



Elektro-Automatik



TRIPLE POWER

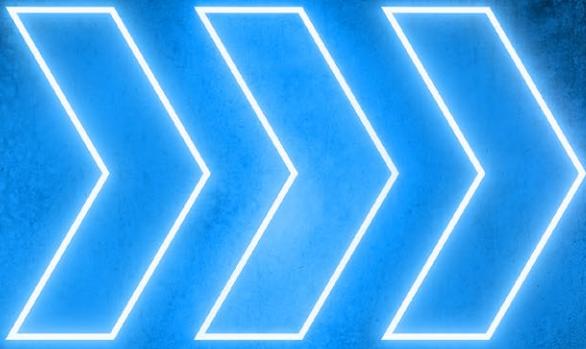
EA-BT 20000 Series

Available with single or triple outputs

High current and high voltage

High precision for measuring voltage and current

High speed with maximized throughput



EA-BT 20000 SERIES

Most powerful battery tester

With the new EA-BT 20000 Battery Testers, EA Elektro-Automatik (EA) presents the only device series with three channels and the highest output voltage or current for a wider range of cell, module and pack tests.

High current

The new series of battery testers can test up to three battery cells, modules or packs with an output of 4 kW/channel, 6 kW/channel or 10 kW/channel at the same time. Battery packs with 12 kW, 18 kW and 30 kW can be tested when connected in parallel.

High precision

With their high precision, the EA-BT 20000 battery testers are ideal for use in basic research and Industry, including automotive and aerospace, and renewable energy systems for the consumer market. Voltage and current are measured with high accuracy. In addition, the devices have a high level of control accuracy.

High speed

The EA-BT 20000 Battery Tester processes and reads commands with a transmission speed of 1 ms. Used together with the latest interface versions EtherCAT, CAN FD and Gbit Ethernet further optimize the devices throughput.

THE TRIPLE HIGH PERFORMANCE APPLICATION

Testing and simulating batteries

The scope covers the entire life cycle of a battery. As a complete solution the EA-BT 20000 models are suitable for testing, simulating and recycling processes for current and future battery technologies and battery capacities. The battery testers can be used flexibly – from material research to battery development and production to incoming inspection and second-life recycling.

Capacity up to 1.92 MW for large systems

The EA-BT 20000 series has sufficient capacity also for large battery systems: up to 64 battery testers of 30 kW output can be paralleled for a total of 1.92 MW. In a different configuration, tests of high-voltage batteries with voltages of up to 2000 V are also possible.

Highlight: EA-BT 20000 Triple

The highlight of the EA-BT 20000 series are the 4U TRIPLE models with triple output: This Battery Tester has three channels to test three batteries at the same time. This is highly efficient, reduces test and investment costs and maximizes throughput.



EA-BT 20000 DEVICES

28 models: 3U, 4U, Triple 4U

The EA-BT 20000 series consists of 28 powerful models with a particularly wide range of voltage and current. In contrast to conventional battery test devices, all users with the triple version have three channels with 600 A or one single channel with 1800 A available.

EA-BT 20000 3U

Model	Voltage	Current	Power
BT 20010-600	0 – 10 V	0 – 600 A	0 – 6000 W
BT 20060-500	0 – 60 V	0 – 500 A	0 – 15000 W
BT 20080-500	0 – 80 V	0 – 500 A	0 – 15000 W
BT 20200-210	0 – 200 V	0 – 210 A	0 – 15000 W
BT 20360-120	0 – 360 V	0 – 120 A	0 – 15000 W
BT 20500-90	0 – 500 V	0 – 90 A	0 – 15000 W
BT 20920-60	0 – 920 V	0 – 60 A	0 – 15000 W
BT 21000-40	0 – 1000 V	0 – 40 A	0 – 15000 W
BT 21500-30	0 – 1500 V	0 – 30 A	0 – 15000 W
BT 22000-20	0 – 2000 V	0 – 20 A	0 – 15000 W

