



Elektro-Automatik



The EA Modular Power System

Flexible configurable. Minimal footprint.
The best choice for DC high power applications.



MODULAR POWER SYSTEM

EA Power Systems

A lot of power. Lots of flexibility. Many advantages.

Device Types and Series

- **Rack Systems with 15 Height Units (15U)**
Power range up to 60 kW
- **Rack Systems with 24 Height Units (24U)**
Power range up to 150 kW
- **Rack Systems with 38 Height Units (38U)**
Power range up to 240 kW
- **Rack Systems with 42 Height Units (42U)**
Power range up to 300 kW



Features

- Application for battery, photovoltaics, electrolysis, fuel cell and many more
- Bidirectional power supplies (PSB, PSBE, PUB), Programmable power supplies (PSI, PS, PU), and regenerative loads (ELR, PUL)
- Intuitive operation through the multilingual color TFT touch panel
- Function generator
- Extensive protective functions (OVP, OCP, OT, ...)
- Flexible slot for digital interfaces
- All interfaces galvanically isolated
- Control software EA-Power Control
- Simulation software EA Battery Simulator
- LabVIEW VI User Library
- IVI driver package
- DBC-Files
- SCPI and ModBus protocol



Modules & Power

- Modular power systems with 42U, 38U, 24U and 15U
- Integrable devices in height units 3U, 4U and 6U
 - 300 kW in only one 42U rack with 5 units á 60 kW/6U
 - 3.84 MW in only 13 racks with up to 64 devices



Efficiency & Applications

- Minimal footprint, rack depth only 1000 mm/ 19" cabinets
- Supplied as turnkey EA power systems
- The best choice for DC high power applications



