

# REAKTOR™ DC22

22 DC SHADE POWER DISTRIBUTION UNIT
INSTRUCTION MANUAL
#RKT-DC22 / #RKT-DC22-BOND

Reaktor is not a PoE DEVICE and is NOT POWERED BY PoE

| Reaktor™ | Instruction | Manual |
|----------|-------------|--------|
|          |             |        |

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Specifications are subject to change without notice

#### **FCC Compliance Statement:**

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

#### **Thank you** for your purchase of Reaktor.

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

### TOLLFREE +1 (844) 771-8725 - 24/7/365

Throughout this manual 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.



### Contents

|    | QUICK START BASIC USE:                                | 8  |
|----|---|----|
|    | INTRODUCTION: COMPATIBLE MOTORS & CAPACITY?           | 9  |
|    | PARTS INCLUDED IN THE BOX:                            | 10 |
|    | ADDITIONAL PARTS INCLUDED WITH BOND EDITION:          | 11 |
|    | POPULAR OPTIONAL PARTS SOLD SEPARATELY:               | 11 |
|    | INSTALLATION - DIMENSIONS:                            | 12 |
|    | REAKTOR MOUNTING                                      | 13 |
|    | INSTALLATION – SYMMETRICAL RACK & DIN MOUNTING:       | 14 |
|    | REAKTOR 10 MOUNTING POINTS                            | 15 |
|    | RACK MOUNTING EXAMPLES                                | 16 |
|    | REAKTOR CONNECTIONS                                   | 17 |
|    | INSTALLATION - CONNECTIONS: FRONT PANEL               | 18 |
|    | INSTALLATION - CONNECTIONS: REAR PANEL                | 19 |
|    | REAKTOR 485 SEGMENTS                                  | 21 |
|    | THREE 485 BUS SEGMENTS                                | 22 |
|    | REAKTOR OPERATIONAL MODES                             | 23 |
| ZZ | REAKTOR OPERATIONAL MODES – HIBERNATION (1of 4)       | 24 |
|    | REAKTOR OPERATIONAL MODES – USER (2 of 4)             | 25 |
|    | REAKTOR OPERATIONAL MODES – GROUP PROG. (3 of 4)      | 26 |
|    | REAKTOR OPERATIONAL MODES – LIMIT SETTING (4 of 4     | 27 |
|    | REAKTOR INDICATORS (9)                                | 28 |
|    | REAKTOR LEDS/INDICATORS – GRP/PROG. & SYSTEM STATUS   | 29 |
|    | REAKTOR LEDS/INDICATORS – ECO/ESM/DC POWER STATUS     | 30 |
|    | REAKTOR USER KEYS (4)                                 | 32 |
|    | REAKTOR KEYS UP/DOWN/ECO/RESET (4):                   |    |
|    | REAKTOR KEY ACTIONS (HIBERNATEZZ MODE): 3 KEYS LOCKED |    |
|    | REAKTOR KEY ACTIONS (USER 🚣 MODE): 3 KEYS LOCKED      | 35 |
|    | REAKTOR KEY ACTIONS (USER 🚣 MODE): KEYS UNLOCKED      |    |
|    | REAKTOR KEY ACTIONS (GROUP PROG. MODE): KEYS UNLOCKED | 37 |
|    | REAKTOR KEY ACTIONS (LIMIT MODE): KEYS UNLOCKED       |    |
|    | USER CONTROL GROUP PROGRAMMING                        | 39 |
| _  | CONFIGURATION – MAKING GROUPS                         | 40 |
|    |   |    |





| CONFIGURATION – BINDING USER CONTROLS TO GROUPS      | 41 |
|--|----|
| ADDING A NEW USER CONTROL TO A PREVISOULY MADE GROUP | 42 |
| CONFIGURATION – BROADCAST ALIAS:                     | 43 |
| CONFIGURATION – MOTOR ECO MODE:                      | 44 |
| REAKTOR BOND CONFIGURATION                           | 46 |
| BOND REAKTOR CONNECTION AND SERIAL SET UP            | 47 |
| BOND BRIDGE PRO TELNET CONFIGURATION                 | 48 |
| MOTOR LIMIT TOOLS / 3rd PARTY CONTROL SYSTEMS        | 49 |
| COMPATIBLE RF DEVICES – USER CONTROLS                | 50 |
| RECEIVERS AND TRANSCEIVERS                           | 50 |
| RF KEYPADS AND HANDHELD REMOTES:                     | 50 |
| 485 WIRED KEYPADS, HUBS:                             | 50 |
| TROUBLESHOOTING                                      | 52 |
| REAKTOR JSON COMMANDS                                | 53 |
| CONFIGURATION – JSON COMMAND LIST                    | 54 |



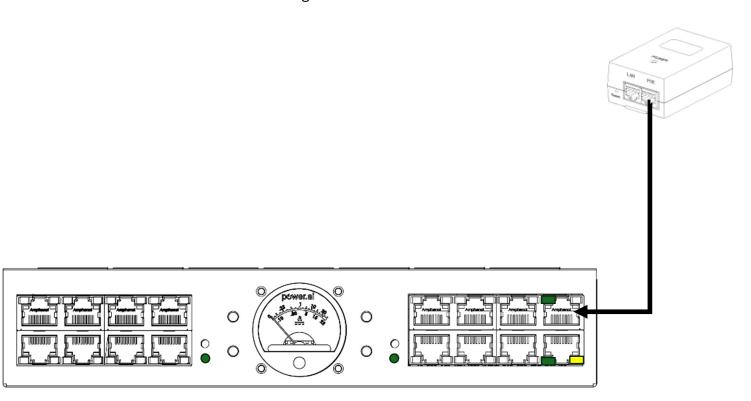
## **QUICK START BASIC USE:**

Reaktor can be used as a standard shade low voltage power supply.

Simply connect the included passive DC injector to the BUS IN port on the front chassis.

This will automatically take the Reaktor out of Hibernation/delivery mode and switch it to the USER MODE.

You will see the LEDs on the BUS IN, the system status and ESM turn green, and no further action is needed to start shading.



You can now connect your low voltage 485 motors to the front and rear ports and use the supply like any other shade power supply.

Optionally you can use the 6 devices ports as a 485 data hub for your user controls and connect any IP gateway or hubs to the BUS OUT of the DATA (LAN) port on the passive DC injector.

Reaktor can be used as a standard shade low voltage power supply.



## INTRODUCTION: COMPATIBLE MOTORS & CAPACITY?

This version of Reaktor is compatible with the following qualified 485 motors.

|   | İ              | MOTORS  | MOTORS     | TOTAL    |
|---|----------------|---------|------------|----------|
| COMPATIBLE & QUALIFIED MOTORS                   | CONNECTION     | PER     | PER        | PER      |
| COLITATIBLE & CONCILIED MOTORO                  | TYPE           | FRONT   | REAR       | (@21A)   |
|   |                | PORTS   | PORTS      | REAKTOR  |
| Somfy® Sonesse® 30 RS485 24V DC #1241144        | Weidmüller     | 8 of 28 | 28 of      | 28       |
| Johns Johnson 30 N3403 247 DC #1241144          | 5P@5.08mm      | 0 01 20 | 28***      | (@.725A) |
| Somfy® Sonesse® III TRA 50/4 A8 DC 485 #113/022 | Weidmüller     |         | 14 of 14*  | 14*      |
| Somfy® Sonesse® ULTRA 504 A8 DC 485 #1134022    | 5P@5.08mm      | 0       | 14 of 14*  | (@1.5A)  |
| Compt. (® Company - ® E00000 D0 40E AO #4000000 | 485 Data Cable | 0 -4 00 | 00 -t 00++ | ,        |
| Somfy® Sonesse® 506S2 RS485 AC #1002286         | #9018541-44    | 8 of 36 | 28 of 36** | 36       |
| Compt. ® E12C2 DC40E AC #1002427                | 485 Data Cable | 0 of 00 | 20 of 20++ | 20       |
| Somfy® 512S2 RS485 AC #1002427                  | #9018541-44    | 8 of 36 | 28 of 36** | 36       |
| Caractive Caracas en E4000 DC 40E AO #4000007   | 485 Data Cable | 0 of 00 | 20 of 20++ | 26       |
| Somfy® Sonesse® 510S2 RS485 AC #1002287         | #9018541-44    | 8 of 36 | 28 of 36** | 36       |
| Somfy® Sonesse® ULTRA 506A2 RS485 AC            | 485 Data Cable | 0 of 20 | 20 of 26** | 26       |
| #1002566  | #9018541-44    | 8 of 36 | 28 of 36** | 36       |
| Comfr.® E2EA2 D2.40E AQ #4.000222               | 485 Data Cable | 0.400   | 00 of 00** |          |
| Somfy® 535A2 RS485 AC #1002288                  | #9018541-44    | 8 of 36 | 28 of 36** | 36       |
| Somfy® Sonesse® 40 RS485 404R2 #1240562         | UTP Cable****  | 8 of 36 | 28 of 36   | 36       |
| Somfy® Sonesse® 40 RS485 406R2 #1240563         | UTP Cable****  | 8 of 36 | 28 of 36   | 36       |
| Somfy® Sonesse® 40 RS485 409R2 #1240564         | UTP Cable****  | 8 of 36 | 28 of 36   | 36       |
| Comfr.@ 20 DC405 DO #4000050 (Obj. 1 1 501)     | Weidmüller     | _       | 11-5444    | 11*      |
| Somfy® 30 RS485 DC #1000658 (Obsolete EOL)      | 5P@5.08mm      | 0       | 11of 11*   | (@1.8A)  |
|   | <del></del>    |         |            |          |

<sup>\*</sup>After programming, a maximum of 6 motors at a time during programming

The motors listed above have all been qualified for use with Reaktor, it may be possible for other motors that are not listed above to operate however we have not qualified them and cannot officially support them.



