

Bipolar DC Power Supply

BP Series

Wide Range
Voltage Output

±60V

×

Large Current
Output

±100A
max.

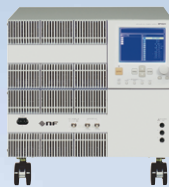
Constant
Current / Constant
Voltage

CC

CV



BP4610 **±10A**



BP4620 **±20A**



BP4650 **±50A**



BP46100 **±100A**

**LINE
UP**

BP4610 (±10A) / BP4620 (±20A) / BP4630 (±30A) / BP4640 (±40A) / BP4650 (±50A)
BP4660 (±60A) / BP4670 (±70A) / BP4680 (±80A) / BP4690 (±90A) / BP46100 (±100A)

Wide Output Range, Variety of Application

For Various Automotive Components, Motor, Solenoid, Capacitor and Others

BP series is a high voltage, large current, high speed bipolar power supply with built-in sequence function. In addition to a bipolar output that allows plus, minus, source, and sink, it has a sequence function that can freely program the output pattern.

LINEUP



The appearance and dimension of BP4670 / BP4680 / BP4690 are the same as BP4660 / BP46100.

	BP4610	BP4620	BP4630	BP4640	BP4650	BP4660	BP4670	BP4680	BP4690	BP46100	
Voltage	± 60 V, 120 Vp-p By the limiter setting, the output range can be shifted to - 5 V to + 115 V and - 115 V to + 5 V (Output current range changes)										
Current	DC	±10A	±20A	±30A	±40A	±50A	±60A	±70A	±80A	±90A	±100A
	AC	±15A	±30A	±45A	±60A	±75A	±90A	±105A	±120A	±135A	±150A
Low amplitude frequency response	DC to 200 kHz (CV, adjusted, amplitude 12 Vp-p), DC to 70 kHz (CC, adjusted, amplitude 12 Vp-p)					DC to 170 kHz (CV, adjusted, amplitude 12 Vp-p), DC to 70 kHz (CC, adjusted, amplitude 12 Vp-p)					

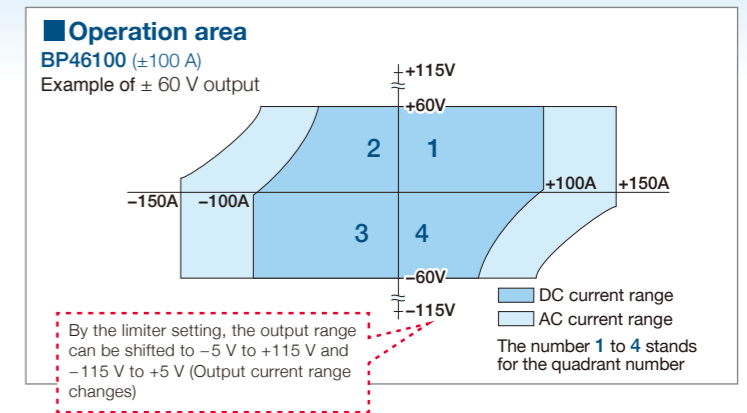
Features

- Voltage/Current 4 Quadrants Operation
- Wide range voltage output ± 60 V (possible to shift the range) 10 Models, ±10 A to ±100 A
- High speed, DC to 150 kHz (CV, Adjusted)
- Constant voltage(CV) / Constant current(CC) operation selectable
- Up to 255 Steps sequence function
- Response calibration function
- Voltage Limiter / Current Limiter
- Measurement function (Output voltage / Output current)
- Analog input as power amplifier

Wide Range Output Area Voltage / Current 4 Quadrants Operation

BP series can output in four quadrants and is capable of handling two directions of current, which are source (supply) and sink (absorption) current.

From devices that generate back electromotive force such as solenoids, capacitive load such as electrolytic capacitor, and even to piezoelectric material charged with electromotive force and power sources and batteries such as fuel cells, you can drive the devices and systems that cannot be driven with generic DC power supply.



