

# SOMFY DIGITAL NETWORK™ (SDN) 0-10V INTERFACE V2



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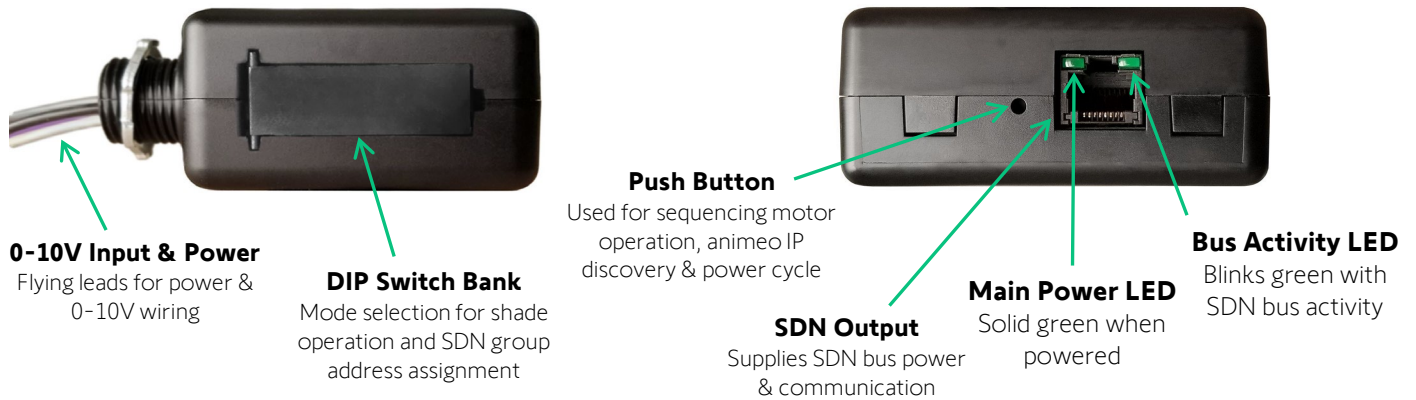
# I. OVERVIEW

The SDN 0-10V Interface V2 is a device which accepts the lighting industry standard 0-10V analog dimming signal and converts it to a Somfy Digital Network™ (SDN) or animeo® IP command. This device receives a 0-10V input from a third-party lighting control system and drives a motor in 10% increments (0%-100%).

## SYSTEM REQUIREMENTS

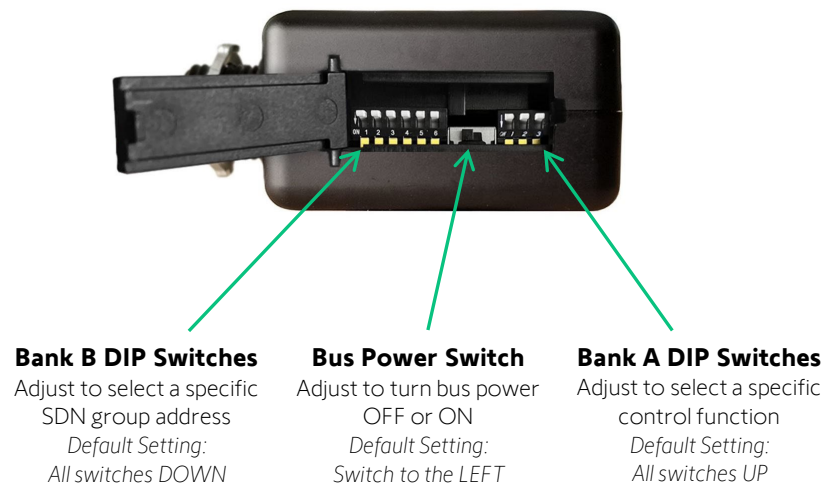
- SDN Motor Configuration Software
- SDN Configuration Tool
- animeo IP Visual Configuration Software
- Fully commissioned standalone SDN or animeo IP project

## CONNECTIONS & INDICATORS



## DIP SWITCHES

The DIP Switch Bank is located behind the access door. Refer to [Appendix A](#) and [Appendix B](#) for the appropriate DIP Switch settings. The Bus Power Switch enables +24V bus power to be supplied to an SDN segment (LEFT=OFF or RIGHT=ON).



