

**NEW**

# High Power & Versatile AC Power Supplies

AC : 0 to 150V / 300V, 1 to 550Hz

DC : 0 to  $\pm 212$ V /  $\pm 424$ V

## DRK series

- High Power of 2kVA, 4kVA is realized in a Wonder Compact Size!
- High quality output equivalent to ones of linear amplifier system.
- The models which can amplify external input signal in its electrical power as an amplifier are also available.



4kVA Model



2kVA Model

# Versatile AC Power Supplies

## DRK series

AC

0 to 150V, 0 to 300V  
1 to 550Hz

DC

0 to ±219V, 0 to ±438V

DRK series are versatile well-regulated AC power supplies realized compact size fitting into 19 inches rack size of 4U even though high power model of 4kVA.

We have succeeded in downsizing, weight saving and efficiency improving large and heavy traditional AC power supplies realizing high quality output equivalent to ones of linear amplifier system by adopting the our own switching amplifier system.

They are best fit to development and inspection process in production line for electronic equipment with their compact design regardless to place to be installed, various functions and secure operability.

- ▶ For inspection line
- ▶ For evaluation of various AC input devises
- ▶ For tests and experiment
- ▶ As a dual output power supply, AC / DC

In 4U size  
Output 4kVA!



Available  
in the  
near  
future

In 2U size  
Output 2kVA!



Models applicable to test for the simplified instantaneous power failure are available.

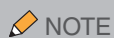
Please contact nearest our sales branch for detail.

### Lineup

Output Wiring Connection	Max Output Power (VA)	Model	Total Q'ty	Max Output Current / Max Output Peak Current (A)			
				AC		DC	
				Lo range (0 to 150V)	Hi range (0 to 300V)	Lo range (0 to ±212V)	Hi range (0 to ±424V)
Single Phase	1.2k	DRK1.2k <sup>*1</sup>	1	12 / 48	6 / 24	5.4	2.7
	2k	DRK2k	1	20 / 80	10 / 40	9	4.5
	4k	DRK4k <sup>*1</sup>	1	40 / 160	20 / 80	/	
	4k	DRK2k-LMsm / -LMss <sup>*1 *2</sup>	2	40 / 160	20 / 80		
	6k	DRK2k-LMsm / -LMss × 2-unit <sup>*1 *2</sup>	3	60 / 240	30 / 120		
8k	DRK2k-LMsm / -LMss × 3-unit <sup>*1 *2</sup>	4	80 / 320	40 / 160			
3-Phase	6k	DRK2k-LPhu / -LPhv / -LPhw <sup>*1 *2</sup>	3	20 / 80	10 / 40		
Single Phase 3-wire	4k	DRK2k-L1p3wm / -L1p3ws <sup>*1 *2</sup>	2	20 / 80	10 / 40		

\*1 : Available in the near future.

\*2 : Optional models. Please refer to page 6 for details of options.



NOTE

DRK series are not applicable to such application that electric power is infused externally or regeneration behavior is made. Therefore they are not suitable for such devises that "returning generated electric power to AC line" or "being connected directly to the grid-connected power system".

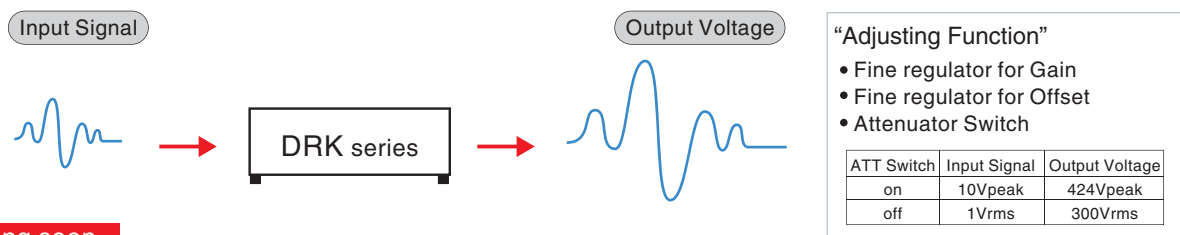
Please make AC output in combination with our high speed four-quadrant bipolar power supplies and such devices.

## Features

### New Function

#### ■ Analogue Interface (at -LAmp Option)

It is able to apply them as an amplifier to amplify external input signal in its electrical power with the option for Analogue Interface.



