



Your partner for power electronics for 50 years

The SYKO group researches, develops, modifies and produces in the field of power electronics from a few watts up to regulated and cascaded  $n \times 10 \text{ kW}$  (>36 kW) output power (DC and / or AC) with input voltages <6 V up to > 5000 V (DC or AC) and currents up to >1200A (input or output) for battery- and frontend-devices.

Our extraordinary strength is the fulfilment of complex and functional power interfaces.

We fulfil the normative standards of the market:

EMC, shock / vibration, climate, temperature, fire protection according to railway standards.

For years we are using full digital processes (control) and information exchange with the customers system by using potential free communication-bus systems.

All our offices, R&D and production lines are located in Mainhausen / Germany.

Functional low power converters from 1 W up to 1 kW are still addressed in the research-, modification-, and standard-program.

Functional power cascading from 1.7 kW up to >6 kW up to  $\geq 36 \text{ kW}$  for 1ph/3ph-converters.

We will fulfil also your requirements.

Don't hesitate to contact us:

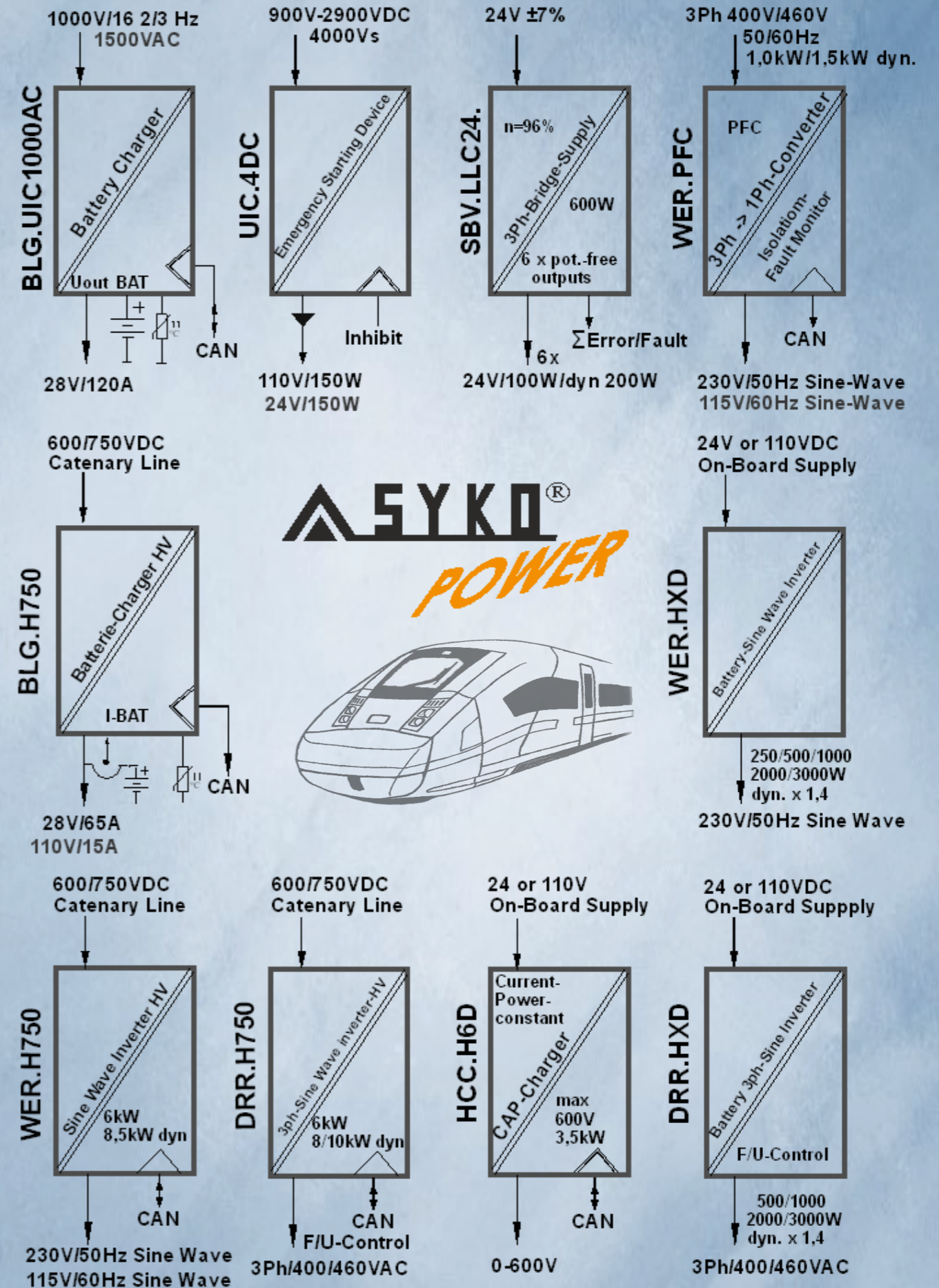
**SYKO Gesellschaft für Leistungselektronik mbH**

Jahnstraße 2  
D-63533 Mainhausen  
Tel. +49 (0) 6182-93520

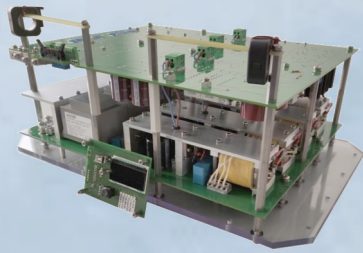
Fax. +49 (0) 6182-9352-15

[www.syko.de](http://www.syko.de) – E-Mail: [info@syko.de](mailto:info@syko.de)

## On land, on water, in the air

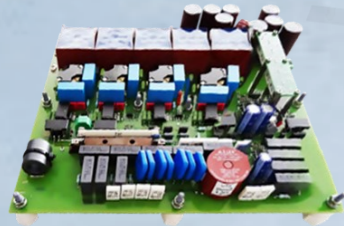


Realized combinations of functions, voltages and powers



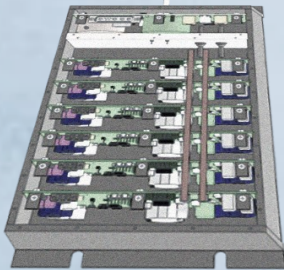
### **BLG.UIC1000AC**

An intelligent 3.3 kW battery charger (28 V / 126 V) working on UIC-voltages 1000 V / 16.67 Hz / 50 Hz and optionally 1500 V / 50 Hz and also 1500 VDC. The output voltage is a function of the battery temperature. The charging current is regulated with current splitting feature.



