



Installation Manual

Splitter™



Updated October, 2019
Version 1.8



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Splitter™

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1. Introduction

1.1 System overview

This manual will give you all the information that you need to install the [[BOS-137]] Splitter™. The Splitter™ is to be used in conjunction with an [[Brand1]] battery room management system.

The Splitter™ will alert an operator with a blue flashing LED light to disconnect a charger from a battery and plug it into a paired battery. This design enables a single charger to charge two battery positions separately. Each charger will have an A and a B position. For example, charger 101 would be split into two battery positions, 101A and 101B. Two Sentinels™ are mounted on the Splitter™ bracket to monitor the battery positions. The Sentinels™ are then connected in series via a data cable back to the controller.

The Splitter™ is a perfect fit for applications where there is a seasonal use of rental batteries. The site can leave open positions next to their current batteries in racks and just add batteries when needed without the need to install temporary or additional power for the seasonal battery chargers.

The Splitter™ also provides a great solution when a facility cannot add additional power to a battery changing area. The Splitter™ allows chargers that would otherwise be idle to be used to charge additional batteries without adding additional chargers and their associated power requirements.

1.2 Organization of this Manual

- Section 2 – System components. This section is simply to help you get familiar with what the various parts of the system are and what they look like.
- Section 3 – Diagram of Installation
- Section 4 – Pre-installation. You have ordered the system and are ready to go on the installation trip. The steps in this section are invaluable in preparation for when you are on site. Our goal is that you only need to make one trip to complete the installation.
- Section 5 – Installing the hardware. The actual installation steps to get everything mounted and wired.
- Section 6 – Configuring [[Brand1]]. Configuring the controller for use with the Splitter™
- Section 7 – Final Inspection & Testing
- Section 8 – Troubleshooting

1.3 Contact Information

[[ContactInfo1]]

[[ContactInfo2]]

[[ContactInfo3]]

2. System Components

2.1 Cabling

- One battery extension cable is required per battery position. A battery extension cable consists of two cables (one positive and one negative) and two battery connectors.

- The battery connectors must match the connector on the battery by size and color. (Different colored battery connectors are keyed to only work with that color.)

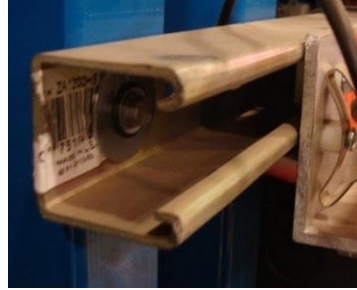
**** Battery cables and connectors are not included with the system and must be supplied by the customer. ****



2.2 Splitter™ Mounting

2.2.1 Unistrut®

- Unistrut® is a metal framing channel that is used to mount the Splitter™ bracket to the battery racks. It is cut to length to mount to the rack supports.



2.2.2 Bracket

- The Splitter™ bracket is an aluminum angle that mounts to the Unistrut®. The battery extension cable connectors and Sentinels™ mount to the Splitter™ bracket.



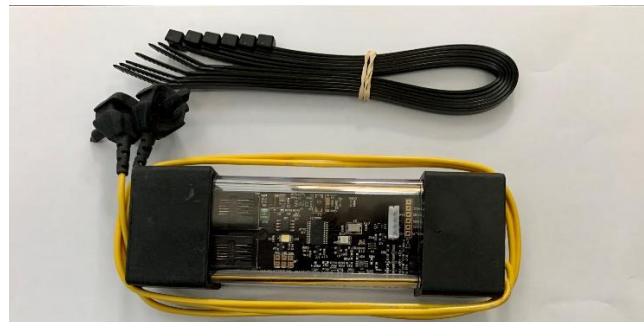
2.3 Retaining Chain

- The retaining chain links the charger connector to the Splitter™ bracket. The chain keeps the charger paired with only the two batteries connected to that specific Splitter™.



2.4 Sentinels™

- The Sentinels™ are included with the purchase of an [[Brand1]] battery management system and mount to the Splitter™ bracket. The Sentinels™ monitor the charge of a battery and communicate data to the [[Brand1]] controller.

