



THE MOST ADVANCED TECHNOLOGY FOR BATTERY FORMATION, CONDITIONING, TESTING AND DESULPHATION

- ▲ **Technology:** IGBT-HF Hybrid Converter
- ▲ **Current ratings:** From 50 to 600 Amps
- ▲ **Voltages:** AC input from 200 to 600 VAC
DC output from 12 to 700 VDC



Product Description

The MVD is a universal battery charger, digitally controlled and programmable.

It can operate with batteries of any type, from individual cells to complete packs, and it can be programmed to support applications of any type (Formation, Conditioning, Recovery, Desulphation and Regeneration).

It is based on a new power conversion technology, featuring an unprecedented combination of very high efficiency, unity power factor (PFC), universal capabilities and precise charge control.

The MVD features a very complete set of charging curves, and the user can complete it by programming new ones, following a very simple procedure.

Thanks to the ultra-filtered output current, this charger ensures a minimal temperature rise in the battery during the recharge process. Moreover, the MVD is suitable to charge battery types that require perfectly constant current and virtually zero ripple.

The MVD is equipped with alphanumeric display & keyboard, Charge History Logger, Programmable Real-Time Clock and Calendar, Audible Alarm and Connectivity package, compatible with wireless Battery Identification Modules and the WEB based Fleet Management System **DoctorFleet.com**.

Typical Applications

- Battery Formation
- Battery Service Shops
- Battery Testing Laboratories

Main Features

- **The Most Energy Efficient** technology available
- Very **Reliable** design, easy maintenance
- **True Universal Charging capability:** Multi-Voltage, Multi-Capacity, Multi-Chemistry, from single cell to full battery packs
- **Full set of standard charging curves** factory programmed
- Possibility to **Create and Save Customized Charging curves** of any type
- Intelligent electronic protection system (includes soft-start, battery polarity reversal, output short circuit and over-temperature)
- Very quiet operation
- Battery voltage/temperature compensation (battery temperature probe required)
- Anti-Arcing protection (auxiliary wires required)

Options

- Wireless connection to DoctorFleet.com
- Extended data-logger with USB port
- Enclosure type IP54 or NEMA 3R (outdoor rated)
- Submersible probe for battery temperature

Product Specifications

AC INPUT	
STANDARD VOLTAGES	Single-phase 220-230-240 VAC \pm 10% Three-phase 220-240, 400, 440, 480, 600 VAC \pm 10% Frequency 50/60 Hz \pm 5 Hz
EFFICIENCY	>90%
POWER FACTOR	>0.90
DC OUTPUT	
STANDARD VOLTAGES	From single battery cell to 600 VDC. See table of Standard models for more details
CURRENT RATINGS	From 50A to 300A.
CHARGING CURVE	User configurable.
PROTECTION	
WRONG BATTERY AND REVERSE POLARITY	If the battery voltage is outside the acceptable limits, or the polarity is reversed, the charger remains in stand-by mode and gives error/warning message.
ELECTRONIC OVERLOAD PROTECTION	Complete protection in case of output short circuit or overload.
ANTI-ARCING	WITHOUT AUXILIARY WIRES: When the battery is connected, no arcing is generated at the connectors. If the battery is disconnected while it's being charged, arcing is possible, so it's necessary to turn off the charger before to disconnect the battery. WITH AUXILIARY WIRES (RECOMMENDED): Full Anti-arcing protection in case of battery disconnection, even while the charge is in progress.
POWER-ON SELF-TEST	Every time the unit is powered, an automatic self-test of the power electronics and the control boards is executed in less than 10 seconds. In case of fault, the unit remains in safe stand-by mode and gives fault messages.
BLACK-OUT OF THE AC INPUT	The charger features an intelligent management of the AC input black-outs. When a black-out of the AC input occurs, all the data related to the charge cycle that was in progress are saved in the Charge History Logger, and remains available for future review. When the AC input is restored, the charger restarts from the exact point of interruption, and it completes the charge cycle normally. The charger adds a random delay on start (from 3 to 20 seconds). When many chargers are connected to the same AC source, this feature prevents all the chargers from turning on simultaneously and causing a high AC input current spike.
AUTOMATIC SHUTDOWN ON BATTERY DISCONNECTION	If the battery is disconnected while the charge is in progress, the charger turns-off automatically within 3 seconds and a specific message is saved in the Charge History Log.
SAFETY TIMER	An independent safety timer turns the charger off in case of malfunction of the main control unit.
MECHANICAL AND ENVIRONMENTAL	
DIMENSIONS (W x H x D mm)	CABINET A: 500 x 900 x 440 (mm) CABINET B: 620x 1050 x 550 (mm)

ENCLOSURE TYPE	Steel
COOLING	FORCED VENTILATION with active fan control
AUDIBLE NOISE	<65 dBA at 1 meter
ENVIRONMENTAL PROTECTION	IP21 (Standard) IP54 (Optional)
AMBIENT TEMPERATURE	OPERATION: -10 / +50 °C STORAGE: -20 / +70 °C
ALTITUDE	<2000m Derating according to EN62040-3
USER INTERFACE AND CONNECTIVITY	
USER INTERFACE	Alphanumeric LCD Display, 5x LEDs, membrane keyboard and Audible Alarm
CONNECTIVITY	<ul style="list-style-type: none"> • Dual RS-485 port for daisy chain interconnection, compatible with WEB based Fleet Management System (DoctorFleet.com) • Compatible with Bassi wireless Battery Identification Modules (BMOD) • Integrated Data-logger (200 cycles) • Extended Data-logger (600 cycles) with USB port (Optional) • Wireless card (Optional)
STANDARDS	
QUALITY	ISO 9001:2008
MARKING	CE
EMC	IEC EN 61000-6-2, IEC EN 61000-6-4
SAFETY	IEC EN 50178, IEC EN 62040-1
TEST AND PERFORMANCE	IEC EN 62040-3
NORTH AMERICAN STANDARDS	UL 1564 "Industrial Battery Chargers" CSA 22.2 107.2-01 "Battery Chargers" cCSAus Listed

NOTES

(*) = Reported Efficiency and Power Factor values are AVERAGE values, measured over the entire charging cycle. Peak Efficiency and Power Factor are higher.

Standard Models

STANDARD MODELS							
TYPE	L-100	L-200	M-50	M-100	M-200	H-100	V-50
OUTPUT VOLTAGE RANGE	2-75V	2-75V	2-150V	2-150V	2-150V	50-300V	50-600V
OUTPUT CURRENT	100A	200A	50A	100A	200A	100A	50A
MAXIMUM OUTPUT POWER	6kW	12kW	12kW	12kW	24kW	30kW	30kW
ENCLOSURE TYPE	A	A	A	A	B	B	B

Other models available on request, with output voltages up to 700 VDC and maximum currents up to 1000 A.

The information contained in this publication is subject to variations without notice.

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