

Crestron **TPS-6X-BTP**
Battery Pack for TPS-6X

Installation Guide



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Battery Pack for TPS-6X: TPS-6X-BTP

Introduction

The Crestron[®] TPS-6X-BTP is a replacement NiMH rechargeable battery pack for the TPS-6X Wireless Touchpanel. One TPS-6X-BTP is included with each TPS-6X. Installation of the TPS-6X-BTP battery pack requires tools and should be performed by a qualified technician.

Features and Functions

- Replacement NiMH rechargeable battery pack for the TPS-6X Wireless Touchpanel
- Fast charging Nickel Metal Hydride batteries
- Can be charged when the TPS-6X is mounted in the TPS-6X-DS or TPS-6X-DS-C Docking Station (TPS-6X-DS-C sold separately)

NOTE: For more information on the TPS-6X Wireless Touchpanel, refer to the latest version of the TPS-6X Operations Guide (Doc. 6575), which is available from the Crestron website (www.crestron.com/manuals).

NOTE: For more information on the TPS-6X-DS or TPS-6X-DS-C Docking Stations, refer to the latest version of the TPS-6X-DS or TPS-6X-DS-C Operations Guides (Doc. 6576 and Doc. 6707 respectively).

Specifications

Specifications for the TPS-6X-BTP are listed in the following table.

TPS-6X-BTP Specifications

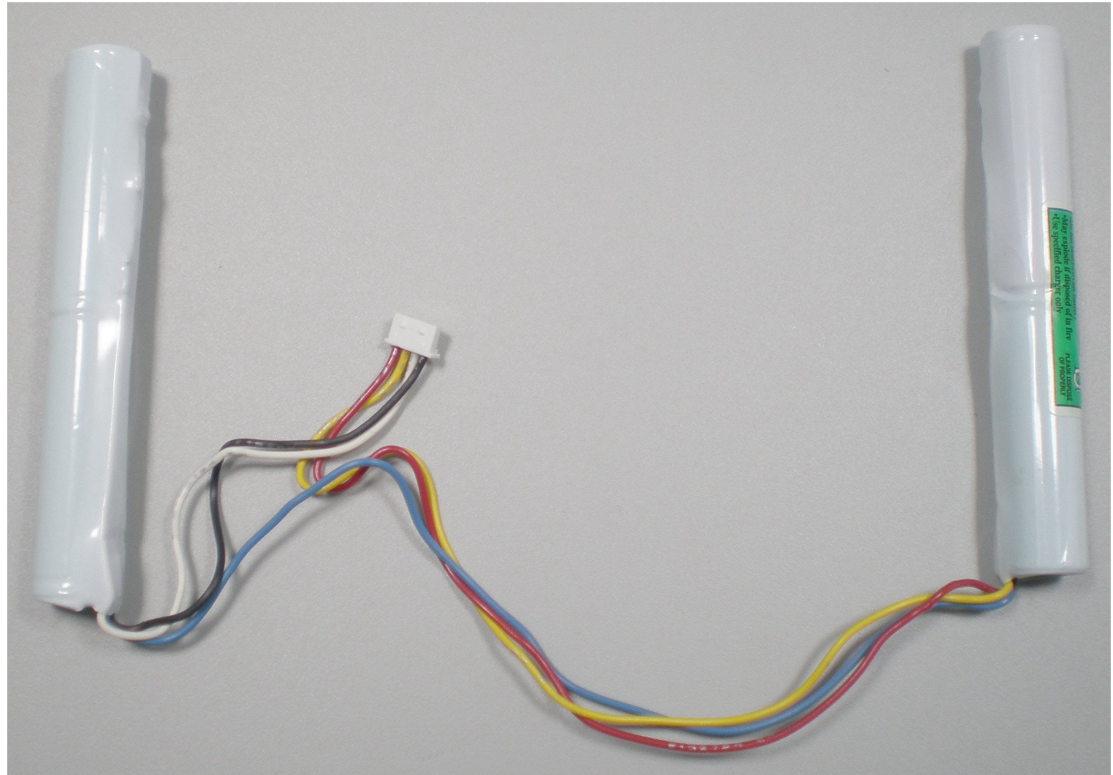
SPECIFICATION	DETAILS
Output Voltage	4.8 Volts DC
Capacity	2000 mAh
Composition	Nickel Metal Hydride (NiMH)
Usage Per Charge	~2 hours continuous, ~24 hours under normal use (10% active duty cycle with standby/powerdown activated)
Charging Time	~2.5 hours (~2.5 to 3 hours when in use)
Optimal Operating Temperature	32° to 112° F (0° to 45° C) 50° to 104° F (10° to 40° C) when charging
Weight	4.3 oz (120.2 g)

