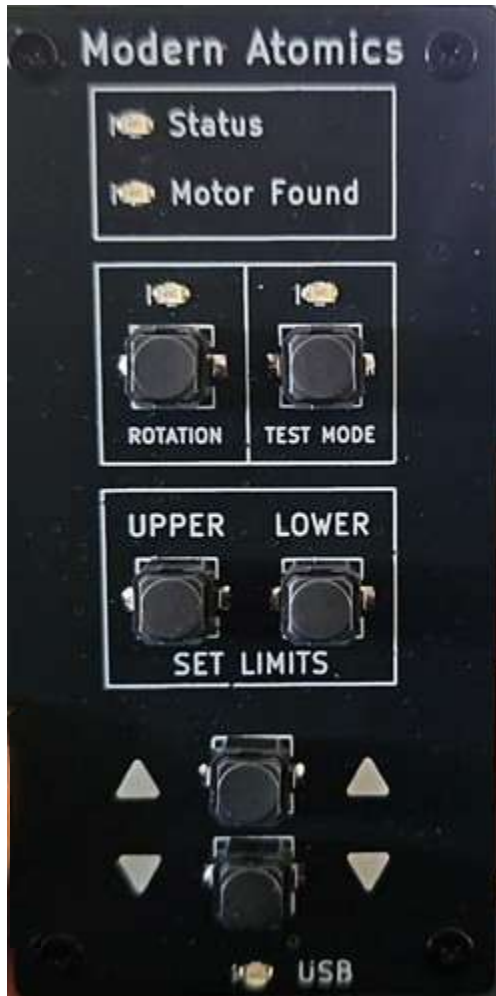# LIMITATOR LM-1   USB to RS-232/485

Product Overview:

Limitator LM-1 Handheld Unit

Limitator™ is a simple to use handheld limit setting tool used to setup limits and adjust rotation for shades using Somfy® SDN® motors.

The **ONLY** limit setting tool made for Somfy® SDN® motors which has collision avoidance.

It can also be used as an interface for laptops or mobile devices equipped with USB ports to connect to any RS-485 or RS-232 serial bus. This enables software applications such as the Modern Atomics Configurator and Somfy® tools such as SET Pro, SDN® Motor Configuration tool, and SDN® Keypad Configuration tool to have access to the RS-485 bus and discover and configure 485 devices such as motors, keypads, RF Transceivers and RF Receivers.

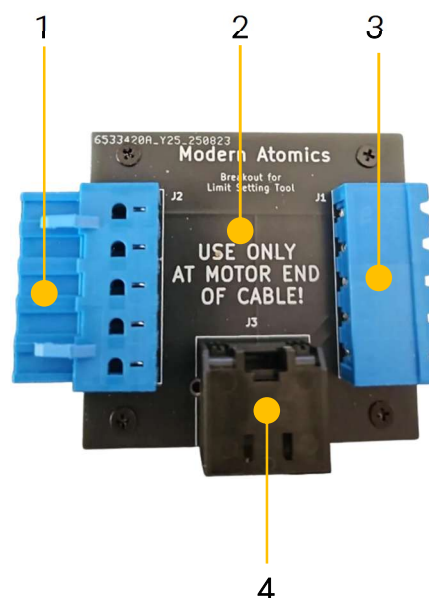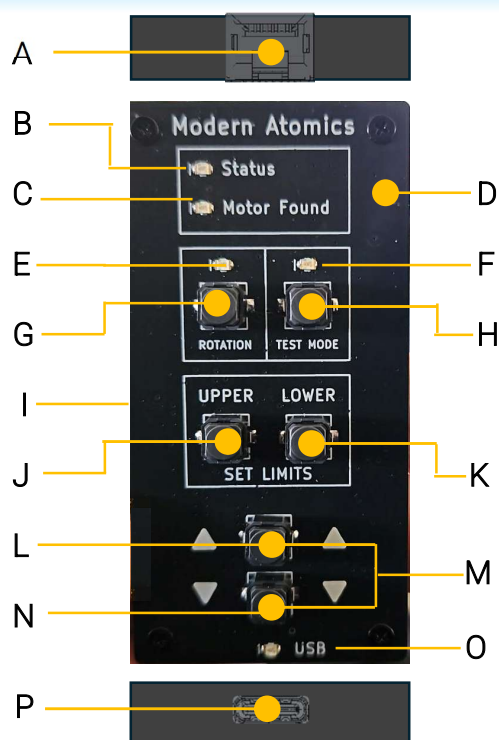This is also the **ONLY** USB to 485 interface on the market with collision avoidance.

