



S7200 Series Bidirectional Programmable DC Power Supply



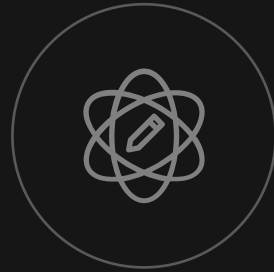
Introduction

01



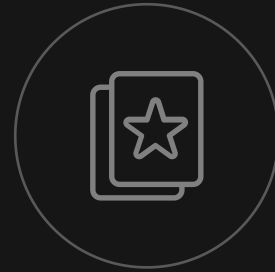
Comparison

02



Software

03



Application

04



More applications

05



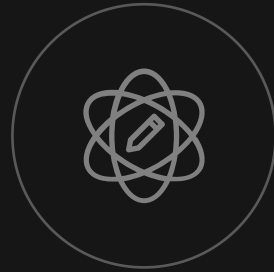
Introduction

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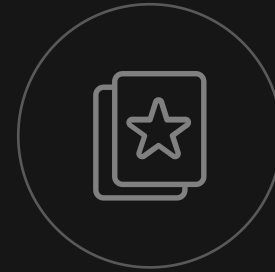
Comparison

02



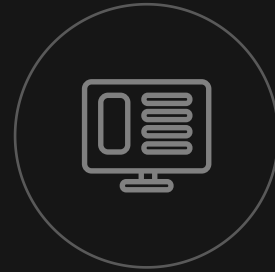
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Introduction- S7200 Series Bidirectional Programmable DC Power Supply



Power: 7.5kW~30kW

Voltage: 400/800/1200/1600/2000/2400V

Current: 80A~400A

S7200 Series Bidirectional Programmable DC Power Supply

The S7200 series integrates the functions of bi-directional DC power supply and DC electronic load, featuring free/active source-load mode switching to meet users' diversified testing requirements. In the bi-directional DC power supply mode, it has both source and load capabilities, the former for providing power and the latter for returning the energy absorbed from the device under test (DUT) back to the grid. In the DC electronic load mode, there are multiple loading modes available such as the basic and the composite modes, ensuring no power output.

S7200 Product Portfolio

Voltage[V]	Power[kW]	Current[A]
400V	30kW	400A
800V	7.5/10kW	80A
	15kW	160A
	20kW	200A
	30kW	240A
1200V	15kW	100A
	20kW	100A
	30kW	100A
1600V	15kW	80A
	20kW	80A
	30kW	80A
2000V	20kW	80A
	30kW	80A
2400V	30kW	80A

S7000 (High voltage) Product Portfolio

Voltage[V]	Power[kW]	Current[A]
750	7.5kw	60A
	15kw	120A
	30kw	180A
1500	15kw	60A
2000	21kw	60A
	30kw	60A



S7200 Series

VS



S7000 High Voltage

*Each model of S7200 shown in the table has both of P and N version
 And models marked in blue are the ones already released.

S7200 Product Portfolio:

NORMAL

Fully-featured, Multi-scenario

PRO

Ultimate experience, Lab testing-oriented

Model	N	P
DC Power Source	•	•
Battery Simulation	•	•
Battery Test	-	•
Automotive Power Curve*	•	•
Load Function	•	•
IV Simulation	•	•
Custom Waveforms*	•	•
Communication Interfaces RS232/LAN/CAN/USB/GPIB(Optional)	•	•



Introduction

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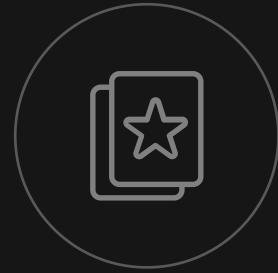
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S7200 VS S7000 Technical Specification:

Item		S7200NG-30K-2400-80	S7200PG-30K-2400-80	S7000UG-30K-2000-0060
Read-back Resolution	Voltage	0.001V		0.01V
	Current	0.001A		0.01A
	Power	0.1W		1W
Accuracy	Voltage	0.02%	0.01%	0.05%
	Current	0.05%	0.05%	0.1%
Voltage Slew Rate (No Load)		0.001–500 V/ms		0.001–200 V/ms
Voltage Slew Rate (Full Load)		0.001–500 V/ms		0.001–90 V/ms
Current Slew Rate (No Load)		0.001–150 A/ms		0.001–20 A/ms
Current Slew Rate (Full Load)		0.001–150 A/ms		0.001–10 A/ms
Dynamic Response Time		0.5 ms		1 ms
Minimum Editable Step Time		1 ms		1 s

Price wise S7000 is lower than S7200 X% in same power rate

Competitor Comparison S7200

Model		Kewell S7200PG-30K-2400-80	Brand E EA-PSB 12000-40	Brand C 62180D-1800
Power Density		3U/30kW	4U/30kW	3U/18kW
Voltage		2400V	2000V	1800V
Current		80A (optional 100A)	40A	40A
Accuracy	Voltage	≤0.01%F.S.	≤0.05%F.S.	0.05% + 0.05%F.S
	Current	≤0.05%F.S.	≤0.1%F.S.	0.1% + 0.1%F.S.
Ripple	Voltage (rms)	400mV	400mV	255mV
	Current (rms)	200mA	/	30mA
Voltage slew rate	No load	0.001V/ms ~ 500V/ms	/	0.001V/ms ~ 180V/ms
	Full load	0.001V/ms ~ 500V/ms	/	0.001V/ms ~ 80V/ms
Current slew rate	Full load	0.001A/ms ~ 150A/ms	/	0.001A/ms ~ 10A/ms
Dynamic Response Time		0.5ms	2ms	0.5ms
Load Regulation	Voltage	≤0.05%F.S.	≤0.05%F.S.	±0.04% F.S.
	Current	≤0.05%F.S.	≤0.05%F.S.	±0.1% F.S.
Line Regulation	Voltage	≤0.02%F.S.	≤0.01%F.S.	±0.01% F.S
	Current	≤0.02%F.S.	≤0.01%F.S.	±0.05% F.S
Efficiency		95.5%	96%	92%

Competitor Comparison S7200

Model		Kewell S7200NG-20K-800-200	Brand I IT6018B-1500-40
Power Density		3U/20kW	3U/18kW
Voltage		800V	1500V
Current		200A	40A
Accuracy	Voltage	≤0.02%F.S	≤0.02% + 0.02%FS
	Current	≤0.05%F.S.	≤0.1% + 0.1%FS
Ripple	Voltage (rms)	200mV	≤0.02%FS (RMS) -300mV
	Current (rms)	400mA	≤0.1%FS (RMS) -40mA
Voltage slew rate	No load	0.001V/ms ~ 500V/ms	≈80V/ms
	Full load	0.001V/ms ~ 500V/ms	≈40V/ms
Current slew rate	Full load	0.001A/ms ~ 450A/ms	40A/ms
Dynamic Response Time		0.5ms	2ms
Load Regulation	Voltage	≤0.05%F.S.	≤0.005%F.S.
	Current	≤0.05%F.S.	≤0.015%F.S.
Line Regulation	Voltage	≤0.02%F.S.	≤0.02%FS
	Current	≤0.02%F.S.	≤0.05%FS
Efficiency		93%	92%

