ACTIONPOWER

High Performance DC Power Supply

Cortex DC series-Unidirectional

0V to 2000V, 15kW to 3MW

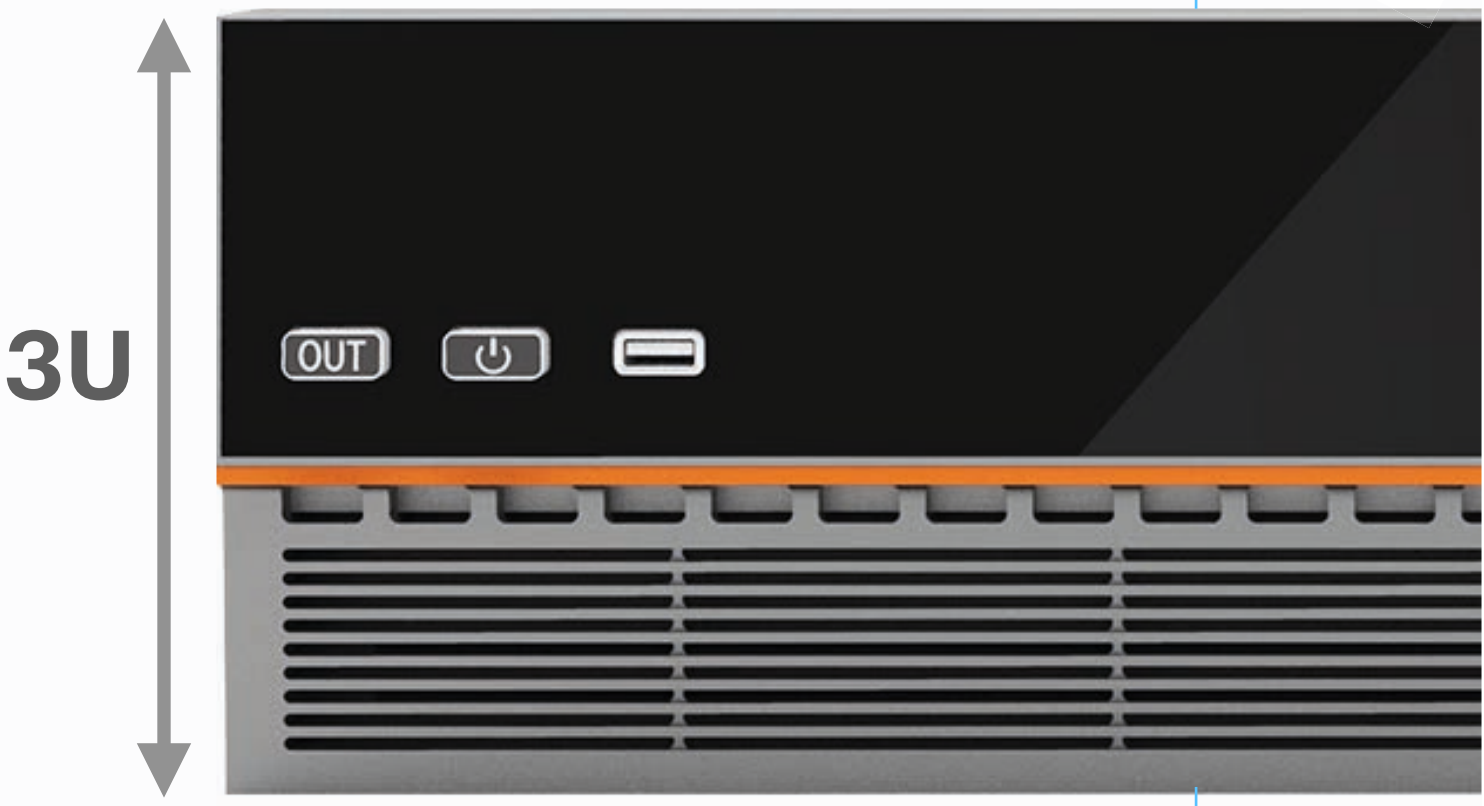
Programmable Unidirectional DC Power Supply

actionpowertest.com

FAST SLEW RATE
WITH EXCEPTIONAL RISE/FALL TIME
FOR SPEED-CRITICAL APPLICATION

The bi-directional power supply with the best performance, which provides 0.02%F.S. of voltage and current accuracy and 600μs of response time based on the unique topology.