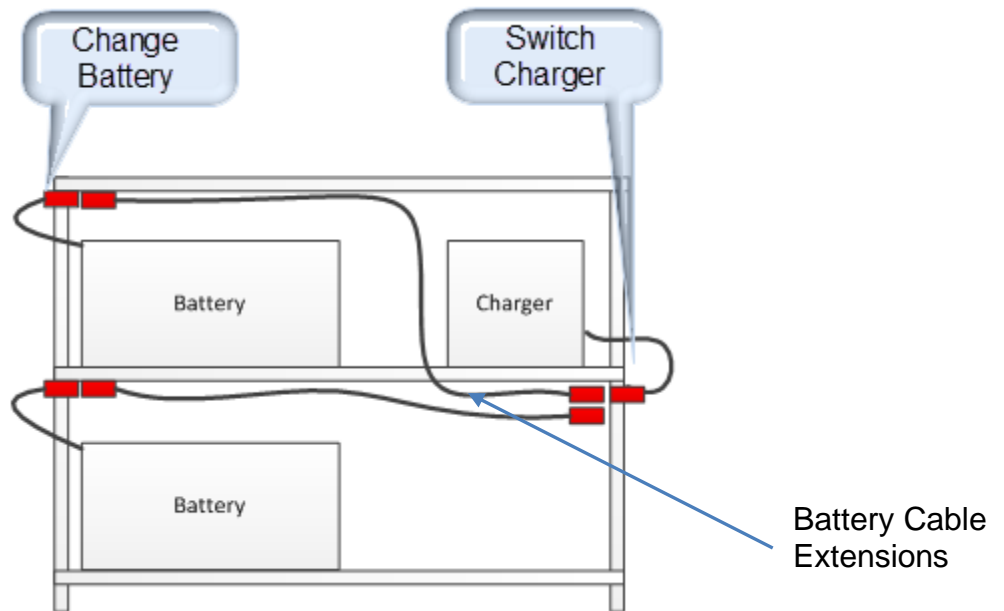


- | | |
|--|--|
| <ul style="list-style-type: none">• For Splitter™ applications, there should be one Sentinel™ per battery charging position. | |
|--|--|