A Motor Tap Breakout Interface is also included to allow quick 485 BUS interconnection at the shade. Handheld unit receives power and 485 communications only flow between the Motor Port and the Handheld Port.

Limitator LM-1 Motor Tap Break out board.

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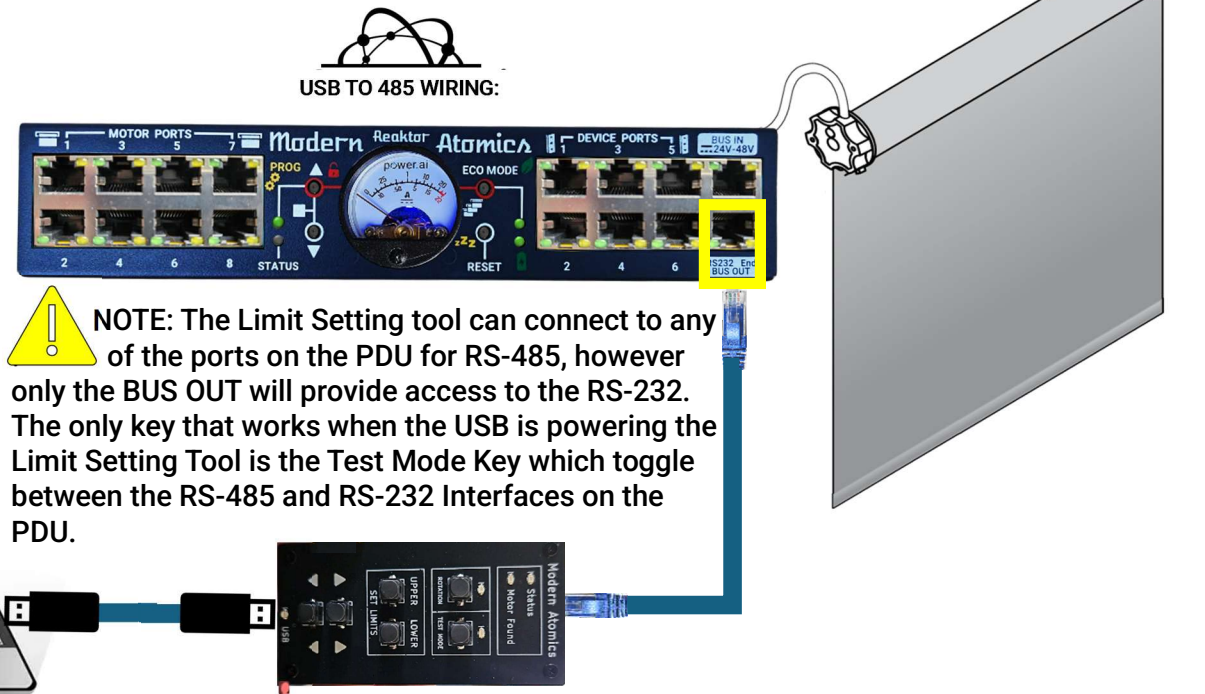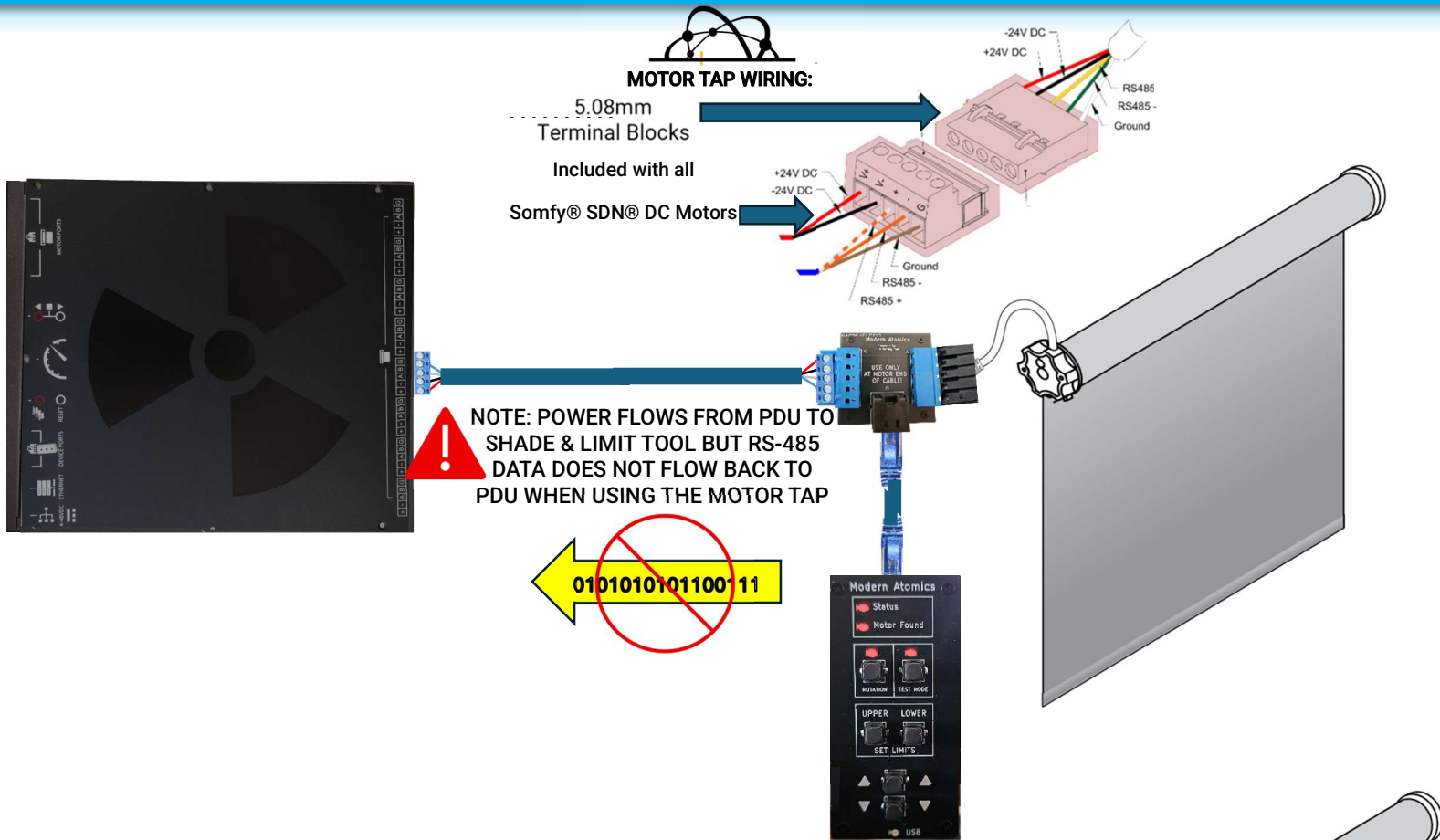
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LIMITATOR LM-1   USB to RS-232/485

