

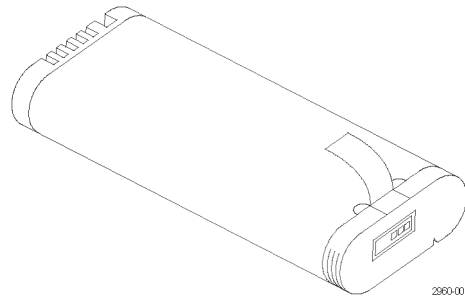
THSBAT Rechargeable Battery Pack

Instructions



Description

The THSBAT battery pack is for use with THS3000 series oscilloscopes. The 10.8 VDC battery pack consists of an array of Lithium-Ion battery cells. An internal circuit monitors the charge on the battery and reports the condition on an LCD display at the top of the battery. The display indicates the amount of charge in increments of approximately 20% each.



Safety Summary

To avoid potential hazards, use this product only as specified.

Retain product literature. Retain the original product information for future reference.

To Avoid Fire or Personal Injury

Use proper battery charger. Use only the THSCHG charger or the THS3000 series oscilloscope to charge the THSBAT Lithium-Ion battery pack.

Do not operate with suspected failures. If you suspect there is damage to the battery, charger, or power supply, have it inspected by qualified service personnel.

Do not operate in wet/damp conditions.

Keep product surfaces clean and dry.

Safety Terms in This Manual

CAUTION. *These statements identify conditions or practices that could result in damage to the equipment or other property.*

Safety Symbols and Terms on the Product

DANGER indicates an injury hazard immediately accessible as you read the marking.

WARNING indicates an injury hazard not immediately accessible as you read the marking.

CAUTION indicates a hazard to property including the product.



CAUTION
Refer to Manual

Battery Recycling

This THSBAT Lithium-Ion rechargeable battery pack must be recycled or disposed of properly.

- Lithium-Ion batteries are subject to disposal and recycling regulations that vary by country and region. Always check and follow your applicable regulations before disposing of any battery. Contact Rechargeable Battery Recycling Corporation (www.rbrc.org) for U.S.A. and Canada, or your local battery recycling organization.
- Many countries prohibit the disposal of waste electronic equipment in standard waste receptacles.
- Place only discharged batteries in a battery collection container. Use electrical tape or other approved covering over the battery connection points to prevent short circuits.



This symbol indicates that this product complies with the applicable European Union requirements according to Directives 2002/96/EC and 2006/66/EC on waste electrical and electronic equipment (WEEE) and batteries. For information about recycling options, check the Support/Service section of the Tektronix Web site (www.tektronix.com).

Transporting Lithium-Ion Batteries

The capacity of the Lithium-Ion rechargeable battery pack in this product is under 100 Wh. The lithium equivalent content has been shown to meet the applicable requirements as defined by the UN Manual of Tests and Criteria Part III Subsection 38.3.

- Always check all applicable local, national, and international regulations before transporting a Lithium-Ion battery.
- Transporting an end-of-life, damaged, or recalled battery may, in certain cases, be specifically limited or prohibited.
- The battery pack must be adequately protected against short-circuit or damage during transport.

Storing Battery Packs

- Store battery packs in a low-humidity environment free of corrosive gases. Storing battery packs in high-humidity environments, or outside the temperature range, can cause oxidation on the metallic parts, increased leakage, significant aging and premature failure.
- Do not store battery packs near heat or fire. Do not store in the sunlight.
- Do not keep battery packs in a place where the terminals can be shorted by metal objects (for example, coins, paper clips, or pens).
- Do not remove a battery pack from its original packaging until required for use.
- When possible remove the battery pack from the equipment when not in use.
- Charge the battery to approximately 50% of capacity at least once every six months.
- Remove the battery and store it separately from the oscilloscope. Refer to the *THS3000 Series Oscilloscope User Manual* for instructions on removing and installing the battery.
- For optimal battery life, store the battery at temperatures between +5 °C and +20 °C (+41 °F and +68 °F). Higher temperatures reduce the battery storage life.

Charging the Battery Pack

The battery pack charges automatically when the oscilloscope is connected to the external power supply. You can also charge the battery pack with the external power supply and the optional THSCHG battery charger base.

You do not need to continuously charge (trickle charge) Li-Ion battery packs to maintain full operating capacity between jobs. However, a Lithium-Ion battery pack will self-discharge during non-use. To achieve the longest operating time, charge your battery pack before use. If you plan to store battery packs, read the specific instructions to do this. Do not leave a battery on prolonged charge when not in use.

When the battery pack is in the oscilloscope, the gauge icon on the oscilloscope display indicates the amount of charge in increments of approximately 25% each. You can also access battery information through the Version and Calibration tab in the oscilloscope User menu.

- To avoid automatic shutdown of the battery pack, only run the oscilloscope on the battery pack when the gauge on the oscilloscope indicates 25% or more charge.
- To ensure the accuracy of the gauge, occasionally allow the oscilloscope to run on the battery pack until automatic shutdown occurs.
- Always verify the correct placement of the battery in the product or the External Battery Charger.