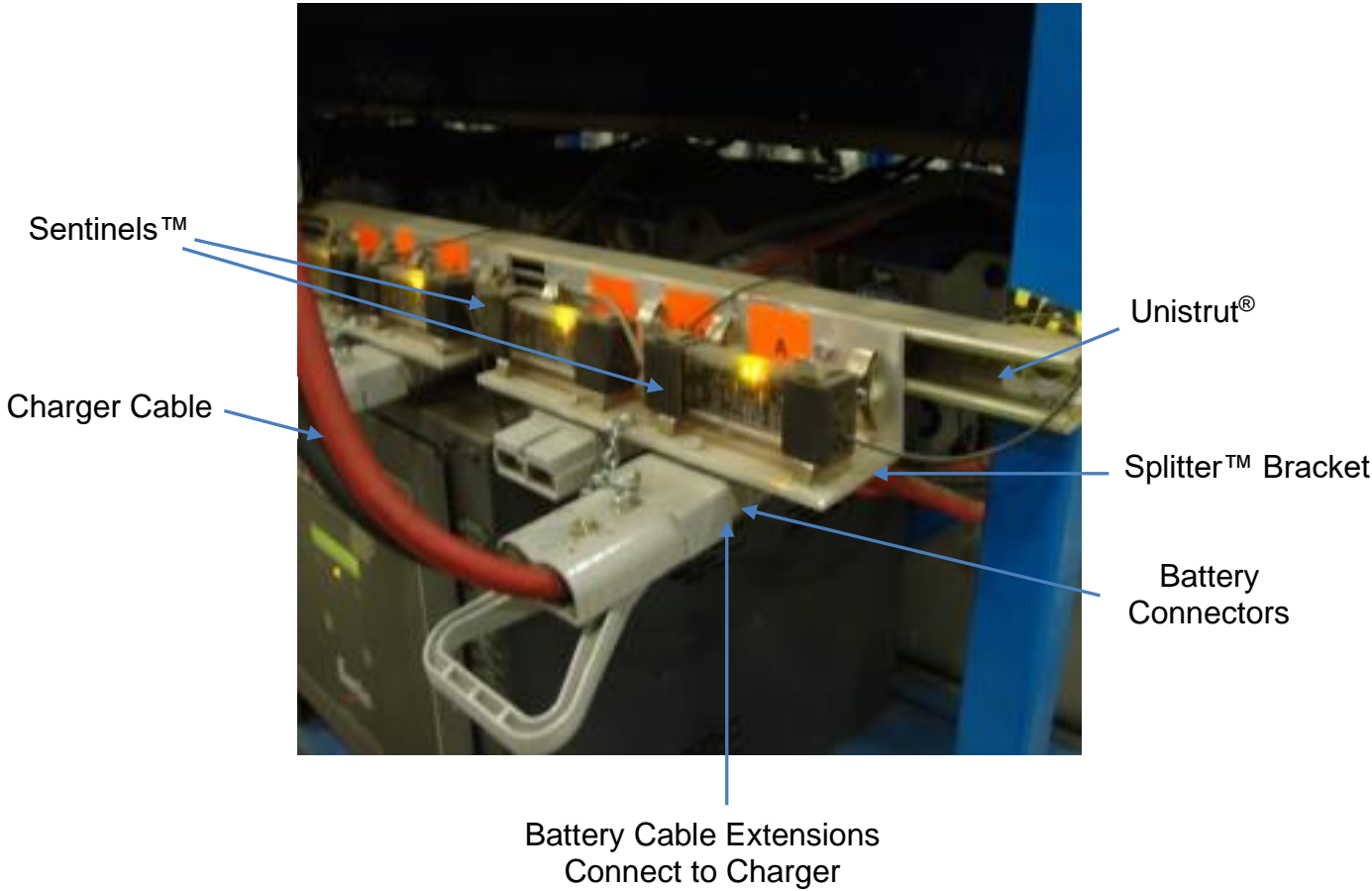
3. Diagram of Installation



Side of Battery Rack



Back of Battery Rack



4. Pre-Installation

These are items that should be done before installation begins.

4.1 Tools

There are a few tools that are needed for the installation:

- Drill (for mounting Unistrut®)



- Anchors (suitable for the Unistrut® mounting surface)



- Phillips Head Screw Driver (for opening the [[Brand1]] controller)



