Central power supplies
Reliable emergency power solutions

EMEX110 – AC/DC Central Power Supply Systems: 110 V
EMEX110 – AC/DC Central Power Supply Systems: 110 V The ‘EMEX110’ range is available where the user preference is for an AC/DC system powering slave luminaires fitted with compatible inverter modules. The 110 V range is suitable for medium to large premises, including schools, supermarkets and other commercial or local authority properties.

EMEX Test
An optional innovative test facility is available for testing both the central power supply system and emergency lighting luminaires linked to it. The ‘EMEX Test’ hardware and software has been developed to produce an advanced, reliable and functional system at comparatively low cost. Data communication to the luminaires being fed from the inverter is available in two forms depending on user choice. Either a Data Bus version utilising a single pair data cable or a line borne data signal imposed onto distributed AC power is available.

- Both the central power supply and luminaires are addressable
- Programmable: To perform timed tests during ‘out of hours’ periods for minimal disruption to everyday core business
- Any failure is recorded to a printable log file
- User interface: A standard PC with printer or door mounted touch-screen
- Networking facility: Up to 256 separate systems can be networked for testing from a single PC
- Remote access: Test results can be viewed remotely via computer network/internet
- A substation (MXC) is used to control up to 40 luminaires
- Additionally, any standard luminaire can be converted for use with substations using a small LTC interface module
- Test and monitoring facility designed as per EN 50172/IEC 62034 guidelines

Compact power ac/dc central Power Supply Systems
Light and medium duty 24 V or 50 V for smaller premises or replacement work. Full range of options available to suit site and customer requirements.

For a project assessment, design and quotation please contact a member of our internal technical sales or field sales team. We will be able to offer the most suitable equipment for your local requirement.
EMEX 110
110 volt AC/DC central power supply systems

EMEX 110 units provide 110V AC/DC to provide power to 110V slave luminaires or converted slave 230V luminaires.

System design
Systems provide 110V AC continuously under mains healthy conditions, and battery back-up at 110V DC upon mains failure. EMEX 110 units benefit from the same modular construction as the EMEX Power static inverter range. Charger modules utilise solid state electronics of the highest reliability. Units feature BS 5424 contactors and MCB protection throughout, to provide a rugged easy to maintain system with exceptional performance for emergency lighting use. Each charger has input and output protection, and measures and limits its own current, making it a self contained unit.

Alarms and status indicators are provided on the front panel display, which provides clear and concise information, rather than a long list of parameters, which may be confusing. EMEX Power is designed and manufactured in the UK.

Standard features: EMEX 110 system overview
EMEX Power offers a host of standard features and benefits, as listed below. Note that some items will be optional, extra cost items on other systems, or may not be available at all if the system is not designed specifically and solely for emergency lighting use.

Performance
- 110V AC/DC output
- Excellent recharge capability – 80% after 12 hours following rated discharge
- MCB protection throughout; no fuses
- EMEX Power true modular construction with common spares (charger, control PCB, and system interface common across the full system range)
- Individual MCB protection for each module - AC and DC circuits
- Individual cooling fans for each charger with on-demand operation (not continuously running)
- Split parallel charger above 10 amps – enhanced integrity with the ability to operate with one or more charger modules isolated (subject to increased recharge time)
- Integral maintenance bypass facility (ability to support output load in bypass mode whilst maintenance is performed)
- Temperature compensated charger
- Standard maintained transformer and switchable for non-maintained

Alarms and instrumentation
- Comprehensive display
- Charger alarm pack
- Momentary “push to test” button
- Fire alarm interface
- Final exit interlock
- Internal and external MCB monitoring
- Local/remote maintained circuit control
- Sub-circuit monitor connection
- Two sets of volt–free alarm relay contacts
- System-inhibit engineers’ switch
- Remote alarm unit option
- Remote test

Mechanical
- IP21 rated cabinet as standard
- Easy front panel access
- Inter-cabinet trunking for battery cables
- Fork-lift plinth
- Lifting eyes for crane lift as standard
- Installation pack with all tools required
- Detailed instruction manual
# EMEX 110

110, 50 & 24 volt AC/DC central power supply systems

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### Batteries

Standard systems are supplied with Valve Regulated Lead Acid (VRLA) batteries, also known as ‘Sealed Lead Acid’. These batteries are sealed for their design life of 10 years.

Lead Acid Planté and Nickel Cadmium batteries are available upon request, however, these batteries require a much larger physical area, and emit potentially explosive gases, meaning the battery room must be adequately ventilated in line with EN 50272. Special attention to EN 50272 should be observed.

These reasons, along with the additional capital cost, generally outweigh the additional life obtained, as demonstrated below.

### Cabinet size

Standard cabinet size is 750 mm wide x 650 mm deep x 1800 mm tall. For larger installations, cabinets are mounted side by side to provide sufficient accommodation for the batteries.

Overall depth of 725 mm is required to allow a ventilation gap of 75 mm (rubber back-stop provided ensures this distance is maintained). Cabinets may be mounted side-by-side since no side ventilation is required.

### Remote alarm

British Standard BS 5266 Part 8 (BS EN 50172) section 7.2.2 requires that a visual daily check of the central power supply alarms is made. It is also a requirement that the CPS should be located in a secure area, which is typically a locked switch room in the basement.

We offer an optional remote alarm unit (RAU), which assists the user to identify any alarm conditions.

