

8kW 380Vdc Battery Charger/Bus Controller

DESCRIPTION

Batteries of all kinds require careful control of charging and discharging. When a battery reaches full charge, as determined by cell level battery management, further charging must be reduced to prevent damage to the battery. Similarly, when the battery is at a low state of charge, further discharge must be prevented.

As the amount of energy storage (kWh) and power (kW) increases, operating at low battery voltages (12/24/48Vdc) requires very large wire gauges, limited wire flexibility, and unwieldy special purpose connectors. High voltage series batteries eliminate some of these problems but multiple high voltage batteries in parallel are also subject to balancing problems that limit expansion.

A controlled high voltage DC bus eliminates these problems and allow virtually unlimited expansion. The Digital Microgrid Initiative (DMI) implements a high voltage bus that's expandable to a megawatt of power with totally autonomous operation of each of the subsystems on the bus with current flow to bi-directional subsystems determined by the voltage of the bus.

The DMI 8kW Battery Charger is a bidirectional, current and voltage controlled charge controller which provides power from a bank of 48Vdc plug-in batteries (with internal battery balancing in each using the DMI1701 BMS). It is designed to connect a virtually unlimited number of batteries to a 380Vdc bus. Each 48 volt battery is independently charged and discharged by internal algorithms in the DMI1705.

The 8kW 380Vdc Battery Charger/Bus Converter consists of a DMI1704 Bidirectional DC-DC Converter, a DMI MicrogridLink Controller, two Anderson SB50 battery ports for 48Vdc plug-in batteries, an RJ45 connector for communicating with the two batteries over a daisy-chained isoSPI™ link, an LED power switch for turning on the converter and for providing status information.

FEATURES & BENEFITS

- 380Vdc to 48Vdc (two port) Bidirectional converter
- 4kW or 8kW power delivery
- Autonomous power flow direction operation
- Unlimited 380Vdc parallel connections for kW to MW sites
- Simultaneous Lilon (LFP, LTO, NMC) and lead acid types.