The data in the chart above may not necessarily reflect the conditions on your job site.

These are theoretical maximum limits, and you may need to account for tube and fabric weight, wire lengths and gauge.

Source Somfy® website and motor databooks

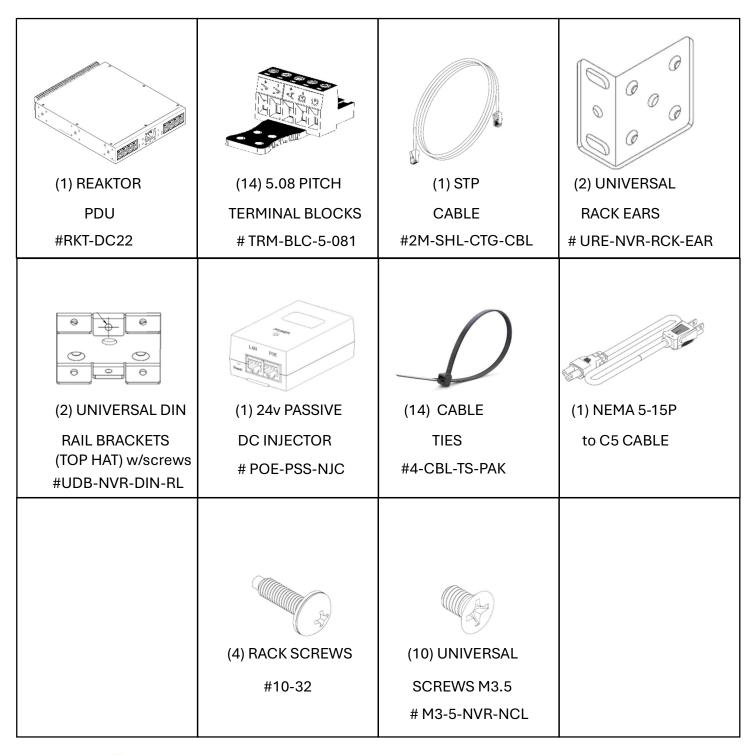
<sup>\*\*</sup>Use only 2 AC motors per rear port, consider using ferrules or optional #CAT-T adaptors and only use the data cable with 3 conductors (#9018541-44), DO NOT USE the data and power 4 conductor cable as damage to the motor may be caused.

<sup>\*\*\*</sup> Use only 2 DC motors (#1241144 motors only) per rear port

<sup>\*\*\*\*</sup>Do not connect pin 4 (power out from motor) as damage to the motor may be caused.



## PARTS INCLUDED IN THE BOX: (Replacement parts also sold on website)



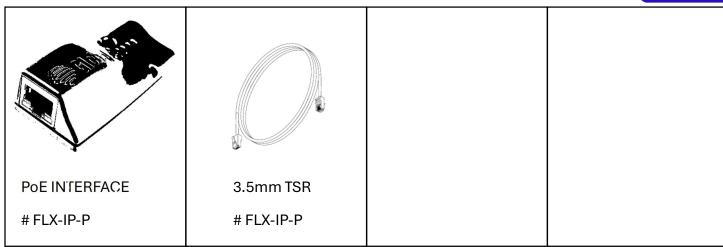


This manual is NOT included in the box as part of our SAVe sustainability efforts. We have 3 QR CODE locations on the enclosure for digital downloads of this manual.



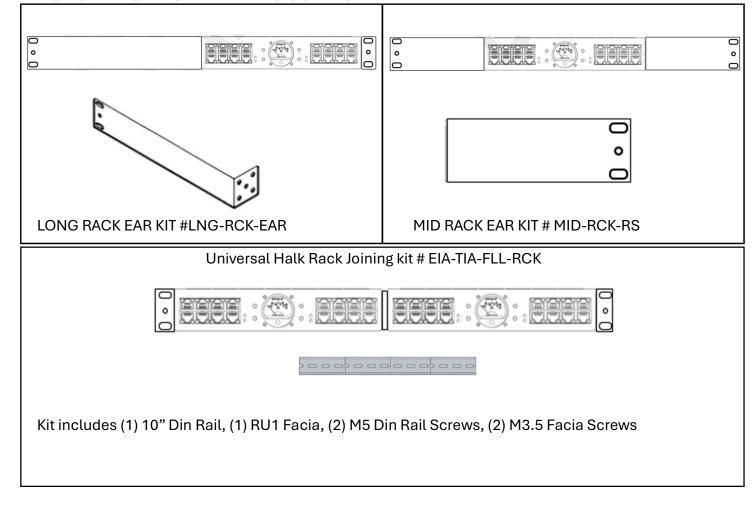
## ADDITIONAL PARTS INCLUDED WITH BOND EDITION:





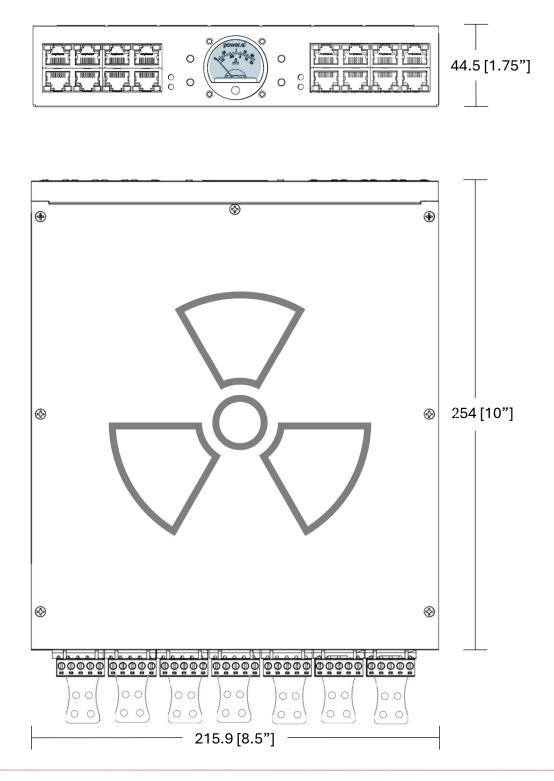
The Reaktor Customizable edition does not come with any other parts unless selected.

