

New Flagship Bench-top DC Power Supply

New

Compact Wide Range
DC Power Supply
PWR-01 Series

A wide range of voltage and current settings can be combined within its output power rating (3 to 4 times)

LAN (LXI compliant) /USB/RS232C as standard interface

Sequence creation software: Wavy for PWR-01

All models are equipped with front output terminals as standard

Variable internal resistance function

The Bench-top

New flagship bench-top DC power supply

L, ML, MH, and H voltage types. Lineup of 12 models in total!

The PWR-01 is a series of high performance, multifunctional, compact, wide-range DC power supplies. It consists of 12 models in total with 4 maximum voltage outputs (L, ML, MH, and H) and 3 maximum power outputs (400 W, 800 W, and 1200 W). The series is equipped with LAN (LXI), USB, and RS232C as standard interfaces that are essential for system integration. The PWR-01 also features front-facing output terminals, variable internal resistance, bleeder ON/OFF functions, CC/CV priority switching function, synchronized operation, various protections, and programmable internal memory.



■Lineup

40 V type

Type	Model	Voltage output	Current output	Power output
	PWR401L		0 A to 40 A	400 W
L	PWR801L	0 V to 40 V	0 A to 80 A	800 W
	PWR1201L		0 A to 120 A	1200 W

80 V type

Type	Model	Voltage output	Current output	Power output
	PWR401ML		0 A to 20 A	400 W
ML	PWR801ML	0 V to 80 V	0 A to 40 A	800 W
	PWR1201ML		0 A to 60 A	1200 W

240 V type

	Туре	Model	Voltage output	Current output	Power output
		PWR401MH		0 A to 5 A	400 W
	MH	PWR801MH	0 V to 240 V	0 A to 10 A	800 W
	PWR1201MH		0 A to 15 A	1200 W	

650 V type

Туре	Model	Voltage output	Current output	Power output
Н	PWR401H		0 A to 1.85 A	400 W
	PWR801H	0 V to 650 V	0 A to 3.70 A	800 W
	PWR1201H		0 A to 5.55 A	1200 W

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Universal Communication Interface Combined with Wide Range Output Coverage!

Sequence Function

Synchronized operation using trigger signals

Communication Interface

LAN (LXI compliant) /USB/RS232C as standard interface

Front Output Terminals

Equipped with front output terminal as standard *Up to 10 A

Wide Range

3 to 4 times coverage ratio for voltage and current range

Convenient sequence generation for the PWR-01

Sequence Creation Software

SD027-PWR-01 (Wavy for PWR-01)

Variable Internal Resistance Function

Easy simulation of power supplies carrying internal resistance made possible

Durable Performance

Operating temperature guaranteed up to 50 °C.











■ Safe and easy to use front-facing output terminals

All models are equipped with front-facing output terminals (up to 10 A) optimized for bench-top use. Please connect to the output terminals with a safety plug. *This product's specifications were recorded using the back-side output terminals.



Safety plugs (Options)



TL41 (screw connection type) Red and black, one set each 1000 V/ CATII max 32 A



TL42 (solder connection type) Red and black, one set each 1000 V/ CATII max 32 A

■ Sequence function

The sequence function allows you to automatically execute programs that you have set in advance one operation at a time. However, you cannot create sequences using only the panel. Sequence programs are created using commands from a PC. Once a sequence is executed via remote control, the program

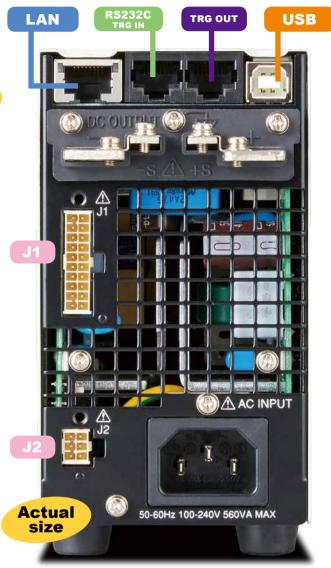
Once a sequence is executed via remote control, the program is saved onto the PWR-01's internal memory and then can be executed directly from the front panel without a PC.

■ Synchronized operation

Synchronized operation allows for settings and sequence programs to be synchronized via trigger signals. Different PWR-01 models (e.g., 400 W model and 800 W model) can be easily mixed and matched with no difficulties. Synchronized operation is also possible in parallel operation. In order to successfully synchronize your power supplies, please configure various settings using remote control commands. After completing configuration, synchronized operation can be performed without a PC.

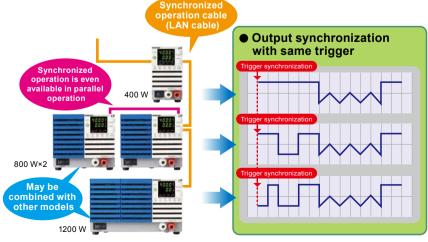
■ Standard communication interface

The series has been equipped with LAN (LXI), USB, and RS232C as standard interfaces, essential for system integration. When using RS232C, please order the D-sub 9P-RJ45 transformation cable (RD-8P/9P) option, sold seperately. The PWR-01 has also been equipped with J1/J2 connectors for analog control.

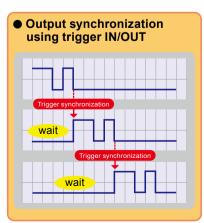


Rear Panel: 400 W model

Sequence Function/Synchronized Operation Concept Map



Output changes can be synchronized with the same trigger signal



Other PWR-01 series sequences can be restarted in synchronization with the PWR-01 series trigger output.

■ Bleeder ON/OFF function

The PWR-01's capacitor is connected to its output terminals, with a bleeder circuit equipped that discharges electricity when the OUTPUT is set to OFF. For example, when a battery is connected to the output terminal, when the bleeder circuit is set to ON, the bleeder circuit will discharge electricity from the battery even when OUTPUT is OFF. In cases like these, excessive electric discharge can be prevented by setting the bleeder circuit to OFF.

This makes it possible to prevent current backflow from a battery without using a diode.

Bleeder circuit	Description
Off *1	Bleeder circuit off
Normal bleeder	Bleeder circuit on
Hyper bleeder *2	When a normal bleeder is used, falling time with no load can be shortened to approximately 70% and eliminate test cycle time. This is effective for situations in which one wants to operate ON/OFF with capacitive load as quickly as possible.

^{*1.} Even if the output terminals are open and the output is turned off or the voltage setting is at 0 V, up to several hundred millivolts of voltage may appear across the output terminals.

■ Customizable startup when turning on output

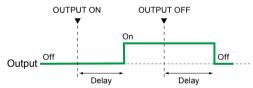
You can choose the priority operation mode (CC priority/CV priority) when the output is turned ON.

This can prevent overshoot when turning on the output.

■ Output ON/OFF delay function

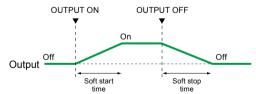
You can set the delay (DELAY TIME) from when the OUTPUT key is turned on or off to when the output actually turns on or off.

This is useful for tests where precise timing/order of rise and drop voltage is essential according to the load characteristics.



■ Soft start/stop function

You can set the rise time and fall time of output current. This is useful when the load cannot follow the sudden rise or fall in the output current or when you want to avoid the overcurrent protection from being activated.



■ Master-slave parallel operation

One-control parallel operation is performed by designating one "master" device and connecting it to one or more of the same models being the "slave" devices. The entire system can then be controlled by operating the master machine. Output current can be greatly amplified (maximum output current: single rated output current x number of parallel units) with one-control parallel operation. The maximum number of parallel units including the master device is 3 units for the 400 W and 800 W models and 2 units for the 1200 W models. Differences in output voltage and output current between the master and slave devices are within approximately 5% of their respective rated output.



■ Series operation

Up to two units can be connected in series (excluding the H type). The total combined output voltage of the two units is applied to the load. The voltage setting accuracy is the same as the accuracy of an individual unit. *You cannot perform master-slave configuration in series operation.

■ Preset memory function

The preset memory function of the PWR-01 allows you to save up to three combinations of each of the voltage, current, OVP, OCP and UVL values. The saved preset values can be recalled from the preset memory found on the front panel.

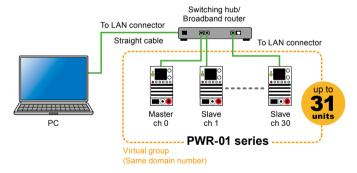
■ CONFIG setting shortcut function

You can register CONFIG setting parameters to the front panel's SC keys. You can perform tests efficiently by registering CONFIG parameters that you use frequently without consulting the CONFIG menu. Up to three parameters can be registered.