# II. INSTALLATION

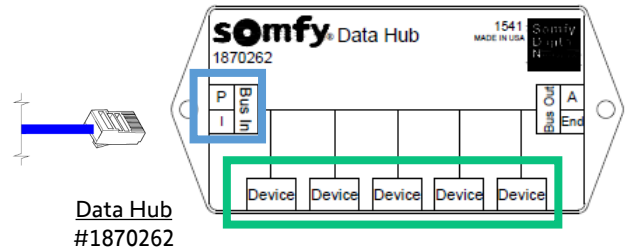
## MOUNTING & POWER

The SDN 0-10V Interface V2 utilizes a junction-box-mountable, plenum-rated enclosure and is powered by line voltage. It is also connected to a standard 0-10V input signal inside the junction box via 2 wires. There is a single RJ45 port on the control which provides the connection to the SDN Bus via a standard CAT-5e or higher cable.

*This device is powered by AC line voltage and must be installed by an Electrician.*

## WIRING TO SYSTEM FOR OPERATION

0-10V Control & Power Inputs	
18AWG 4-Conductor Cable	
FUNCTION	COLOR
0-10V (+)	Violet
0-10V (-)	Pink
Neutral	White
Line	Black



0-10V & Line Voltage  
Input from Third-Party

**WHEN USED TO  
START AN SDN  
BUS LINE**

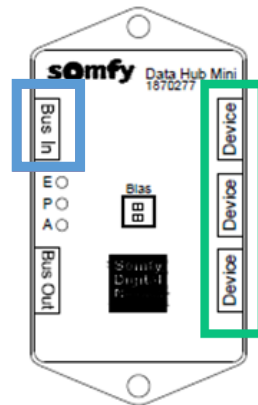
To "BUS IN" port  
on SDN Device

Provides 20 SDN Bus Power  
Units to Bus Line with Bus  
Power Switch ON

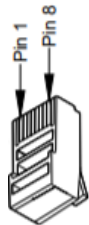
OR

**WHEN USED AS  
AN SDN DEVICE**

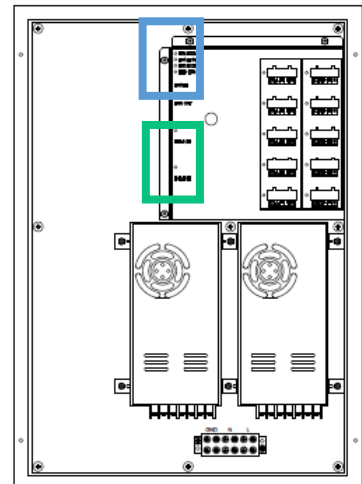
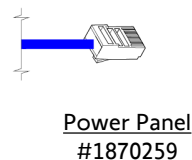
To any SDN  
"DEVICE" port  
Bus Power Switch  
must be OFF



SDN 0-10V Interface V2  
#1870857



SDN Bus Wiring Pinout		
CAT-5e or higher TIA-568B standard with RJ-45		
Pin #	Color	Function
1	Orange White	SDN RS485 (+)
2	Orange	SDN RS485 (-)
3	Green White	Reserved
4	Blue	Power 24v DC
5	Blue White	Power 24v DC
6	Green	Reserved
7	Brown White	SDN RS485 Ground
8	Brown	SDN RS485 Ground



### III. SET UP

#### SOMFY DIGITAL NETWORK™ (SDN) MODE

The SDN 0-10V Interface V2 operates in 2 different modes: SDN Mode (standalone) and animeo IP mode. These modes are accessible by the setting of DIP switches. Refer to [Appendix A](#) to enable the Bank A DIP switches before setting a specific SDN group address.

