

DESCRIPTION

The ESB12 & 24 units include a circuit-breaker/isolator and optional junction box. 12V or 24V configuration must be decided by ordering the correct variant and cannot be changed by the user. This equipment is designed specifically for use in hazardous areas (ATEX directive 94/9/EC) and is corrosion resistant with a 316 stainless casing.

ESB12 & 24 units contain deep cycle batteries protected with a 50A MCB isolator and are not suited to engine cranking applications.

TECHNICAL DATA

Type of Protection	Increased Safety			
Marking Code	Ex d e IIB T4			
Gas Group	⊕ II 2 G			
Ambient Temperature	-20°C to +48°C			
Certificate Numbers	Sira 06ATEX3314X & IECEx SIR 06.0088X			
Type	ESB12	ESB12T	ESB24	ESB24T
Output (12 Cells)	12V/110AH	12V/110AH	24V/55AH	24V/55AH
Weight	58 Kg	62 kg	58 kg	62 kg
Part Number	811093/12	811094/12	811093/24	811094/24
Terminal box fitted *	No	Yes*	No	Yes*

**The flameproof isolator and battery box include the warning:
 DO NOT OPEN WHEN AN EXPLOSIVE ATMOSPHERE MAY BE PRESENT.**

***Note: When terminal boxes are used (ESB12T & ESB24T), the power dissipation is limited and must be calculated to EN/IEC 60079-7 Annex E, E.2. A maximum of 8W may be dissipated if 85°C cable is installed or 17W if 100°C cable is installed.**

INSTALLATION

This equipment must be installed and maintained in accordance with BS EN 60079-14 and 17. Failure to observe any instructions in this data sheet may invalidate any warranty agreement.

Fix the battery to the skid or frame using four M10 screws via the holes provided at the base of the case.

The enclosure should be earthed to the frame via the stainless M6 stud assembly at the base of the outer case. Check for continuity after mounting.

Isolate the battery supply (using switch) prior to working inside the Ex d isolator or Ex e junction box.

Cable glands must be ATEX/IECEX certified. The ESB12 and ESB24 units should be fitted with an M25x1.5 Ex d gland. The ESB12T and ESB24T units should be fitted with an M25 Exe gland and retaining nut.

Units with Terminal boxes: these are fitted with Weidmuller terminals (www.weidmuller.co.uk). Tightening torques for terminal screws are:

WDU2.5/WPE2.5 0.4Nm to 0.8Nm WDU4/WPE4 0.5Nm to 1.0Nm WDU6/WPE6 0.8Nm to 1.6Nm
WDU10/WPE10 1.2Nm to 2.4Nm

After mounting, it is essential that the cables are fixed locally to prevent them being pulled or twisted using a suitable clamp. ESB12T and ESB24T units are provided with an optional bracket to facilitate this. The cables should be protected from mechanical damage by the use of a guard or conduit. Alternatively, armoured cable may be used.

BATTERY CHARGING

Charging of the Pyroban ESB battery in hazardous areas must take into consideration over-charging faults. The charging circuit must be such that under any single fault, the following parameters are not exceeded:

		12V units	24V units
Alternator Charging:	Output must not exceed:	15V	30V
Charging with Battery charger:	Max output 10A	15V	30V
	Or rapid recharge: Max output	15.6V	31.2V

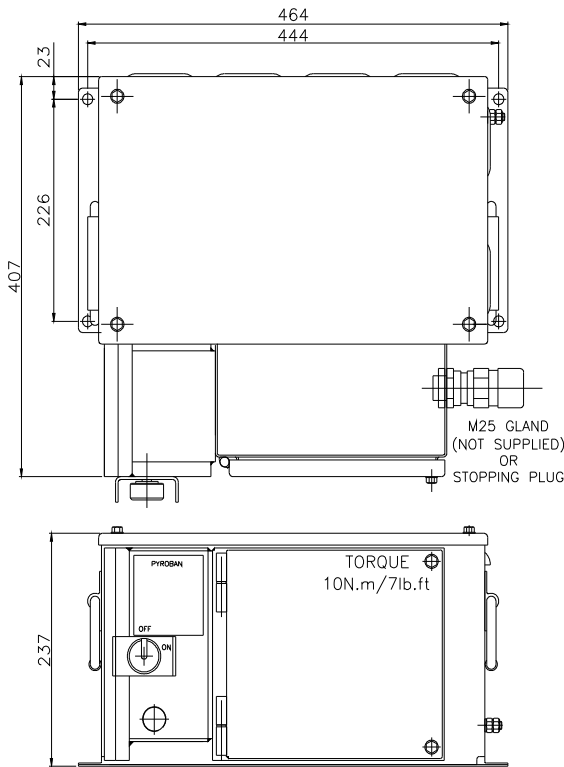
(Stop charging if battery exceeds 50°C)

Any charging system that is installed within the potential explosive atmosphere must be certified as compliant with IEC 60079:0 and any appropriate sub-standard.

If relevant, the charging circuit shall be separated from any other voltage source(s). The separation shall satisfy table 1 of IEC 60079-7:2006.