NOTE: The batteries will not charge when they are warmer than the maximum charging temperature. This may occur due to extended use of the panel while on the TPS-6X-DS (or TPS-6X-DS-C) Docking Station. To cool the batteries, turn off power to the touchpanel using the left trigger key. The touchpanel will cool faster if it is removed from the TPS-6X-DS (or TPS-6X-DS-C) before it is turned off. The panel will be cool in approximately 20 minutes.

Physical Description

The TPS-6X-BTP consists of two battery cells, along with the integrated wiring. It has a multi-pin connector for attachment inside the TPS-6X.

TPS-6X-BTP Physical View



Setup

Removal

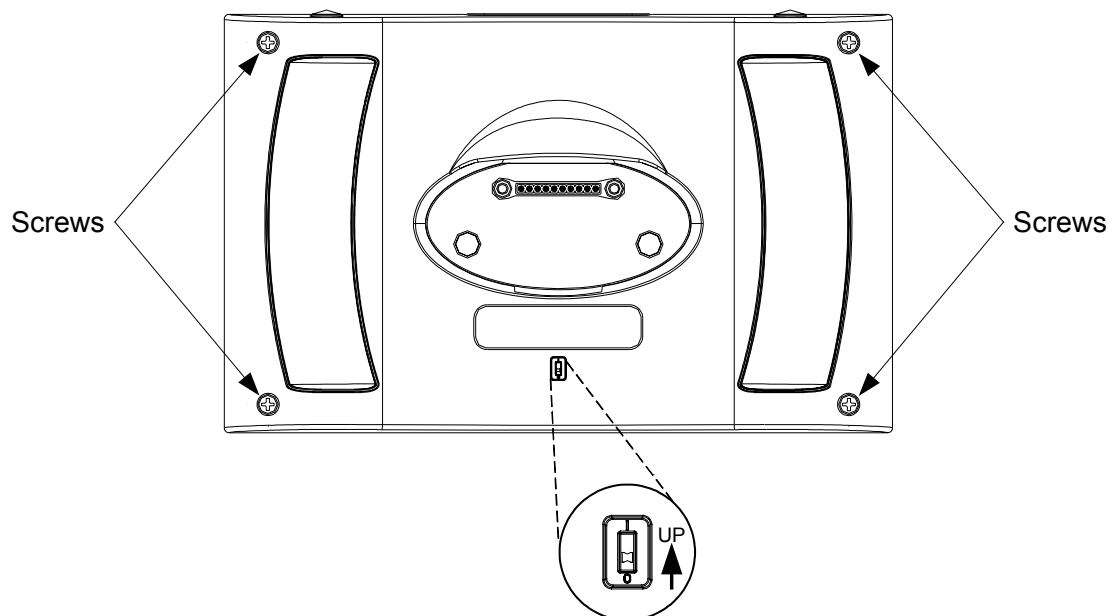
NOTE: The TPS-6X Wireless Touchpanel contains ESD (electrostatic discharge) sensitive devices. To avoid damaging the unit, perform the following procedure while wearing a grounding strap that is properly grounded or on a grounded workstation.

NOTE: To prevent damage to the multi-pin connector and wiring, use care when handling the TPS-6X-BTP.

Perform the following procedure to remove the existing TPS-6X-BTP from a TPS-6X touchpanel. A #1 Phillips screwdriver and a small slot head screwdriver are required.