■ Multi-channel (VMCB)* *virtual multi-channel bus

When multi-channel (VMCB) is used, one personal computer can be connected to multiple PWR-01 series machines (up to 31 units) to construct a virtual multi-channel power source system. This is effective for matching the control timing of multiple PWR-01 series units and for saving communication ports.

Basic configuration with LAN interface and VMCB (example)



Easy access with a built-in web server

Use a browser from a PC, smartphone, or tablet to access the web server built into the PWR-01 series for convenient control and monitoring.



*Screen sample

^{*2.} The fan speed is fixed to the maximum speed.

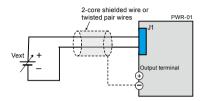
■ External analog control function

The PWR-01 series is equipped with external voltage/resistance control, which is necessary for external analog control and monitoring applications for power supply testing. The input external signal and the output status signal can be accessed through the J1/J2 connectors on the rear panel. When using the J1/J2, please purchase the J1/J2 connector plug kit (OP01-PWR-01) option, sold separately.

Controlling the output voltage & output current.

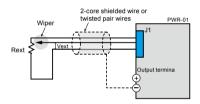
▼Control using an external voltage

It is possible to control the output voltage/output current of the PWR-01 series by using an external voltage.



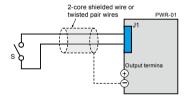
▼Control using an external resistance.

It is possible to control the output voltage/output current of the PWR-01 series by using an external variable resistor.



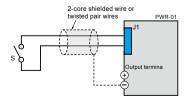
▼Turning output on and off using an external contact.

It is possible to turn the output ON/OFF of the PWR-01 series by using an external contact.



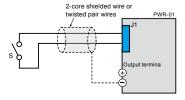
▼Output shutdown control using an external contact.

It is possible to turn the output OFF of the PWR-01 series by using an external contact.



▼Clearing alarms using an external contact.

It is possible to clear the alarm of the PWR-01 series by using an external contact.



Monitoring operation modes.

External monitoring of the output voltage and output current.

J1 connector pin arrangement

20 9 • • 19 8 • • 18 7 • • 18	Ø Δ 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
9 19 19 18 7 17 16 17 16 17 17 17	