	ELEMENT	DESCRIPTION
A	**485 / 232 BUS PORT**	RJ45 RS-485 or RS-232 BUS connection to PDU or MOTOR TAP (Break out board)
B	**STATUS LED**	LED ON = 7-28VDC Power found on RJ45 485 Port
C	**MOTOR FOUND LED**	LED OFF = No Motor found and or more than one Motor found on BUS
D	**LIMITATOR LM-1**	Hand-held Limit setting tool & USB C to RS-485 / RS-232 BUS RJ45 Interface
E	**ROTATION LED**	LED OFF = Reverse Roll / LED ON = Standard Roll / LED Flashing = Unknown
F	**TEST MODE LED**	LED OFF = Limit Setting mode active / LED ON = Test mode active
G	**ROTATION KEY**	Pressing this key will toggle the motor rotation when in the Limit Setting mode
H	**TEST MODE KEY**	When powered by the RS-485 RJ45 BUS Port, a press will toggle between the Limit Setting mode and the Test mode When powered by the USB C Port, a press will toggle between RS-485 & RS-232
I	**EXPANSION PORT**	This 6-pin port is reserved for factory firmware updates and processor diagnostics
J	**UPPER LIMIT KEY**	Pressing this key in the Limit Setting mode sets the motor upper limit to the current position
K	**LOWER LIMIT KEY**	Pressing this key in the Limit Setting mode sets the motor lower limit to the current position
L	**UP KEY**	In the Limit Setting mode a press sends 6 up pulses & a hold sends motor move up commands until you release the key (These commands will go past any current limits). In the Test mode a press will send go to the upper limit (if limits have already been set)
M	**UP & DOWN KEYS**	Press both keys to STOP any motor movement
N	**DOWN KEY**	In the Limit Setting mode a press sends 6 down pulses & a hold sends motor move down commands until you release the key (These commands will go past any current limits). In the Test mode a press will send go to the lower limit (if limits have already been set)
O	**USB LED**	LED ON = USB C port has power from PC / MOBILE Device
P	**USB C PORT**	The USB C port provides a bridge to the 485/232 BUS for using PC motor configuration software
1	**PDU RS-485 PORT**	5 pole 5.08 Pitch Inverted header for connection to PDU using the Somfy® motor connector
2	**RS-485 MOTOR TAP**	Breakout board for use with the hand-held tool. 485 data does not flow back to the PDU Port
3	**MOTOR 485 PORT**	5 pole 5.08 Pitch normal header for connection to motor using the Somfy® motor connector
4	**HAND-HELD PORT**	RJ45 Connection to Hand-Held Tool RS-485 Data is only routed to the Motor Port

MOTOR TAP WIRING:

5.08mm
Terminal Blocks

Included with all

Somfy® SDN® DC Motors

-24V DC
+24V DC
RS485
RS485 -
Ground

+24V DC
-24V DC

Ground
RS485 -
RS485 +

USE ONLY
AT MOTOR END
OF CABLE!

⚠️ NOTE: POWER FLOWS FROM PDU TO SHADE & LIMIT TOOL BUT RS-485 DATA DOES NOT FLOW BACK TO PDU WHEN USING THE MOTOR TAP

01010101011001011

Modern Atomics
Status
Motor Found
ROTATION   TEST MODE
UPPER   LOWER
SET LIMITS
▲   ▲
▼   ▼
USB

USB TO 485 WIRING:

MOTOR PORTS Modern Reaktor Atomics DEVICE PORTS BUS IN
1 3 5 7   1 3 5 ⎓24V-48V
PROG ▲ ⚡ ▲ ECO MODE
power.ai
2 4 6 8 STATUS RESET 2 4 6 RS232 End BUS OUT

⚠️ NOTE: The Limit Setting tool can connect to any of the ports on the PDU for RS-485, however only the BUS OUT will provide access to the RS-232. The only key that works when the USB is powering the Limit Setting Tool is the Test Mode Key which toggle between the RS-485 and RS-232 Interfaces on the PDU.

UPPER LOWER ROTATION TEST MODE Status Motor Found Modern Atomics
SET LIMITS
USB

Motor Tap PDU and MOTOR Terminal Blocks

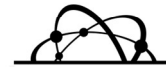## RJ45 PINOUTS of Limit Setting Tool & Motor Tap