600μs
ULTRA FAST RESPONSE TIME



HIGH ACCURACY
VOLTAGE & CURRENT

It performs fast dynamic characteristics by stable and precise control using equipped high accuracy voltage and current measurement device and micro-processor for digital signal.

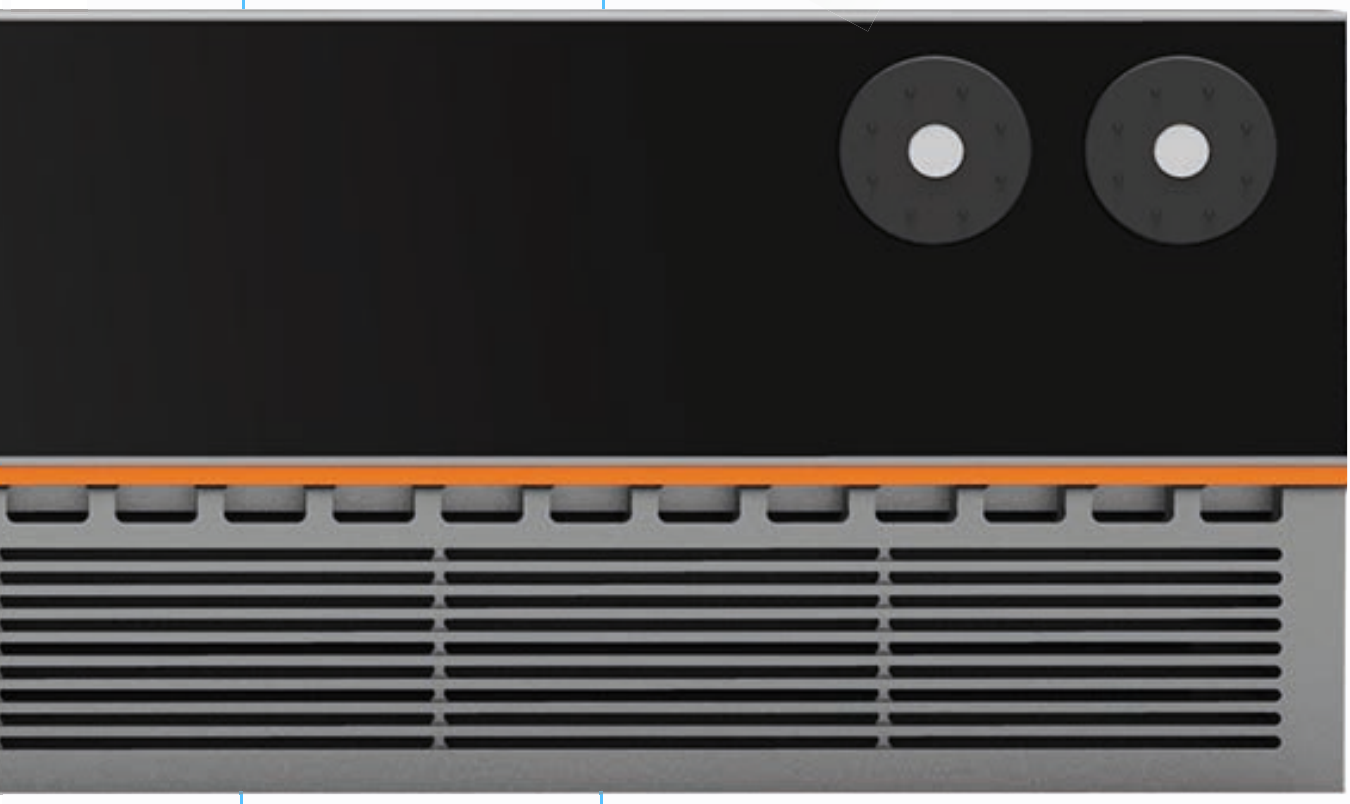
0.02%F.S.
HIGH ACCURACY

0V
SUPPORT ZERO VOLT INPUT

2000V
MAXIMUM DC VOLTAGE OUTPUT

HIGH VOLTAGE
DC POWER SUPPLY

Cortex DC series provides the safety feature that it stably maintains 0V in standby mode, and the maximum voltage range is up to 2000Vdc.



