

# Features

# Industrial Application

- Bidirectional battery balancer
- For E-Mobility production automation
- Digital regulation concept
- High functionality
- Programmable output parameter Vout/Iout
- Flexible and reliable

## SAB10000 Series

# 10kW Battery Balancer



### Module Features Table

Input Voltage Range [VAC]	Output Voltage [VDC]	Output Current [A]	Output Power [kW]	Ripple and Noise [%Vout]	Efficiency typ. [%]
340-470	20	500	10	1	96

### Option: Bidirectional DC/DC Converter

Input Voltage Range [VDC]	Output Voltage [VDC]	Output Current [A]	Output Power [kW]	Ripple and Noise [%Vout]	Efficiency typ. [%]
520-700	24	420	10	1	97



#### Input voltage

400VAC 3 Phases / (340-470VAC 3 Phases)  
600VDC / (520-700VDC)

#### Input frequency

50/60Hz

#### Efficiency

96%

#### Switching operating frequency

about 50kHz

#### Line Regulation

±0.1%

Load regulation TBD

#### Power factor

0.95 typ. Full load

#### Input protections

- Fuses protection
- EMI filter
- Varistor

#### See table for

- Output voltages and currents
- Output ripple and noise

#### Output protections

- Short circuit protection (1.1A in max)
- Overcurrent protection (1.1-1.2A In)
- Overtemperature protection (95°C ±5°C)
- Overvoltage protection 1.25V max.

#### Hold up time

>10ms

#### Output power

10kW

#### Operating temperature

-20°C to +55°C

#### Temperature power derating

from +55°C to +65°C: 2.5%/°C

#### Storage temperature

-40°C to +85°C

#### Humidity

< 95% not condensed

#### Cooling

Forced ventilation

#### Dielectric withstand voltage

- Conform to EN 62368-1

#### Isolation

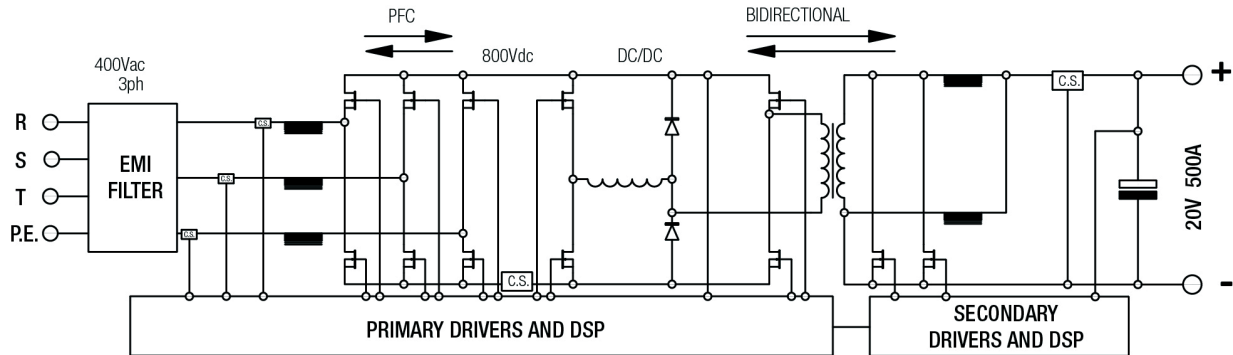
- > 200MΩ with 500VDC

#### Comply with

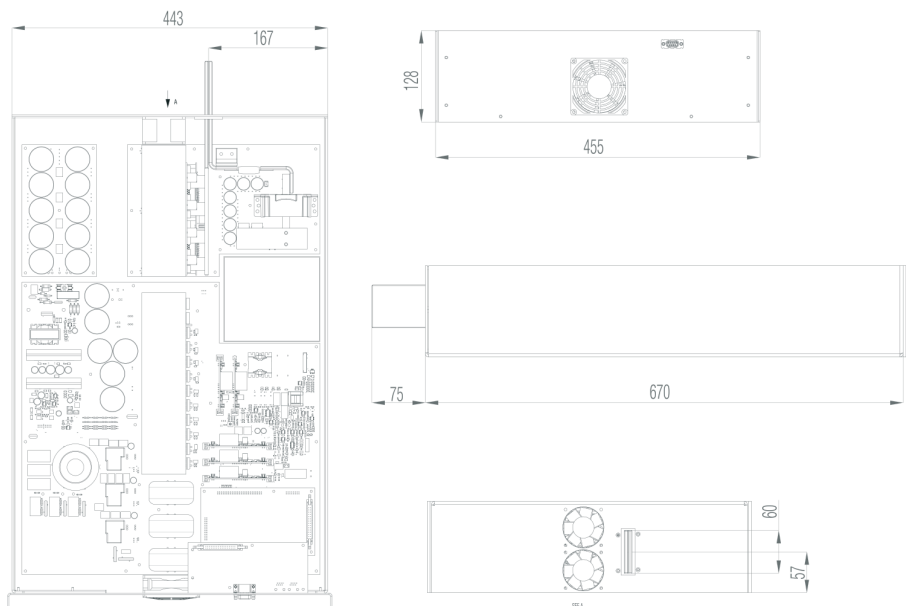
- EN 62368-1
- EN 61000-6-4
- EN 61000-3-2
- EN 61000-4-2
- EN 61000-4-3
- EN 61000-4-4
- EN 61000-4-5
- EN 61000-4-6
- EN 61000-4-8
- EN 61000-4-11

**Specifications** (measured @ Ta= 25°C, nom. Vin, full load and after warm-up unless otherwise stated)

### BLOCK DIAGRAM



### DIMENSION AND PHYSICAL CHARACTERISTICS



### Bidirectional

Increased system efficiency, energy recovery, conditions relevant to functionality, intelligent mains (EVs as intermediate storage for mains power), and cost and space savings are just a few of the applications that require bidirectional power supplies or converters. Selection of topology taking mains or DC voltages as well as their conversion ratios into account play a decisive role in applications. CLLC is a good choice where the battery and PFC bus voltage (around 400VDC) are similar in 3AC mains applications. If the battery voltage is substantially lower (48V) or higher (800VDC) than the PFC bus voltage, a phase-shifted full bridge or PSFB is a better alternative.

The product information and specifications may be subject to changes even without prior written notice. The product has been designed for various applications; its suitability lies in the responsibility of each customer. The products are not authorized for use in safety-critical applications without RECOM's explicit written consent. A safety-critical application is an application where a failure may reasonably be expected to endanger or cause loss of life, inflict bodily harm or damage property. The applicant shall indemnify and hold harmless RECOM, its affiliated companies and its representatives against any damage claims in connection with the unauthorized use of RECOM products in such safety-critical applications.