Somfy Digital Network™ SDN Technical Training

Course Agenda

1. Who is Somfy
2. Benefits of SDN
3. SDN Overview
4. Systematic Design
   - AC Motor Power
   - DC Motor Power
   - Combination AC & DC
5. Specialty Devices
6. SDN Troubleshooting
7. Commissioning
8. Project Services

1

Who is Somfy?

Who is Somfy

Somfy Organization

50 years of experience in motorization

175+ million motors produced

Production capacity **20,000,000** motors per year

60 Countries

121 Subsidiaries

8,940 Employees

2,066 Patents in Somfy portfolio

100+ million radio motors sold worldwide

270+ million users worldwide

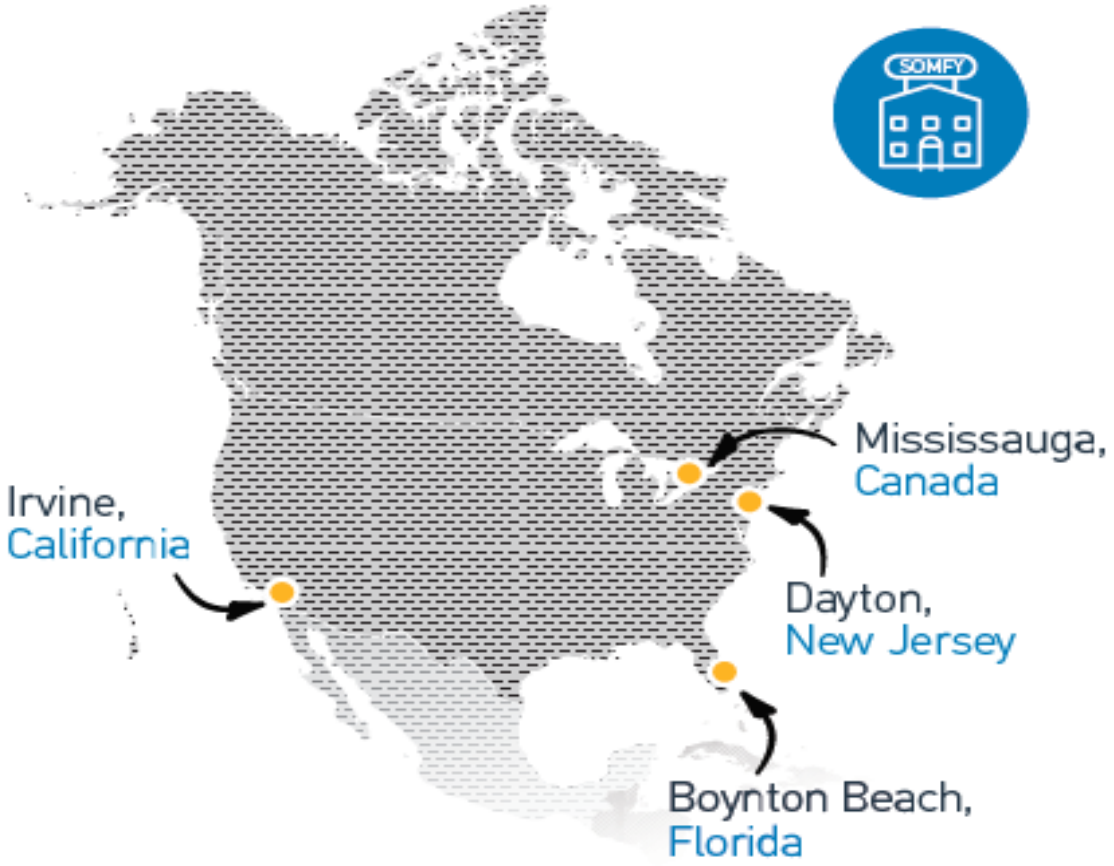
8 manufacturing plants

Over 5 million connected devices

somfy

Who is Somfy

North American Locations



- 150 EMPLOYEES
- 4 TRAINING CENTERS
- CUSTOMER SERVICE

  8 am to 8 pm EST

Who is Somfy

What Does Somfy Offer?

The **widest range of strong, quiet motors and variety of controls** for all types of applications and technologies

Any application inside and out

Any type of control

TIME WEATHER TOUCH

VOICE HA BMS

Any power option

- Solar
- Rechargeable
- Embedded
- Plug-in
- Wired
- 120 V AC
- Low voltage DC
- PoE

Any technology

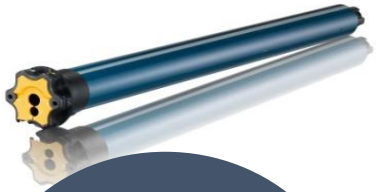
Somfy Digital Network RS485 · RTS · DRY CONTACT · ZigBee™ · Z-WAVE

and more....

Who is Somfy

Somfy Evolution Fueled by Constant Innovation

Motors
1969



Centralization & Radio
1998

RTS
Radio Technology Somfy®

Smart Home
2009

Connected Objects

&

amazon alexa

zigbee

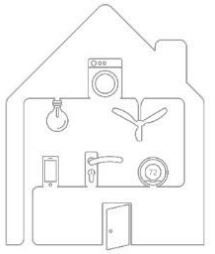
IFTTT

Google Assistant

works with nest

connects with Somfy TaHoma

Open Connectivity



The Product
Removing Effort

The House
Comfort & Security
Home Motion by Somfy

The Occupant
Connected
Comfort, Security
Energy Saving

somfy

2

Benefits of SDN

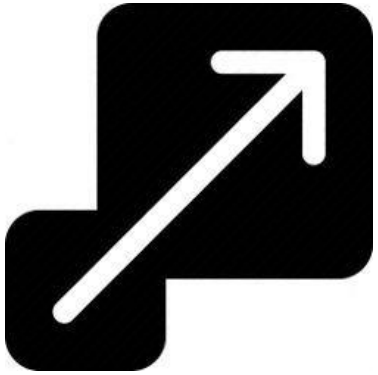
Benefits of SDN

Where to Use Motorization

Benefits of SDN

Features

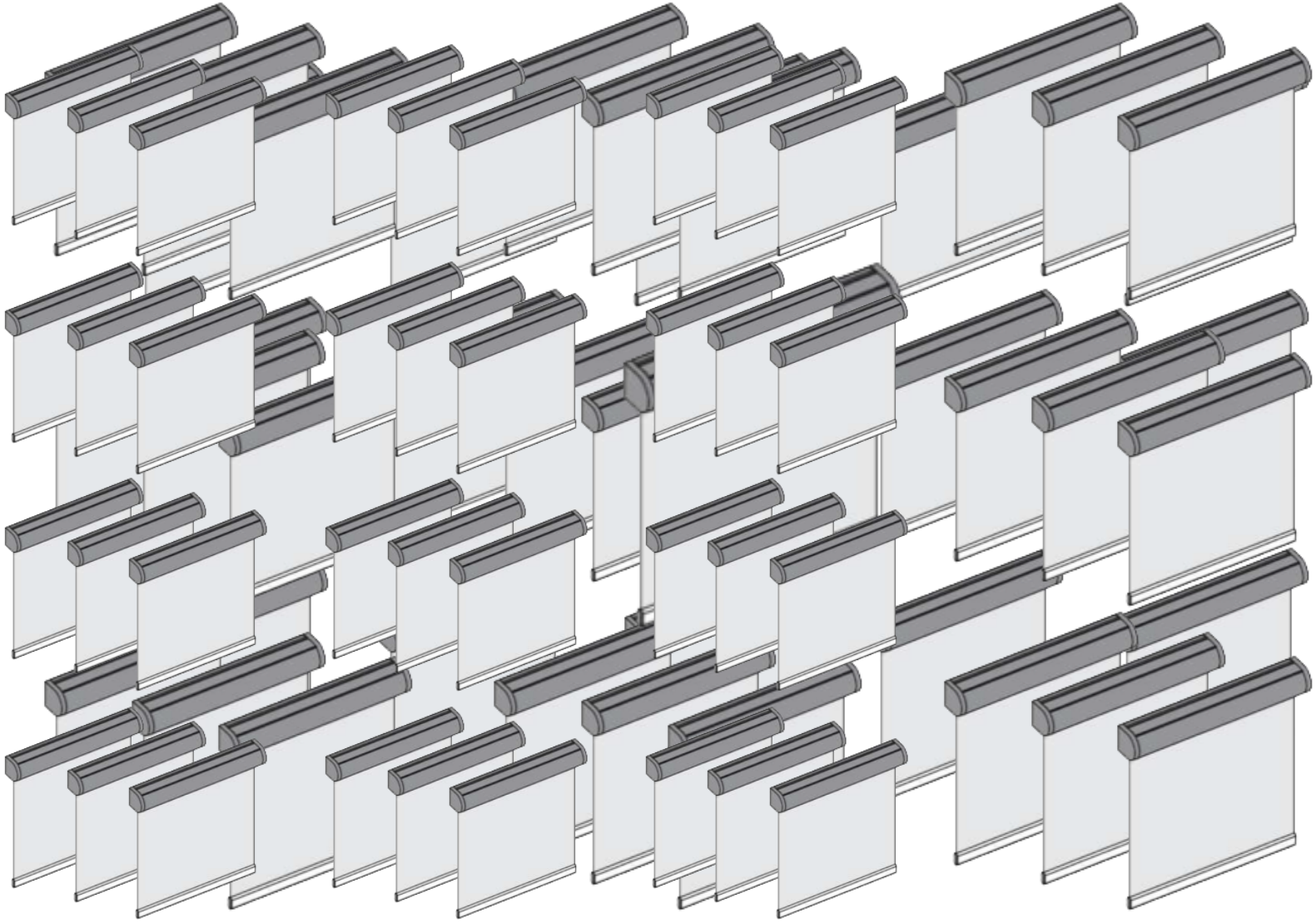
- Hardwired
  - No risk of radio frequency interference
  - Reliable
- 16 intermediate positions
  - Multiple stop points
  - Sun tracking (with animeo IP)
- 2-Way
  - Percentage positions
  - Feedback from the motor
- Scalable
  - 1 motor
  - 200 motors
  - 1,000 motors
- Less money in wiring - Standard vs SDN
- Unlimited # of controls



Benefits of SDN

Scalable Solution

Somfy Digital Network RS485



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SDN Overview

SDN Overview

What is SDN?

