

## High Power Programmable DC Power Supply PWS Series

### Introduction

Programmable switching DC power supply PWS series cover large range of outputs, rated power from 1.2kW to 100kW, rated voltage up to 5000V, rated current up to 10000A.

IGBT module adjustment and PWM modulation facilitate PWS series with high efficiency, high accuracy and high stability. High gain amplifier circuit design makes PWS series with fast response. Improvement on circuits brings stronger anti-interference performance. Active air duct design and optimized cooling channels effectively reduce temperature rise.

Over Voltage Protection, Over Current Protection and Over Temperature Protection keep the PWS series and their load safe from unexpected conditions. For more complicated applications, the PWS series are available with many optional functions: remote ON/OFF control, PV curve output, etc.

PWS series can be made to customer order. Please contact us for more details.

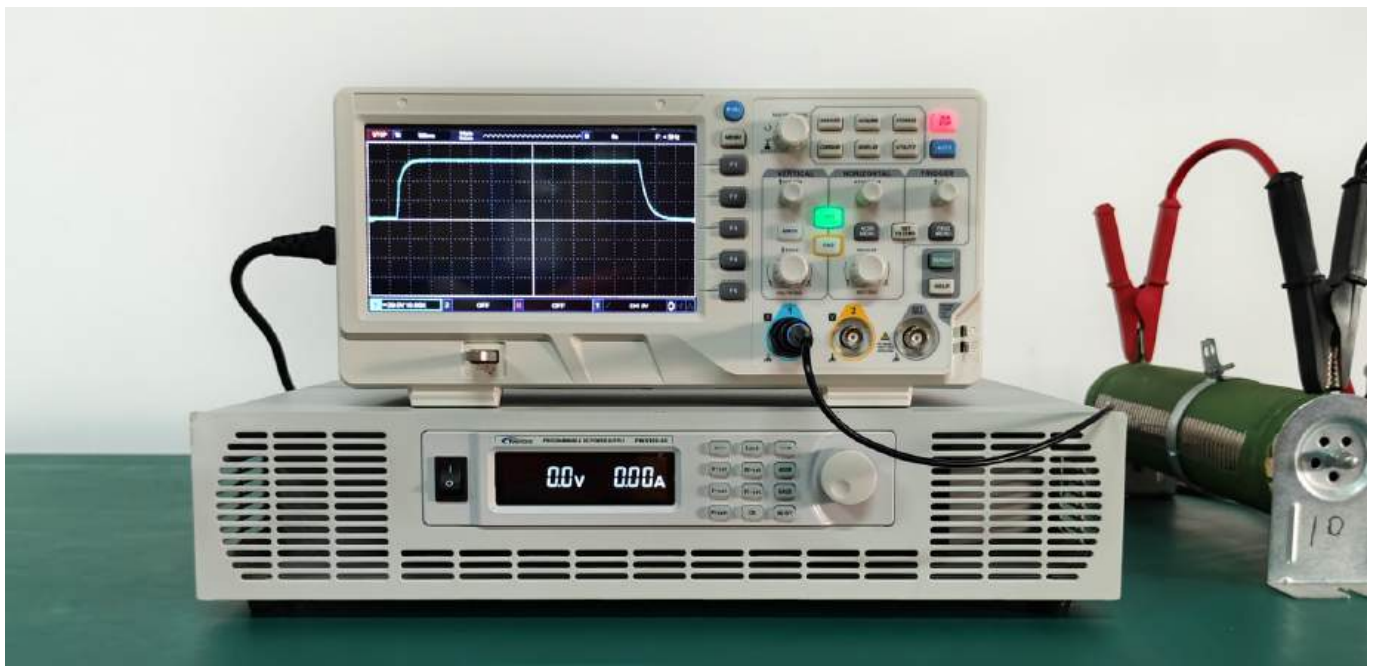
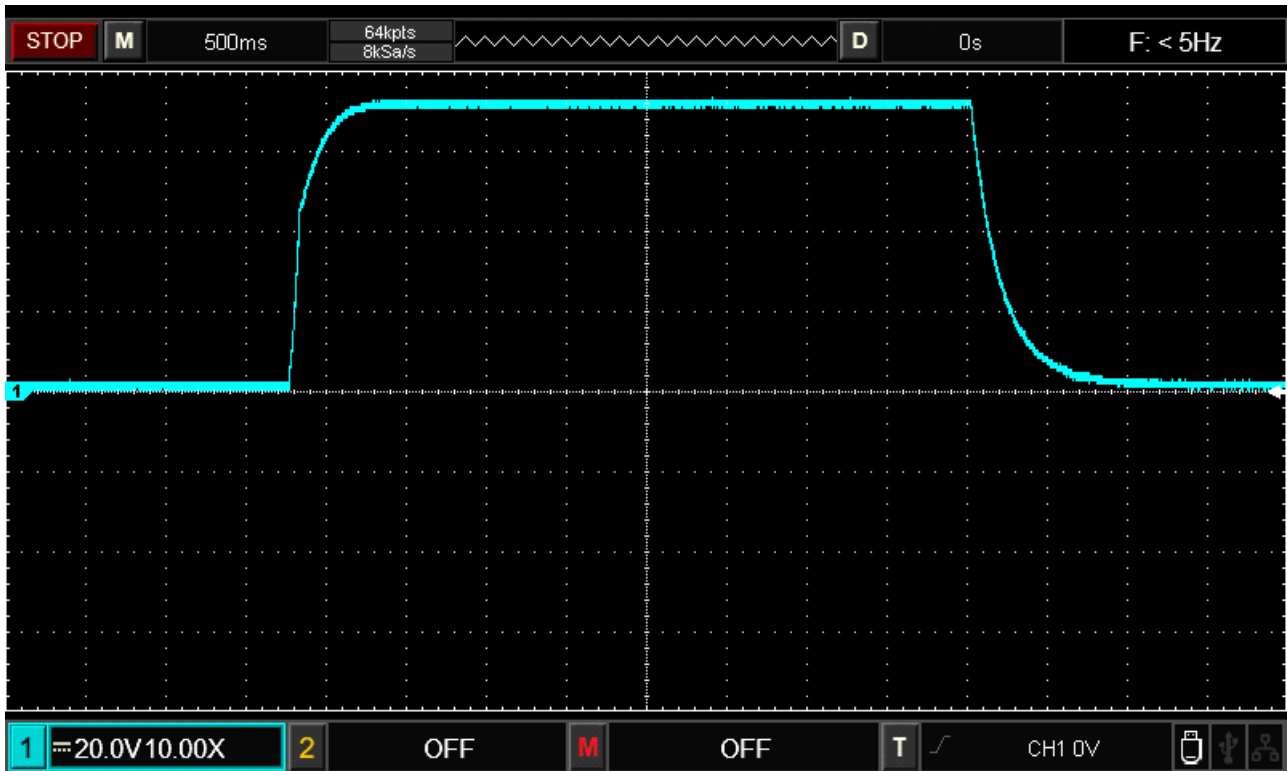
### Features