#### SDN MODE OPTIONS

- **Motor All Configuration** – Will communicate on the SDN bus using the FFFFFFFF broadcast address
- **Group Specific Configuration** – Will communicate on the SDN bus with group addresses 010100 through 01013D
- **Percent Position** – Will move the motors on the SDN bus from 0% - 100% depending on 0-10V input
- **Intermediate Position** – Will move the motors on the SDN bus from IP1 through IP11 depending on 0-10V input

#### SDN MODE PUSH BUTTON OPERATION

PUSH BUTTON ACTION	RESPONSE	LED ACTION
Press & Release < 30 seconds	Sequence operation – Motors will travel UP-STOP-DOWN-STOP as the push button is repeatedly pressed and released.	LED flashes once each time the push button is released.
Press & Hold 30+ seconds	Software Reset – Once the push button is released, the reset will be executed. Motors do not move.	LED is OFF up to 30 seconds. LED begins to flash at 30 seconds and continues flashing while the button is held. Once the button is released the LED turns OFF.

#### SDN MOTOR ALL CONFIGURATION

1. OPEN the DIP switch bank access door
2. SET the appropriate bus power function with the Bus Power Switch  
*NOTE: The default setting for this DIP switch bank is OFF in the LEFT position.*
  - a. Bus Power Switch - Select OFF = Left to disable Bus Power  
Select ON = Right to enable Bus Power
3. SET the appropriate 0-10V control function in Bank A - Function DIP Switches ([see Appendix A](#))  
*NOTE: The default setting for this DIP switch bank is all switches in the UP position.*
  - a. DIP Switch 1 - Select OFF = Up to enable Percent Position motor movements  
Select ON = Down to enable Intermediate Position motor movements
  - b. DIP Switch 2 - Select OFF = Up to enable SDN Mode Output
  - c. DIP Switch 3 - Select OFF = Up to enable Standard Operation  
Select ON = Down to enable Reverse Operation
4. SET the 0-10V control Motor All address in Bank B - Specific Group Address DIP Switches ([see Appendix B](#))  
*NOTE: The default setting for this DIP switch bank is all switches in the DOWN position.*
  - a. DIP Switch 1 through 6 - Select ON = Down to enable the Motor All FFFFFFFF broadcast address
5. CLOSE the DIP Switch Bank access door
6. PRESS & RELEASE the Push Button to test (all motors move)
7. TEST operation from the Third-Party 0-10V output control

Refer to [Appendix C](#) for 0-10V input levels and the corresponding SDN outputs.

Refer to the Somfy Connect UAI Plus Integration Report to identify the specific group address required, or use the SDN Motor Configuration software to assign the specific group address to each motor to be controlled. Refer to [Appendix A](#) to enable the Bank A DIP switches before setting a specific SDN group address. Refer to [Appendix B](#) to set a specific SDN group address.

## **SDN GROUP SPECIFIC CONFIGURATION**

1. OPEN the DIP switch bank access door
2. SET the appropriate bus power function with the Bus Power Switch  
*NOTE: The default setting for this DIP switch bank is OFF in the left position.*
  - a. Bus Power Switch - Select OFF = Left to disable Bus Power  
Select ON = Right to enable Bus Power
3. SET the appropriate 0-10V control function in Bank A - Function DIP Switches ([see Appendix A](#))  
*NOTE: The default setting for this DIP switch bank is all switches in the UP position.*
  - a. DIP Switch 1 - Select OFF = Up to enable Percent Position motor movements  
Select ON = Down to enable Intermediate Position motor movements
  - b. DIP Switch 2 - Select OFF = Up to enable SDN Mode Output
  - c. DIP Switch 3 - Select OFF = Up to enable Reverse Operation  
Select ON = Down to enable Standard Operation
4. SET the appropriate 0-10V control specific group address in Bank B - Specific Group Address DIP Switches  
*NOTE: The default setting for this DIP switch bank is all switches in the DOWN position.*  
*Refer to [Appendix B](#) to set the specific group address. Only 62 addresses are available.*
5. CLOSE the DIP Switch Bank access door
6. PRESS & RELEASE the Push Button to test (the specific group of motors will move)
7. TEST operation from the Third-Party 0-10V output control

## ANIMEO® IP MODE

The SDN 0-10V Interface V2 integrates with animeo IP using the animeo IP Visual Configuration software. The control is discovered and configured as a 6-Button Non-Eco Mode keypad and will move motors on the SDN bus to the full UP, full DOWN, 25%, 50%, and 75% positions depending on the 0-10V input. Refer to [Appendix A](#) to enable animeo IP Mode.