Price wise S7200 is lower than I brand X% in similar power rate

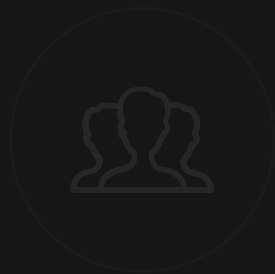
Competitor Comparison S7200

Model		Kewell S7200PG-30K-2400-80	Kewell 2 Parallel	Brand C 62450D-2000
Power Density		3U/30kW	6U/60kW	4U/45kW
Voltage		2400V	2400V	650V/2000V
Current		80A (optional 100A)	160A (optional 200A)	180A/40A
Accuracy	Voltage	≤0.01%F.S.	≤0.01%F.S.	0.05%F.S.
	Current	≤0.05%F.S.	≤0.05%F.S.	0.2%F.S.
Ripple	Voltage (rms)	400mV	400mV	80mV/2405mV
	Current (rms)	200mA	400mA	135mA/75mA
Min. operating voltage		65V@80A (optional: 65V@100A)	65V@160A (optional: 65V@200A)	35V@180A 105V@60A
Voltage slew rate	No load	0.001V/ms ~ 500V/ms	0.001V/ms ~ 500V/ms	65V/ms 200V/ms
	Full load	0.001V/ms ~ 500V/ms	0.001V/ms ~ 500V/ms	/
Current slew rate	Full load	0.001A/ms ~ 150A/ms	0.001A/ms ~ 300A/ms	90A/ms 30A/ms
Dynamic Response Time		0.5ms	0.5ms	0.5ms
Load Regulation	Voltage	≤0.05%F.S.	≤0.05%F.S.	±0.04% F.S.
	Current	≤0.05%F.S.	≤0.05%F.S.	±0.1% F.S.
Line Regulation	Voltage	≤0.02%F.S.	≤0.02%F.S.	±0.01% F.S.
	Current	≤0.02%F.S.	≤0.02%F.S.	±0.05% F.S.
Efficiency		95.5%	95.5%	94%



Introduction

01



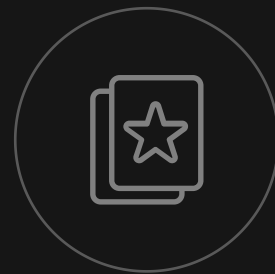
Comparison

02



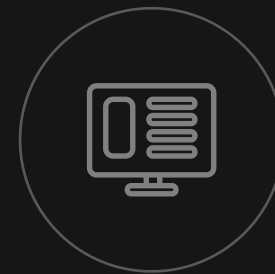
Software

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UDW(Customed Waveform)

DC source IV simulation(IV) Battery test(BT) Battery simulation(BS) LIST **UDW** VE

Simulation Waveform



Excel path: C:\Users\Administrator\Desktop\UDW - 1.xls

Chain:

+	UDW	UDW	UDW
-	1	2	3

Counts: 11 Object: Current End state: Last

Buttons: Create, Preview, Apply, Run, Func start

Waveform type: **UDW** Triangle Rectangle Sine

Waveform:	1		
Interval:	0.005	sec	Resolution: 0.0001sec
Repeat:			
Interpolation:	0.00001		
Chain:	≡		
	Interval		
	1 ≡ 20		
Start	11		
Length	2883		
Waveform Data	Unit: Amp.		

Protection **Limit value** Basic Exit

Voltage setting: 100.0 V Voltage slew rate: 20.000 V/ms

Current limit: 606.00 A Current slew rate: 900.000 A/ms

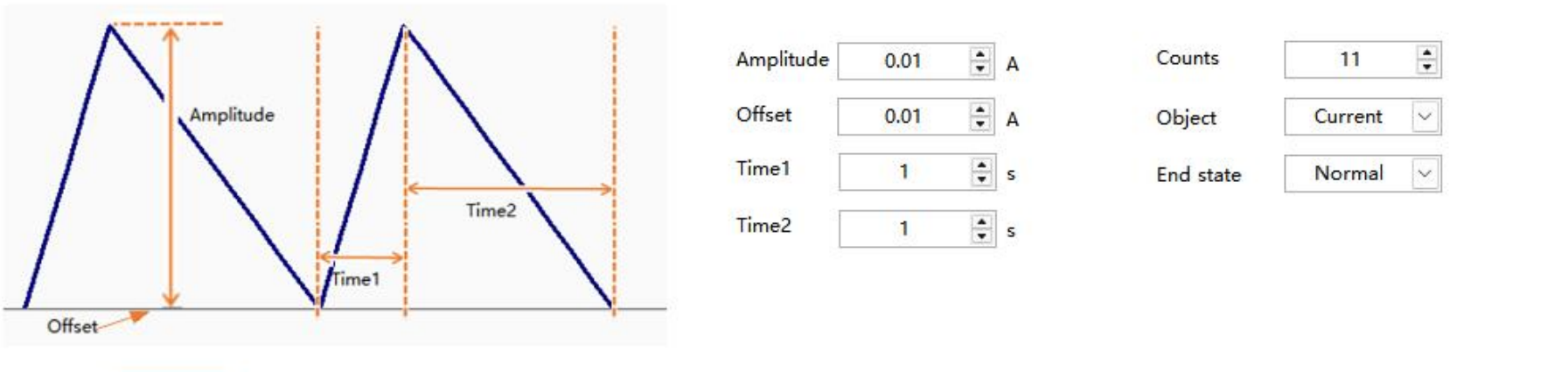
Power limit: 15150 W

Apply

The UDW function can generate any waveform of current or voltage. The minimum duration for a single step can be set at **0.1 ms**. In this mode, the slope of voltage or current is higher than that in the conventional CV/CC mode, which is **1000V/ms** and **300A/ms or 500A/ms** respectively.

UDW(Customed Waveform)

DC source IV simulation(IV) Battery test(BT) Battery simulation(BS) LIST **UDW** VE

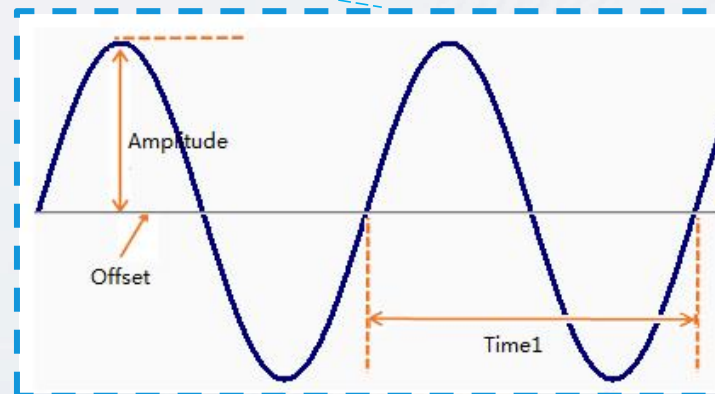
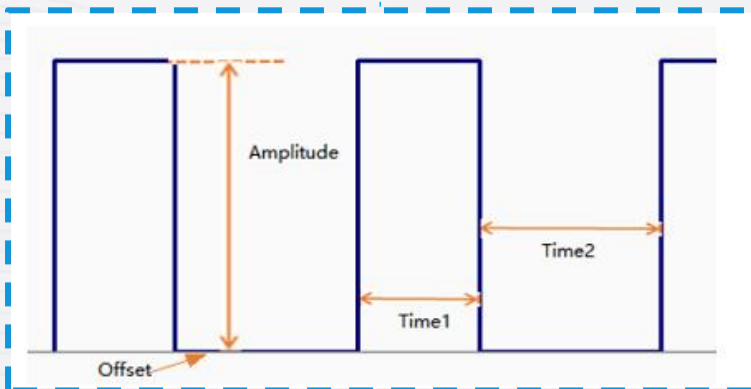


Amplitude: 0.01 A
Offset: 0.01 A
Time1: 1 s
Time2: 1 s

Counts: 11
Object: Current
End state: Normal

UDW **Triangle** Rectangle Sine

Create
Preview
Apply
Run
Func start



S7200 can generate **triangle** waves, **rectangle** waves and **sine** waves by setting (offset) (Amplitude) (Time1) (Time2).