### Coming soon

#### ■ Soft Remote sensing (at -LSn option)

It is possible to calculate differences between set value of output voltage and the voltage drop in the load end by resistance of output line and compensate for it. (Automatic Gain Control)

#### ■ Output Voltage and Frequency in Wide Range

Double duty of AC/DC

##### AC Output

It is able to output continuously, AC: 0 to 150V, Frequency 1 to 550Hz, in order to correspond to various AC input devices. They are applicable widely as power supplies for production line, for tests and experiments and for evaluation of equipment for aircrafts or ships and vessels.

AC	
Voltage	0 to 150V / 0 to 300V
Frequency	1 to 550Hz

##### DC Output

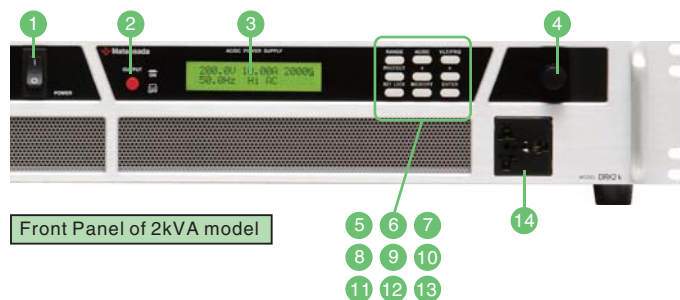
It is able to control DC output of 0 to  $\pm 212V$  / 0 to  $\pm 424V$  with the same operation of one of AC mode. They are contribute to space saving as it can be bound 2 units of traditional AC power supply and DC power supply together into one unit of them.

DC	
Voltage	0 to +212V / 0 to +424V 0 to -212V / 0 to -424V

#### ■ Refined and Simplified Operability

As it is able to call up commonly-used functions or output settings immediately, work efficiency is increased. For the application utilized in the same settings, as latest settings are memorized, it is able to eliminate troublesome re-settings.

In case that several test patters are repeated (for example, 90V $\rightarrow$ 100V $\rightarrow$ 110V, 50 / 60Hz), testing time is shortened very much by using the memory function.



- 1 Power Switch  
Prior to any actions for safety.
- 2 OUTPUT  
To ON / OFF output.
- 3 Display  
To display Statue, Settings, Monitor.
- 4 Rotary Encoder  
To switch range of output voltage.

- 5 Switching Range  
To switch range of output voltage.
- 6 AC / DC  
To switch output mode (AC $\leftrightarrow$ DC).
- 7 Voltage / Frequency  
To set Voltage / Frequency.
- 8 OCP / OVP / OPP  
To set various protections.
- 9 Directional Key  
To shift digits at set values.

- 11 Key Lock  
To disable key actions.
- 12 Memory  
To register or call up settings used frequently up to 10 kinds.
- 13 ENTER  
To use at deciding in memory function.
- 14 Output Terminal  
The universal type output terminal.

#### ■ Light, Compact and Space-saving

They have been considerably compact in comparison with traditional AC power supplies and power supplies which satisfy needs of factories and experiment rooms requiring space saving.

