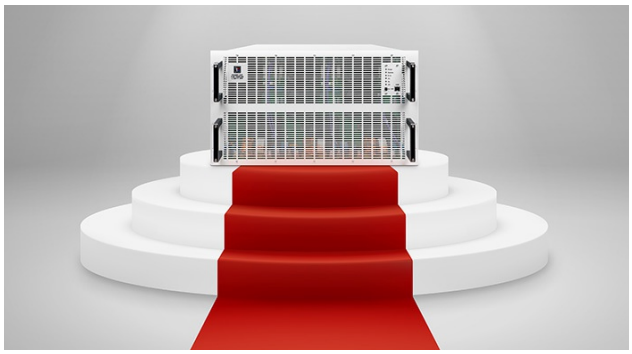
CAN Newsletter Online

ELECTRONICA 2022

DC power supplies and loads

At the Electronica 2022 in Munich, Germany, EA Elektro-Automatik has introduced its DC power supplies and electronic loads in hall A4, stand 414. CAN and CANopen interfaces are provided optionally.



The EA-10000 industrial series with 60 kW in 6U and up to 300 kW in a single rack (Source: EA Elektro-Automatik)

EA, manufacturer of DC power supplies for R&D and manufacturing, introduced its 60 kW and 30 kW, EA-PU 10000 programmable DC power supplies, EA-PUB 10000 programmable bidirectional DC power supplies, and EA-PUL DC programmable regenerative electronic loads. Typical applications include electric vehicle battery pack testing, powering furnaces in semiconductor wafer fabrication facilities, electrochemical electrolysis processing, and solar inverter testing. The products, without manual front panel displays, are intended for use in production ATE (automatic test equipment) systems and automated process control systems requiring high power.

The 60 kW models output maximum voltages of 360 V to 2000 V and maximum currents of 480 A to 80 A; the 30 kW models output maximum voltages of 60 V to 2000 V and maximum currents of 1000 A to 40 A. Overall, the 60-kW series includes 21 models, and the 30 kW series consists of 29 models allowing engineers to select a model that addresses their specific applications, said the company. The increased power capability enables engineers to reduce the number of power instruments needed for a high-power system, saving critical rack space and providing more power in a smaller footprint, the manufacturer continued.

Communicates with PCs and PLCs

The 10000 series instruments work in either PC-controlled test systems or PLC-controlled (programmable logic controller) industrial processes. Engineers can program the instruments using SCPI or Modbus programming modes. The 10000 series instruments have a range of galvanically isolated interfaces. Optional interfaces include for example CAN and CANopen.

EA offers a power density of 60 kW in one 6U enclosure and 30 kW in a 4U enclosure. Markus Schyboll, CEO of EA, commented, “With the new 60 kW and 30 kW industrial series instruments, EA Elektro-Automatik provides space-saving, cost-effective solutions with priority on both safety and the lowest cost of ownership. All our models have overcurrent, overvoltage, overpower, and overtemperature protection functions, and our new bidirectional power supplies and regenerative electronic loads have power factors of 0.99 and return up to 96 % of absorbed power back to the grid.”

Enables systems with capacity up to 3,84 MW

Test engineers can parallel up to 64 of the 10000 series power supplies and loads using the commander and responder bus to enable one instrument to control all instruments in the system which can be paralleled up to 3,84 MW. The system can consist of any combination of instrument models within the EA 10000 series family. A galvanically-isolated interface in each instrument ensures that all the instruments share the load requirements so that no instruments in the system are overloaded.

All 10000 series instruments operate on the same firmware and have similar input and output characteristics. The common programming and user interface saves test development and setup time when building test and control systems requiring multiple power instrumentation, explained the company.

The company continued: All 10000 series instruments employ an autoranging output (input if an electronic load) characteristic. Autoranging enables the instrument to have a higher voltage capacity at lower currents and a higher current capacity at lower voltages than a power supply or load with a conventional rectangular output/input characteristic. Furthermore, an instrument with autoranging output/input can deliver/accept full power output over a significant portion of the instrument’s operating range. This is in contrast with an instrument with a rectangular output characteristic which has maximum power only at its maximum voltage and current.

The EA-PU power supplies, EA-PUB bidirectional power supplies, and EA-PUL electronic loads are available with an on-board full function generator (software option) to create signals riding on a DC bias and stimulate the characteristics of various devices such as solar cells, batteries, and fuel cells. Special functions enable maximum power point tracking (MPPT) and EN 50530 solar panel inverter testing, and LV123-, LV124-, and LV148-standard based test sequences for testing of automotive components and systems. The optional function generator enabled the task of simulating various devices and creating sequences of outputs (or inputs) to comply with key test standards by eliminating the need for external waveform generation instrumentation to interconnect with an EA Elektro-Automatik instrument.

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