### ANIMEO IP MODE PUSH BUTTON OPERATION

BUTTON ACTION	RESPONSE	LED ACTION
Press & Release < 7 seconds	Sequence operation – Motors will travel UP-STOP-DOWN-STOP as the button is repeatedly pressed and released.	LED flashes once each time the button is released. The Sequence command is sent when the button is released.
Press & Hold 7-30 seconds	animeo Discovery – The animeo Discovery signal is sent to the Building Controller. Motors do not move.	LED is OFF up to 7 seconds. LED turns ON at 7 seconds, then will turn OFF once the button is released. The Animeo Discovery signal is sent once the button is released.
Press & Hold 30+ seconds	Software Reset – Once the button is released, the reset will be executed. Motors do not move.	LED begins to flash at 30 seconds and continues flashing while the button is held. Once the button is released the LED turns OFF.

### ANIMEO IP MODE CONFIGURATION

1. OPEN the DIP switch bank access door
2. SET the appropriate bus power function with the Bus Power Switch
 

*NOTE: The default setting for this DIP switch bank is OFF in the left position.*

  - a. Bus Power Switch - Select OFF = Left to disable Bus Power  
Select ON = Right to enable Bus Power
3. SET the appropriate 0-10V control function in Bank A - Function DIP Switches ([see Appendix A](#))
 

*NOTE: The default setting for this DIP switch bank is all switches in the UP position.*

  - a. DIP Switch 1 - Select OFF = Up to enable Percent Position motor movements  
Select ON = Down to enable Intermediate Position motor movements
  - b. DIP Switch 2 - Select ON = Down to enable animeo IP Mode Output
  - c. DIP Switch 3 - Select OFF = Up to enable Standard Operation  
Select ON = Down to enable Reverse Operation
4. CLOSE the DIP Switch Bank access door
5. In the animeo IP Visual Configuration software, SELECT the Wrench icon to enter Configuration Mode
  - a. In the left Remotes pane, Physical remotes tab, SELECT “+” to enter the Remote Wizard
6. PRESS & HOLD the Push Button for 7–30 seconds to discover the device
7. SELECT the device in the Remote Wizard window when discovered, then SELECT “Next”
  - a. In the Remote name field, ENTER a device name for the area or group of motors it will control
  - b. In the Remote owner, purpose, located at room, and floor fields ENTER details if required
  - c. In the Remote ergonomics dropdown, SELECT “6 Button Decoflex Keypad Presets – No Eco”
  - d. SELECT “Finish” to add the device to the Physical Remote list
  - e. REPEAT Step 5a to add more controls
  - f. UPLOAD the configuration to the animeo IP Building Controller to apply changes
  - g. TEST the newly added device(s) - SELECT the device, then RIGHT-CLICK for Up/Stop/Down control
8. PRESS & RELEASE the Push Button to test the programmed operation
9. TEST operation from the Third-Party 0-10V output control

# APPENDIX

## [ APPENDIX A ] BANK A - FUNCTION DIP SWITCHES

The SDN 0-10V Interface V2 operates in 2 different modes: SDN Mode and Animeo IP Mode. These modes are accessible by the setting of DIP switches enabling specific functions. See DIP switch 1-3 settings below (OFF=DIP SWITCH UP↑ or ON=DIP SWITCH DOWN↓).

The default setting for this DIP switch bank is all switches in the UP position.

DIP SWITCH SETTING	DIP SWITCH 1	DIP SWITCH 2	DIP SWITCH 3
↑	PERCENT POSITION	SDN MODE OUTPUT	STANDARD OPERATION
↓	INTERMEDIATE POSITION	ANIMEO IP MODE OUTPUT	REVERSE OPERATION



## [ APPENDIX B ] BANK B - SPECIFIC GROUP ADDRESS DIP SWITCHES

The SDN 0-10V Interface V2 can reside on the standalone SDN bus with a Somfy Connect UAI Plus. The Bank B DIP switches allow setting a specific SDN address for this device to control. There are 62 available hexadecimal group addresses.

When using the SDN Configuration Tool Software, refer to the Address ID column to set the motor group address. When using the SDN Motor Configuration Software, refer to the Inverted ID column to set the motor group address.

When using the SDN Keypad Configuration Software, refer to the Inverted ID column to set the group address in the SDN Keypads.