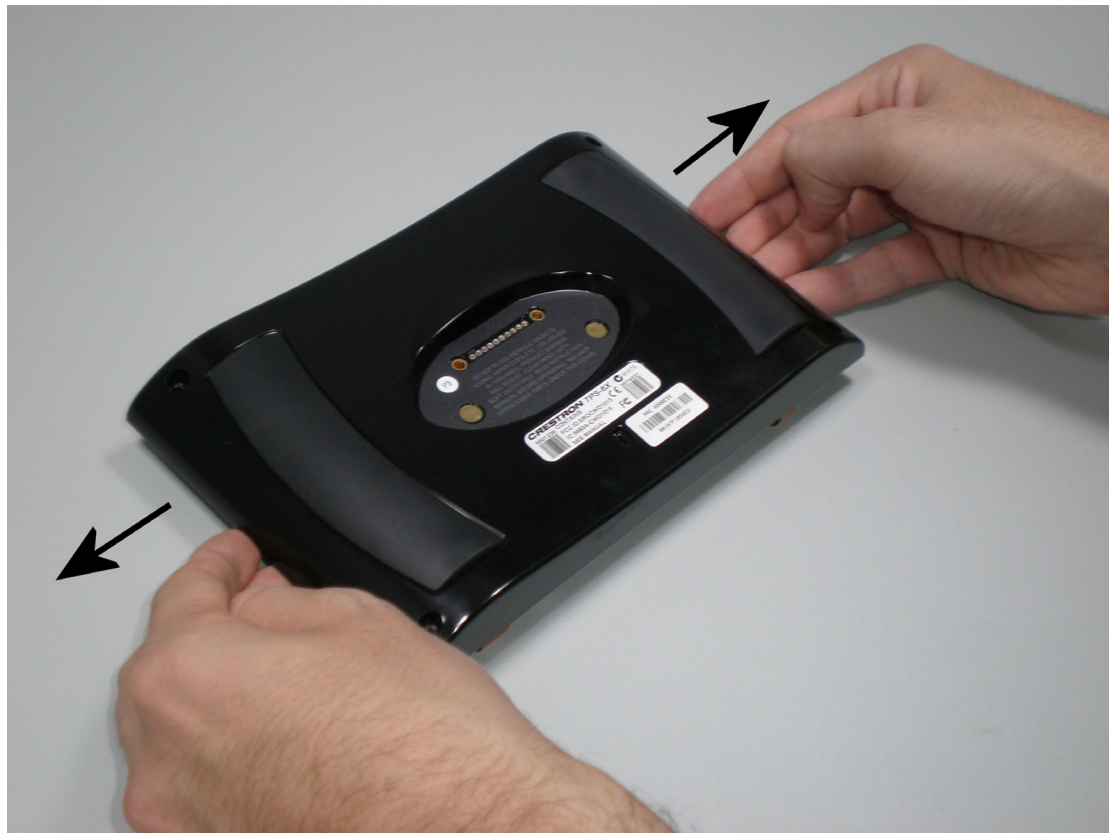
1. Remove power from the touchpanel, use the included T-pin to slide the battery switch on the rear to the OFF (down) position and place the touchpanel face down on a clean, padded work surface. (Refer to illustration below.)