#### POPULAR OPTIONAL PARTS SOLD SEPARATELY:



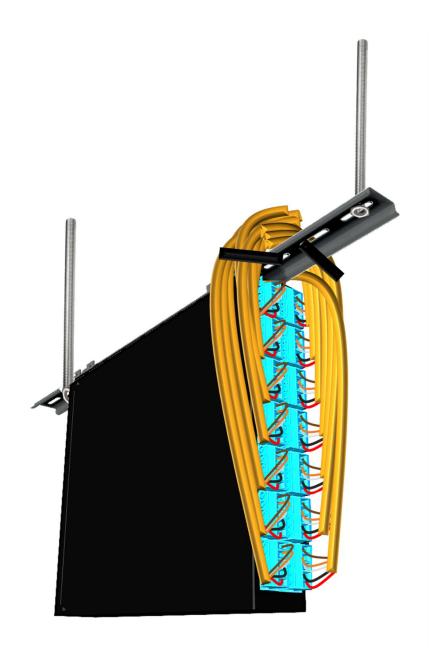


## **INSTALLATION - DIMENSIONS:**



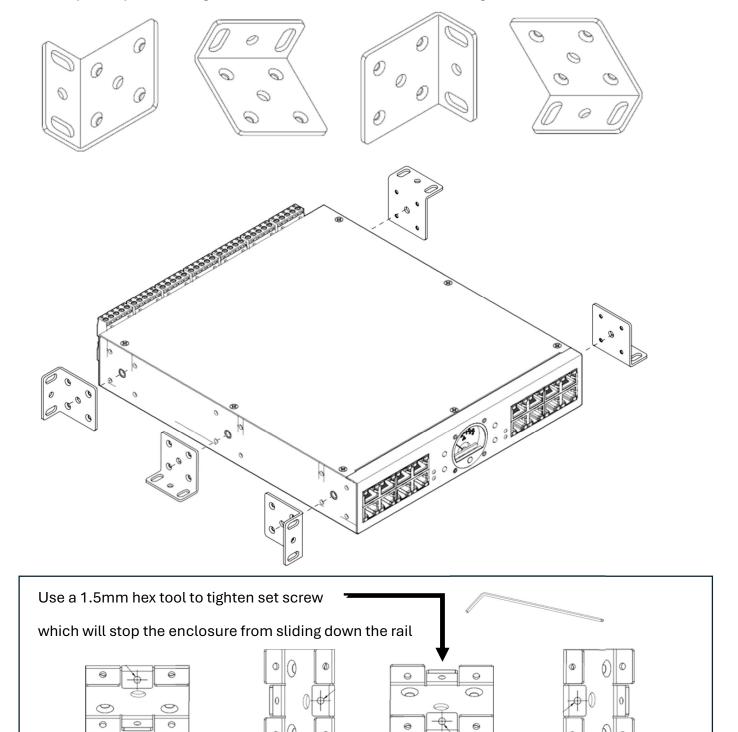


## **REAKTOR MOUNTING**



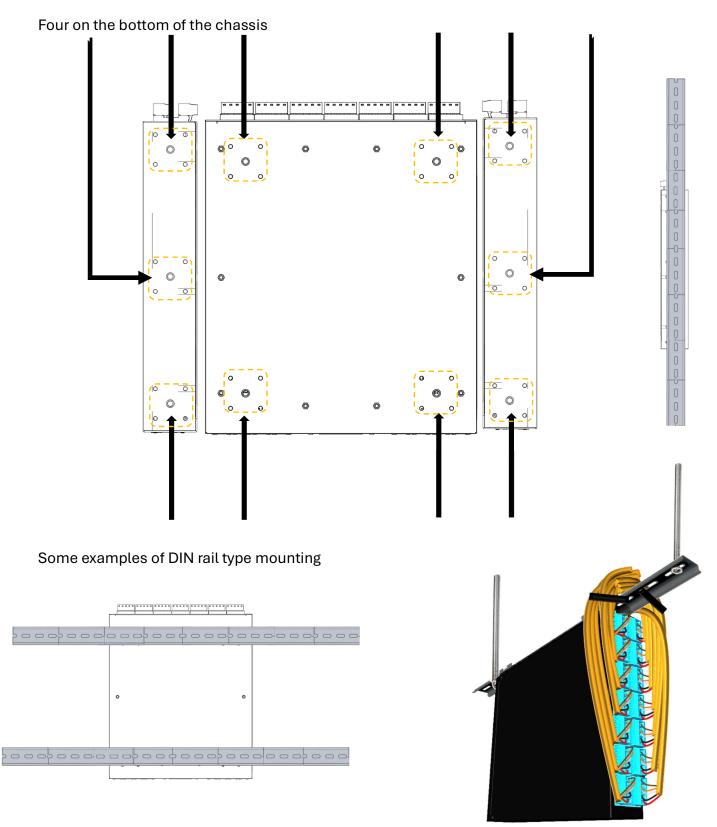
### **INSTALLATION – SYMMETRICAL RACK & DIN MOUNTING:**

Using the included symmetrical rack ears and din rail brackets the unit can be mounted in a variety of ways. Including on wall or in wall box with screws through rack ears or on din rails



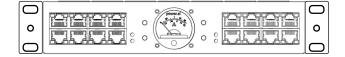
### **REAKTOR 10 MOUNTING POINTS**

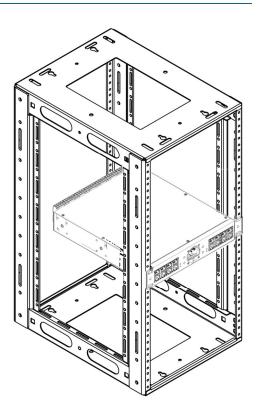
Reaktor is Plenum rated and has 10 Rack mount and Din rail bracket mounting points



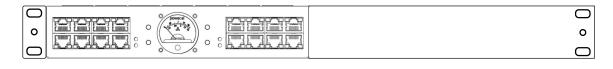
### **RACK MOUNTING EXAMPLES**

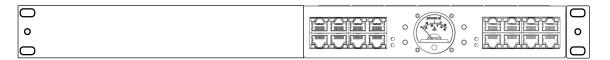
1RU Half rack enclosures – 1 Reaktor





1RU Full rack – (1 Reaktor with optional Long Rack Ears\* must use front & back due to weight)

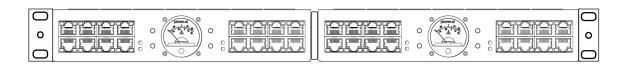




1RU Full rack – (1 Reaktor with optional Mid Rack Ears\* must use front & back due to weight)

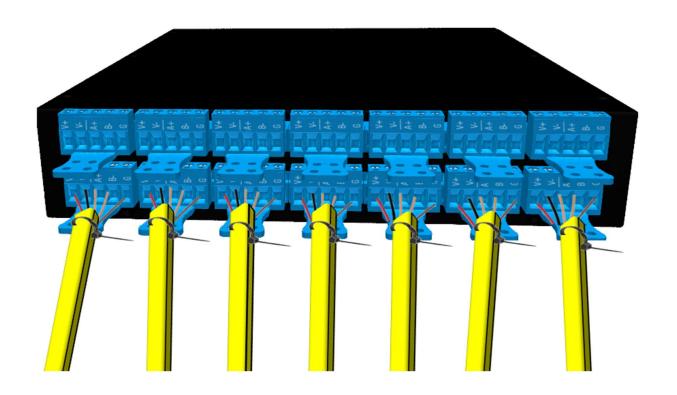


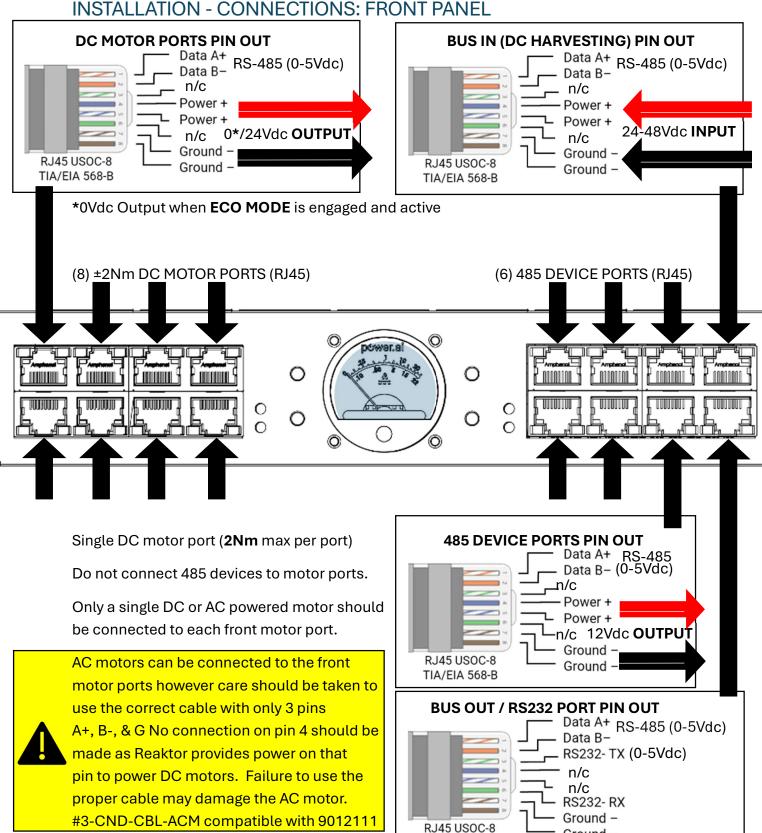
1RU Full rack – (2 Reaktors with optional 1RU Rack Joiner Kit)





