

DC-Supply/Charger for Naval Applications



The converter is designed by Wärtsilä to convert an AC voltage of 440 V/60 Hz to 28 VDC for supplying loads and charging batteries.

The technology is based on pulse width modulation (PWM) technique using a 3ph IGBT (insulated gate bipolar transistor) power stage for active rectification for the input voltage, and a PWM halfbridge topology for generating the DC voltage via an output transformer and a rectifier.

The output voltage control is of type average current mode providing excellent line and load regulation.

State-of-the-art control electronics are used providing power factor correction control and output voltage control as well as a build-in fault detection and an RS485 interface for remote control.

Overload and short circuit situations are managed by accordant derating of the power stage.

For battery testing and supervision of external batteries there are several inputs for evaluation of the battery condition. The connection of the batteries and the load is controlled by the converter using external power relays.

Constant current mode is used to charge the batteries until the maximum battery voltage is reached. The fully charged battery will be maintained by a trickle charging mode. Charging parameters can be adjusted on the user interface (LCD display and push buttons) on the frontpanel of the converter. The maximum charging current can be adjusted, the adjustment is password protected. A fast charging mode can be selected manually by the user interface.

For Surface Vessels

Standard Features

- Design STANAG 1008
- High reliability
- Battery management
- Fault detection

Application

- AC/DC supply/charger

Support Service

- Complete Integrated Logistic Support (ILS)





Electrical Specifications

Input acc. STANAG 1008 e8

Voltage 440 V + 5%, 3ph

Output acc. STANAG 1008 e9

Power 4 kW

Voltage 18 V - 32 V

Output current 140 A, V/I curve

Static tolerance < 1%

Ripple < 2%

General Specifications

Efficiency > 88% at full load

Temperature range 0°C to +55°C

Humidity nom. 85%

Shock Acc. to BV 0430

RFI/EMI Noise < 60 dB(A)

Insulation class Acc. to VDE 0110

Protection IP 20

Physical Characteristics

Dimensions Depth 380 mm

Width 483 mm

Height 178 mm

Weight 28 kg + 5%

Design Characteristics

MTBF > 20,000 h

MIL-HDBK-217F

MTTR Less than 1 h

Cooling Air-cooling by fans

Control & Monitoring

All local operation and monitoring functions are provided by a 126x64 dot display with integrated soft keys.

Basic menu

- Output voltage & current
- Capacity of battery branch
- Failure display in plain text
- Reset function

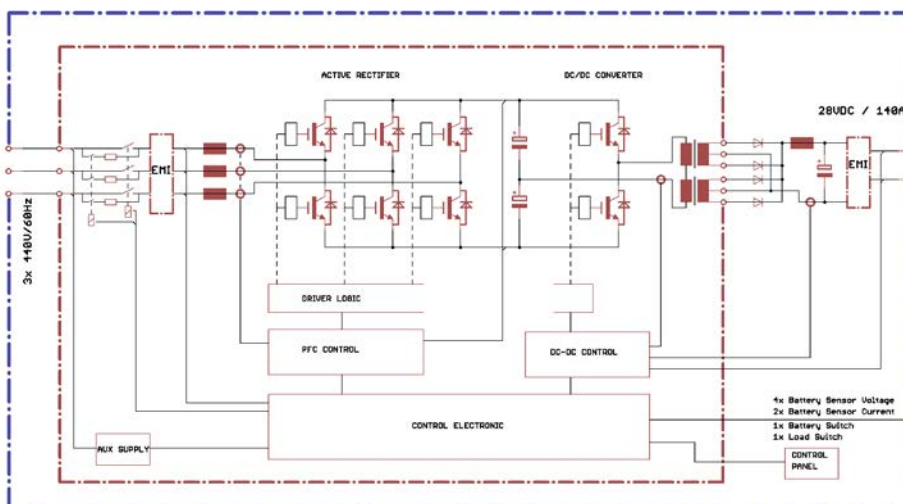
Sub menu

- Local/remote setting
- Charger on/off
- Boost mode on/off

Setting menu

- Max. charging current
- Max. float charging voltage
- Temp. comp. on/off
- Temp. comp. coefficient T1/T2
- Programming of relay output 1/2/3/4

Other functions on request.



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