Automotive power curve

Ktest_V2.00.06

DC Source Time interval 1s Save Parameter Debug Fault clear Help Back

DC Source Reading chart IV curve **VE** Communication error,click to reconnect

V 0.000 V
I 0.000 A
P 0.0 W

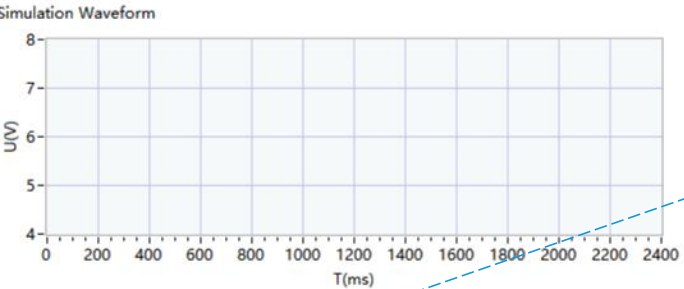
Power state
Standby
Run
Sys. sta.
Com. sta.

Stop
CV
CC
IV
BT
BS
LIST
UDW
VE

DC source IV simulation(IV) Battery test(BT) Battery simulation(BS) LIST UDW **VE**

Simulation Waveform

12V 24V
U 8.0000 V
t1 1 ms



Preview
Apply
Run
Func start

DIN40839 ISO16750-2 LV123

DIN40839

Simulation Waveform

12V 24V
U 8.0000 V
t1 1 ms

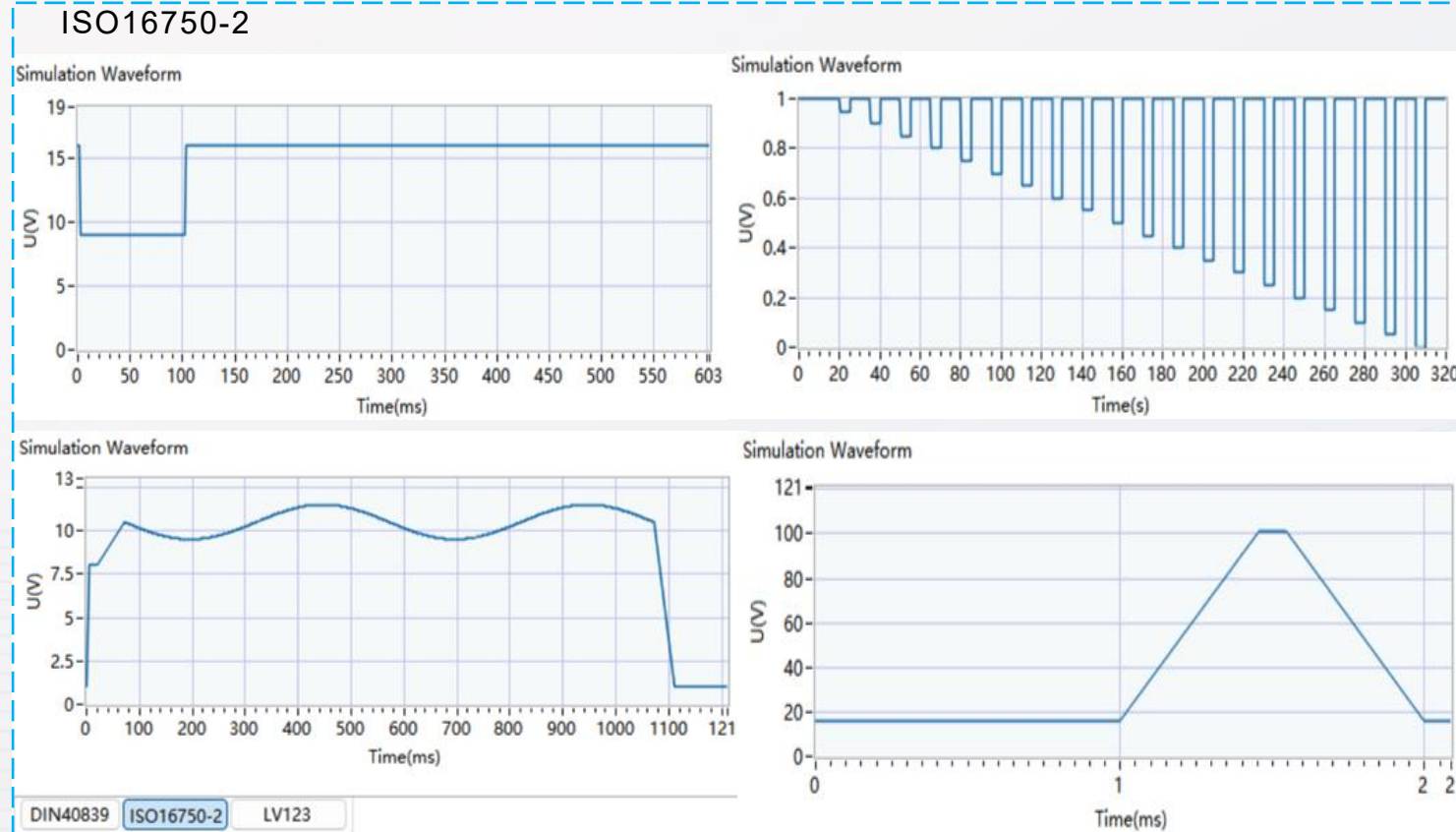


Simulation Waveform

12V 24V
U 16.0000 V
t1 1 ms



Automotive power curve



List Mode

The screenshot displays the 'List Mode' interface. At the top, there is a navigation bar with 'DC Source', 'Time interval' (set to 1s), and buttons for 'Save', 'Parameter', 'Debug', 'Fault clear', 'Help', and 'Back'. Below this, a secondary bar shows 'DC Source', 'Reading chart', 'IV curve', 'VE', and a red warning message: 'Communication error,click to reconnect'.

The main area features three large digital displays: a red one showing '0.000' with a 'V' symbol, a blue one showing '0.000' with an 'A' symbol, and a green one showing '0.0' with a 'W' symbol.

Below the displays is a menu with options: 'DC source', 'IV simulation(IV)', 'Battery test(BT)', 'Battery simulation(BS)', 'LIST' (highlighted), 'UDW', and 'VE'. To the left of this menu is a vertical sidebar with radio buttons for 'Power state' (Standby, Run, Sys. sta., Com. sta.) and 'Stop' (CV, CC, IV, BT, BS, LIST, UDW, VE).