3MW
MAXIMUM DC OUTPUT POWER

30kW/3U
HIGH DENSITY POWER

HIGH POWER DENSITY
WITH AUTO RANGING

Power density of Cortex DC series is up to 30kW/3U, and it can perform numerous application test using auto-ranging function, which adjusts the voltage and current range flexibly.

Ratings, types and voltages

Power	Model	Voltage	Current
15kW	CD15-040A	40	±667
	CD15-060A	60	±667
	CD15-080A	80	±667
	CD15-800A	800	±54
	CD15-1K0A	1000	±54
	CD15-1K5A	1500	±45
	CD15-2K0A	2000	±45

Power	Model	Voltage	Current
20kW	CD20-040A	40	±667
	CD20-060A	60	±667
	CD20-080A	80	±667
	CD20-800A	800	±80
	CD20-1K0A	1000	±80
	CD20-1K5A	1500	±60
	CD20-2K0A	2000	±60

Power	Model	Voltage	Current
30kW	CD30-800A	800	±80
	CD30-1K0A	1000	±80
	CD30-1K5A	1500	±60
	CD30-2K0A	2000	±60

FEATURES

- Fast Response Time : <600μs
- High Voltage Accuracy : <0.02%F.S.
- High Current Accuracy : <0.02%F.S.
- Parallel Connection : up to 3MW
- High Power Density : 30kW/3U
- PV Simulation Function