PDU PORT

(RED) 24VDC +

(BLACK) GROUND

(ORANGE+WHITE) RS-485 +

(ORANGE) RS-485 −

(BROWN) DATA GROUND

RS-485 DATA DOES NOT
FLOW BACK TO PDU

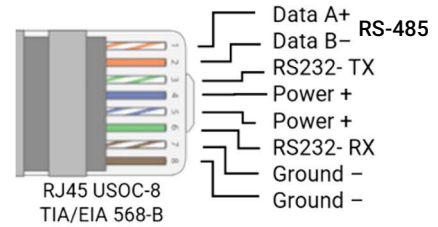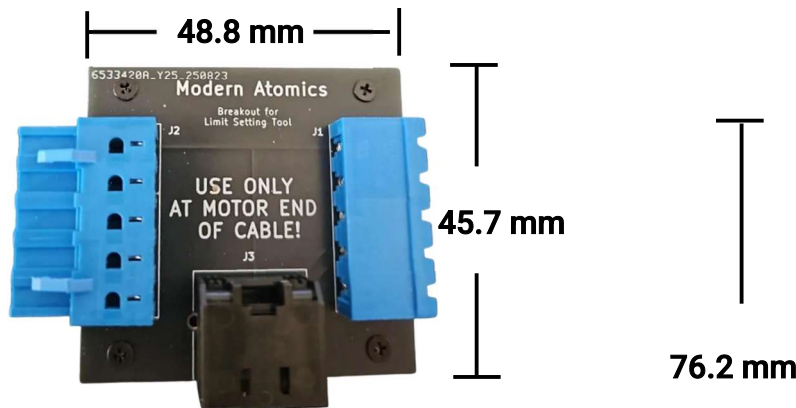**MOTOR PORT**

24VDC + (RED)

GROUND (BLACK)

RS-485 + (YELLOW)

RS-485 − (GREEN)

DATA GROUND (WHITE)

Data A+ — RS-485
Data B−
RS232- TX
Power +
Power +
RS232- RX
Ground −
Ground −

RJ45 USOC-8
TIA/EIA 568-B

DIMENSIONS:

48.8 mm

45.7 mm

38.1 mm

76.2 mm

Status
Motor Found

ROTATION   TEST MODE

UPPER   LOWER

SET LIMITS

USB

LIMITATOR LM-1   USB to RS-232/485

Technical Specifications:
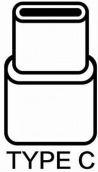
Parts Included:

TYPE C

- HANDHELD UNIT CONNECTIONS:
  - USB PORT: Type C (5 VDC)
  - SERIAL BUS PORT: RJ45 (7-36 VDC)
  - JTAG EXPANSION: 6-PIN (1.0 pitch)

- MOTOR TAP BREAKOUT CONNECTIONS:
  - PDU PORT: 5 POLE 5.08 PITCH
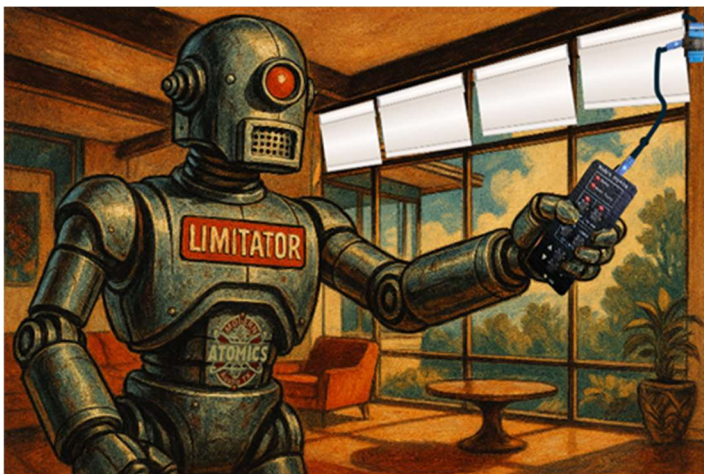 - MOTOR PORT: 5 POLE 5.08 PITCH
  - HANDHELD PORT: RJ45

(1) Limit Setting Tool
(1) RS-485 Motor Tap
(1) USB C Cable (1M)

Features summary:

Works with all Somfy® SDN® Motors and Drapes

Qualified with the following Software:

Modern Atomics Configurator Mobile Software

Somfy® SET Pro Software

Somfy® SDN Motor Configuration Software

Somfy® SDN Keypad Configuration Software

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LIMITATOR LM-1   USB to RS-232/485

