🔆 Matsusada Precision

Compact bi-polar power supply DJOPF Series



Compact size / Function generator integrated Four-quadrant high speed bi-polar power supply

DJOPF10-5 : ±10V / 50W / DC to 30kHz DJOPF20-3 : ±20V / 60W / DC to 30kHz DJOPF30-2 : ±30V / 60W / DC to 30kHz DJOPF60-1 : ±60V / 60W / DC to 30kHz



- Compact design of the width 140mm and Lightweight of 3kg.
- ◆ Possible waveform generation, sequence operation and various measurerments
- Corresponding to the digital interface and remote control



DJOPF series

High speed bi-polar power supply with function generator

DJOPF series is four-quadrant bi-polar power supply which source and sink electric power. Thanks to the original design, phenomenal light weight and compact size power supply, which is 140mm width, and weigh 3kg has been achieved,bi-polar amplifier equipped with a built-in function generator enabling its compact size and fast response. They can be used in 2-mode of a constant voltage (CV) or a constant current (CC). They are ultra compact and high speed, driving output proportional to the input waveform such as a sine wave, triangular wave, saw wave, and square wave. DJOPF series is most appropriate for evaluation test such as solar panels, the instruments driven by battery and the IC which control battery.



Even more high power model, DOP series, fast model, DOS series, are available. Contact to local sales office for details.

Applications

- Suitable to evaluate battery driven equipment to use as a simulated battery
- Inductive load such as coil and transformer
- Capacitive load like capacitor
- Various motor tests

- Tests for in-vehicle electrical component
- Evaluation test for solar panel related devices
- For surface treatment

Features

Response speed

Newly developed DJOPF Series is the most appropriate for transient response test with such high power and broad bandwidth.

Wide lineup

Select a model fitting for your applications from the lineup of various output voltage and current.

Built-in function generator

DJOPF includes the sequence function other than a waveform generation function.

DC or AC output meter

3-digit digital meter displays the DC or AC value of the output voltage and current.

Compact & light weight

For maximum compactness and light weight, DJOP Series has been improved for small footprint and easy carry.

Constant voltage (CV) / Constant current (CC)

A single switch selects between CV and CC modes.

Four-quadrant action

DJOPF Series can be used both as a high speed response DC power supply and as an electronic load.

Complete protective function

Protective function against over voltage / current and protective measures against output short-circuit are completely provided.

Lineup

 \star Please consult with our sales office about the specifications except the following list.

Model	Output voltage V(rms value)	Output current A(rms value)	Output power	Frequency bandwidth (-3dB)	Weight kg(approx.)
DJOPF10-5	±10(7)	±5(3.5)	50	$ m DC\sim 30 kHz$	3.0
DJOPF20-3	±20(14)	±3(2.1)	60	DC \sim 30kHz	3.0
DJOPF30-2	±30(21)	±2(1.4)	60	DC \sim 30kHz	3.0
DJOPF60-1	±60(42)	±1(0.7)	60	DC \sim 30kHz	3.0

Specifications

Input voltage	85V to 264Vac / 50/60Hz / single phase	Protections	Over voltage protection, over current	
Input current	1.5A max @100Vac input		protection, against short-circuit	
Waveform	orm Sine wave, Square wave,	Temperature coef.	0.02% / °C (CV mode), 0.04% / °C(CC mode)	
generation function	Triangular wave	Output display	LCD on front panel Voltage : 3-digit digital meter Current : 3-digit digital meter	
Setting frequency for waveform	DC, 10mHz to 30kHz			
External control voltage (Vcon-in)	U		DC : ±1.5%F.S±1dgt AC : ±1.5%F.S±1dgt	
(1000)	control can be changed.)	Sequence function	Program : 3 memories Step : 16 steps / program Step time : 10ms to 1999s999ms Step resolution : 1ms	
Output setting range	DC : -100% to +100% AC : 0% to +100%			
Setting accuracy 1	±0.5%F.S			
Ripple	<cv mode=""> less than 0.02%rms <cc mode=""> less than 0.2%rms</cc></cv>	Preset function	10 memories	
inppio		Operating temp.	0°C to +40°C	
Stability	0.016%/Hr typ.	Storage temp.	-20°C to +70°C	
Distortion factor ¹²	<cv mode=""> 0.05% <cc mode=""> 0.5%</cc></cv>	Humidity	20% to 80%RH (no condensation)	
Regulation	Input : 0.05% (for ±10% input change) Load : 0.05% (for 10% to 100% load change)	Accessories	AC input cable 2.5m (1) Instruction manual (1)	

*1 : About AC, it sets up in 1kHz and a sine wave. *2 : In the rated output and a resistance load.