VPGM			' - '	
J1-1 VPGM resistance. O' to 5 V: 0 % to 100 % of the rated output voltage (CF12: LO). O' to 10 V: 0 % to 100 % of the rated output voltage (CF12: HI). J1-2 VMON Output voltage monitor. 0 % to 100 % of the rated output voltage generated as a voltage between 0 V and 5 V (CF13: LO) or a voltage between 0 V and 5 V (CF13: LO) or a voltage between 0 V and 5 V (CF13: LO) or a voltage between 0 V and 5 V (CF13: LO) or a voltage between 0 V and 5 V (CF13: LO) or a voltage between 0 V and 10 V (CF13: HI). J1-3 REF OUT Reference voltage for external resistance control. 5.25 V (CF12: LO) / 10 V (CF12: HI), maximum output current: 2.5 mA. J1-4 PRL ON On when parallel operation is in use and when output is on (output throug an open-collector photo-coupler) External signal common for pins 1 to 3, 6 to 9, 11, 12, 14, 16, and 20. When remote sensing is not used, this is at the same electric potential at the negative output terminal. Alarms are cleared when a low level signal (0 V to 0 V) is received or shorted. J1-7 I SUM Current output terminal for parallel operation. J1-8 PRL OUT Positive output terminal for parallel operation. External signal common for pins 1 to 3, 6 to 9, 11, 12, 14, 16, and 20. When remote sensing is not used, this is at the same electric potential at the negative output terminal. When remote sensing is used, this is at the same electric potential as the negative output terminal to 3, 6 to 9, 11, 12, 14, 16, and 20. When remote sensing is not used, this is at the same electric potential as the negative output terminal. When remote sensing is used, this is at the same electric potential as the negative output terminal. When remote sensing is used, this is at the negative output terminal. When remote sensing is used, this is at the negative output terminal. When remote sensing is used, this is at the negative output terminal. When remote sensing is used, this is at the negative output terminal. When remote sensing is used, this is at the negative output terminal. When remote sensing is used, this	Pin No.	Signal name	Description	
J1-2 VMON generated as a voltage between 0 V and 5 V (CF13: LO) or a voltage between 0 V and 10 V (CF13: HI). J1-3 REF OUT Reference voltage for external resistance control. 5.25 V (CF12: LO) / 10 V (CF12: HI), maximum output current: 2.5 mA. J1-4 PRL ON On when parallel operation is in use and when output is on (output through an open-collector photo-coupler) External signal common for pins 1 to 3, 6 to 9, 11, 12, 14, 16, and 20. When remote sensing is not used, this is at the same electric potential at the negative output terminal. When remote sensing is used, this is at the same electric potential as the negative electrode (-S) of sensing input. J1-6 ALM CLEAR Vlaram clear terminal. Alarms are cleared when a low level signal (0 V to 0 V) is received or shorted. J1-7 I SUM Current output terminal for parallel operation. J1-8 PRL OUT Positive output terminal for parallel operation. J1-9 PRL COMP IN Correction signal input terminal for parallel operation. External signal common for pins 1 to 3, 6 to 9, 11, 12, 14, 16, and 20. When remote sensing is not used, this is at the same electric potential at the negative output terminal. When remote sensing is used, this is at the same electric potential at the negative output terminal. When remote sensing is used, this is at the same electric potential at the negative output terminal. When remote sensing in used, this is at the same electric potential at the negative electrode (-S) of sensing input. J1-10 IPGM Terminal used to control the output current with an external voltage external resistance. 0 V to 5 V; 0 % to 100 % of the rated output current (CF12: H). Output current monitor. 0 % to 100 % of the rated output current is generated as a voltage between 0 V and 10 V (CF13: HI). J1-13 PRL COM Common for pin 4. On when a protection function is activated during parallel operation or when an output shutdown signal is being received.	J1-1	VPGM	0 V to 5 V; 0 % to 100 % of the rated output voltage (CF12: LO).	
J1-4 PRL ON On when parallel operation is in use and when output is on (output through an open-collector photo-coupler) J1-5 A GND External signal common for pins 1 to 3, 6 to 9, 11, 12, 14, 16, and 20. When remote sensing is not used, this is at the same electric potential at the negative output terminal. When remote sensing is used, this is at the same electric potential as the negative electrode (-S) of sensing input. J1-6 ALM CLEAR Alarm clear terminal. Alarms are cleared when a low level signal (0 V to 0 V) is received or shorted. J1-7 I SUM Current output terminal for parallel operation. J1-8 PRL OUT Positive output terminal for parallel operation. J1-9 PRL COMP IN Correction signal input terminal for parallel operation. External signal common for pins 1 to 3, 6 to 9, 11, 12, 14, 16, and 20. When remote sensing is not used, this is at the same electric potential at the negative output terminal. When remote sensing is used, this is at the same electric potential as the negative electrode (-S) of sensing input. J1-11 IPGM Terminal used to control the output current with an external voltage external resistance. O Y to 5 V; 0 % to 100 % of the rated output current (CF12: LO). 0 V to 10 % to 100 % of the rated output current (CF12: HI). Output current monitor. O % to 100 % of the rated output current is generated as a voltage between 0 V and 5 V (CF13: LO) or a voltage between 0 V and 10 V (CF13: HI). On when a protection function is activated during parallel operation or when an output shutdown signal is being received.	J1-2	VMON	Output voltage monitor. 0 % to 100 % of the rated output voltage igenerated as a voltage between 0 V and 5 V (CF13: LO) or a voltage between 0 V and 10 V (CF13: HI).	
J1-5 A GND External signal common for pins 1 to 3, 6 to 9, 11, 12, 14, 16, and 20. When remote sensing is not used, this is at the same electric potential at the negative output terminal. When remote sensing is used, this is at the same electric potential at the negative output terminal. When remote sensing is used, this is at the same electric potential as the negative electrode (-S) of sensing input. J1-6 ALM CLEAR Alarm clear terminal. Alarms are cleared when a low level signal (0 V to 0 V) is received or shorted. J1-7 J1-8 PRL OUT PRL COMP IN Correction signal input terminal for parallel operation. External signal common for pins 1 to 3, 6 to 9, 11, 12, 14, 16, and 20. When remote sensing is not used, this is at the same electric potential at the negative output terminal. When remote sensing is used, this is at it same electric potential as the negative electrode (-S) of sensing input. J1-11 IPGM J1-12 J1-13 J1-14 J1-14 J1-14 PRL COM Output current monitor. Output current monitor. Output current monitor. Ow to 100 % of the rated output current (CF12: LO). 0 V to 10 When remote sensing is used, this is at the same electric potential as the negative electrode (-S) of sensing input. J1-13 PRL COM Output current monitor. Output current monitor. Ow to 100 % of the rated output current is generated as a voltage between 0 V and 5 V (CF13: LI)) or a voltage between 0 V and 10 V (CF13: HI). On when a protection function is activated during parallel operation or when an output shutdown signal is being received.	J1-3	REF OUT	Reference voltage for external resistance control. 5.25 V (CF12: LO) / 10. V (CF12: HI), maximum output current: 2.5 mA.	
J1-5	J1-4	PRL ON	On when parallel operation is in use and when output is on (output throug an open-collector photo-coupler)	
J1-7 I SUM Current output terminal for parallel operation. J1-8 PRL OUT Positive output terminal for parallel operation. J1-9 PRL COMP IN Correction signal input terminal for parallel operation. External signal common for pins 1 to 3, 6 to 9, 11, 12, 14, 16, and 20. When remote sensing is not used, this is at the same electric potential at the negative output terminal. When remote sensing is used, this is at the same electric potential as the negative electrode (-S) of sensing input. J1-11 IPGM Terminal used to control the output current with an external voltage external resistance. O' to 5 V; 0 % to 100 % of the rated output current (CF12: LO). 0 V to 10 % to 100 % of the rated output current (CF12: HI). J1-12 IMON Output current monitor. O' to 100 % of the rated output current is generated as a voltage between 0 V and 5 V (CF13: LO) or a voltage between 0 V and 10 V (CF13: HI). J1-14 PRL COM Common for pin 4. On when a protection function is activated during parallel operation or when an output shutdown signal is being received.	J1-5	A GND	When remote sensing is not used, this is at the same electric potentia the negative output terminal. When remote sensing is used, this is at	
J1-8 PRL OUT Positive output terminal for parallel operation. J1-9 PRL COMP IN Correction signal input terminal for parallel operation. External signal common for pins 1 to 3, 6 to 9, 11, 12, 14, 16, and 20. When remote sensing is not used, this is at the same electric potential at the negative output terminal. When remote sensing is used, this is at the same electric potential at the negative output terminal. When remote sensing is used, this is at the same electric potential as the negative electrode (-S) of sensing input. J1-11 IPGM Terminal used to control the output current with an external voltage external resistance. O Y to 5 V; 0 % to 100 % of the rated output current (CF12: LO). 0 V to 10 % to 100 % of the rated output current (CF12: HI). Output current monitor. O % to 100 % of the rated output current is generated as a voltage between 0 V and 5 V (CF13: LO) or a voltage between 0 V and 10 V (CF13: HI). J1-13 PRL COM Common for pin 4. On when a protection function is activated during parallel operation or when an output shutdown signal is being received.	J1-6	ALM CLEAR	Alarm clear terminal. Alarms are cleared when a low level signal (0 V to 0. V) is received or shorted.	
J1-9 PRL COMP IN Correction signal input terminal for parallel operation. External signal common for pins 1 to 3, 6 to 9, 11, 12, 14, 16, and 20. When remote sensing is not used, this is at the same electric potential in the negative output terminal. When remote sensing is used, this is at the same electric potential as the negative electrode (-S) of sensing input. J1-11 IPGM Terminal used to control the output current with an external voltage external resistance. O V to 5 V; 0 % to 100 % of the rated output current (CF12: LO). 0 V to 10 % to 100 % of the rated output current (CF12: HI). Output current monitor. J1-12 IMON Output current monitor. O % to 100 % of the rated output current is generated as a voltage between 0 V and 5 V (CF13: LO) or a voltage between 0 V and 10 V (CF13: HI). J1-13 PRL COM Common for pin 4. On when a protection function is activated during parallel operation or when an output shutdown signal is being received.	J1-7	ISUM	Current output terminal for parallel operation.	
External signal common for pins 1 to 3, 6 to 9, 11, 12, 14, 16, and 20. When remote sensing is not used, this is at the same electric potential the negative output terminal. When remote sensing is used, this is at the same electric potential the negative output terminal. When remote sensing is used, this is at it same electric potential as the negative electrode (-S) of sensing input. J1-11	J1-8	PRL OUT	Positive output terminal for parallel operation.	
J1-10 A GND When remote sensing is not used, this is at the same electric potential at the negative output terminal. When remote sensing is used, this is at the negative electrode censing is used, this at the negative electrode (-S) of sensing input is same electric potential as the negative electrode (-S) of sensing input. J1-11 IPGM Terminal used to control the output current with an external voltage external resistance. 0 V to 5 V; 0 W to 100 % of the rated output current (CF12: LO). 0 V to 10 % to 100 % of the rated output current (CF12: HI). J1-12 IMON Output current monitor. 0 W to 100 % of the rated output current is generated as a voltage between 0 V and 10 V (CF13: HI). J1-13 PRL COM Common for pin 4. J1-14 PRL ALM On when a protection function is activated during parallel operation or when an output shutdown signal is being received.	J1-9	PRL COMP IN	Correction signal input terminal for parallel operation.	
J1-11 IPGM external resistance. 0 V to 5 V; 0 % to 100 % of the rated output current (CF12: LO). 0 V to 10 0 % to 100 % of the rated output current (CF12: HI). J1-12 IMON Output current monitor. 0 % to 100 % of the rated output current is generated as a voltage between 0 V and 5 V (CF13: LO) or a voltage between 0 V and 10 V (CF13: HI). J1-13 PRL COM Common for pin 4. J1-14 PRL ALM On when a protection function is activated during parallel operation or when an output shutdown signal is being received.	J1-10	A GND	When remote sensing is not used, this is at the same electric potential a the negative output terminal. When remote sensing is used, this is at the	
J1-12 IMON 0 % of the rated output current is generated as a voltage between 0 V and 5 V (CF13: LO) or a voltage between 0 V and 10 V (CF13: HI). J1-13 PRL COM Common for pin 4. On when a protection function is activated during parallel operation or when an output shutdown signal is being received.	J1-11	IPGM	0 V to 5 V; 0 % to 100 % of the rated output current (CF12: LO). 0 V to 10 V	
J1-14 PRL ALM On when a protection function is activated during parallel operation or when an output shutdown signal is being received.	J1-12	IMON	0 % to 100 % of the rated output current is generated as a voltage betwee	
an output shutdown signal is being received.	J1-13	PRL COM	Common for pin 4.	
Futured size of second of the 2 64 to 0.44, 42, 44, 46, and 20	J1-14	PRL ALM	On when a protection function is activated during parallel operation or whe an output shutdown signal is being received.	
When remote sensing is not used, this is at the same electric potential a	J1-15	A GND	External signal common for pins 1 to 3, 6 to 9, 11, 12, 14, 16, and 20. When remote sensing is not used, this is at the same electric potential at the negative output terminal. When remote sensing is used, this is at th	
J1-16 SHUT DOWN Output shutdown control terminal. The output is turned off when set to LO (0 V to 0.5 V) or shorted.	J1-16	SHUT DOWN	Output shutdown control terminal. The output is turned off when set to LOV (0 V to 0.5 V) or shorted.	
J1-17 OUTPUT CONT or 5 V) or open (CF15: LO)	J1-17	OUTPUT CONT	On when set to LOW (0 V to 0.5 V) or shorted; off when set to HIGH (4.5 or 5 V) or open (CF15: LO) On when set to HIGH (4.5 V to 5 V) or open; off when set to LOW (0 V or 0.	
J1-18 PRL COMP OUT Correction signal output terminal for parallel operation.	J1-18	PRL COMP OUT	Correction signal output terminal for parallel operation.	
J1-19 PRL IN- Negative input terminal for parallel operation.	J1-19	PRL IN-		
J1-20 PRL IN+ Positive input terminal for parallel operation.	J1-20	PRL IN+	Positive input terminal for parallel operation.	

J2 connector pin arrangement



Pin No.	Signal name	Description
J2-1	STATUS COM	Common for pins 2 to 6. *1
J2-2	OUT ON STATUS	Outputs a signal when output is on (output through an open-collector photocoupler). *2
J2-3	PWR ON STATUS	Outputs a low level signal when the power is on (output through an open-collector photocoupler). *2
J2-4	ALM STATUS	Outputs a signal when a protection function (OVP, OCP, FOCP, OHP, SENSE, AC-FAIL) is activated or when an output shutdown signal is being received (output through an open-collector photocoupler). *2
J2-5	CV STATUS	Outputs a signal during CV mode (output through an open-collector photocoupler) *2
J2-6	CC STATUS	Outputs a signal during CC mode (output through an open-collector photocoupler). *2

*1. The status common is floating (isolation voltage of 800 V or less). It is isolated from the control circuit.
*2. Open collector output:Maximum voltage: 30 V. Maximum current: 8 mA.

