

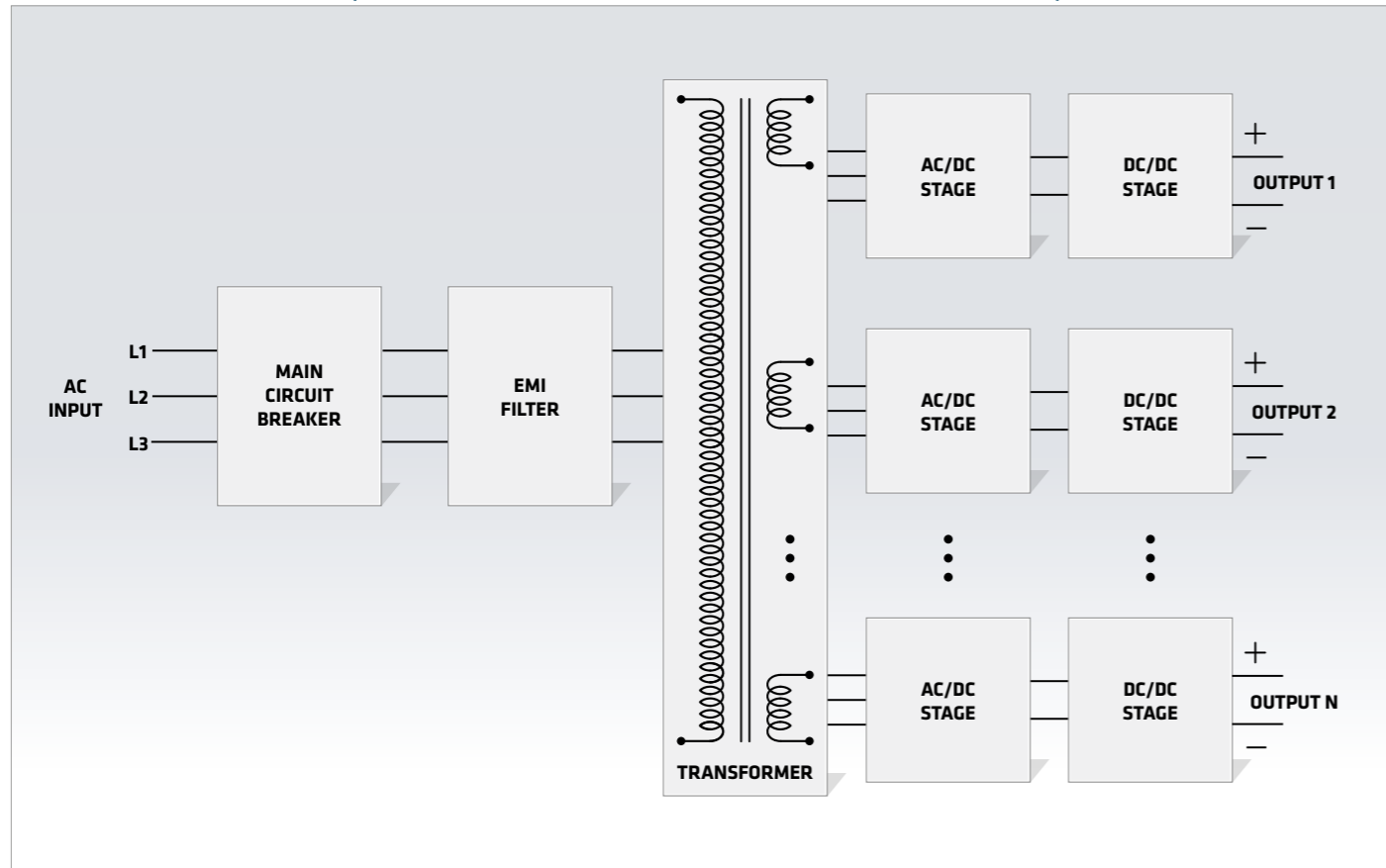


HD CHARGERS

Sovel's State of The Art in Regenerative Battery Formation: Maximizing Energy Efficiency and Cost-Effectiveness



This multi-line modular converter, built with high frequency switching technology (IGBT), is designed for lead-acid battery formation. More than 600 units installed worldwide since 2005.



