

POWER FOR TOMORROW TODAY

The Eternity Technologies range is built using only the highest quality and most efficient production processes at our state-of-the-art manufacturing centre in the UAE.

It is this innovation, modern design criteria and industry-leading machinery that allows Eternity Technologies to not only meet the needs of the global industrial market with increased reliability but define it for the future.



Service



Accessories



Bloc Batteries



Chargers



Network Power



Motive Power



Eternity
TECHNOLOGIES

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Installation, Operation and Maintenance

PzV Cells

Eternity Technologies have brought together the latest manufacturing processes and modern design criteria to deliver the Eternity Technologies PzV range of gel batteries designed to meet the ever changing demands of the Global Motive Power market.



Safety Instructions

Carefully read this manual in all its parts upon receipt of Eternity Technologies PzV Batteries.

Lead-acid PzV Batteries are components of a system and although they are maintenance free, they require suitable precautions and behavioural norms to guarantee safe working conditions and to ensure maximum performance of the battery during its entire life. The Installation, Operation and Maintenance instruction manual supplies the necessary instructions for the correct care, handling, installation, use and maintenance of Eternity Technologies PzV Batteries.

The non compliance with the instructions given herein may cause injury to personnel and damage to equipment as well as poor operation and performance of the battery. Any repairs made without authorisation, for example, opening the valves, may render the warranty void.

Store this manual in close proximity to the batteries at all times and ensure it is accessible to the relevant personnel.



No naked flames



Corrosive



Wear safety goggles



Read instructions



First aid /
medical assistance



Keep away from children



Explosive



Caution



Electric shock risk

Observe the following precautions at all times

Observe the operating instructions - work on the battery should be carried out by qualified personnel only.

Exposed metal parts of the battery carry a voltage and are electrically live with the risk of short circuits.

Avoid any electrostatic charge; before starting work on the battery, first discharge any possible electricity from yourself by touching an earth-connected part; repeat this action occasionally until work is complete.

Use protective equipment, such as protective clothing, rubber gloves and goggles.

Use insulated tools.

DO NOT place or drop metal objects on top of the battery.

DO NOT wear rings or bracelets.

Remove any articles of clothing with metal parts that might come into contact with the battery terminals.

DO NOT smoke and DO NOT use open flames or create electric sparks.

Take all precaution when using the main supply.

Make sure that the first aid kits and fire extinguishers are easily accessible.

Used batteries contain recyclable materials. They must not be disposed with household waste but as a special waste. Methods of return and recycling must conform to the regulations in operation at the site where battery is located. If in doubt please contact Eternity Technologies.



Pb

1. Delivery, unpacking and storage

Unpack the batteries as soon as they are delivered. Verify that the equipment has been delivered in good condition. Any damage must be reported immediately to the carrier and the damaged items retained for inspection by the carrier's representative.

If the battery cannot be immediately installed, store it in a dry, cool and clean place.

Do not expose the battery to direct sunlight, to avoid any damage to containers and lids.

During the storage time, the open circuit voltage (OCV) must periodically be checked.

Cells with OCV below 2.07 Vpc must be recharged using an approved charger and profile.

The OCV of a fully charged battery should result between 2.12-2.15 Vpc.

Recommended storage time for PZV-ET cells is 2 months @ 30°C and 3 months @ 20°C.

Failure to observe the above conditions may result in a greatly reduced capacity and service life or in permanent damage to the cells.

2. Installation & Handling

WARNING

The cells are already charged when delivered and should be unpacked with care. Avoid short circuiting terminals of opposite polarity.

The cells are fitted with a Gas Release Valve, please do not remove this valve. The valve is designed to release air from the cell when the pressure builds up to a certain level during charge or discharge. The valve prevents air entering the cell and acts as a fire barrier to the inside of the cell.

Before installing the cells, clean all parts. Remove the short circuit protectors from the terminal posts and discard.

When lifting the cells off the pallet ensure that the cells on the pallet are adequately secured on all four side to prevent cells from falling over.

Motive power batteries are heavy, so adequate mechanical handling systems should be used. Cells that are lifted using mechanical equipment should be lifted with both terminals. Ensure that the lifting equipment does not short out the battery terminals.

