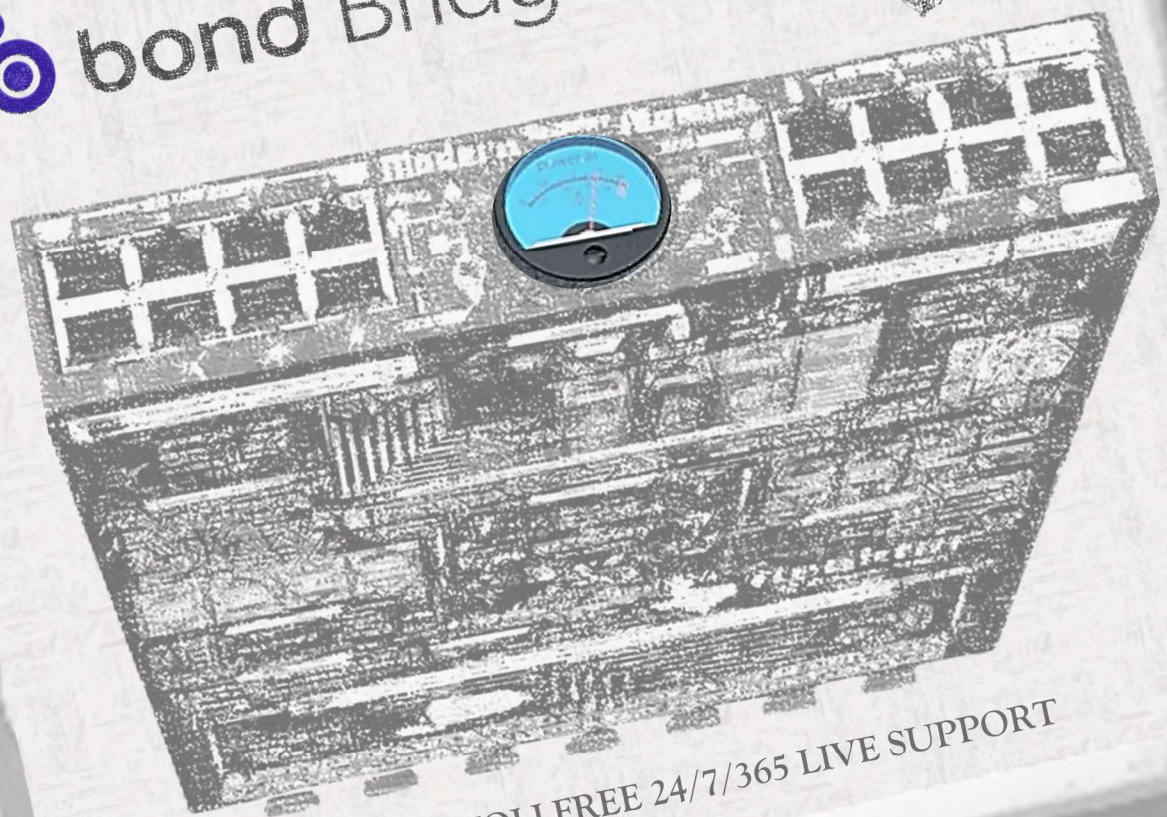
# Tech Note #102

## INTEGRATION WITH bond Bridge PRO



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# Atomic Tech Note: #102

## Bond Bridge Pro

## Integration

## Document #4000006

Compatible with Reaktor and Collider series PDUs.



Specifications are subject to change without notice

This Tech Note is designed to provide all the necessary information for integration, however if you have any additional questions or need any additional information, please reach out to our Customer Support Teams.

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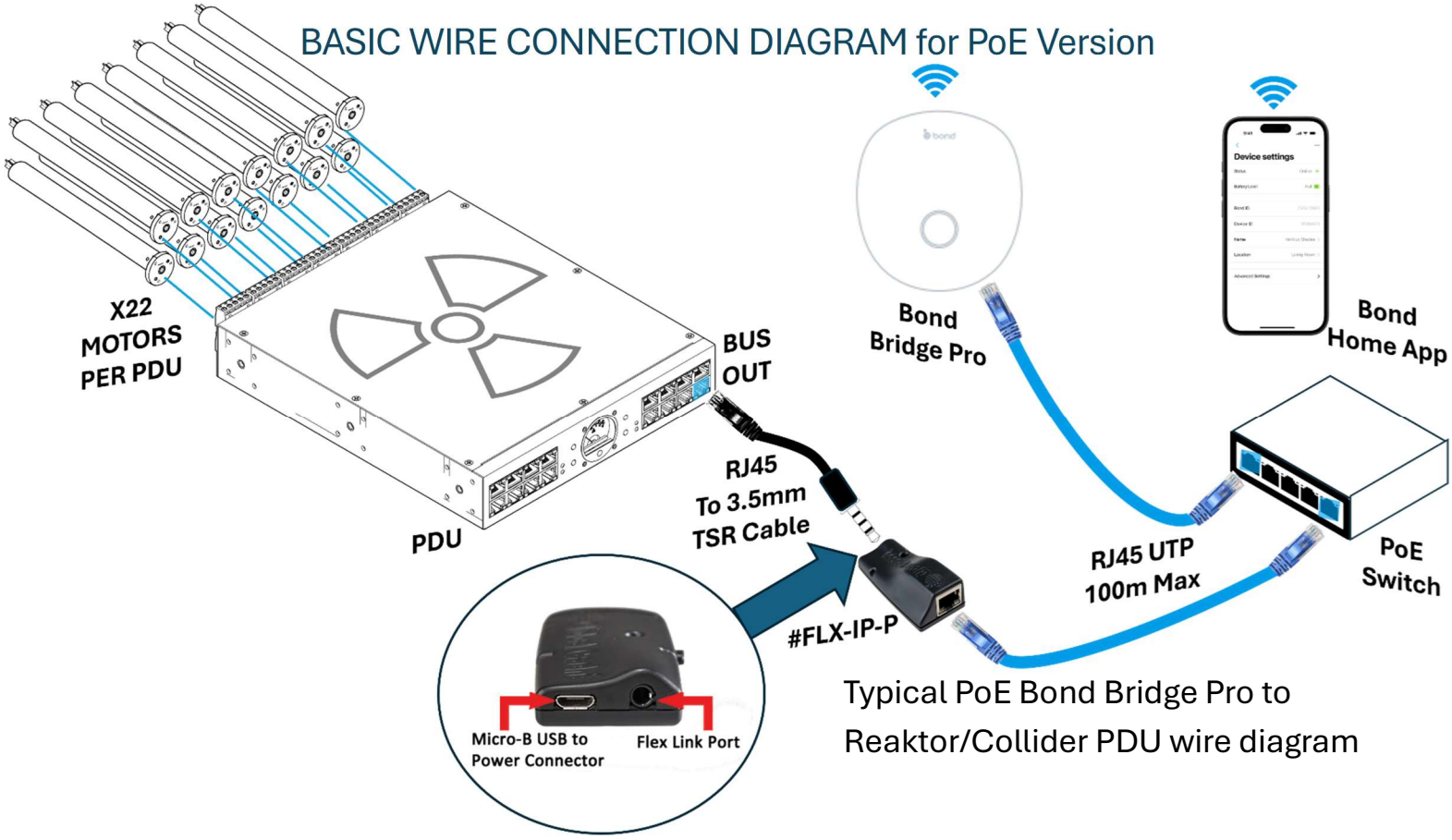
Throughout this Tech Note you will find QR codes that when scanned will take you to a video for that section that may contain additional information. Scan the code or click on the QR code to bring up your default browser and take you to the video.