## **REAKTOR CONNECTIONS**

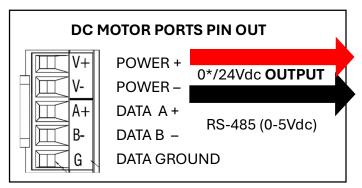




Ground -

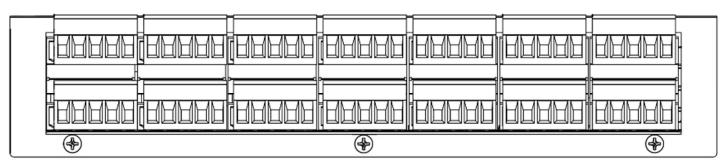
TIA/EIA 568-B

### **INSTALLATION - CONNECTIONS: REAR PANEL**

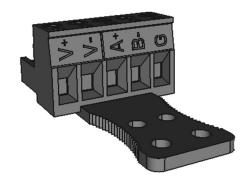


\*0Vdc Output when **ECO MODE** is engaged and active

(14) ±4Nm MOTOR PORTS (5.08 – FIVE POSITION TERMINAL BLOCKS, 12-24 AWG wire)



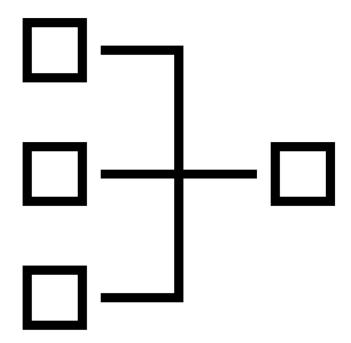
DC motor ports (4Nm max per port is supported)



14 - 5.08 pitch terminal blocks are included (The cable strain relief can be removed as needed)

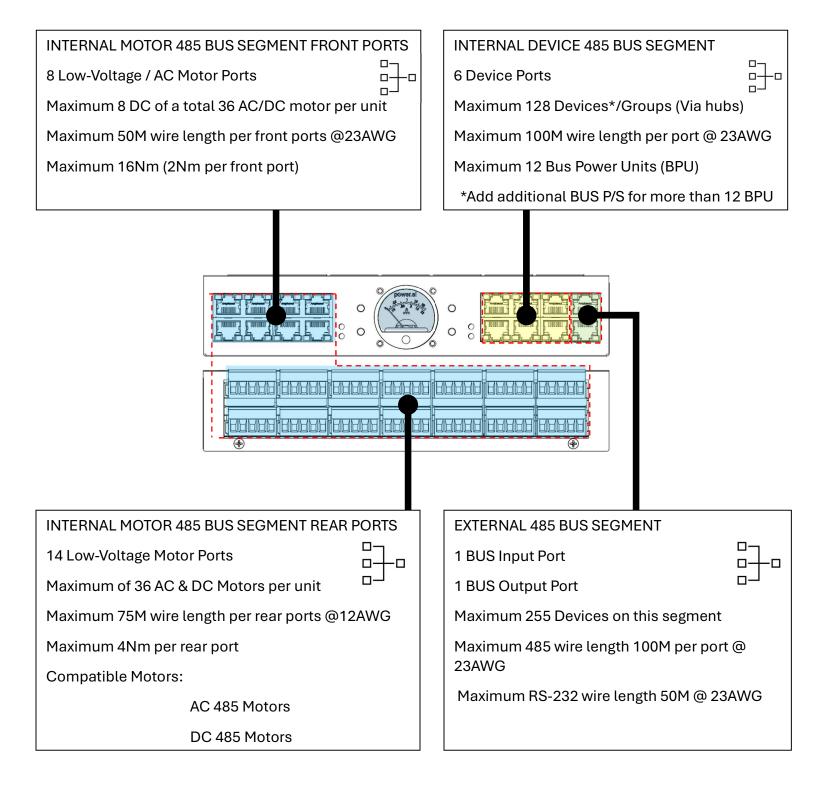


## **REAKTOR 485 SEGMENTS**

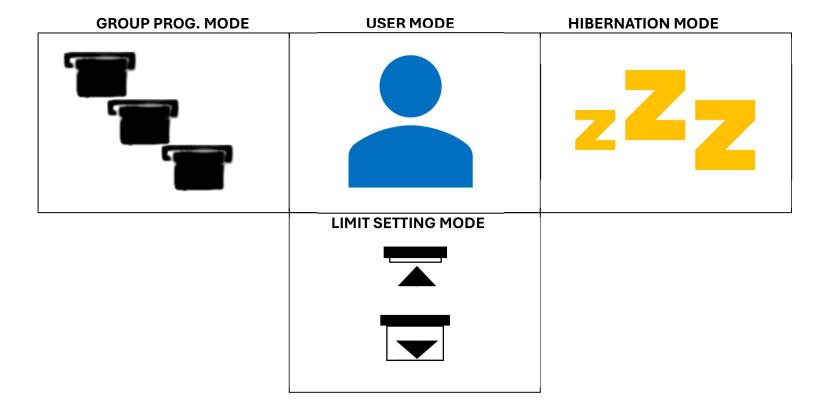


#### **THREE 485 BUS SEGMENTS**

#### Reaktor has three 485 BUS segments:



## **REAKTOR OPERATIONAL MODES**





### REAKTOR OPERATIONAL MODES - HIBERNATION (1 of 4):

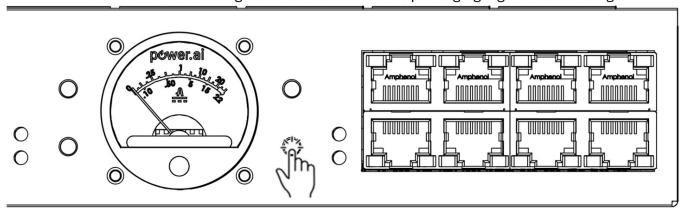
Reaktor has 4 operational modes (HIBERNATION, USER, GROUP/PROGRAMMING, & LIMIT)

MODE 1 of 4; HIBERNATION ZZZZ MODE

This is the shipping/delivery mode that the unit is set at from the factory.

In this mode no power can be provided on any Motor or Device port.

In this deep-sleep mode the priority of processing is for ESM Balancing, and ultra-low energy support systems which are running in the background. The unit has countermeasures against unintended user intervention whether biological or artificial means such as during stressful movements or packaging ingress or crushing.



You can test (or demonstrate operational readiness) with a press of the reset Key. The unit is still in Hibernation mode, but will briefly turn on the ESM, and both BUS OUT LED's for UN38.3 international inspection or other EMEA nonproliferation inspection purposes.

Reaktor has two methods to switch out of Hibernation Mode.

#1 Connect a 24-48VDC power source to the BUS INPUT which will switch to USER\_MODE

(The unit ships with a passive DC injector, connect the output to the BUS IN)

or

#2 Hold the RESET Key for approximately 6 seconds until the ESM LED starts flashing & has now switched to USER MODE

Depending on any programming, and the number of 485 devices on the system, the Status LED will start flashing, please wait until the flashing stops before pressing any KEYs.

Any previously programmed keypads, and RF remotes as well as any 3<sup>rd</sup> party control system commands will work in the background while the system is busy.



### REAKTOR OPERATIONAL MODES - USER (2 of 4):

Reaktor has 4 operational modes (HIBERNATION, USER, GROUP/PROGRAMMING, & LIMIT)

### MODE 2 of 4; USER MODE

This is the normal run-time mode that Reaktor will be in for 99% of its operational life.

Three of the four user keys are locked by default in this mode to avoid unintentional motor movements. Check the user key section for details on how to unlock the keys for use.

Depending on the Reaktor set-up this mode can help save energy by eliminating all or some of the energy used by shade motors and you can enable or disable the JSON control.

You can switch to other modes using user key press and hold combinations or you can switch back to the Hibernation mode by holding the reset key for approximately 6 seconds.

This mode also has access to a special FORCED DISCOVERY function which you may need to enable in the event you are not able to discover one or more motors and or you have been instructed to perform a forced discovery from support.

To start the forced discovery, press and hold both the ECO KEY and the DOWN KEY until the STATUS LED starts to flash GREEN

Another function in this mode is the Factory Reset, this will reset all Reaktor functions (Groups, device bindings, eco mode status, JSON status) (this factory reset only affects the current Reaktor, and no other Reaktor or connected motors or user devices are changed)

To perform this factory reset press and hold the ECO KEY

#### **TOGGLE JSON (SERIAL OUTPUT)**

Once this is connected, hold the UP and DOWN keys in the USER AMODE to toggle the JSON Integration feature.



### REAKTOR OPERATIONAL MODES – GROUP PROG. (3 of 4):

Reaktor has 4 operational modes (HIBERNATION, USER, GROUP/PROG., & LIMIT)

#### MODE 3 of 4; GROUP PROGRAMMING MODE

This is the mode used for motor and user interface commissioning.