Bottom View Showing Battery Switch and Screw Locations



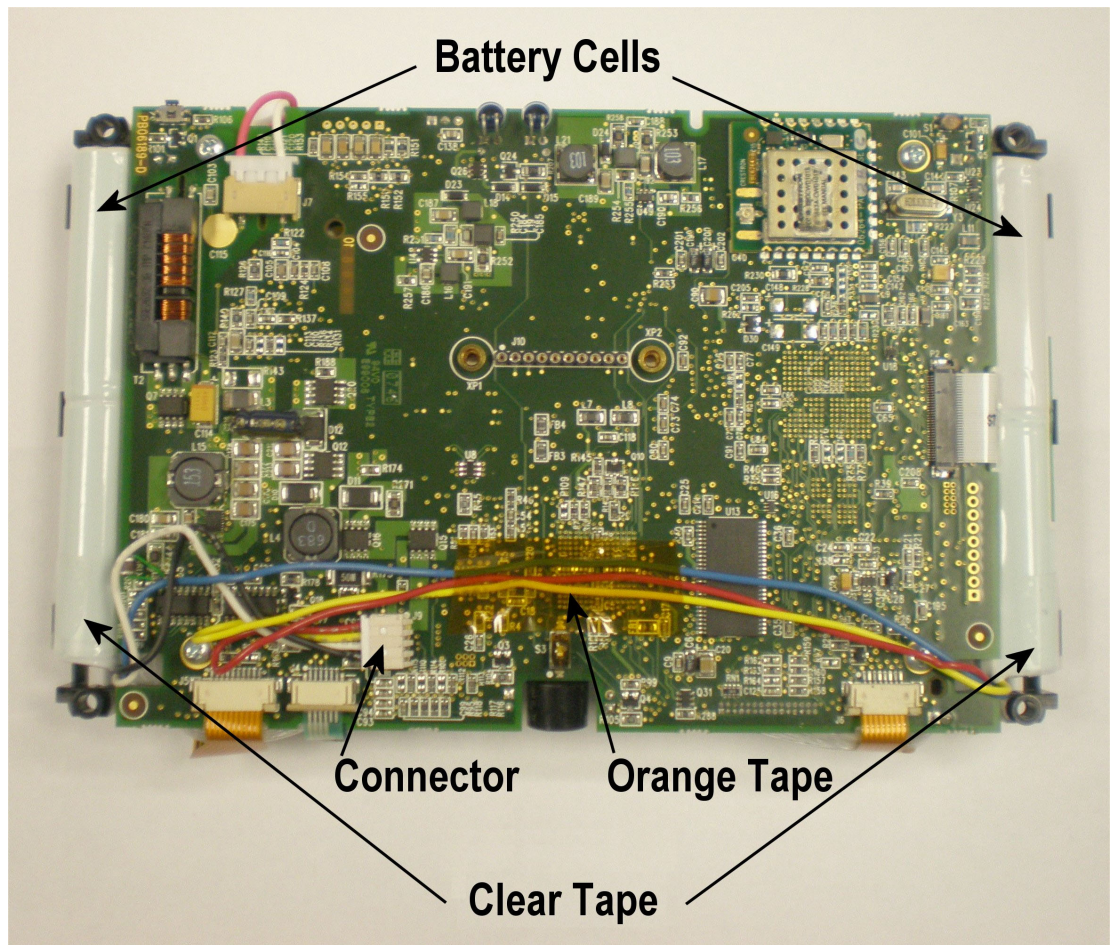
2. Remove the four screws that secure the front bezel to the touchpanel and return the unit to its normal, face-up position. (Use care and hold the bezel to the rest of the touchpanel. If the bezel separates from the rest of the touchpanel while rotating the unit to its normal position, the internal parts of the panel may spill out.)
3. Lift the front bezel from the touchpanel, then place the touchpanel assembly face down on the work surface.
4. Carefully remove the rear of the enclosure from the touchpanel by grasping the support frame at the left and right edges, gently spreading them (as shown in the illustration below) and lifting the assembly. It will snap out of the enclosure.

Removing Rear Enclosure from TPS-6X



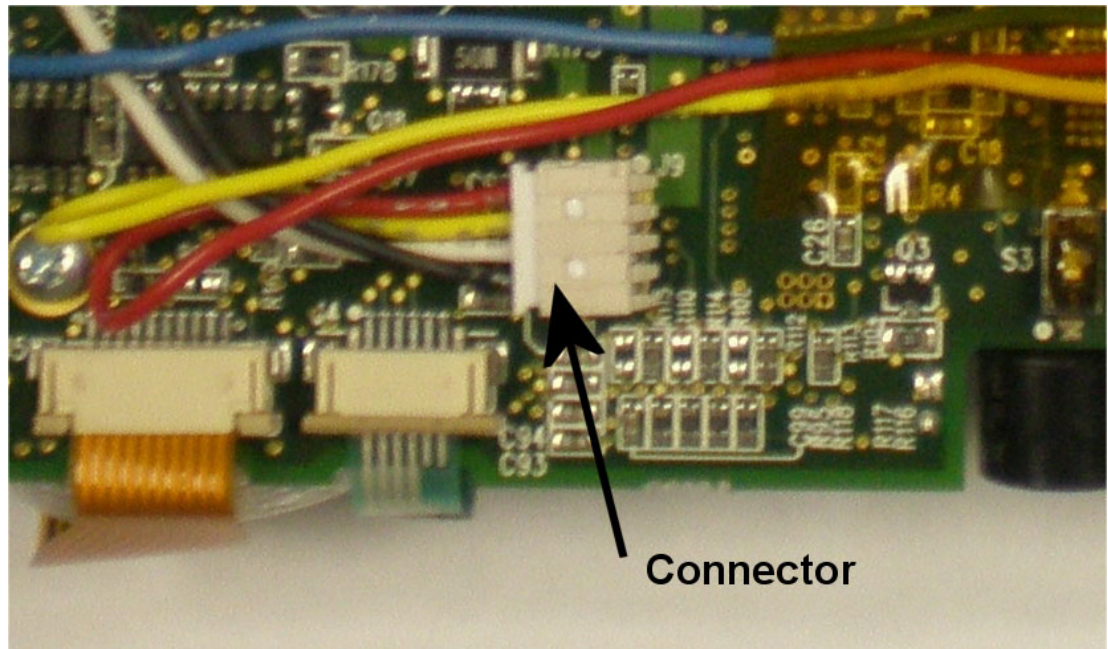
5. Remove the orange tape securing the battery pack wires to the circuit board and the two pieces of clear tape on each battery cell. (Refer to illustration below.)