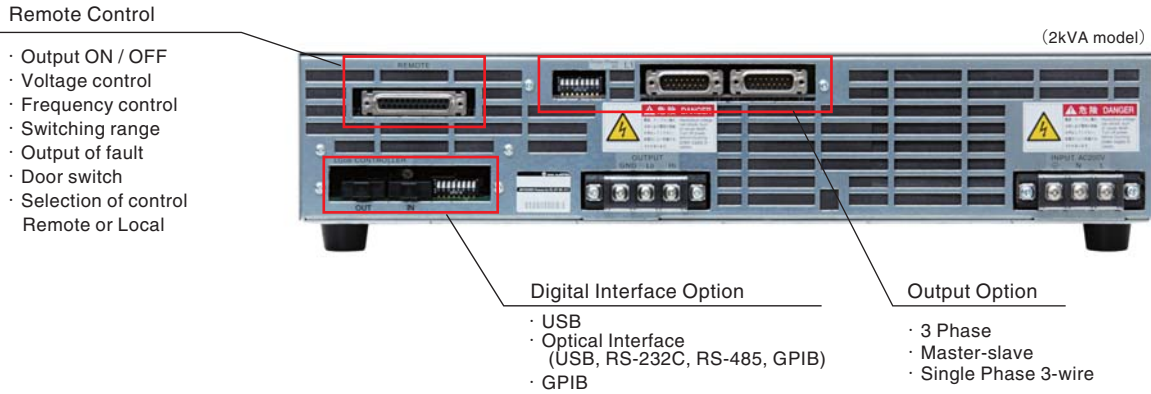
# Versatile AC Power Supplies

## Features

### Standard Functions and Plenty of Options

External control is equipped as standard. They are applicable automation of production lines immediately as it is able to control remotely ON / OFF, voltage, frequency and ranges.

And USB, RS-232C, RS-485 and GPIB are applicable by option.



### Various Output --- 3-Phase Output, Single Phase 3-wire Output, Master-slave

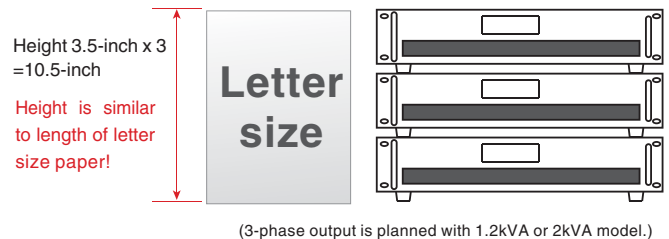
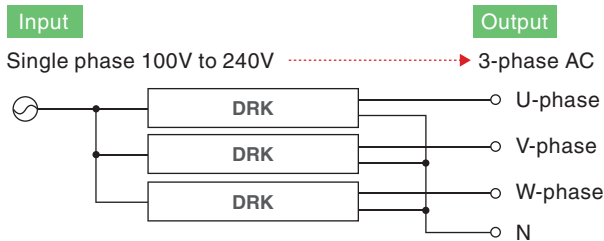
3-phase output, single phase 3-wire output and Master-slave hooking are applicable by options.

(Master-slave hooking is applicable only for 2kVA model.)

Also, they are applicable as a simple power supply by cancelation of option settings.

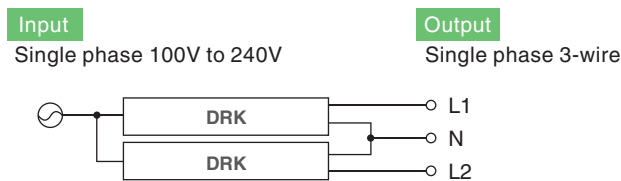
#### 3-Phase Output

It is possible to test and evaluate 3-phase AC even where only single phase 200VAC or 100VAC is available



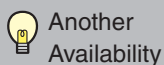
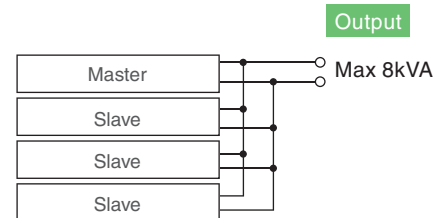
#### 3-Phase Output

It is possible to test and evaluate single phase 3-wire even where only single phase is available.



#### Master-slave (2kVA model only)

When larger power supply is required, maximum 8kVA is available with the master-slave hooking. (Master unit : one, slave units : 3)



### Simplified Instantaneous Power Failure Test

Please consult our sales staff for detail.