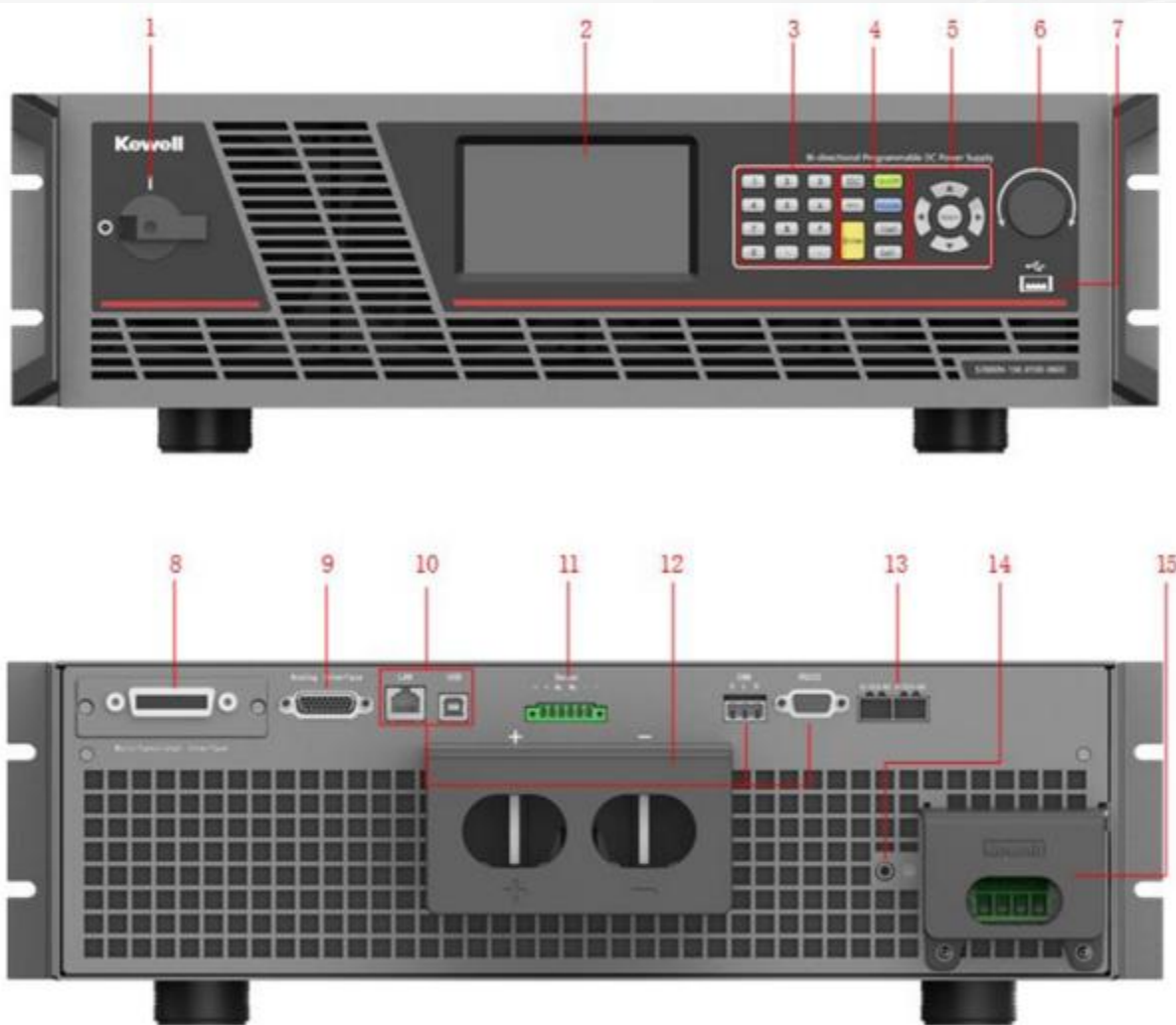
The 'LIST' mode is active, showing a table with columns for 'Group01' through 'Group10'. The table has columns for 'TRIG', 'DWELL', 'SET', 'SR', and 'SR'. The data is as follows:

	TRIG	DWELL	SET	SR	SR
1	Manual	5.0	10.0000	2.0000	1.0000
2	Auto	2.0	5.0000	1.0000	0.5000
3	External	2.0	5.0000	1.0000	1.0000
4	Skip	2.0	10.0000	1.0000	1.0000

Below the table, there are controls for 'Cycle times' (set to 2), a list of groups (Group01 to Group10), and a 'Listnode head' table with columns for 'Group01' and 'Repeat time'. The 'Listnode head' table shows Group01 with a repeat time of 3 and Group02 with a repeat time of 2. To the right, there are buttons for 'Trigger', 'Apply', 'Stop', and 'Func start', along with an 'Object' dropdown set to 'Voltage' and an 'End state' dropdown set to 'Last'.

List mode can support file programming for 10 groups, in each of which 10 arrays can also be edited, Single step can be set to 1ms, min voltage slew rate 0.001V/ms, cycles can be set from 1 to 65535 times

S7200 Appearance:

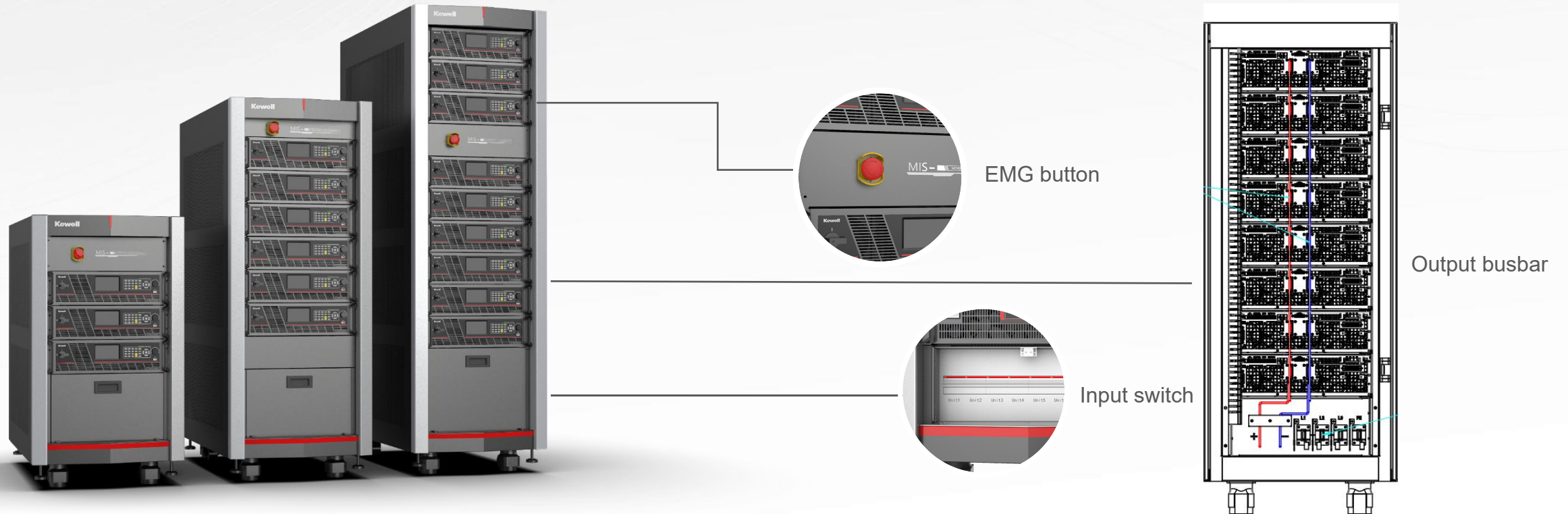


Num.	Name
1	Power switch
2	TFT screen
3	Numeric keys
4	Function keys
5	Arrow keys
6	Push-button knob
7	USB upgrading port
8	GPIB port
9	Analog interface
10	Communication interface (RS232/LAN/CAN/USB)
11	Remote sensing port
12	DC output port
13	Parallel interface
14	Grounding port
15	AC input port

