



Engineered for power and speed

EA-PSB 20000 Triple: High-Performance testing with three channels for a wide application range

EA-PSB 20000 Triple

Triple output for growing demands

The electrification of the world is rapidly advancing, with industry and the public sector transitioning from fossil fuels to electrical energy, ideally sourced from renewables. Various requirements come together here: more power, more throughput, more flexibility. As a new generation 3-channel bidirectional power supply the EA-PSB 20000 Triple allows synchronized testing to meet these requirements. It comes as a 3U and 4U version with a voltage range of up to 3 x 920 V and current up to 3 x 340 A. The product can operate independently or as part of a complete test system, including the rack in which it is housed.

The development of the EA-PSB 20000 Triple is not just a response to the market trends, but a necessary evolution to keep pace with the rapidly advancing fields of electrification and testing.

A future-proof and flexible solution

For demanding industries across all sectors

The EA-PSB 20000 Triple was designed to achieve what other devices have previously failed to do. It is therefore the only solution for running a wide range of tests in an efficient, cost-saving and reliable way at high speed – and all in just one device.

Two examples illustrate the immense potential of the EA-PSB 20000 Triple.



PV inverters

Conventional solutions reach their limits with PV inverters, as two panel inputs and a third for the battery output have to be tested. With its three channels, the EA-PSB 20000 Triple fulfills this requirement. The built-in software can also recognize the MPP (Maximum power point) tracking to determine the efficiency of the PV inverter.



Automotive Testing

Electrification of vehicles introduces new electrical components, making design and testing critical. With higher voltages and advanced energy systems, testing demands now cover all electrical subsystems. EA Elektro-Automatik's triple-channel bidirectional DC power supplies offer flexible, efficient solutions for testing modern EV components.



Key features

- With three independent channels, customers can conduct parallel testing on different components or subsystems, such as motors, inverters, and on-board chargers, within the same test setup. This reduces the time needed to validate each component individually.
- The occupation of rack space is reduced by more than 50% when using triple devices instead of single output devices.
- By enabling more efficient testing and reducing the time required for validation and integration, a triplechannel power supply helps customers accelerate their development process. This is particularly important in fast-moving industries like automotive and renewable energy, where being first to market can be a significant competitive advantage
- Operational expenses are significantly lower due to high energy recovery (up to greater than 96%) when used in bidirectional mode. Both operational and HVAC energy cost savings are realized.
- Worldwide Input Voltage: 208 V - 480 V, +/- 10%, 3ph AC
- Active Power Factor Correction, typical 0.99
- Very high efficiency of over 96% in regenerative with energy recovery back to the grid
- Voltages from 0 - 60 V up to 0 - 920 V
- High performance with up to 10 kW per channel
- Currents from 0 - 20 A up to 0 - 340 A per channel
- 3 Independent, fully isolated and bidirectional DC output/ input stages, with autoranging
- Galvanically isolated Share-Bus for parallel operation
- 3 Built-in high speed control interfaces with 1 ms communication speed

Built-in interfaces

- USB
- Ethernet (1 Gbit/s)
- EtherCAT
- CAN FD
- Master-Aux-Bus
- Share-Bus
- USB Host on front panel
- Digital In/Out

Technical data

EA-PSB 20000 Triple 4U

Model	Voltage	Current per channel	Power per channel	Total Power
PSB 20060-340 Triple	0 - 60 V	0 - 340 A	0 - 10000 W	0 - 30000 W
PSB 20080-340 Triple	0 - 80 V	0 - 340 A	0 - 10000 W	0 - 30000 W
PSB 20200-140 Triple	0 - 200 V	0 - 140 A	0 - 10000 W	0 - 30000 W
PSB 20360-80 Triple	0 - 360 V	0 - 80 A	0 - 10000 W	0 - 30000 W
PSB 20500-60 Triple	0 - 500 V	0 - 60 A	0 - 10000 W	0 - 30000 W
PSB 20920-40 Triple	0 - 920 V	0 - 40 A	0 - 10000 W	0 - 30000 W

* Optional available with water cooling

EA-PSB 20000 Triple 3U

Model	Voltage	Current per channel	Power per channel	Total Power
PSB 20060-170 Triple	0 - 60 V	0 - 170 A	0 - 5000 W	0 - 15000 W
PSB 20080-170 Triple	0 - 80 V	0 - 170 A	0 - 5000 W	0 - 15000 W
PSB 20200-70 Triple	0 - 200 V	0 - 70 A	0 - 5000 W	0 - 15000 W
PSB 20360-40 Triple	0 - 360 V	0 - 40 A	0 - 5000 W	0 - 15000 W
PSB 20500-30 Triple	0 - 500 V	0 - 30 A	0 - 5000 W	0 - 15000 W
PSB 20920-20 Triple	0 - 920 V	0 - 20 A	0 - 5000 W	0 - 15000 W

* Optional available as 208 V variant



EA-PSB 20000 Triple Series

3-Channel Programmable Bidirectional DC Power Supply



3U

3 x 5 kW

60 – 920 V / 20 – 170 A

Wide range input



3U – 208 V

3 x 5 kW

60 – 920 V / 20 – 170 A

US 208 V variant



4U (optional water cooling)

3 x 10 kW

60 – 920 V / 40 – 340 A

Wide range input

Many advantages

In a single solution

1

Higher **test capacity**

A 3-Channel PSB supports the electrification efforts, by enabling versatile power testing, across multiple devices at a time.

2

Higher **cost efficiency**

Cost-effective solution with three independent channels per device, lowering operational expenses per channel.

3

Higher **test density**

Compact design with high power density maximizes lab space and resource utilization.

4

Higher **test coverage**

Versatile functionality supports multiple testing scenarios, increasing flexibility and productivity in your lab.

5

Future **viability**

Built to handle the growing demands of electrification, ensuring long-term solution.

6

Solution **ready**

Ideal for PV and EV testing, supporting the shift to cleaner, sustainable energy solutions.

Leading-edge power electronics made by EA

Wide application spectrum. Technological excellence.
Global customer reach.

The EA Elektro-Automatik Group is Europe's leading supplier in the area of power electronics for R & D and industrial applications. At the headquarters in Germany in the industrial center of North Rhine-Westphalia, 450 qualified associates, in a facility of 19000 m², research, develop and manufacture high-tech devices such as programmable power supplies, high-power supplies and electronic loads with mains feedback.

Development partner in forward looking sectors

With high performance criteria and a broad application spectrum, EA has established itself as the development partner in forward looking industries. Thus, EA equipment is being used in battery and fuel cell technology. It is used in wind and solar energy, electrochemicals, process technology, telecommunications, automobile industry and many more future orientated sectors.

Automated quality assurance

Results and experience from decades of R&D flow continually into new solutions. Automatic test systems with specially developed soft- and hardware assure consistently high product quality. Flexible production processes support fast reaction to changing customer requirements.

Global customer reach, value sharing

As a globally active company, EA maintains close contact with national and international customers and partners. The sales network includes branches in China, USA and Singapore, a sales office in Spain and an extensive service and partner network. EA continues to expand and, as a mid-size employer, takes full responsibility for development and production in Germany. Value based joint working is characterised by mutual respect and open communication.

Technological excellence is driving innovation of tomorrow

The foundation of the company in 1974 was based on innovation, a tradition which is maintained today. What started with the development of simple mains adaptors is continued today in the overall concept of technology leadership. With highly specialised power supply systems for a multitude of applications, EA is driving the future of power electronics – technologically excellent for high performance and designed for resource protection and energy saving.