Somfy Digital Network

SDN is a platform comprised of intelligent motors and controls.

Intelligent Motors

These intelligent motors and controls are built using bus line technology.

Bus Line Technology

The bus line technology allows for a scalable solution allowing for the same components no matter the size of the job.

SDN Overview

Defining a Bus Line

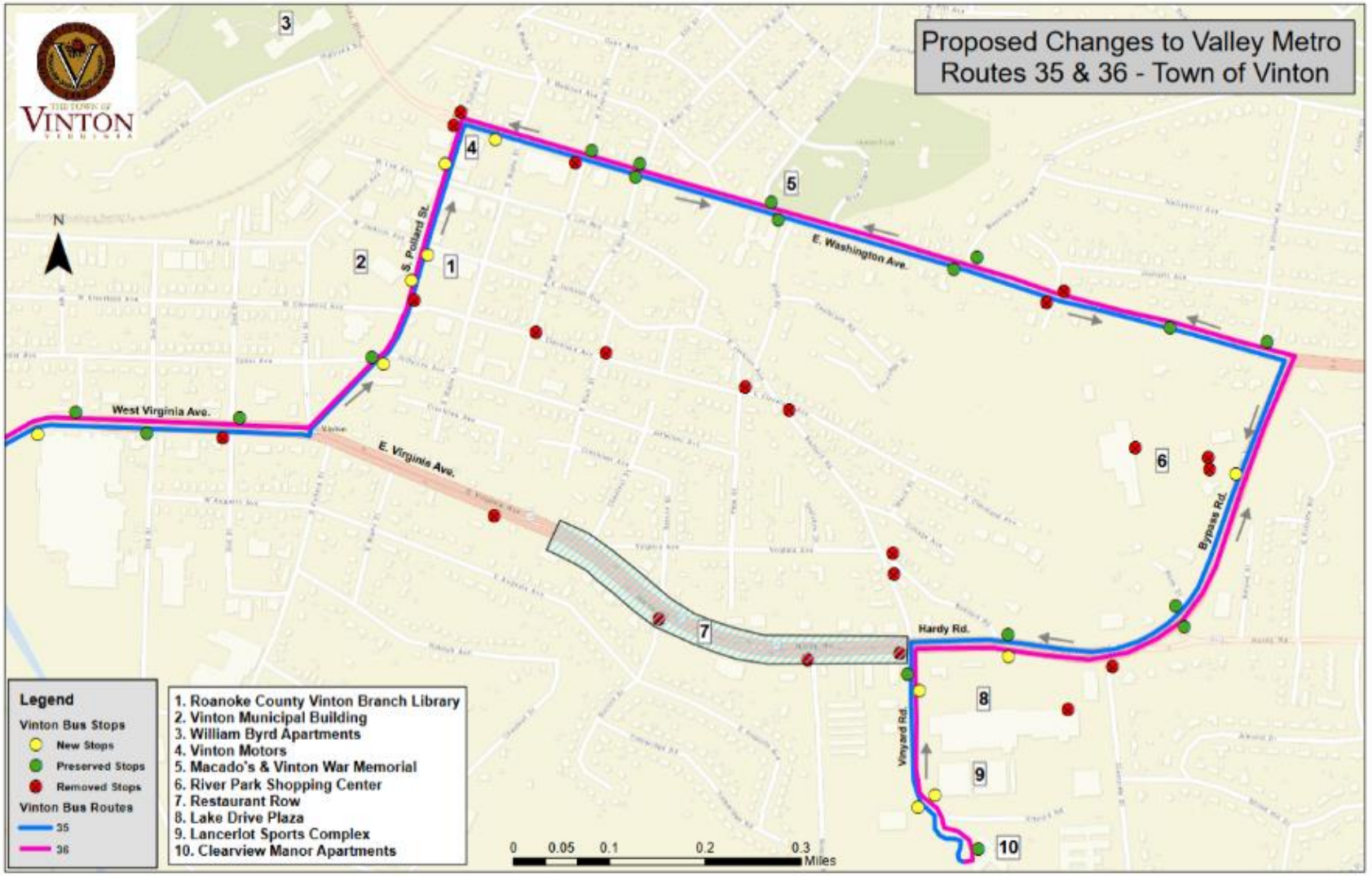
Somfy Digital Network RS485

Bus segment

Route – Wire

Bus – Information

Stops - Motors



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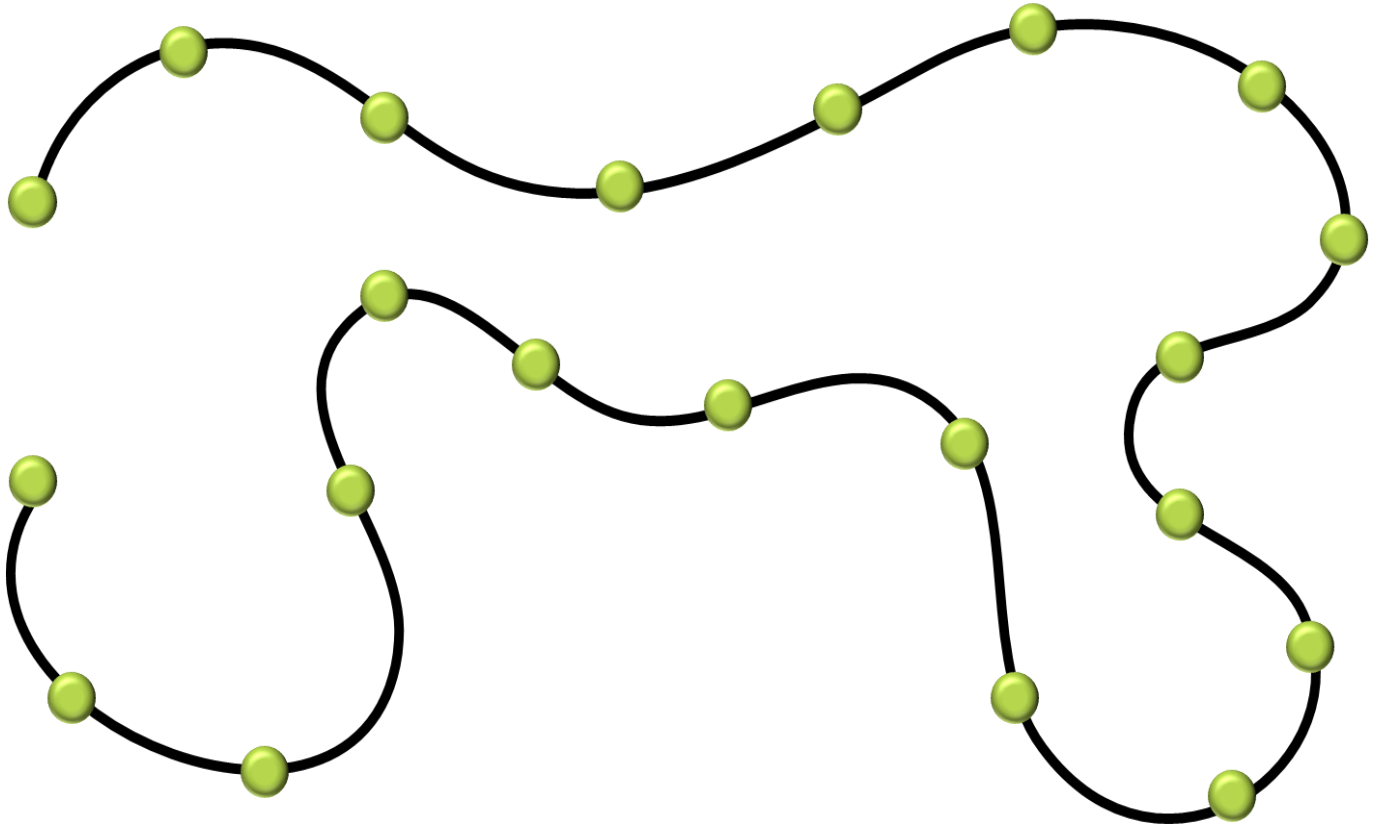
SDN Overview

SDN Bus Line Topology

- Typical layout of **Bus Line Distribution for AC Powered Motors**
- BUS IN to BUS OUT Connections with a defined beginning and end.