Remote alarm unit providing both audible and visual fault indication with mute facility. The RAU requires a local 220 – 240V AC supply and should be linked to the static inverter unit by a two core cable.

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**Order Codes**

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<th>Battery</th>
<th>Initial cost</th>
<th>Design life</th>
<th>Maintenance</th>
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<table>
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### Battery Table

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### Order Codes Table

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EMEX 110 – 110, 50 & 24 VOLT AC/DC CENTRAL POWER SUPPLY SYSTEMS
EMEL
110, 50 & 24 volt AC/DC central power supply systems

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EMEL mid-range
- 110V, 50V and 24V AC/DC central power supply systems in 1, 2 or 3 hour durations
- Compatible with a range of AC/DC slave luminaires and converted mains luminaires
- Suitable for small and medium sized installations, EMEL Light Duty provides an effective solution where self contained luminaires may not be appropriate, eg where ongoing maintenance may be disruptive
- Ideal for refurbishment of an existing installation, and is suitable for local authority specification work

EMEL economy
EMEL Economy systems are supplied with 5 year design life valve regulated lead acid batteries. They include a mains on indicator and charge fail alarm as standard.

EMEL 24V AC/DC Economy 100W to 700W

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EMEL standard
EMEL Standard systems are supplied with 10 year design life valve regulated lead acid batteries and include mains on indicator and charge fail alarm, together with a moving coil ammeter and voltmeter as standard.

Option list (EMEL standard only)
- Remote Alarm Unit (/RAU)
- Phase Failure Relay (/PFR)
- Fire Alarm Relay (/FAR)
- Sub-Circuit Control Relay(s) (/SCR)
- Maintained Control Relay (/MCR)
- Digital Ammeter/Voltmeter (/DM)
- Time Switch (/TS)
- High/Low Volts Monitor (/HL)
- Earth Fault Monitor (/EFA)
- Common Alarm Relay (/CAR)

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<table>
<thead>
<tr>
<th>EMEL 24V AC/DC Standard</th>
<th>400W to 800W</th>
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<tr>
<td>EMEL 50V AC/DC Standard</td>
<td>200W to 2,000W</td>
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<tr>
<td>EMEL 110V AC/DC Standard</td>
<td>600W to 3,500W</td>
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For larger 110V systems, please refer to our EMEX 110 range
### Technical reference

#### Best practice

**Testing**

BS 5266 Part 8 (EN 50172) and BS EN 62034:2012 specify the statutory requirements for testing the entire emergency lighting installation, and a copy of this standard should be obtained.

It should be noted that, immediately after a test, the battery might not have sufficient capacity to provide emergency lighting cover. For this reason all tests should be performed, where possible, at a time of minimum risk.

**Record keeping**

It is a requirement of BS 5266 Part 8 (EN 50172) that accurate records of testing are kept. Emergi-Lite have produced an Emergency Lighting Record Log Book designed to assist with these requirements. These are available to order – part code YLB-EL0807.

**General maintenance**

Check the system has adequate ventilation. Louvres in the door, and grilles in the rear panel must not be obstructed. Door access must not be obstructed. The operating environment should be free from dust, which can accumulate inside modules.

**Charger maintenance**

The charger output voltage should be tested on a monthly basis by a competent engineer to ensure it is set correctly. Charger voltage may be affected by the ambient temperature in the battery compartment. Any variation in charger voltage should be noted, and, if in doubt, contact Emergi-Lite Service Department for advice and assistance. Equipment should be maintained dust free and clean to prevent premature failure.

**Battery and cells maintenance and storage**

Battery storage, maintenance and handling shall be fully carried out in line with the battery manufacturers instructions. The battery should be visually inspected each month by a competent engineer to check that there is no evidence of damaged or leaking cells. Damaged or leaking cells require replacement. Please contact Emergi-Lite service department for advice and replacements. Individual cell voltages should be recorded on the record sheets provided in the manual. A digital DC voltmeter is required for this purpose. Only record cell voltages when the battery is fully charged, which takes a maximum of 24 hrs after a test.

Cell voltages should remain constant over the life of the battery. Cells showing a voltage differing from previous readings require investigation (please note charger is temperature compensated and cell voltages will vary with ambient room temperature changes). Do not at any time attempt to remove or replace cells or re-commission the system. Please contact Emergi-Lite service department for advice and assistance. Temperature extremes severely affect battery life. Always check and record the ambient temperature in the battery room. The optimum temperature is 20°C. Always consult the battery manufacturers literature for further guidance.

**Handling**

Most cells are heavy and difficult to handle. Care should be taken and the correct technique employed when using manual or other lifting methods.

**Explosion hazard**

Recombination (sealed) cells, when operated correctly, have negligible rates of gas evolution.

**Repair/disposal**

No attempt should be made to repair any cells, they should be treated as disposable when they have outlived their use. Batteries must be disposed of in accordance with current waste disposal and pollution legislation. It is recommended that the following authorities are contacted before any attempt is made to dispose of cells; Environment Agency Local Office, Local Authority Environmental Health or Waste Handling Department.

Our service department is available to provide advice regarding disposal of batteries, replacement of batteries and re-commissioning of Central Power Supply Systems. Please contact us for assistance.

**Warranty**

Failure to observe above guidance may invalidate the ABB Emergi-Lite warranty. Terms and conditions of warranty apply which are available on request.