EMERGENCY LIGHTING STATIC INVERTER ELBR ACTIVE STANDBY SERIES

Single Phase Input and output

TECHNICAL DATA

Mains Present

The mains power supplies the battery charger (power factor corrected) which converts the AC into DC and charges the battery. The mains power also supplies power directly to the load via the static switch, this is the maintained circuit. The inverter is normally running when the mains is available (active standby)

Mains Fail

In the event mains failing the unit will revert to battery backup. The inverter converts the DC from the battery to AC and powers the load via the static switch. The inverter will supply a 230V AC output for the rated duration. Once a pre-set DC voltage is reached the inverter will turn off automatically to protect the batteries from over discharge

Enclosure

- Zintec Steel finished in RAL7035 - Pale Grey
- Front access
- 50mm clearance required to the rear of the cubicle for ventilation
- Top cable entry with removable gland plate for simple installation
- IP rating for enclosures is IP21
- Integral 100mm plinth allows good manoeuvrability with forklift
- Key locked front door with inner protective panel
- Easy and safe front access to circuit breakers

Termination

All client connections are suitably rated DIN rail mounted terminals, positioned for top cable entry via a removable gland plate

Remote Monitoring Circuits

2 sets of voltage free alarm contacts

Display

LCD and synoptic LED indications

The “ELBR” series of AC-AC modular Active Standby Static Inverters fully comply with BS. EN 50171. Available up to 3kVA with 3hr battery backup and 5kVA with 1hr battery backup.

The product range has been specifically designed for applications where only a limited amount of floor space is available. The control gear and batteries are housed in a single composite enclosure. Inverter and charger modules are hot swappable considerably reducing downtime.

All components including batteries can be accessed from the front. Inverter output voltage is 230VAC single phase, therefore standard mains luminaires can be used without any modification; this also allows the system to be integrated into existing lighting circuits.

- Active Standby Static Inverter
  230V, 50Hz, Single Phase Input & 230V, 50Hz, Single Phase Output
- Fully compliant with BS EN50171:2001, Central Power Supply Systems

Standard Features

- Power Factor corrected modular charger (rectifier) to reduce power consumption and reduce total cost of ownership for whole life
- Inverter rated for 120% of the rated output
- Battery circuit breaker monitored and alarmed
- Comms capability via Volt Free Contacts
- Test Key Switch and Timer

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VERTIV.

BATTERY CHARGER
Modular hot swappable design utilising the latest switch-mode technology using DSP (Digital Signal Processor) functionality for efficient operation. Power factor corrected
Recharge to 80% (rated duty) within 12 hours in compliance with BS EN 50171:2001
Temperature compensation
Battery disconnect sensing

BATTERY
Valve Regulated Lead Acid (VRLA) 10 Year design life at 20°C
Batteries are sized to provide the stated standby time from the failure of the mains supply. End of life de-rating is included as standard in accordance with BS EN 50171:2001

INVERTER
Compact modular inverter with hot swap modules
Pure sine wave output
High efficiency - low heat loss. Reliable, proven design for Emergency Lighting loads

LOW BATTERY VOLTAGE DISCONNECT
This circuit operates after the inverter has turned off due to a low battery shutdown and prevents the battery from potentially damaging deep discharges during extended periods of mains supply failure

LCD DIGITAL METER (READINGS)
Mains: Volts AC
Inverter: Volts AC / Current
Battery / DC: Volts DC / Charger Output Current
Environment: Battery Temperature

ALARMS
Mains Fail
Mains Voltage High
Mains Voltage Low
Battery Disconnected
Inverter Overload
Inverter Over-temperature
Fan failure
Inverter Off / Fault
Battery Voltage Low
Low Battery Voltage Disconnect Operated
Charger (Rectifier) fault

System and Installation Considerations

Room Ventilation

Adequate ventilation should be provided for safe dispersal of potentially explosive gases created by the batteries. The system will generate a small amount of heat during standby operation but during battery discharge and recharge a greater amount of heat will be generated, adequate ventilation is required to keep the room cool so that the battery temperature does not rise significantly. The preferred temperature is 20-22°.

Environment

- Room must be kept dry and clean
- Operating Temperature: 0-40°C – Inverter only
- Relative Humidity: 90% non condensing
- Altitude: 1000m at full rating

Applicable Standards

Standards

- Vertiv™ operates a Quality Management System which complies with BS EN ISO9001-2000 for the design, manufacturing, sales, installation, maintenance and service. The Vertiv Environmental Policy and Management Systems comply with EN ISO14001.
- Vertiv is committed to implementing a policy of continuous improvement to its production processes and pollution reduction. The ELBR range carries the CE mark in accordance with the European Safety Directive 2006/95 (superseding the 73/23 and successive amendments) and European EMC directive 2004/108 (superseding the 89/336, 92/31 and 93/68).
- Vertiv prides itself in producing quality bespoke Emergency Lighting systems all of which fully comply with the requirements of BS EN 50171:2001.

Safety

In terms of general and safety requirements, the static inverter unit conforms to standard IEC/EN 62040-1-1 governing use in unrestricted access locations.

EMC and Surge Suppression

Electromagnetic effects will be minimised in order to ensure that computer systems and other similar electronic loads will neither be adversely affected by nor affect the static inverter unit. The static inverter unit will be designed to meet the requirements of EN 62040-2, category C2. The manufacturer and customer in partnership agree to ensure the essential EMC protection requirements for the specific resulting installation.

Materials

All materials and components comprising the static inverter unit will be new and of current manufacture.