Technical data

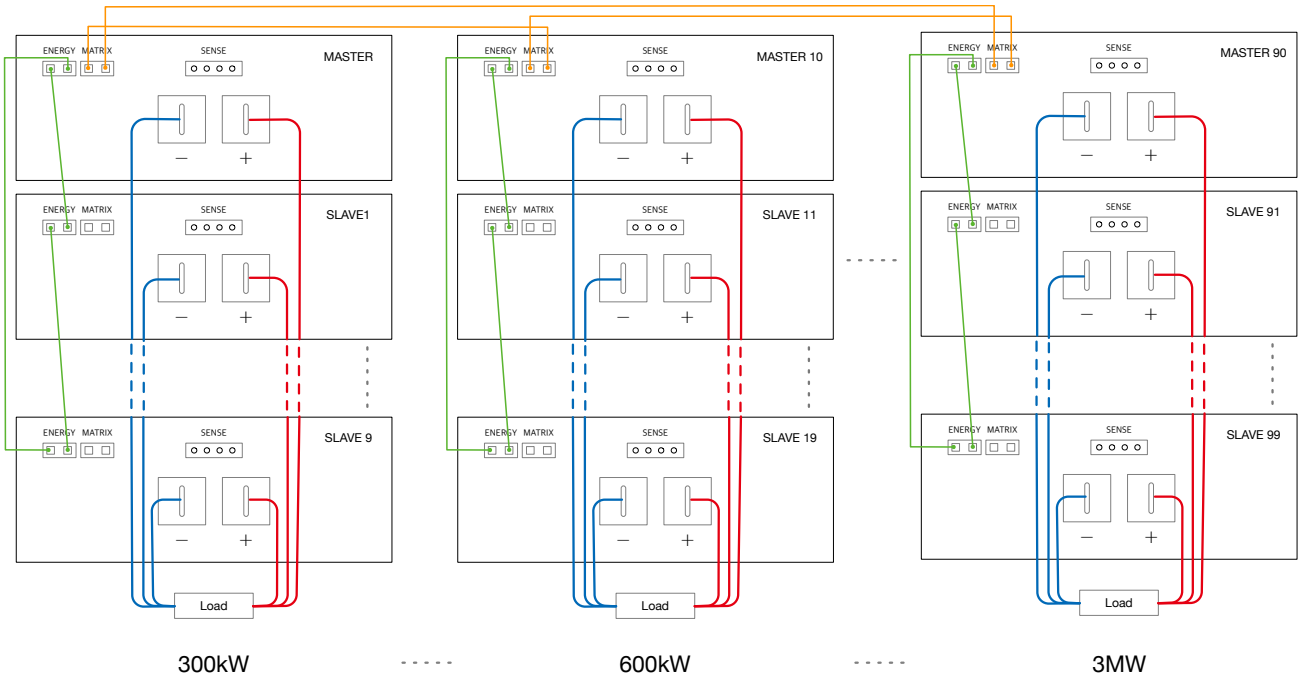
Model	40V/60V/80V	800V/1000V	1500V/2000V
AC Input			
Voltage, Phases	304Vac to 480Vac / 380V±20%, 3ph+PE		
Frequency	47Hz to 63Hz		
Inrush Current	<50A		
Power Factor	0.99		
Efficiency up to	93.5%	94%	95%
DC Output Voltage			
Accuracy	±0.02% F.S.		
Resolution	±10mV	±50mV	±100mV
Display Accuracy	±0.02% F.S.		
Line Regulation CV	±0.01% F.S. (208-408V AC±10% input voltage, constant load and constant Loadtemperature)		
Regulation CV	±0.01% F.S. (0-100% load, constant load and constant temperature)		
Ripple (rms) CV	<25mV	<200mV	<200mV
Ripple and Noise p-p CV	<300mVpp	<1200mVpp	*<2400mVpp*
Remote Compensation	Max.voltage±1V	Max.voltage and 2%F.S.±1V	
Rise Time 10%-90% CV	1ms	800μs	
Voltage Slew Rate	50V/ms	1500V/ms	3000V/ms
Recovery Time	2.5ms±0.75%F.S	600μs ±0.75% F.S. (50% -100% or 100% -50/% load)	
Discharge Time	≤20s	≤20s	≤30s
DC Output Current			
Accuracy	±0.15% F.S.	±0.02% F.S.	
Resolution	±100mA	±10mA	
Display Accuracy	±0.15% F.S.	±0.02% F.S.	
Display Resolution	±10mA	±10mA	
Line Regulation CC	±0.01% F.S. (208-408V AC±10% input voltage, constant load and constant temperature)		
Load Regulation CC	±0.05% F.S. (0-100% load, constant load and constant temperature)		
Rise Time 10%-90% CC	1ms	500μs	

Technical data

Model	40V/60V/80V	800V/1000V	1500V/2000V
DC Output Power			
Accuracy	±30W		
Resolution	±10W	±1W	
Display Accuracy	±30W		
Display Resolution	±10W	±1W	
Resistance			
Range	0.003-100Ω	0.05-100Ω	0.5-3000Ω
Programming Accuracy	1mΩ	0.01Ω	0.1Ω
Programming Resolution	1mΩ	0.01Ω	0.01Ω
Protective Functions			
OVP	Over-voltage protection, adjustable 0 - 110% UNominal (±1% F.S.)		
OCP	Over-current protection, Adjustable 0V- ±110% INominal (±1% F.S.)		
OPP	Over-power protection, range 0V ~ ±110% PNominal (±1% F.S.)		
OTP	Over-temperature protection		
Interface			
Standard Interface: Type-B USB, LAN, CAN, RS485; Optional Interface: GPIB			
Device Configuration			
Parallel Operation	Up to 100 units with energy-matrix bus (3MW)		
Environment Conditions			
Operating Temperature	0 to 50 (°C) (power derating over 35°C)		
Storage Temperature	-20 to 70(°C)		
Humidity	≤ 80%. Not condensing		
Altitude	Output current derating 2%/100m above 2000m or derating 1°C/100m		
Mechanical Spec.			
Cooling	Forced air cooling		
Dimensions	435mm x 132mm x 781mm		
Weight	40kg	35kg	

