

# **Bidirectional DC Programmable Power Supply**

## **MODEL PRD**



XI'AN ACTIONPOWER ELECTRIC CO., LTD.

<b>Output voltage</b>	<b>40V/60V/80V</b>	<b>200V/360V</b>	<b>500V/600V</b>	<b>800V/1000V</b>	<b>1500V/2000V</b>
<b>AC Input</b>					
Voltage range	304Vac to 480Vac / 380V±20%				
Frequency	47Hz to 63Hz				
Wiring method	3ph+PE				
Inrush current	<50A				
Efficiency up to	93.5%	94%	95%	94%	95%
Power Factor	0.99				
<b>Protective functions</b>					
OVP	Overvoltage protection, adjustable 0 - 110% $U_{Nominal}$ (±1% F.S.)				
OCP	Overcurrent protection, Adjustable 0V- ±110% $I_{Nominal}$ (±1% F.S.)				
OPP	Over-power protection, range 0V ~ ±110% $P_{Nominal}$ (±1% F.S.)				
OT	Overtemperature protection				
<b>Voltage</b>					
Programming accuracy	± 0.02% F.S.				
Programming resolution	± 1mV	± 10mV			
Display accuracy	± 0.02% F.S.				
Line regulation CV	± 0.01% F.S. (208V-480V AC±10% input voltage, constant load and constant temperature)				
Load regulation CV	± 0.01% F.S. (0-100% load, constant input voltage and constant temperature)				
Ripple (rms) CV	<25mV	<60mV	<200mV	<200mV	<400mV
Ripple and noise p-p CV	<300mVpp	<480mVpp	<1000mVpp	<1200mVpp	<2400mVpp
Remote compensation	Max.voltage±1V	Max. voltage and 2%F.S.±1V			
Rise time 10%-90% CV	1ms	500µs			
Fall time 90%-10% CV	1ms	500µs			
Voltage swing rate	150V/ms	200V/ms	1500V/ms	600V/ms	5000V/ms
Recovery time	Recovery to steady state within 2.5ms ±0.75% F.S. (25%-50% or 50% -25%) load	Recovery to steady state within 500µs ±0.75% F.S. (50% -100% or 100% -50% load)			
Discharge time	≤20s	≤20s	≤30s	≤20s	≤30s
<b>Current</b>					
Programming accuracy	± 0.15% F.S.	± 0.02% F.S.			
Programming resolution	± 100mA	± 10mA			
Display accuracy	± 0.15% F.S.	± 0.02% F.S.			
Display resolution	± 10mA	± 1mA			
Line regulation CC	± 0.01% F.S. (208V-480V AC±10% input voltage, constant load and constant temperature)				
Load regulation CC	± 0.05% F.S. (0-100% load, constant input voltage and constant temperature)				
Rise time 10% - 90% CC	1ms	500µs			
Full time 90% - 10% CC	1ms	500µs			

<b>Power</b>					
Programming accuracy	± 30W	± 3W	±0.01% F.S.	± 3W	±0.01% F.S.
Programming resolution	± 10W	± 1W			
Display accuracy	± 30W	± 3W			
Display resolution	± 10W	± 1W			
<b>Resistance</b>					
Range	0.003-100Ω	0.05-100Ω	0.5-3000Ω	0.05-100Ω	0.5-3000Ω
Programming accuracy	1mΩ	0.01Ω	0.1Ω	0.01Ω	0.1Ω
Programming resolution	1mΩ	0.01Ω	0.1Ω	0.01Ω	0.1Ω
<b>SAS</b>					
Short-circuit current setting range	0A~1e				
Simulated fill factor range	0.3~0.95				
Photovoltaic panel type selection	C-Si, Thin-film, Custom				
I-V curve update rate	Typical time 1ms, with online curve switching function				
IV curve criteria	EN50530, Sandia, simple				
IV curve function	Static curves; curve scanning; static sequences; static MPPT; dynamic MPPT; weather simulation; Shading of photovoltaic panels; curve programming; custom curves etc.				
Curve setting	<ol style="list-style-type: none"> <li>1) IV curves can be customized with parameters such as Voc, Isc, FF and Pm;</li> <li>2) Dynamic working mode takes into account environmental influences such as temperature changes and irradiance, and can continuously output IV curves for different environments;</li> <li>3) Built-in EN50530/Sandia dynamic I-V curve test program;</li> </ol>				
<b>Battery simulation</b>					
Battery type	Simulate different battery types such as lithium manganate, lithium Cobaltate, lithium iron phosphate, Nickel-metal hydride, Ternary lithium, lithium titanate and lead-acid batteries; Customize battery types, freely set 1st, 2nd and 3rd order RC battery models;				
Setting parameters	Parameters such as number of series connections, number of parallel connections, initial SOC, initial temperature, internal resistance, single unit capacity				
Interface	Support for CSV custom model import				
Real-time	200μs command refresh rate				
<b>Programming</b>					
Programming mode	List, Wave, Step, Advanced				
Programming steps	200				
Cycle range	0~9999999 times				
Minimum programming time	100μs				
Mode of operation	Load, end, trigger				
<b>Interfaces/Any port</b>					
Functions and definitions	See "Any port interface specification"				
Isolation	707VDC				
<b>Interface</b>					

Rear	Type-B USB, LAN, Share Bus, Magic-BUS, Magic-BOX DC terminal, AC supply, Remote sensing, Analog interface				
Front	Type-A USB, ON/OFF Button, Out Button, Touch screen, Rotary knob				
<b>Environment</b>					
Operating temperature	0 to 50 (°C) (power derating over 35°C)				
Storage temperature	-20 to 70(°C)				
Humidity	≤ 80%. Not condensing				
Height	Output current derating 2%/100m above 2000m or Ta derating 1°C/100m				
<b>Insulation</b>					
Negative - PE	±500 V DC	±1500VDC	±1500VDC	±1500VDC	±1500VDC
Positive - PE	+500 V DC	+1500VDC	+2000VDC	+1500VDC	+2000VDC
AC Input - PE	2.5 kV AC				
<b>Others</b>					
Size	W435mm x H132mm x D781mm				
Weight	40kg	35kg			

**Note:** The above accuracy test conditions are: 25°C ± 5°C;

Ripple voltage/Ripple(peak)@20MHz bandwde;

Ripple voltage/Ripple (rms) @ 300kHz LF;

Voltage swing rate / Slew rate (Without load).

Power	Model	Voltage	Current	Power	Model	Voltage	Current	Power	Model	Voltage	Current
<b>30kW</b>	PRD0224	200V	±240A	<b>20kW</b>	PRD4V66E	40V	±667A	<b>15kW</b>	PRD4V50E	40V	±667A
	PRD0324	360V	±240A		PRD6V66E	60V	±667A		PRD6V50E	60V	±667A
	PRD0518	500V	±180A		PRD8V66E	80V	±667A		PRD8V50E	80V	±667A
	PRD0618	600V	±180A		PRD0216E	200V	±240A		PRD0212E	200V	±160A
	PRD0808	800V	±80A		PRD0316E	360V	±240A		PRD0312E	360V	±160A
	PRD1008	1000V	±80A		PRD0512E	500V	±180A		PRD0509E	500V	±120A
	PRD1506	1500V	±60A		PRD0612E	600V	±180A		PRD0609E	600V	±120A
	PRD2006	2000V	±60A		PRD0805E	800V	±80A		PRD0804E	800V	±54A