## GETTING STARTED AND SYSTEM PREREQUISITES

Compatible and Required equipment list.

- Bond Bridge Pro with v4.27.51 firmware or above
- Bond edition Reaktor or Collider (Up to 8 PDU's per Bond Bridge Pro)
- or Standard Edition Reaktor or Collider and a #FLX-IP-P PoE or WIFI or other compatible Global Cache Server (Included with all Bond editions)
- 802.3 af/at/bt PoE switch to power the #FLX-IP-P & the Bond Bridge Pro or connect the #FLX-IP and the Bond Bridge Pro to the respective USB power adaptors if using the WIFI versions on both
- 485 or PoE Motors connected to a Reaktor or Collider

The Bond Bridge Pro currently has a limitation of up to 50 Motors which can be spread across up to 8 PDU's




Typical PoE Bond Bridge Pro to Reaktor/Collider PDU wire diagram

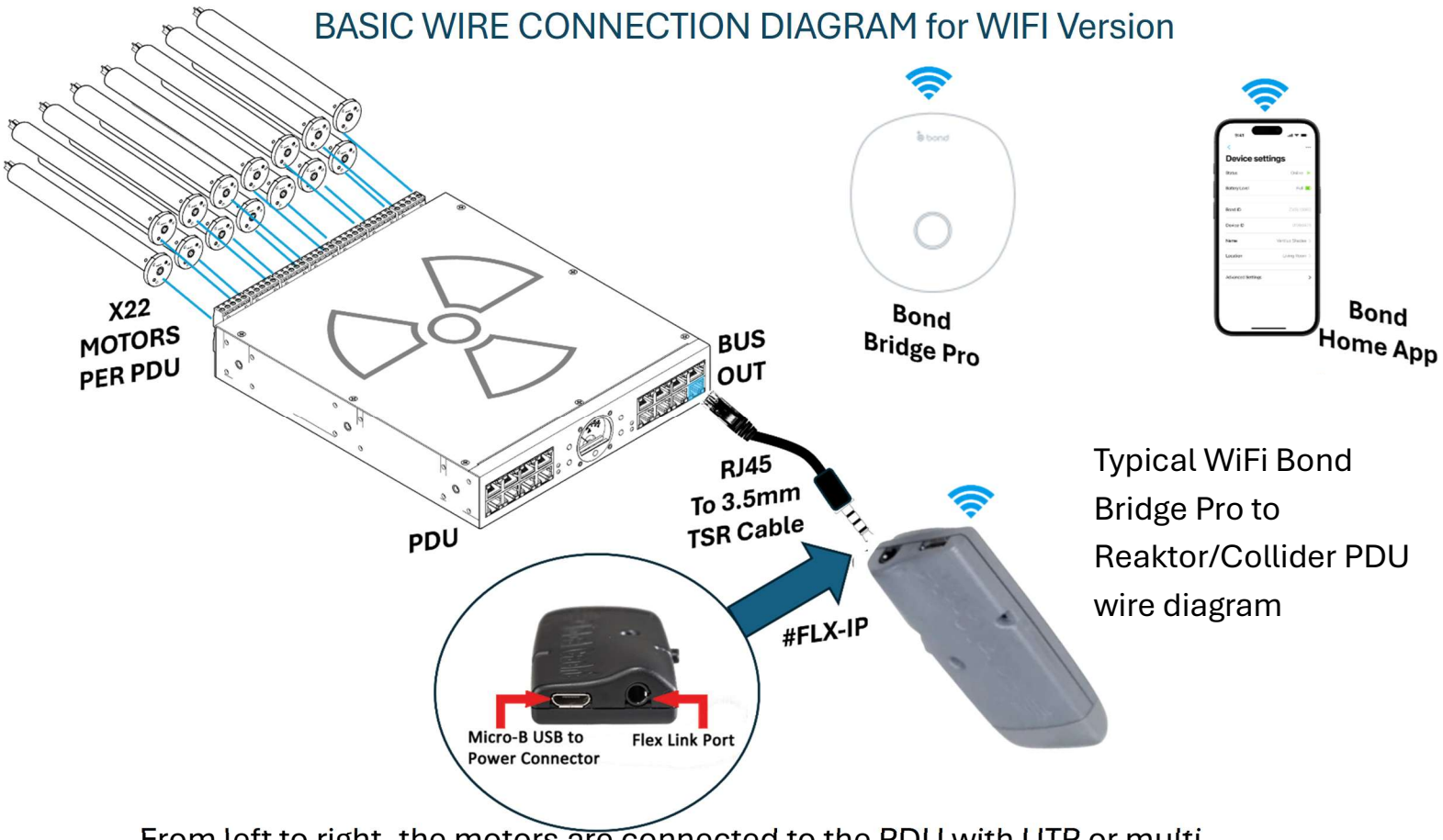
From left to right, the motors are connected to the PDU with UTP or multi conductor cabling;

The #FLX-IP-P is connected to the BUS OUT port on the PDU via a custom RJ45 to 3.5mm TSR Cable which is included with the Bond Edition PDU's and or with the #FLEX-IP;

The #FLEX-IP-P is connected to a PoE switch (any type af/at/bt/) and or with the included USB power supply and an Ethernet connection to a Ethernet switch;

The Bond Bridge Pro is also connected to the PoE switch, or a USB power cable and an Ethernet connection to a switch and or is connected via WIFI.

