Qoltec®

USER MANUAL FOR THE

AGM

GEL

DEEP CYCLE

Introduction

Thank you for your trust and for choosing our battery. We are confident that the product will meet your expectations. This manual will guide you through the process of installing and fitting the battery and will be helpful should any problems arise during the operation of the device. If you encounter any problems, please refer to this manual before contacting Customer Service.

Safety precautions

1. Please read the user manual before using the battery.
2. The battery must only be used for its intended purpose.
3. Before first use, check the condition of the casing, the polarity markings and the battery voltage. If the voltage is too low, charge the battery using a suitable charger before connecting it to the device. Do not use the battery if there is visible mechanical damage, bulging, signs of leakage or corrosion on the terminals.
4. Do not short-circuit the battery terminals.
5. Do not dismantle, puncture, deform or modify the battery casing.
6. Do not throw the battery into a fire or expose it to very high temperatures.
7. The battery must be protected from direct sunlight, moisture, water and heat sources.
8. Do not use the battery if its casing is damaged, swollen, cracked or leaking.
9. When connecting, ensure correct polarity: positive terminal “+” to the positive terminal of the device, negative terminal “–” to the negative terminal of the device.
10. Incorrect connection may damage the battery, the device or the installation.
11. Keep the battery out of the reach of children.
12. If the electrolyte comes into contact with the skin or eyes, rinse the area immediately with plenty of water and seek medical advice.
13. Do not allow the battery to become deeply discharged, as this may shorten its service life. Leaving a discharged battery for a long period of time may lead to sulphation of the plates, permanent loss of capacity and the inability to recharge.

About the product

Correct use of the battery in accordance with the manufacturer's instructions ensures stable operation of the equipment, reduces the risk of damage and extends the product's service life. Particular attention should be paid to correct polarity, selecting the appropriate charger and avoiding deep discharge of the battery.

Instructions section	AGM	GEL	DEEP CYCLE
Technology description	AGM glass mat	Gel electrolyte	design for deeper discharge cycles
Charging	AGM/VRLA charger	GEL/VRLA charger, be careful with the voltage	charger compatible with battery technology
Application	UPS, alarms, buffer, cyclic	buffer and cyclic, suitable for mobile installations	motorhomes, boats, PV, cyclic operation
Discharge	avoid deep discharge	better resistance, but still avoid extreme discharge	suitable for deeper discharge
Storage	Recharge every 3–6 months	recharge every 3–6 months	Similarly, especially after operating cycles

AGM battery

An AGM battery is a maintenance-free lead-acid battery manufactured using VRLA technology, in which the electrolyte is trapped within glass mat separators. As a result, the battery is highly leak-proof, vibration-resistant and capable of operating in various positions.

AGM battery applications

The product is designed for both buffer and cyclic operation, including in UPS emergency power supply systems, alarm systems, monitoring systems, cash registers, electric toys, solar systems, medical devices, automation, boats, motorhomes and other devices requiring a stable DC power source.

Buffer and cyclic operation

An AGM battery can operate in two basic modes:

Buffer mode

In buffer mode, the battery is constantly connected to a charger or a device with a voltage maintenance function. This mode is used, for example, in UPS systems, alarms, emergency systems and power distribution units.

Examples of applications:

- UPS units,
- alarm systems,
- surveillance,
- emergency lighting,
- access control systems.

Cyclic operation

In cyclic operation, the battery is regularly discharged and recharged. This mode is found, for example, in electric vehicles, solar systems, and portable and mobile devices.

Examples of use:

- camper vans,
- boats,
- electric toys,
- photovoltaic systems,
- mobile devices.

Discharging an AGM battery

NOTE: Do not allow the battery to become completely discharged. Deep discharge can lead to sulphation of the plates and a permanent reduction in capacity.

Battery condition	**Open-circuit voltage**
Charged	approx. 12.7–13.0 V
Partially discharged	approx. 12.2–12.4 V
Significantly discharged	approx. 11.8–12.0 V
Deeply discharged	below 11.5 V

DEEP CYCLE battery

The Deep Cycle battery is designed for cyclic operation, i.e. regular discharging and recharging. It is ideal for applications requiring prolonged power consumption, such as motorhomes, boats, solar installations, emergency systems, electric vehicles and mobile devices.

Applications of Deep Cycle batteries

Deep Cycle batteries are designed for both buffer and cyclic operation. They are particularly well suited to applications requiring regular discharging and recharging, such as solar installations, motorhomes, boats, emergency systems, electric vehicles and mobile devices.

It is recommended to use a dedicated battery charger

Deep Cycle batteries require charging using the so-called constant-voltage method, first with direct current and then while maintaining a constant voltage. This allows you to avoid the risk of damaging the battery through improper charging.

GEL battery

A GEL battery is a maintenance-free lead-acid battery manufactured using VRLA technology, in which the electrolyte has been thickened into a gel. As a result, the battery is highly leak-proof, resistant to leakage and performs well in cyclic and buffer applications.

To charge a GEL battery, use a charger designed for gel batteries or a charger with a suitable GEL mode. Do not use chargers with excessively high charging voltages, as this may damage the structure of the gel electrolyte and shorten the battery's service life.

Applications of the GEL battery

GEL batteries are particularly well suited to applications involving regular discharging and recharging, e.g. in solar installations, recreational vehicles ( ), mobile devices and off-grid power systems. To ensure correct operation, always select a battery whose voltage, capacity and maximum discharge current match the requirements of the specific device.

Charging the battery

Only use a charger designed for the specific battery type: AGM, GEL or VRLA. The charger should have the correct voltage, charge current limitation and automatic termination or switch to trickle charge mode once fully charged.