TPS-6X Assembly (Removed from Enclosure)



- Using the flat end of a small slot head screwdriver, gently separate the multi-pin connector from the corresponding connector on the circuit board of the TPS-6X. (Refer to illustration below.)

TPS-6X-BTP Connector on TPS-6X



- Remove battery cells with the connecting wires attached, from either side of the assembly.

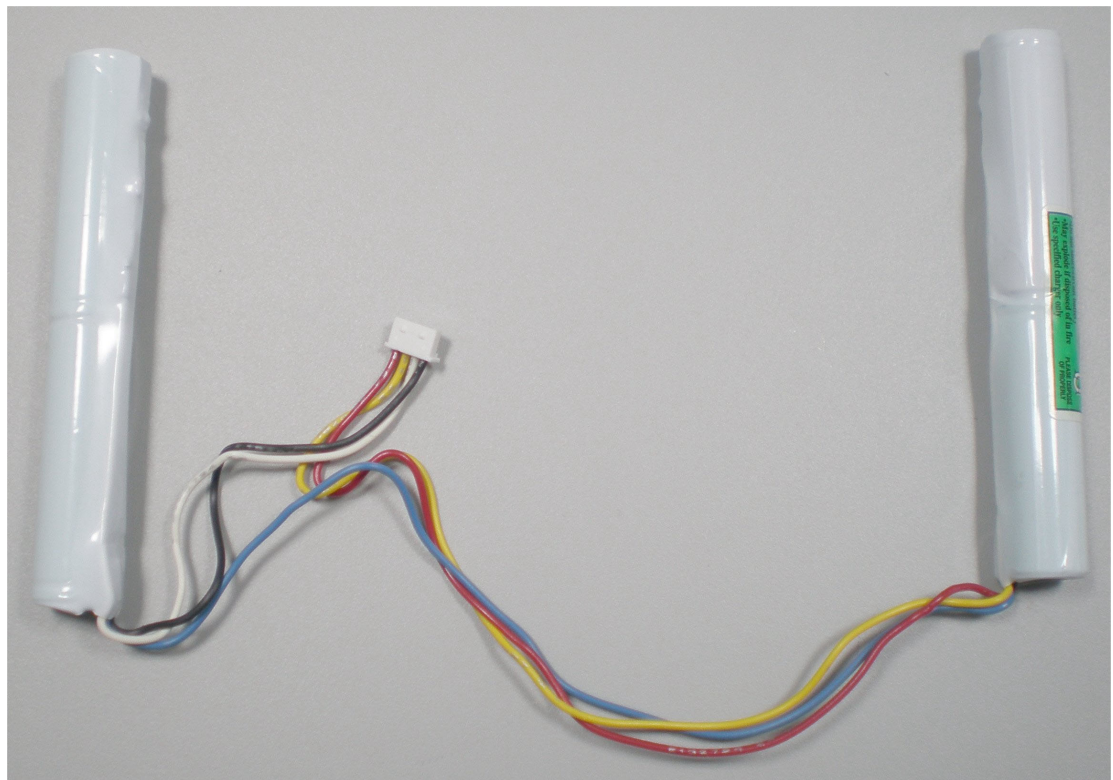
Installation

NOTE: The TPS-6X Wireless Touchpanel contains ESD (electrostatic discharge) sensitive devices. To avoid damaging the unit, perform the following procedure while wearing a grounding strap that is properly grounded or on a grounded workstation.

