

REAKTOR[™] DC22

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

All brand names, product names and trademarks are the property of their respective owners. Certain trademarks, registered trademarks, and trade names may be used to refer to either the entities claiming the marks and names or their products.

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.



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
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):	33
REAKTOR KEY ACTIONS (HIBERNATEZZZ MODE): 3 KEYS LOCKED	34
REAKTOR KEY ACTIONS (USER 📥 MODE): 3 KEYS LOCKED	35
REAKTOR KEY ACTIONS (USER 📥 MODE): KEYS UNLOCKED	36
REAKTOR KEY ACTIONS (GROUP PROG. 🖛 MODE): KEYS UNLOCKED	37
REAKTOR KEY ACTIONS (LIMIT MODE): KEYS UNLOCKED	38
USER CONTROL GROUP PROGRAMMING	39
CONFIGURATION – MAKING GROUPS	40
	QUICK START BASIC USE: INTRODUCTION: COMPATIBLE MOTORS & CAPACITY?

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 PoE 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 PoE 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.

		MOTORS	MOTORS	TOTAL	
	CONNECTION	PER	PER	PER	
COMPATIBLE & QUALIFIED MOTORS	TYPE	FRONT	REAR	(@21A)	
		PORTS	PORTS	REAKTOR	
Somfy@ Sonoooo@ 20 PS485 241/ DC #1241144	Weidmüller	9 of 29	28 of	28	
30111y 3011esse 30 K3485 24V DC #1241144	5P@5.08mm	0 01 20	28***	(@.725A)	
Somfrie Sonoooo@ LILTEA E04 A8 DC 485 #1124022	Weidmüller	0	14 of 14*	14*	
Solling* Sollesse* OLTRA 504 A8 DC 465 #1134022	5P@5.08mm	0	14 01 14	(@1.5A)	
Somfu® Sonoooo® E0682 BS 185 AC #1002286	485 Data Cable	9 of 26	29 of 26**	26	
30111y 3011esse 30032 R3463 AC #1002260	#9018541-44	0 01 30	20 01 30	30	
Somfr/® E12S2 BS48E AC #1002427	485 Data Cable	9 of 26	29 of 26**	26	
30111y - 51232 R3485 AC #1002427	#9018541-44	0 01 30	20 01 30		
Somfu® Sonoooo® E10S2 BS48E AC #1002287	485 Data Cable	9 of 26	29 of 26**	26	
30111y 3011esse 31032 R3463 AC #1002287	#9018541-44	0 01 30	20 01 30	30	
Somfy® Sonesse® ULTRA 506A2 RS485 AC	485 Data Cable	9 of 26	29 of 26**	26	
#1002566	#9018541-44	0 01 30	20 01 30	30	
Somth (® E2EA2 DS 48E AC #1002288	485 Data Cable	9 of 26	29 of 26**	26	
30111y - 555AZ K5465 AC #1002266	#9018541-44	0 01 30	20 01 30	30	
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	
C_{2}	Weidmüller	0	11.55114	11*	
301119° 30 KS485 DC #1000658 (Obsolete EOL)	5P@5.08mm	U		(@1.8A)	

*After programming, a maximum of 6 motors at a time during programming

**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.

*** Use only 2 DC motors (#1241144 motors only) per rear port

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

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



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

(1) REAKTOR PDU #RKT-DC22	(14) 5.08 PITCH TERMINAL BLOCKS # TRM-BLC-5-081	(1) STP CABLE #2M-SHL-CTG-CBL	(2) UNIVERSAL RACK EARS # URE-NVR-RCK-EAR
(2) UNIVERSAL DIN RAIL BRACKETS (TOP HAT) w/screws #UDB-NVR-DIN-RL	(1) 24v PASSIVE PoE INJECTOR # POE-PSS-NJC	(14) CABLE TIES #4-CBL-TS-PAK	(1) NEMA 5-15P to C5 CABLE
	(4) RACK SCREWS #10-32	(10) UNIVERSAL SCREWS M3.5 # M3-5-NVR-NCL	



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





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

Four on the bottom of the chassis





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

0	$\left[\bigcirc\right]$
0	0
0	\circ

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

0	0
0	0
0	0

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





REAKTOR CONNECTIONS



INSTALLATION - CONNECTIONS: FRONT PANEL



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 (1of 4):

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

MODE 1 of 4; HIBERNATION $\mathbb{Z}^{\mathbb{Z}}$ 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 PoE injector, connect the PoE 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 3rd 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 A 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 A MODE 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.