- ✓ Max. output voltage 5000V, Max. output current 10000A
- ✓ Applying IGBT module and 19-inch standard size
- ✓ **4 digits LCD display for voltage and current**
- ✓ Constant voltage and constant current operations, auto CV/CC switch
- ✓ Front panel operation: preset voltage and current, output ON/OFF
- ✓ Multiple protections: OVP, OCP, OTP and OLP
- ✓ Transient response time 5ms
- ✓ **No overshoot during startup**
- ✓ **Communication: RS232, RS485 and LAN interface** (LAN not available for 1.2kW & 1.8kW models)
- ✓ Remote Sensing function: compensate the voltage drop (only for models  $\leq 300V$ )
- ✓ Optional function
  - **Parallel functions, max 8 units in parallel**
  - Remote control: 0-5V, 0-10V or 4-20mA signal to control output voltage and current
  - Remote ON/OFF control: Interlock loop or 12V input control
  - Reverse current protection: to protect power supply from damage by reverse current from EUT
  - Reverse polarity switch: to allow change of positive and negative output polarity in reverse direction
  - PV curve output for solar panel tests
  - System Bus interface
- ✓ Customized specifications and functions acceptable



# High Power DC Power Supply

No overshoot during startup



# High Power DC Power Supply

Photos (1.2kW & 1.8kW, cabinet size 1U half-width)



# High Power DC Power Supply

Photos (3.6kW, 6kW & 7.5kW, cabinet size 2U)



# High Power DC Power Supply

Photos (12kW & 15kW, cabinet size 3U)