Check the user key section for details on how to switch the Reaktor to this mode.

In this mode you can create motor groups, bind wall switches or RF remotes via RF receivers and transceivers



When you enter this mode, the Reaktor will perform an auto discovery of the motors. The PROGRAMMING LED will be flashing during this discovery and once complete all motors that have been discovered will start to jog. Some motors can have issues discovering on the 485 bus, so check to make sure all motors on this unit (up to a maximum of 36 AC & DC motors per Reaktor) are jogging. This is a special jogging, and the motors are not in sync, meaning the jogs will have a popcorn effect which allows us to confirm every motor has been discovered individually.



If any motor is **NOT JOGGING**, then check the wiring. If the wiring is ok, this could indicate that the motor could not be properly discovered which may be caused by a bus collision. Some motors have implemented a very basic collision avoidance.

In the rare event that this still does not discover the motor, we have a MANUAL FORCED



DISCOVERY MODE that will discover any 485 connected motors 100% of the time. You can start this forced discovery by holding down the ECO KEY and the DOWN KEY and the same time. All connected motors will start to jog. Reconnect any motor that could not be discovered previously and it will now be discovered.

Once a motor is discovered Reaktor will retain its node ID and rediscovery will not be needed.

The Group Programming Mode is the only mode that can switch to the LIMIT SETTING MODE

Check the user key section for details on how to switch the Reaktor to this mode.

You can switch to other modes using user key press and hold combinations or you can switch back to the Hibernation mode by holding the reset key for approximately 6 seconds.

The GROUP PROGRAMMING MODE will time out after 50 minutes of the last KEY activity.



### REAKTOR OPERATIONAL MODES – LIMIT SETTING (4 of 4):

Reaktor has 4 operational modes (HIBERNATION, USER, GROUP/PROGRAMMING, & LIMIT)

#### **MODE 4 of 4; LIMIT SETTING MODE**

This is a special mode used for adjusting limits to a single motor or changing the rotation.

Check the user key section for details on how to switch the Reaktor to this mode.

Reaktor will only enter this mode when a single motor is connected.

In this mode you can.



Change motor rotation (keep in mind this will remove any current limits on the motor)



Set or adjust motor upper limit



Set or adjust motor lower limit



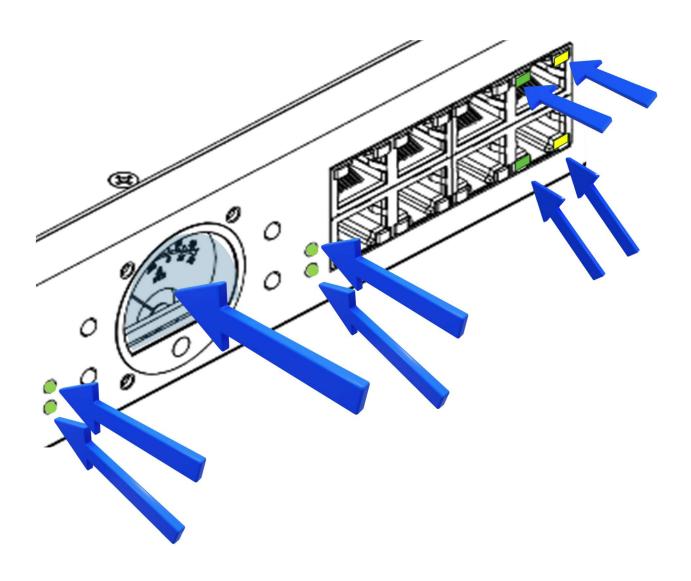
Auto set limits is a special feature which may be helpful for demo or other uses. To perform this feature, press the ECO key with a motor connected that has no limits. When doing this the current location is set as the upper limit, and the lower limit will be set at 1000 pulse below the current location.





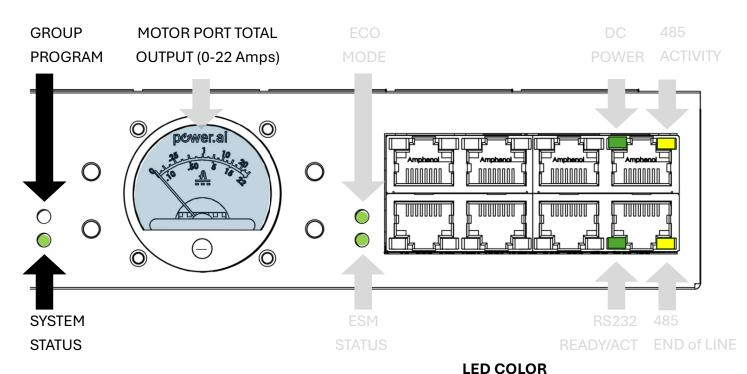
You can exit this mode by holding the UP and ECO keys to switch to the USER MODE

## **REAKTOR INDICATORS (9)**





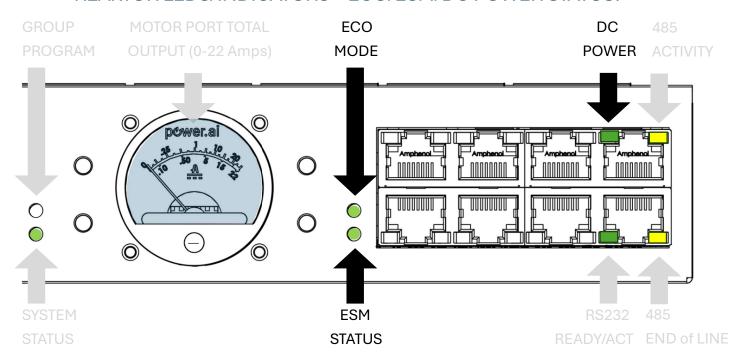
#### REAKTOR LEDS/INDICATORS - GRP/PROG. & SYSTEM STATUS:



#### $\bigcirc$ NONE **GREEN YELLOW** RED **AMBER UNIT IN UNIT IN GROUP/PROGRAMMING LED: UNIT IN** This LED indicates programming USER OR GROUP N/A LIMIT N/A HYBER. PROG SETTING Mode (if active) MODE MODE MODE This LED also FLASHES during ※ \* AI BUS activity (please wait for flashing to stop before proceeding) $\circ$ **SYSTEM STATUS LED: UNIT IN UNIT IN KEYS** SYSTEM **UNLOCKED** This LED indicates overall system HYBER. USER N/A **ERROR\*** Status and Keylock status MODE MODE (KEYS LOCKED) This LED also FLASHES during ※ AI BUS activity (please wait for flashing to stop before proceeding) This LED also winks slowly if RS232 is enabled



### REAKTOR LEDS/INDICATORS - ECO/ESM/DC POWER STATUS:

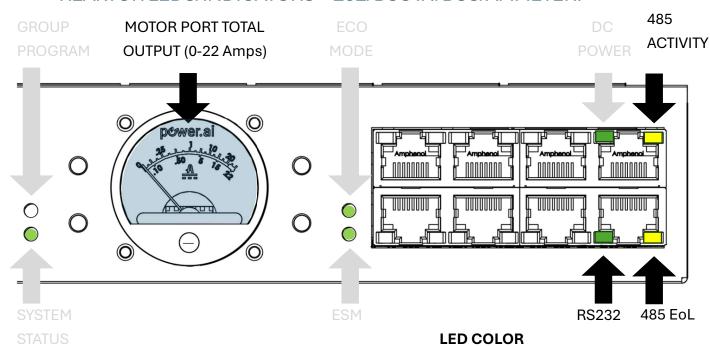


#### **LED COLOR**

|                                      | NONE<br>O   | GREEN          | YELLOW | AMBER<br>•   | RED |
|--------------------------------------|-------------|----------------|--------|--------------|-----|
| ECO MODE STATUS:                     | Unit is     | unit is        | N/A    | Pending      |     |
| This LED indicates the status of     | In Hiber.   | in user        |        | change to    | N/A |
| ECO MODE                             | Mode or     | mode &         |        | ECO ACTIVE   |     |
|                                      | ECO MODE    | ECO MODE       |        | (press reset |     |
|                                      | Is INACTIVE | ACTIVE         |        | to complete) |     |
|                                      |             |                |        | •            |     |
| ESM STATUS:                          | Unit is     | ESM            |        | ESM          | ESM |
| This LED indicates the status of the | in Hiber.   | Power          | N/A    | Charge       | LOW |
| Energy Storage Module or ESM         | Mode        | Good           |        | pending      |     |
|                                      |             |                |        |              |     |
| This LED also winks slowly when the  |             | <del>(-)</del> |        |              |     |
| ESM is harvesting power from BUS IN  |             |                |        |              |     |
| DC POWER STATUS:                     | 0           | •              | •      | •            | •   |
| This LED indicates the status of any | NO DC       | DC POWER       |        |              |     |
| DC for the Reaktor to use for power  | POWER       | IS             | N/A    | N/A          | N/A |
| & harvesting for the ESM             | DETECTED    | PRESENT        |        |              |     |