J1 and J2 connectors

	J1 connector	J2 connector
Connector type	WF2549-2WR10S3T01 (WCON)	WF2549-2WR03S3T01(WCON)
Housing type	WF2549-2H10W01 (WCON)	WF2549-2H03W01 (WCON)
Terminal (pin)	WF2549-TPS302 (WCON)	WF2549-TPS302 (WCON)
Wire diameter (core wire)	AWG20 to AWG24	AWG20 to AWG24
Manual pressure welding tool	SN-28B (IWISS) or an equivalent product	SN-28B (IWISS) or an equivalent product

CONFIG setting is easy for ON/OFF settings with external contact points that can be easily accessed from the front panel.

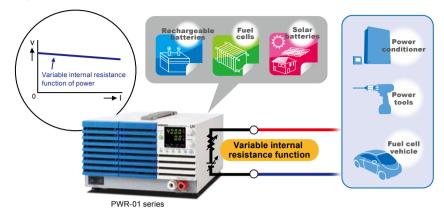


■ Variable internal resistance function

The variable internal resistance function enables you to easily simulate the internal resistance of rechargeable batteries, solar batteries, fuel cells, and the like. By setting the internal resistance value in constant voltage (CV) mode, you can decrease the output voltage according to the output current.

You can use a CONFIG setting to set the internal resistance.





	PWR401L	PWR401ML	PWR401MH	PWR401H
Vrtg [V]	40	80	240	650
Irtg [A]	40	20	5	1.85
Rint [Ω]	0.001 to 1.000	0.001 to 4.000	0.01 to 36.00	0.1 to 263.5
Resolution *1	0.001	0.001	0.01	0.1
	PWR801L	PWR801ML	PWR801MH	PWR801H
Vrtg [V]	40	80	240	650
Irtg [A]	80	40	10	3.7
Rint [Ω]	0.001 to 0.500	0.001 to 2.000	0.01 to 18.00	0.1 to 131.8
Resolution*1	0.001	0.001	0.01	0.1
	PWR1201L	PWR1201ML	PWR1201MH	PWR1201H
Vrtg [V]	40	80	240	650
Irtg [A]	120	60	15	5.55
Rint [Ω]	0.001 to 0.333	0.001 to 1.333	0.01 to 12.00	0.1 to 87.84
Resolution*1	0.001	0.001	0.01	0.01

Setting range

Vrtg	rated output voltage
Irtg	rated output current
Rint	internal resistance

0 <Rint (min) ≤Rint (max)

L type, ML type: Rint (max)= Vrtg/ Irtg

MH type, H type: Rint (max)= $Vrtg/Irtg \times 3/4$

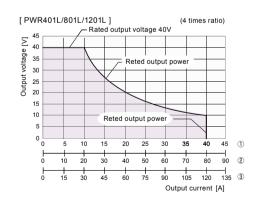
The variable internal resistance function can be configured only in constant voltage(CV)mode.

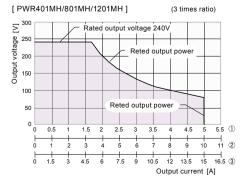
*1. Resolution when FINE is in use

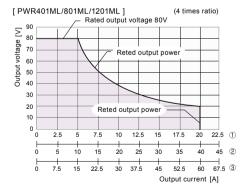
The maximum internal resistance that can be set during parallel operation is the value obtained by dividing Rint (max) during standalone operation by the number of units in parallel operation. The resolution is the value obtained by dividing the resolution during standalone operation by the number of units in parallel operation.

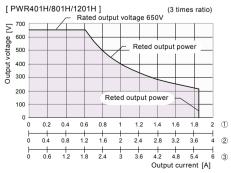
■ 3 to 4 times ratio power operation

3 to 4 times ratio power operating range covers a wide variety of voltage and current setting combinations. For example, the 1200 W rated power output PWR1201ML is capable of seamless operation from 80 V/15 A to 20 V/60 A.









①400W ②800W ③1200W

KIKUSUI ADAS (Advanced Driver Ass **Car Electronics Evolved for Au Optimal KIKUSUI Product Lineup for ADAS Product**

Automated driving technology undergoes screening by the ISO/TC204 in compliance with international standards. Aging tests for driving control systems of onboard electric components, power voltage variation tests and load change tests etc. are performed to make a DC power source and DC power load into a system that can be controlled by multiple channels depending on the needs of each.

For aging tests...

Our DC power supply lineup can be used in a wide range of situations, including as an alternative power source to batteries or for aging tests of ECUs,

onboard electronic components or driving power sources for sensors. Moreover, the sequence creation software Wavy Series can be used to create simple simulations such as actuator or sensor operations and for the rise/fall of power supplies in multiple channels.

Multichannel control possible

Standby

NEW

Compact Wide Range DC Power Supply PWR-01 series

■ Equipped with front output terminals as standard

■ A wide range of voltage and current settings can be combined within its output power rating.

■ LAN (LXI compliant) /USB/RS232C as standard interface

■ A virtual multi-channel bus (VMCB) function makes multi-channel operation more efficient.



esistance function

function



Compact DC Power Supply PMX-A series

- High setting resolution Voltage: 1 mV, Current: 0.1 mA
 LAN(LXI compliant)/USB/RS232C as standard interface
- External analog remote control
- Monitoring and status signal output
- CV, CC priority start function
- (to prevent overshoot when the output is ON)
- Remote sensing function (18V, 35V models)
- Key lock, 3-point preset memory function



High-Efficiency, Large-Capacity Switching Power Supply

PAT-T series

- Output capacity of 8 kW from a unit of standard rack width(430 mm), a height of about 130 mm(3U), and a depth of about 550 mm.
- Continuous operation capable under full load even with an ambient
- temperature of 50°C.



Main onboard electric components

Lane Keeping System (LKS), Adaptive Cruise Control (ACC), Autonomous Emergency Braking (AEB), Traffic Sign Recognition (TSR), millimeter wave radar, infrared laser, camera, car navigation, night vision, ultrasound sensor, Data Communication Module (DCM), various displays etc.

istance System) Solutions tomated Driving



Testing and Evaluation

Multichannel synchronized operation possible

For power voltage variation tests...

Our bipolar power source PBZ series simulates various power sources such as +B, ACC, IG and ILL from batteries to test onboard electric components (driving environment recognition products, information transmission products. HMI products etc.). Superior synchronization and sequence functions can be used for power voltage variation testing of onboard devices

Arbitrary waveform construction functions make it possible to recreate actual onboard measured waveforms and can be used for a wide range of situations including error analysis and margin testing. In addition, low ripple noise makes it possible to recreate highly precise waveforms.



■ User-defined waveform generation function

- Sequence function
- Synchronized operation function ■ Parallel operation function

PBZ SR



Multichannel synchronized operation possible

New high visibility color display High Speed Slew Rate 60 A/us

Advanced



Multifunctional Electronic Load PLZ-5W series

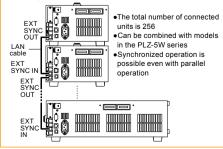
- Operation Voltage: 1 V to 150 V (from 0.05 V)
- Arbitrary I-V characteristics : Installed "ARB mode"
- Parallel Operation Feature: The total current and power capacity can be increased to a maximum of 10.8 kW (2160 A) by connecting booster units.
- Various Communication Interfaces : LAN (LXI compliant), USB, RS232C, GPIB (Option), External Analog Control
- Improved Sequence Feature (Maximum 10000 steps)

For load change test...

Our multi-function DC electronic load, the PLZ-5W series, can be used as an alternative for onboard products. Various load current patterns can be used to evaluate and test ECU and onboard electronic components. The PLZ-5W series sequence function, synchronized driving function and sequence creation software Wavy can be used to easily create various load patterns such as sudden load changes.

Synchronized operation possible with just a LAN connection

 Synchronization of the load ON/OFF of multiple units Synchronization of sequence start/pause release of multiple units



PLZ-5W SR series



400 W model

Item/Model		PWR401L	PWR401ML	PWR401MH	PWR401H	
AC input						
Nominal input rating		100 Vac to 240 Vac, 50 Hz to 60 Hz, single phase				
Input voltage range		85 Vac to 265 Vac				
Input frequency range		47 Hz to 63 Hz				
100 Vac		5.6 A				
Current (TYP) *1	200 Vac	2.8 A				
Inrush current (MAX) *2		25 Apeak or less				
Power (MAX) *3		560 VA				
Power factor (TYP) *1		0.99 (input voltage: 100 V), 0.97 (input voltage: 200 V)				
Efficiency (MIN) *1		75 % (TYP)				
Hold-up time for power interruption (MIN) *3		20 ms or more				

- *1. At the rated output power for the rated output current.
- *2. Excludes the charge current component that flows through the capacitor of the internal EMC filter circuit immediately after the POWER switch is turned on (for approximately 1 ms).
- *3. 100 Vac, at the rated output power.