Anti corrosive terminal grease is applied to the terminals to prevent corrosion of the brass insert in the terminal. It is recommended to apply more anti corrosive grease to the terminals if required before fitting the connectors and bolts. Ensure that the cell polarities are lined up correctly before connecting the cells. Connecting the same polarity terminals will cause a short.

Bolts must be tightened to a torque of 23Nm +/- 2Nm. The connectors should be well anchored and sufficiently long to prevent pulling on the battery terminals. The cells must be accessible to facilitate voltage readings.

Before fitting the battery to the vehicle make sure the top of the battery is clean and dry.

Batteries must be kept upright when lifting. Provided in the battery tray (container) are holes into which lifting hooks should be located. Ensure that the battery is located in its correct position on the vehicle or rack and secure any restraining devices.

3. Applications

The PZV-ET-ET cells are maintenance free and are the ideal battery technology for certain motive power applications. However, the VRLA product cannot be used the same as a flooded battery. The main difference is that the energy throughput needs to be limited to avoid the battery reaching destructively high temperatures, as a result of this we propose the following battery Ah limits when discharging to 80% depth of discharge:

24V Battery – Maximum 600Ah

36V Battery – Maximum 400Ah

48V Battery – Maximum 300Ah

80V Battery – Maximum 200Ah

If greater capacities are used, the energy throughput will increase resulting in a shorter battery life.

4. Charging

As the cells only release a very small amount of Hydrogen release gas during charging, a dedicated charging room is not required although it is advisable that the charging room / area complies with DIN EN 50272-3.

A full charge should be carried out after every discharge. We advise a minimum of 12 hour charge for a battery taken to a depth of discharge of 80% or a minimum 8 hour charge for a battery discharged to 60%. All battery covers on the application should be open when charging to avoid any gas build ups. Do not open or tamper with the gas release valves at any point.

An equalization charge is to be carried out once per week to avoid capacity drop and prolong battery life.

The charging and equalization profiles must be approved by Eternity Technologies. Please contact us for any clarification.

5. Operation / Discharge

The PZV-ET cells are maintenance free so the cells should not be opened at any point. The cells are ideal for use in storage areas of food, chemicals and pharmaceutical products.

It is recommended that the battery is not discharged beyond 80% of nominal capacity. Deeper discharging will lead to early failure of the battery. When the battery has been discharged it should be recharged as soon as possible on the appropriate charger.

PZV-ET cells Should only be used in light to normal duty applications and for a maximum of 6 times per week. Adequate rest periods should be given to the battery to allow it cool after each cycle.

The recommended operating temperature range for the battery should be between +5 - +35°C. Operating outside of these temperatures will lead to early failure of the battery.

6. Maintenance

Battery in Service

The PZV-ET cells are maintenance free. Never remove the valves or top up with water.

Ensure the cells are clean and dry and remove any liquids present at the base of the battery tray with the drainage tube or pump.

Lifting facilities on battery trays and racks should be examined periodically for corrosion or other deterioration. Do not lift damaged trays as there is a danger of collapse. If the battery is in two units, these should be kept together when charging.

If excessive corrosion or other deterioration becomes evident in any part of the battery it should be reported to Eternity Technologies. Check bolted connections on the battery for tightness and ensure that they are clean.

Inspect battery cable insulation and battery charging connectors for wear and damage to insulation and burning of contacts. Refurbish or replace as necessary.

Keep all terminal connections smeared with an approved anti-corrosive grease.

Keep a record of the battery voltage and individual cell voltage on a monthly basis.

Battery out of Service

If a battery is to be taken out of service for a time, or if a new charged battery cannot be put into service immediately, it should be given a charge and stored in a cool dry place.

Disconnect detachable connectors.

Every 2-3 months, give the battery a charge.

If a vehicle is used at irregular intervals the battery should be given a charge every month and the battery disconnected from the vehicle during its idle periods. Before putting back into service, charge the battery.

7. Disposal of Old batteries

Careless disposal of a battery can harm the environment and can be dangerous to the public. Always dispose of spent batteries to an authorised, licensed dealer. Do not attempt to open or dismantle a battery or cell.

The British Standards Institute have published a 'Code of Practice for Safe Operation of Traction Batteries' – BS 6287:1982 which is available online.

Additional Information

For any further information on Eternity PzV batteries, please contact:

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