- Battery Cable Cutter

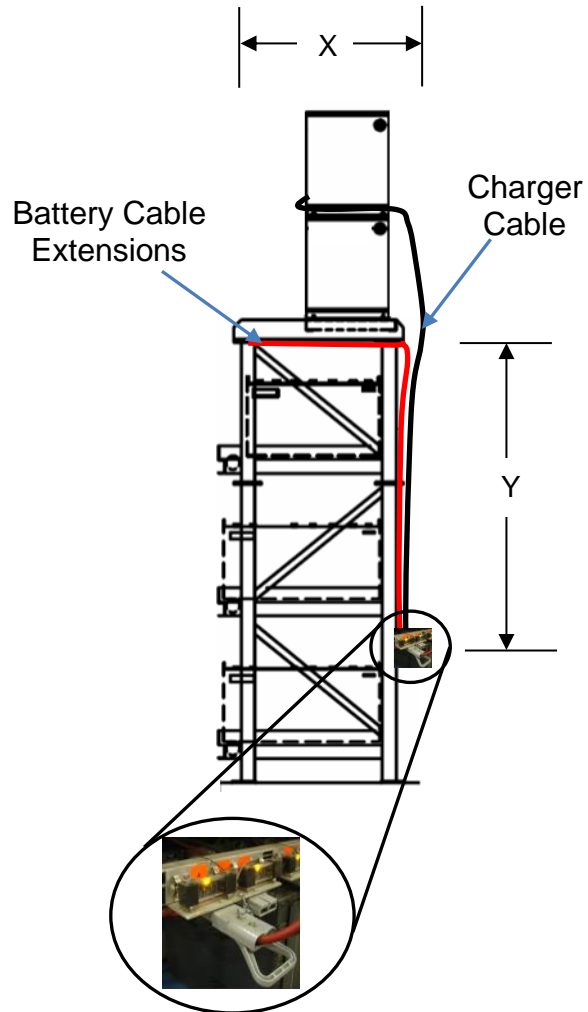


- Battery Cable Crimper

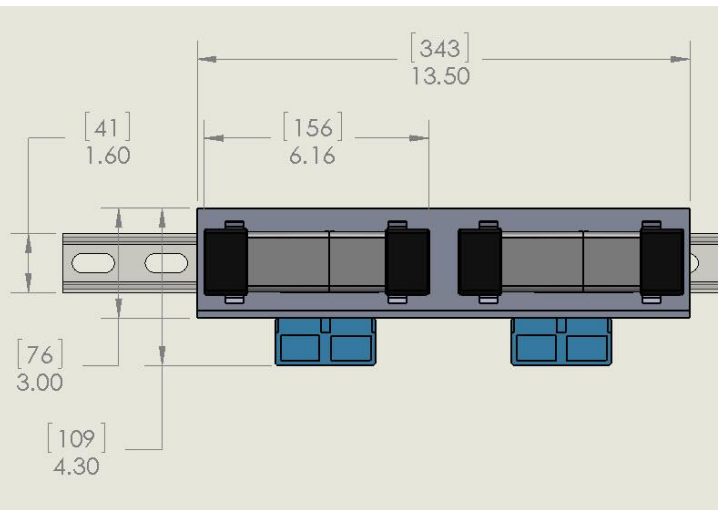


4.2 Location Layout and Cable Runs

- Locate an area on the back of the racks approximately 3-4 feet (.9-1.2 m) from the floor to mount the Unistrut® and Splitter™ brackets that does not impede the opening of charger doors.
- Measure the length of the battery cable extensions needed for each battery position to reach the Splitter™.
- Measure the distance from the charger to the Splitter™ bracket. Charger cables may need to be lengthened or shortened. The charger cables must be able to reach both A and B positions on the bracket.
- Add together dimensions in the X, Y, and Z directions and then add an additional 10%.
- Check the battery and charger connector colors and amp rating. The connectors on the battery cable extensions will need to match these.



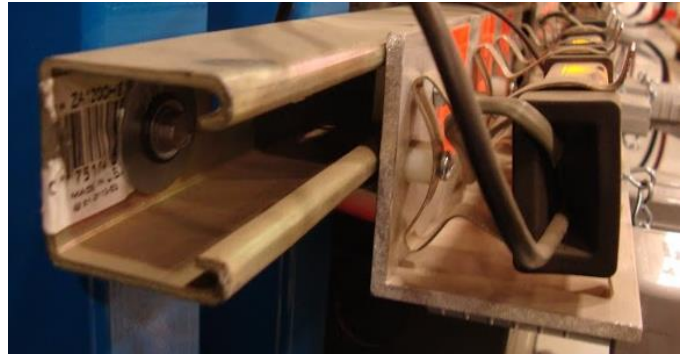
- Measure the distance between rack supports to determine the lengths of Unistrut® required.
- Be sure that the Unistrut® provides enough length to mount all of the Splitter™ brackets.