EQUIPMENT PERFORMANCE

Both in charge and discharge:

Input AC/DC IGBT inverter stage

- power factor > 0.99
- current distortion ≤ 5%

High efficiency

overall system efficiency > 93%

INTEGRATION OF HD CHARGERS WITH SOVEMA'S BATTERY COOLING SYSTEMS

HD converters can be interfaced with Sovema's water baths or with its Acid Recirculation System to provide a complete turnkey formation solution. This integration allows higher safety standards, better efficiency, and rapid installation. The chargers can also be interfaced with water baths and Acid Recirculation Systems of other vendors.

HIGH DENSITY MODULAR CONVERTERS

HD stands for High Density of the circuits which allows a compact cabinet footprint.

In addition, the modular and plug-and-play design (each circuit is provided with its DSP control board) makes the system very flexible and efficient by minimizing the down-time.

SYSTEM COMPONENTS

The complete converter consists of two main components:

1. An input transformer with a single primary and as many secondaries as the number of circuits, up to a maximum of 16 circuits per cabinet. Galvanic insulation is provided between primary and secondaries and among all secondaries.
2. A number of independent output stages connected to the batteries.

Each output stage is comprised of:

- 1) A bidirectional AC/DC high frequency converter
- 2) A bidirectional DC/DC high frequency converter
- 3) A DSP control board for the single circuit



Autodiagnostic system screenshots

KEY FEATURES AND BENEFITS

- ▶ PF ≥ 0.99 during charge & discharge:
NO NEED FOR EXTERNAL POWER FACTOR CORRECTION SYSTEM
- ▶ THD ≤ 5%:
NO NEED FOR EXTERNAL HARMONIC DISTORTION CORRECTION SYSTEM
NO HARMONIC RESONANCE IN THE POWER GRID
- ▶ Galvanic insulation between circuits and with respect to the AC input stage:
HIGHER SAFETY STANDARDS
- ▶ Fast Service System/Autodiagnostic with integrated DSP sensors:
FASTER RESPONSE & INTERVENTION TIME
- ▶ Switching technology:
HIGHER ENERGY EFFICIENCY COMPARED TO LINEAR TECHNOLOGY
- ▶ Regenerative switching mode topology:
ENERGY SAVINGS IN EXCESS OF 60% COMPARED TO TRADITIONAL SYSTEMS

TECHNICAL DATA

MODEL	CURRENT (A)	VOLTAGE (V)	Nr. of Circuits per Cabinet	Battery Type	Typical Battery Cooling System	AC/DC and Output Power Limitation
HD-CD-12-30-400	0-30	10-400	12	SLI/AGM	Water bath	12KW
HD-CD-12-30-600		10-600				
HD-CD-16-30-400	0-30	10-400	16	SLI/AGM	Water bath	12KW
HD-CD-16-30-600		10-600				
HD-CD-12-60-400	0-60	10-400	12	SLI/AGM	Water bath	24KW
HD-CD-12-60-600		10-600				
HD-CD-16-60-400	0-60	10-400	16	SLI/AGM	Water bath	24KW
HD-CD-16-60-600		10-600				
HD-CD-12-75-360	0-75	10-360	12	TRUCK	Acid Recirc	24KW
HD-CD-16-75-360	0-75	10-360	16	TRUCK	Acid Recirc	24KW
HD-CD-8-100-360	0-100	10-360	8	TRUCK	Acid Recirc	
HD-CD-6-100-360	0-100	10-360	6	TRUCK	Acid Recirc	
HD-CD-8-150-360	0-150	10-360	8	TRUCK	Acid Recirc	43KW
HD-CD-6-150-360	0-150	10-360	6	TRUCK	Acid Recirc	43KW
HD-CD-4-300-300	0-300	10-300	4	INDUSTRIAL	Acid Recirc	75KW
HD-CD-3-300-300	0-300	10-300	3	INDUSTRIAL	Acid Recirc	75KW
HD-CD-2-600-300	0-600	10-300	2	INDUSTRIAL	Acid Recirc	150KW
HD-CD-2-300-250 4Q	0-250	10-300	2		Dry charge	
HD-CD-1-1200-300	0-1200	10-300	1	INDUSTRIAL	Acid Recirc	350KW
HD-CD-48-5-400	0-5	10-400	48	MOTORCYCLE	Water bath	

Other versions are available upon Customer's request.

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