# High Power DC Power Supply



## Specifications

Model	DC Output		Line Regulation		Load Regulation		Ripple & Noise		Setting/Readback Accuracy		Resolution	
	Voltage	Current	CV	CC	CV	CC	CV (rms)	CC (rms)	CV	CC	V	A
<b>Power 1kW to 1.8kW, 1U half-width frame, Dimensions 218W*44H*435D mm, Weight approx 4.5kg, Input 1φ2W, 220V±10% 50Hz/60Hz</b>												
PWS30-40	0~30V	0~40A	≤0.2%FS	≤0.2%FS	≤0.2%FS	≤0.2%FS	≤0.3%FS+50mV	≤0.3%FS+10mA	≤0.1%FS+20mV	≤0.3%FS+30mA	0.01V	0.01A
PWS60-20	0~60V	0~20A	≤0.2%FS	≤0.2%FS	≤0.1%FS	≤0.1%FS	≤0.3%FS+50mV	≤0.3%FS+10mA	≤0.1%FS+20mV	≤0.3%FS+30mA	0.01V	0.01A
PWS100-12	0~100V	0~12A	≤0.2%FS	≤0.2%FS	≤0.1%FS	≤0.1%FS	≤0.3%FS+100mV	≤0.3%FS+10mA	≤0.1%FS+20mV	≤0.3%FS+10mA	0.1V	0.01A
PWS300-4	0~300V	0~4A	≤0.2%FS	≤0.2%FS	≤0.1%FS	≤0.1%FS	≤0.3%FS+100mV	≤0.3%FS+10mA	≤0.1%FS+100mV	≤0.3%FS+10mA	0.1V	0.001A
PWS600-2	0~600V	0~2A	≤0.2%FS	≤0.2%FS	≤0.1%FS	≤0.1%FS	≤0.3%FS+100mV	≤0.3%FS+10mA	≤0.1%FS+100mV	≤0.3%FS+10mA	0.1V	0.001A
PWS30-60	0~30V	0~60A	≤0.2%FS	≤0.2%FS	≤0.2%FS	≤0.2%FS	≤0.3%FS+50mV	≤0.3%FS+10mA	≤0.1%FS+20mV	≤0.3%FS+30mA	0.01V	0.01A
PWS60-30	0~60V	0~30A	≤0.2%FS	≤0.2%FS	≤0.1%FS	≤0.1%FS	≤0.3%FS+50mV	≤0.3%FS+10mA	≤0.1%FS+20mV	≤0.3%FS+30mA	0.01V	0.01A
PWS100-18	0~100V	0~18A	≤0.2%FS	≤0.2%FS	≤0.1%FS	≤0.1%FS	≤0.3%FS+100mV	≤0.3%FS+10mA	≤0.1%FS+20mV	≤0.3%FS+10mA	0.1V	0.01A
PWS150-10	0~150V	0~10A	≤0.2%FS	≤0.2%FS	≤0.1%FS	≤0.1%FS	≤0.3%FS+100mV	≤0.3%FS+10mA	≤0.1%FS+100mV	≤0.3%FS+10mA	0.1V	0.001A
PWS300-6	0~300V	0~6A	≤0.2%FS	≤0.2%FS	≤0.1%FS	≤0.1%FS	≤0.3%FS+100mV	≤0.3%FS+10mA	≤0.1%FS+100mV	≤0.3%FS+10mA	0.1V	0.001A
PWS600-3	0~600V	0~3A	≤0.2%FS	≤0.2%FS	≤0.1%FS	≤0.1%FS	≤0.3%FS+100mV	≤0.3%FS+10mA	≤0.1%FS+100mV	≤0.3%FS+10mA	0.1V	0.001A
PWS1000-1	0~1000V	0~1A	≤0.2%FS	≤0.2%FS	≤0.1%FS	≤0.1%FS	≤0.3%FS+100mV	≤0.3%FS+10mA	≤0.1%FS+100mV	≤0.3%FS+10mA	1V	0.001A
<b>Power 3.6kW, 2U frame, Dimensions 482W*88H*520D mm, Weight approx 14kg, Input 1φ2W, 220V±10% 50Hz/60Hz</b>												
PWS30-120	0~30V	0~120A	≤0.2%FS	≤0.2%FS	≤0.2%FS	≤0.2%FS	≤0.3%FS+50mV	≤0.3%FS+10mA	≤0.1%FS+20mV	≤0.3%FS+50mA	0.01V	0.1A