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 AMODE

REAKTOR INDICATORS (9)





REAKTOR LEDS/INDICATORS – GRP/PROG. & SYSTEM STATUS:







30 | Page



REAKTOR LEDS/INDICA	TORS – 23	2/BUS IN/E	BUS/AMM	1ETER:	
GROUP MOTOR PORT TOTAL	EC	0		DC	485
PROGRAM OUTPUT (0-22 Amps)	МО	DE		POWER	ACTIVITY
STATUS	ESI	VI I I		K9232	485 EOL
		L			
01/100	NONE	GREEN		AMBER	RED
RS-232 STATUS:	NONE	GREEN	YELLOW	AMBER •	RED
RS-232 STATUS: This LED indicates if a connection	NONE O RS232	GREEN ** Flashes On	YELLOW	AMBER e	RED ●
RS-232 STATUS: This LED indicates if a connection To the RS232 port is detected	NONE O RS232 Connection	GREEN ** Flashes On with RS232	YELLOW N/A	AMBER • N/A	RED • N/A
RS-232 STATUS: This LED indicates if a connection To the RS232 port is detected And flashes on with data activity	NONE O RS232 Connection Detected	GREEN ** Flashes On with RS232 Data Activity	YELLOW N/A	AMBER • N/A	RED • N/A
RS-232 STATUS: This LED indicates if a connection To the RS232 port is detected And flashes on with data activity 485 BUS STATUS (BUS IN):	NONE O RS232 Connection Detected O	GREEN * Flashes On with RS232 Data Activity	YELLOW N/A	AMBER • N/A	RED • N/A
RS-232 STATUS: This LED indicates if a connection To the RS232 port is detected And flashes on with data activity 485 BUS STATUS (BUS IN): This LED Flashes on with 485 BUS	NONE O RS232 Connection Detected O NO	GREEN * Flashes On with RS232 Data Activity On when	YELLOW N/A Flashes	AMBER • N/A • N/A	RED N/A N/A
RS-232 STATUS: This LED indicates if a connection To the RS232 port is detected And flashes on with data activity 485 BUS STATUS (BUS IN): This LED Flashes on with 485 BUS Activity	NONE O RS232 Connection Detected O NO DATA	GREEN ** Flashes On with RS232 Data Activity On when Power	YELLOW N/A Flashes on with	AMBER • N/A N/A	RED N/A N/A
RS-232 STATUS: This LED indicates if a connection To the RS232 port is detected And flashes on with data activity 485 BUS STATUS (BUS IN): This LED Flashes on with 485 BUS Activity	NONE O RS232 Connection Detected O NO DATA	GREEN ** Flashes On with RS232 Data Activity On when Power present	YELLOW N/A Flashes on with Data Act.	AMBER • N/A	RED N/A N/A
RS-232 STATUS: This LED indicates if a connection To the RS232 port is detected And flashes on with data activity 485 BUS STATUS (BUS IN): This LED Flashes on with 485 BUS Activity	NONE O RS232 Connection Detected O NO DATA	GREEN * Flashes On with RS232 Data Activity On when Power present •	YELLOW N/A Flashes on with Data Act.	AMBER • N/A N/A	RED N/A N/A
RS-232 STATUS: This LED indicates if a connection To the RS232 port is detected And flashes on with data activity 485 BUS STATUS (BUS IN): This LED Flashes on with 485 BUS Activity 485 BUS STATUS (BUS OUT): This LED indicates upstream 485	NONE O RS232 Connection Detected O NO DATA O Upstream	GREEN ** Flashes On with RS232 Data Activity On when Power present ON when	YELLOW N/A Flashes on with Data Act. 485 End	AMBER • N/A • N/A	RED N/A N/A
RS-232 STATUS: This LED indicates if a connection To the RS232 port is detected And flashes on with data activity 485 BUS STATUS (BUS IN): This LED Flashes on with 485 BUS Activity 485 BUS STATUS (BUS OUT): This LED indicates upstream 485 Node(s) detected or 485 End of Line	NONE O RS232 Connection Detected O NO DATA O Upstream Node(s)	GREEN ** Flashes On with RS232 Data Activity On when Power present ON when NO RS232 is	YELLOW N/A Flashes on with Data Act. 485 End of Line	AMBER • N/A N/A	RED • N/A • N/A

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 KEY ACTIONS (HIBERNATE ZZMODE): 3 KEYS 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.

Reaktor™ Instruction Manual





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.



Reaktor™ Instruction Manual





&

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.

	1 15 15 16 16 16					
		jeie	Ľ	ipapad		
	 		_		 	
			A			
			IL)			
(*)						(*)

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. **STOP** + **STOP** + **STOP**



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 STOP** + **S** 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 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** 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

·0'000



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	×	TRO.Y Integration			×	+	
\leftarrow	C	A Not secure 192.168.	0.251/troy	P	A»	î	3	=

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".

Status: reset Enabled Obisabled

IP	192.168.0.250
Port	4999
Username	Mike
Password	
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.



3rd 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.



NOTE: Some limit setting tools and cables provide power for user devices. If you are unsure, we recommend using the BUS OUT.



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™ 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 PoE not	Check AC input on passive PoE, check cable from PoE to
power	connected	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; and after 11 hours and 45 minutes; and the
		system (bus activity) has been idle for more than 30
		minutes
		Or the input power is lost; and 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.
		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
	Reaktor	motors are connected then you can enter Limit mode.
I cannot test the shades	Reaktor KEYS locked	The Reaktor keys are locked by default, check system
from the up/down keys		status LED, if the LED is GREEN then the keys are locked,
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
		unlocked. The keys will automatically lock again after 50
		minutes of non-user activity.



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

1

0

{"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}

©2025 MODERN ATOMICS LLC - ALL RIGHTS RESERVED