Item/Model			PWR401L	PWR401ML	PWR401MH	PWR401H		
Outpu	t							
	Output voltage *1		40 V	80 V	240 V	650 V		
Rating	Output current *1		40 A	20 A	5 A	1.85 A		
	Output power			400 W				
	Maximum settable	voltage *2	42 V	84 V	252 V	682.5 V		
	Setting accuracy			± (0.05 % of set +	-0.05 % of rating)			
	Resolution		200 mV	400 mV	1000 mV	2500 mV		
	Using FINE	, OUT OFF	10 mV	10 mV	100 mV	100 mV		
	Using FINE	, OUT ON	1 mV	1 mV	10 mV	10 mV		
	When using a d	communication interface	1 mV	1 mV	10 mV	10 mV		
	Line regulation *3		±6 mV	±10 mV	±26 mV	±67 mV		
	Load regulation *4		±6 mV	±10 mV	±26 mV	±67 mV		
\/altana	Transient respons	e *5	1 ms or less	2 ms or less	2 ms or less	3 ms or less		
Voltage	Dinale neige *C	p-p *7	50 mV	50 mV	100 mV	300 mV		
	Ripple noise *6	rms *8	5 mV	5 mV	20 mV	50 mV		
	Rise time At full load		50 ms	50 ms or less		rless		
	Rise time	No load	50 ms or less		100 ms or less			
	Fall time *9 At full load No load		50 ms	50 ms or less		250 ms		
			500 m	500 ms or less		2000 ms		
	Maximum remote sation voltage (sin		1.5 V	4 V	5 V	5 V		
	Temperature coef	ficient *10		100 ppm/°C				
	Maximum settable	current *2	42 A	21 A	5.25 A	1.9425 A		
	Setting accuracy *	11		± (0.5 % of set +	-0.1 % of rating)			
	Resolution		200 mA	100 mA	20 mA	10 mA		
	Using FINE	, OUT OFF	10 mA	10 mA	1 mA	1 mA		
	Using FINE	, OUT ON	1 mA	1 mA	0.1 mA	0.1 mA		
Current	When using a d	communication interface	1 mA	1 mA	0.1 mA	0.1 mA		
Current	Line regulation		±6 mA	±4 mA	±2.5 mA	±2.2 mA		
	Load regulation		±13 mA	±9 mA	±6.0 mA	±5.4 mA		
	Ripple noise *12	rms *8	80 mA	40 mA	12 mA	6 mA		
	Rise time (TYP)	At full load	50	ms	100 m	ns		
	Fall time (TYP)	At full load	50	ms	100 m	ns		
	Temperature coef	ficient *10		100 pp	om/°C			
Maxim	um internal resistar	nce that can be set	1.000 Ω	4.000 Ω	36.00 Ω	263.5 Ω		

- 1. The maximum output voltage and maximum output current are limited by the maximum output power.
 2. Can be limited to approximately 95 % of the OVP trip point or OCP trip point.
- 85 Vac to 135 Vac or 170 Vac to 265 Vac, fixed load
- *4. The amount of change that occurs when the load is changed from no load to full load (rated output power/rated output voltage) with rated output voltage. The value is measured at the sensing point.
 *5. The amount of time required for the output voltage to return to a value within "rated output voltage ± (0.1 % +10 mV)." The load current fluctuation is 50 % to 100 % of the maximum current with the set output voltage.
- 6. Measured using an RC-9131C probe that conforms to the JEITA specifications. At the rated output current.
 7. When the measurement frequency bandwidth is 10 Hz to 20 MHz.
 8. When the measurement frequency bandwidth is 10 Hz to 1 MHz.

- When the bleeder circuit is set to bleeder normal
- *10. When the ambient temperature is within 0°C and 50 °C
- *11. Applies to the range of 1 % to 100 % of the rated current. TYP (0.1 % of rating) for 0 % to 1 %.
- *12. When the output voltage is 10 % to 100 % of the rating. At the rated output current.

Item/Model		PWR401L	PWR401ML	PWR401MH	PWR401H	
Display function						
Voltage display	Maximum display	99	99.99		9.9	
voitage display	Display accuracy		± (0.2 % of rea	ading + 5 digit) ading + 8 digit) LED lights in red.		
Current display	Maximum display	99.99		9.999		
Current display	Display accuracy		± (0.5 % of rea	ading + 8 digit)		
Power display			The PWR DSPL	LED lights in red.		
	Maximum display		9999			
	Display accuracy	Displays the result of r	nultiplying the current and voltage.	The display is toggled with the vol	tage or current display.	



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Email: sales@calright.com http://www.calright.com

800 W model

Item/Model		PWR801L	PWR801ML	PWR801MH	PWR801H	
AC input						
Nominal input rating			100 Vac to 240 Vac, 50 H	Hz to 60 Hz, single phase		
Input voltage range			85 Vac to	265 Vac		
Input frequency range			47 Hz t	o 63 Hz		
Occurs at (TVD) to	100 Vac	11.2 A				
Current (TYP) *1	200 Vac	5.6 A				
Inrush current (MAX) *2	·	50 Apeak or less				
Power (MAX) *3		1120 VA				
Power factor (TYP) *1		0.99 (input voltage: 100 V), 0.97 (input voltage: 200 V)				
Efficiency (MIN) *1		75 % (TYP)				
Hold-up time for power interruption (MIN) *3			20 ms or more			

- *1. At the rated output power for the rated output current.
- *2. Excludes the charge current component that flows through the capacitor of the internal EMC filter circuit immediately after the POWER switch is turned on (for approximately 1 ms).
- *3. 100 Vac, at the rated output power.

Item/Model			PWR801L	PWR801ML	PWR801MH	PWR801H	
Dutpu							
	Output voltage *1		40 V	80 V	240 V	650 V	
Rating O	Output current *1		80 A	40 A	10 A	3.70 A	
	Output power	tiput voltage *1	W				
	Maximum settabl	e voltage *2	42 V	84 V	252 V	682.5 V	
	Setting accuracy			± (0.05 % of set +0	0.05 % of rating)		
	Resolution		200 mV	400 mV	1000 mV	2500 mV	
	Using FIN	E, OUT OFF	10 mV	10 mV	100 mV	100 mV	
	Using FIN	E, OUT ON	1 mV	1 mV	10 mV	10 mV	
	When using a	communication interface	1 mV	1 mV	10 mV	10 mV	
	Line regulation *3		±6 mV	±10 mV	±26 mV	±67 mV	
	Load regulation *4		±6 mV	±10 mV	±26 mV	±67 mV	
altage	Transient respons	se *5	1 ms or less	2 ms or less	2 ms or less	3 ms or less	
oltage	Dipple noise *6	p-p *7	50 mV	50 mV	100 mV	300 mV	
	Ripple floise 6	rms *8	5 mV	5 mV	20 mV	50 mV	
	Diag time	At full load	50 ms or less		100 ms o	r less	
	No load		50 ms or less		100 ms or less		
	Fall time *9		50 ms or less		150 ms	250 ms	
			500 ms or less		1200 ms	2000 ms	
			1.5 V	4 V	5 V	5 V	
	Temperature coef	ficient *10	100 ppm/°C				
	Maximum settabl	e current *2	84 A	42 A	10.5 A	3.885 A	
	Setting accuracy	*11		± (0.5 % of set +	0.1 % of rating)		
	Resolution		400 mA	200 mA	40 mA	20 mA	
	Using FIN	E, OUT OFF	10 mA	10 mA	10mA	1 mA	
	Using FIN	E, OUT ON	1 mA	1 mA	0.1 mA	0.1 mA	
	When using a	communication interface	1 mA	1 mA	0.1 mA	0.1 mA	
urrent	Line regulation		±10 mA	±6 mA	±3 mA	±2.4 mA	
	Load regulation		±21 mA	±13 mA	±7 mA	±5.7 mA	
	Ripple noise *12	rms *8	160 mA	80 mA	24 mA	12 mA	
	Rise time (TYP)	At full load	50	ms	100 n	ns	
	Fall time (TYP)	At full load	50	ms	100 n	ns	
	Temperature coef	ficient *10		100 pp	m/°C		
∕laxim	um internal resista	nce that can be set	0.500 Ω	2.000 Ω	18.00 Ω	131.8 Ω	

- The maximum output voltage and maximum output current are limited by the maximum output power.
- *2. Can be limited to approximately 95 % of the OVP trip point or OCP trip point.
 *3. 85 Vac to 135 Vac or 170 Vac to 265 Vac, fixed load
- *4. The amount of change that occurs when the load is changed from no load to full load (rated output power/rated output voltage) with rated output voltage. The value is measured at the sensing point.
- *5. The amount of time required for the output voltage to return to a value within "rated output voltage ± (0.1 % +10 mV)." The load current fluctuation is 50 % to 100 % of the maximum current with the set output voltage.