Perimeter Bus Line

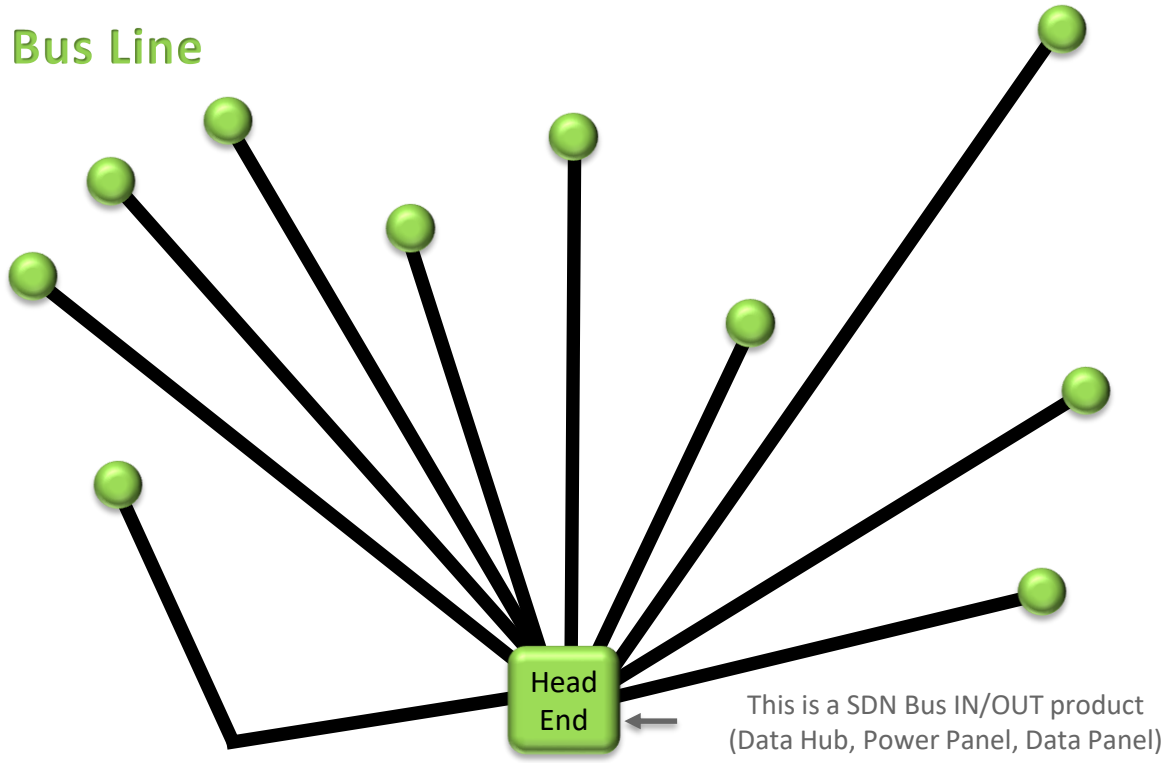


SDN Overview

SDN Bus Line Topology

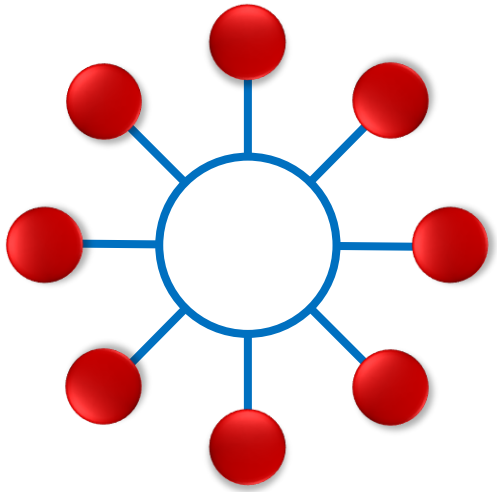
- Typical Layout of **Bus Line Distribution for DC Powered motors**
- BUS IN to BUS OUT Connections with a defined beginning and end.

Home Run Bus Line

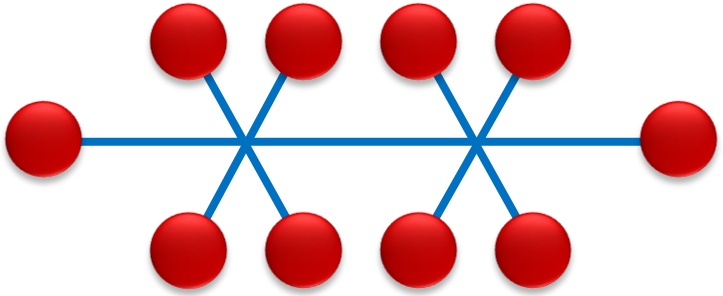


SDN Overview

SDN Bus Line Topology

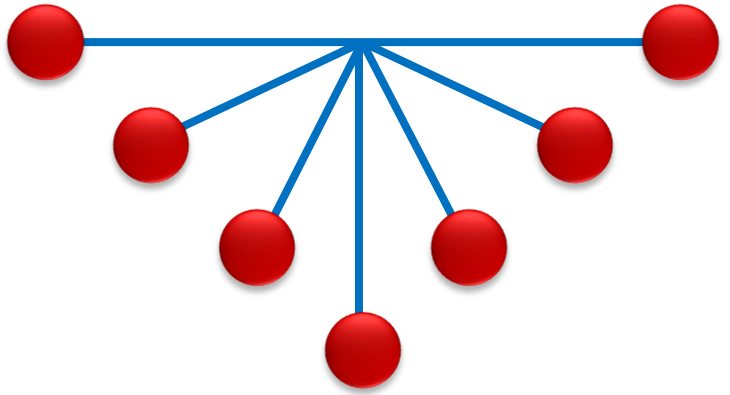


Ring (Avoid)



Backbone with stars or clusters (Avoid)

Star network (Avoid)

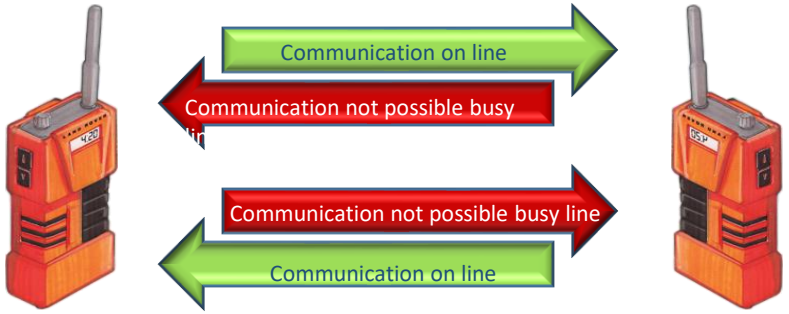


SDN Overview

How Our Motors Communicate

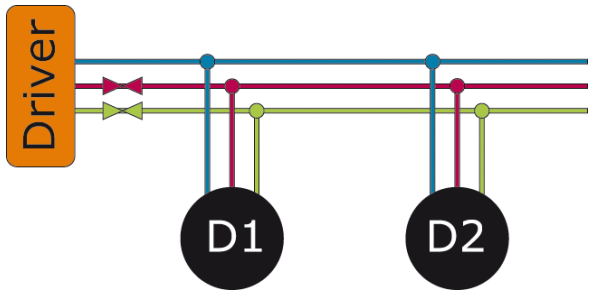
Somfy Digital Network RS485

HALF-DUPLEX



Transmitter

Receiver

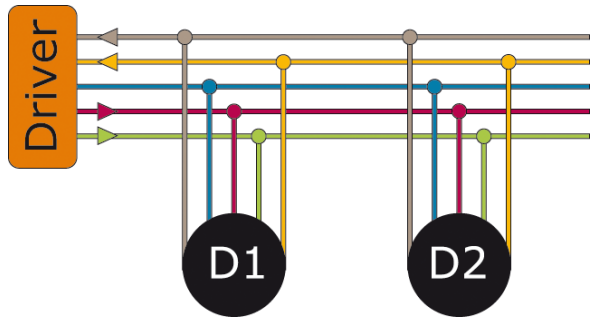


Devices

FULL-DUPLEX

Transmitter / Receiver

Transmitter / Receiver



Devices

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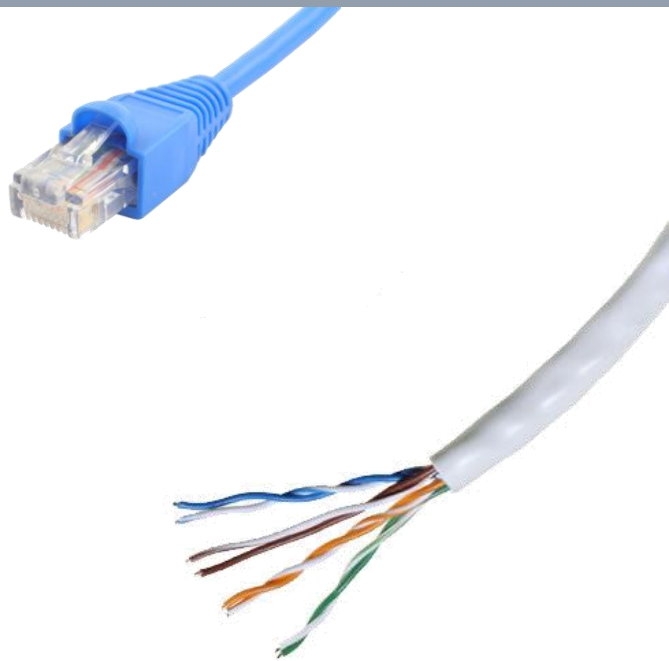
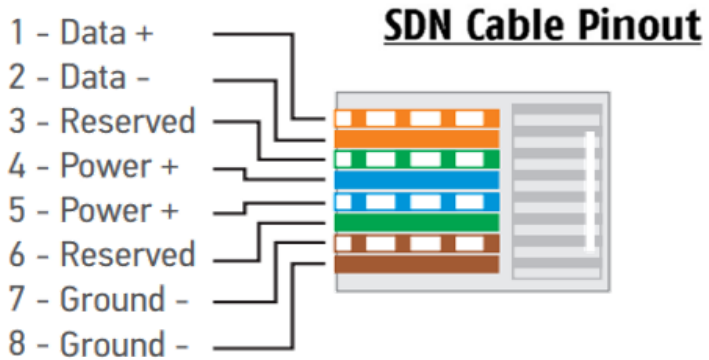
SDN Overview
Category Wire

Wiring Standard

- Utilizes twisted pair (UTP) category wire (Cat5e or higher)
- No substitution for Cat5e or higher
- Terminated with a RJ-45 connection
- Follows T568B standard pinout





SDN Overview

Core Features

Mis-wire Protection

Protection against possible incoming mis-wired connections including swapping the Power and Ground, Power and Data, Ground and Data, or a combination.

