



GEL BATTERY MANUAL



LEGAL GUARANTEES

In accordance with Law 1480 of 2011 Consumer Statute and Decree 735 of 2013 Legal Guarantee:

- To request a guarantee, the customer is obliged to report the damage to the product, make it available to the company at the guarantee service point at AV CL 80 69-70 Unit 1C, and indicate the invoice number to determine your purchase date.
- The delivery of the repaired product will be delivered to the customer at the warranty service point, unless the customer requests to send it to a different destination, in which case the customer must assume the cost of freight.
- In any case, when a product repair guarantee is denied or approved, the respective written report must be issued supporting the evidence that justifies the decision.
- In no case will Tb Plus Energy proceed with the replacement of the product given under warranty since, if the repair does not proceed, a credit note will be issued which covers the acquisition of another new product or service or the return of the money paid.
- If the failure repeats once the product has been repaired, only the credit note applies which covers the acquisition of another new product or service or the return of the money paid.
- When the customer opts for a refund of the money, it will be for the amount of the sale price. For this purpose, they must send a communication signed by the legal representative, which indicates the bank details to make the return, the which will be effective within fifteen (15) business days after receipt of the return request.
- The repair of the product will be carried out within 30 business days following the claim, which is carried out by filling out the GP-F-018 Warranty Form, which is completed in the PQRF Guarantees tab on the WEB page www.tbplusenergy.com or at the following link:
https://forms.office.com/Pages/ResponsePage.aspx?id=K987JK0Nuke_1n30RF9URwiKWAfZovhDrWEVYGmhK95UOVZYUFBWMUpaQVZBM0hIS0RKUjdLSkdIWS4u
- Once the guarantee form has been completed, the client has 15 days to make it available at the guarantee service point.
- The product manuals in which proper use, installation instructions and periods covered by the warranty are reported are found in the PQRF Product Manuals tab on the website www.tbplusenergy.com.

TECHNICAL SPECIFICATIONS

Product description

Device made up of several cells capable of storing electrical energy for use later.

In GEL batteries, a silicone compound is added to the electrolyte, which causes the liquid becomes a solid mass like gelatin, hence its name.

Main properties

- High resistance to high temperatures and humidity.
- Good charging efficiency at high temperatures.
- High efficiency between charging and discharging, with very little energy loss.
- High charging currents that shorten charging times.
- Useful life up to 5 years.
- Maintenance-free battery - Valve Regulated Lead Acid (VRLA), Lead battery - acid regulated by Valve).
- High energy retention.
- Simple installation.
- Greater care for the environment and less pollution, post program consumption.
- Reduces the evaporation percentage.