Protections

Voltage limit protection (Vlimit)

DJOPF is equipped with voltage limit protection, which protects load by limiting output with the value that was set optionally even at abnormal conditions.

Current limit protection (Ilimit)

DJOPF is equipped with current limit protection, which protects load and power supply by limiting output with the value that was set optionally even at the time of overload.

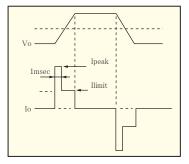
Over voltage protection (O.V.P)

DJOPF is equipped with over voltage protection, which protects load by limiting voltage up to approx. 120% of the rated output voltage even at abnormal conditions.

High speed over current protection

DJOPF is provided with 2 types of over current protections, high speed over current protection to limit the pulse current, and standard over current protection to limit the static current.

The standard over current protection limits the static current, responding at around 1ms. Additional fast response type limited current circuit can limit pulse current of square waveforms or from capacitor at approx. 2 times more current of rating.



Over current protection (O.C.P)

DJOPF is also equipped with over current protection, which protects power supplies and load by limiting current up to approx. 120% of the rated output current.

Output range

DJOPF series is a bi-polar power supply which can perform four-quadrant operation. They can supply (source) and absorb (sink) current in the field of the drawing on the right.

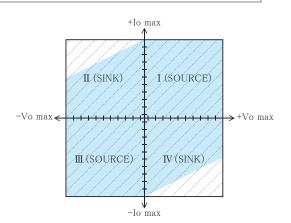
Vo max : rated output voltage

lo max : rated output current

Range of AC operation (with 50Hz or more frequency and 50 % of duty and without any DC bias)



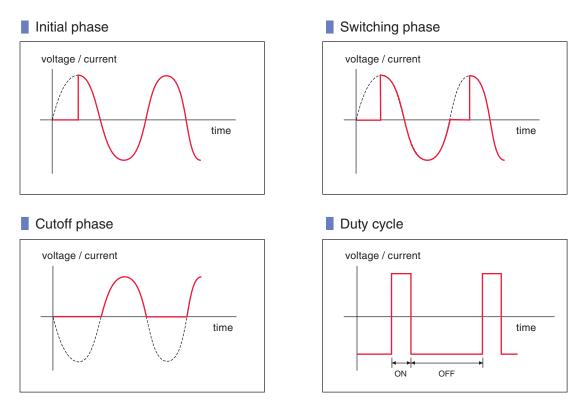
Range of DC operation



Functions

Fundamental wave generated function

DJOPF is equipped with a built in function generator that produces sine, square, and triangle waves. Frequency range can be set between 0.01Hz and 30kHz, and easy adjustments of amplitude, initial phase(sine wave), switching/cutoff phase setting(sine wave),and duty cycle(square wave, triangular wave) are possible, making it very convenient for a variety of evaluation tests and applications.

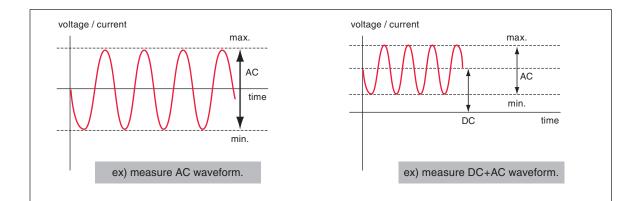


Applications

Rush current source for rush current measurement, wave fluctuation test etc.

Measurement functions

DJOPF is equipped with measurement functions that measure DC value, AC value, maximum value and minimum value thus Wide frequency ranges, DC to 30kHz, can be measured automatically, and it is easy to change the setting depending on application.



Sequence functions

DJOPF is equipped with a sequence function that can program step length, step amplitude, ramp, CV / CC mode, sequence-ending setting, AC superposition, step jump, number of jump, etc. Any desired wave form can be generated making it useful for various experiment, evaluation, and validation applications.