SOFTWARE: Modern Atomics Configurator

Configure Any Somfy® Motor

Configure Any Somfy® Decoflex® Keypad

Configure any Somfy® RTS® Keypad or remote or Sensor

Configure Somfy® RTS® to SDN® Receiver

Configure Pegasus RF Transciever

Configure Any Bond Sidekick Remote

Configure any Lutron® Pico® RF Remote

Configure any Modern Atomics Reaktor

Create, Edit, save and load site files

Modern Atomics Configurator V0.1

HELP (Display/Return)

Connect to Serial Port | Disconnect

Clear Discovered Devices

Start Discovery

Refresh All

Address | Group or Device Address | Highlight | ▲ | ■ | ▼

MOTORS

Count = 5			Address	Label	Group 0	Group 1	Group 2	Group 3	Group 4	Group 5	Group 6	Group 7	Group 8	Group 9	Group 10	Group 11	Group 12	Group 13	Group 14	Group 15
REFRESH	SEND	JOG	08bc70	R1 M1	222222		666666		333333											
REFRESH	SEND	JOG	089538	R2 M1	555555		666666													
REFRESH	SEND	JOG	08a175	T1 M1	111111		666666													
REFRESH	SEND	JOG	08bc54	R2 M2	444444		666666													
REFRESH	SEND	JOG	08a647	R1 M2	333333		666666													

KEYPADS

Count = 1		Address	Group 0	Group 1	Group 2	Group 3	Group 4
REFRESH	SEND	13ac99	111111	222222	333333	444444	666666

PEGASUS

Count = 1		Node Address	GP Input Group	Wind Input Group	RF Function	Group 0 Chan 0	Group 1 Chan 1	Group 2 Chan 2	Group 3 Chan 3	Group 4 Chan 4	Group 5 Chan 5	Group 6 Chan 6	Group 7 Chan 7	Group 8 Chan 8	Group 9 Chan 9	Group 10 Chan A	Group 11 Chan B	Group 12 Chan C	Group 13 Chan D	Group 14 Chan E	Group 15 Chan F
					RF RX ->	333333															
REFRESH	SEND	553385				LEARN	LEARN	LEARN	LEARN	LEARN	LEARN	LEARN	LEARN	LEARN	LEARN	LEARN	LEARN	LEARN	LEARN	LEARN	LEARN
			PROG	LEARN	RF TX ->																
						PROG	PROG	PROG	PROG	PROG	PROG	PROG	PROG	PROG	PROG	PROG	PROG	PROG	PROG	PROG	PROG

RTS Receivers

Count = 0		Address	Chan 1	Chan 2	Chan 3	Chan 4	Chan 5

Save Config To File | Save

Load Config From File | Choose File | No file chosen

LIMITATOR LM-1

USB to RS-232/485

SOFTWARE: Somfy® SETPro®

Configure Any Somfy® SDN® Motor

Configure Any Somfy® Decoflex® V2 Keypad

Configure Somfy® RTS® to SDN® V2 Receiver

Click here to find
the Com port for
Limitator!

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LIMITATOR LM-1   USB to RS-232/485

SOFTWARE: Somfy® SDN® Motor Configuration Software

Configure Any Somfy® SDN® Motor

Click here to find the com port for Limitator

Somfy SDN Motor Configuration 5.1

Ports ▼ Connect

COM3

Monitoring
- ○ Group [ ]
- ○ Single
- Get Single Motor Address
- Auto Discovery

Pulse Count
- Get Counts   Clear
- [ ] Position: Pulses From Top 0
- [ ] Limit: Pulses From Top 0
- -

Group Addresses

1	[ ]	Get Groups
2	[ ]	Set Groups
3	[ ]	Erase Groups
4	[ ]	Clear Fields
5	[ ]	
6	[ ]	
7	[ ]	
8	[ ]	
9	[ ]	
10	[ ]	
11	[ ]	
12	[ ]	
13	[ ]	
14	[ ]	
15	[ ]	
16	[ ]	