 *6. Measured using an RC-9131C probe that conforms to the JEITA specifications. At the rated output current.
- *7. When the measurement frequency bandwidth is 10 Hz to 20 MHz.
- *8. When the measurement frequency bandwidth is 10 Hz to 1 MHz.
 *9. When the bleeder circuit is set to bleeder normal.
- *10. When the ambient temperature is within 0°C and 50 °C
- *11. Applies to the range of 1 % to 100 % of the rated current. TYP (0.1 % of rating) for 0 % to 1 %.
 *12. When the output voltage is 10 % to 100 % of the rating. At the rated output current.

Item/Model		PWR801L	PWR801ML	PWR801MH	PWR801H
Display function	ion				
Valtage display	Maximum display	99	.99	999.9	
Voltage display	Display accuracy			ding + 5 digit)	
Current diamles	Maximum display	99.99			9.999
Current display	Display accuracy		± (0.5 % of rea	ading + 8 digit)	
Power display			The PWR DSPL	LED lights in red.	
	Maximum display	9999			
	Display accuracy	Displays the result of n	Displays the result of multiplying the current and voltage. The display is toggled with the voltage or current of		



● 1200 W model

Item/Model		PWR1201L	PWR1201ML	PWR1201MH	PWR1201H	
AC input						
Nominal input rating			100 Vac to 240 Vac, 50 H	Iz to 60 Hz, single phase		
Input voltage range	voltage range 85 Vac to 265 Vac					
Input frequency range	ut frequency range 47 Hz to 63 Hz					
Current (TYP) *1	100 Vac	16.8 A				
Current (117)	200 Vac	8.4 A				
Inrush current (MAX) *2			75 Apeal	k or less		
Power (MAX) *3			1680) VA		
Power factor (TYP) *1		0.99 (input voltage: 100 V), 0.97 (input voltage: 200 V)				
Efficiency (MIN) *1 75 % (TYP)						
Hold-up time for power interruption (MIN) *3		20 ms or more				

- *1. At the rated output power for the rated output current.
- *2. Excludes the charge current component that flows through the capacitor of the internal EMC filter circuit immediately after the POWER switch is turned on (for approximately 1 ms).
- *3. 100 Vac, at the rated output power.

Item/Model			PWR1201L	PWR1201ML	PWR1201MH	PWR1201H	
Output					·		
	Output voltage *1		40 V	80 V	240 V	650 V	
Rating	Output current *1		120 A	60 A	15.0 A	5.55 A	
~ ∟	Output power			1200	W		
	Maximum settab	e voltage *2	42 V	84 V	252 V	682.5 V	
	Setting accuracy			± (0.05 % of set +0	0.05 % of rating)		
	Resolution		200 mV	400 mV	1000 mV	2500 mV	
	Using FIN	E, OUT OFF	10 mV	10 mV	100 mV	100 mV	
	Using FIN	E, OUT ON	1 mV	1 mV	10 mV	10 mV	
	When using a	communication interface	1 mV	1 mV	10 mV	10 mV	
Ī	Line regulation *		±6 mV	±10 mV	±26 mV	±67 mV	
	Load regulation *	4	±6 mV	±10 mV	±26 mV	±67 mV	
/altana	Transient respon	se *5	1 ms or less	2 ms or less	2 ms or less	3 ms or less	
/oltage	Ripple noise *6	p-p *7	50 mV	50 mV	100 mV	300 mV	
	Rippie noise 6	rms *8	5 mV	5 mV	20 mV	50 mV	
	At full load		50 ms or less		100 ms c	or less	
	Rise time	No load	50 ms or less		100 ms or less		
	Fall time *9 At full load No load		50 ms	50 ms or less 150 ms		250 ms	
			500 ms or less		1200 ms	2000 ms	
	Maximum remote sensing compen- sation voltage (single line)		1.5 V	4 V	5 V	5 V	
-	Temperature coe	fficient *10	100 ppm/°C				
	Maximum settab	e current *2	126 A	63 A	15.75 A	5.8275 A	
Ī	Setting accuracy	*11		± (0.5 % of set +0	0.1 % of rating)		
Ī	Resolution		600 mA	300 mA	60 mA	30 mA	
	Using FIN	E, OUT OFF	100 mA	10 mA	10 mA	1 mA	
	Using FIN	E, OUT ON	10 mA	1 mA	1 mA	0.1 mA	
	When using a	communication interface	10 mA	1 mA	1 mA	0.1 mA	
urrent	Line regulation		±14 mA	±8 mA	±3.5 mA	±2.6 mA	
	Load regulation		±29 mA	±17 mA	±8.0 mA	±6.1 mA	
- H	Ripple noise *12	rms *8	240 mA	120 mA	36 mA	18 mA	
Ī	Rise time (TYP)	At full load	50	ms	100 r	ns	
Ī	Fall time (TYP)	At full load	50	ms	100 r	ns	
	Temperature coe	fficient *10		100 ppr	m/°C		
Maximu	ım internal resista	nce that can be set	0.333 Ω	1.333 Ω	12.00 Ω	87.84 Ω	

- *1. The maximum output voltage and maximum output current are limited by the maximum output power.
- *2. Can be limited to approximately 95 % of the OVP trip point or OCP trip point.
- 85 Vac to 135 Vac or 170 Vac to 265 Vac, fixed load
 The amount of change that occurs when the load is changed from no load to full load (rated output power/rated output voltage) with rated output voltage. The value is measured at the sensing point.
- *5. The amount of time required for the output voltage to return to a value within "rated output voltage ± (0.1 % +10 mV)." The load current fluctuation is 50 % to 100 % of the maximum current with the set output voltage.

 *6. Measured using an RC-9131C probe that conforms to the JEITA specifications. At the rated output current.

 *7. When the measurement frequency bandwidth is 10 Hz to 20 MHz.
- *8. When the measurement frequency bandwidth is 10 Hz to 1 MHz.
- *9. When the bleeder circuit is set to bleeder normal.
- *10. When the ambient temperature is within 0°C and 50 °C
- *11. Applies to the range of 1 % to 100 % of the rated current. TYP (0.1 % of rating) for 0 % to 1 %.
- *12. When the output voltage is 10 % to 100 % of the rating. At the rated output current.

Item/Model		PWR1201L	PWR1201ML	PWR1201MH	PWR1201H
Display function					
Voltage display	Maximum display	99	99.99		9.9
voitage display	Display accuracy		± (0.2 % of rea	reading + 5 digit) 99.99 reading + 8 digit) PL LED lights in red. 9999	
Current display	Maximum display	999.9	99.99		9.999
Current display	Display accuracy		± (0.5 % of rea	eading + 5 digit) 9.99 eading + 8 digit) LED lights in red.	
Power display			The PWR DSPL	LED lights in red.	
	Maximum display	9999			
	Display accuracy	Displays the result of r	nultiplying the current and voltage.	The display is toggled with the vol	tage or current display.



Common specifications

Item/Model		400 W model	800 W model	1200 W model
Protection functions				
Overvoltage		Turns the output	off, displays OVP	, and lights ALM
protection (OVP)	Setting range	10 % to 112 % of the rated output voltage		
	Setting accuracy	± (1.5 % of ratin	g)	
Overcurrent		Turns the output	off, displays OCP	, and lights ALM
protection (OCP) *1	Setting range	10 % to 112 % o	f the rated outpu	t current
	Setting accuracy	± (3 % of rating)		
Front-panel output te	rminal overcurrent	Turns the output	off, displays FOCI	P, and lights ALM
protection (FOCP)*2	Value (fixed)	11 A (TYP)		
Undervoltage limit (I	JVL)	Cannot be set to a value less than or equal to the set voltage		
	Setting range	0 % to 105 % of the rated output voltage		
Overheat protection	(OHP)	Turns the output off, displays OHP, and lights ALM		
Incorrect sensing connect	ion protection (SENSE)	Turns the output off, displays SENS, and lights ALM		
Low AC input protec	tion (AC-FAIL)	Turns the output off,*3 displays AC, and lights ALM		
Shutdown (SD)		Turns the output	off,displays SD, a	nd lights ALM
Power limit (POWER	R LIMIT)	ALM blinking		
	Value (fixed)	Approx. 105% o	f the rated outpu	t power
Communication mon	itoring (watchdog)	Turns the output off, displays WDOG, and lights ALM		
Master-slave parallel operation protection (PRL ALM)		Turns the output	off, displays PRL,	and lights ALM

- *1. This does not protect against the discharge current peak that is generated from the capacitors inside the PWR-01 output section when the load is changed suddenly.