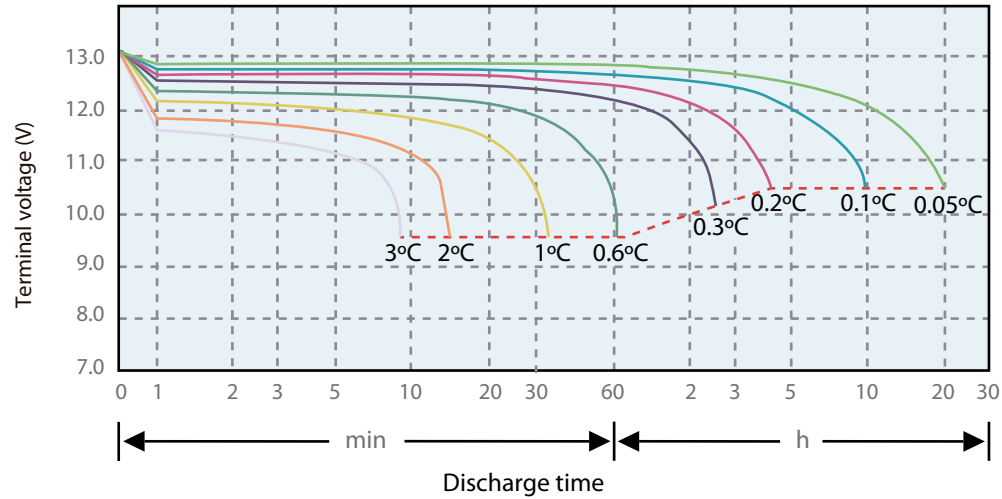
TECHNICAL VARIABLES

| Operating temperature | | |
|---|---------------------------------------|-------|
| Nominal voltage | 12V | |
| Operation | - 20 ° C (- 4 ° F) ~ 50 ° C (122 ° F) | |
| Charge | 0 ° C (32 ° F) ~ 40 ° C (104 ° F) | |
| Discharge | - 20 ° C (- 4 ° F) ~ 50 ° C (122 ° F) | |
| Storage | - 20 ° C (- 4 ° F) ~ 40 ° C (104 ° F) | |
| Specification | | |
| Affected capacity by the temperature | 40 ° C (104 ° F) | 108 % |
| | 25 ° C (77 ° F) | 100 % |
| | 0 ° C (32 ° F) | 83 % |
| | -15 ° C (5 ° F) | 60 % |
| Auto - discharge in 25° C (77° F) (Before recharging) | Cap. after 3 months | 91 % |
| | Cap. after 6 months | 82 % |
| | Cap. after 12 months | 65% |