⚠ CAUTION. To avoid damage to the battery pack, use only the oscilloscope or the THSCHG battery charger to charge the battery pack. Do not connect any other voltage source to the battery pack.

⚠ CAUTION. To avoid overheating of the batteries during charging, do not exceed the allowable ambient temperature given in the specifications.

NOTE. For optimum performance, charge the battery pack completely before using it for the first time or after prolonged storage.

To discharge the battery pack completely, continue to run the oscilloscope on the battery pack until automatic shutdown occurs.

NOTE. To prolong the life of the battery pack and to prevent shutdown, do not operate or charge the battery pack at high temperatures. For best results, allow the battery pack to cool to room temperature before using or charging the battery pack.

Cold temperatures adversely affect the normal electrochemical reactions within a battery pack, reducing the available capacity. You can minimize this loss by keeping the battery packs at room temperature prior to and during use.

Do not leave a battery pack discharged for extended periods. See the Storing Battery Packs section for information on how to properly store a battery pack.

The battery pack switches to trickle charging when the battery pack is fully charged.

Battery Use Guidelines

Do not leave a battery unused for an extended period of time, either in the product or in storage. When a battery has been unused for six months, check the charge status, and charge or dispose of the battery as appropriate. See *Charging the Battery Pack* and *Battery Recycling*.

The typical estimated life of a Lithium-Ion battery is about two to three years, or 300 to 500 charge cycles, whichever occurs first. One charge cycle is a period of use from fully charged, to fully discharged, and fully recharged again. You should use a two to three year life expectancy for batteries that do not run through complete charge cycles.

A rechargeable Lithium-Ion battery has a limited life and will gradually lose its capacity to hold a charge. This loss of capacity (aging) is irreversible. As the battery loses capacity, the length of time it will power the product (run time) decreases.

A Lithium-Ion battery continues to slowly discharge (self-discharge) when not in use or while in storage. You need to routinely check the charge status of the battery.

Use the battery only in the application for which it is intended. Use only THSBAT battery packs in your THS3000 series oscilloscope.

Maintaining the Battery Pack

- Observe and note the run time that a new fully-charged battery provides for powering your product. You can use this new battery run time as a basis to compare run times for older batteries. The run time of your battery will vary depending on the product's configuration and the applications that you run.
- The battery pack gives the best performance when operated at normal room temperature, 20 °C ±5 °C (68 °F ±9 °F).
- Routinely check the charge status of the battery.
- Carefully monitor a battery that is approaching the end of its estimated life.
- Consider replacing the battery with a new one if the battery run time drops below about 80% of the original run time, or the battery charge time increases significantly.
- Follow the storage requirements if you store or do not use a battery for an extended period. If you do not follow the storage requirements, and the battery will not power the oscilloscope when installed, consider the battery to be damaged. Do not connect power to the oscilloscope during this time. Remove the battery pack from the oscilloscope. Do not attempt to recharge or reuse the battery. Replace it with a new battery.

Handling Battery Packs

- Do not disassemble, crush, or puncture the battery.
- Do not short the external contacts on the battery.
- Do not dispose of the battery in fire or water.
- Do not expose the battery to temperatures above +60 °C (+140 °F).
- Seek medical advice if a battery or part of it has been swallowed.
- Do not put battery packs near heat or fire. Do not put in sunlight.
- Keep the battery pack clean and dry. Clean dirty connectors with a dry, clean cloth.
- Batteries contain hazardous chemicals that can cause burns or explode. If exposure to chemicals occurs, clean with water and get medical aid. Repair the product before use if the battery leaks.

- Do not attempt to open, modify, reform or repair a battery pack that appears to be malfunctioning, or which has been physically damaged.
- Keep the battery away from children and animals.
- Avoid exposing the battery to excessive shock or vibration.
- Do not use a damaged battery or charger.
- If a battery pack has leaking fluids, do not touch any fluids. Dispose of a leaking battery pack. See the *Battery Recycling* section for information on Disposal and Recycling.
- In case of eye contact with fluid, do not rub eyes. Immediately flush eyes thoroughly with water for at least 15 minutes, lifting upper and lower lids, until no evidence of the fluid remains. Seek medical attention.

Specifications

Characteristic	Description
Capacity	52 Wh, 4.8 Ah
Output	10.8 VDC
Operating temperature	0 °C to +45 °C (+32 °F to +113 °F)
Storage temperature	-20 °C to +60 °C (-4 °F to +140 °F)
Weight (including packaging)	351 gm (12.4 oz)

Warranty Information

For warranty information, go to the www.tektronix.com Web site, and search for “THSBAT warranty”.

Contacting Tektronix

Tektronix, Inc.
14200 SW Karl Braun Drive
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Beaverton, OR 97077
USA

For product information, sales, service, and technical support:

- In North America, call 1– 800–833–9200.
- Worldwide, visit www.tektronix.com to find contacts in your area.