System Status

Status lights provide a quick visual confirmation of Bus Power. SDN Bus Activity, SDN Bus Idle State, and End of Line notification.

Isolation

Allows an SDN system to overcome the limitations of RS485

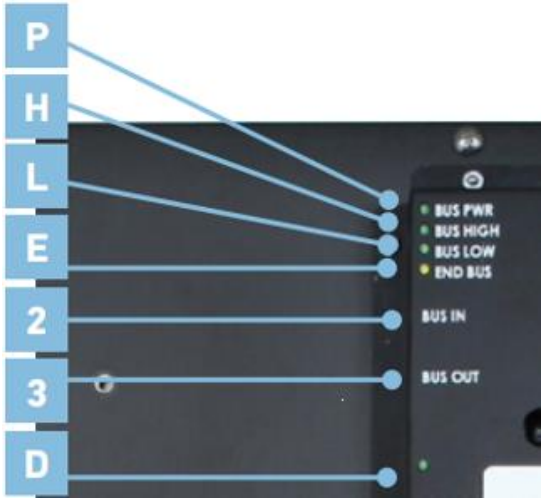
Power Units

A SDN unit of measure created to simplify the calculation of required power supply and amount of power consumption on an SDN Bus.

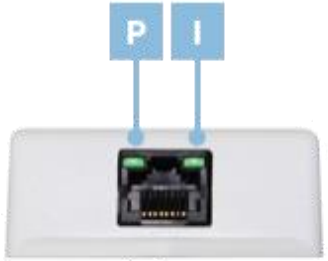
SDN Overview

System Status Signals

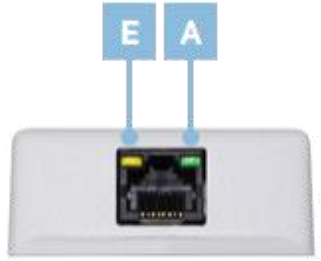
LEDs are used on the SDN 2.0 devices to share common system notifications.



LED Indicators				
LABEL	**ELEMENT**	**COLOR**	**FUNCTION ON**	**FUNCTION OFF**
P	**Bus Power**	Green	Power	No Power
H	**Bus High (I)**	Green	No Data	Data
L	**Bus Low (A)**	Green	Data	No Data
E	**End of Bus**	Yellow	End of Bus	Not End of Bus
D	**Device LED**	Green	Device port powered	Device port not powered



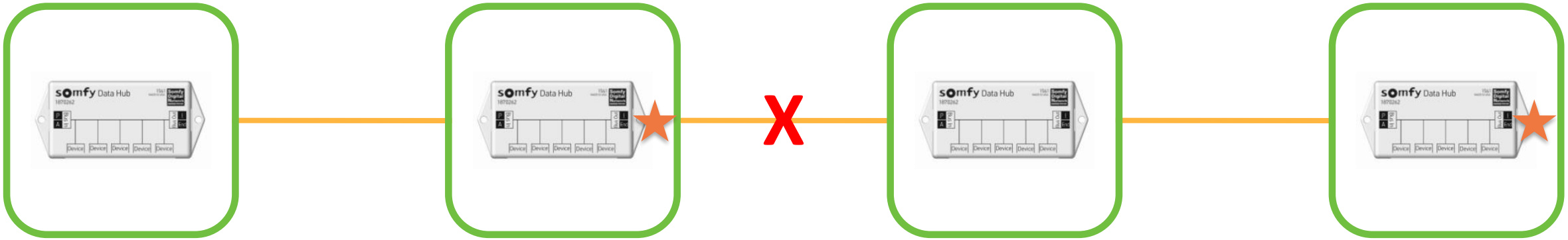
Left view



Right view

SDN Overview

End of Line Notification



SDN Overview

Bus Segment

Rules of an SDN Bus Segment

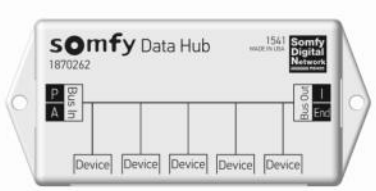
- Each SDN Bus Segment supports:
  - Up To 20 Bus Distribution Devices****
  - 1600 ft. total cumulative length
  - 80-100 Power units

- When there are multiple segments each SDN Bus Segment must be separated by an isolation point.

**** Depending on the bus distribution device

SDN Overview

Bus Segment



Data Hub rev B
(1870262)

- Up To 14 Bus Distribution Devices
- 1600 ft. total cumulative length
- 70 total devices

SDN Mini Data Hub
(1870277)

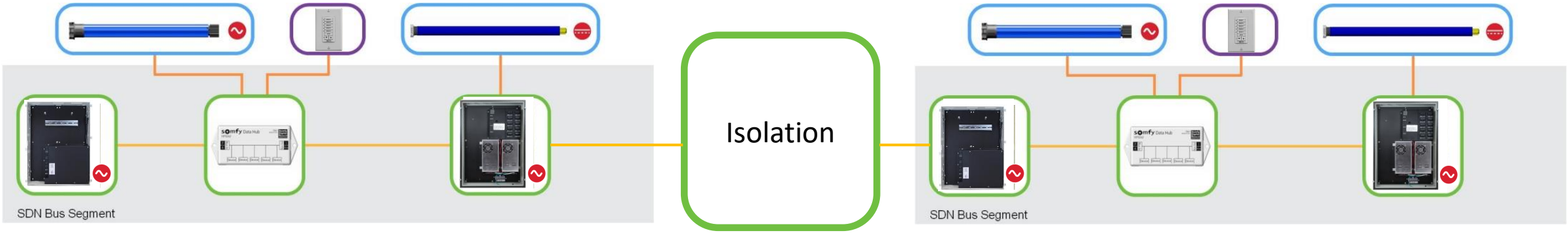
- Up To 20 Bus Distribution Devices
- 1600 ft. total cumulative length
- 60 total devices

Power Panel for SDN
(1870259)

- Up To 10 Bus Distribution Devices
- 1600 ft. total cumulative length
- 120 total devices

SDN Overview
Segment Isolation

- Built-in products - no RS485 knowledge required
- Creates new Bus segments
    - Each segment supports:
        - Up To 20 Bus Distribution Devices
        - 1600 ft. of Bus wiring
- Minimizes communication issues from propagating across segments
- Allows SDN system design to overcome RS485 limitations



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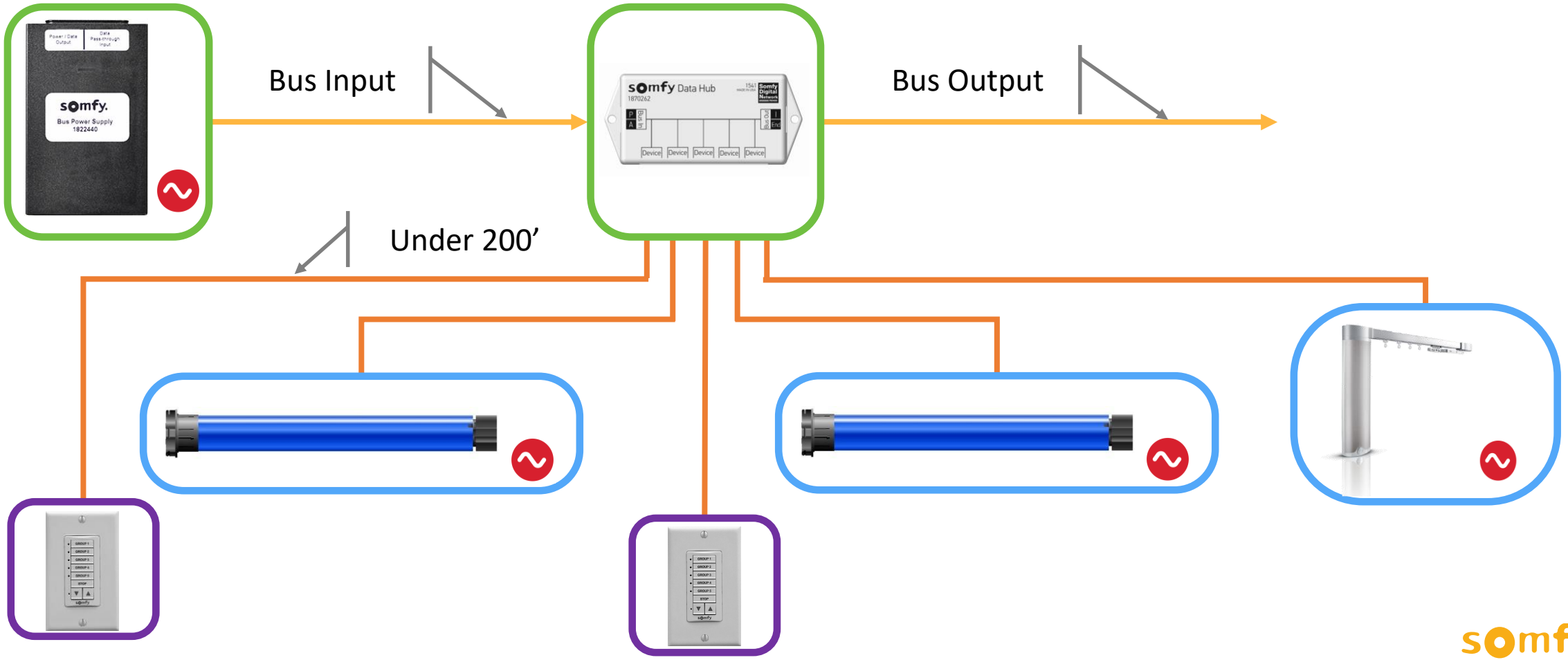
Systematic Design AC Motors