High Voltage / Large Current / Wide Range, Constant Current Operation

Output voltage is ± 60 V covering the range required in testing vehicle electrical components. Also BP series have large current necessary for large parts, high speed required in driving actuators, and constant current operation effective in driving low impedance solenoids.

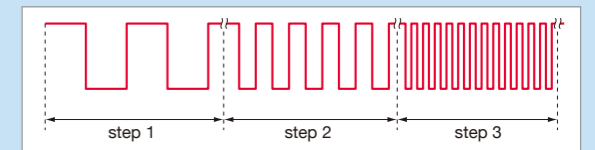
With such enriched specification satisfying all such requirements, BP series responds to the needs in development and test of devices. With the lineup from ± 10 A to ± 100 A, BP will respond a variety of application

Sequence Function

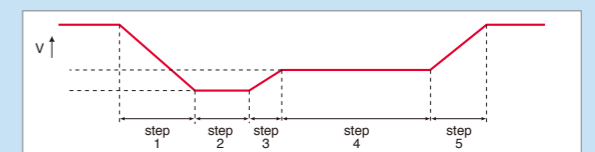
BP series has a built-in sequential signal source. For example, by programming a series of voltage change pattern used in voltage fluctuation test on electrical and electronic components, the test can be done in a single operation since the output changes in order according to the procedure.

- Number of sequences : 1 sequence for each of the CV mode and CC mode
- Number of steps : 1 to 255 (within 1 sequence)
- Step time : 0.1 ms to 999.9999s (resolution 0.1 ms)
- Parameters : DC voltage, superimposed AC voltage, frequency and waveforms
- Jump count : 1 to 999, or continuous
- Sequence control : Start, Stops, Hold, Branch

Various output patterns using sequence functions



Ex.1 Relay Operation Test (Withstand Power Supply Fluctuation Test)



Ex.2 Vehicle Electrical and Electronic Components Test (ISO / DIS7637-2.2 Pulse 4) (Simulation of Transient Voltage Drops at Startup)

The bundled software allows user to edit the complicated pattern easily

Control Software

The software is bundled that allow user to set the basic parameters, to collect the data, to edit the sequence / the arbitrary waveform and to control the sequence. This will support the data analysis and automate of production line.



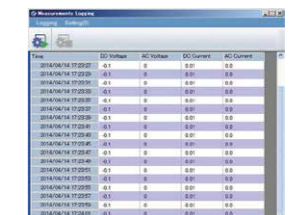
▲ Remote control



▲ Sequence edit



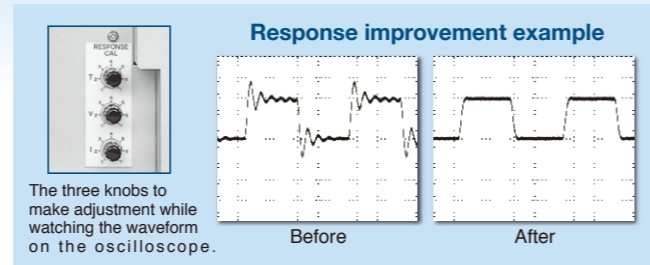
▲ Arbitrary waveform edit



▲ Data logging

Response Calibration Function

Transient response for load with complicated impedance characteristic such as electromagnetic components with inductance (coil component) or capacitance (capacitor component) differs among loads. BP series has a response calibration function that allows users to individually optimize transient response characteristic in square wave output or sudden output change.



Voltage Limiter / Current Limiter

BP have the capability to set each of the maximum voltage and current with + and - independently. When shifting the output voltage range, voltage limiter is used.

Other Functions

- Voltage / Current output monitor
- Measurement function
To measure and display the output voltage / current (DC value and p-p value)
- Output on / off function
- External signal input for signal source
- External control I/O (output on/off, sequence control and others)
- USB interface
- Store / Recall memories (30 sets)
- Power input: Three-phase, 3-wire or three-phase, 4-wire (specify on order, BP4640 to BP46100)

Topics

Evaluation of three-phase motor inverter

The introduction of a simulation system for a three-phase motor inverter using a bipolar power supply.