The Bond Home App needs to be downloaded from your app store onto a compatible iOS or Android mobile device and normally needs to be connected to a WIFI connection which is also on the same logical segment of the Ethernet switch.




Typical WiFi Bond Bridge Pro to Reaktor/Collider PDU wire diagram

From left to right, the motors are connected to the PDU with UTP or multi conductor cabling;

The #FLX-IP-WIFI is connected to the BUS OUT port on the PDU via a custom RJ45 to 3.5mm TSR Cable which is included with the Bond Edition PDU's and or with the #FLEX-IP;

The #FLEX-IP-WIFI is connected with the included USB power supply

The Bond Bridge Pro is also connected to the PoE switch, or a USB power cable and an Ethernet connection to a switch and or is connected via WIFI.

The Bond Home App needs to be downloaded from your app store onto a compatible iOS or Android mobile device and normally needs to be connected to a WIFI connection which is also on the same logical segment of the Ethernet switch.

## CONNECT MOTORS AND BUILD ALL GROUPS USING PDU FIRST

For Reaktor and using the front keys connect your motors and start building your groups. (See pages 40-42 of your PDU manual for more details on making groups)

A best practice would be to keep note of the order in which you connect your motors and create your groups as this will aid you in the naming process inside the Bond Home App.

Once the Bond Bridge Pro is connected and setup with your PDU, the motors and groups will start to appear in the app and they will be listed as Motor1, Motor 2, and Group1, Group2, Etc.

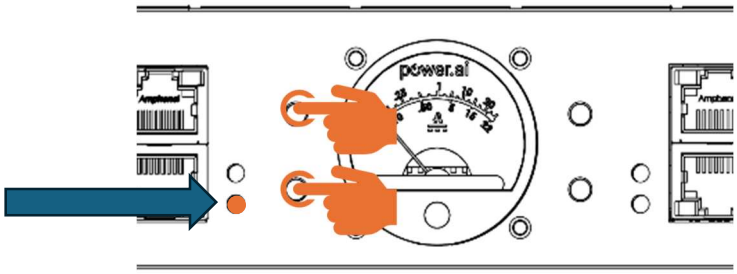
In the Bond Home app you can rename the motors and groups and assign them to rooms as needed.

The reason you will want groups made from the PDU is so that all the shades in each group move in unison with each other.

If you decide to make new groups inside of the Bond Home app and have not make them using the PDU the shades in your group will NOT move in unison with each other.

## REAKTOR CONNECTION AND MULTI-PDU JSON SERIAL SET UP

If you have more than one PDU in your system you will need to turn on the multi-PDU JSON feature on the PDU with the #FLX-IP-P or #FLX-IP-WIFI connected. If you only have a single PDU then you can skip this next step.



On the PDU with the #FLX-IP-P in the user mode and with the keys unlocked (You can tell the keys are unlocked when the bottom left status LED is Amber) Press and hold both the UP and DOWN KEYS for approximately 2 seconds.

The status LED will now blink every 3-4 seconds to indicate the multi-unit PDU JSON is running.

# DISCOVERING IP-ADDRESS OF #FLX-IP-P

## Discovering the IP Address

- The Flex IP will typically receive an IP address from your network's DHCP server.
- Windows users can find the IP address using our **iHelp** utility, available for download from our website.
- For other operating systems, locate the IP address via your router's interface or a third-party IP scanner, matching the MAC address found on the unit's label.
- If your network lacks a DHCP server, the default IP is set to **192.168.1.70**. It can be accessed directly with a PC and ethernet cable by configuring the IPv4 settings on the PC for an IP address in the same subnet range of the default IP. Example below:
  - TPC IP config: IP address: 192.168.1.85, Subnet Mask: 255.255.255.0, Gateway: NONE.
  - Disable any additional network connections, such as WiFi.
  - iHelp does not detect the unit while directly connected to a PC.

```
C:\Users\Apps-Station1>arp -a

Interface: 192.168.8.120 --- 0x12
  Internet Address      Physical Address      Type
  192.168.8.1           94-83-c4-55-cf-f9     dynamic
  192.168.8.11          4c-c2-06-16-01-e0     dynamic
  192.168.8.12          4c-c2-06-16-02-ce     dynamic
  192.168.8.13          4c-c2-06-16-01-18     dynamic
  192.168.8.180         00-0c-1e-06-69-eb     dynamic
  192.168.8.226         00-0f-ff-91-8f-72     dynamic
  192.168.8.255         ff-ff-ff-ff-ff-ff     static
  224.0.0.22            01-00-5e-00-00-16     static
  224.0.0.251           01-00-5e-00-00-fb     static
  224.0.0.252           01-00-5e-00-00-fc     static
```


THE #FLX-IP-P will be identified in many IP Scanners as \ITACHFLEX by Global Cache

Advanced IP Scanner

File View Settings Help

Scan

192.168.8.1-254 Example: 192.168.0.1-100, 192.168.0.200

Results Favorites

| Status | Name | IP | Manufacturer | MAC address |
|---|---|---|---|---|
| | console.gl-inet.com | 192.168.8.1 | GL Technologies (Hong Kong) Limited | 94:83:C4:55:CF:F9 |
| | sfy_poe_000356 | 192.168.8.11 | Somfy | 4C:C2:06:16:01:E0 |
| | sfy_poe_000444 | 192.168.8.12 | Somfy | 4C:C2:06:16:02:CE |
| | sfy_poe_00028E | 192.168.8.13 | Somfy | 4C:C2:06:16:01:18 |
| | Admin | 192.168.8.120 | GIGA-BYTE TECHNOLOGY CO.,LTD. | 74:D4:35:4D:85:03 |
| | ITACHFLEX0669EB.lan | 192.168.8.180 | Global Cache | 00:0C:1E:06:69:EB |
| | ea1-000FFF918F72.lan | 192.168.8.226 | Control4 | 00:0F:FF:91:8F:72 |

## #FLX-IP-P TELNET CONFIGURATION SETUP

### Device Configuration

- Access device settings by entering the IP address into a browser.
- To assign a static IP in Network Settings, switch off DHCP and input your desired IP.
- To configure the Flex Link Cable settings, choose the type of cable connected and configure as necessary. Remember to save your changes.

