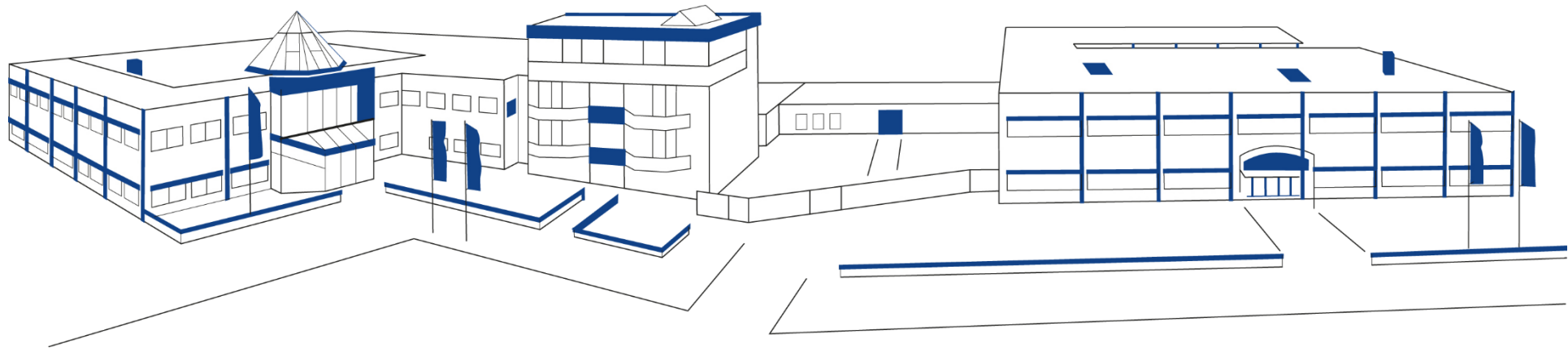


## DC Programmable Power News EA Elektro-Automatik Germany New 30kW Products under preparation



# Power Supply EA-PSI 10000 30kW 4U



# Power Supply EA-PSI 10000 30kW 4U

| Output Power   | 30kW   |                          |          |          |  |            |            |            |
|----------------|--|--------------------------|----------|----------|--|------------|------------|------------|
| Output voltage | 0...80V  | 0...200V<br>Pre-liminary | 0...360V | 0...500V | 0...750V   | 0...1.000V | 0...1.500V | 0...2.000V |
| Output current | 0...1.000A   | 0...450A                 | 0...250A | 0...180A | 0...120A   | 0...90A    | 0...60A    | 0...40A    |
| Mains          | 340...528VAC 3-phase   |                          |          |          |  |            |            |            |
| Housing        | 19" 4U x 660mm   |                          |          |          |  |            |            |            |
| Fittings       | <ul style="list-style-type: none"><li>TFT Touch display and encoder</li><li>Operation modes CV, CC, CP, CR</li><li>Controls identic to PSB 9000 3U</li><li>New GUI (graphic user interface)</li><li>New Share-Bus, galvanically isolated</li></ul> |                          |          |          | <ul style="list-style-type: none"><li>Function generator</li><li>Anybus plug-in interface modules</li><li>LAN / USB / Analogue interface</li><li>Digital regulation, U / I / P / R</li></ul> |            |            |            |
| Delivery plan  | Prototypes: November 2018  |                          |          |          | Series: 2Q of 2019   |            |            |            |
| Status         | 60%  |                          |          |          |  |            |            |            |

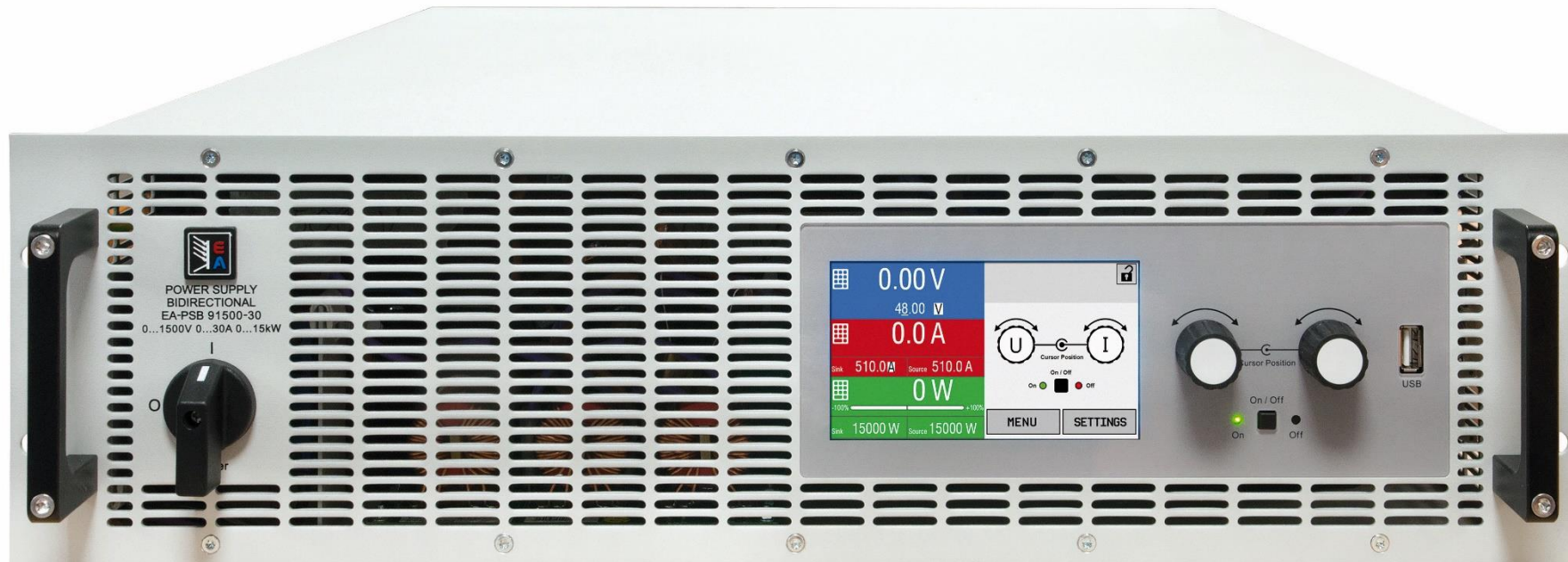
# Regenerative Electronic Load EA-ELR 10000 30kW 4U