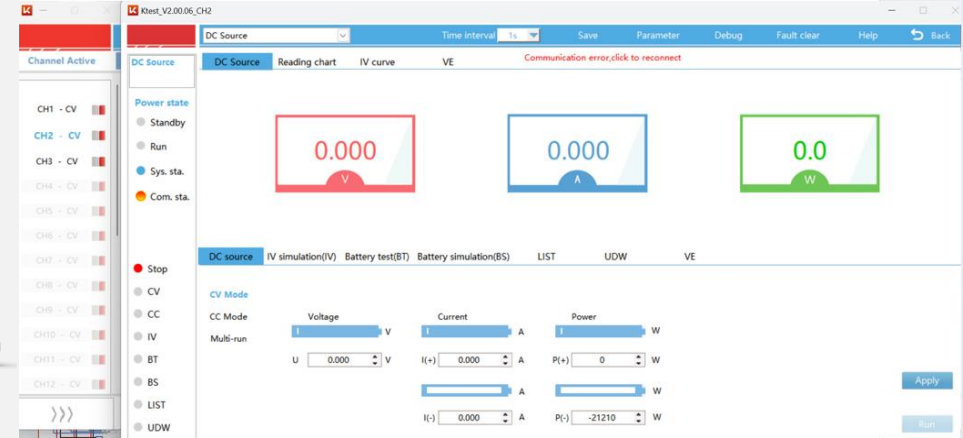
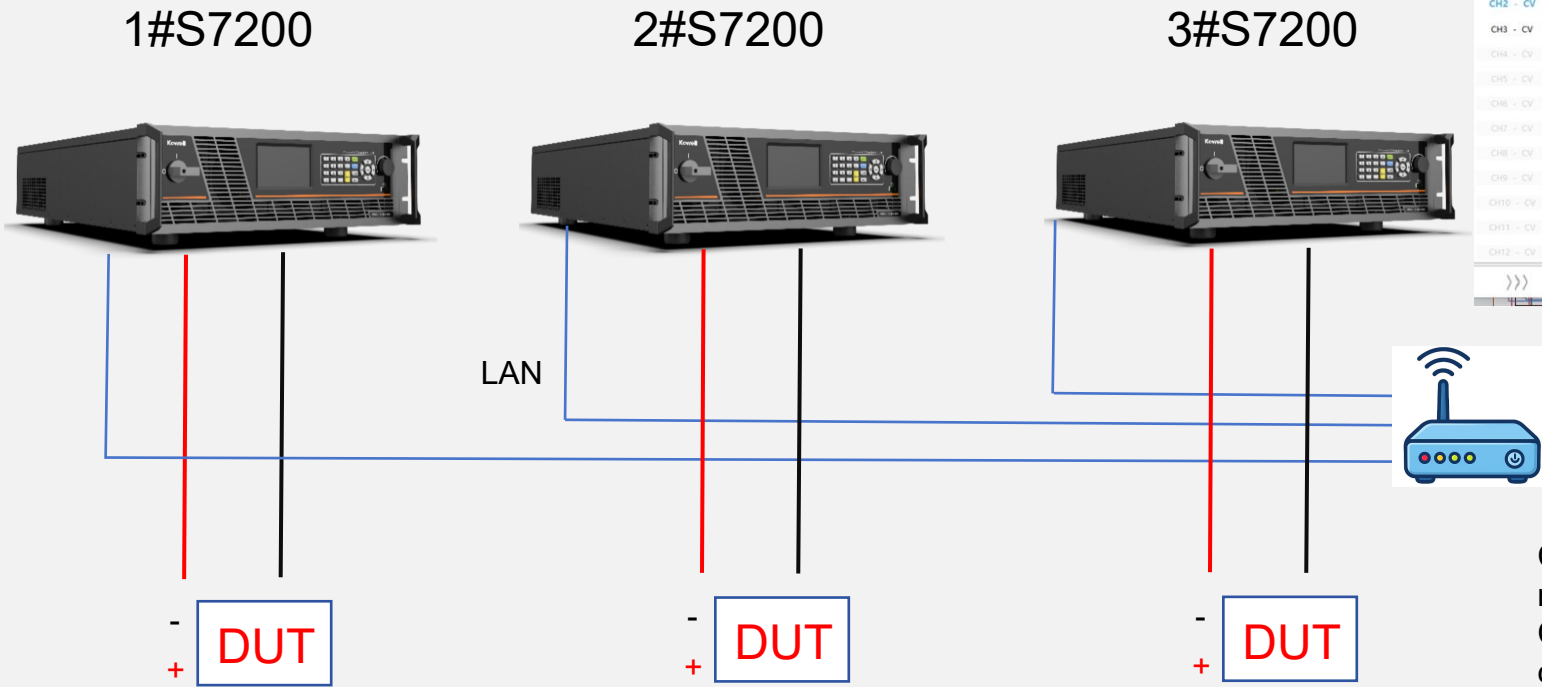
Operating in Parallel:

Model	Numbers	Weight(cabinet)
HK-15U	2~3	130kg
HK-29U	4~6	220kg
HK-42U	7~9	280kg

Note: There are two **fiber optic cables** (2m each) and **fiber optic communication modules** coming with the standard S7200 device. The series supports up to **10 devices** in parallel connection.



Operating in One PC Control Multiple Equipments



CH1,CH2,CH3 represent 1#S7200,2#S7200 and 3#S7200 respectively.In software, the operators can choose specific CH and then control corresponding S7200. One PC control up to **24** equipments.

Multiple S7200 equipments communicate with PC via LAN through network switch,one PC can control multiple S7200 equipments,

Fully Automatic One-Touch Calibration

Voltage Calibration

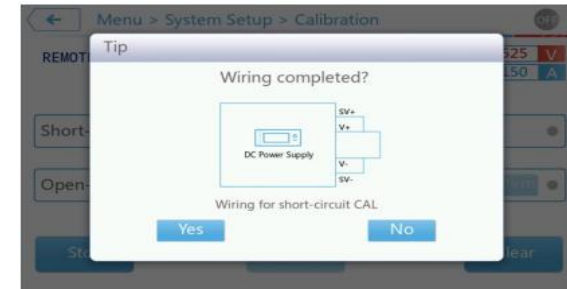
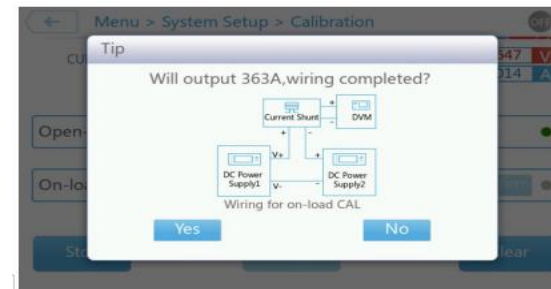
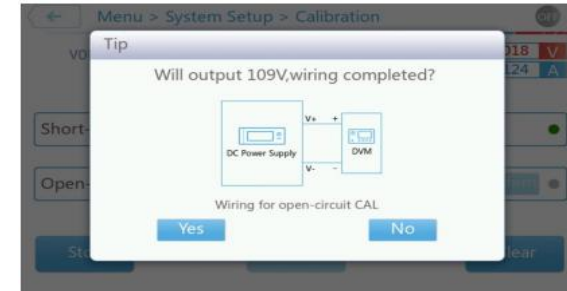
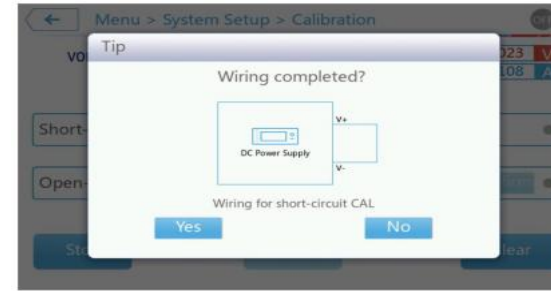
- Short-circuit CAL
- Open-circuit CAL