PWS60-60	0~60V	0~60A	≤0.2%FS	≤0.2%FS	≤0.1%FS	≤0.1%FS	≤0.3%FS+100mV	≤0.3%FS+10mA	≤0.1%FS+20mV	≤0.3%FS+50mA	0.01V	0.01A
PWS100-36	0~100V	0~36A	≤0.2%FS	≤0.2%FS	≤0.1%FS	≤0.1%FS	≤0.3%FS+100mV	≤0.3%FS+10mA	≤0.1%FS+20mV	≤0.3%FS+30mA	0.1V	0.01A
PWS200-18	0~200V	0~18A	≤0.2%FS	≤0.2%FS	≤0.1%FS	≤0.1%FS	≤0.3%FS+100mV	≤0.3%FS+10mA	≤0.1%FS+100mV	≤0.3%FS+10mA	0.1V	0.01A
PWS300-12	0~300V	0~12A	≤0.2%FS	≤0.2%FS	≤0.1%FS	≤0.1%FS	≤0.3%FS+100mV	≤0.3%FS+10mA	≤0.1%FS+100mV	≤0.3%FS+10mA	0.1V	0.01A
PWS600-6	0~600V	0~6A	≤0.2%FS	≤0.2%FS	≤0.1%FS	≤0.1%FS	≤0.3%FS+100mV	≤0.3%FS+10mA	≤0.1%FS+100mV	≤0.3%FS+10mA	0.1V	0.001A
PWS1000-3	0~1000V	0~3A	≤0.2%FS	≤0.2%FS	≤0.2%FS	≤0.2%FS	≤0.3%FS+100mV	≤0.3%FS+10mA	≤0.2%FS+100mV	≤0.3%FS+10mA	1V	0.001A
PWS2000-1	0~2000V	0~1A	≤0.2%FS	≤0.2%FS	≤0.2%FS	≤0.2%FS	≤0.3%FS+100mV	≤0.3%FS+10mA	≤0.2%FS+100mV	≤0.3%FS+10mA	1V	0.001A
<b>Power 6kW, 2U frame, Dimensions 482W*88H*520D mm, Weight approx 15kg, Input 1φ2W, 220V±10% 50Hz/60Hz</b>												
PWS20-300	0~20V	0~300A	≤0.2%FS	≤0.2%FS	≤0.2%FS	≤0.2%FS	≤0.5%FS+100mV	≤0.3%FS+10mA	≤0.1%FS+20mV	≤0.5%FS+100mA	0.01V	0.1A
PWS30-200	0~30V	0~200A	≤0.2%FS	≤0.2%FS	≤0.2%FS	≤0.2%FS	≤0.5%FS+100mV	≤0.3%FS+10mA	≤0.1%FS+20mV	≤0.5%FS+100mA	0.01V	0.1A
PWS60-100	0~60V	0~100A	≤0.2%FS	≤0.2%FS	≤0.1%FS	≤0.1%FS	≤0.3%FS+100mV	≤0.3%FS+10mA	≤0.1%FS+20mV	≤0.3%FS+100mA	0.01V	0.1A
PWS100-60	0~100V	0~60A	≤0.2%FS	≤0.2%FS	≤0.2%FS	≤0.2%FS	≤0.3%FS+100mV	≤0.3%FS+10mA	≤0.1%FS+20mV	≤0.3%FS+100mA	0.1V	0.01A
PWS200-30	0~200V	0~30A	≤0.2%FS	≤0.2%FS	≤0.1%FS	≤0.1%FS	≤0.3%FS+100mV	≤0.3%FS+10mA	≤0.1%FS+100mV	≤0.3%FS+10mA	0.1V	0.01A
PWS300-20	0~300V	0~20A	≤0.2%FS	≤0.2%FS	≤0.1%FS	≤0.1%FS	≤0.3%FS+100mV	≤0.3%FS+10mA	≤0.1%FS+100mV	≤0.3%FS+10mA	0.1V	0.01A
PWS600-10	0~600V	0~10A	≤0.2%FS	≤0.2%FS	≤0.1%FS	≤0.1%FS	≤0.3%FS+100mV	≤0.3%FS+10mA	≤0.1%FS+100mV	≤0.3%FS+10mA	0.1V	0.01A
PWS1000-6	0~1000V	0~6A	≤0.2%FS	≤0.2%FS	≤0.2%FS	≤0.2%FS	≤0.3%FS+100mV	≤0.3%FS+10Ma	≤0.2%FS+100Mv	≤0.3%FS+10Ma	1V	0.001A