# Regenerative Electronic Load EA-ELR 10000 30kW 4U

| Input Power   | 30kW   |                          |          |          |   |            |            |            |
|---------------|--|--------------------------|----------|----------|---|------------|------------|------------|
| Input Voltage | 0...80V  | 0...200V<br>Pre-liminary | 0...360V | 0...500V | 0...750V  | 0...1.000V | 0...1.500V | 0...2.000V |
| Input current | 0...1.000A   | 0...450A                 | 0...250A | 0...180A | 0...120A  | 0...90A    | 0...60A    | 0...40A    |
| Mains         | 340...528VAC 3-phase   |                          |          |          |   |            |            |            |
| Housing       | 19" 4U x 660mm   |                          |          |          |   |            |            |            |
| Fittings      | <ul style="list-style-type: none"><li>TFT Touch display and encoder</li><li>Operation modes CV, CC, CP, CR</li><li>Controls like PSB 9000 3U</li><li>New GUI (graphic user interface)</li><li>New Share-Bus, galvanically isolated</li></ul> |                          |          |          | <ul style="list-style-type: none"><li>Function generator</li><li>Anybus plug-in interfaces</li><li>LAN / USB / Analogue interface</li><li>Digital regulation, U / I / P / R</li></ul> |            |            |            |
| Delivery plan | Prototypes: November 2018  |                          |          |          | Series: 2Q 2019   |            |            |            |
| Status        | 60%  |                          |          |          |   |            |            |            |

# Bi-directional Power Supply EA-PSB 10000 30kW 4U



# Bi-directional Power Supply EA-PSB 10000 30kW 4U

| Output/Input Power   | +-30kW   |                          |           |           |   |            |            |            |
|----------------------|--|--------------------------|-----------|-----------|---|------------|------------|------------|
| Output/Input voltage | 0...80V  | 0...200V<br>Pre-liminary | 0...360V  | 0...500V  | 0...750V  | 0...1.000V | 0...1.500V | 0...2.000V |
| Output/Input current | +0...1.000A  | +0...450A                | +0...250A | +0...180A | +0...120A   | +0...90A   | +0...60A   | +0...40A   |
| Mains                | 340...528VAC 3-phase   |                          |           |           |   |            |            |            |
| Housing              | 19" 4U x 660mm   |                          |           |           |   |            |            |            |
| Fittings             | <ul style="list-style-type: none"><li>TFT Touch display and encoder</li><li>Operation modes CV, CC, CP, CR</li><li>Controls like PSB 9000 3U</li><li>New GUI (graphic user interface)</li><li>New Share-Bus, galvanically isolated</li></ul> |                          |           |           | <ul style="list-style-type: none"><li>Function generator</li><li>Anybus plug-in interfaces</li><li>LAN / USB / Analogue interface</li><li>Digital regulation, U / I / P / R</li></ul> |            |            |            |
| Delivery plan        | Prototypes: November 2018  |                          |           |           | Series: 2Q 2019   |            |            |            |
| Status               | 60%  |                          |           |           |   |            |            |            |



# Introduction EA Battery Simulator

## Basic functions and areas of application:

- Battery simulation and emulation (via PC-Software)
- Simulation of the connectivity behaviour of real batteries in HiL (hardware-in-the-Loop) test systems
- Suitable for the usage with bi-directional power supply series EA-PSB 9000
- For fast, economic and reproducible hardware tests
- Outstanding advantages for the usage in E-mobility (EV) environment (simulation of any battery condition within the shortest time-> R & D optimisation)