### **UIC.4DC**

This emergency start-up device works on the rectified UIC voltage >900 V up to 2900 V (active) and up to 4000 V (inactive). The output delivers  $\geq 150$  W / 100 V  $\pm 3\%$ . An Inhibit input switches the input stage inactive. A fault signal shows low-voltage events.



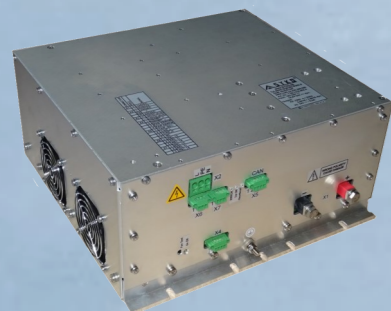
### **SBV.LLC24**

This new developed topology works at a constant input voltage  $\pm 7\%$  and produces six high potential free output voltages 24 V  $\pm 5\%$ , capable of zero load and 100 W static and 200 W dynamically output power each stage with an efficiency > 97%. The input stage is equipped with an active overvoltage limiter. Furthermore the input is protected against wrong polarity and the start-up has a soft-start function.



### **WER.PFC**

This converter (AC/DC) works with a 3 phase 400 V / 460 V, 50/60 Hz input voltage. According to the railway standards the converter converts the input voltage to a potential free 400 VDC intermediate voltage following a sine wave stage producing 230 VAC / 50Hz with 1 kW and 4 seconds  $I^2t$  1,5KW at the output. The inverter gets enabled by a potential free inhibit. Communication is established via CAN-Busprotocol.



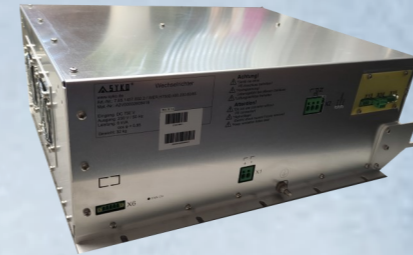
### **WER.HXD**

This standard battery-sine-wave converter WER.HXD works on the 24 V DC up to 110 V DC board-net. By use of the regulated string-current-cascade a potential free 400 VDC voltage and a back-ended 230 VAC / 50 Hz voltage is generated in the several power-stages. The converter meets railway standards.



### **BLG.H750**

This new designed 1.8 kW intelligent battery charger BLG.H750 works on the catenary line with voltages from 380 VDC up to 1000 VDC / 1270 VDC-1 sec. / 1800 VDC-100ms and 3000 VDC-1ms. The potential free output voltage is a function of the battery temperature and the splitting current into the battery is regulated.



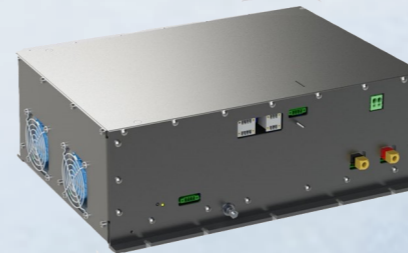
### **WER.H750**

This „certified for railway use“ sine-wave converter WER.H750 works on the catenary line 600 VDC / 750 VDC and delivers a potential free 230 VAC / 50 Hz sine-wave voltage with 6 kW and  $I^2t$  8.5 kW output power. Communication is handled via potential free CAN-BUS.



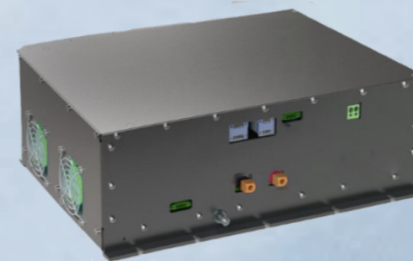
### **DRR.H750**

This „certified for railway use“ 3-phase sine-wave converter DRR.H750 works on the catenary line 600 VDC/750 VDC and delivers a potential free 400 V / 460 V-50 Hz / 60 Hz 3-phase sine wave voltage with an output power of 6 kW and dynamically 8/10 kW. The F/U setpoint value can be adjusted by an external interface and the communication is handled via a potential free CAN-BUS.



### **HCC.H6D**

This „certified for railway use“ potential free CAP-Charger charges high voltage CAPS with 3.5 kW up to 600 VDC starting from 0 V. Input board-net voltages can be 24 VDC up to 110 VDC (-30 %/+40 %). The communication is handled by the potential free CAN-BUS.



### **DRR.HXD**

This „certified for railway use“ standardised battery-3 phase-sine-wave converter works on different board-net voltages from 24 VDC up to 110 VDC (-30 %/+40 %). By use of the regulated string-current-cascade a potential free 750 VDC voltage and a back-ended 400 V/460 V/50 Hz/60 Hz voltage is generated in the several power stages with output power from 500/1000/2000/3000 W and with an output power of and dynamically 1.4 times of the output power at  $I^2t = 4$  seconds. The communication is handled by the potential free CAN-BUS.