EA-BT 20000 4U

Model	Voltage	Current	Power
BT 20010-1000	0 – 10 V	1000 A	10000 W
BT 20060-1000	0 – 60 V	1000 A	30000 W
BT 20080-1000	0 – 80 V	1000 A	30000 W
BT 20200-420	0 – 200 V	420 A	30000 W
BT 20360-240	0 – 360 V	240 A	30000 W
BT 20500-180	0 – 500 V	180 A	30000 W
BT 20920-120	0 – 920 V	120 A	30000 W
BT 21000-80	0 – 1000 V	80 A	30000 W
BT 21500-60	0 – 1500 V	60 A	30000 W
BT 22000-40	0 – 2000 V	40 A	30000 W

EA-BT 20000 TRIPLE 4U

Model	Voltage	Current	Power
BT 20010-400 Triple	0 – 10 V	400 A per channel	4000 W per channel
BT 20010-600 Triple	0 – 10 V	600 A per channel	6000 W per channel
BT 20060-340 Triple	0 – 60 V	340 A per channel	10000 W per channel
BT 20080-340 Triple	0 – 80 V	340 A per channel	10000 W per channel
BT 20200-140 Triple	0 – 200 V	140 A per channel	10000 W per channel
BT 20360-80 Triple	0 – 360 V	80 A per channel	10000 W per channel
BT 20500-60 Triple	0 – 500 V	60 A per channel	10000 W per channel
BT 20920-40 Triple	0 – 920 V	40 A per channel	10000 W per channel



THE ADDED VALUES



Regenerative: Save energy costs

- Energy recovery with an efficiency of up to over 96%
- Minimal waste heat, no cost-intensive air conditioning required
- Rapid amortization of the EA-BT 20000 models



Autoranging: Flexible output levels

- Wide range of voltage, current and power
- For an extended range of applications compared to conventional devices



Interface & control flexibility: For automated tests

- Software EA-Power Control and EA-Battery Simulator
- For configuration and test procedures without programming language
- Via connection to the PC or the programmable logic controller (PLC)
- Two modes of operation: SCPI commands for program control from PC or ModBus Commands for program control from the PLC
- Flexible communication interfaces: Gbit Ethernet, ProfiNet, CAN-FD or EtherCAT™
- 1 ms communication speed



Safety Sense: Test with confidence

- 2nd Sense input for
 - incorrect battery polarity detection
 - or for detection of accidentally interchanged cell trays
- Automatic pre-charge to
 - avoid sparks and inrush currents
 - extend lifetime of the contactors
- Dynamic Sense Regulation for
 - detecting cable overload
 - detecting creeping wiring faults





3U



4U



4U TRIPLE

THE FEATURES AT A GLANCE:

- Wide range of supply voltages: 208 V - 480 V, +10%, 3ph AC
- Active power factor correction, typical 0.99
- Battery tester, 2-quadrant for charging and discharging
- In discharge mode regenerative with energy recovery back to the grid
- Very high efficiency of up to over 96%
- Voltage from 0 – 10 V to 0 – 2000 V
- Voltage from 0 – 10 V to 0 – 920 V (Triple)
- Current up to 1000 A
- Current up to 600 A per channel or 1800 A connected in parallel (Triple)
- Power up to 30 kW
- Full output power over a wide range of current and voltage (autoranging)
- Control modes CV, CC, CP, CR with fast transition
Digital control, high resolution with 18bit ADCs and DACs, control speed selection: Normal, Fast, Slow
- Galvanically isolated share bus for parallel operation
- Master auxiliary bus for parallel operation
- Built-in interfaces with 1 ms communication speed
- Typical battery tester functionality integrated
- Battery test mode and battery simulation via EA Power Control Software
- Command languages and drivers: SCPI and ModBus, LabVIEW, IVI

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 centre of North Rhine-Westphalia, more than 350 qualified associates, research, develop and manufacture high-tech equipment for programmable power supplies, high power mains adaptors and electronic loads with or without power 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 sectors. Our devices are used across industries – from battery and fuel cell technology, wind and solar energy, to electrochemicals processes, telecommunications and more.

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 mid-size company EA is totally responsible for the production location in Germany but acts globally with branches in China and USA, a sales office in Spain and a wide network of partners. Value sharing, mutual respect and open communication characterise our organization.

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, designed for resource protection and energy saving and conceived for a multitude of applications.