After completing removal of the old TPS-6X-BTP from the TPS-6X touchpanel (refer to “Removal” on page 4), perform the following procedure to install the new TPS-6X-BTP. A #1 Phillips screwdriver is required.

1. Orient the TPS-6X-BTP so the black and white wires are on the left side bottom and the red and yellow wires are on the right side bottom, as shown in the illustration below.

TPS-6X-BTP Orientation

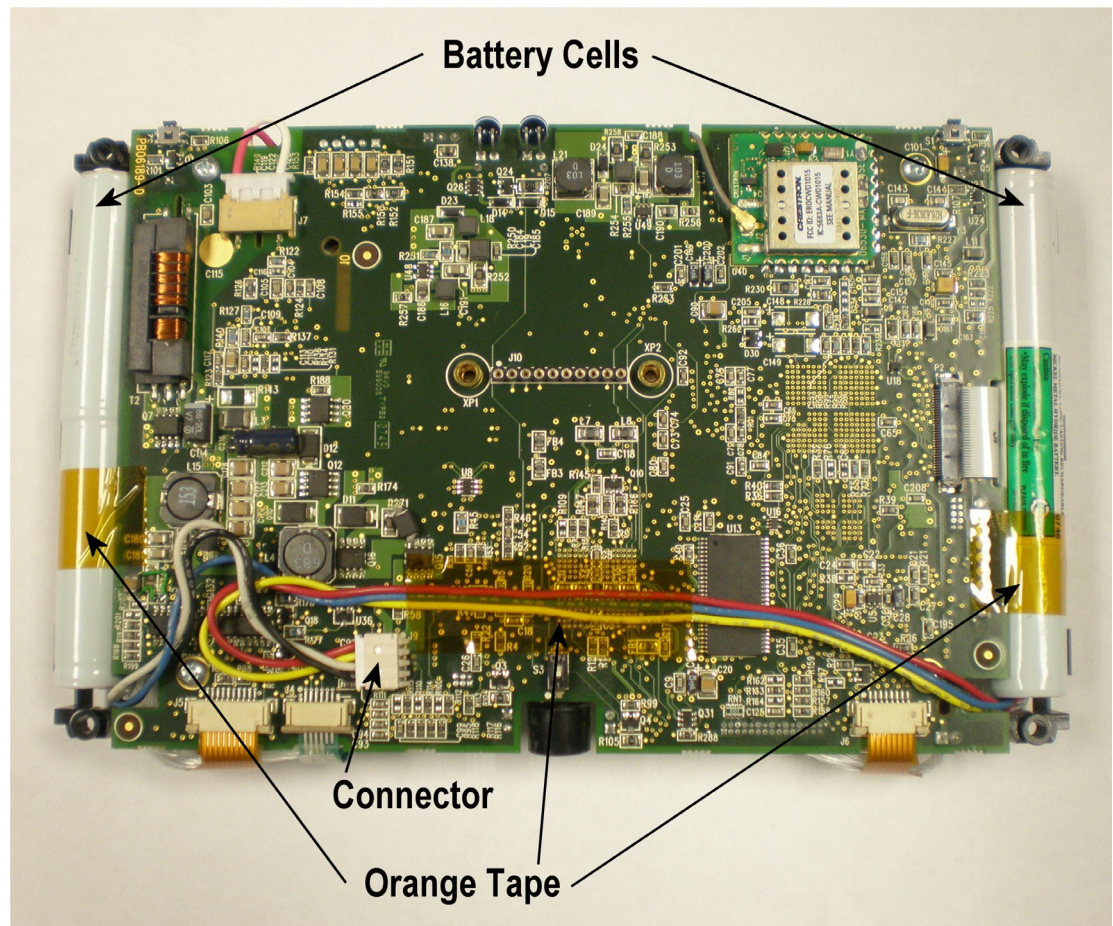


2. Place the battery cells in their compartments on the left and right sides of the TPS-6X assembly, ensuring the ridge that runs along the length of each cell is facing inward, toward the center of the assembly and the rounded side of each cell is facing outward.