Adjust the #FLX-IP-P to the following settings as shown in the image below.

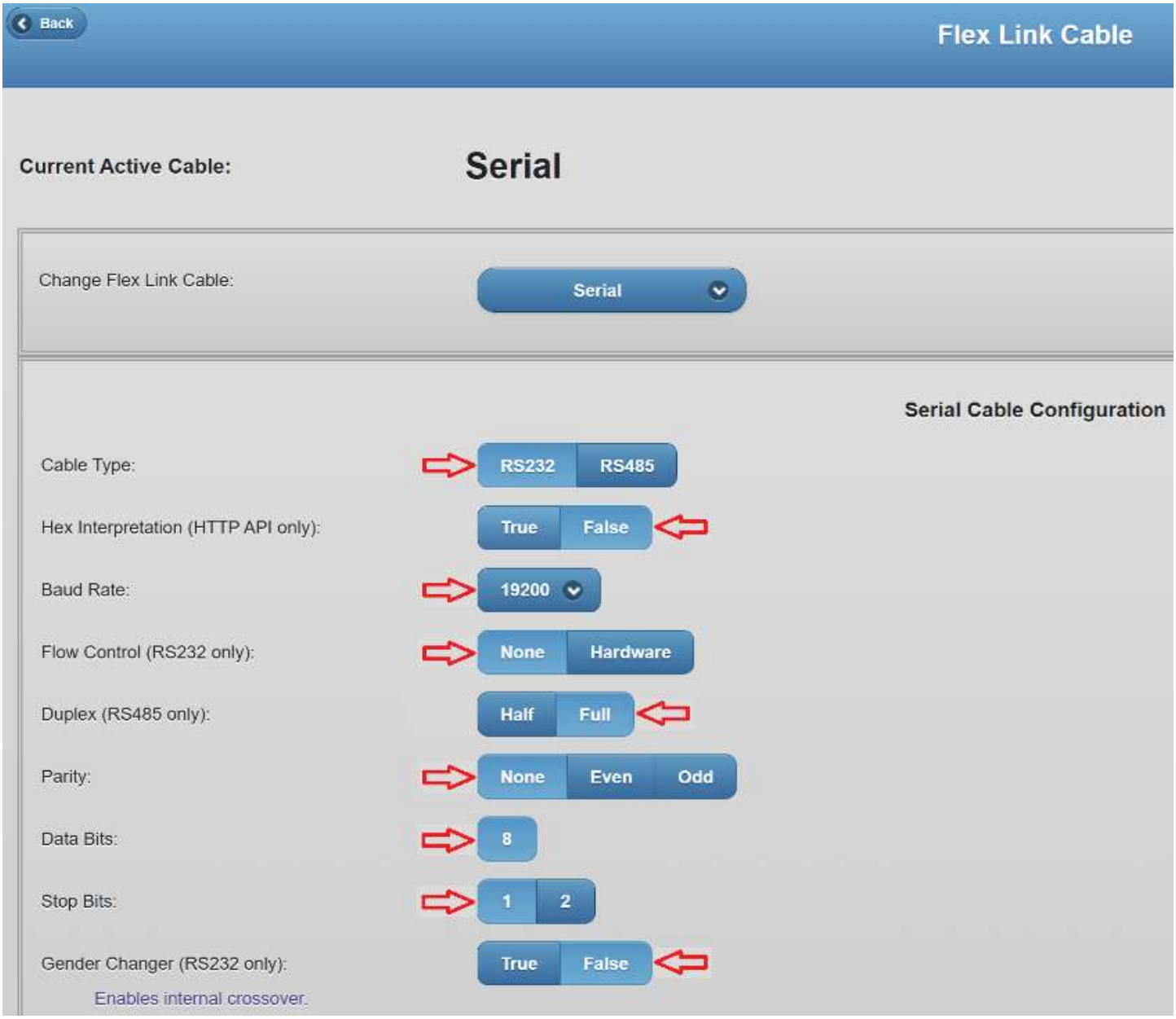
Cable (RS232)

Hex (False)

Baud Rate (19,200)

Flow (None) Data Bits (8) Stop Bits (1)

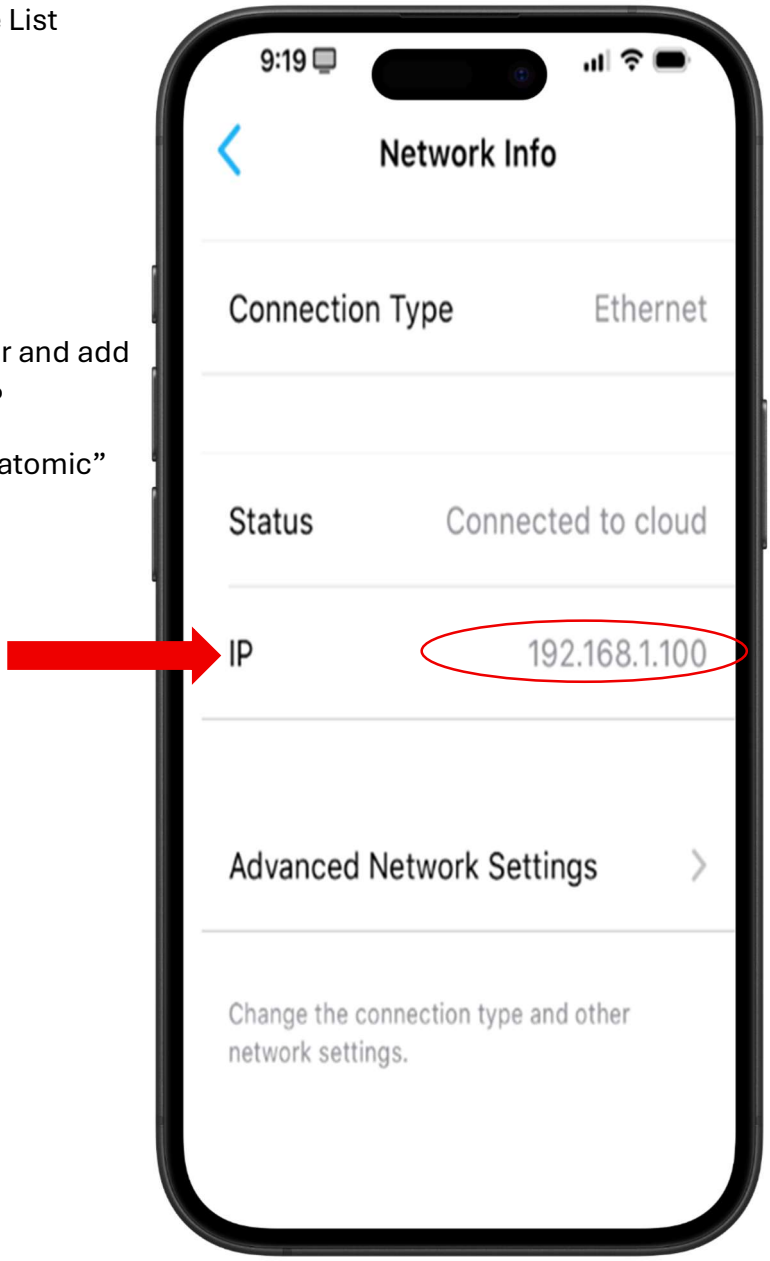
Gender Change (False)