5. Installation

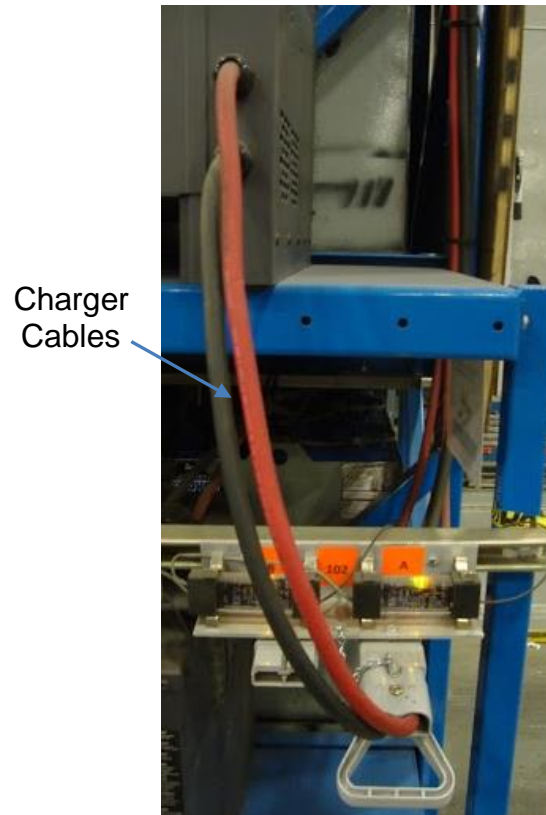
5.1 Unistrut® and Splitter™ Bracket

- Cut Unistrut® to the required length determined in Section 4.2.
- Mount the Unistrut® to the rack supports with appropriate anchors at approximately 3-4 feet (.9-1.2 m) from the floor on the back of the racks.
- Be sure that the Unistrut® will not impede the opening of charger doors.
- Mount the Splitter™ brackets to the Unistrut® with appropriate hardware.



5.2 Charger Cable to Splitter™

- Lengthen or shorten the charger cables as needed depending on the length measured in Section 4.2.



5.3 Retaining Chain

- Connect the retaining chain to the bracket and charger connector.

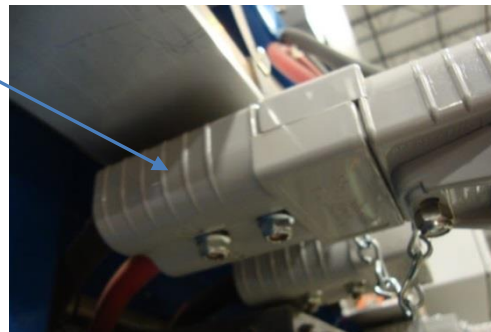
*****It is important that the retaining chain remain in place during operation so that the charger cannot be connected to a battery with which it is not paired. *****



Retaining Chain

5.4 Battery Extension Cable

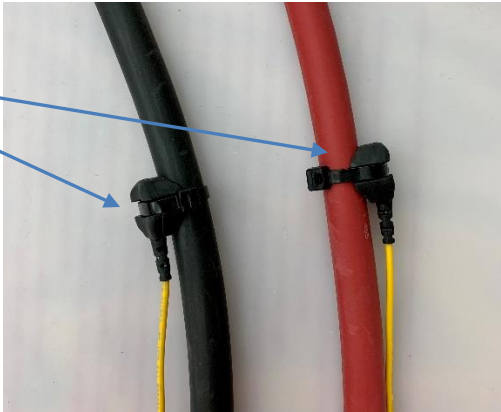
- Cut a positive and negative cable to length determined in Section 4.2. Crimp on tips and insert into the appropriate color and size battery connector.
- Mount the connectors to the charger connector mount and Splitter™ bracket. Be sure that the cables are secure so that they do not drape over the batteries.
- Repeat the process for all battery positions.



5.5 Mount Sentinels™

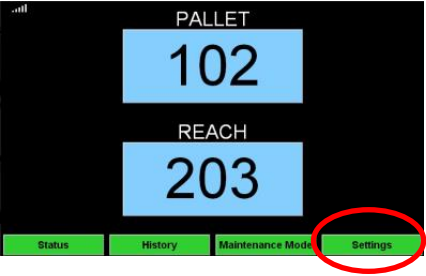
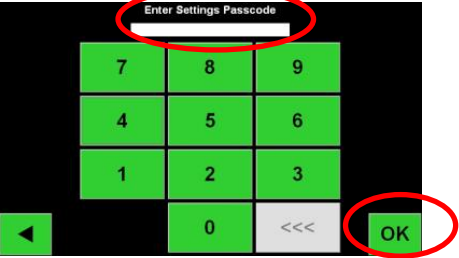
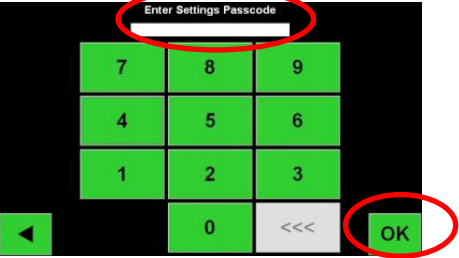
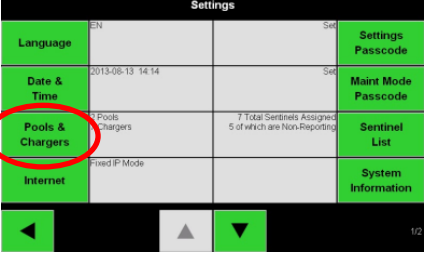

- Press the Sentinels™ into the mounts provided on the Splitter™.

