

For evaluation testing of electric vehicle and motorcycle inverters!

In recent years, different means of transport, including electric vehicles, have become increasingly electrified, with batteries, motors, and inverters playing an important role in this process.

The inverters transfer energy by converting DC power from the battery into AC power to drive the motor. When decelerating, they convert the back EMF from the motor into DC power to charge the battery.

As efficient energy conversion can extend electric vehicle driving range and shorten charging time, the development and evaluation of inverters are essential to improve energy-saving performance.

The PXB series is ideal as a power supply for inverter characterization tests.



NEW

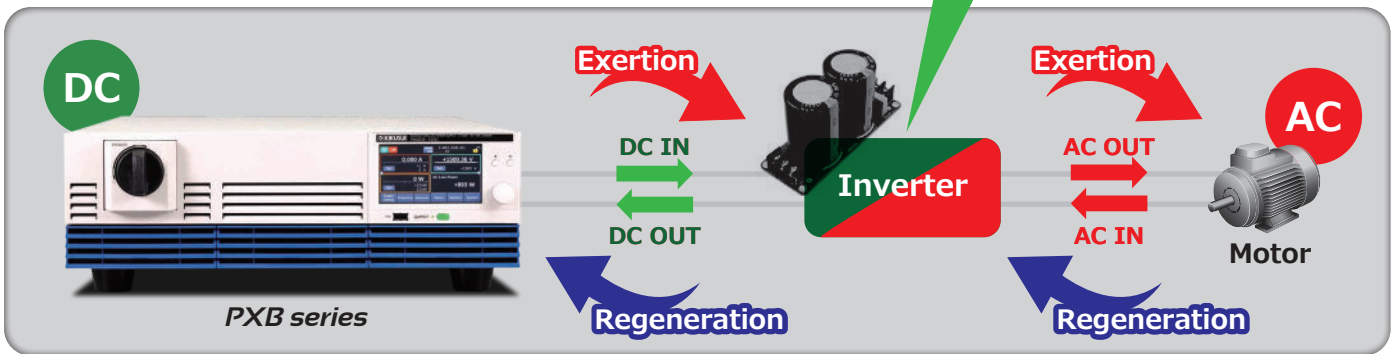
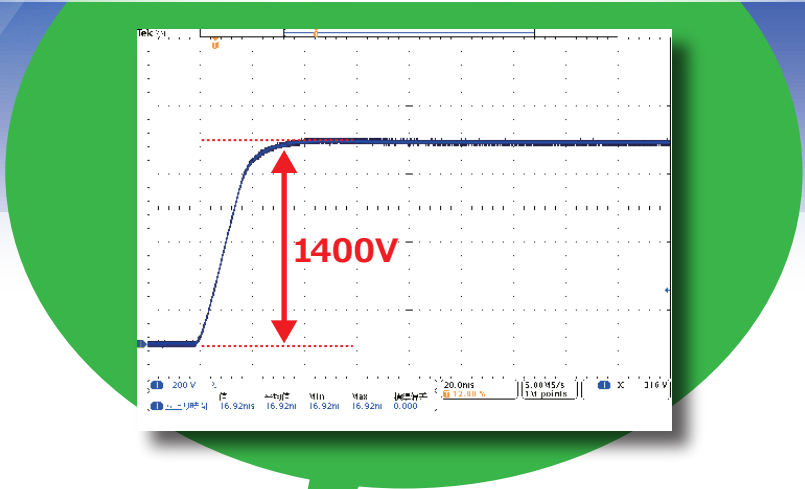
Bidirectional DC Power Supplies | PXB series

Key features! 1

Usually, to smooth the voltage, from a few hundred μF to several thousand μF capacitor is connected to the input stage of the inverter.

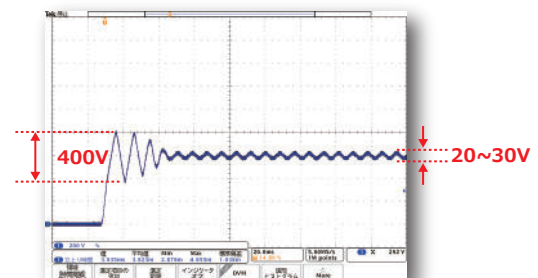
The PXB series was developed specifically for cases where such capacitive loads (e.g., capacitors) are connected. Thus, it provides stable output waveforms even when connected to a several hundred μF capacitive load. Inconsistent power supply waveforms can affect test results and reduce reproducibility. Therefore, the quality of the output waveform is essential. The PXB series provides ideal output waveforms for evaluation and ensures a high-quality power supply.

Output waveform when a capacitive load ($400 \mu\text{F}$) is connected to the PXB20K-1500.



Points to note.

The stability of capacitive load output cannot be determined from catalog specifications. If a power supply susceptible to capacitive loads is used, problems such as overshooting and ringing can occur. The quality of power supply output waveforms is essential for the accurate evaluation of the EUT and plays a significant role in the reproducibility of the test.



Output waveform when a $400 \mu\text{F}$ capacitor is connected to a power supply susceptible to capacitive loads.