· Setting length : 10ms to 1999s999ms(minimum setting length: 1ms)

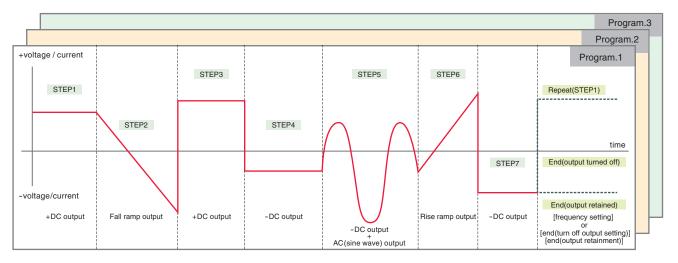
· Up to 16 steps can be set and saved plus 3 programs per program.

 $\cdot \, \text{Can}$ be set CV / CC mode per program

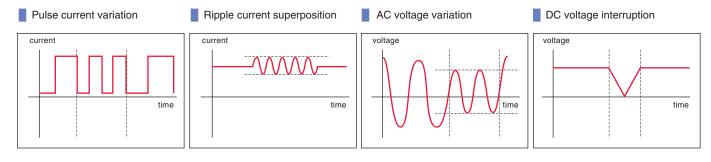
· Frequency : Infinite, 1 to 999

·DC voltage / current lamp operation, AC voltage / current sweep operation and AC frequency sweep operation are available.

Program image



Complicated waveforms such as below can be easily generated just by using the sequence function.



Applications

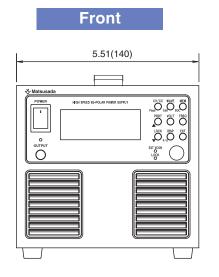
Motor testing, pulse power supplies, or various evaluation equipment, etc

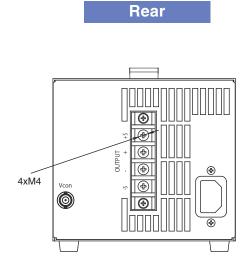
Memory function

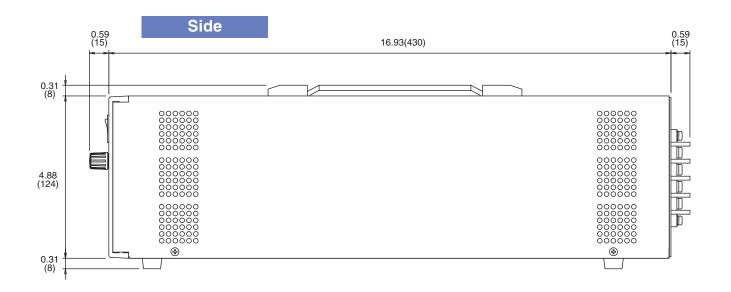
DJOPF is equipped with both preset and set-up memory.

During fundamental wave operation, output voltage (at CV mode), Output current(at CC mode), CV / CC setting, and waveform setting can be saved to 10 set-up memories. Also, sequence programs can be saved in up to 3 programs. Data changes can be saved and data called out very easily.

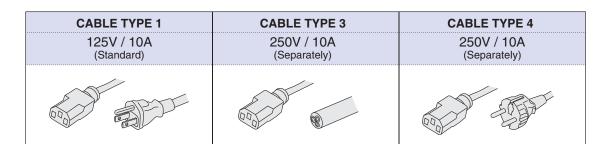
DJOPF is equipped with a [Protection function], and [CV/CC crossover], as standard functions.







AC input cable



Options

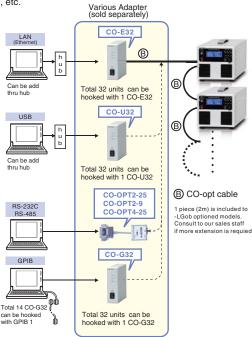
* : These options cannot be selected together. Only one of each can be selected.

-LGob

Optical interface board - For isolated control with optical communication

-LGob	Optical Interface board + Optical cable 2m
-LGob (Fc5)	Optical Interface board + Optical cable 5m
-LGob(Fc10)	Optical Interface board + Optical cable 10m
-LGob (Fc20)	Optical Interface board + Optical cable 20m
-LGob (Fc40)	Optical Interface board + Optical cable 40m

Insulation control is made with optical communication.As perfect insulation is made by optical fiber it is able to forestall miss operation as transient phenomenon caused by surge, dielectric thunder or foreign noise, etc.



When use them under following conditions, select -LGob always.
 Noisy environment as in a factory. (Ex. A motor or a coil is used near to load or power supply)
 Used in high voltage floating. (250V and higher)

•Our power supply and controller (PC or PLC) can not be installed within 2m

Characteristic of amplifier

Rise time

(Stepping time): The response time is sometimes described by the rise time (as shown in the drawing on the right).