- With CC and CV operation, 1 set of BP series allows to test both of inverters and motors.
- Four quadrants operation enables supply and absorption of power, corresponding to motor power running and regeneration
- Fast response
- Configure 3 phases with 3 units

For motor simulation [Constant current operation]

A high-speed motor simulation system that combines a motor HILS and bipolar power supplies instead of the actual motor for various evaluations of motor drive inverters.

- Point**
- Constant current operation to simulate motor power consumption
 - It is possible to simulate the power running and regeneration of the motor

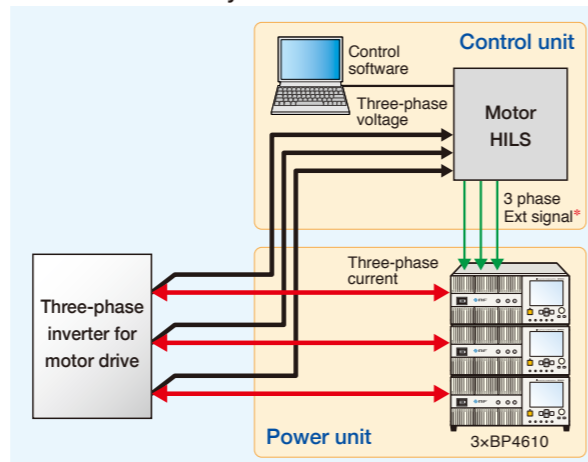
For inverter simulation [Constant voltage operation]

The combination of a three-phase signal source and bipolar power supplies simulates the operation of the inverter. Supports complex evaluation tests of three-phase motors.

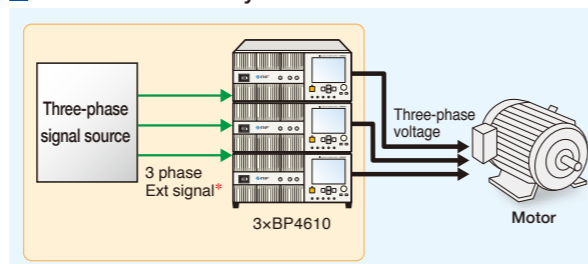
- Point**
- Constant voltage operation to simulate the output of an inverter
 - Corresponds to motor regenerative power
 - Complex tests such as rated operation, unbalanced three-phase operation and efficiency evaluation are possible

*The internal signal source cannot be used in the above simulation system.

Motor simulation system



Inverter simulation system



◆ **Note:** The common potential of the three-phase external signal must be isolated from the ground potential and each phase must be isolated from each other. Consult us before building a three-phase system.

APPLICATION

For power supply voltage fluctuation test on 12V/24V/48V vehicle electrical and electronic components

With BP series, you can perform power supply voltage fluctuation test on various vehicle electrical and electronic components. You can program a certain pattern in advance using the sequence function.

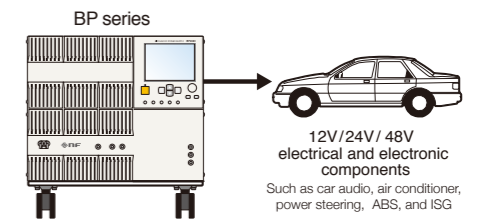
BP series handles the test on not only 12 V/24 V components but 48 V components.