### REAKTOR LEDS/INDICATORS - 232/BUS IN/BUS/AMMETER:



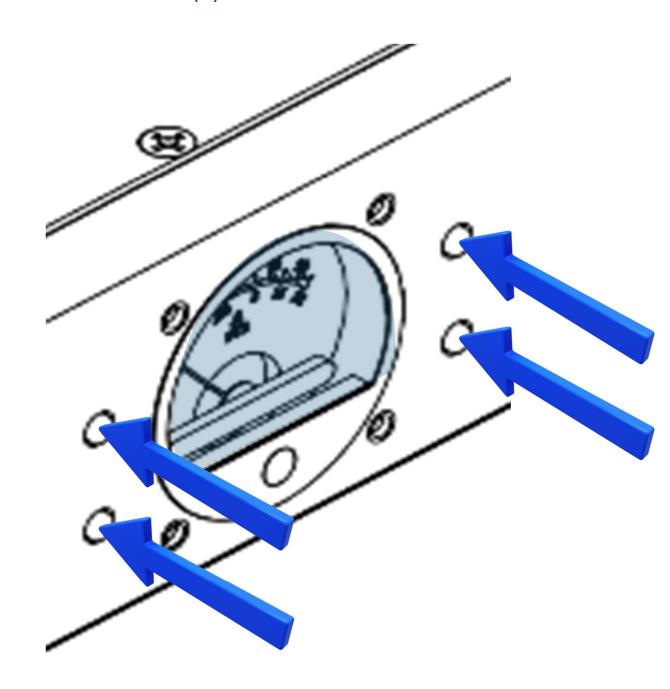
|                                     | NONE       | GREEN         | YELLOW    | AMBER | RED |
|-------------------------------------|------------|---------------|-----------|-------|-----|
| RS-232 STATUS:                      | 0          | *             | •         | •     | •   |
| This LED indicates if a connection  | RS232      | Flashes On    |           |       |     |
| To the RS232 port is detected       | Connection | with RS232    | N/A       | N/A   | N/A |
| And flashes on with data activity   | Detected   | Data Activity |           |       |     |
|                                     | 0          |               | *         |       |     |
| 485 BUS STATUS (BUS IN):            |            |               |           |       |     |
| This LED Flashes on with 485 BUS    | NO         | On when       | Flashes   | N/A   | N/A |
| Activity                            | DATA       | Power         | on with   |       |     |
|                                     |            | present       | Data Act. |       |     |
| 485 BUS STATUS (BUS OUT):           | 0          |               | •         | •     | •   |
| This LED indicates upstream 485     | Upstream   | ON when       | 485 End   |       |     |
| Node(s) detected or 485 End of Line | Node(s)    | NO RS232 is   | of Line   | N/A   | N/A |
|                                     | Detected   | connected     |           |       |     |

#### **MOTOR PORT AMMETER:**

This analog gauge indicates the total amount of current flowing through the motor ports in amps. This meter is very precise and can show quiescent current loads as low as 2mA.

The blue backlighting comes on when 24V is present on the motor connectors and when it is not on then 0V will be present on these ports.

## REAKTOR USER KEYS (4)





### REAKTOR KEYS UP/DOWN/ECO/RESET (4):

Reaktor has 4 user keys. The UP, DOWN & ECO KEYS are LOCKED by default to avoid unintentional presses. The RESET key is never locked.



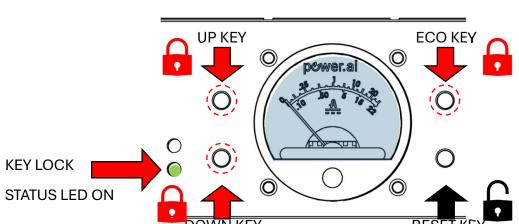


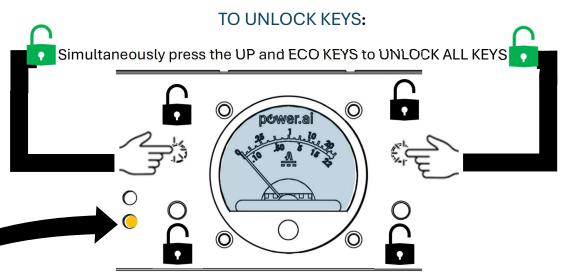
The black and white hand icon represents a KEY press & release





The solid orange hand icon represents a KEY press & hold, then release





The Status LED will illuminate with a GREEN color when the keys are locked





Once keys are unlocked, they remain unlocked until 50 minutes after the last key activity



**KEY LOCKED!** 



## REAKTOR KEY ACTIONS (HIBERNATE ZZMODE): 3 KEYS LOCKED









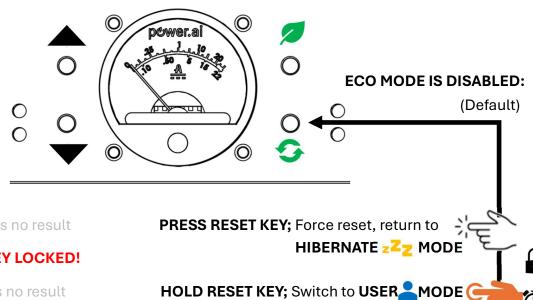




P KEY; has no result

**KEY LOCKED!** 

#### All LED's and BACKLIGHTING ARE OFF



KEYS ARE LOCKED: (Default)

