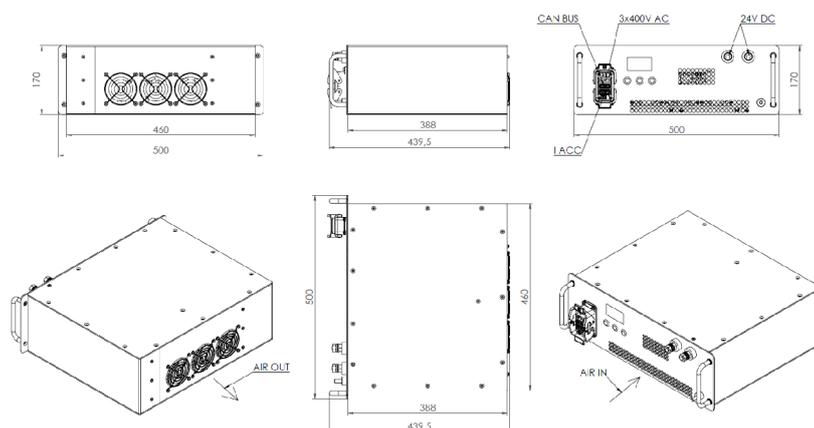


ENI-LA400/24/6 Charger

Product Data Sheet



APPLICATION

The ENI-LA400/24/6 charger provides power for on-board devices rated at 24 V and recharges the on-board battery bank.

SPECIFICATIONS

Rated input voltage	3 x 400 V, 50 Hz
Output voltage	24 to 29 V
Rated load current	230 A
Ambient operating temperature	-25°C to 40°C
Size [W x D x H]	500 x 440 x 170 mm
Weight	25 kg
Enclosure protection rating	IP23

DESIGN

The converter unit is housed in an aluminium sheet enclosure. The surfaces of the enclosure parts are preserved by galvanizing for improved resistance to operating conditions and the environment. The front and rear panels of the charger feature air vents. The air is supplied through the front panel vents, passes the radiator ribs and the power component chamber, and leaves the enclosure through the rear panel vents. The enclosure houses the converter actuation circuits. The front panel features screw terminals for the 24 V voltage output and a Harting multipin connector for the 3 × 400 V input, CAN data, and a battery bank temperature sensor output or a converter switching operation indication output. The unit is installed aboard the vehicle using the mounting points on the front panel of the charger enclosure. All device materials meet the relevant standards for safety of use and environmental protection.

OPERATION

The input voltage is supplied to the Harting multipin connector terminals and then to the precharging circuit and the main contactor to the charger input line, comprising a three-phase choke that acts as an input filter, a three-phase bridge rectifier, and the input filter capacitors. This subsystem effectively filters the input voltage and protects the supply system from return interference from the charger. The charge input line also features a separate EMC filter to protect the supply system from EMC interference generated by the high-frequency operation of the inverter. The converter inverter module is supplied with rectified voltage from the rectifier and works as a SiC-transistor-based half-bridge system. The inverter output supplies power to 4 transformers. The output voltage from each transformer enters a full-wave rectifier with an overvoltage protection line and follows an LC output filter. The LC output filter eliminates high-frequency pulses generated by modulation of the DC voltage in the inverter. The charger output features an EMC filter which protects the downstream systems against interference generated by high-frequency operation of the inverter.

BLOCK DIAGRAM