Systematic Design – AC Motors

Basic Application Diagram



Systematic Design – AC Motors

Line Voltage Intelligent Motors

TECHNICAL CHARACTERISTICS	Sonesse® ULTRA 50	Sonesse® 50	LT 50
			Exterior Rated
SOUND LEVEL	≤ 38 dBA ULTRA Quiet	≤ 47 dBA	≤ 55 dBA
TORQUE	6 Nm	6 Nm | 10Nm	15 Nm | 35 Nm
SPEED	24 rpm	32 rpm | 32 rpm	38 rpm | 20 rpm
NOMINAL VOLTAGE	120 VAC - 60 Hz	120V - 60Hz AC	120V - 60Hz AC
CONTROL TECHNOLOGY	W | RTS | Somfy Digital Network	W | RTS | Somfy Digital Network	Somfy Digital Network
CERTIFICATIONS	CE | c UL us	CE | c UL us	CE | c UL us

Somfy DESIGNED FOR SILENCE

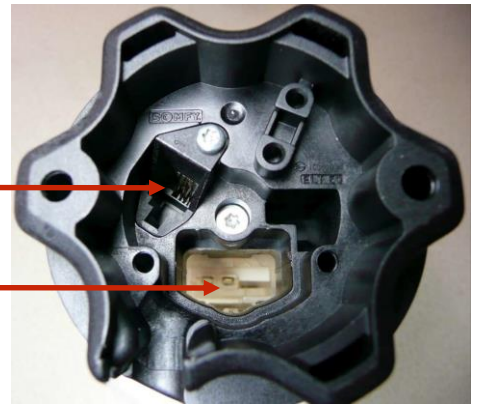
Sonesse 506 UQ	1002566
Sonesse 506	1002286
Sonesse 510	1002287
LT50 515	1002427
LT50 535	1002288

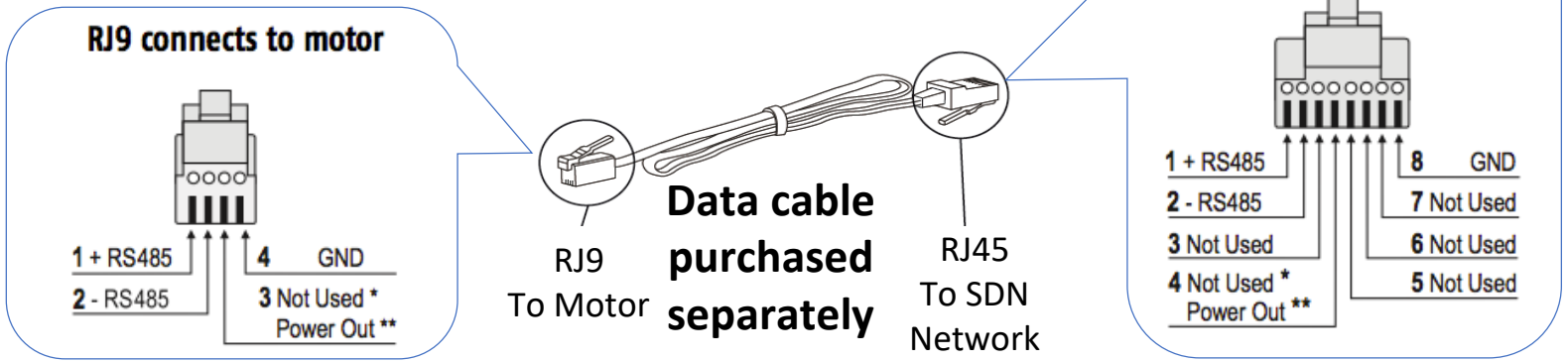
- 6-35 Nm lifting capacity
- Range including quiet motors < 38-55 dBA
- Connects directly to bus distribution
- AC Motors can be wired in parallel to lower electrical installation costs
- Circuit should be using 80% of their capacity when communicating with an electrician. (Ex. 506A2 Motor uses 1.2A/Motor. 13 motors/ 20A circuit).
- Encoder based for precise positioning within +/- 1/16”

Line voltage motors, powered by wall outlets or junction boxes and controlled by SDN

Systematic Design – AC Motors

500 Series RS485 Motor Physical connections





Order Black or Grey Cables for SDN Networks

4 Cond. 26AWG modular cable with RJ9 on one end and RJ45 other end – Direct Keypad or SDN Room Controller Hub

GREY WITH POWER OUT	2.5 ft. long	#9018545
	8 ft. long	#9018546
	12 ft. long	#9018547
	24 ft. long	#9018548

Only to be used with 1 to 1 keypad to motor configuration or SDN Room Controller Hub (1870278)

4 Cond. 26AWG modular cable with RJ9 on one end and RJ45 other end – (SDN – animeo IP)

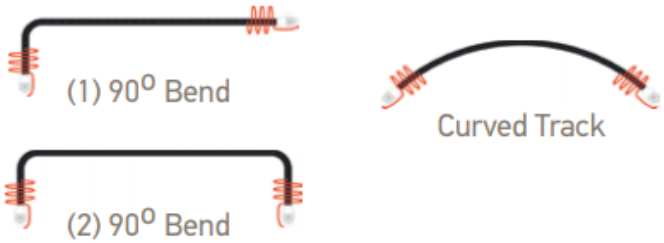
BLACK WITHOUT POWER OUT	2.5 ft. long	#9018541
	8 ft. long	#9018542
	12 ft. long	#9018543
	24 ft. long	#9018544

To be used with Stand-alone SDN or animeo IP networks

Can only be extended using Category 5e or higher cable

Systematic Design – AC Motors

Line Voltage Drapery Motors



Available in straight and curved tracks

Glydea Ultra 60e

- Fabric weights up to 132lbs
- Track lengths of 36’

Glydea Ultra 35e

- Fabric weights up to 77lbs
- Track lengths of 32’

SOUND LEVEL	38 dBA at silent mode*
SPEED	4.9 in./s - 7.86 in./s (silent: 2.95 in./s)
POWER SUPPLY	120V AC 50/60 HZ
CONTROL TECHNOLOGY	RTS / DC / WT / SDN** / ZB**
CERTIFICATIONS	c TUV us, CE

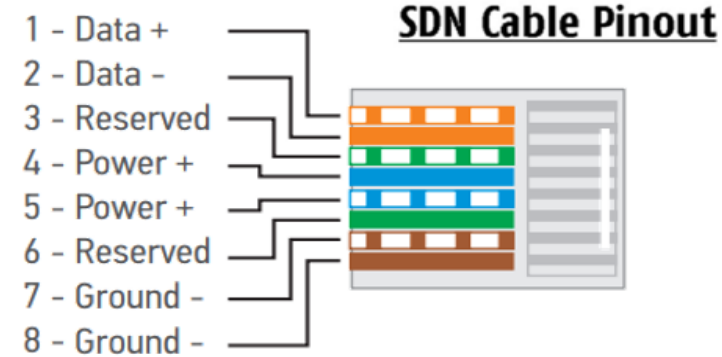
RS485 (2-Way) Module for Glydea Ultra 1870275

Systematic Design – AC Motors

Glydea RS485 Physical Connections

REQUIRED ACCESSORIES

- RS485 Limit Setting Tool #9017142 (limit tool version A11 or higher)
- USB to RS485 Adaptor: #9015260



	ELEMENT	FUNCTION
1	**RJ45 SDN RS485 Connector**	SDN input connection for system operation
2	**Module to Motor Connection**	SDN output with pass-through data and power

Systematic Design – AC Motors

Bus Distribution Components

Features:

- Mis-wire protection
- End of line notification
- System status
- Isolation
- Power units

Components:

<u>Starting an SDN bus:</u>

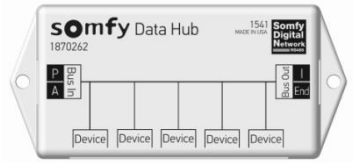
- Bus Power Supply
- Data Panel

<u>Bus Distribution Devices:</u>

- Data Hub
- SDN Mini Data Hub
- Power Panel for SDN
- Extender

Designed around standard RJ-45 connectors

- Low cost field termination
- Easily add more devices
- Simplified troubleshooting

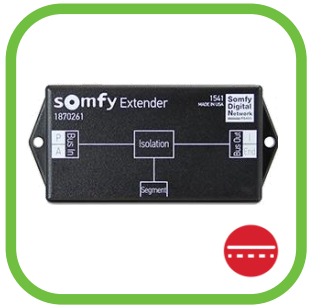


Systematic Design – AC Motors

Bus Power Units – Supply/Consumption

Somfy Digital Network RS485

Supplying Devices:



Extender
provides 100 units

Data Panel
provides 100 units

Power Supply
provides 80 units

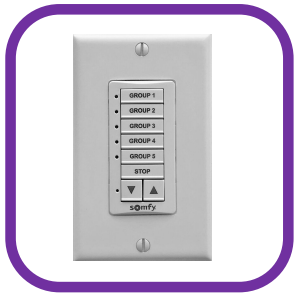
Consuming Devices:

Somfy Connect UAI+
Uses 6 units

Power Panel
Uses 3 unit

Consuming Devices:

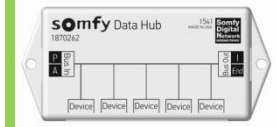
Somfy Connect LTI
Uses 7 units



DecoFlex Keypad
Uses 1 unit

RTS Receiver
Uses 1 unit

Glydea Card
Uses 1 unit



Data Hub
Uses 2.5 unit

Mini Hub
Uses 2 unit

Sum of consuming devices can not exceed supply in each bus segment

somfy

Systematic Design – AC Motors

Bus Power Supply

- Provides 24V DC power for devices on the SDN Bus.