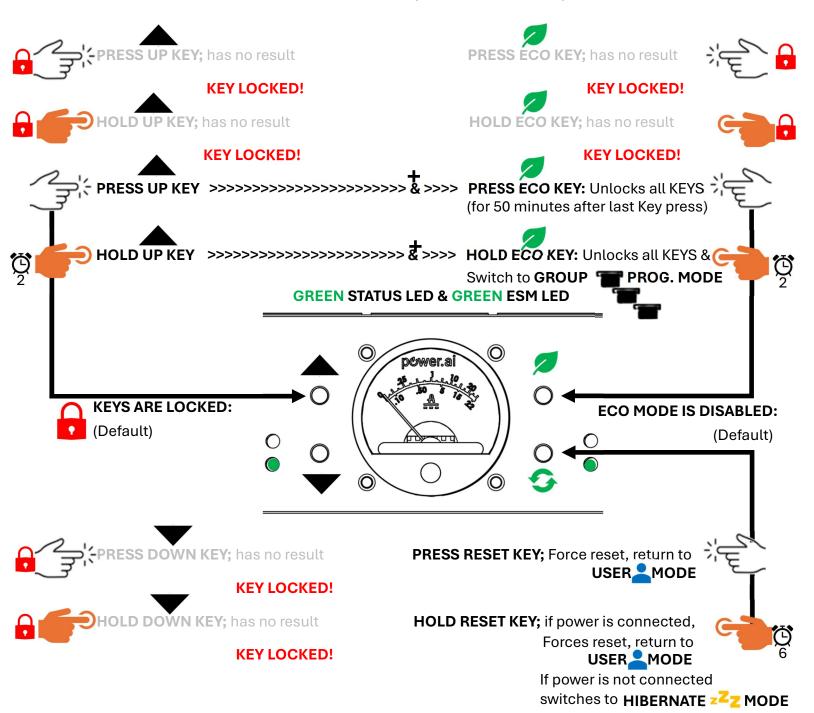




**KEY LOCKED!** 

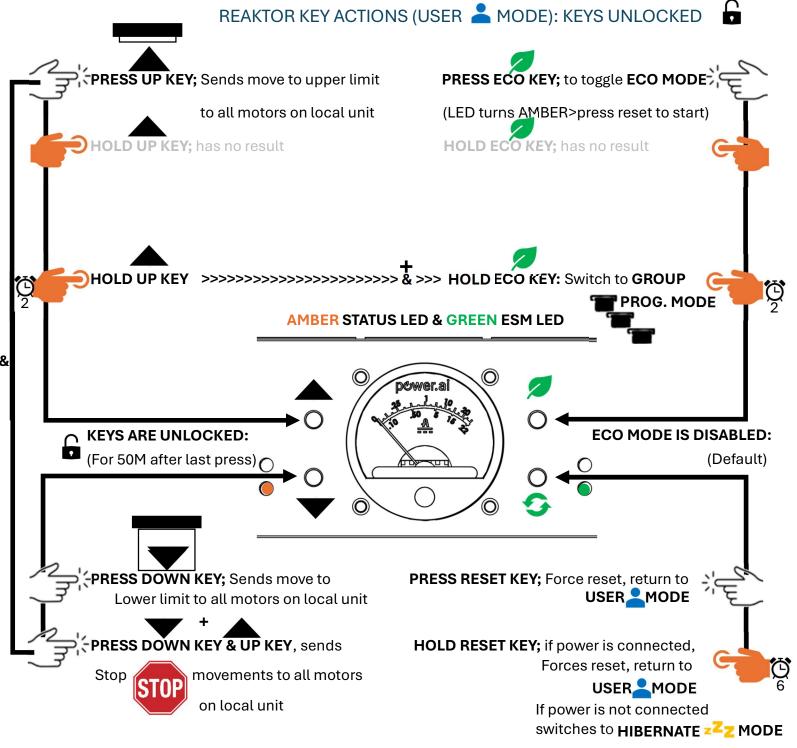


## REAKTOR KEY ACTIONS (USER 🚨 MODE): 3 KEYS LOCKED 🔂



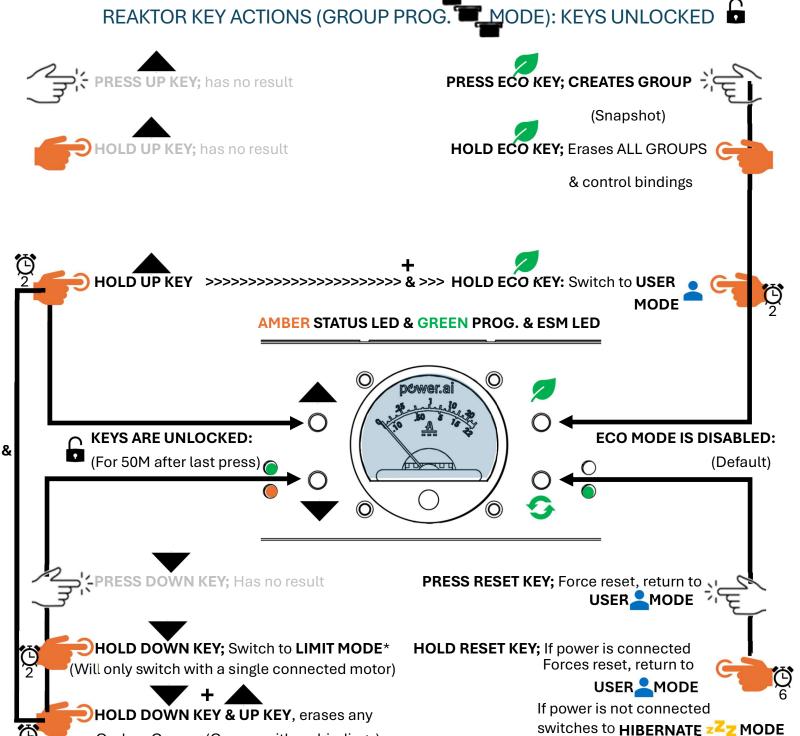
NOTE: The Ammeter Blue Backlighting will turn on once any movement command is sent on or to the internal local 485 segment (Motor Ports) and turn back off after 5 minutes of inactivity on the internal local 485 segment.





NOTE: The Ammeter Blue Backlighting will turn on once any movement command is sent on or to the internal local 485 segment (Motor Ports) and turn back off after 5 minutes of inactivity on the internal local 485 segment.



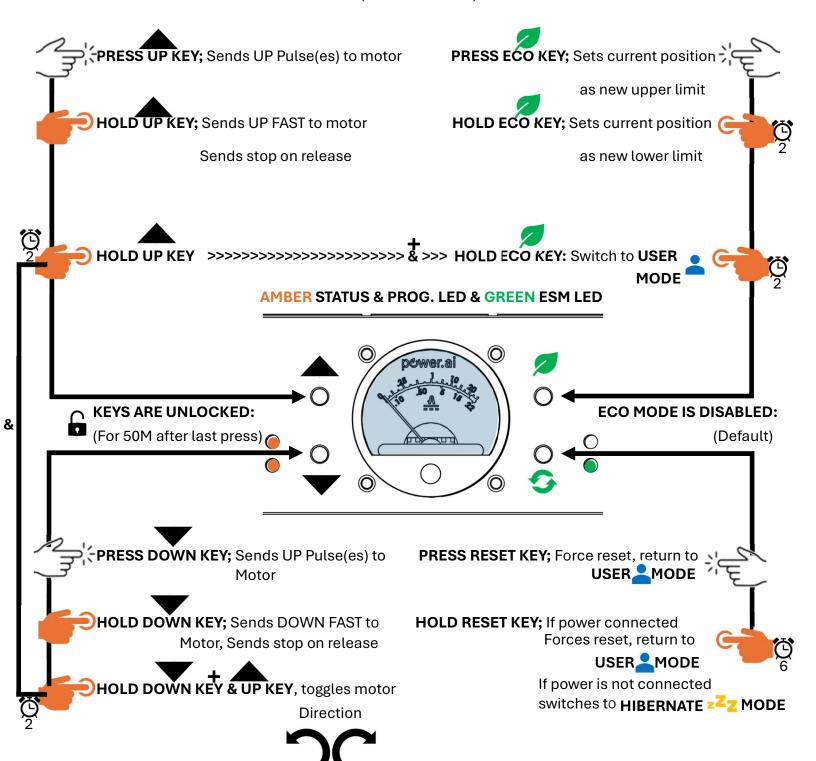


Orphan Groups (Groups with no bindings)



## REAKTOR KEY ACTIONS (LIMIT MODE): KEYS UNLOCKED







CAUTION, as changing the motor rotation will remove any currently set limits.

# **USER CONTROL GROUP PROGRAMMING**

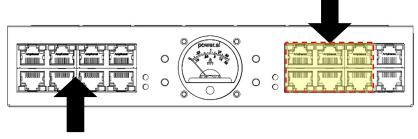




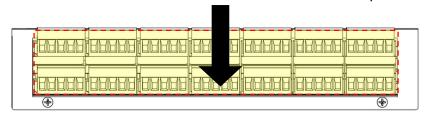
#### **CONFIGURATION – MAKING GROUPS:**

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.

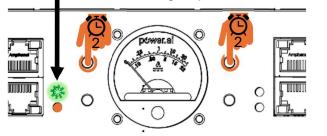


STEP #2 - Connect all motors to the front or rear motor ports on Reaktor.



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.



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 **TEST** 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 STOP 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** 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 STOP + STOP + STOP + STOP

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)





To **TEST** the binding, you can PAUSE the GROUP PROGRAMMING MODE by **TWICE** PROGRAMING MODE BY **TWICE** PROGRAMING MODE BY **TWICE** PROGRAMMING M

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





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.



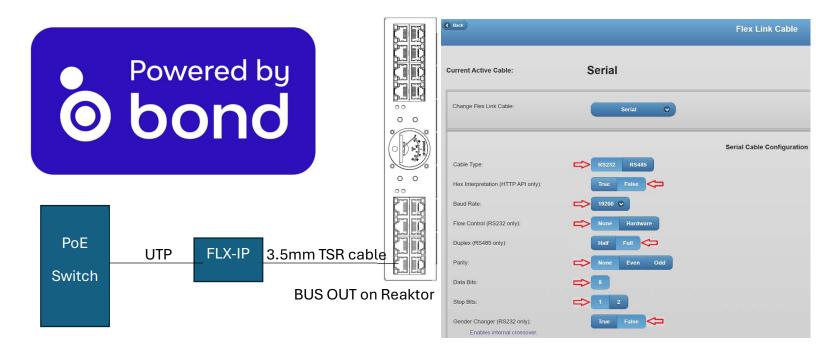
# **REAKTOR BOND CONFIGURATION**



#### BOND REAKTOR CONNECTION AND SERIAL SET UP

Reaktor has a special interface with Bond Bridge Pro units. You can add a PoE IP interface #FLX-IP-P (Included with Reaktor BOND edition).

The PoE IP interface connects to your PoE switch for power via UTP RJ45 connection and a 3.5mm TSR cable to the Reaktor BUS OUT. See the diagram below.



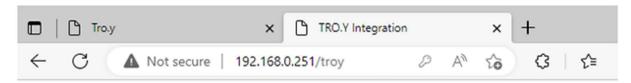
Once this is connected, hold the UP and DOWN keys in the USER AMODE to turn on the JSON Integration feature.