Remote Voltage Calibration

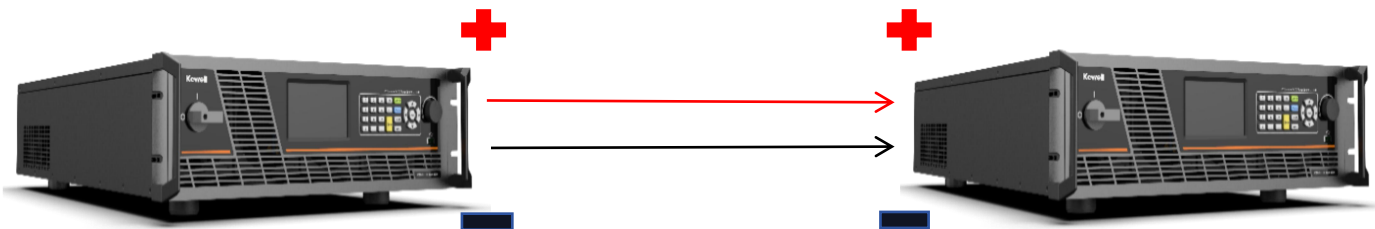
- Short-circuit CAL
- Open-circuit CAL

Current Calibration

- Short-circuit CAL
- On-load CAL



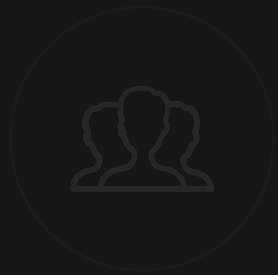
Source ← → Load





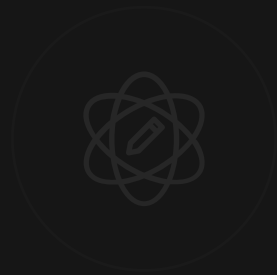
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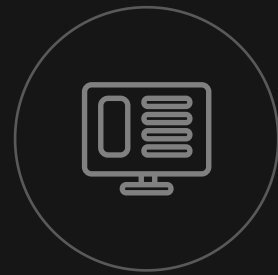
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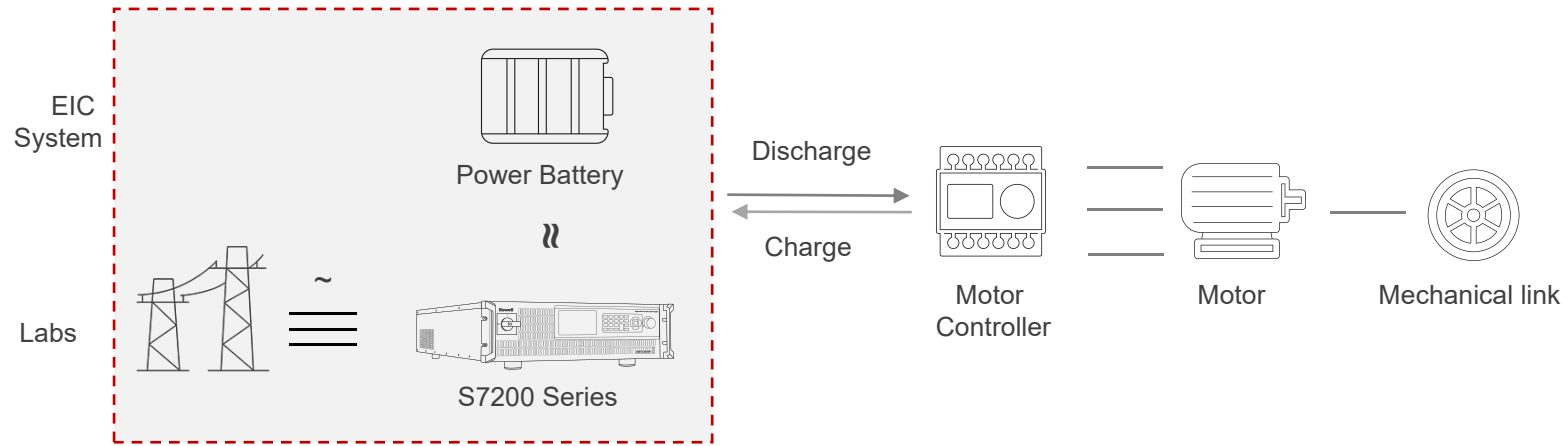


More applications

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Application-Motor Controller Testing

MORE PRECISE AND CONVENIENT



Battery Simulations

1. Simulating the EV running in reality, in which **Speeding up** is the process for **energy output**.
2. **Deceleration** process allows the output from power battery, which is **recycling energy**.
3. **Batteries of Lithium Iron Phosphate and Ternary Lithium** are typical Power source for EVs. Their performances can be simulated by our devices.



Discharge of Battery:
Speed↑ Current Output↑ Power Consumption↑



Charge of Battery:
Recycling Power→Power decreased to be negative→Transient electrical consumption to be negative



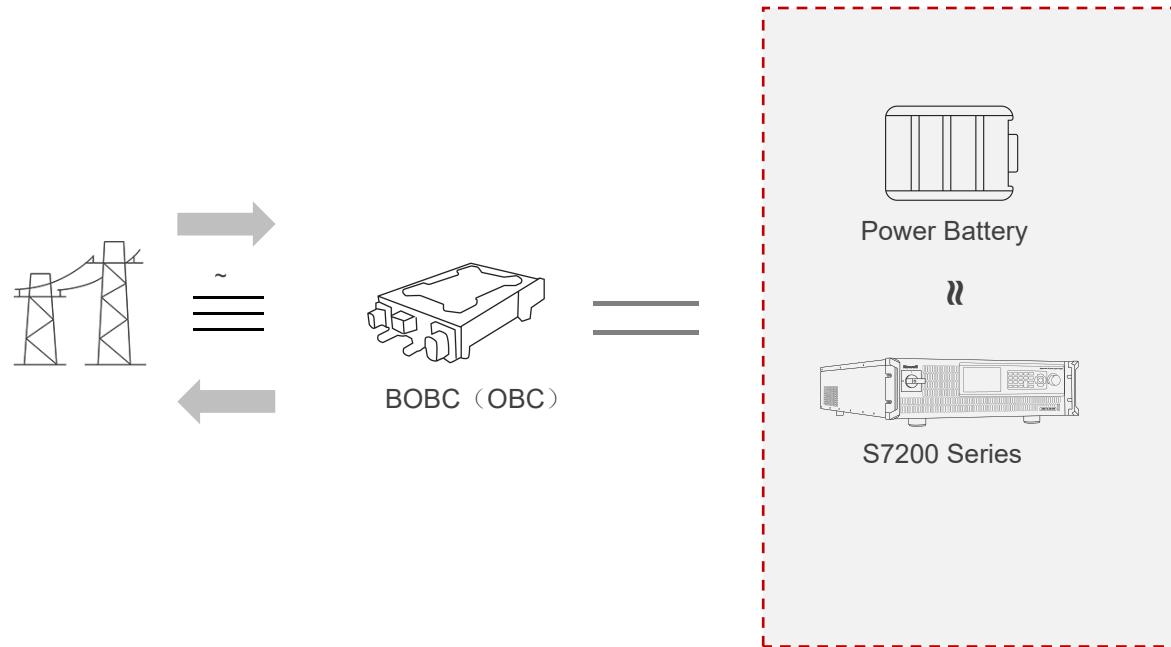
Transition from Average speed to Acceleration



Transition from Average Speed to Deceleration

Application-On Board Charger Test

MORE PRECISE AND CONVENIENT



Discharge of Battery:
Speed↑ Current Output↑ Power Consumption↑



Charge of Battery:
Recycling Power→Power decreased to be negative→Transient electrical consumption to be negative

Battery Simulations

1. Simulating the EV running in reality, in which **Speeding up** is the process for **energy output**.
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3. **Batteries of Lithium Iron Phosphate and Ternary Lithium** are typical Power source for EVs. Their performances can be simulated by our devices.



