

Uninterruptible Power Supply 3RPQ15KB 15kVA,230V,3ph,60Hz



The 3RPQ15KB Uninterruptible Power Supply (UPS) supplies a battery supported ,230V, 60Hz three phase output to ships loads. The UPS consists of a transformer isolated rectifier, an inverter and a static switch. A separate battery cabinet is required.

The rectifier in the UPS is supplied by the ship's 440V 3phase 60Hz supply and provides power to supply the inverter and recharge the battery.

In normal operation, the rectifier float charges the battery and supplies the DC input to the inverter. The inverter supplies the output. When the input supply fails the battery supplies the DC input to the inverter that continues to supply the output. When the mains returns the rectifier recharges the battery.

As required for naval applications the UPS is designed to meet the necessary ruggedness in terms of shock, vibration and EMC requirements.

The unit is designed for front operation and maintenance and has an ingress protection rating of IP44.

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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 kVA	16.4kVA
Input Power	16.3kW
Input Rated Voltage	440V
Input Rated Current	21.5A/phase
Input Current THD	<4%
Power Factor	0.99
Inrush Current	<Inom

Option: Alternative input supply with ACOS
Option: Anti-condensation heaters 115V or 230V

Battery

Separate battery cabinet required
Nominal voltage 480VDC.

Output

230V 3 phase, 60Hz, 15kVA , 12kW.

Waveform	Sinusoidal
THD	<2%
Static voltage regulation	± 1%
Dynamic voltage regulation	± 5%
Frequency stability	± 0.1%.

Options

Earth isolation monitor
Output distribution
Auxiliary 24V DC Output

Wild heat 2.2kW

Efficiency >85 %

Protection

Input circuit breaker. Output short circuit and over current protection. Over voltage and over temperature trips are also provided to afford general protection to the unit. Battery cut off at the end of discharge, battery overvoltage protection.

Local Controls and Indications.

Supply ON/OFF selector switch, Supply available LED, Rectifier LED Battery LED, Inverter LED, Liquid Crystal Display with scroll pushbuttons to view mimic and parameters

Remote Indications.

Volt free contacts for Output On, earth fault, battery protection operation, battery discharge, bypass operation, UPS Alarm RS485/RS232 interface

MECHANICAL FEATURES

Enclosure

Fabricated mild steel folded and welded for strength. Deck mounted with top steadies. Lifting eyes are provided.

Dimensions

(O/A)(hwxwd) mm 2015 x 800 x 725

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

Weight kg

Cable Entry

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

Ingress Protection Rating

IP44

Cooling

The UPS is designed for air cooling by fans. Louvres of sufficient size are provided for this purpose. Individual cooling fans for power

assemblies are provided. Unrestricted airflow should be allowed around the unit.

Maintenance

Front maintenance – Lift off hinged doors 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

The equipment is designed to meet a shock requirement of a maximum vertical acceleration (half sine-wave pulse) of amplitude 117.7m/s² (12g) and of duration 9ms (rise time to peak velocity) and 24ms (fall time to zero velocity). For installed shock levels in excess of this shock mounts should be fitted.

Vibration

The unit, when 'hard' mounted, is designed to meet shipboard vibration. Typically: 5 to 33Hz +/- 0.125mm

Noise

< 65dbA. @ 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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