mV				
	Current	≤0.1%+5mA				
Setting accuracy	Voltage	±(0.03% of reading + 10mV)				
	Current	±(0.1% of reading + 0.1% of FS)				
Setting resolution	Voltage	1mV				
	Current	1mA				
Reading accuracy	Voltage	±(0.02% of reading +5mV)				
	Current	±(0.1% of reading + 0.1% of FS)				
Reading resolution	Voltage	1mV				
	Current	1mA				
Ripple&Noise (20Hz~20MHz)	Voltage	≤2mVrms, 30mVpp				
	Current	≤10mArms				
Rise time	Empty load	≤500ms				
	Full load	≤1s				
Fall time	Empty load	≤1.5s	≤1.5s	≤1.5s	≤3s	≤4s
	Full load	≤3ms	≤2ms	≤3ms	≤8ms	≤10ms
Slew rate	Time range	0.2~99999S, resolution 0.1S				
	Rise slew rate	0.06V/ms(max)	0.04V/ms(max)	0.06V/ms(max)	0.12V/ms(max)	0.16V/ms(max)
	Fall slew rate	10V/ms(max)	10V/ms(max)	10V/ms(max)	7.5V/ms(max)	8V/ms(max)
Recovery time		≤1.5ms (50% load change)				
Temperature Coefficient		≤100ppm/℃				
Efficiency		80% typical				
Power factory		0.98				
Protection		Over load, over voltage, over current, over temperature and reverse polarity protections				
O.V.P setting range		0.1~34V	0.1~24V	0.1~34V	0.1~64V	0.1~88V
O.C.P setting range		0.1~24A	0.1~34A	0.1~24A	0.1~12A	0.1~8.8A
Remote sense function		Maximum compensation voltage 5% of FS				
Battery charge		Lithium battery curve charge				
Digital interface		RS232 & RS485 interface, Support SCPI & ModBus commands				
Analog interface		0-5V analog control for output ON/OFF, voltage & current control & monitor				
Memory		300 sets internal save, support save to USB flash driver				
Insulation		Between base and terminals: ≥20MΩ/500VDC Between base and AC line: ≥30MΩ/500VDC				
Operating environment		Indoor use	Altitude: ≤2000m	Ambient temperature: 0~40℃		
		Relative humidity: ≤80%	Installation category: II	Pollution degree: 2		
Storage environment		-10℃~70℃, ≤70%RH				
Power source		AC220V±10%, 50/60Hz				
Accessories		Power cord x1, Operation manual x1, RS232 cable x1, Software CD x1				
Dimension (WxHxD)		215x89x352mm				
Weight		4.5kg				

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Programmable Switching DC Power Supply

Specifications (900W)

