

Charger /24VDC Supplies



3RP Range



The chargers consist of an input automatic changeover switch, an auto transformer, rectifier modules, and output distribution.

The rectifier provides a high quality nominal 24V output at the rated load from a 440V 3phase 60Hz supply. The rectifier uses switched mode rectifier modules configured in parallel to produce the regulated output suitable for charging valve regulated lead acid batteries. In the event of failure of the ship's normal ac supply, the input will be switched automatically to the emergency supply.

The charger distribution consists of 2pole miniature circuit breakers.

Built into steel enclosures for deck or bulkhead mounting, the chargers are suitable for shock levels up to 15g. Above this suitable shock mounts can be used.

Ingress Protection level is to IP23, suitable for electrical compartments or IP44 suitable for machinery spaces

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ELECTRICAL CHARACTERISTICS

Input

440 volts 3 phase 3 wire 60Hz in accordance with STANAG 1008 Edition 8 and Lloyds NSR

Input Rated Voltage 440V
Input Current THD <4%
Power Factor 0.99
Inrush Current <Inom

Option: Normal/Emergency input supply with automatic changeover
Option: Anti condensation heater, 115V or 230V

Output

27.4V DC nominal 26-32V adjustment
Temperature compensated for battery float voltage

Voltage Regulation <1%
Ripple and noise <50mV pk-pk
Voltage transients <20% (75% load step)
Voltage recovery time <100ms (75% load step)
Isolation > 10Mohm

Option: Earth isolation monitor
Option: Fixed 24VDC output

Load

Output Power: up to 10kW

Efficiency >87%

Protection

Inputs fused, output current limited, over-voltage trip, over-temperature trip.

Local Controls and Indications.

Supply ON/OFF selector switch
Equalise battery voltage switch
Output Voltmeter
Output Ammeter
Output voltage adjust
Normal Supply Available, Emergency Supply Available, ACH On, Fan Fail, Current limit, Overvoltage, Overtemperature, Output On and Earth Fault LEDs

Remote Indications.

Fault, Output ON, and Alarm remote indication by means of volt free contacts.

Options: Interface with battery alarms when used in conjunction with the BB range of Battery Boxes

MECHANICAL FEATURES

Enclosure

Fabricated mild steel folded and welded for strength. Deck/bulkhead mounted with lifting eyes.

Cable Entry

Top/bottom via gland plate.
User connections are made to internal rail mounted and stud terminals. Access for the cables is by a gland plate that can be drilled or punched as required for glands.

Ingress Protection Rating

IP23 suitable for electrical equipment compartment
IP44 suitable for machinery spaces
IP54 fitted with dust filters

Cooling

Fan assisted by two speed fans. Fan failure detection

Maintenance

Front maintenance - Hinged door for access.

Internal wiring

Low fire hazard cross linked polyolefin RADOX 125.

Earth

For safety the chassis of the UPS must be earthed. An external M10 earth stud is situated adjacent to the gland plate.

ENVIRONMENTAL CHARACTERISTICS

Shock

Designed to meet a shock requirement of 15g in each of three orthogonal directions when solidly mounted. For installed shock levels in excess of this shock mounts should be fitted.

Vibration.

Designed to meet the shipboard vibration requirements. Typically 5 to 33Hz +/- 0.125mm

Noise

< 60dbA @ 1m

Electromagnetic Compatibility

Designed to meet the requirements of Def Stan 59-411. Emissions and susceptibility (Below deck limits)

Ambient Temperature

0°C to + 45°C

Relative Humidity

10% to 95% non-condensing

Ships Motion

The equipment is designed to withstand, without damage or degradation of performance or spillage of fluids, ship motion due to the action of the sea and weather as well as accelerations and velocities deriving from deliberate ship manoeuvres. Typically:

Roll angles	± 30°
Pitch angles	± 10°
Steady list angles	± 15°
Steady trim angles	± 5°



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