## BOND BRIDGE PRO TELNET CONFIGURATION

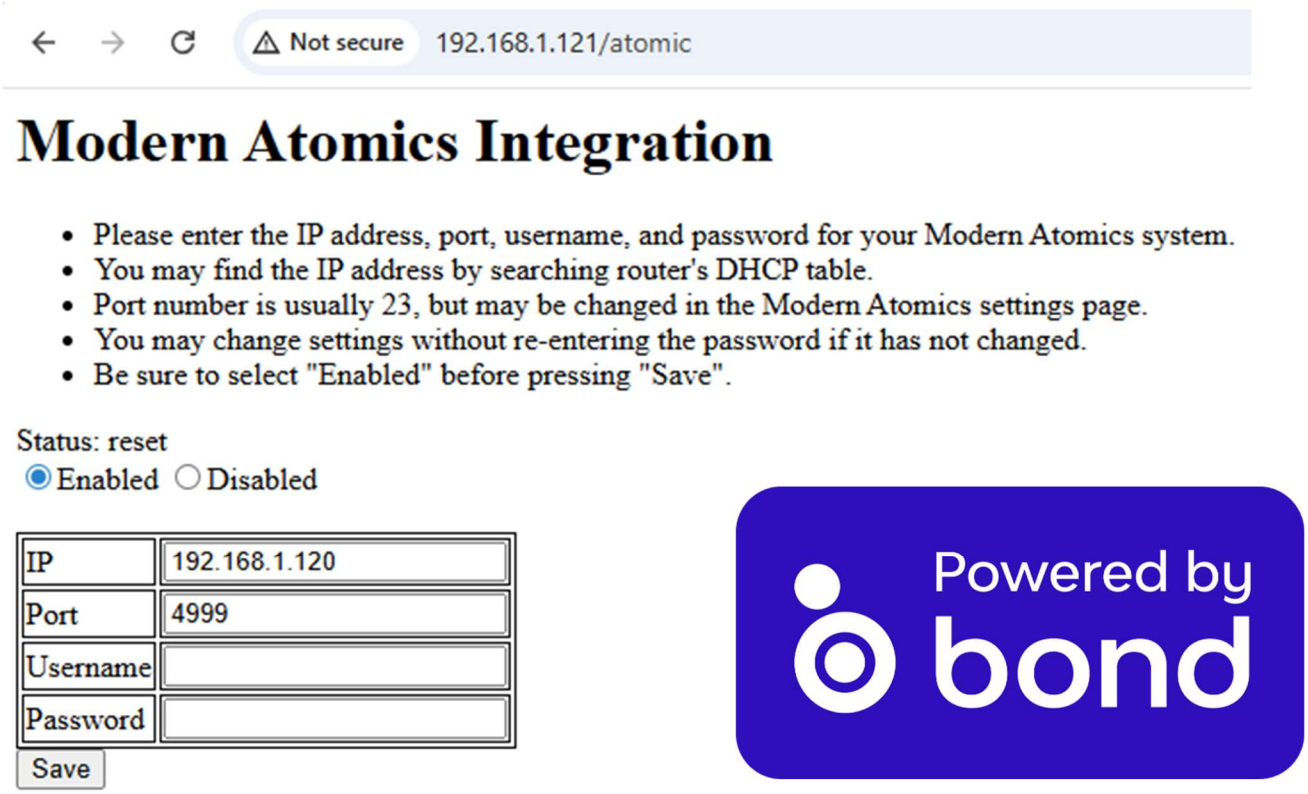
You will need to know the IP address of your Bond Bridge Pro for the next step

- Open your Bond app
- Select the Bond Bridge Pro in the Device List
- Click on the “Advanced Settings”
- Click on the “Network Info”
- Copy IP address
- Open a web browser
- Paste the IP address into the address bar and add the following /atomic to the end of the IP
- Should look like this “XXX.XXX.XXX.XXX/atomic”



## BOND BRIDGE PRO TELNET CONFIGURATION

Using a browser that is connected to the same network as your Bond Bridge Pro, navigate to the Bond Bridge Pro IP address with a forward slash atomic (Example 192.168.0.251/atomic