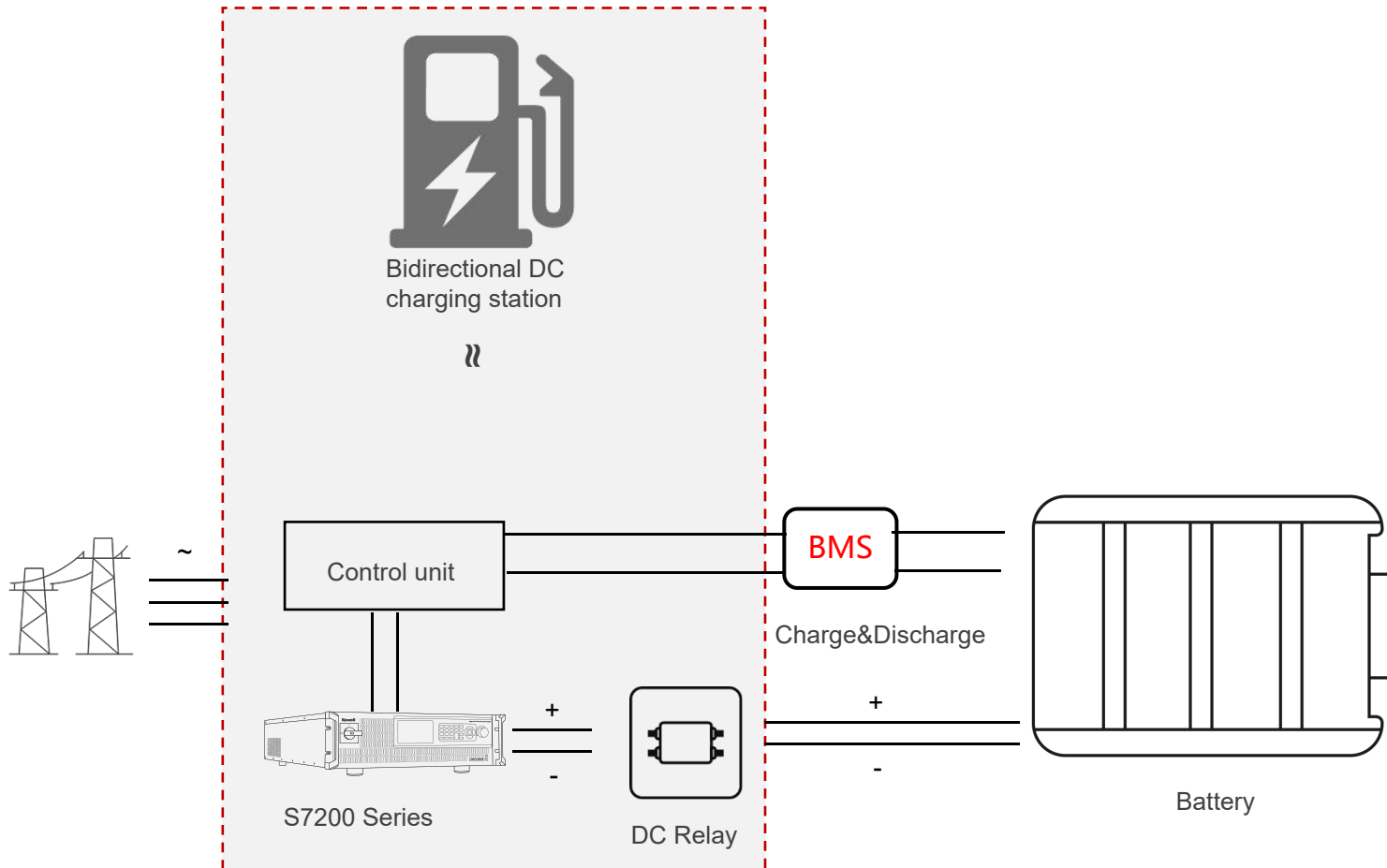
Transition from Average speed to Acceleration



Transition from Average Speed to Deceleration

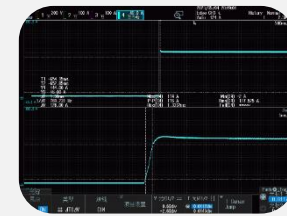
Application-Battery Charge/Discharge Test

MORE PRECISE AND CONVENIENT



Charge/Discharge of Battery

1. Tests for **Module, Pack and Energy Storage Battery** Performance and Aging Test
2. **Charge, Discharge and Quiescence** Test



Battery Charge



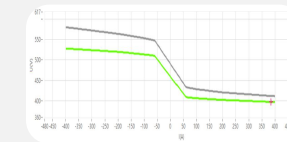
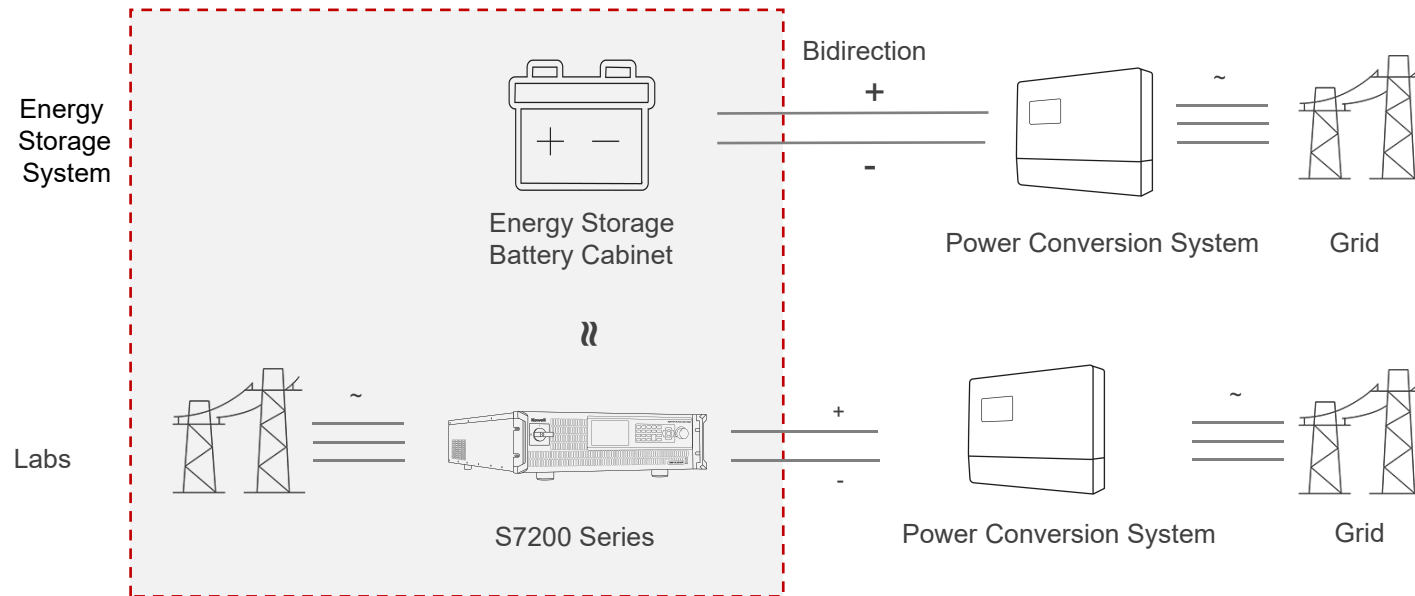
Battery Discharge

Application-Power Conversion System Test

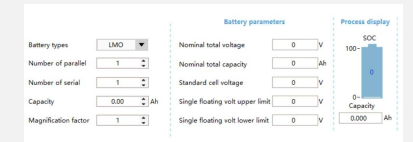
MORE PRECISE AND CONVENIENT

Battery Simulation

1. **Lithium Iron Phosphate Battery** is a typical energy storage unit and its performances can be simulated.
2. Simulation for **battery charge**.
3. Simulation for **battery discharge**.
4. Alternatives to real **power conversion system** for the **aging tests**