 2. Available on models with a maximum settable current of 11 A or more. If the OCP value is less
- than the FOCP value, the OCP value takes precedence.
- *3. Auto recovery after eliminating the cause of the alarm is selectable.

Item/Mod	el		400 W model	800 W model	1200 W model
Signal ou	tput and i	nput			
	Voltage	monitor (VMON)	Selectable monitor voltage range: 0 V to 5 V or 0 V to 10 V		
Monitor		Setting accuracy	0 V to 5 V or 0 V to 10 V acy 2.5 % of f.s. *1 Selectable monitor voltage range: 0 V to 5 V or 0 V to 10 V		
signal output	Current	monitor (IMON)		e:	
		Setting accuracy	2.5 % of f.s. *1		
	OUTO	STATUS	On when output	ole monitor voltage range: V or 0 V to 10 V If.s. *1 ole monitor voltage range: V or 0 V to 10 V If.s. *1 n output is on. In during CV operation In when an alarm has been activated In when the power is turned on electable: LOW (0 V to 1.5 V), If.s. 5 V to 5 V) pedance: 10 kΩ (TYP) electable: LOW (0 V to 0.6 V), If.s. *1 If.s.	
Status signal	CV STATUS		Turns on during CV operation		
output	CC STA	ATUS	g accuracy 2.5 % of f.s. *1 r (IMON) Selectable monitor voltage range: 0 V to 5 V or 0 V to 10 V g accuracy 2.5 % of f.s. *1 JS On when output is on. Turns on during CV operation Turns on uning CV operation Turns on when an alarm has been a TATUS Turns on when the power is turned of Logic selectable: LOW (0 V to 1.5 V) HIGH (3.5 V to 5 V)		
*2	ALARM	I STATUS	Turns on when a	an alarm has bee	en activated
	POWE	R ON STATUS	Turns on when t	he power is turne	ed on
	Input (TRG IN)	•	,	5 V),
Trigger	ALARM STATUS Turns on when an alarm has POWER ON STATUS Turns on when the power is Logic selectable: LOW (0 V HIGH (3.5 V to 5 V)	e: 10 kΩ (TYP)			
signal	Output	(TRG OUT)	o V to 5 V or 0 V to 10 V racy 2.5 % of f.s. *1 Selectable monitor voltage range: 0 V to 5 V or 0 V to 10 V racy 2.5 % of f.s. *1 On when output is on. Turns on during CV operation Turns on when an alarm has been activ Turns on when the power is turned on Logic selectable: LOW (0 V to 1.5 V), HIGH (3.5 V to 5 V)	6 V),	
			Pulse width: 100) μs (TYP)	

- *1. f.s. is the full scale at the selected range. It is 10 V for the 10 V range and 5 V for the 5 V range. *2. Photocoupler open collector output;
- maximum voltage 30 V, maximum current (sink) 8 mA; isolated from the output and control circuits; status commons are floating (withstand voltage of less than or equal to 60 V); and status signals are not mutually isolated

Item/Mode	el		400 W model	800 W model	1200 W model
Control fu	nctions				
	Output	voltage control	0 % to 100 % of	the rated output	voltage
	(VPGM)	Selectable control	voltage range: 0 V to	o 5 V or 0 V to 10 V
		Accuracy	5 % of rating		
	Output	current control	0 % to 100 % of	the rated output	current
	(IPGM)		Selectable control	voltage range: 0 V to	o 5 V or 0 V to 10 V
		Accuracy	5 % of rating		
External control		on/ off control T ON/OFF CONT	Logic selectable: Output on when set to LOW (0 V to 0.5 V) or shorted; output off when set to HIGH (4.5 V or 5 V) or open Output on when set to HIGH (4.5 V to 5 V) or open; output off when set to LOW (0 V or 0.5 V) or shorted		
	Output s	shutdown control	Output on when set to LOW (0 V to 0.5 V) or shorted		to 0.5 V) or
	Alarm c	lear control .R	Alarm cleared w shorted	hen set to LOW	(0 V to 0.5 V) or

Item/Model		400 W model	800 W model	1200 W model	
Other functions					
Output-on/ off dela	ıy	Setting range: 0.0 s, 0.5 s to 99.9 s *1 setting resolution: 0.1 s			
Soft start and soft	stop	Setting range: 0 setting resolution	.0 s, 0.5 s to 10.0 n: 0.1 s) s *1	
Overcurrent protect activation delay	ction (OCP)	Setting range: 0 setting resolution			
Preset memory		saved: the set v	of the following soltage, the set cu CP, and the set U	ırrent, the set	
Key lock		Locks the opera OUTPUT key.	tion of all keys of	ther than the	
CONFIG shortcut			NFIG parameters SC1, SC2, and		
		Number of programs: 1			
		Number of steps: 64			
		Repetition count: 1 to 99998, INFinity			
Sequence		Number of configurable interval loops: 16			
		Number of inter	val loops: 2 to 99	1998	
		Step time: 0.1 s (common to step	to 100 h o transition and r	amp transition)	
Synchronized Oper	ation		of voltage ings, synchroniza eps in a sequenc		
Master-slave parallel operation *2				including the	
Series operation *3		Two units (the s	ame model)		
Multichannel (VMCB)	Connection between the master unit and PC	LAN, USB, RS2	32C		
(**************************************	Connection with slave units	LAN			

- *1. Factory default is 0.0 s.
- Current difference between the master and slaves is 5 % (TYP)
- *3. H type is excluded

Item/Model		400 W model	800 W model	1200 W model
Operation display				
OUTPUT ON/ OFF		OUTPUT LED lights green when the output is on.		
Output-on/ off delay		"DLY" lights when it is set and blinks when it is in effect. OUTPUT LED blinks orange while outputon delay is in effect.		
		OUTPUT LED blinks green while output-off delay is in effect.		
Soft start and soft stop		"SS" lights when it is set and blinks when it is in effect. OUTPUT LED lights green when soft start is in effect. OUTPUT LED blinks green when soft stop is in effect.		
CV operation		CV LED lights in green.		
CC operation		CC LED lights in red.		
Alarm operation		ALM LED lights in red when a protection function has been activated. ALM LED blinks red when the power limit (POWER LIMIT) is activated. OUTPUT LED blinks orange when a protection function is activated when the output is on.		
Preset memory		PRESET A, B, or C LED lights green when a preset memory entry is being recalled or saved.		
Key lock operation		LOCK LED lights green when the keys are locked.		
Remote operation		REMOTE LED lights green during remote control.		
	LAN operation	No fault status: Fault status: Lig Standby status	Lights green.	ng on the status.
Bleeder circuit		"HB" lights when the hyper bleeder is set.		
Variable internal resistance (VIR)		"VIR" lights when it is set.		
Sequence		"SEQ" lights when a sequence is being executed and blinks the PWR-01 is waiting for a trigger.		



Specifications

Common specifications

Item/Model		400 W model 800 W model 1200 W model			
Interface	Interface				
Common	Software protocol	IEEE Std 488.2-1992			
specifications	Command language	Complies with SCPI Specification 1999.0			
RS232C		Complies with the EIA232D specifications (excluding the connector)			
	Hardware	RJ-45 connector (male) *1			
		Baud rate: 1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200 bps			
		Data length: 8 bits, Stop bits: 1 bit, Parity bit: None			
		No flow control			
	Program message terminator	LF during reception, CR/LF during transmission			
	Hardware	Complies with the USB 2.0 specifications; dat rate: 480 Mbps (HighSpeed)			
		Socket B type			
USB	Program message terminator	LF or EOM during reception, LF + EOM during transmission			
	Device class	Complies with the USBTMC-USB488 device class specifications			
LAN		IEEE 802.3 100Base-TX/10Base-T Ethernet			
	Hardware	IEEE 802.3 100Base-TX/ 10Base-T Ethernet Complies with LXI Specification2011 Ver.1.4			
		IPv4, RJ-45 connector *2			
	Communication protocol	VXI-11, SCPI-RAW, HISLIP			
	Program message terminator	VXI-11, HiSLIP: LF or END during reception, LF + END during transmission SCPI-RAW: LF during reception, LF during transmission.			

^{*1.} The RD-8P/9P adapter cable is an option.