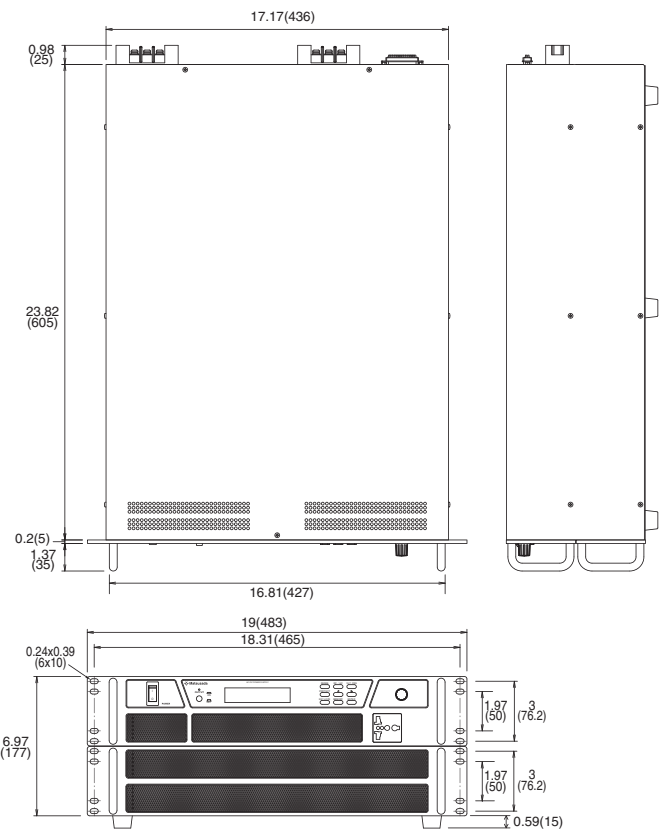
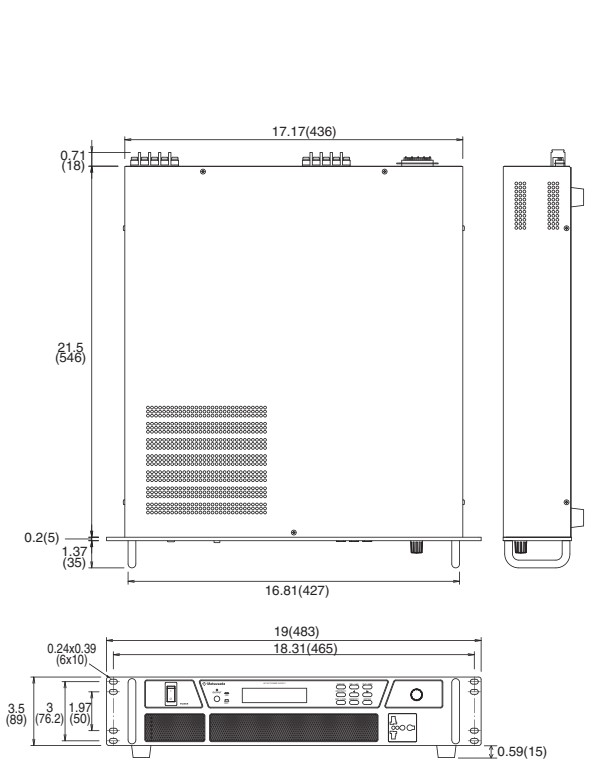
It is able to make simplified instantaneous power failure test for AC input equipment

It is able to confirm operating conditions of equipment tested under such situation as simulating unstable aspect of power source line or aspect happened instantaneous power failure.

# Dimensions inch (mm)

**1.2kVA and 2kVA Models** Weight : 16kg approx.

**4kVA Model** Weight : 35kg approx.



## Specifications

Input voltage	100VAC to 240VAC±10%, 50 / 60Hz, Single phase
Efficiency	≥70% (at rated output)
Power factor	≥0.9 (at rated output)
Output voltage setting range	Lo (100V) range : AC; 0V to 150V, DC; 0V to ±212V Hi (200V) range : AC; 0V to 300V, DC; 0V to ±424V
Number of Phase	Single
Output frequency	DC, 1Hz to 550Hz
Peak current of maximum output	4 times of maximum output current (crest factor = 4)
Output voltage control	Voltage range : Lo (100V) and Hi (200V) switching with the selector switch on the front panel Local ----- With the rotary encoder on the front panel Remote ---With the external control voltage, Vcon-in = 0Vdc to 10Vdc
Voltage regulation	Line : ±0.15% (for AC±10% input change) Load : ±0.15% (at Lo range), ±0.3% (at Hi range)
Voltage Stability	0.05% / Hr
Temp. coefficient for voltage	±0.05% / °C
Distortion factor of output waveform	0.5% at 50 / 60Hz, 80V to 150V, 160V to 300V (at power factor of load = 1)
Setting of output frequency	Local : with the rotary encoder on the front panel Remote : with the external control voltage, Vcon-in = 0Vdc to 10Vdc
Setting accuracy of frequency	≤0.03% (at environmental temperature 20°C and output frequency ≥50Hz)
Temp. coefficient for frequency	≤0.1Hz (at environmental variation ±10°C)
Output display	Output Voltage : 0.1V resolution (RMS) (effective value display, Accuracy ±1.5% F.S. ±1 digit, at frequency ≥50Hz) Output Current : 0.01A resolution (RMS) (effective value display, Accuracy ±1.5% F.S. ±1 digit, at frequency ≥50Hz) Output Power : 1VA resolution (RMS)
Protections	Short-Circuit Protection, Overvoltage, Overcurrent, Overpower, Input Voltage Reduction, Over-temperature Protection, Blackout Protection, Variable Limit for OCP, OPP and OVP
Miscellaneous functions	Remote Switch for ON / OFF (TTL or external relay), Interlock (external relay), Remote Switching Voltage Range, Remote Switching Frequency, Output of Fault Status, Preset Function (10 memories)
Operation temp.	0°C to +40°C
Storage temp.	-20°C to +70°C
Storage humidity	20% to 80%RH (no condensation)
Output terminals	One Universal Outlet, Terminal board
Accessories	Instruction Manual : 1 Cover for Remote Connector : 1