-

Adjust Limits-Reset Motor
- ○ Limit Adjust
- Up (Pulses)
- Up (ms*10) 200
- Down (Pulses)
- Down (ms*10) 200

- ○ Reset Motor
- Reset Motor(s)
- Reverse Rotation
- Standard Rotation
- Wink Motor
- Set Up @ Current
- Set Down @ Current
- Set Down @ 1000
- Up (ms*10)
- Down (ms*10) 10

-

Motor Addresses

Movements
- Stop -
- Up Limit
- Down Limit
- Jog Up (*10 ms) 10
- Jog Down (*10ms) 10
- Jog Up (Pulses) 10
- Jog Down (Pulses) 10
- Pulse Position [ ]
- 0 -100% position [ ]
- Go to IP [ ]
- Next IP Up
- Next IP Down
- Clear Fields

IP's (pulses from top 0)
- IP01 [ ] Get IP's
- IP02 [ ] Erase All Ips
- IP03 [ ] Set IP# @ Pulse 1
- IP04 [ ] Set IP# @ Current 1
- IP05 [ ] Set Equal # of IP's 1
- IP06 [ ] Delete IP # 1
- IP07 [ ] Set IP # @ IP% 1 50
- IP08 [ ] Clear Fields
- IP09 [ ]
- IP10 [ ]
- IP11 [ ]
- IP12 [ ]
- IP13 [ ]
- IP14 [ ]
- IP15 [ ] -
- IP16 [ ]

DC Motor Speed Control
- [ ] Roll Speed   Get
- [ ] Slow Speed   Set
-   Clear
- ○ Speeds
- ○ ST50 DC Ramp Duration

Lock Network
- Get   Lock   Unlock   Priority 1
- -

Lock Position
- Set   Priority 1
- ● Up ○ Down ○ Current ○ Unlock
- ○ IP 1   ○ % 50

Motor Label
- Get Set Clear -
- [ ]

Disconnected   -

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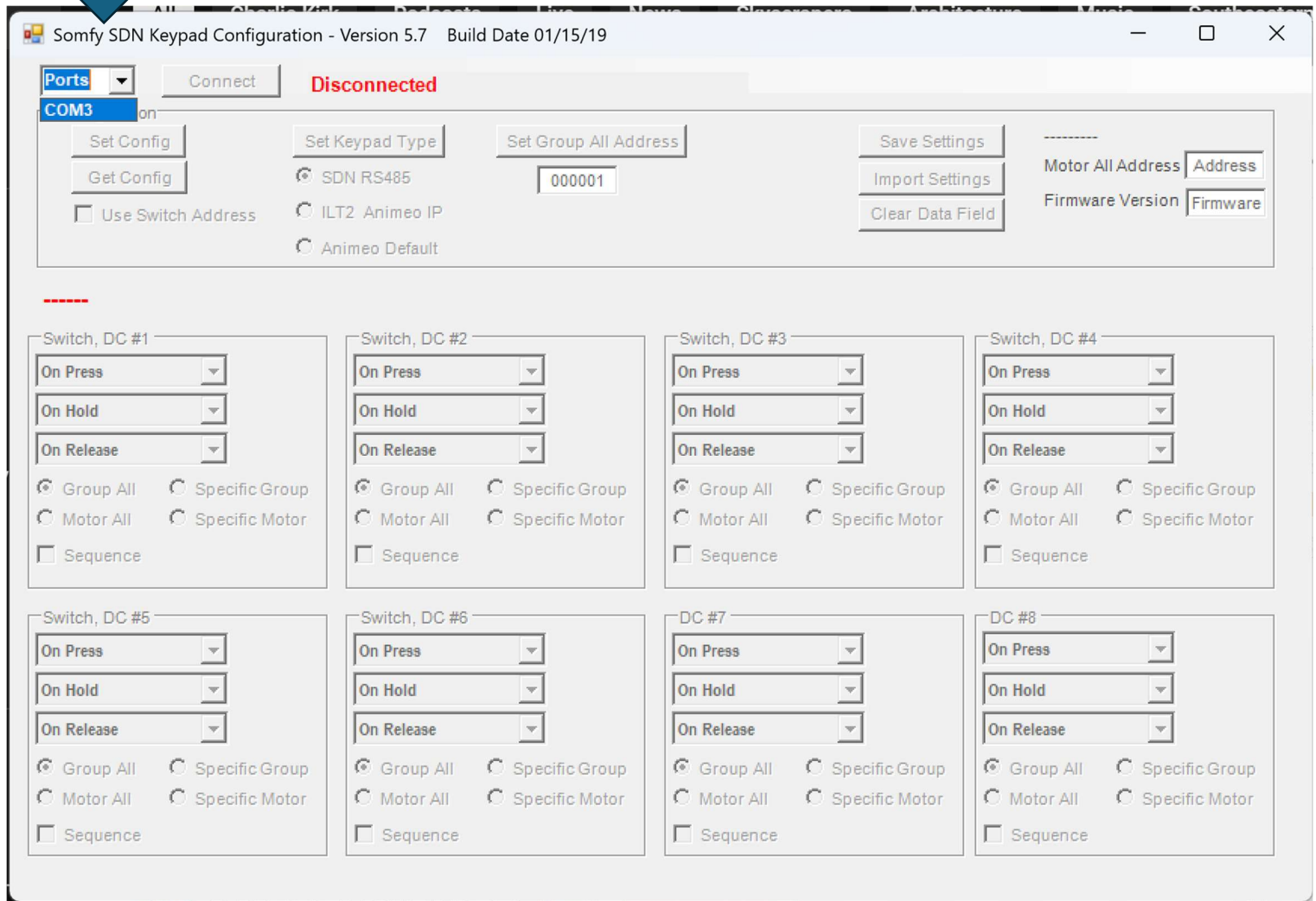Modern Atomics

