

## Installation Manual

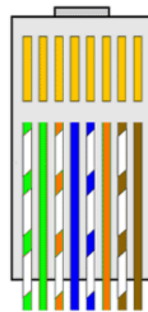
In this document the Feedback LED is just called LED, and User Button is just called Button.

### Creating the Power Bus

The Power Bus is created by connecting CAT3, CAT5 or CAT6 cables between the PowerHub™ and the MotorTaps™. One or both of the RJ45 ports on the PowerHub can be used. Star layout, daisy-chain layout, or a mixture of both is acceptable. Our RJ45 Splitters can be used as needed to break out the Power Bus. RJ45 connectors need to be pinned in a straight through fashion, and while any configuration is possible, we suggest you stick with a standard like 568A to avoid confusion. It is suggested that a cable tester is used during installation to verify that all cables are pinned properly.

#### **568A pinout for the RJ45 connectors**

- Pin 1 - green/white
- Pin 2 - green
- Pin 3 - orange/white
- Pin 4 - blue
- Pin 5 - blue/white
- Pin 6 - orange
- Pin 7 - brown/white
- Pin 8 - brown



Plug the PowerHub's power supply into a 120V outlet. When plugged in to power, the LED on the PowerHub will be a dim green. If MotorTaps are being installed prior to shade installation, we suggest the PowerHub not be connected to power until the shades are installed as MotorTap timers will begin even if no motors are connected.

#### *Notes:*

- *Maximum total cable accumulative length on a Power Bus is 500 feet.*
- *No more than 20 MotorTaps can be connected to a PowerHub. Installations with more than 20 MotorTaps must be split into separate Power Buses with additional PowerHubs.*
- *Do not connect any Ethernet products to this system as damage may result (e.g., PC, router or switch).*
- *If more than one Power Bus is used, do not connect PowerHubs to one another.*

## Installation of MotorTaps

While the MotorTaps do not need to be accessible after installation; it is suggested that the MotorTaps be installed in an accessible location like behind a shade or in a drop ceiling. This will allow installers access to the Button and visibility of the LED. MotorTaps can be secured using the mounting hole and a screw (screw not included) or by using a good quality double-sided foam tape.

Once the MotorTap is installed, connect it to the Power Bus by plugging the bus in to one of the RJ45 ports on the MotorTap. Verify the MotorTap has power by connecting it to a live bus and seeing the LED start up blinks (Firmware version) or by quickly pressing and releasing (less than 1 second) the Button and seeing status blinks on the LED (described below).

Plug a Cronopower motor cable from Motor Port 1 to the charging connection on Motor 1 and, if used, a motor cable from Motor Port 2 to the charging connection on Motor 2.

*Note: MotorTaps are not plenum rated and should not be installed in plenum spaces.*

## Checking Power to the Motor and Initiating a Charge

Newly installed MotorTaps will initiate a charge on motor 1 after one day and motor 2 after 3 days upon initial power up. This will allow charging of all motors in the days following a new installation.

### Motor 1:

Press and hold the Button until the green LED comes on (approximately 1 second). Release the Button while LED is green, and the MotorTap will start to charge Motor 1. Verify that the LED remains green\* and Motor 1 indicates it has a charger connected (jog, LED or sounder).

Note that if the motor does not need to charge (i.e., it draws no current), then the MotorTap will stop charging after 3 seconds and the LED will go out. If the motor does want to charge, the MotorTap will continue to charge it and the LED will remain green. If you do not want it to charge now, then click the Button to stop the charge. The LED will blink status.

### Motor 2:

Press and hold the Button until the green LED comes on and then changes to blue. (approximately 3 seconds).

Release the Button while the LED is blue, and the MotorTap will start to charge Motor 2. Verify that the LED remains blue\* and Motor 2 indicates it has a charger connected.

Note that if the motor does not need to charge (i.e., it draws no current), then the MotorTap will stop charging after 3 seconds and the LED will go out. If the motor does want to charge, the MotorTap will continue to charge it and the LED will remain blue. If you do not want it to charge, then click the Button to stop the charge. The LED will blink status.

*\* If the LED changes to red, then an error has occurred – reset everything by unplugging the power supply and waiting till the PowerHub LED goes out, then plug it back in and try again.*

Possible errors: shorted Power Bus cable, shorted motor cable, or defective motor.

#### **Notes:**

- Charging time for motors is 6 hours. If a motor is fully charged in less than 6 hours, the MotorTap will stop charging it. Time till next charge will be reset.*
- Only one motor per Power Bus can ever charge at a time.*
- If a motor is already charging on the Power Bus when a manual charge is initiated, that motor will be kicked off the bus in order to prioritize the charge that was manually initiated. The initial motor will charge again after its timer expires and the bus is free. If a manual charge is initiated on multiple motors, the last motor to be initiated will charge and the others will wait in the charging queue until the Power Bus is free.*
- Only one installer should be pressing a Button to avoid confusion.*
- If a shade is moving while a charge begins, some motors may stop moving. A second press of the shade command on the remote or switch may be needed to continue the movement of the shade. This could make an automated scene occasionally incorrect.*

### **Determining Time Till Next Charge**

Click the Button (press less than 1 second) to determine time till next charge. The green LED will blink how many months\* are left till next charge for Motor 1 and the blue LED will blink how many months are left till next charge for Motor 2, then the red LED will blink once if the interval is set to every 3 months or twice if set to 6 months.

*\* blink times are rounded up (e.g., 3.5 months will round up to 4 blinks).*

### **Changing the Charging Interval**

Default charge time interval is set to every 3 months but can be adjusted to every 6 months. To adjust the charging interval, press and hold the Button until the green LED comes on, then changes to blue, and then to red. (approximately 5 seconds) release the Button, and the red LED will blink twice if the MotorTap is using 6 month intervals, and once if using 3 month intervals.

Press and release the Button to change to the other interval. The LED will now blink the new interval. Additional presses of the Button will cycle between the two charging intervals. If the Button is not pressed after 4 seconds, the LED will blink the interval and the MotorTap will go back to normal operation.

#### *Notes:*

- *New MotorTaps will activate an initial charge after 1 day for motor 1 and 3 days for motor 2, then change to the default interval of every 3 months (or every 6 months if the charge interval has been changed to 6 months).*
- *When the interval is changed from 6 months to 3 months, any motor with more than 3 months remaining will be reduced to 3 months.*

### **Error Notification**

The MotorTap provides a maximum current of 1 Amp. If more than 1 Amp is being drawn, the voltage will be reduced until less than 1A is drawn. If the voltage is reduced to the lower limit (2.8V), and excessive current is still being drawn, then charging will stop and a fault condition will be noted. The MotorTap will blink the red LED every 10 seconds until power is reset.

### **Handling Power Failure**

The number of days till next charge is retained in the MotorTap during power outages. Partial days are not retained, so when power returns, the partial day timer is set to one half day to average everything out.

If power fails while charging a motor due to a timer initiated charge, that motor will charge again within one day after power is restored.

### **Safety**

Cronopower devices are not plenum rated and should not be installed into plenum spaces.

This product is powered by a UL Listed Class 2 direct plug-in Power Supply (low voltage and low power levels in accordance with the NEC ANSI/NFPA 70). Due to these power limitations, any product powered by a Class 2 supply is considered safe from a fire initiation standpoint and provides acceptable protection from electric shock. Thus, the component powered by the supply does not need a separate UL Listing as it is inherently protected and safe.

## System Layout