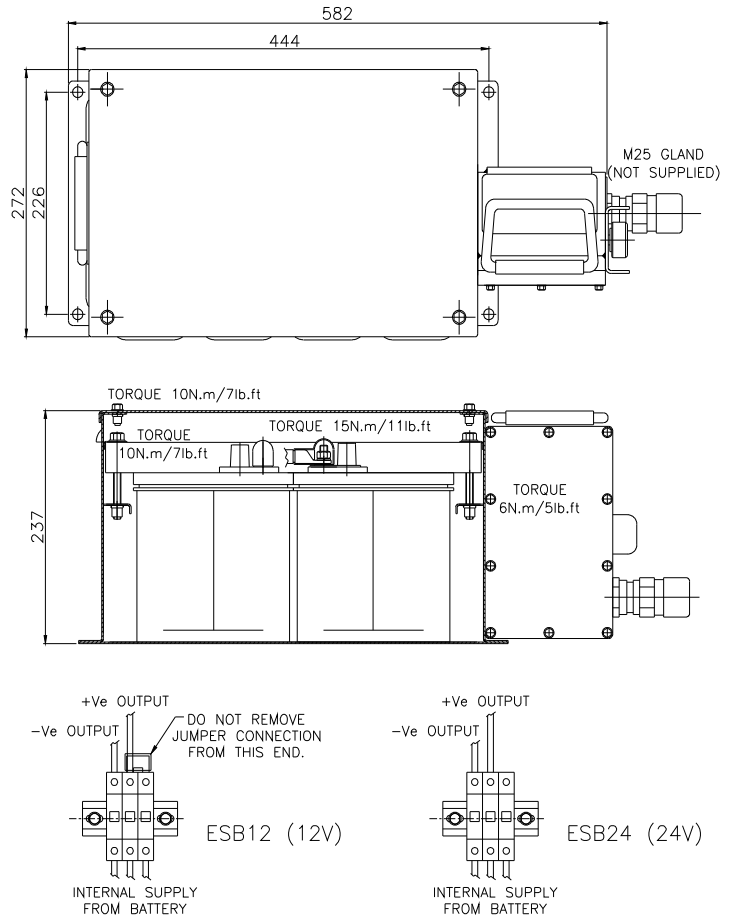
DIMENSIONS

ESB12T/ESB24T



BATTERY TIGHTENING TORQUES
APPLY TO BOTH BATTERY TYPES

ESB12/ESB24



BATTERY SAFETY

Acid Hazard

The batteries are AGM (Absorbed Glass Mat) type and acid will not normally leak, even from a cracked case. In the event of contact of acid with the skin, immediately drench in clean water and remove any contaminated clothing. Wash eyes under running water for a minimum of 10 minutes and seek medical attention.

Electrical Energy

Burns may occur from the heating of tools and conductive objects in contact with live conductors. Rapid discharging can cause gaseous fumes leading to explosions.

Isolate the battery where possible prior to working on electric circuits. Exercise caution when working with metallic tools or conductors to prevent short circuits and arcing.

For burns cool the area with water, apply a sterile dressing and seek medical attention if necessary.

Emission of Gasses

Hydrogen and oxygen are emitted during charging and can cause an explosive concentration. Install in a ventilated area. Avoid exposing batteries to ignition sources such as sparks and lit cigarettes.

Weight

Both battery assemblies are heavy and awkward to handle. Do not lift alone or use a suitable lifting device to avoid personal injury. Conduct a risk assessment if necessary.

Handling

Always wear proper eye, face and hand protection when working with battery. Never lean over battery while boosting, testing, or charging.

Disposal

Batteries contain acid and lead compounds, should not be burnt and must be disposed of in accordance with the local environmental regulations.

MAINTENANCE

This should be carried out in a safe area.

Every 12 months or 1500 hours operation whichever sooner:

- Check that the supply cables are in good condition and fixed in their original position.
- Check that the cable glands are tight.
- Check that the mounting fixings are tight.
- Check that the isolator operates freely.
- Inspect the unit for mechanical damage, contact Pyroban Customer services for advice on repair or replacement.
- **The internal battery is not serviceable; do not attempt to fill with water or acid.**
- Should any repairs be made to the flameproof isolator enclosure, please note that the maximum constructional gap (l_c) is less than that required by Table 1 of EN/IEC 60079-1 on the following joints:

Flanged lid to enclosure 0.05mm: Actuator cylindrical joint to enclosure 0.15mm

STORAGE

Store fully charged, upright in a cool, dry and ventilated place. Storage at low charge causes the plates to sulphate and permanently deteriorates the performance. Check every few months to make sure the open circuit terminal voltage has not dropped below 12.4 Volts (24.8 Volts). Recharge if necessary.

BATTERY REPLACEMENT

Genuine Pyroban parts should be ordered to ensure certification is not invalidated.

The internal battery units may only be replaced **AS A PAIR** by the following specially tested part: Optima BT-DC4.2 Pyroban part number 994516

To replace the batteries, first isolate the supply. Remove the battery lid and retaining bar. Take care not to short the battery terminals when removing connections. Replace wiring in the original layout. Replace any nuts and shake-proof washers and tighten fixings to the values on page 2

Re-fit insulators provided so that no conductive parts are exposed. The maximum allowable clearance between the terminal or bare supply cable to the battery casing is 10mm.

Replace the lid and tighten fixings to the values on page 2.

DECLARATION OF CONFORMITY

We, Pyroban Limited, Dolphin Road, Shoreham-by Sea, Sussex, BN43 6QG, UK, declare that the component mentioned in this data sheet has been designed and manufactured in accordance with the essential health and safety requirements of Directive 94/9/EC(ATEX) inclusive of subsequent amendments. Compliance with these Directives is established by meeting the technical requirements of the relevant CEN and CENELEC standards.




David Waring CEng MIMechE

Engineering Manager

OTHER INFORMATION

Nothing contained in this brochure is intended to extend any warranty or representation, expressed or implied, regarding the products described herein. Any such warranties or other terms and conditions of sale of products shall be in accordance with Pyroban's standard terms and conditions of sale for such products, which are available upon request. Specifications and machinery may be altered without notice at any time.

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