Features:

- Best for single SDN segment systems
- 200 ft. Wire Distance to the first Bus Distribution Device
- Fault-tolerant
- Needs a dedicated 120V AC outlet
- Pass-through SDN connection
- Provides 80 Bus power units
- Current overload indicator

Bus and Sensor Station Power Supply (1822440)

Systematic Design – AC Motors

Bus Power Supply

	ELEMENT	FUNCTION
1	**SDN Data Pass-through Input (RJ45)**	SDN input connection for pass-through operation
2	**SDN Power/Data Output (RJ45)**	SDN output with pass-through data and power
3	**LED Status Indicator**	Blue = Powered normal operation Purple = Operating at excess of 80% capacity
4	**Power Input**	100-240V AC using supplied power cable
5	**RST**	Reset (pin-button)

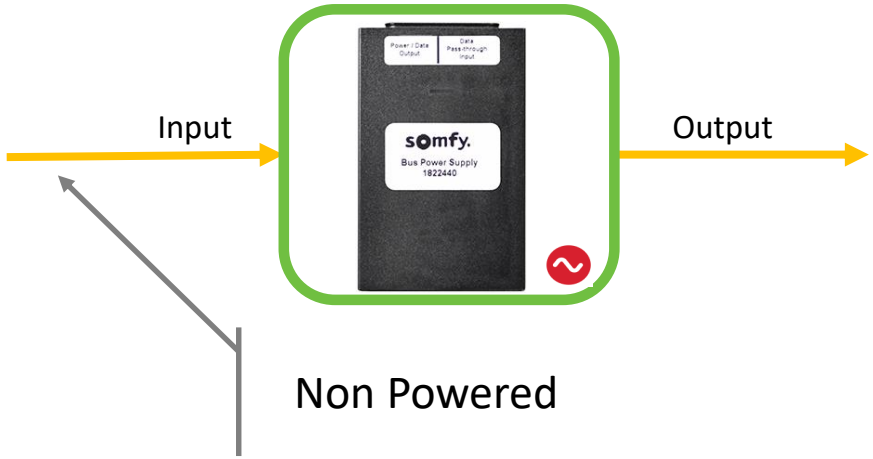
Systematic Design – AC Motors

Bus Power Supply

Two Uses

Power devices in a single segment system

- Provides bus power to auxiliary bus devices (not motors)
- Provides 80 power units



Power devices for programming

- Easily program and troubleshoot SDN devices

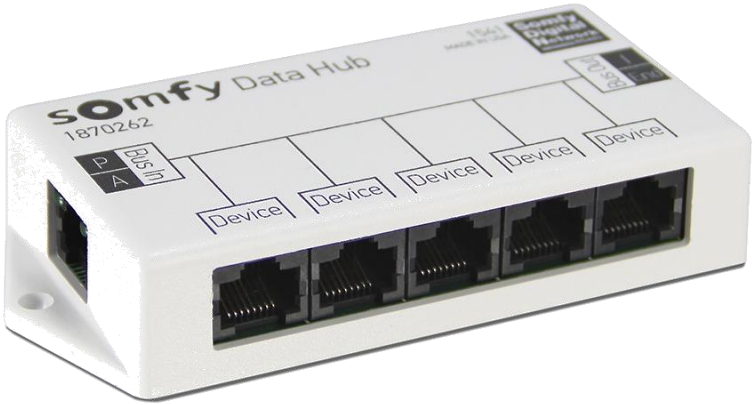
Systematic Design – AC Motors

Data Hub

- Adds 5 device ports to an SDN Bus
- Supports wire stub up to 200 ft.
  - Wire Stubs DO NOT COUNT toward the cumulative wire distance
- Use REV A or Higher
- Max 14 Data Hubs on a Bus Segment
- CANNOT combine with min hubs or power panels
- When installing in J-box use a minimum 6”x 6” J-box

Features:

- System status LEDs:
- Bus power (P)
- Communication
  - Active (A)
  - Inactive (I)
  - End of line (E)
- Mis-wire protection



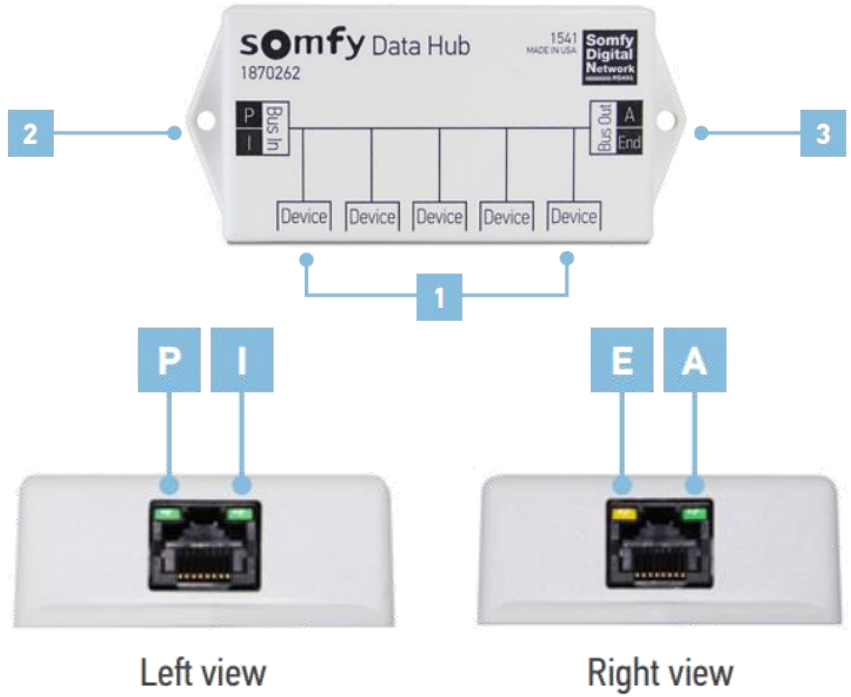
Data Hub rev B
(1870262)

Systematic Design – AC Motors

Data Hub

	ELEMENT	FUNCTION
1	**Device Port**	5 devices less than 200 ft. from the main bus line (each port has 200 ft. wire length limitation)
2	**SDN Bus Input**	Input for bus signals
3	**SDN Bus Output**	Output for bus signals

LED Indicators				
LABEL	**ELEMENT**	**COLOR**	**FUNCTION ON**	**FUNCTION OFF**
P	**Bus Power**	Green	Power	No Power
I	**I (idle)**	Green	No Data	Data
E	**End (end of line)**	Yellow	End of Bus	Not End of Bus
A	**A (activity)**	Green	Data	No Data

