

DC Supply/Charger

3RP3KB



The 3RP3KB provides a high quality output of 27.4 volts dc when used for float charging valve regulated lead acid batteries or can be set for 24V for ships 24V systems.

The rectifier uses power factor corrected switched mode rectifier modules to produce the regulated output. In the event of failure of the ship's normal ac supply, the input will be switched automatically to the emergency supply.

Built into a steel enclosures for 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
Meters, indicating lamps and the mains ON/OFF switch are situated on the front of the equipment.

The charger output distribution consists of 2pole circuit breakers which are accessible via the hinged flap on the front of the unit.

The power module and main control circuits are easily accessible for maintenance by opening the hinged door.

The DC supply is designed to IEC62040-1 and are fully compliant with Lloyd's Register Regulations.

Gresham Power Electronics
Gresham House, Telford Road
Salisbury, SP2 7PH, UK
+44 (0)1722 413060
www.greshampower.com
e-mail: sales@greshampower.com

ELECTRICAL CHARACTERISTICS

Input

Normal and Emergency input: 230V, 3 phase 3 wire 60 Hz in accordance with STANAG 1008 and Lloyds NSR

Input kVA	3.2kVA (@ 2.74kW o/p power)
Input Power	3.1kW (@2.74kW o/p power)
Input Rated Voltage	230V 3ph
Input Rated Current	10A/phase (@2.74kW o/p power)
Power Factor	0.96
Inrush Current	<Inom

Automatic change over to Emergency supply

Option: Anti-condensation heater 115V or 230V, 50/60Hz

Output

Nominal Output Voltage	24V
Float output voltage	27.4V @20°C*
Boost output voltage	29 V
Max output current	125A + 40A battery recharge
Voltage Regulation	<1%
Voltage Ripple	<20mVpk-pk
Voltage transients	<10% (90% load step)
Voltage recovery time	<100ms (90% load step)

*Temperature Compensated as per battery manufacturers recommendation -36mV/°C

Load

Output Power: 2.9kW

Wild heat

500W (worst case)

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
Voltmeter, Ammeter
Voltage adjustment
Normal Supply Available, Emergency Supply Available, Charge, Float, Equalise, Fan Fail, Current limit, Overvoltage, Output On, Overtemperature, and Earth Fault LEDs

Remote Indications and Interface

NC/C/NO volt free contacts: General Alarm, Output ON, Battery Discharge, DC Voltage within limits and Earth fault.
MODBUS RS485

Distribution

Up to 12 x 2pole miniature circuit breakers
Actual current ratings and characteristics specific for the application

Earth leakage detection

Option: maintained and non-maintained loads

MECHANICAL FEATURES

Enclosure

Fabricated mild steel folded and welded for strength. Bulkhead mounted. Lifting eyes.

Dimensions

(O/A)(h x w x d) mm 795 x 703 x 456

A clearance of at least 100 mm should be allowed around the unit to allow proper ventilation.

Fixings (mm) 4 holes 13.0mm dia. Centres 650 (w) x 720 (h) mm

Weight 110kg

Cable Entry

Via gland plate

Ingress Protection Rating

IP23

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.

Earthing

M10 external earth stud.

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.

EN62040-2 Radiated and Conducted Emissions
EN61000-3-3 Harmonic Emissions
EN61000-4-2 ESD
EN61000-4-3 Radiated Susceptibility Electric Field
EN61000-4-4 Fast Transient Burst
EN61000-4-5 Voltage Surge
EN61000-4-6 Conducted Interference
EN61000-4-8 Power Frequency Magnetic Field
EN61000-4-16 LF Conducted Susceptibility

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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Metromatics

For further information or pricing, please contact us:

Melbourne 03 9872 4592 Sydney 02 9460 4355
Brisbane 07 3868 4255 Adelaide 08 8343 8516

sales@metromatics.com.au
www.metromatics.com.au