The rise time of an amplifier at a response speed of (= frequency bandwidth) Fc (Hz) is generally acquired by "tr \doteq 0.35/fc."

Fall time tf is the same as tr.

- Frequency bandwidth
- : at 30kHz or lower, tr = tf = around 12 μs
- : at 20kHz or lower, tr = tf = around 18 μs

Response speed

When accurate output waveforms are required, select a amplifier with a frequency bandwidth higher enough than the operating frequency. In case of using sine waves, 3 to 5 times more frequency bandwidth is required, and around 10times more in case of square waves in general. Inadequate bandwidth causes not only decrease in the output amplitude but much difference between the input and output phases. Therefore operating the product while monitoring the actual output waveforms is recommended.

Capacitative load

Capacitative load may cause oscillation.

In such cases, placed a power resistance in series with the output. Be careful that the frequency bandwidth is limited depending on the resistance and capacitance placed in series when capacitative load.

-LUs1

USB interface board - Digital control via USB

Output ON/OFF, Voltage / Current setting(AC and DC), Switch of Constant Voltage / Constant Current, Frequency setting, Waveform setting(sine wave, square wave, and triangular wave), phase setting(sine wave), Duty setting(square wave and triangular wave)



Ethernet interface boad - Digital control via Ethernet

Output ON/OFF, Voltage / Current setting(AC and DC), Switch of Constant Voltage / Constant Current, Frequency setting, Waveform setting(sine wave, square wave, and triangular wave), phase setting(sine wave), Duty setting(square wave and triangular wave) (Ethernet is a registered tradmark of Xerox Corporation.)



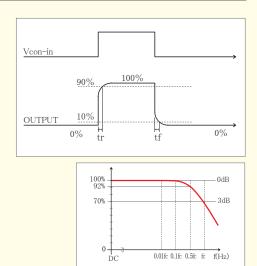
Remote Switch (OUTPUT ON / OFF)



No handle

The handle for carrying will not be equipped.

When ordering, suffix the following option mark to the model number. <e.g> DJOPF60-1-LNhSUs1, DJOPF10-5-LGob(Fc5)NhS



Inductive load

Some inductance of inductive load may cause resonance in CC mode.

In such cases, connect a C-R series circuit between output terminals to prevent resonance.



Customer Inquiry Sheet (DJOPF series)

Please copy this page and above fax number after filling out form below.

I would like

A quotation	An explanation of product	A demonstration	To purchase
Other ()	
	romant / commant		

Give us your requirement / comment

]

Please fill in below.

Address:	
Company:	
Dept.:	Title:
Name:	
Tel:	Fax:
E-mail:	

Manufacturer warranty

We warrant the specification, unless otherwise specified, at max. rated output after warm up, and scope of application is between 10% and 100% of max. rated output. We warrant that products contained in this catalog (hereinafter, the "Products") are free from defects in material and workmanship under normal use for a period of one (1) year from the date of shipment thereof. However, the warranty period for X-ray detectors and X-ray source shall be either one (1) year from the date of shipment or 1,000 hours, whichever shorter. The above warranty shall not apply to any Product which, at our sole judgment, has been: i) Repaired or altered by persons unauthorized by us; or ii) Connected, installed, adjusted or used otherwise than in accordance with the instructions furnished by us (including being used in an inappropriate installation environment, such as in corrosive gas, high temperature and humidity). We are not liable for any loss, damage or failure of the Products flat the shipment thereof caused by external factors such as disasters. We will not inspect, adjust or repair any of our power supply products in the field or at any customer supply products. If it is found that the problem is arising out of such power supply product after inspection, please contact your local sales office for additional troubleshooting. A "Return Merchandise Authorization" is required in case the power supply must be sent back to the factory in Japan for inspection and repair. We, at our sole discretion repair or replace such defective products at no cost to the purchaser. We assume no liability to the purchaser oany third party for special, incidental, consequential, or other damages resulting from a breach of the foregoing warranty. This warranty excludes any and all other warranties not set forth herein, express or implied, including without limitation the implied warranties of merchantability or fitness for a particular purpose. The Products for such applications as requiring extremely high reliability and safety, or involvin

Make sure you read the specification in the latest catalog before you order. Contact nearby sales office for the latest catalog PLEASE SEE THE LINK BELOW FOR THE COMPLETE WARRANTY TERMS http://www.matsusada.com/site/warranty.html

💛 Matsusada Precision Inc.

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