The system status LED will wink when the RS-232 is on and active.

You will need to adjust the serial baud settings to 19200, 8, none, 1 and know the IP address from the FLX-IP as you will need this for the BOND Telnet configuration page setup.

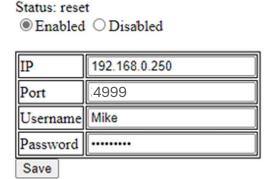
#### BOND BRIDGE PRO TELNET CONFIGURATION

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



# TRO.Y Integration

- Please enter the IP address, port, username, and password for your TRO.Y system.
- . You may find the IP address by searching for "troy" in your router's DHCP table.
- Port number is usually 23, but may be changed in the Troy's settings page.
- You may change settings without re-entering the password if it has not changed.
- · Be sure to select "Enabled" before pressing "Save".



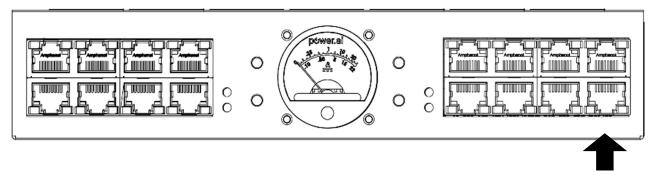


You will need to click on the table and enter the IP address of the FLX-IP in the IP section of the table. Enter the port at 4999 and use anything you want in the Username and password

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

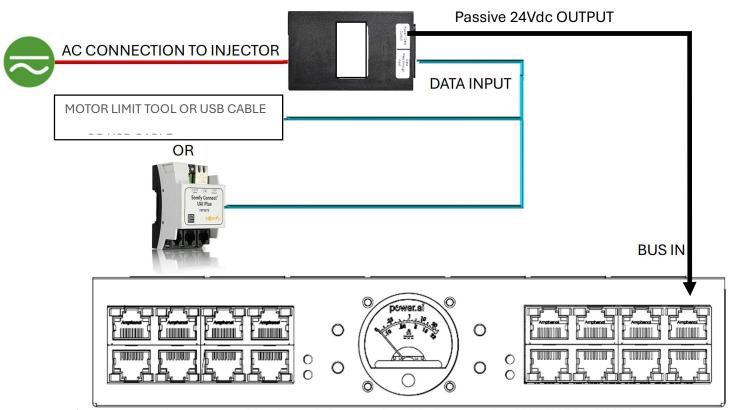


## MOTOR LIMIT TOOLS / 3rd PARTY CONTROL SYSTEMS:



When using motor limit setting tools, we recommend using either the BUS OUT if the tool has its own power like the 485BUSter or the SILABS 485 USB KIT.

You can also use the BUS IN, however since this is also how Reaktor is normally powered, you will want to connect to the data only port on the included passive PoE injector.



 $3^{\text{rd}}$  party control systems with 485 serial ports should also use the BUS OUT or BUS in.

Toggle the JSON output feature by pressing the UP and DOWN KEYS in the USER MODE

If your control system needs an Ethernet connection then you will need a gateway device like Somfy UAI+, SILABS TRO.Y, or other interface and these kinds of hubs should connect through the BUS IN as outlined above.



### COMPATIBLE RF DEVICES - USER CONTROLS

Reaktor is compatible with the following RF DEVICES:

#### **RECEIVERS AND TRANSCEIVERS:**

SOMFY® RTS Receiver for SDN V2 #1871471 (5 CHANNELS)

SILABS™ PEGASUS™ #302305 /#302208 (16 CHANNELS)

MODERN ATOMICS RF TRANSCEIVER #RF-TRN-302 (16 CHANNELS)



#### RF KEYPADS AND HANDHELD REMOTES:

SIDEKICK<sup>™</sup> by Olibra (BOND) (all versions)

PICO® Remotes by LUTRON® (all versions)

SOMFY® RTS® all versions, including Smoove®, Telis®, Situo®, Decoflex®



#### 485 WIRED KEYPADS, HUBS:

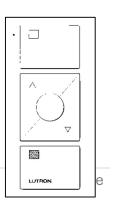
SOMFY® SDN Decoflex® (all versions)

SOMFY® DATA HUBS (all versions)

SILABS™ SUITE XVI

Modern Atomics™ 485 HUB





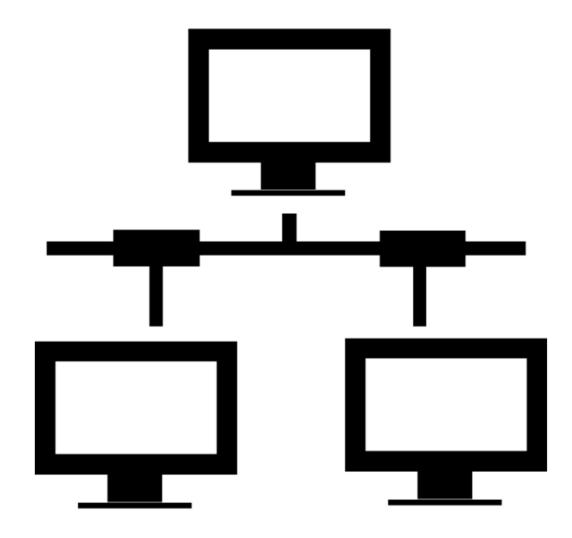


# TROUBLESHOOTING CALL US FOR HELP TOLLFREE +1 (844) 771-8725

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



# **REAKTOR JSON COMMANDS**



#### **CONFIGURATION – JSON COMMAND LIST:**

#### **System Integration Id Request**

```
{"method" : "status.intid", "id" : 7342}
{"result" : {"integrationID" : "54675"}, "id" : 7342}
```



#### **Motor Ping Request**

Returns a list of ALL motors (and groups)

```
{"method": "sdn.status.ping", "params":{"targetID":"*"}, "id": 7342}

{"result":["783644","786433","8745AA","AADD45","99DE34","1265AB","DF3272","00234

1"],"id":7342}
```

#### **Info Request**

```
{"method":"sdn.status.info","params":{"targetID":"001234"},"id":7342}

{"result":{"type":"motor","nativeID":"001234","label":"This is a label",

"assignedID":"001234","statusAvailable":false}, "id":7342}
```



#### **Motor Move Down Command**

```
{"method":"sdn.move.down","params":{"targetID":"123456","seq":44},"id":2323}
{"result":true, "id":2323}
```



#### **Motor Move Up Command**

```
{"method":"sdn.move.up","params":{"targetID":"123456","seq":44},"id":2323}
{"result":true, "id":2323}
```



#### **Motor Stop Command**

```
{"method":"sdn.move.stop","params":{"targetID":"123456","seq":44},"id":2323}
{"result":true, "id":2323}
```



#### **Group Ping Request**

#### Returns a list of ALL groups

```
{"method": "sdn.status.ping", "params":{"groupID":"*"}, "id": 7342}
{"result":["783644","786433","8745AA","AADD45","99DE34","1265AB","DF3272","00234
1"],"id":7342}
```

#### **Group Move Down Command**

```
{"method":"sdn.move.down","params":{"groupID":"123456","seq":44},"id":2323} {"result":true, "id":2323}
```



#### **Group Move Up Command**

```
{"method":"sdn.move.up","params":{"groupID":"123456","seq":44},"id":2323}
{"result":true, "id":2323}
```



#### **Stop Command**

```
{"method":"sdn.move.stop","params":{"groupID":"123456","seq":44},"id":2323}
{"result":true, "id":2323}
```

#### **Motor Move TO IP Command**

```
{"method":"sdn.move.ip","params":[{"targetID":"AB3476",
"num":1},{"seq":3}],"id":987}
{"result":true, "id":987}
```

#### Move TO Command (0 % - 100 %)

```
{"method":"sdn.move.to","params":{"targetID":"AB3476","position":33},"id":987}
{"result":true, "id":987}
```

#### Non-Standard Methods:



#### **Set Eco Mode to ON**

```
{"method":"set.ecomode.on", "id":987}
{"result":true, "id":987}
```

### Set Eco Mode to OFF

```
{"method":"set.ecomode.off", "id":987}
{"result":true, "id":987}
```

#### Get Eco Mode Value

```
{"method":"get.ecomode","id":987}
{"result":true, "ecoMode":"off", "id":987}
```

#### **Local Reaktor System Info**

```
{"method": "status.about", "id": 7342}
{"result":{"compiled":"Feb 13 2025, 14:10:59", "battV":"26.39", "inputV":"47.27"}, "id":7342}
```

### **Local Reaktor System Reset**

{"method":"sysrst", "id":987}