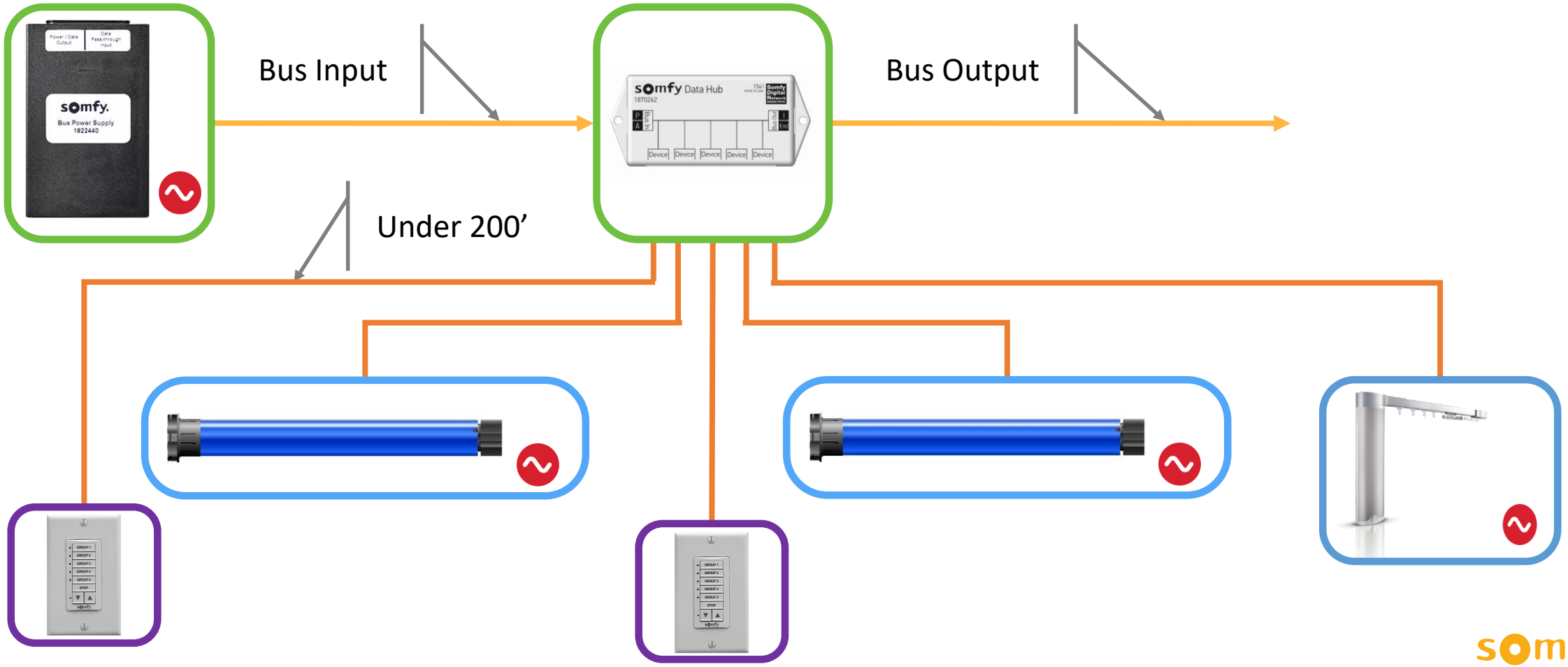


Systematic Design – AC Motors

Data Hub

Somfy Digital Network RS485

<u>Add 5 device ports to a system</u>



somfy

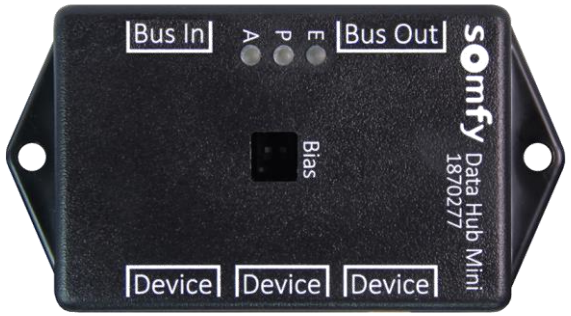
Systematic Design – AC Motors

SDN Mini Data Hub

- Adds 3 device ports to an SDN Bus
- Supports wire stub up to 200 ft.
  - Wire stubs DO count toward the cumulative wire distance
- Smaller hub ideal to fit in shade pocket
- Max 20 Mini Data Hubs on a Bus Segment
- CANNOT be combined with data hubs rev B on the same bus segment
- When installing in J-box use a minimum 6”x 6” J-box

Features:

- System status LEDs:
  - Bus power
  - Communication
  - End of line notification
- Mis-wire protection



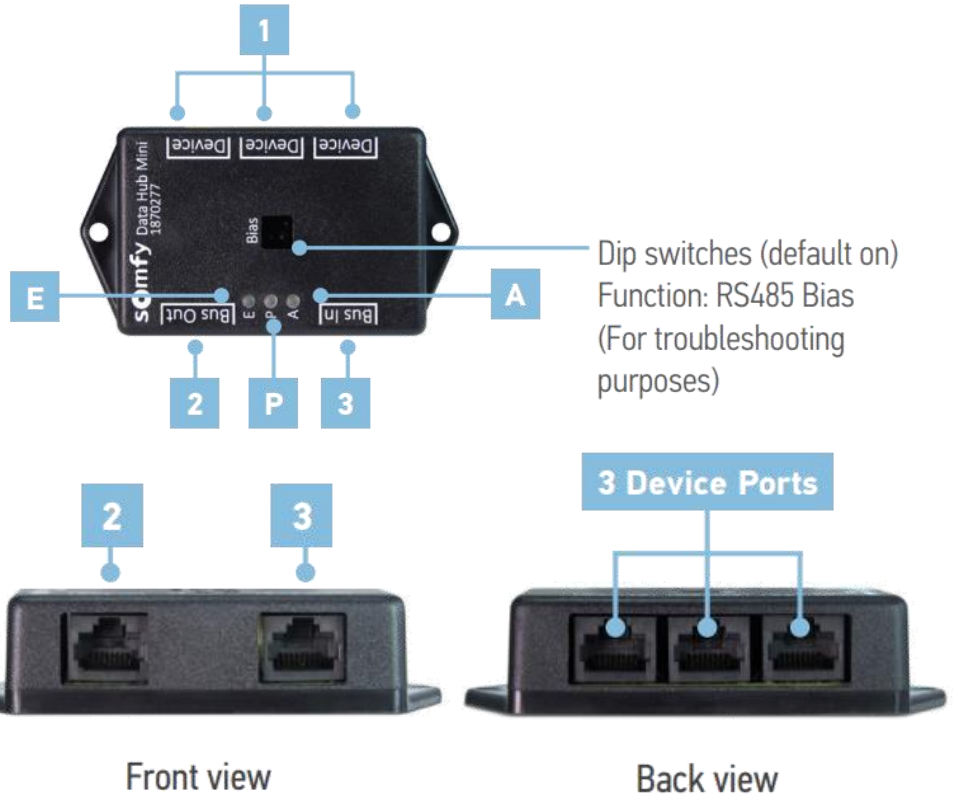
SDN Mini Data Hub
(1870277)

Systematic Design – AC Motors

SDN Mini Data Hub

	ELEMENT	FUNCTION
1	**Device Port**	3 devices less than 200 ft. from the main bus line
2	**SDN Bus Output**	Output for bus signals
3	**SDN Bus Input**	Input for bus signals

LED Indicators				
LABEL	**ELEMENT**	**COLOR**	**FUNCTION ON**	**FUNCTION OFF**
P	**Bus Power**	**Red**	Power	No Power
E	**End (end of line)**	**Yellow**	End of Bus	Not End of Bus
A	**Data Activity**	**Green**	Flashes when transmitting data	

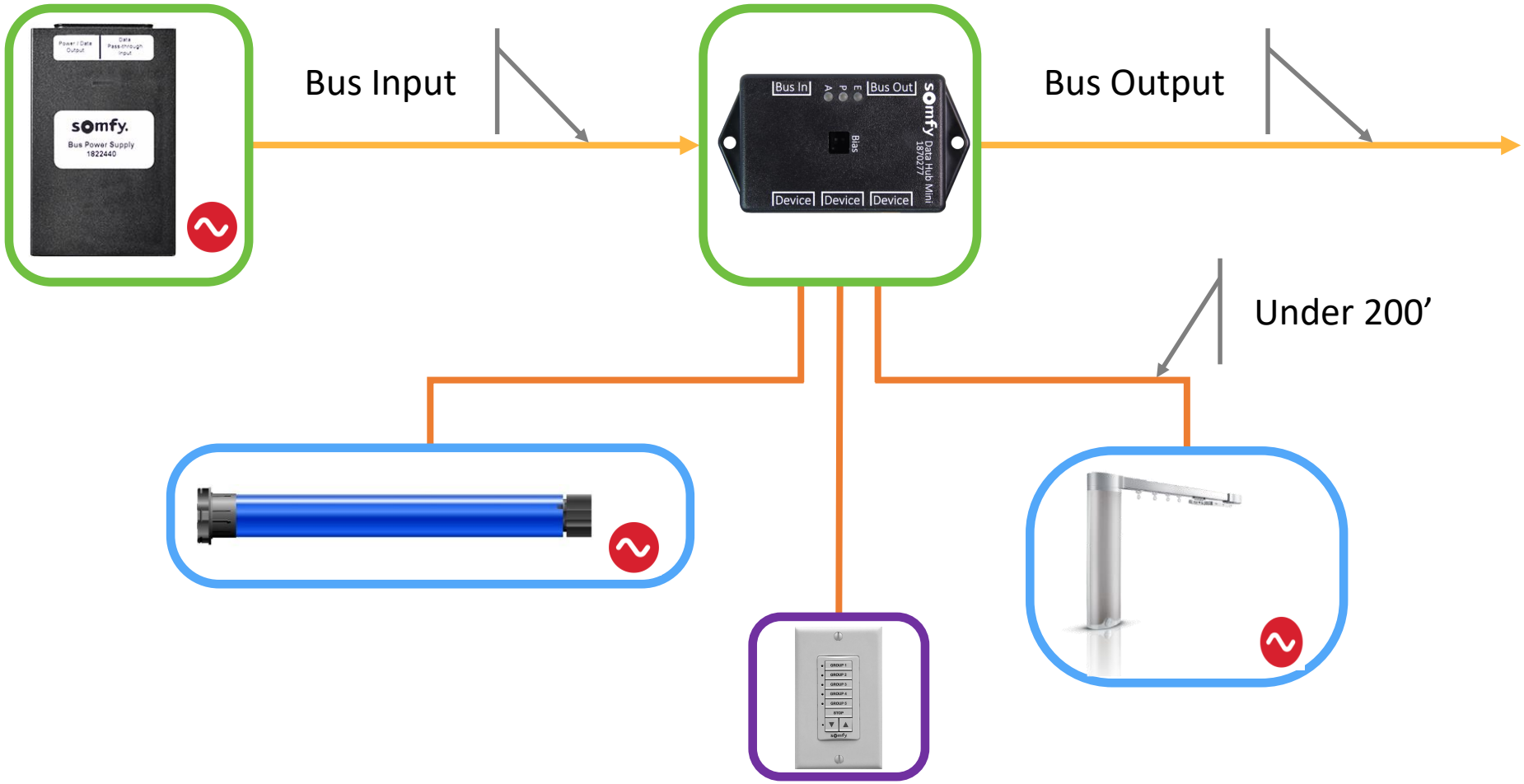


Systematic Design – AC Motors

SDN Mini Data Hub

Somfy Digital Network RS485

<u>Add 3 device ports to a system</u>



somfy.