LIMITATOR LM-1   USB to RS-232/485

SOFTWARE: Somfy® SDN® Keypad Configuration Software

Configure Any Somfy® Decoflex® Keypad

Click here to find the com port for Limitator

Somfy SDN Keypad Configuration - Version 5.7   Build Date 01/15/19

Ports ▾   Connect   **Disconnected**

COM3

Set Config	Set Keypad Type	Set Group All Address		Save Settings	----------
Get Config	● SDN RS485	000001		Import Settings	Motor All Address [Address]
☐ Use Switch Address	○ ILT2 Animeo IP			Clear Data Field	Firmware Version [Firmware]
	○ Animeo Default				

Switch, DC #1
- On Press ▾
- On Hold ▾
- On Release ▾
- ● Group All   ○ Specific Group
- ○ Motor All   ○ Specific Motor
- ☐ Sequence

Switch, DC #2
- On Press ▾
- On Hold ▾
- On Release ▾
- ● Group All   ○ Specific Group
- ○ Motor All   ○ Specific Motor
- ☐ Sequence

Switch, DC #3
- On Press ▾
- On Hold ▾
- On Release ▾
- ● Group All   ○ Specific Group
- ○ Motor All   ○ Specific Motor
- ☐ Sequence

Switch, DC #4
- On Press ▾
- On Hold ▾
- On Release ▾
- ● Group All   ○ Specific Group
- ○ Motor All   ○ Specific Motor
- ☐ Sequence

Switch, DC #5
- On Press ▾
- On Hold ▾
- On Release ▾
- ● Group All   ○ Specific Group
- ○ Motor All   ○ Specific Motor
- ☐ Sequence

Switch, DC #6
- On Press ▾
- On Hold ▾
- On Release ▾
- ● Group All   ○ Specific Group
- ○ Motor All   ○ Specific Motor
- ☐ Sequence

DC #7
- On Press ▾
- On Hold ▾
- On Release ▾
- ● Group All   ○ Specific Group
- ○ Motor All   ○ Specific Motor
- ☐ Sequence

DC #8
- On Press ▾
- On Hold ▾
- On Release ▾
- ● Group All   ○ Specific Group
- ○ Motor All   ○ Specific Motor
- ☐ Sequence