Modular and Scalable Design

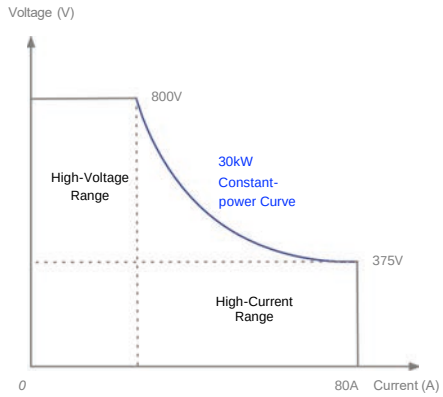
The Cortex DC series applies the DMPS (Digital Matrix Parallel System) method for high performance and stable power supply, which enables capacity expansion up to 3MW by connecting up to 100 units of 30kW power modules in parallel using high-speed fiber optic communication. In particular, redundancy function ensures stable operation of the test system even in the event of fault at specific modules. That is in case of fault in any slave module, the system bypass the abnormal module and operate continuously so that secures the reliability and stability of the system by minimizing down-time.



Features

- For 380V, 400V AC
- Modular rack system
- Module redundancy function
- Cabinet system with 26U / 42U & 19 inch rack
- Minimal footprint : 3U / 30kW
- Up to 100 units parallel connection (3MW)
- Extensive protective function (OVP, OCP, OTP, …)
- Air cooling

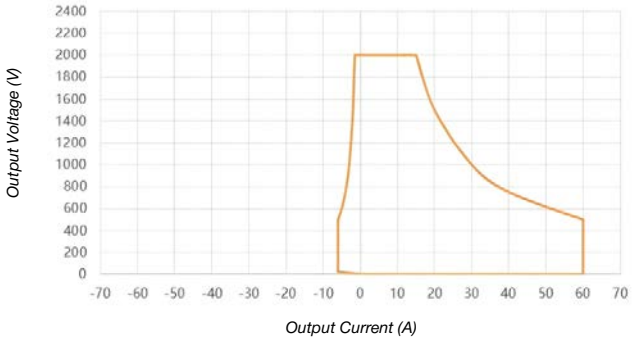
Auto ranging



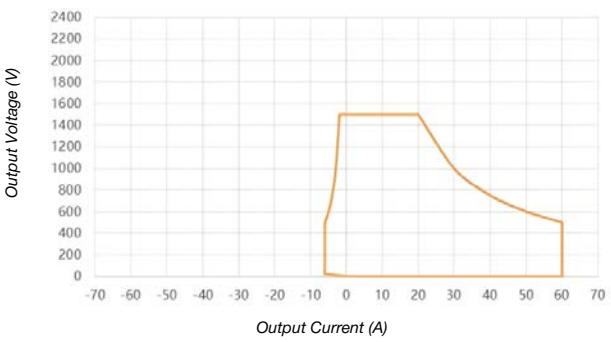
The auto ranging function automatically controls voltage and current through the programmable DC power supply to maintain the rated output over a wide operating range. That is the higher voltage is available at lower current, and vice versa, allowing the DUT to be tested under different voltage/current conditions with a single DC power supply.