Automotive Components

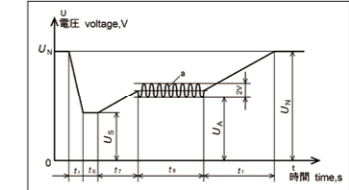
- Steering motor
- ECU power supply circuit
- Automotive electronics
- Electric pump (Water pump / Oil pump)
- Comprehensive test in-vehicle

Automotive Devices

- Power inductor
- Solenoid
- Connector
- High-power relay



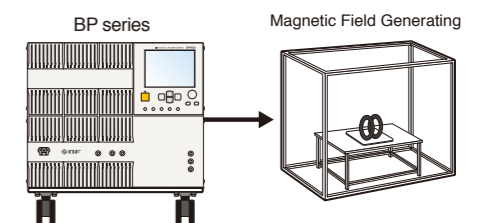
Output Example



ISO 16750-2 Supply Voltage profile

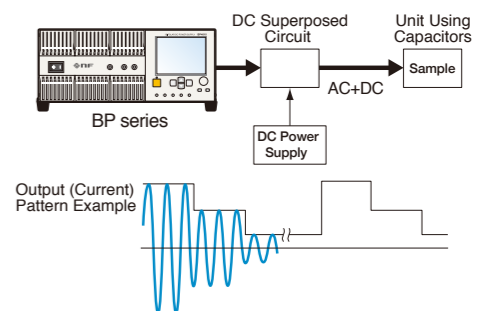
As a constant current power supply for generating magnetic field

In electromagnetic field test, constant current needs to be supplied to the coil for stable generation of constant magnetic field. BP series can output constant current (CC) to keep the current running through the coil constant and generate stable magnetic field.



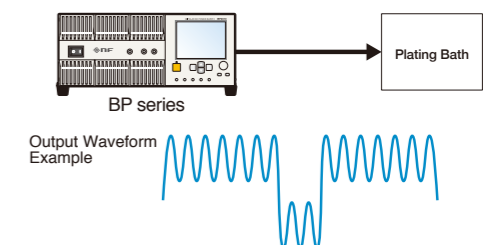
As a constant current power supply for capacitor ripple test

Using this power supply, you can perform ripple test on the units using capacitor(s) such as inverters. The constant current (CC) of BP series allows you to perform test with stable operation. You can also program output patterns using the sequence function



As a constant current power supply for plating

The power supply can be used as a constant current power supply for plating various electronic materials. Using the constant current (CC) output of BP series, you can always supply constant and stable current.



And other

Wireless Charging

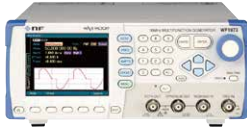
- Power supply for charging
- Evaluation of charging coil

Driving of magnetic material

- Magnetic flux measurement
- B-H curve measurement

Related Products

MULTIFUNCTION GENERATOR WF1973 / WF1974



Effortless waveform generator via an intuitive graphical user interface

- Frequency range : 0.01 μ Hz to 30 MHz
- Sine, Square (duty variable), Pulse, Ramp wave, Noise, DC, Arbitrary waveforms
- Auto burst, trigger burst, gate, triggered gate
- Internal and external modulation, sweep
- Sequence function
- 2-channel operation (WF1974)

FREQUENCY RESPONSE ANALYZER FRA51615



From power electronics such as inverters and wireless charging to servo control, evaluation of electronic components and batteries

- Frequency range : 10 μ Hz to 15 MHz
- Measurement speed : 0.5 ms/point
- Basic accuracy : Gain : ± 0.01 dB, Phase : $\pm 0.06^\circ$
- Isolation : 600 V CATII / 300 V CATIII
- Maximum measurement voltage : 600 Vrms
- Sequence measurement function, Marker search, Load correction, Port extension.

GAIN-PHASE ANALYZER FRA51602



Loop-gain measurement for inverters and switching power supply

- Frequency range : 10 μ Hz to 2 MHz
- Measurement speed : 0.5 ms/point
- Basic accuracy : Gain : ± 0.01 dB, Phase: $\pm 0.06^\circ$
- Maximum input voltage / Isolation : 600 V CAT II / 300 V CAT III
- Maximum measurement voltage : 600 Vrms
- Dynamic range : 140 dB
- Sequence measurement function, Auto ranging, Amplitude compression function, Equalization.

Note: The contents of this catalog are current as of April 1st, 2020.
Product appearance and specifications are subject to change without notice.
Before purchase, contact us to confirm the latest specifications, price and delivery date.

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