Charging recommendations:

Operating mode	**Recommended voltage for a 12V battery**
Buffer / float mode	approx. 13.5–13.8 V
Cycle operation	approx. 14.4–14.9 V

For 6V, 24V or other batteries, use the voltage values specified in the documentation for the specific model.

Important charging rules:

1. Do not charge the battery with a charger of the wrong voltage.
2. Do not exceed the maximum charging current specified by the manufacturer.
3. The recommended charging current is usually approx. 0.1C, i.e. 10% of the battery's capacity.
4. Example: for a 100Ah battery, the recommended charging current is approx. 10A.
5. Do not leave a deeply discharged battery uncharged for a long period of time.
6. The battery should be charged in a well-ventilated area.
7. During charging, avoid sparks and open flames near the battery.

Installation and connection

1. When installing the battery, please observe the following guidelines:
    - Condition check: Before installation, ensure that the battery is not mechanically or chemically damaged. Also check for any visible signs of leakage.
    - Avoid short circuits: Take care during installation to avoid causing a short circuit. Avoid contact between metal objects and the battery terminals.
    - Secure mounting: Install the battery in a stable and adequately ventilated location. Ensure that the battery is well protected against shocks and vibrations.

2. Before installation, ensure that the device to which the battery is being connected is switched off.
3. Check that the battery voltage matches the device's requirements.
4. Identify the positive (+) and negative (-) terminals on the battery and on the device. The terminals are usually colour-coded: red (positive) and black (negative).
5. Connecting the positive (+) terminal: First, connect the positive (red) cable to the positive terminal of the battery. Ensure the connection is secure and stable.
6. Connecting the negative terminal (-): Next, connect the negative cable (black) to the negative terminal of the battery. Ensure the connection is secure and stable.
7. Check that both connections are secure and stable. Ensure that the cables are firmly attached and do not have any slack.
8. If possible, secure the battery terminals to prevent accidental short-circuiting.
9. Once you have ensured that the connections are correct and secure, switch on the device.
10. Monitor the operation of the device and the battery for the first few minutes to ensure that everything is working correctly and there are no issues.
11. When connecting several batteries in series or in parallel, use batteries of the same type, voltage, capacity, state of charge and level of discharge.

Note: Incorrect connection of the terminals may damage the battery, the device or the installation. Do not short-circuit the battery terminals or touch them with metal objects.

Common problems and possible causes

Problem	Possible cause	Solution
The battery discharges quickly	Battery wear, excessive load, incomplete charging	Check the charger, load and battery voltage
The device does not work when connected	Reverse polarity, flat battery, loose cables	Check polarity, cables and voltage
Battery not charging	Incorrect charger, damaged charger or battery	Use an AGM charger and check the charging

		parameters
The casing is swollen	Overcharging, excessive temperature, damage	Stop using the battery
Low capacity	Natural wear and tear, deep discharge, long storage without charging	Charge the battery and check its condition

Storage

1. The battery should be stored in a dry, cool and well-ventilated place.
2. The battery should be fully charged before long-term storage.
3. Do not store the battery in a discharged state.
4. Check the battery voltage during storage.
5. It is recommended to recharge the battery every 3–6 months, depending on the storage temperature.
6. The higher the storage temperature, the faster self-discharge occurs.

Ventilation

Under normal conditions, gas evolution is negligible, and natural ventilation is sufficient to cool the cells and mitigate the effects of accidental overcharging. Thanks to these properties, the batteries can be installed in offices and other premises. If the batteries are installed in enclosed cabinets, adequate ventilation must be ensured.

Remember that correct use and proper care of the battery are very important for its service life. Store the battery in a dry, clean and well-ventilated place, away from flammable materials and heat sources.

Maintenance

The AGM battery is a maintenance-free product and does not require topping up with electrolyte.

Recommended checks:

1. check the condition of the casing regularly,
2. check the cleanliness and condition of the terminals,
3. remove dust and dirt with a dry or slightly damp cloth,
4. check that the cables are securely fastened,
5. check the battery voltage periodically,
6. do not use harsh chemicals to clean the casing.

Disposal

A used battery must not be disposed of with household waste. The product should be taken to an appropriate collection point for used batteries and accumulators or to a retailer that accepts this type of waste.

Proper disposal helps protect the environment and enables the recovery of raw materials.

Important final information

1. The battery must be used in accordance with the technical specifications stated on the product label.
2. Incorrect charging, short-circuiting, overheating or deep discharge may shorten the battery's service life.
3. Before connecting to the device, ensure that the voltage, capacity and type of battery comply with the device manufacturer's requirements.
4. If you have any doubts regarding the selection or use of the battery, please contact your retailer or service centre.

Warranty terms

The manufacturer's warranty is valid for 12 months from the date of purchase.

Note: The warranty does not cover the effects of incorrect charging, deep discharge, short circuits, reverse polarity connection, mechanical damage or natural wear and tear of the battery.

The warranty covers manufacturing defects and damage arising from causes beyond the user's control, revealed during the correct use of the product in accordance with its intended purpose and the recommendations contained in this manual.

A condition for the warranty claim to be considered is that the battery is used in accordance with the technical parameters specified on the product label, in the technical documentation and in the user manual. The battery should be correctly charged, stored and operated, maintaining the correct polarity, appropriate charging voltage and permissible operating conditions.

The battery is a consumable product whose capacity and performance may gradually decrease over time, depending on the number of charge and discharge

cycles, operating conditions and storage methods. A natural reduction in battery capacity resulting from normal use does not constitute a product defect.

If you notice any abnormalities, such as swelling of the casing, leakage, excessive heating, an unusual odour, inability to charge, or a significant drop in performance, stop using the battery and contact the retailer or service centre.

Please enclose proof of purchase and a description of the fault with your warranty claim. The product being returned should be properly secured for transport to prevent further damage.