



## Uninterruptible Power Supply 1RPQ10KB60A



The 1RPQ10KB30A Uninterruptible Power Supply (UPS) supplies a battery supported, 115V, 60Hz single phase output to ships loads. The UPS consists of a transformer isolated rectifier, battery and an inverter.

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 IP23.

## ELECTRICAL CHARACTERISTICS

### Input

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

Input kVA	14.5kVA
Input Power	14kW
Input Rated Voltage	440V
Input Rated Current	20A/phase
Power Factor	>0.95
Inrush Current	<Inom

Option: Alternative input supply

Option: ACH 115V or 230V

### Battery

Autonomy time: 60minutes,

Nominal rated capacity 24Ah.

Valve Regulated Sealed Lead Acid type,

Single string of 64 blocks connected in series.

Nominal voltage 768VDC.

Specified lifetime of 7 to 10yrs at 20degC.

Recommended normal operating temperature range is 20 to 25degC.

Recharge to 80% from a fully discharged condition within 8 hours.

Battery Float Voltage Temperature compensation.

### Output

115V 1 phase, 60Hz, 10kVA 0.8 power factor lagging.

Waveform	Sinusoidal
THD	<3%
Static voltage regulation	± 1%
Dynamic voltage regulation	± 5%
Frequency stability	± 0.1%.

Option: Earth isolation monitor

Option: Output distribution

Option: Auxiliary 24V DC Output

**Wild heat** 2kW

**Efficiency** >80 %

### 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 the parameters

### Remote Indications.

RS232 interface gives status/fault information plus the parameter

values of supply voltage, supply current, Output Voltage, Output

Current, Battery Voltage, Battery charge/discharge current,

Temperature, Battery Capacity

## 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 1995 x 1515 x 581

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

Fixings (mm) 4 holes M16(x2.0). Centres 1400(w) x 750(d) mm

2 holes M16(2.0). Centres 1400(w) x 1920 (h) mm

**Weight** 1360kg

### Cable Entry

Top via gland plate. Aperture 340mm x 65mm

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

## Cooling

The UPS is designed for natural cooling by convection and 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/s<sup>2</sup> (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.

The equipment is designed to comply with the requirements of Def Stan 59-41. 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°