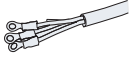
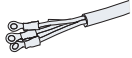


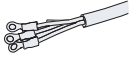
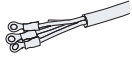


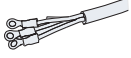
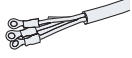


# Options

- LAmp**     **Analogue Interface (\*1) (\*2)**  
It is able to input analogue waveform externally with BHC input and to enhance electric power.  
It is insulated from the output. Please refer to page 3 for detail.
- LUs1**     **USB interface Board (\*3)**  
ON/OFF with the Remote Switch, Switching Voltage Range, Variable Voltage, Variable Frequency, Status, Monitor for Voltage and Current
- LGb**     **GPIO interface Board (\*3)**  
ON/OFF with the Remote Switch, Switching Voltage Range, Variable Voltage, Variable Frequency, Status, Monitor for Voltage and Current
- LGob**     **Optical Interface Board (\*3)**  
Insulation control is made with optical communication. One piece of Optical cable, 2m length, is included with this option.  
ON / OFF with the Remote Switch, Switching Voltage Range, Variable Voltage, Variable Frequency, Status, Monitor for Voltage / Current and various Interface  
(Please refer to catalogue for digital controller "CO series" about optical conversion for various interfaces, USB, RS-232C, RS-485 and GPIB.)
- LN**     **Release of Blackout Protection**  
Output of the power supply is made ON / OFF interlocking AC input voltage.
- LSn**     **Remote sensing (coming soon)**  
Please refer to P.3.
- L1p3wm**     **Single phase 3-wire Connection (\*4) (\*5)**  
Single phase 3-wire output mode is available.  
Each one unit optioned respectively is required.
- L1p3ws**     **Single phase 3-wire Connection (\*4) (\*5)**  
Single phase 3-wire output mode is available.  
Each one unit optioned respectively is required.
- LPhu** }     **Multi-Phase connection (\*4) (\*5)**  
**-LPhv** }     3 phase output mode is available.  
**-LPhw** }     Each one unit optioned respectively is required.
- LMsm** }     **Parallel Connection (\*4) (\*5), for 1.2kVA and 2kVA models only**  
**-LMss** }     It is able to increase output power by paralleling.  
It is able to hook maximum 3 slave units per one master unit in the optional formation. (for AC mode only)  
(When the combination is changed, adjustment in our factory is required.)

The instantaneous power failure test function is available separately.  
Please consult our sales staff for detail.

**How to Order** Please suffix above optional codes in order of alphabet and AC input on the tail of Model number.  
(Example) DRK2k-LAmpGbMsmNSn  
DRK4k-LFNSnUs11p3wm

\*1) -LAmp cannot be installed together with options for single phase 3-wire connection (-L1p3wm, -L1p3ws) or options for (-LPhu, -LPhv, -LPhw).  
\*2) In case of utilizing a transformer as a load, the transformer may be saturated by offset from external signal.  
\*3) These options should be selected either one.  
\*4) (-L1p3wm or -L1p3ws), (-LPhu, -LPhv or -LPhw) and (-LMsm or -LMss), these options are should be selected either one. An option is required for each power supply.  
\*5) When interface options (-LUS1, -LGb and -LGob) is applied, only the master unit (-L1p3wm, -LPhu or -LMsm) should be optioned. No option is required on slave units.