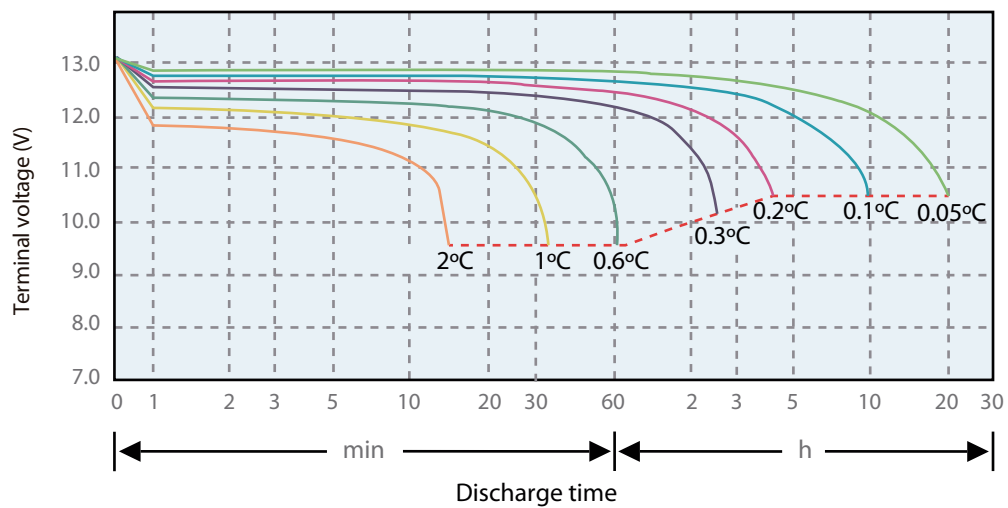
GRAPHICS

Discharge Features

TB 12-55 / 75

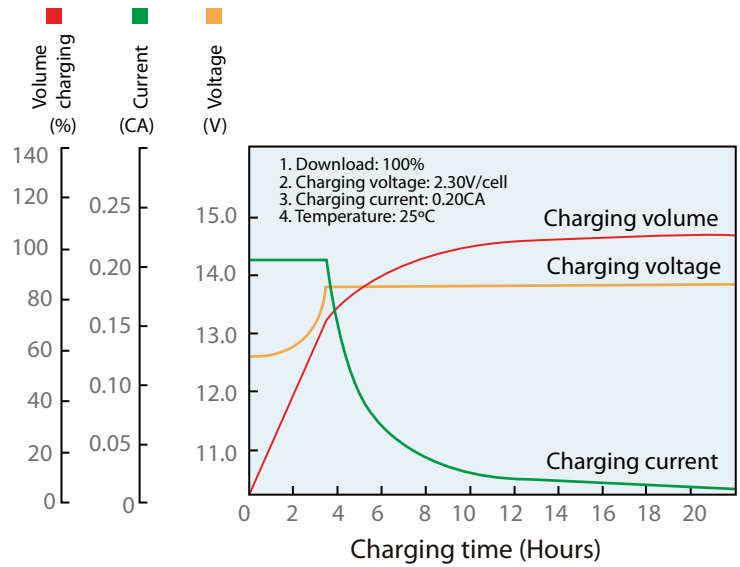


TB 12-100 / 120 / 150 / 200 / 250



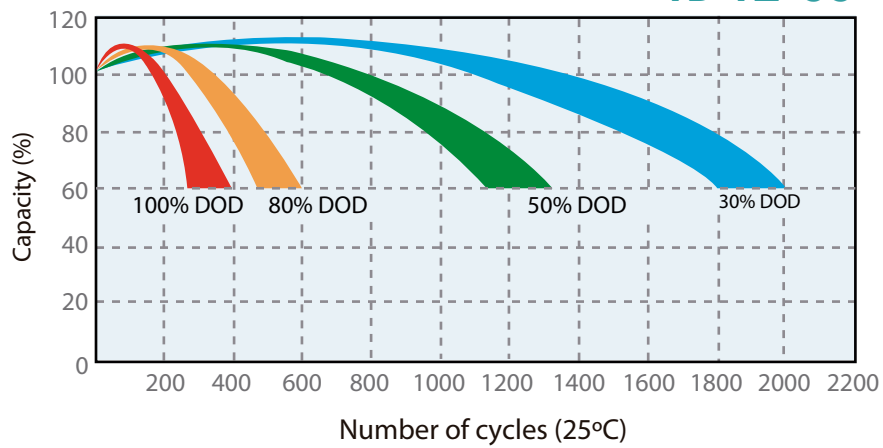
GRAPHICS

Charging voltage characteristics

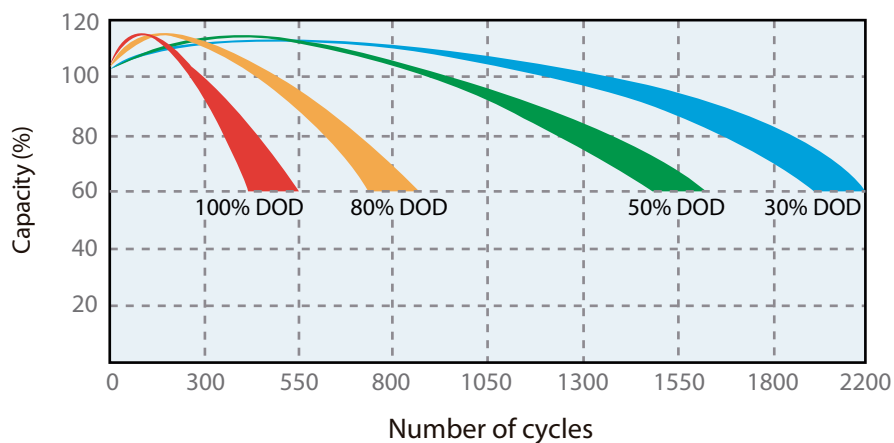


Life cycle in relation to depth of discharge

TB 12-55



TB 12-75 / 100 / 120 / 150 / 200 / 250



WARRANTY CONDITIONS

Tb Plus Energy guarantees that each product is free of defects in materials and manufacturing, and offers a guarantee for a period of **18 months** from the purchase of the product.

RECOMMENDATIONS

- Follow loading and unloading recommendations.
- Charge to 100% on the first charge.
- Store in a safe place. Free of light, water and dust.
- Install under certified professional recommendation.
- Do not expose to nearby heat sources.
- Do not connect equipment with a power greater than that with which the power supply has been sized battery or system.
- Once a year check the battery charge level.
- Keep the battery free of objects and obstacles.
- Do not manipulate its edges with your hands.
- Do not leave them within the reach of children.


| Test | Voltage and current | | | Temperature | | Ohmic | | Undulation |
|-----------|--|--|------------------------------|------------------------|--|---------------------------------|--|---|
| | Voltage floatation total measurement on the terminals of the battery | Tension and voltage of the exit from charger | Current float DC (for chain) | Temperature atmosphere | Temperature of the terminal negative of each battery | Values ohmic internal cell/unit | Endurance from cell to cell and detail of connection of terminal | Tension or current undulation AC imposed on the battery |
| Monthly | X | X | X | X | | | | |
| Quarterly | X | X | X | X | X | X | | |
| Annually | X | X | X | X | X | X | X | X |


Inspections recommended by IEEE Standard 1188, "Recommended Practices for Maintenance, Testing, and Replacement of Batteries Valve Regulated Lead Acid (VRLA) for Stationary Applications"


*Other battery capacities can be developed and supplied upon request.


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