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# High Power DC Power Supply

Model	DC Output		Line Regulation		Load Regulation		Ripple & Noise		Setting/Readback Accuracy		Resolution	
	Voltage	Current	CV	CC	CV	CC	CV (rms)	CC (rms)	CV	CC	V	A
<b>PWS30-250</b>	0~30V	0~250A	≤0.2%FS	≤0.2%FS	≤0.2%FS	≤0.2%FS	≤0.5%FS+100mV	≤0.3%FS+10mA	≤0.1%FS+20mV	≤0.5%FS+100mA	0.01V	0.1A
<b>PWS60-125</b>	0~60V	0~125A	≤0.2%FS	≤0.2%FS	≤0.2%FS	≤0.2%FS	≤0.3%FS+100mV	≤0.3%FS+10mA	≤0.1%FS+20mV	≤0.5%FS+100mA	0.01V	0.1A
<b>PWS150-50</b>	0~150V	0~50A	≤0.2%FS	≤0.2%FS	≤0.2%FS	≤0.2%FS	≤0.3%FS+100mV	≤0.3%FS+10mA	≤0.1%FS+20mV	≤0.5%FS+30mA	0.1V	0.01A
<b>PWS100-75</b>	0~100V	0~75A	≤0.2%FS	≤0.2%FS	≤0.2%FS	≤0.2%FS	≤0.3%FS+100mV	≤0.3%FS+10mA	≤0.1%FS+20mV	≤0.5%FS+30mA	0.1V	0.01A
<b>PWS300-25</b>	0~300V	0~25A	≤0.2%FS	≤0.2%FS	≤0.2%FS	≤0.2%FS	≤0.3%FS+100mV	≤0.3%FS+10mA	≤0.1%FS+100mV	≤0.3%FS+10mA	0.1V	0.01A
<b>PWS600-12</b>	0~600V	0~12A	≤0.2%FS	≤0.2%FS	≤0.2%FS	≤0.2%FS	≤0.3%FS+100mV	≤0.3%FS+10mA	≤0.1%FS+100mV	≤0.3%FS+10mA	0.1V	0.01A
<b>PWS1000-8</b>	0~1000V	0~8A	≤0.2%FS	≤0.2%FS	≤0.2%FS	≤0.2%FS	≤0.3%FS+100mV	≤0.3%FS+10mA	≤0.2%FS+100mV	≤0.3%FS+10mA	1V	0.001A
<b>Power 12kW, 3U frame, Dimensions 482W*132H*570D mm, Weight approx 25kg, Input 3φ4W, 380V±10% 50Hz/60Hz</b>												
<b>PWS10-500</b>	0~10V	0~500A	≤0.2%FS	≤0.2%FS	≤0.2%FS	≤0.2%FS	≤1%FS+100mV	≤0.3%FS+10mA	≤0.1%F+20mV	≤0.5%FS+200mA	0.01V	0.1A
<b>PWS10-1000</b>	0~10V	0~1000A	≤0.2%FS	≤0.2%FS	≤0.2%FS	≤0.2%FS	≤1%FS+100mV	≤0.3%FS+10mA	≤0.1%F+20mV	≤0.5%FS+200mA	0.01V	0.1A
<b>PWS20-600</b>	0~20V	0~600A	≤0.2%FS	≤0.2%FS	≤0.2%FS	≤0.2%FS	≤1%FS+100mV	≤0.3%FS+10mA	≤0.1%F+20mV	≤0.5%FS+200mA	0.01V	0.1A
<b>PWS30-400</b>	0~30V	0~400A	≤0.2%FS	≤0.2%FS	≤0.2%FS	≤0.2%FS	≤1%FS+100mV	≤0.3%FS+10mA	≤0.1%F+20mV	≤0.5%FS+200mA	0.01V	0.1A