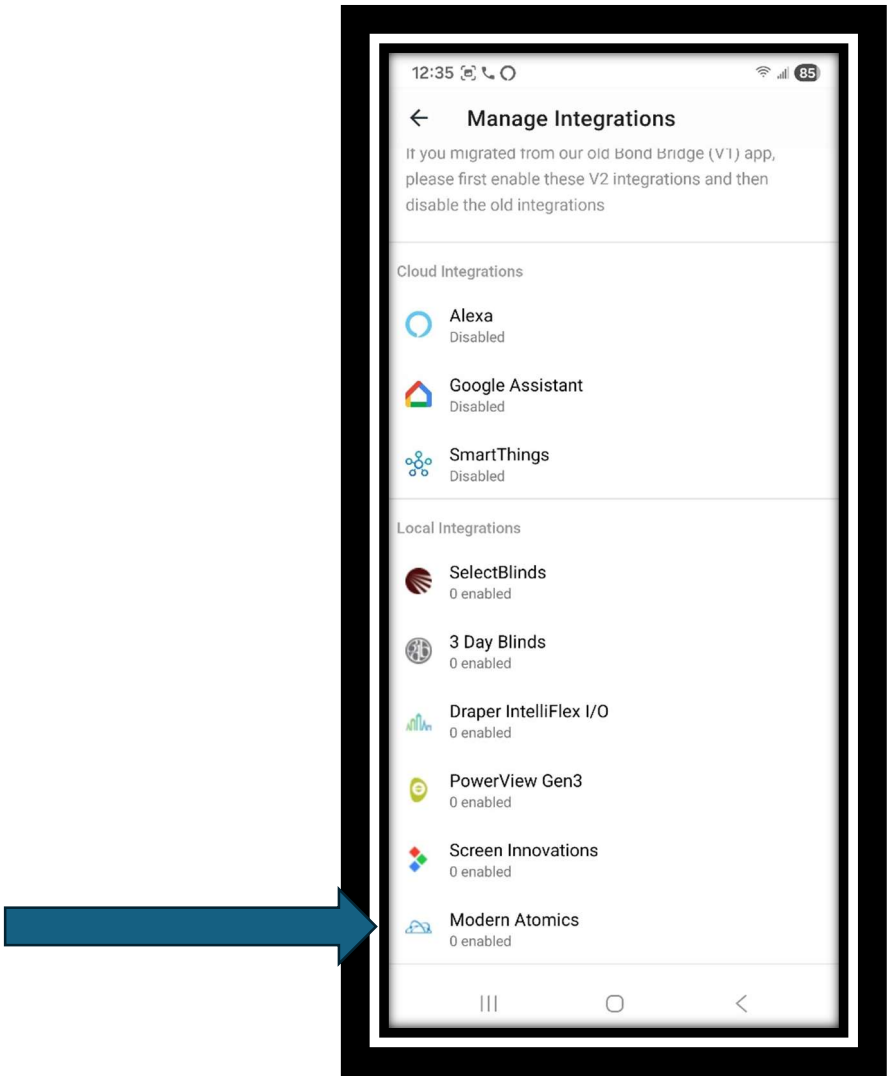

You will need to click on the table and enter the IP address of the FLX-IP in the IP section of the table you found in the last step. Enter the port at 4999 and use anything you want in the Username and password

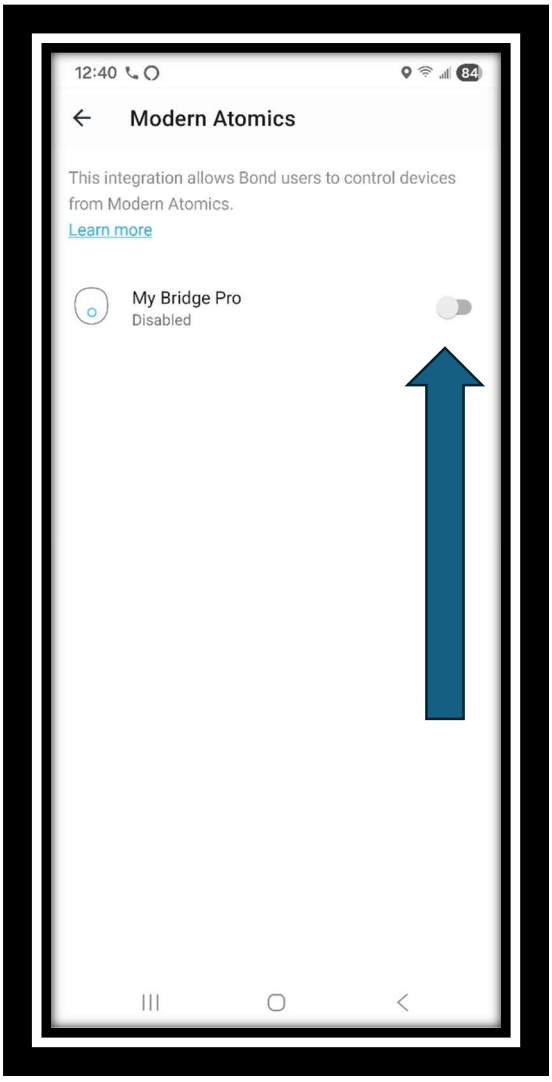
Reboot the Bond Bridge Pro and then reboot Reaktor and you're ready to control.

## BOND BRIDGE PRO TELNET CONFIGURATION

You will also need to turn on the Modern Atomics Integration with Bond App in the Bond Bridge Pro Settings under Manage Integrations

Select Modern Atomics, and then turn the Integration On



Your connected motors and any groups you have made will migrate to the Bond app within a few minutes.

If you add a new group or motor to the system, it will also migrate to your list of devices in the Bond Home app.

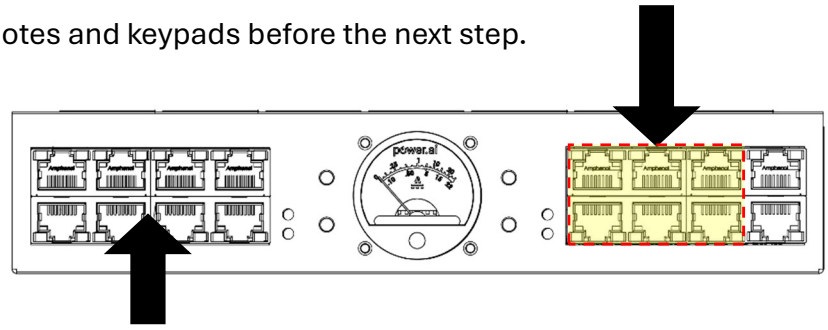
If you do not see your new motors or groups the app, power cycle the Bond Bridge Pro and this is forcing a new discovery.