Model Input Voltage		Input Voltage			
		200V		100V	
DRK1.2k	CABLE TYPE5		Rated Voltage 250V		Rated Voltage 250V
			Max. Current 25A		
DRK2k	CABLE TYPE5		Rated Voltage 250V		Rated Voltage 250V
			Max. Current 25A		
DRK4k	CABLE TYPE11		Rated Voltage 250V		Rated Voltage 250V
			Max. Current 35A		

# Introduce of Sequence Software (Coming soon)

## Sequence Software for Power Supplies and Electronic Loads

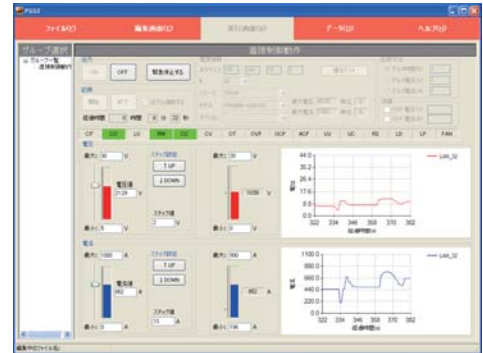
PSS2en

The sequence software for power supplies and electric loads

PSS2en is the dedicated software which can actuate sequence operation to various power supplies, electronic loads and digital controller for power supplies manufactured by Matsusada Precision Inc. with simple set up. It is perfect for the endurance test for electronic parts, electric equipment and electric elements for cars or various simulation tests.

### Features

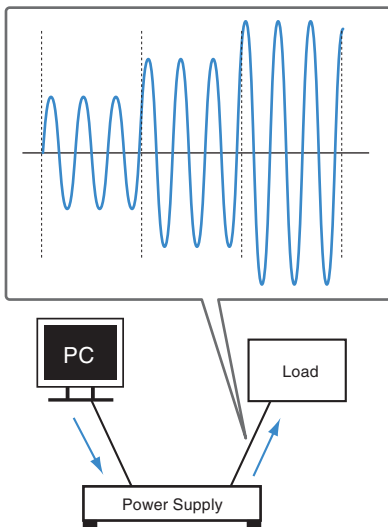
- It is able to set complex sequences only by inputting voltage, current and time on the sequential sheets.
- It is able to save data log with the monitoring function.
- Package control of 1 to 32 units of our power supplies and electronic loads or individual sequence operation are possible.
- An experiment to change continuously temperature or humidity of loads by interlocking operation with thermostatic chamber by Espec is possible.
- Even if power supplies and electronic loads applied combined with PSS2en are ones of plural kinds, package control is possible in one application software.



This is available to these applications as follows for example.

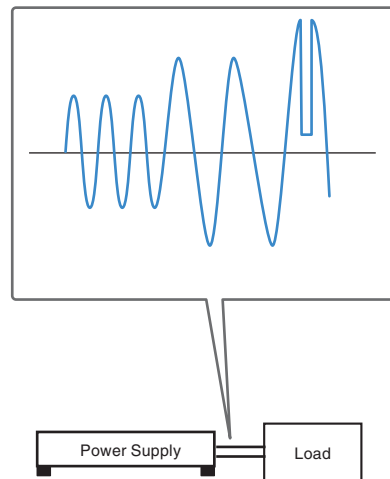
It is able to automate the inspection process for AC input devices with its sequence function.

The energization pattern of the AC input device is prepared with PSS2en and the energization inspection process is automated as minimum input voltage → rated voltage → maximum voltage and 50/60Hz.



It is able to automate evaluation of AC input devices with the ramp and / or simplified instantaneous power failure function sequence function \*.

It is able to quantify the evaluation of AC input devices by varying continuously voltage and/or frequency and with the simplified instantaneous power failure function \*.



Endurance tests for products or parts are possible by linking a thermostatic chamber.

At the same time of control of the power supply and the load by PSS2en, it is able to make temperature control or monitoring of the thermostatic chamber.

PSS2en can interlock the power supply, load and thermostatic chamber made by Espec.