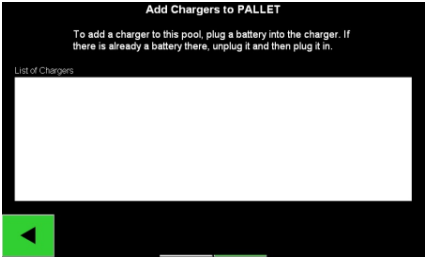

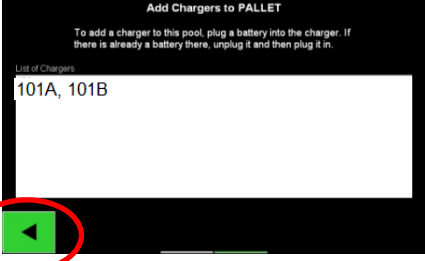


<ul style="list-style-type: none">• Connect Sentinels™ to each other and the battery extension cables per instructions in [[Brand1]] installation manual.	

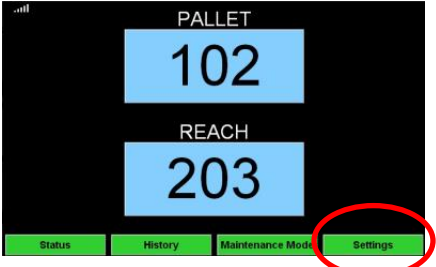
6. **[[Brand1]] Configuration Setup**

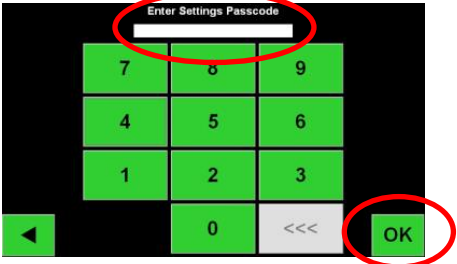
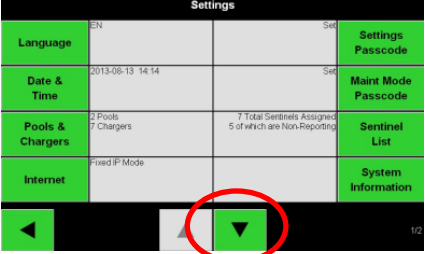

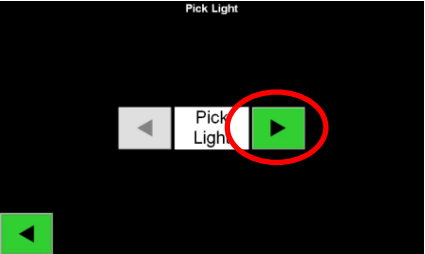
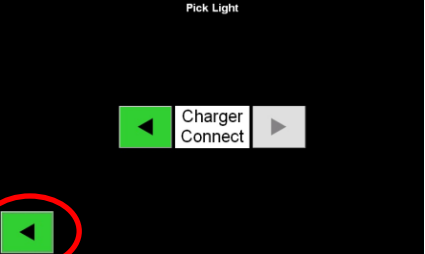
6.1 Adding Chargers