<b>PWS60-200</b>	0~60V	0~200A	≤0.2%FS	≤0.2%FS	≤0.2%FS	≤0.2%FS	≤0.5%FS+100mV	≤0.3%FS+10mA	≤0.1%F+20mV	≤0.5%FS+200mA	0.01V	0.1A
<b>PWS100-120</b>	0~100V	0~120A	≤0.2%FS	≤0.2%FS	≤0.2%FS	≤0.2%FS	≤0.3%FS+100mV	≤0.3%FS+10mA	≤0.1%FS+100mV	≤0.3%FS+100mA	0.1V	0.1A
<b>PWS200-60</b>	0~200V	0~60A	≤0.2%FS	≤0.2%FS	≤0.2%FS	≤0.2%FS	≤0.3%FS+100mV	≤0.3%FS+10mA	≤0.1%FS+100mV	≤0.3%FS+100mA	0.1V	0.1A
<b>PWS300-40</b>	0~300V	0~40A	≤0.2%FS	≤0.2%FS	≤0.2%FS	≤0.2%FS	≤0.3%FS+100mV	≤0.3%FS+10mA	≤0.1%FS+100mV	≤0.3%FS+30mA	0.1V	0.01A
<b>PWS400-30</b>	0~400V	0~30A	≤0.2%FS	≤0.2%FS	≤0.2%FS	≤0.2%FS	≤0.3%FS+100mV	≤0.3%FS+10mA	≤0.2%FS+100mV	≤0.3%FS+10mA	0.1V	0.01A
<b>PWS600-20</b>	0~600V	0~20A	≤0.2%FS	≤0.2%FS	≤0.2%FS	≤0.2%FS	≤0.3%FS+100mV	≤0.3%FS+10mA	≤0.2%FS+100mV	≤0.3%FS+10mA	0.1V	0.01A
<b>PWS800-15</b>	0~800V	0~15A	≤0.2%FS	≤0.2%FS	≤0.2%FS	≤0.2%FS	≤0.3%FS+100mV	≤0.3%FS+10mA	≤0.2%FS+100mV	≤0.3%FS+10mA	0.1V	0.01A
<b>PWS1000-12</b>	0~1000V	0~12A	≤0.2%FS	≤0.2%FS	≤0.2%FS	≤0.2%FS	≤0.3%FS+100mV	≤0.3%FS+10mA	≤0.2%FS+100mV	≤0.3%FS+10mA	1V	0.01A
<b>Power 15kW, 3U frame, Dimensions 482W*132H*570D mm, Weight approx 25kg, Input 3φ4W, 380V±10% 50Hz/60Hz</b>												
<b>PWS30-500</b>	0~30V	0~500A	≤0.2%FS	≤0.2%FS	≤0.2%FS	≤0.2%FS	≤1%FS+100mV	≤0.3%FS+10mA	≤0.1%FS+20mV	≤0.5%FS+200mA	0.01V	0.1A
<b>PWS50-300</b>	0~50V	0~300A	≤0.2%FS	≤0.2%FS	≤0.2%FS	≤0.2%FS	≤1%FS+100mV	≤0.3%FS+10mA	≤0.1%FS+20mV	≤0.5%FS+200mA	0.01V	0.1A
<b>PWS60-250</b>	0~60V	0~250A	≤0.2%FS	≤0.2%FS	≤0.2%FS	≤0.2%FS	≤1%FS+100mV	≤0.3%FS+10mA	≤0.1%FS+20mV	≤0.5%FS+200mA	0.01V	0.1A
<b>PWS100-150</b>	0~100V	0~150A	≤0.2%FS	≤0.2%FS	≤0.2%FS	≤0.2%FS	≤0.5%FS+100mV	≤0.3%FS+10mA	≤0.1%FS+20mV	≤0.5%FS+200mA	0.01V	0.1A
<b>PWS150-100</b>	0~150V	0~100A	≤0.2%FS	≤0.2%FS	≤0.2%FS	≤0.2%FS	≤0.5%FS+100mV	≤0.3%FS+10mA	≤0.1%FS+20mV	≤0.3%FS 100mA	0.1V	0.1A
<b>PWS200-75</b>	0~200V	0~75A	≤0.2%FS	≤0.2%FS	≤0.2%FS	≤0.2%FS	≤0.3%FS+100mV	≤0.3%FS+10mA	≤0.1%FS+100mV	≤0.3%FS+30mA	0.1V	0.01A