- Carefully connect the multi-pin connector of the TPS-6X-BTP with the corresponding connector on the circuit board of the TPS-6X.
- Dress the cables of the TPS-6X-BTP as shown in the illustration below and apply the 2-inch (50 mm) piece of orange tape that came with the TPS-6X-BTP to hold the wires in place.
- Apply the two 1 inch (25 mm) pieces of orange tape that came with the TPS-6X-BTP to each battery cell, extending the tape to the black tab of the battery housing support on each side, as shown in the illustration below. These replace the clear tape that held the original cells in place.

NOTE: Ensure the tape does not wrap around to the front of the touchpanel, where it could contact the light fibers on either side of the screen.

TPS-6X Assembly (Cables Dressed, Orange Tape Applied)



6. Carefully turn the assembly over, returning it to its normal, face-up position. Then place the assembly into the rear half of the TPS-6X enclosure, hinging it so the top of the assembly is in place first (as shown in the illustration below). Then settle the bottom of the assembly into place and with your thumbs on the black plastic at the left and right edges, press and snap the assembly into place.

Installation (Showing Top of Assembly in Place)



7. Position the front bezel over the exposed touchpanel, ensuring the ribbon cables remain tucked in place and the fiber optic cables remain inboard of the posts located next to each of the bottom screw holes.
8. Hold the bezel to the rest of the touchpanel and carefully rotate the entire panel onto its face once more.
9. Reinstall the four screws to secure the bezel to the touchpanel. Tighten the screws, being careful not to strip the threads.
10. Re-connect power, slide the battery switch on the rear to the ON (up) position.

Charging

NOTE: A Nickel Metal Hydride (NiMH) battery typically provides 500 charge/discharge cycles.

To charge the TPS-6X-BTP, install the TPS-6X-BTP in a TPS-6X touchpanel and mount the touchpanel on a powered TPS-6X-DS or TPS-6X-DS-C Docking Station/Charger (TPS-6X-DS-C sold separately).

NOTE: The battery pack may take up to three hours to charge in a powered touchpanel if the panel is in use during charging.

Storage

Over time, the capacity and voltage of rechargeable Nickel Metal Hydride (NiMH) batteries will decrease if the batteries are not recharged at regular intervals. This is caused by a chemical reaction that takes place within the batteries, commonly known as “self-discharge”.

Temperature is a major factor affecting the rate of self-discharge of the battery when placed in storage. Higher temperatures will increase the rate of self-discharge. The storage time table on the following page shows how long it will take NiMH batteries to self-discharge at different storage temperatures. After the allotted time in storage, the batteries will need to be cycled (charged and discharged) to prevent permanent damage to the batteries.

NiMH batteries and packs can be stored at any state of charge. The information in the storage time table is valid for batteries in any state of charge. A fully discharged battery will last as long in storage as a fully charged battery. Storing the battery in a charged state will not increase the maximum storage period in the storage time table.

- The energy storage capability of the battery negative electrode will be decreased if the battery is allowed to completely self-discharge. Therefore, it is important to cycle NiMH batteries that have been stored for extended periods before use.
- If the batteries are cycled (charged and discharged), the storage capability will be restored up to 95% of its initial rated capacity after the second or third cycle.

To prolong the life and maintain the performance of your NiMH batteries, Crestron recommends you follow these steps:

- Practice FIFO (First In and First Out) inventory rotation.
- Never store batteries under load.
- Store batteries in a temperature controlled environment (refer to table below).
- Store batteries at 65% ($\pm 20\%$) relative humidity and keep out of direct sunlight.
- Cycle batteries at least one charge/discharge cycle according to the table below.

NiMH Battery Storage Time

TEMPERATURE RANGE	BATTERY OR PACK MAXIMUM STORAGE PERIOD (CYCLE INTERVAL)
104° to 122° F (40° to 50° C)	Less than 30 days
86° to 103° F (30° to 39° C)	30 to 90 days
-4° to 85° F (-20° to 29° C)	91 to 180 days

Disposal

NOTE: The TPS-6X-BTP contains Nickel Metal Hydride (NiMH) battery cells. When the unit can no longer retain a charge, it must be recycled or disposed of properly. Follow local ordinances and/or regulations for disposal.