30kW Cortex DC Series Auto Ranging

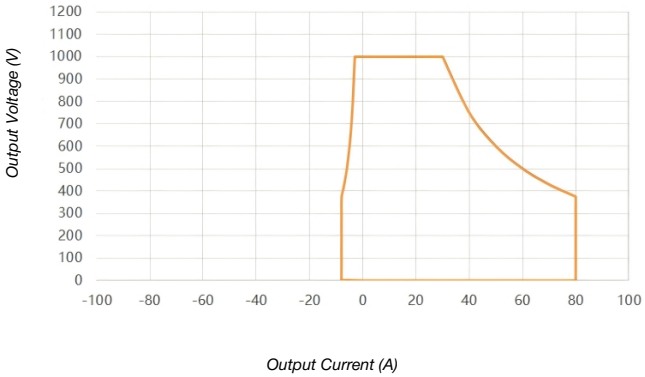
CD30-2K0A



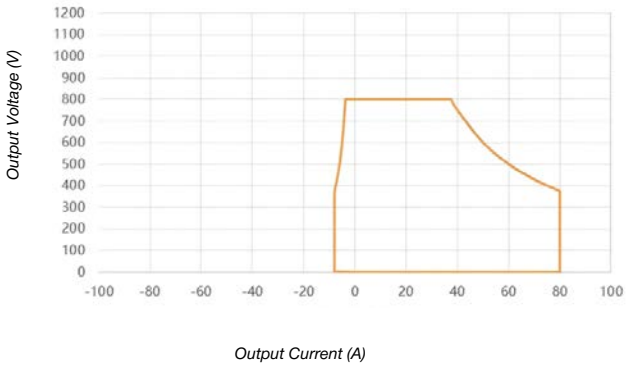
CD30-1K5A



CD30-1K0A



CD30-800A



Application

The Cortex DC Series unidirectional programmable DC power supplies are designed for advanced testing, simulation, and validation in renewable energy, automotive electronics, laboratories, and production environments. With high accuracy, fast dynamic response, and flexible programming, the Cortex DC Series operates as a DC power source, enabling realistic energy flow simulation. For photovoltaic and renewable energy applications, the system functions as a high-performance solar array simulator (SAS).

It accurately emulates PV I-V characteristics for static curve scanning and dynamic MPPT efficiency testing, supporting reliable inverter validation under changing irradiance conditions. In automotive electronics testing, the Cortex DC Series supports R&D and verification of onboard chargers, DC/DC converters, and power electronic components.