IV Simulation

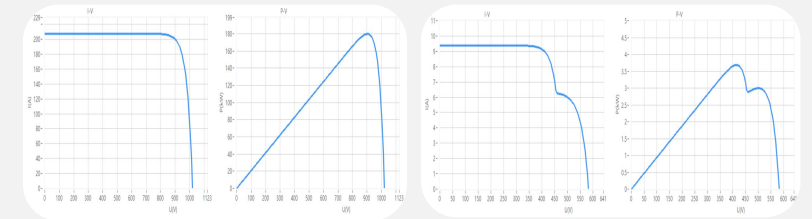
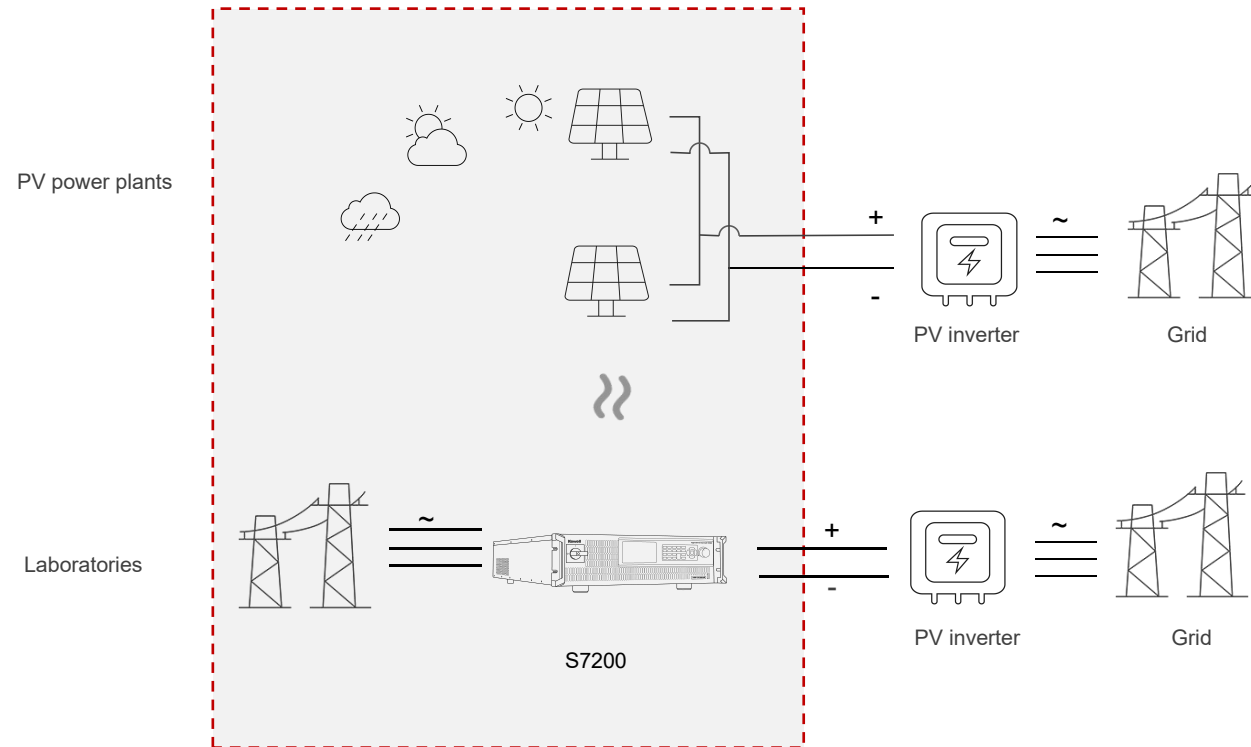


Simulation for multiple batteries

Application—IV Simulation

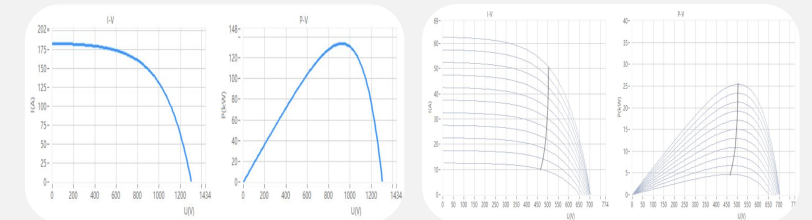
IV simulation function

1. The equipment can simulate the corresponding characteristics of monocrystalline, polycrystalline, and thin film solar panels;
2. Simulate the output of solar panels on sunny days, cloudy days, rainy days, etc.
3. Static MPPT test, simulate a single output characteristic of solar cells;
4. Dynamic MPPT test, simulate multiple output characteristics of solar cells.



IV simulation

Shading



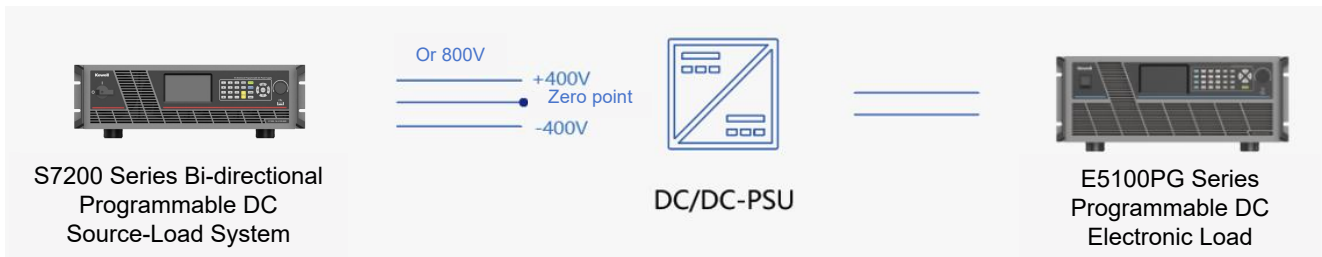
Static MPPT test

Dynamic MPPT test

Application—HVDC Test

MORE PRECISE AND CONVENIENT

HVDC-DC Test Platform



HVDC-DC Power Range:

Power: 10kW/20kW and above
Input voltage: 800V/±400V, etc.
Output voltage: 54V.

S7000/S7200 Series

100/800/1200 V **600/240/100 A** **5~30 kW**
Voltage Current Power

0.02 %F.S. **95 %**
Voltage accuracy Efficiency

E5100P Series

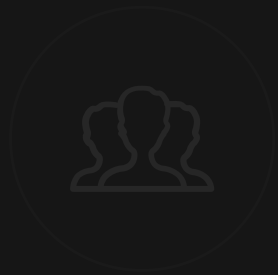
150 V **600~2400A** **6~60 kW**
Voltage Current Power

42 A/us **50 kHz**
Loading slope Dynamic loading frequency



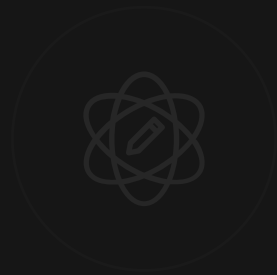
Introduction

01



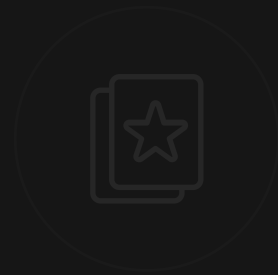
Comparison

02



Software

03



Application

04








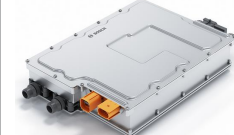


More applications

05

More applications

MORE PRECISE AND CONVENIENT

<p>01 Green energy and energy storage</p>		<p>Fuel cell test</p>		<p>Capacitor</p>	<p>Solar charger</p>	<p>liquid-cooling charging pile module</p>	<p>Fuel cell DCDC test</p>
<p>02 EV and power</p>	<p>High-voltage components</p>		<p>DC motor</p>	<p>Electric motor</p>		<p>OBC</p>	<p>DCDC converter</p>
<p>03 Industry and communication power supply</p>		<p>Communication power supply</p>	<p>LED products</p>		<p>UPS</p>	<p>Power semiconductor components</p>	<p>Electric welding/plating</p>
<p>04 High-power testing and R&D</p>	<p>High-speed electronic test</p>	<p>Micro-inverter</p>	<p>eVTOL industry</p>		<p>Automatic test systems</p>	<p>Bi-directional DC/DC converter</p>	

A dramatic landscape of snow-capped mountains under a starry night sky. The mountains are illuminated from the side, creating strong highlights and deep shadows. The sky is dark blue with numerous small white stars.

Kewell

We are dedicated to becoming a global test equipment supplier covering versatile application industries based on test power supplies.

www.kewelltest.com