<ul style="list-style-type: none"> On the display on the front of the controller, press “Settings.” 																									
<ul style="list-style-type: none"> The display will ask for a passcode. The default passcode is 919191. 																									
<ul style="list-style-type: none"> If the passcode has been changed or lost, the passcode can be recovered from [[Company]] by contacting them with the system controller serial number. Enter the passcode and press “OK.” 																									
<ul style="list-style-type: none"> Press Pools & Chargers. 																									
<ul style="list-style-type: none"> Press Add Charger to add chargers to the selected pool. 	 <table border="1" data-bbox="889 1499 1312 1751"> <thead> <tr> <th>Pool #</th> <th>Pool Name</th> <th>Voltage</th> <th>Charger Count</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>PALLET</td> <td>24</td> <td>Add Charger (0)</td> </tr> <tr> <td>2</td> <td></td> <td>Set V</td> <td>Add Charger (0)</td> </tr> <tr> <td>3</td> <td></td> <td>Set V</td> <td>Add Charger (0)</td> </tr> <tr> <td>4</td> <td></td> <td>Set V</td> <td>Add Charger (0)</td> </tr> <tr> <td>5</td> <td></td> <td>Set V</td> <td>Add Charger (0)</td> </tr> </tbody> </table>	Pool #	Pool Name	Voltage	Charger Count	1	PALLET	24	Add Charger (0)	2		Set V	Add Charger (0)	3		Set V	Add Charger (0)	4		Set V	Add Charger (0)	5		Set V	Add Charger (0)
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4		Set V	Add Charger (0)																						
5		Set V	Add Charger (0)																						

<ul style="list-style-type: none"> To add a charger slot to the pool, plug a battery into one of the paired battery extension cables. 	
<ul style="list-style-type: none"> If it is already plugged in, be sure that the charger is turned off and then unplug it and plug it back in. 	
<ul style="list-style-type: none"> Enter the desired ID for the charger followed by an "A" or a "B" with no spaces. Press "OK." Repeat the process for the 	
<ul style="list-style-type: none"> Repeat the process for the other paired positions. Press back arrow to return to previous screen and add chargers to other pools. 	

6.2 Pick Light

<ul style="list-style-type: none"> On the display on the front of the controller, press "Settings." 	
--	--

<ul style="list-style-type: none"> Enter the passcode and press “OK.” 	
<ul style="list-style-type: none"> Press the down arrow. 	
<ul style="list-style-type: none"> Press “Pick Light.” 	
<ul style="list-style-type: none"> Press the right arrow until the screen reads “Charger Connect.” This will enable the blue flashing LED to alert the operator to move the charger cable to the paired battery position. 	
<ul style="list-style-type: none"> Press back arrows to return to Home screen. 	

7. Final Inspection and Testing

Task	Status
Battery cable connectors are secured to the bracket.	<input type="checkbox"/>
Unistrut® is secure to mounting surface.	<input type="checkbox"/>
Is there enough cable to reach both A & B sides of the Splitter™?	<input type="checkbox"/>
The blue LED on the Sentinel™ illuminates when the battery is connected and the paired battery is not charging.	<input type="checkbox"/>
Reset the Maintenance screen to the default password (“11111”) or Settings screen to the default password (“919191”) when leaving the box if it was changed during installation.	<input type="checkbox"/>
Close the box and fasten the screws (locking is optional).	<input type="checkbox"/>

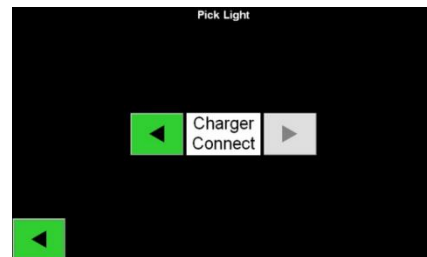
8. Troubleshooting

No blue light

- Check the Settings screen on the control box to ensure that the blue LED pick light is set to charger connect.
 - Go to Settings page 2 for Pick Light.
 - Press “Pick Light”.



- Scroll through the options until the screen reads “Charger Connect.”



- The blue LED on the Sentinel™ illuminates when the battery is connected and the paired battery is not charging. If both batteries are charged, no blue light will be on.
- Ensure Sentinel™ is powered
 - Is the green LED on?
 - Check that the Sentinel™ Data Power Cable is connected
- Ensure Sentinel™ Flexi-Taps are installed properly
 - Does the Amber LED come on when a battery is connected?

Blue light is on and flashing for a long time	<ul style="list-style-type: none">• During normal operation, the blue light will go off after connection and charge start.<ul style="list-style-type: none">○ If the charger is still charging, leave it connected.○ Troubleshoot charger if there is a charger fault. • A flashing blue light can also indicate that a battery is in “Quarantine”.<ul style="list-style-type: none">○ Check the “Quarantine” status.

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