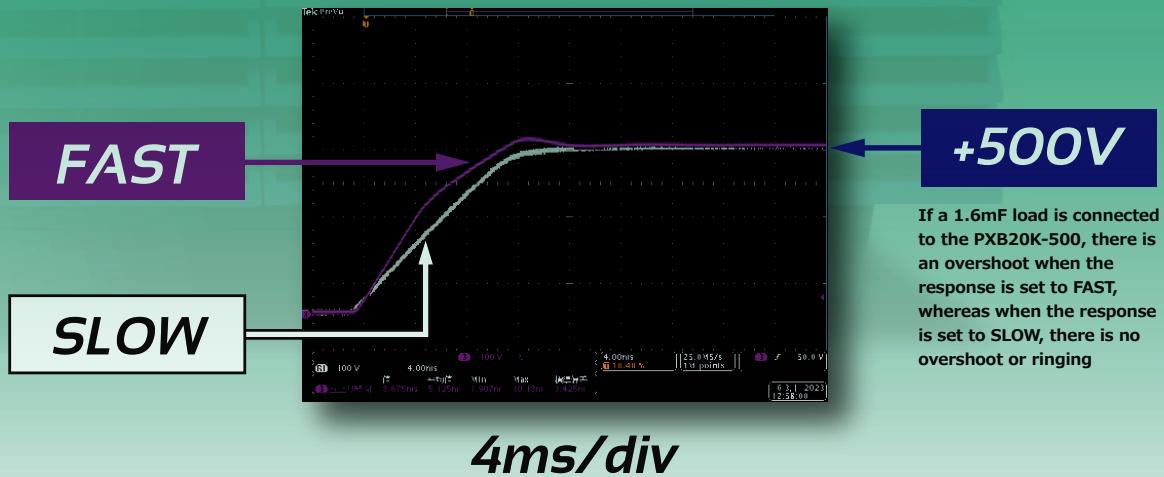
Key features!

2



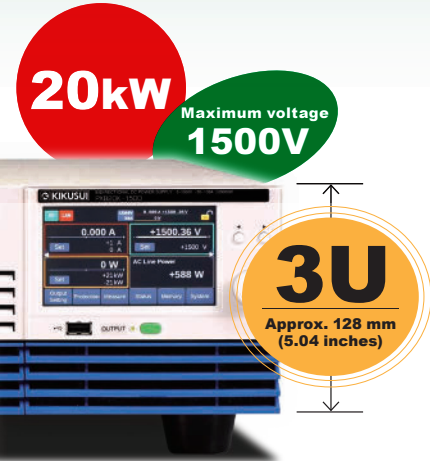
Furthermore, the PXB series offers a choice of 'SLOW' or 'FAST' response in CV and CC modes. This variable response function can be used to suppress overshooting or ringing by slowing down the response.

Output voltage waveform when a 1.6 mF capacitor is connected to the PXB20K-500



The PXB series, capable of stable operation with capacitive loads, is ideal for automotive inverters evaluation testing

- High power density: 20 kW in 3U size
- A single unit handles both power and regeneration
- Rated output voltage 50V/ 500V/ 1000V/ 1500V
- Select a model with an input voltage from 200 VAC (3-phase) or 400 VAC (3-phase)
- Continuous operation at rated power at ambient temperature of 50°C (122 °F, Excluding some models)
- Up to 10 units (200 kW) can be operated in parallel
- Equipped with touch panel display
- LAN, USB, RS232C, external analog control (isolated type) standard
- Regenerative function (on-site)
- External control I/O is standard for both NPN and PNP type PLCs



Lineup / Main Specifications

Model	Output			Ripple noise	Power fluctuation		Load variation	
	CV	CC *	Rated power	CV (rms)	CV	CC	CV	CC
PXB20K-50	0 V to 50 V	-800 A to +800 A	20 kW	30 mV	±10 mV	±1600 mA	±40 mV	±1600 mA
PXB20K-500	0 V to 500 V	-120 A to +120 A		250 mV	±100 mV	±240 mA	±250 mV	±240 mA
PXB20K-1000	0 V to 1000 V	-60 A to +60 A		500 mV	±200 mV	±120 mA	±500 mV	±120 mA
PXB20K-1500	0 V to 1500 V	-30 A to +30 A		750 mV	±300 mV	±60 mA	±750 mV	±60 mA

Model	Rise time / Fall time				Input current	Weight
	CV		CC			
	Rise time	Fall time	Rise time (Short-circuit) (TYP)	Fall time (Short-circuit) (TYP)	AC 200 V (3-phase 3-wire) / 400 V (3-phase 3-wire) * Select type at purchase. Switching not possible.	Approx.
PXB20K-50	10 ms		5 ms		80 A / 40 A	41 kg (90.39 lbs)
PXB20K-500						38 kg (83.78 lbs)
PXB20K-1000						37 kg (81.57 lbs)
PXB20K-1500						37 kg (81.57 lbs)

*The minimum voltage at which maximum sinking is possible is 2 % of the rated voltage.