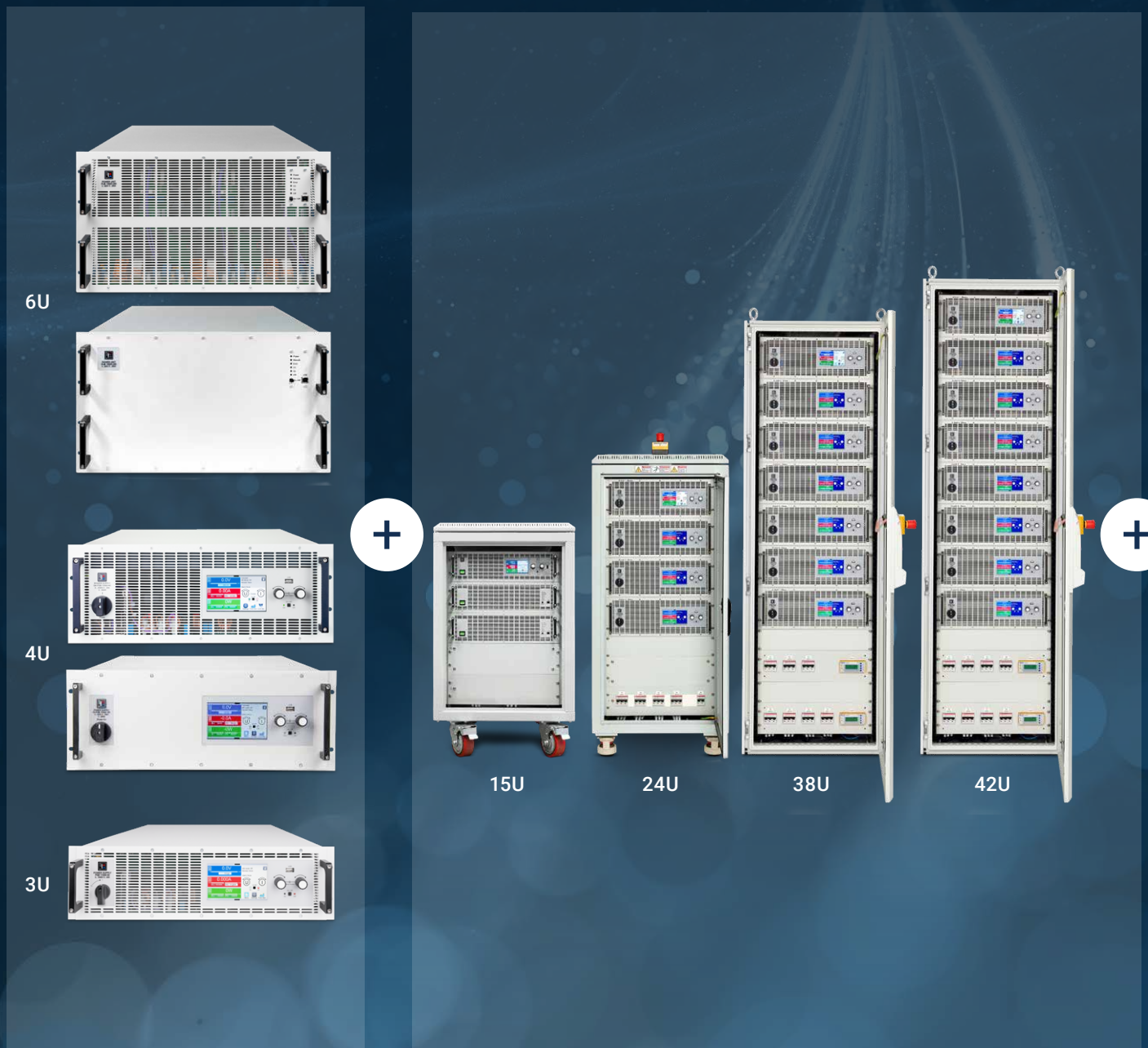
Devices & Series

- Integrable device types:
 - Bidirectional power supplies
 - Programmable power supplies
 - Regenerative electronic loads
- Integrable series (air and water cooled):
 - EA-10000
 - EA-10000 Industrial
 - EA-BT 20000

Maximum modularity

Configure your suitable EA power system

Configure 3U, 4U and 6U devices into 42U, 38U, 24U and 15U racks. Combine EA-10000 and EA-10000 Industrial series bidirectional power supplies, programmable power supplies, or regenerative loads. System performance can be increased by connecting devices in parallel. In a 42U rack with 5 units of 60 kW you can reach 300 kW, for the maximum power of 3.84 MW you can connect up to 64 units in 13 racks.



7 Options for your EA Modular Power System

Choose the right equipment for your applications



01 Water Cooling

In order to be able to use the EA power systems in as many environments as possible, they are available as air-cooled standard version and as water-cooled version. Water cooling includes the water-cooled equipment and the pre-installed and tested water distribution system in the rack system, which allows quick and easy connection to the building services. Choose water cooling for environments where waste heat must not be released to the immediate environment and noise must be reduced.



02 NS Protection

Network and supply protection (NS) increases safety for regenerative systems when EA power systems are equipped with regenerative systems such as PSB, PUB, ELR or PUL. In the rack system, the NS protection from a well-known supplier monitors the grid for the feed-in of generation and regenerative plants. The module acts on the fast stop chain and switches off the entire rack in the event of a mains fault. Islanding (feeding energy back into a faulty grid) is prevented.



03 Isolation Monitor

The EA power system is optionally equipped with the insulation monitor of a renowned supplier. This monitors the insulation resistance of the DC output against protective earth. The module acts on the fast stop chain and switches off the entire rack system in the event of an insulation fault. This increases the safety of the operated system.



04 DC Contactor

DC contactors are used to increase safety and are mounted between the DC output of the EA power system and the device under test (DUT). In the rack, the DC contactors are integrated into the fast stop chain. In the event of an fast stop situation, the DC contactors break the connection between the power system and the DUT. This provides clear isolation and prevents unwanted currents from flowing between the rack and the DUT.



05 DC Copper bar

DC copper busbars are used to connect the DC output of multiple devices within an EA power system to parallelize power and increase rack performance accordingly. A central connection point is provided to connect the DC output of the entire rack to the intended application. The DC copper busbars are designed for specific applications.



06 Ethernet Switch

The 19" Ethernet switch from a renowned supplier with 24 ports is installed in the EA power system. By using the switch, a multi-channel power system can be operated via only one external Ethernet interface. The individual devices are connected internally between the switch and the power system's built-in devices. This reduces the number of cables required for the supply in the system and the cabling effort in general.



07 Signal lamp

The rack is equipped with a top-mounted signal lamp. It signals green when the system is ready for operation (power is present at the system, AC contactors are open) and red when the system is in operation (AC contactors closed, voltage may be present at the DC output).



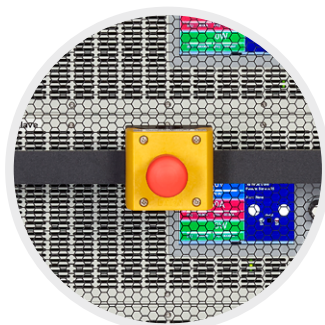
Select devices and integrate into the rack

New high-performance systems are constantly being developed for the electrification of the world. Associated with this is the testing requirement for the battery packs, fuel cell stacks, solar systems or electrolysis systems. With the EA Modular Power System you have the possibility to select the suitable devices for your tests and simulations and to integrate them into a powerful system.

With safety reliable and efficient

Integrated safety system

Each EA Modular Power System includes a safety system integrated as standard. It complies with the EN 60204-1 standard and is prepared for connection to a 3-phase 400 V mains supply. The systems are equipped as standard with a 2-channel fast stop system, including an fast stop button and door contact switches at the rear door of the 19" rack. A central safety relay monitors and controls the entire safety system and switches off the redundant AC contactor if necessary. In addition, each rack is equipped with a lockable control switch that can be used to turn the power to the devices on and off. All devices in the rack and the entire cabling of the power system are protected by fuses.



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.