# USER CONTROL GROUP PROGRAMMING

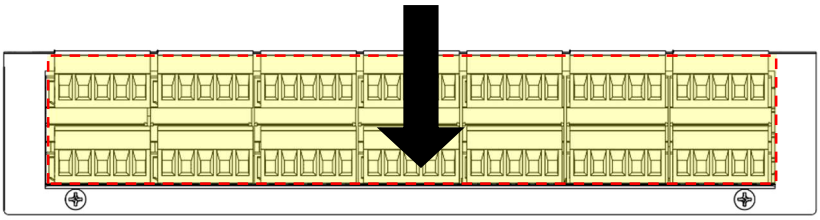
## CONFIGURATION – MAKING GROUPS:

To set up user controls in Reaktor you need to create some groups in the GROUP PROGRAMMING MODE.

**STEP #1** – Connect your user controls, wired keypads, RF receivers to the Reaktor device ports on the front of the unit. For RF receivers ensure you have already paired all your RF remotes and keypads before the next step.

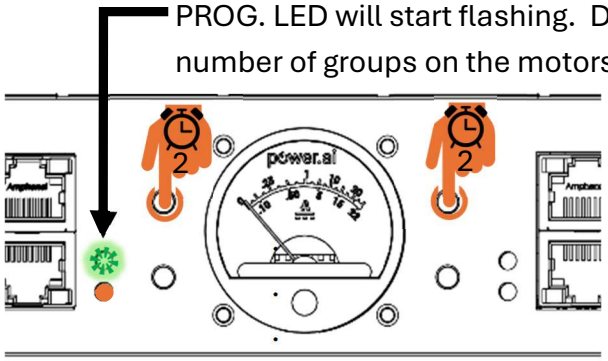


**STEP #2** – Connect all motors to the front or rear motor ports on Reaktor.



**STEP #3** – From the **USER** **MODE** switch to the GROUP PROG. MODE

Hold the **UP** and **ECO KEYS**, (does not matter if the keys are locked or not) the GROUP PROG. LED will start flashing. Depending on how many devices, length of the cables and number of groups on the motors this can take a couple minutes.



Once the LED stops flashing, all motors will start to jog.

Next disconnect all motors **except** the motors you want for your group and ensure all these motors are jogging. If not check the wiring of any motor not jogging, and if the motor is still not jogging press the **RESET KEY** on Reaktor and begin from Step #3 again. (See page 24 if all motors are not jogging)

**STEP #4** – Press the **ECO KEY** or any stop button from one of your connected user controls to make the group. You can now BIND all your user controls.

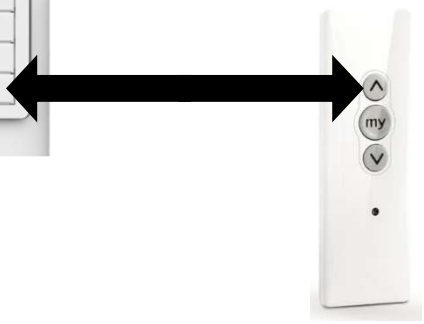
NOTE: On some user controls the STOP button may be labeled "MY"

## CONFIGURATION – BINDING USER CONTROLS TO GROUPS:

Each Reaktor can have up to 128 groups, and or up to 128 devices.

Binding User Controls is the process of associating or mapping a user control device like a keypad or RF remote or a preset/channel of that control device to a group of motors for the purpose of controlling them from that device or preset.

When you are in the GROUP PROGRAMMING MODE and have just created a Group (and all group motors are still jogging) you can now BIND your user controls by pressing the UP button on all the control device(s) that you would like to control this group of shades.




The motors will stop jogging for approximately 2-3 seconds and once the motor jogging resumes the binding is complete.

To **TEST** the binding, you can PAUSE the GROUP PROGRAMMING MODE by **TWICE** pressing the **STOP** button on any user control.

When the programming is paused the motor jogging will slow down and you can test the group with your user controls to control the shades, up down & stop will all work as normal.

When you are done testing your group you can resume programming with another **TWICE** press of the **STOP** button and the motors resume jogging faster. If you are done creating groups, you can exit the programming mode by holding the **UP** and **ECO KEYS** on Reaktor or just press the **RESET KEY** which will reboot the Reaktor.

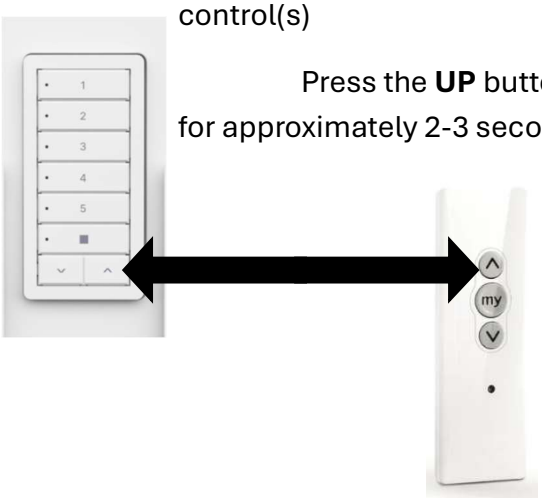
If you want to make more groups, disconnect the current motors, and connect the motors wanted for the next group and ensure they are all jogging and then go back to step #4 of creating a group. If any motor in your group is not jogging press the **RESET KEY** on Reaktor and begin from Step #3 of group programming again.

If you have just made a group, and you believe you have made a mistake, you can delete the current group by **THRICE PRESSING STOP** on one of your connected user controls.

## ADDING A NEW USER CONTROL TO A PREVISOULY MADE GROUP

If you want to add another user control to one of your already created groups, connect the new user control to the Reaktor and locate a user control that was already previously bound to that group and **QUARCE PRESS STOP** (press stop 4 times in a row) on the previous user control


Reaktor will go back to the GROUP PROGRAMMING MODE and place the unit on the previously created group & the motors in the group will start to jog. To add the new user control(s)




Press the **UP** button on the new user control device. The motors will stop jogging for approximately 2-3 seconds & once the motor jogging resumes the binding is complete.

To **TEST** the binding, you can PAUSE the GROUP PROGRAMMING MODE by **TWICE** pressing the **STOP** button on any user control.


When the programming is paused the motor jogging will slow and you can test the group with your user controls to control the shades, up down & stop will all work as normal.