When using the Somfy Connect UAI Plus, refer to the Integration Report to identify the specific Inverted ID required to program SDN Keypads.

See DIP switch 1-6 settings below (OFF=DIP SWITCH UP↑ or ON=DIP SWITCH DOWN↓).

Refer to [Appendix A](#) to enable the Bank A DIP switches before setting a specific SDN group address.

The default setting for this DIP switch bank is all switches in the DOWN position.

DIP SWITCH SETTING						ADDRESS ID (HEX)	INVERTED ID (HEX)	DIP SWITCH SETTING						ADDRESS ID (HEX)	INVERTED ID (HEX)
1	2	3	4	5	6			1	2	3	4	5	6		
DEFAULT SETTING						00 00 00	FF FF FF	↓	↓	↓	↓	↓	↓	01 01 13	EC FE FE
↓	↓	↓	↓	↓	↑	01 01 00	FF FE FE	↓	↑	↓	↑	↓	↓	01 01 14	EB FE FE
↓	↓	↓	↓	↑	↓	01 01 01	FE FE FE	↓	↑	↓	↑	↑	↓	01 01 15	EA FE FE
↓	↓	↓	↓	↑	↑	01 01 02	FD FE FE	↓	↑	↓	↑	↑	↑	01 01 16	E9 FE FE
↓	↓	↓	↑	↓	↓	01 01 03	FC FE FE	↓	↑	↑	↓	↓	↓	01 01 17	E8 FE FE
↓	↓	↓	↑	↓	↑	01 01 04	FB FE FE	↓	↑	↑	↓	↓	↑	01 01 18	E7 FE FE
↓	↓	↓	↑	↑	↓	01 01 05	FA FE FE	↓	↑	↑	↓	↑	↓	01 01 19	E6 FE FE
↓	↓	↓	↑	↑	↑	01 01 06	F9 FE FE	↓	↑	↑	↓	↑	↑	01 01 1A	E5 FE FE
↓	↓	↑	↓	↓	↓	01 01 07	F8 FE FE	↓	↑	↑	↑	↓	↓	01 01 1B	E4 FE FE
↓	↓	↑	↓	↓	↑	01 01 08	F7 FE FE	↓	↑	↑	↑	↓	↑	01 01 1C	E3 FE FE
↓	↓	↑	↓	↑	↓	01 01 09	F6 FE FE	↓	↑	↑	↑	↑	↓	01 01 1D	E2 FE FE
↓	↓	↑	↓	↑	↑	01 01 0A	F5 FE FE	↓	↑	↑	↑	↑	↑	01 01 1E	E1 FE FE
↓	↓	↑	↑	↓	↓	01 01 0B	F4 FE FE	↑	↓	↓	↓	↓	↓	01 01 1F	E0 FE FE
↓	↓	↑	↑	↓	↑	01 01 0C	F3 FE FE	↑	↓	↓	↓	↓	↑	01 01 20	DF FE FE
↓	↓	↑	↑	↑	↓	01 01 0D	F2 FE FE	↑	↓	↓	↓	↑	↓	01 01 21	DE FE FE
↓	↓	↑	↑	↑	↑	01 01 0E	F1 FE FE	↑	↓	↓	↓	↑	↑	01 01 22	DD FE FE
↓	↑	↓	↓	↓	↓	01 01 0F	F0 FE FE	↑	↓	↓	↑	↓	↓	01 01 23	DC FE FE
↓	↑	↓	↓	↓	↑	01 01 10	EF FE FE	↑	↓	↓	↑	↓	↑	01 01 24	DB FE FE
↓	↑	↓	↓	↑	↓	01 01 11	EE FE FE	↑	↓	↓	↑	↑	↓	01 01 25	DA FE FE
↓	↑	↓	↓	↑	↑	01 01 12	ED FE FE	↑	↓	↓	↑	↑	↑	01 01 26	D9 FE FE