## Further important basic functions:

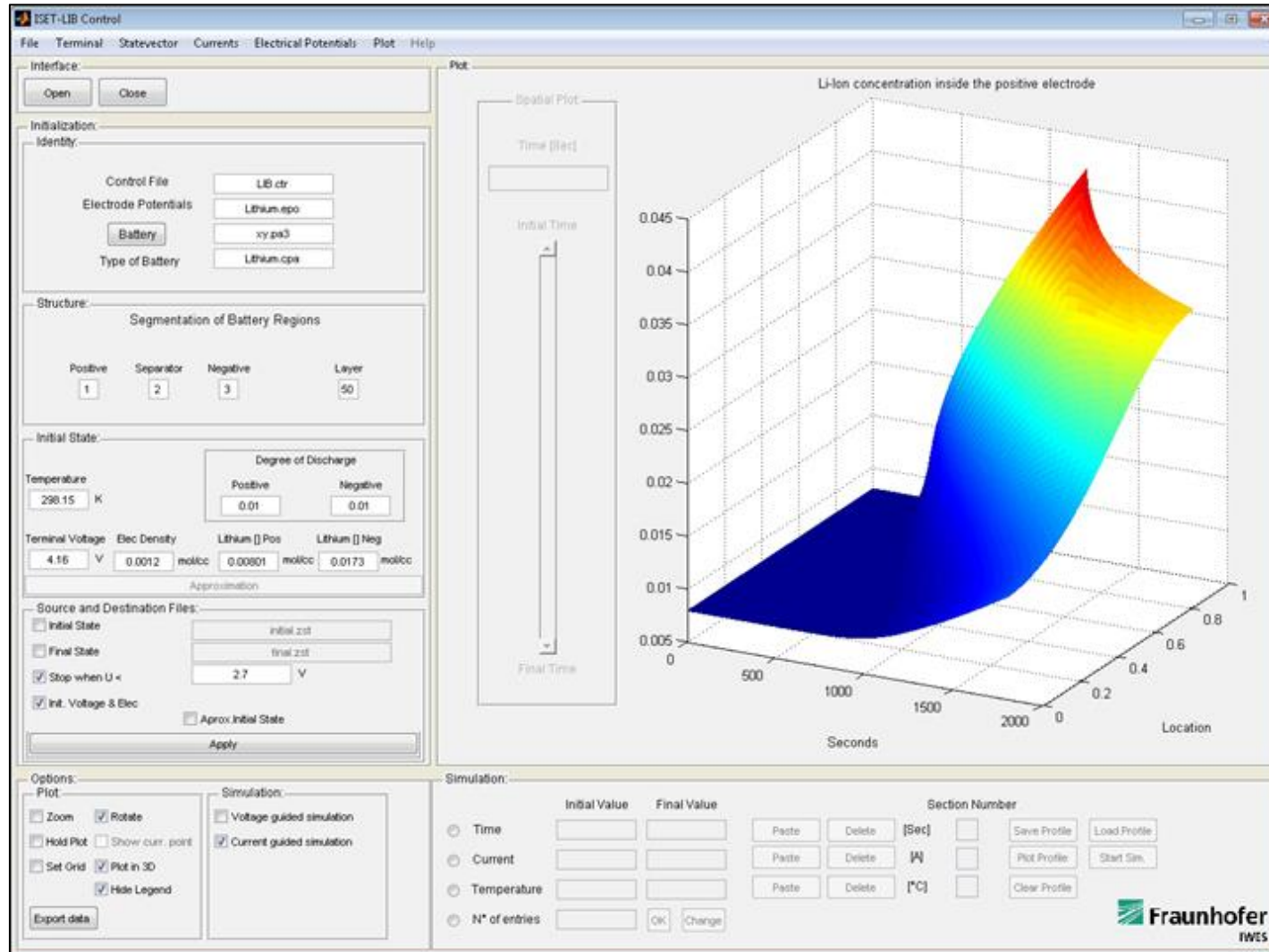
- Easy to scale
- High flexibility
- Contains profound knowledge and documentation on internal „real-life“ battery conditions
- Simulation of Worst-Case-Szenarios



# Functions of the EA Battery Simulator

- (Fast) Configuration of Temperatur, battery State of Charge (SOC), battery status of health (SOH) and many more
- Simulation of Aging Processes
- Simulate thermal interdependences inside the Battery Pack
- Enables to illustrate a large variety of battery geometries and cell arrangements
- HiL-Interfaces: EtherCat, CAN, RS232, Ethernet
- Compatible to MATLAB / SIMULINK
- Suitable for an integration into Real-time modules
- Simulation of following battery types:
  - Lead-Acid Batteries
  - Lithium-Ion Batteries
  - Lithium-Sulfate Batteries
  - Solid-state body battery
  - Redox-Flow Batteries (and other battery types upon request)

# View into the design of the EA Battery Simulator



## Features:

- Transparent licensing system  
(Sublicensing under EA brand)
- Specific Installation Software with License Dongle
- Individuell Adaptation to EA PSB 9000 units
- New feature under preparation:  
Change of specific basic parameters of a battery