(0℃~40℃)		PPS-1560	PPS-2045	PPS-3030	PPS-3625	PPS-4520
Rated output	Voltage	0~15.5V	0~20.5V	0~31V	0~36.5V	0~45.5V
	Current	0~60.5A	0~45.5A	0~31A	0~25.5A	0~20.5A
Line regulation	Voltage	≤0.01%+4mV				
	Current	≤0.1%+3mA				
Load regulation	Voltage	≤0.1%+5mV				
	Current	≤0.1%+5mA				
Setting accuracy	Voltage	±(0.03% of reading + 10mV)				
	Current	±(0.1% of reading + 0.1% of FS)				
Setting resolution	Voltage	1mV				
	Current	1mA				
Reading accuracy	Voltage	±(0.02% of reading +5mV)				
	Current	±(0.1% of reading + 0.1% of FS)				
Reading resolution	Voltage	1mV				
	Current	1mA				
Ripple&Noise (20Hz~20MHz)	Voltage	≤2mVrms, 30mVpp				
	Current	≤10mArms				
Rise time	Empty load	≤200ms	≤300ms	≤500ms	≤500ms	≤500ms
	Full load	≤300ms	≤1s	≤1s	≤1s	≤1s
Fall time	Empty load	≤2s	≤2s	≤2s	≤3s	≤3s
	Full load	≤2ms	≤2ms	≤2ms	≤3ms	≤3ms
Slew rate	Time range	0.2~99999S, resolution 0.1S				
	Rise slew rate	0.08V/ms(max)	0.06V/ms(max)	0.06V/ms(max)	0.07V/ms(max)	0.09V/ms(max)
	Fall slew rate	8V/ms(max)	10V/ms(max)	15V/ms(max)	12V/ms(max)	15V/ms(max)
Recovery time		≤1.5ms (50% load change)				
Temperature Coefficient		≤100ppm/℃				
Efficiency		80% typical				
Power factory		0.98				
Protection		Over load, over voltage, over current, over temperature and reverse polarity protections				
O.V.P setting range		0.1~18V	0.1~24V	0.1~34V	0.1~40V	0.1~55V
O.C.P setting range		0.1~62 A	0.1~50A	0.1~34A	0.1~27.5A	0.1~22A
Remote sense function		Maximum compensation voltage 5% of FS				
Battery charge		Lithium battery curve charge				
Digital interface		RS232 & RS485 interface, Support SCPI & ModBus commands				
Analog interface		0-5V analog control for output ON/OFF, voltage & current control & monitor				
Memory		300 sets internal save, support save to USB flash driver				
Insulation		Between base and terminals: ≥20MΩ/500VDC Between base and AC line: ≥30MΩ/500VDC				
Operating environment		Indoor use	Altitude: ≤2000m	Ambient temperature: 0~40℃		
		Relative humidity: ≤80%	Installation category: II	Pollution degree: 2		
Storage environment		-10℃~70℃, ≤70%RH				
Power source		AC220V±10%, 50/60Hz				
Accessories		Power cord x1, Operation manual x1, RS232 cable x1, Software CD x1				
Dimension (WxHxD)		215x89x412mm				
Weight		5.5kg				

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Programmable Switching DC Power Supply

Specifications (900W)

(0℃~40℃)		PPS-6015	PPS-8011	PPS-12H75	PPS-15H60
Rated output	Voltage	0~60.5V	0~80.5V	0~121V	0~151V
	Current	0~15.5A	0~11.5A	0~7.6A	0~6.1A
Line regulation	Voltage	≤0.01%+4mV			
	Current	≤0.1%+3mA			
Load regulation	Voltage	≤0.1%+5mV			
	Current	≤0.1%+5mA			
Setting accuracy	Voltage	±(0.03% of reading + 10mV)			
	Current	±(0.1% of reading + 0.1% of FS)			
Setting resolution	Voltage	1mV			
	Current	1mA			
Reading accuracy	Voltage	±(0.02% of reading +5mV)			
	Current	±(0.1% of reading + 0.1% of FS)			
Reading resolution	Voltage	1mV			
	Current	1mA			
Ripple&Noise (20Hz~20MHz)	Voltage	≤2mVrms, 30mVpp		≤5mVrms, ≤50mVpp	
	Current	≤10mArms			
Rise time	Empty load	≤1s	≤1s	≤1.5s	≤1.5s
	Full load	≤1.5s	≤1.5s	≤2s	≤2s
Fall time	Empty load	≤3s	≤3s	≤8s	≤8s
	Full load	≤3ms	≤4ms	≤9ms	≤12ms
Slew rate	Time range	0.2~99999S, resolution 0.1S			
	Rise slew rate	0.06V/ms(max)	0.08V/ms(max)	0.08V/ms(max)	0.1V/ms(max)
	Fall slew rate	20V/ms(max)	20V/ms(max)	13V/ms(max)	13V/ms(max)
Recovery time		≤1.5ms (50% load change)			
Temperature Coefficient		≤100ppm/℃			
Efficiency		80% typical			
Power factory		0.98			
Protection		Over load, over voltage, over current, over temperature and reverse polarity protections			
O.V.P setting range		0.1~64V	0.1~88V	0.1~132V	0.1~160V
O.C.P setting range		0.1~17A	0.1~12A	0.1~8A	0.1~6.6A
Remote sense function		Maximum compensation voltage 5% of FS			
Battery charge		Lithium battery curve charge			
Digital interface		RS232 & RS485 interface, Support SCPI & ModBus commands			
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Accessories		Power cord x1, Operation manual x1, RS232 cable x1, Software CD x1			
Dimension (WxHxD)		215x89x412mm			
Weight		5.5kg			

Specifications are subject to change without prior notice.

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