DIP SWITCH SETTING						ADDRESS ID (HEX)	INVERTED ID (HEX)	DIP SWITCH SETTING						ADDRESS ID (HEX)	INVERTED ID (HEX)
1	2	3	4	5	6			1	2	3	4	5	6		
↑	↓	↑	↓	↓	↓	01 01 27	D8 FE FE	↑	↑	↓	↑	↓	↓	01 01 33	CC FE FE
↑	↓	↑	↓	↓	↑	01 01 28	D7 FE FE	↑	↑	↓	↑	↓	↑	01 01 34	CB FE FE
↑	↓	↑	↓	↑	↓	01 01 29	D6 FE FE	↑	↑	↓	↑	↑	↓	01 01 35	CA FE FE
↑	↓	↑	↓	↑	↑	01 01 2A	D5 FE FE	↑	↑	↓	↑	↑	↑	01 01 36	C9 FE FE
↑	↓	↑	↑	↓	↓	01 01 2B	D4 FE FE	↑	↑	↑	↓	↓	↓	01 01 37	C8 FE FE
↑	↓	↑	↑	↓	↑	01 01 2C	D3 FE FE	↑	↑	↑	↓	↓	↑	01 01 38	C7 FE FE
↑	↓	↑	↑	↑	↓	01 01 2D	D2 FE FE	↑	↑	↑	↓	↑	↓	01 01 39	C6 FE FE
↑	↓	↑	↑	↑	↑	01 01 2E	D1 FE FE	↑	↑	↑	↓	↑	↑	01 01 3A	C5 FE FE
↑	↑	↓	↓	↓	↓	01 01 2F	D0 FE FE	↑	↑	↑	↑	↓	↓	01 01 3B	C4 FE FE
↑	↑	↓	↓	↓	↑	01 01 30	CF FE FE	↑	↑	↑	↑	↓	↑	01 01 3C	C3 FE FE
↑	↑	↓	↓	↑	↓	01 01 31	CE FE FE	↑	↑	↑	↑	↑	↓	01 01 3D	C2 FE FE
↑	↑	↓	↓	↑	↑	01 01 32	CD FE FE	↑	↑	↑	↑	↑	↑	RESERVED	

## [ APPENDIX C ] INPUT LEVELS & SDN OUTPUT

When the SDN 0-10V Interface V2 is properly connected and powered, it will accept an analog voltage in the range of 0-10V and convert that voltage to a corresponding SDN command. As the input voltage rises between 0 and 10 volts, the control processes the various levels and transmits motor commands on to the SDN bus as either increasing motor percentages of 0-100% or intermediate positions IP1-IP11. The control is optimized to work best with discrete voltage inputs rather than a sliding scale. This is done to ensure a stable motor position.

The SDN 0-10V Interface V2 is optimized for operation with a wireless control module manufactured by Encelium, as well as standard analog voltages in the range of 0.75V to 9.1V. This allows the control to operate with a broad range of 0-10V inputs that may slightly vary between lighting manufacturers.

ENCELIUM INPUT	MOTOR % POSITION	MOTOR INTERMEDIATE POSITION	NON-ENCELIUM INPUT	MOTOR % POSITION	MOTOR INTERMEDIATE POSITION
.750 V	0%	IP1	.750 V	0%	IP1
1.088 V	10%	IP2	1 V	10%	IP2
2.037 V	20%	IP3	2 V	20%	IP3
2.973 V	30%	IP4	3 V	30%	IP4
3.901 V	40%	IP5	4 V	40%	IP5
4.897 V	50%	IP6	5 V	50%	IP6
5.813 V	60%	IP7	6 V	60%	IP7
6.73 V	70%	IP8	7 V	70%	IP8
7.71 V	80%	IP9	8 V	80%	IP9
8.66 V	90%	IP10	9 V	90%	IP10
9.58 V	100%	IP11			

SOMFY® is the leading global manufacturer of strong, quiet motors with electronic and app controls for interior window coverings and exterior solar protections. Over 270 million users worldwide enjoy the more than 170 million motors produced by Somfy. During the past 50 years, Somfy engineers have designed products for both the commercial and residential markets to motorize window coverings such as interior shades, wood blinds, draperies, awnings, rolling shutters, exterior solar screens and projection screens. Somfy motorization systems are easily integrated with security, HVAC and lighting systems providing total home or building automation.

**FOR QUESTIONS OR ASSISTANCE PLEASE CONTACT TECHNICAL SUPPORT:**

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