

eTwinCHARGER10 - 10 kW On-Board Battery Charger for Off-Highway Vehicles

Overview

eTwinCHARGER10 is a high-performance 10 kW air-cooled AC/DC On-Board Charger (OBC) designed for special vehicles. When connected to a 400 Vac mains supply, it enables charging of the vehicle's traction battery. It also offers advanced flexibility by independently managing two separate battery packs, supporting nominal voltages of 28 V and 128 V.

AC/DC TOPOLOGY
 MOSFET / SiC switching technology

MAXIMUM CHARGING POWER
 10 kW

SUPPORTED OUTPUT VOLTAGE
 28 V and 128 V

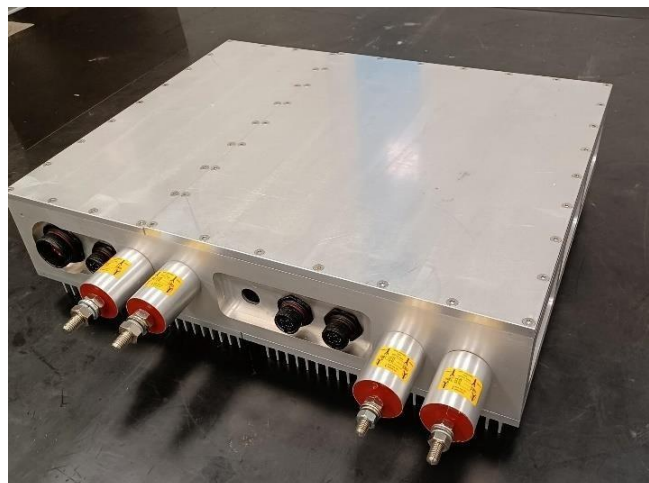
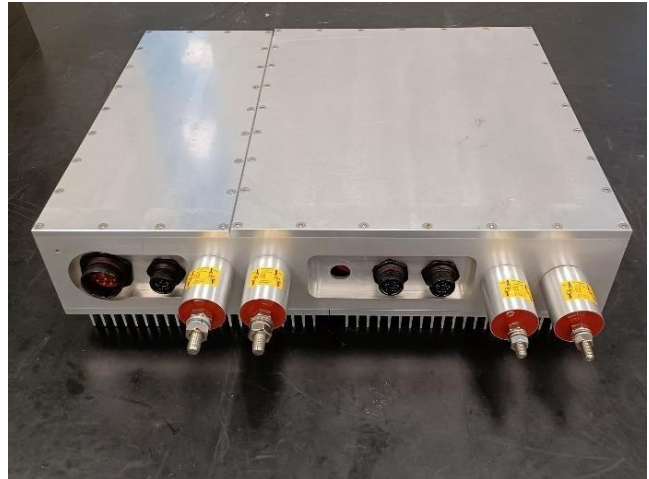
INPUT VOLTAGE
 340 Vac - 440 Vac

EFFICIENCY
 96% at full load

POWER DENSITY
 0,6 kW/Lt (air-cooled)

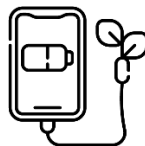
FEATURES
 SiC MOSFETs (top-side cooling)
 Air cooling

COMMUNICATION
 EtherNET & CANOpen



Energy Efficiency

The use of an active pre-charge circuit improves energy efficiency by reducing losses and optimizing the charging process.



Charging Flexibility

Support for charging two battery packs with different voltages ensures maximum flexibility to meet a wide range of application-specific energy requirements.



Advanced Technology

SiC (Silicon Carbide) technology ensures high performance and long service life, contributing to reduced operating costs and improved overall system reliability.



Key Features

- Independent charging of two battery packs
- Fully designed and **manufactured in Italy**
- Power Factor Correction (PFC) technology
- High power density and compact design
- 3-level electronic architecture for enhanced efficiency and control
- Compliance with standards: ISO 16750-3, ISO 19453-6, MIL-STD-810H, SAE J1455
- Air cooling designed for automotive and special applications
- SiC technology based on 40 mΩ MOSFETs with top-side cooling for high performance and reliability

Technical Specifications

AC Input	
Voltage range	360 – 440 V
Input current	Up to 25 A
28V DC Output	
Nominal voltage	28 V
Voltage range	18 – 32 V
Max current	200 A
Max power	6kW
Efficiency	>96% full load
128V DC Output	
Nominal voltage	128 V
Voltage range	116V – 132 V
Max current	30 A
Max power	4 kW
Efficiency	>96% full load
Features	
Communication	Ethernet, CAN
Topology	Unidirectional, Isolated
Certifications	Off-Road Vehicle Standards
Information	
Electrical protections	Input and Output Overcurrent and Overvoltage Protection
Other protections	Internal Overtemperature, Fan Monitoring, Pre-charge
Storage temperature	-40°C up to + 85°C
Operating ambient temperature	-30°C up to 85°C, derating from 60°C
Humidity	0 – 95%RH non-condensing
Dimensions	100 mm (H) x 480 mm (W) x 390 mm (D)
Weight	< 28 kg
Internal Electronics / External Enclosure	IP67
Max Operating Altitude	2000 m without derating 4000 m derating
Power connections	Copper bars