Resources

Industry Compliance

As of the date of manufacture, the TPS-6X-BTP has been tested and found to comply with specifications for CE marking and standards per EMC and Radiocommunications Compliance Labelling.



Reference Documents

The latest version of all documents mentioned within the guide can be obtained from the Crestron website (www.crestron.com/manuals). This link will provide a list of product manuals arranged in alphabetical order by model number.

List of Related Reference Documents

DOCUMENT TITLE
TPS-6X Isys® 5.7" Wireless Touchpanel
TPS-6X-DS Docking Station for the TPS-6X
TPS-6X-DS-C Docking Station for the TPS-6X

Further Inquiries

If you cannot locate specific information or have questions after reviewing this guide, please take advantage of Crestron's award winning customer service team by calling Crestron at 1-888-CRESTRON [1-888-273-7876].

You can also log onto the online help section of the Crestron website (www.crestron.com/onlinehelp) to ask questions about Crestron products. First-time users will need to establish a user account to fully benefit from all available features.

Future Updates

As Crestron improves functions, adds new features and extends the capabilities of the TPS-6X-BTP, additional information may be made available as manual updates. These updates are solely electronic and serve as intermediary supplements prior to the release of a complete technical documentation revision.

Check the Crestron website periodically for manual update availability and its relevance. Updates are identified as an “Addendum” in the Download column.

Return and Warranty Policies

Merchandise Returns / Repair Service

1. No merchandise may be returned for credit, exchange or service without prior authorization from CRESTRON. To obtain warranty service for CRESTRON products, contact an authorized CRESTRON dealer. Only authorized CRESTRON dealers may contact the factory and request an RMA (Return Merchandise Authorization) number. Enclose a note specifying the nature of the problem, name and phone number of contact person, RMA number and return address.
2. Products may be returned for credit, exchange or service with a CRESTRON Return Merchandise Authorization (RMA) number. Authorized returns must be shipped freight prepaid to CRESTRON, 6 Volvo Drive, Rockleigh, N.J. or its authorized subsidiaries, with RMA number clearly marked on the outside of all cartons. Shipments arriving freight collect or without an RMA number shall be subject to refusal. CRESTRON reserves the right in its sole and absolute discretion to charge a 15% restocking fee plus shipping costs on any products returned with an RMA.
3. Return freight charges following repair of items under warranty shall be paid by CRESTRON, shipping by standard ground carrier. In the event repairs are found to be non-warranty, return freight costs shall be paid by the purchaser.

CRESTRON Limited Warranty

CRESTRON ELECTRONICS, Inc. warrants its products to be free from manufacturing defects in materials and workmanship under normal use for a period of three (3) years from the date of purchase from CRESTRON, with the following exceptions: disk drives and any other moving or rotating mechanical parts, pan/tilt heads and power supplies are covered for a period of one (1) year; touchscreen display and overlay components are covered for 90 days; batteries and incandescent lamps are not covered.

This warranty extends to products purchased directly from CRESTRON or an authorized CRESTRON dealer. Purchasers should inquire of the dealer regarding the nature and extent of the dealer's warranty, if any.

CRESTRON shall not be liable to honor the terms of this warranty if the product has been used in any application other than that for which it was intended or if it has been subjected to misuse, accidental damage, modification or improper installation procedures. Furthermore, this warranty does not cover any product that has had the serial number altered, defaced or removed.

This warranty shall be the sole and exclusive remedy to the original purchaser. In no event shall CRESTRON be liable for incidental or consequential damages of any kind (property or economic damages inclusive) arising from the sale or use of this equipment. CRESTRON is not liable for any claim made by a third party or made by the purchaser for a third party.

CRESTRON shall, at its option, repair or replace any product found defective, without charge for parts or labor. Repaired or replaced equipment and parts supplied under this warranty shall be covered only by the unexpired portion of the warranty.

Except as expressly set forth in this warranty, CRESTRON makes no other warranties, expressed or implied, nor authorizes any other party to offer any warranty, including any implied warranties of merchantability or fitness for a particular purpose. Any implied warranties that may be imposed by law are limited to the terms of this limited warranty. This warranty statement supersedes all previous warranties.

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Specifications subject to
change without notice.