EV Testing

Solar Array Simulating

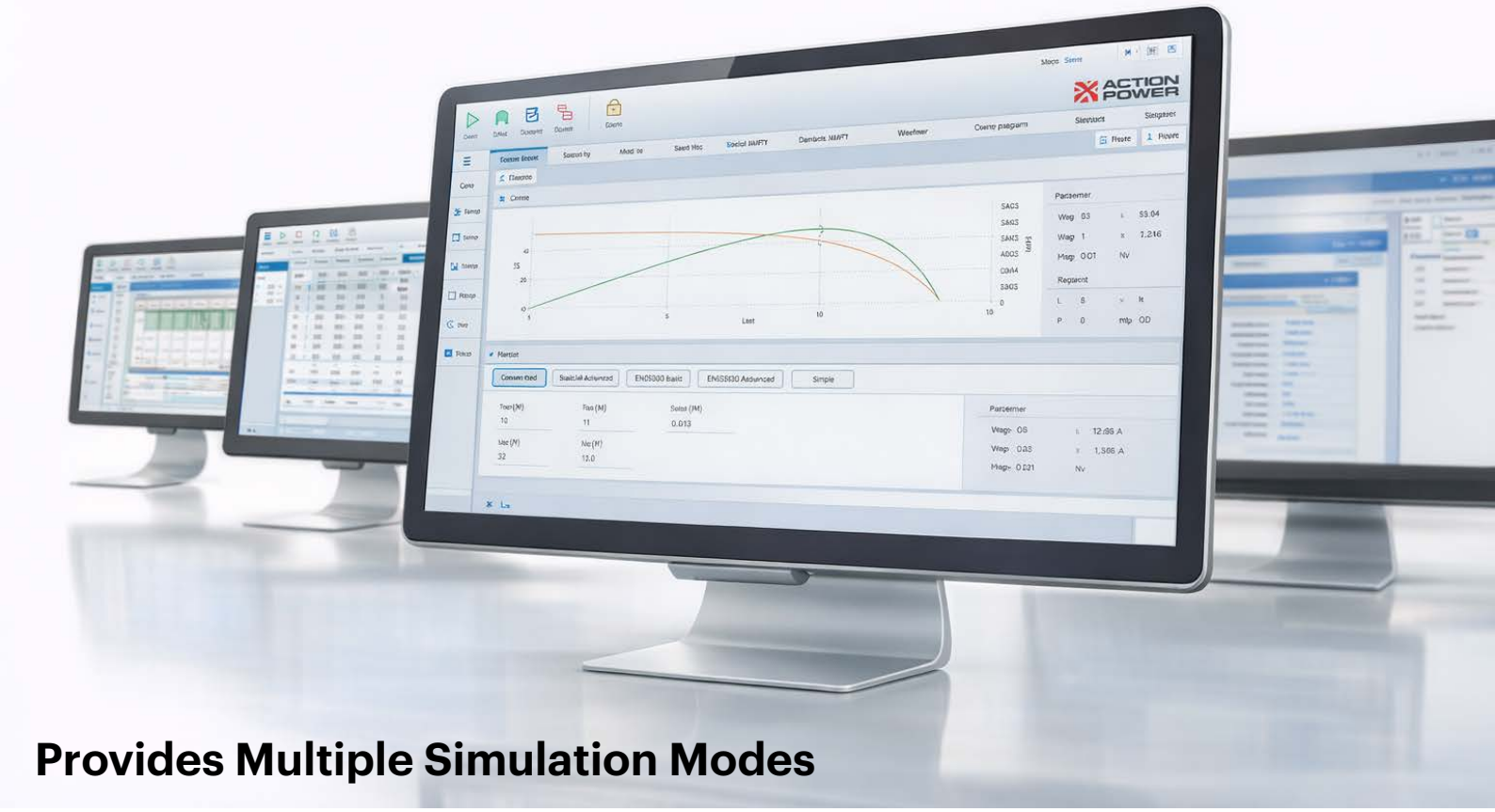
Power Electronic Components Testing

Server Power Supply Reliability Testing

Fuel Cell System Testing

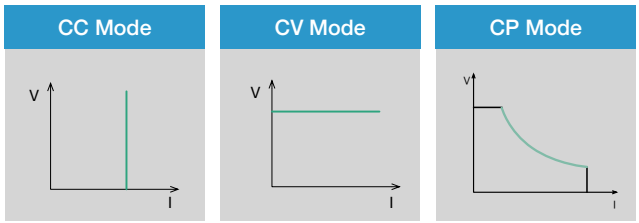
Burn-in Testing

Powerful Software

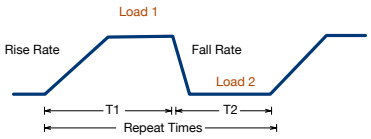


Provides Multiple Simulation Modes

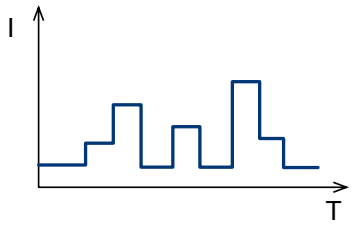
Basic Mode



Dynamic Mode



Programmable Sequences



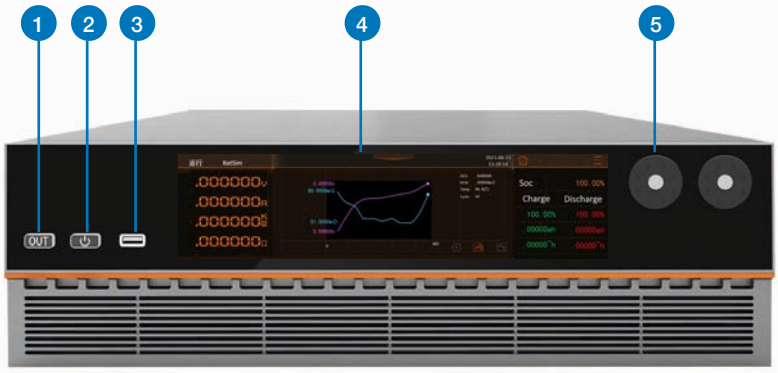
FEATURES

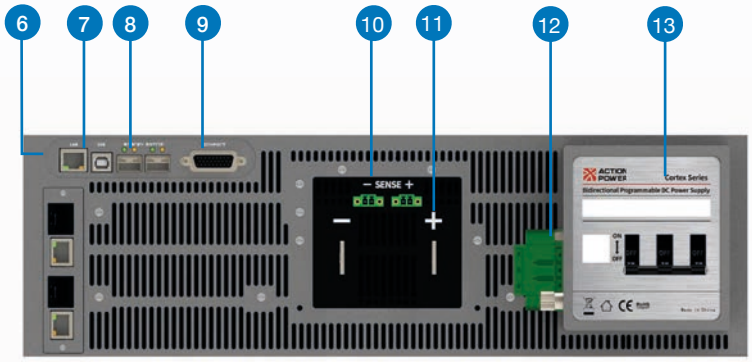
- PV Simulation

Static curves, Curve programming, Static MPPT, Dynamic MPPT, Weather Simulation, Shading of photovoltaic panels

- Programming waveform
- Curve import and export

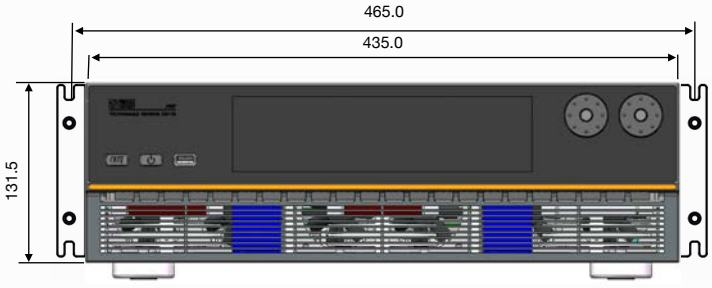
Panel Description

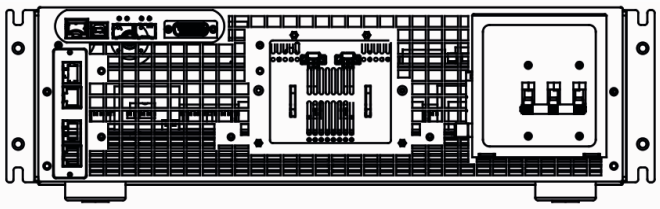


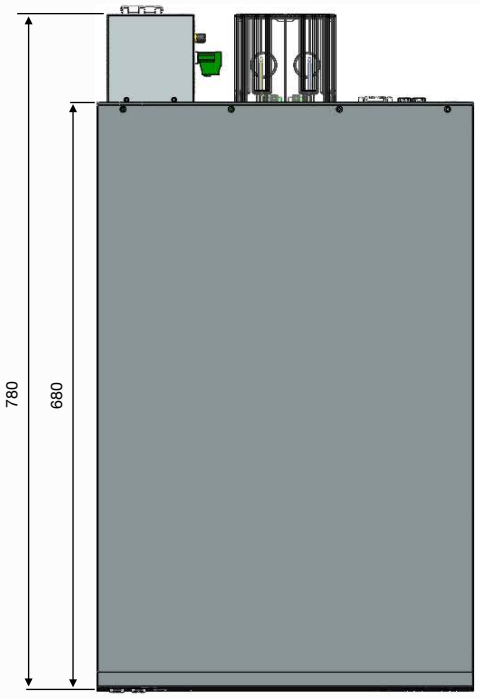


1. Power Output Button
2. Power On / Reset Button
   Device on/off switch
3. USB port
   External Storage Interface
4. 18” FHD Touch Screen
   Display setting and measurement data
5. Pushable Knob
   To edit the settings on-screen
6. LAN Interface
7. USB Interface
8. Energy Matrix Interface
   Parallel connection
9. Anyport Interface
10. Voltage Sensing
11. Output Positive/Negative Terminals
12. AC input & PE Terminal
13. AC Circuit Breaker
    AC power on/off

Dimension







ACTIONPOWER

For more information, please contact
your local ACTIONPOWER distributor or visit

www.actionpowertest.com

© Copyright 2026 ACTIONPOWER. All rights reserved.
Specifications subject to change without notice.

Headquarters
No.3333 Run De RD., Chang An District, Xi'an Shaanxi, China 710119
info@actionpowertest.com
+86 (0)29-8569-1870