When you are done testing your group you can resume programming with another **TWICE** press of the **STOP** button and the motors resume jogging faster. If you are done creating groups, you can exit the programming mode by holding the **UP** and **ECO KEYS** on Reaktor or just press the **RESET KEY** which will reboot the Reaktor.



If you want to make more groups, disconnect the current motors, and connect the motors wanted for the next group and ensure they are all jogging and then go back to step #4 of creating a group. If any motor in your group is not jogging press the **RESET KEY** on Reaktor and begin from Step #3 of group programming again.

## CONFIGURATION – BROADCAST ALIAS:

Reaktor can have **ONE** broadcast alias per unit. If you need another alias, you will need to add another Reaktor to your system.

In 485 networking, commands can be sent out as a broadcast command (similar to a multicast command over an IP network) These commands are "seen" by all nodes on the network typically using the "FFFFFF" addressing scheme and have some useful functionality. Since Reaktor has three 485 bus segments it can translate a broadcast command from one segment and translate it to a normal addressing scheme for use on other segments, this type of translation is called a broadcast alias.

What you can use an alias on a shade network is to make very basic sensors or generic purpose input and output GPI/O devices to control or trigger actions for shades such as a dry contact closure 12V trigger or even 0-10 volt applications. This is also very common on RF sensors.

Setting up an alias for Reaktor is very simple and you use the same method as binding a user control to a group that you have created.

Connect the motors you want in the group and connect the Alias device to a device port, then switch to the **GROUP** **PROGRAMMING MODE** and once your motors jogging, create the group and now trigger the associated GPI/O or sensor to bind it to the group. Use the **UP** to bind the sensor to the group in the same way you bind the user controls to the group. You can even pause the programming by triggering a stop on the GPI/O the same way that a STOP works on the user controls.

Common 485 GPI/O devices; FONTUS, VBYV, ZBDMI, TDMI, PEGASUS, MOAB, 0-10V

## CONFIGURATION – MOTOR ECO MODE:

The Reaktor has a special shade motor energy savings mode called the **ECO MODE** which is inactive by default.

When the **ECO MODE** is active, Reaktor at times will remove the voltage to the motors which can help to reduce or eliminate operational quiescent current draw from the motors. Reaktor will also respond to non-movement 485 BUS queries intended for connected motors with the last known data in the response. These proxied data responses allow us to keep the operational current low. If any movement command is received Reaktor will turn back on the power to relay the command.

Some motors respond very quickly to the relayed command which may not be detected by an end-user, however in our testing the 50mm sized motors take longer to respond to the power up than the latest 30mm motors. This is why the feature is not active by default.

If saving the most amount of energy is important to the end-user, we suggest turning on the **ECO MODE** (See **ECO MODE** in the Reaktor **USER KEY** section for more details) and testing the user controls making sure the expectation from the use is acceptable.

One other note for large systems, if you have a shade system with 30mm and 50mm motors we recommend placing all the 50mm motors on the same Reaktor. If this is not possible, then all motors on that Reaktor will have the same delay as the 50mm motors have.

The **ECO MODE LED** will be a solid GREEN color when the **ECO MODE** is active.

**To turn ECO MODE on**, and with the USER KEYS unlocked, press the ECO MODE KEY once and the ECO MODE LED will turn AMBER indicating it is ready to toggle the ECO MODE. Next press the RESET KEY to activate ECO MODE and after the reboot, the ECO MODE LED will now be a solid GREEN color indicating that the ECO MODE is now ACTIVE.

**To turn ECO MODE off**, and with the USER KEYS unlocked, press the ECO MODE KEY once and the ECO MODE LED will turn AMBER indicating it is ready to toggle the ECO MODE. Next press the RESET KEY to deactivate ECO MODE and after the reboot, the ECO MODE LED will now be off indicating that the ECO MODE is now INACTIVE.

REAKTOR BOND CONFIGURATION


Powered by bond

# TROUBLESHOOTING **CALL US FOR HELP TOLLFREE +1 (844) 771-8725**

| ISSUE | POTENTIAL CAUSE: | REMEDY ACTION: |
|---|---|---|
| Reaktor unit has no power | Passive DC not connected | Check AC input on passive DC, check cable from output to BUS IN on UNIT |
| Shades have no power | ECO MODE Enabled | A movement command must be sent on the bus to a connected motor for Reaktor to provide power to the motor, you can unlock the front KEYS and press an up, down or stop to force power on to the motor |
| Shades have a delay before they move | ECO MODE Enabled | Some 485 motors take time to receive a command after a power cycle, turn off ECO MODE to remove the delay |
| Shades start to move but then stop moving | ESM LED IS AMBER or RED | Check ESM LED, if the LED is not green, then the ESM needs time to harvest energy from the BUS IN, this can take a few hours |
| Shades start to move but then stop moving | ESM LED is GREEN | Ensure you are not overloading the motor port (Front motor ports 2Nm maximum per port, Rear motor ports 4Nm maximum per port) If you have more than the port can provide move a motor off this port to another port that is not used in the same group, or you may need additional Reaktors for this project |
| 1 or more of the shades in my group is not moving with the group | 485 BUS Collision | Check wiring of the motors not moving, then review FORCED DISCOVERY on pages 23-24 to get the shade working with your group |
| The Reaktor keeps going back to Hibernate mode | Passive PoE not providing power | Reaktor has a special feature to protect itself in the event of long power disruptions. Reaktor will shut down if input power is lost; **and** after 11 hours and 45 minutes; **and** the system (bus activity) has been idle for more than 30 minutes<br>Or the input power is lost; **and** the system (bus activity) has been idle for more than 30 minutes and ESM is very low.<br>To remedy, re-apply power to the passive PoE and or if you need to move shades, hold the reset KEY for approx. 6 seconds which will switch Reaktor back to USER MODE |
| I cannot set any limits on my motor | More than one motor is connected to Reaktor | Reaktor's Limit setting mode is only available if a single 485 motor is connected. Check to make sure no other motors are connected then you can enter Limit mode. |
| I cannot test the shades from the up/down keys or turn on the ECO mode | Reaktor KEYS locked | The Reaktor keys are locked by default, check system status LED, if the LED is GREEN then the keys are locked, press both the UP and ECO KEYS to unlock KEYS, and system LED will turn amber to indicate the keys are unlocked. The keys will automatically lock again after 50 minutes of non-user activity. |