Meight (main unit only)	Item/Model		400 W model	800 W model	1200 W model	
Dimensions See the outline drawing.	General					
Coperating environment Coperating temperature Coperating temperat	Weight (main unit only)					
environment Operating O	Dimensions		See the outline drawing.			
Environmental Operature Operature Operature Operating humidity Storage (an interpretature) 20 %rh to 85 %rh (no condensation) Storage (an interpretature) 20 %rh to 85 %rh (no condensation) Altitude Up to 2000 m Cooling method Forced air cooling using fan Orgondring polarity Negative grounding or positive grounding possible L/ML/ MH type: ±500 Vmax Hype: ±800 Vmax Hype: No abnormalities when 1650 Vac is applied for 1 minute L/ML/ MH type: No abnormalities when 1650 Vac is applied for 1 minute Hype: No abnormalities when 1900 Vac is applied for 1 minute Hype: No abnormalities when 2300 Vdc is applied for 1 minute Hype: No abnormalities when 2300 Vdc is applied for 1 minute Hype: No abnormalities when 2640 Vdc is applied for 1 minute Hype: No abnormalities when 2500 Vdc is applied for 1 minute Hype: No abnormalities when 2500 Vdc is applied for 1 minute Hype: No abnormalities when 2640 Vdc is applied for 1 minute County (and to the secondary circuit and chassis or more (70 % or less) at 500 Vdc Urby: 100 MΩ or more (70 % or less) at 500 Vdc Hype: 4		environment	Indoor use, overvoltage category II			
Storage temperature 10 °C to +60 °C (14 °F to 140 °F)	Environ-	temperature	,			
temperature Storage humidity Altitude Up to 2000 m Cooling method Grounding polarity Isolation voltage Across the primary and secondary circuit and chassis Across the primary and secondary circuit and chassis Across the primary pricruit and chassis Across the primary or circuit and chassis Across the primary and secondary circuit and chassis Across the primary and secondary circuit and chassis Blassiance Across the primary and secondary circuit and chassis Across the primary and secondary circuits Across the primary and secondary circuits and chassis Across the primary and secondary circuits			20 %rh to 85 %rh (no condensation)			
Across the primary and secondary circuit and chassis Insulation resistance Across the primary and secondary circuit and chassis Across the primary and secondary circuit and chassis Across the secondary circuit and chassis Across the primary and secondary circuit and chassis Across the secondary circuit and chassis Across the primary and secondary circuit and chassis consection short bar output terminal Ma boti set "Only L type and ML type included only with the 400W/800W model ferrite core set "Included only with the 1200W model Ferrite core set "Included only with the 1200W model Ferrite core set "Included only with the 1200W	conditions		, , , , , , , , , , , , , , , , , , , ,			
Cooling method Forced air cooling using fan		Storage humidity				
Safety *1 Negative grounding or positive grounding possible L/ ML/ MH type: ±500 Vmax H type: ±800 Vmax H type: 100 Manual Secondary MI type: No abnormalities when 1650 Vac is applied for 1 minute H type: No abnormalities when 1650 Vac is applied for 1 minute L/ ML/ MH type: No abnormalities when 2300 Vdc is applied for 1 minute L/ ML/ MH type: No abnormalities when 2300 Vdc is applied for 1 minute L/ ML/ MH type: No abnormalities when 2640 Vdc is applied for 1 minute L/ ML/ MH type: No abnormalities when 2640 Vdc is applied for 1 minute Manual Secondary Manua		Altitude	Up to 2000 m			
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Across the primary circuit and chassis Across the primary circuits Across the primary and secondary circuit and chassis Across the primary and secondary circuit and chassis Insulation resistance Across the primary and secondary circuit and chassis Across the primary and secondary circuit and chassis Across the primary and secondary circuits Across the primary and secondary circuits and chassis or mere (70 % or less) at 500 Vdc H type: 100 MΩ Or more (70 % or less) at 500 Vdc H type: 40 MΩ Or more (70 % or less) at 1000 Vdc Manual Chassis connection short bar Output terminal M4 screws Output terminal M4 screws Output terminal cover Output terminal cover Output terminal cover Output secon	Grounding	oolarity	Negative groundir	Negative grounding or positive grounding possible		
Circuit and chassis 1 minute	Isolation vo	Itage	1			
Across the primary and secondary circuits Hype: No abnormalities when 1650 Vac is applied for 1 minute Hype: No abnormalities when 1900 Vac is applied for 1 minute Hype: No abnormalities when 1900 Vac is applied for 1 minute Hype: No abnormalities when 2300 Vdc is applied for 1 minute Hype: No abnormalities when 2640 Vdc Hype: No abnorma			No abnormalities when 1500 Vac is applied for			
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Low Voltage Directive 2014/35/EU *2						
EN 61010-1 (Class I *5, Pollution Degree 2 *6)	Safety *1		Low Voltage Directive 2014/35/EU *2			



^{*2.} Category 5; use a straight cable

^{*1.} Does not apply to specially ordered or modified products.
*2. Limited to products that have a CE mark. Does not apply unless a core is attached to the J1 connector cable.

^{*3.} This is a Class A instrument. This product is intended for use in an industrial environment. This product may cause interference if used in residential areas. Such use must be avoided unless the user takes special measures to reduce electromagnetic emissions to prevent interference to the reception of radio and television broadcasts.

^{*4.} This is a Group 1 instrument. This product does not generate and/or use intentionally radiofrequency energy, in the form of electromagnetic radiation, inductive and/or capacitive coupling, for the treatment of material or inspection/analysis purpose.
*5. This is a Class I instrument. Be sure to ground this product's protective conductor terminal.

The safety of this product is guaranteed only when the product is properly grounded.

6. Pollution is addition of foreign matter (solid, liquid or gaseous) that may produce a reduction of dielectric strength or surface resistivity. Pollution Degree 2 assumes that only nonconductive pollution will occur except for an occasional temporary conductivity caused by condensation

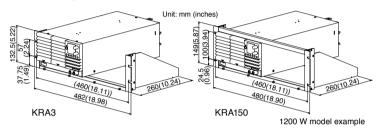


Product	Model	Remark	
AC power cord	AC5.5-3P3M-M4C-VCTF	For the 1200 W model. Total length 3 m. (Not CE compliant)	
J1/ J2 connector plug kit	OP01-PWR-01	A plug kit for externally controlling the PWR-01 through the J1/ J2 connector. 30 pin pieces. Housing for the J1 connector and J2 connector, 1 piece each.	
RS232C control conversion cable	RD-8P/9P		
Parallel operation cable	Coming soon	For 2 units in parallel	
Sequence creation software	SD027-PWR-01	Wavy for PWR-01	
Safety plugs	TL41	Screw connection type. Red and black, one set each.	
	TL42	Solder connection type. Red and black, one set each.	
Deals many at a deater	KRA3	For EIA inch racks	
Rack mount adapter	KRA150	For JIS millimeter racks	

AC power cord



Rack mount adapter



■ Application software



Sequence Creation Software Coming soon

SD027-PWR-01 (Wavy for PWR-01)

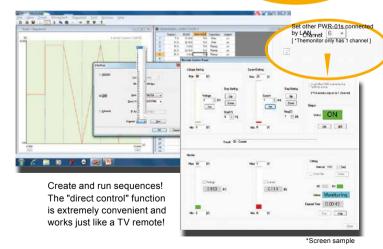
Software that supports automatic testing of a power supply, allowing you to create and edit sequence data with the click of a mouse!

Global commands can be used for batch control of VMCBconnected PWR-01 power supplies!

SD027-PWR-01 (Wavy for PWR-01) is an application software that supports sequence creation and the operation for Kikusui power supplies and electronic loads. Wavy allows you to create and edit sequences visually with the click of a mouse and doesn't require programming knowledge. Wavy allows you to control your power supply in almost the same way as a remote controller for monitoring voltage and current, logging, etc.

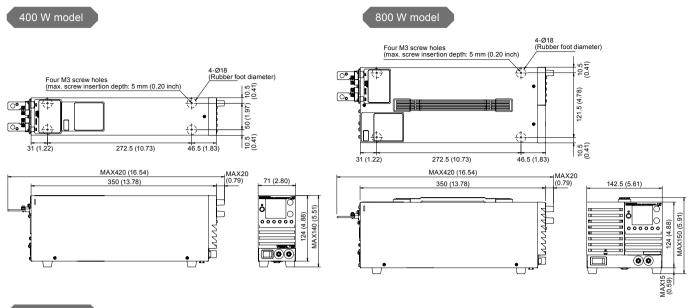
[Operating environment, conditions]

- Number of power supplies or electronic loads that the Wavy can control is limited to one unit.
 - *When a VMCB connection is used, the slave units are controlled at the same time the master unit is controlled.
- CPU: Pentium 4 HT or better (Recommended: Core2 or better)
- CD-ROM: Necessary to install the "Wavy"
- Mouse: Necessary
- Monitor: 1024 x 768 dots or higher resolution
- Memory: 128MB or more
- ●Interfaces: LAN, USB, RS232C





■ Outline drawing (Unit mm (inches))



1200 W model