<b>PWS300-50</b>	0~300V	0~50A	≤0.2%FS	≤0.2%FS	≤0.2%FS	≤0.2%FS	≤0.3%FS+100mV	≤0.3%FS+10mA	≤0.1%FS+100mV	≤0.3%FS+30mA	0.1V	0.01A
<b>PWS500-30</b>	0~500V	0~30A	≤0.2%FS	≤0.2%FS	≤0.2%FS	≤0.2%FS	≤0.3%FS+100mV	≤0.3%FS+10mA	≤0.1%FS+100mV	≤0.3%FS+30mA	0.1V	0.01A
<b>PWS600-25</b>	0~600V	0~25A	≤0.2%FS	≤0.2%FS	≤0.2%FS	≤0.2%FS	≤0.3%FS+100mV	≤0.3%FS+10mA	≤0.1%FS+100mV	≤0.3%FS+30mA	0.1V	0.01A
<b>PWS800-18</b>	0~800V	0~18A	≤0.2%FS	≤0.2%FS	≤0.2%FS	≤0.2%FS	≤0.3%FS+100mV	≤0.3%FS+10mA	≤0.2%FS+100mV	≤0.3%FS+10mA	0.1V	0.01A
<b>PWS1000-15</b>	0~1000V	0~15A	≤0.2%FS	≤0.2%FS	≤0.2%FS	≤0.2%FS	≤0.3%FS+100mV	≤0.3%FS+10mA	≤0.2%FS+100mV	≤0.3%FS+10mA	1V	0.01A
<b>PWS1500-10</b>	0~1500V	0~10A	≤0.2%FS	≤0.2%FS	≤0.2%FS	≤0.2%FS	≤0.3%FS+100mV	≤0.3%FS+10mA	≤0.2%FS+100mV	≤0.3%FS+10mA	1V	0.01A



## High Power DC Power Supply

Time drift: Voltage $\leq$ 0.5%FS rms / Current $\leq$ 1%FS rms

Temperature drift: Voltage $\leq$ 0.1%FS rms/ $^{\circ}$ C / Current $\leq$ 0.3%FS rms/ $^{\circ}$ C

Transient response time:  $\leq$ 5ms (10% ~ 90% load change)

Remote sensing: Max compensation voltage 5V

Protection: OVP, OCP, OTP and short circuit protection

OVP setting range: 0.1V to 110% of rated voltage

OCP setting range: 0.1A to 110% of rated current

Digital interface: RS232, RS485 and LAN, support ModBus-RTU commands

Analog interface (optional): 0-5V, 0-10V or 4-20mA interface for voltage/current control and feedback

Cooling method: Forced air cool

Operating environment: 0 $^{\circ}$ C~40 $^{\circ}$ C, 10%~80%RH

Storage environment: -20 $^{\circ}$ C~70 $^{\circ}$ C, 10%~90%RH

Accessories: Operation manual x1, RS232 cable x1

**The above models are listed for reference only. Customer specifications are welcome.  
Specifications are subject to change without prior notice.**