AMMONITE®
SYSTEM

ACCU THERMO
heating batteries

user manual

The symbol placed on the product or on its package indicates that this product cannot be treated as household waste. It should be handed over to the applicable collection point for the used up electrical and electronic equipment By providing a proper storage you may prevent dangerous consequences to the environment and human health.

Recycling helps to preserve natural resources. For more information about recycling of this product, please contact your local authorities or authorities responsible for environment protection, your household waste disposal service or the shop where the product was purchased.

At the end of the use the battery should be placed in a special container or brought to a collection point for the recycling of electrical and electronic equipment. In order to do this please read current environment protection regulations.

Note

Despite the regulations in force concerning air shipping of hazardous goods including Li-Ion batteries, the shipping company may refuse to ship a Li Ion battery onboard a plane.

Ammonite System® company will not be held responsible for such occurrences.

Intended use

The THERMO battery range is intended to be used to supply power to a diver's heated clothing operating at a maximum of 12 V, with the receivers' (heated undersuit, vest, gloves, and torch) maximum total power of not more than 200 W (for and ACCU 24 Ah THERMO) and 140 W (ACCU 14 Ah THERMO).

The THERMO range batteries feature two connection terminals at the top part of the casing, one of which hasa built-in cable with the so-called E/O connector. Used to connect the heating device, it is equipped with an intelligent E/O system and features a two-level power regulation (70%/100%) switch to control heating levels. The other terminal is used to charge the battery; it may be optionally used to connect any Ammonite System® lamp head.

What is intelligent E/O?

Intelligent E/O is an electronic circuit protecting the contacts of a wet connector from damage caused by electrolysis. The process responsible for this kind of damage takes place during the passage of current in water between the contacts of a wet connector when it remains unconnected. Until the battery is connected to a receiver, e.g. a heated vest, there is no voltage on the E/O lead. Voltage is automatically disconnected also upon disconnecting the receiver by unplugging the E/O cable. Thus, no current passes between the contacts of the wet connector, making them safe from damage.

Getting ready for operation

Due to the considerable power of heated clothing, it is recommended to use a fully charged battery in order to maximise its operation time.

LED indicator

The LED indicator is located at the top part of the battery casing.

The LED light indicates the battery performance status and provides information on the current battery level.

On power-up, the LED lights for 4 seconds in a mode corresponding to its charge level:

green, continuous: 75% – 100% of charge capacity

green, intermittent: 50% – 75% of charge capacity

red, intermittent: 25% – 50%

red, continuous: less than 25%

Next, the LED switches to the operation ready mode – repeated two red flashes and one green – battery ready for operation – no receiver on the E/O output.

Once a receiver is connected and found – the E/O output becomes active – the receiver starts being powered.

When a receiver is connected, the LED lights green.

Using a torch with ACCU THERMO battery

It is possible to use ACCU THERMO battery to simultaneously supply power to heated clothing and a torch head. However, such a gear setup is not recommended for safety reasons.

Ammonite System® recommends diving with a primary torch, independently battery powered, along with two battery powered backup torches.

Recommendations for use

In the case of a longer period of non-use, the battery capacity must be checked by connecting the charger to the charging socket. If need be, the battery should be charged up.

The circuit controlling the battery performance is equipped with a microprocessor which consumes little power. Therefore, it is necessary to check the battery level or – in case of a longer period of non-use – take the pack out of the casing and store separately.

Precautions – Li-Ion battery packs – recommendations

The battery should not be left unattended while being charged.

The battery pack must be fully charged before its first use.

Deep discharge of the pack i.e. one below 8.0 V (15% on the battery display) should be avoided.

The batteries discharge spontaneously even when they are not used. This may result in deep discharge and, consequently, loss of capacity or deterioration of the battery pack.

Before use in water, condition of the electric cables, particularly the E/O cable, should be checked.

If damage is detected, the battery pack should not be used. The battery should be checked for leaktightness – the plugs and leak stoppers must be appropriately tightened up.

Ammonite System® company will not be held responsible for any damage resulting from misuse of ACCU THERMO range batteries.

Charging the Li-Ion battery

In order to charge the battery you must connect the charger to a 100–240 V ~ power source.

Proper performance of the charger is indicated on the blue backlit display.

Undo the stopper on the battery terminal labelled „charging/torch".

The output plug of the charger must be connected to the battery's „charging/torch" terminal. The charge start is indicated by the display changing its colour from blue to red and displaying information on the battery pack charge status.

When the battery has been charged, the display will read „FULL 100%".

Use of the Li-Ion battery:

The battery must be charged only with the AMMO Li-Ion charger supplied by Ammonite System®.

The battery must not be discharged below the voltage level of 8.0 V.

You should not do the following:

Open (cut the protective wrap) the battery pack.

Interfere with the battery construction.

Short the battery contact pins.

Use the battery with batteries operating in other chemical systems or made by other manufacturers.

Use the battery with batteries operating in the same chemical system but featuring different capacities or nominal voltages.

Throw the battery or pierce the cells' casing

Put the battery into fire.

Immerse the pack into water without a waterproof casing.

Storage conditions of Li-Ion batteries

The battery should be stored in a dry, ventilated room in ambient temperatures from +10 °C to +40 °C.

Temperatures higher than +60 °C may cause damage to the internal parts of the battery.

Charging the battery must always take place in a positive temperature: from 10 °C to +40 °C.

If the battery was stored in a negative temperature, it is necessary to let it adjust by leaving it in a temperature of at least +10 °C for 4-5 hours.

While diving in winter, you must not store the battery in a negative temperature (e.g. in a car boot or outdoors).

Charging a frozen battery may result in damage to its internal parts.

Discharge of the battery may take place in temperatures ranging from +10 °C to +40 °C.

The battery may be stored after prior charge up to 70%-100% (storing a discharged battery leads to its deterioration).

The battery must be stored away from sources of fire and damp, as well as food.

When stored, the battery must be charged at least once every six months or more often if the voltage on its pins amounts to less than 8.5 V (20% on the charger display).

You must check the voltage/capacity on the battery pins once a month using the charger included in the kit or another appropriate measuring instrument.

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