Systematic Design – AC Motors

SDN DecoFlex™ Digital Keypad

- In-wall control with plug-in connections
- 6 Button and 8 button configurations
- Dry contact third party integration
- Custom engravable buttons
- Fits into any Decora wall plate
- Powered and communicates over single wire
- Available in White*, Black, & Ivory

**Part number show for white version only*

6 button

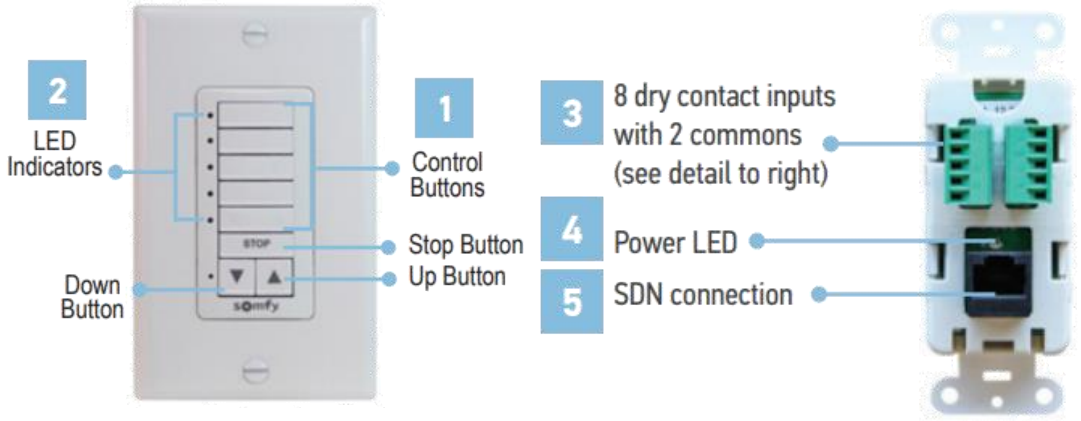
8 button

SDN DecoFlex Digital Keypad 6-Button White 1811252 (shown)
SDN DecoFlex Digital Keypad 8-Button White 1811253 (shown)
SDN DecoFlex Digital Keypad with Group Function 6-Button 1811749
SDN DecoFlex Digital Keypad with Group Function 8-Button 1811750

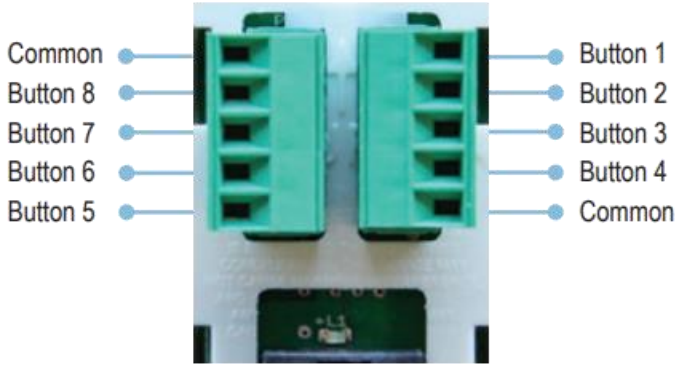
Systematic Design – AC Motors

SDN DecoFlex™ Digital Keypad

	ELEMENT	FUNCTION
1	**Buttons**	Press for motor control. Can be programmed with functions for Press, Release, Hold and Sequential
2	**Front LEDs**	Group selection Amber - Solid in SDN mode and flashes in group mode
3	**Dry Contact Inputs**	Triggers programmed button function
4	**Power LED**	Blinking Red - SDN power
5	**SDN Connection**	Power and data connection to SDN bus

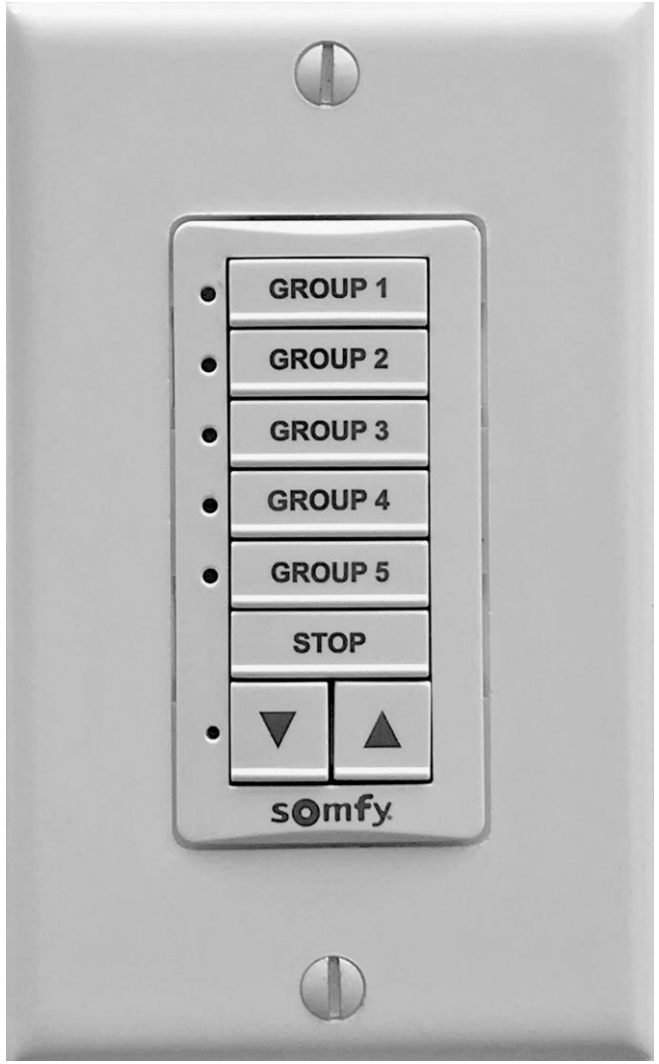


Detail of Inputs



Systematic Design – AC Motors

SDN DecoFlex™ Digital Keypad - Functions



Systematic Design – AC Motors

SDN DecoFlex™ Digital Keypad - Functions

Press

Click!

Go Down!

Systematic Design – AC Motors

SDN DecoFlex™ Digital Keypad - Functions

Release

Let go!

Stop!

Systematic Design – AC Motors

SDN DecoFlex™ Digital Keypad - Functions

Hold

Click!

1 2

Program IP!

Systematic Design – AC Motors

SDN DecoFlex™ Digital Keypad - Functions

Sequential

1 Down

2 Stop

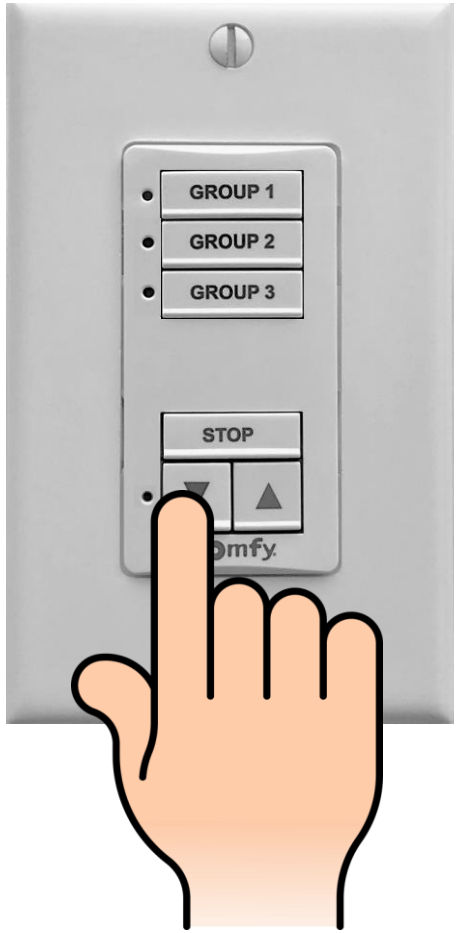
3 Up

2 Stop

1 Down

Systematic Design – AC Motors

SDN DecoFlex™ Digital Keypad - Functions



Sequential

1 Down

2 Stop

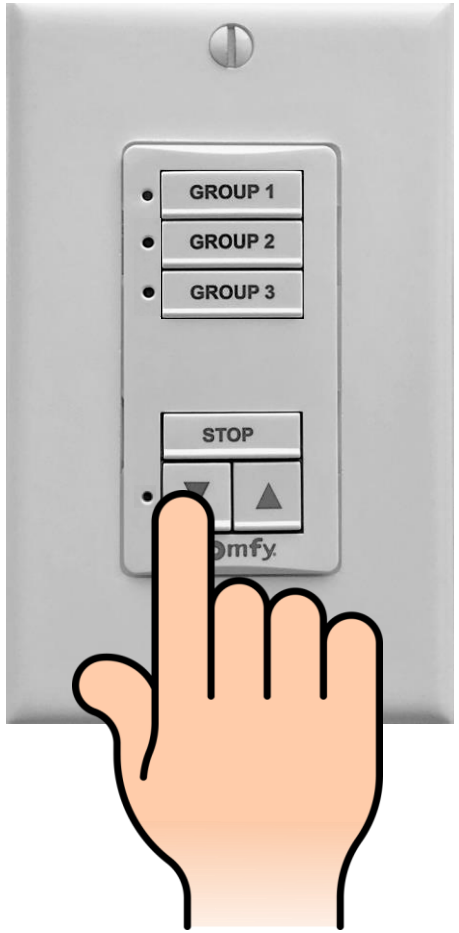
3 Up

2 Stop

1 Down

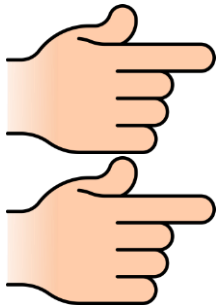
Systematic Design – AC Motors

SDN DecoFlex™ Digital Keypad - Functions



Sequential

1 Down



2 Stop

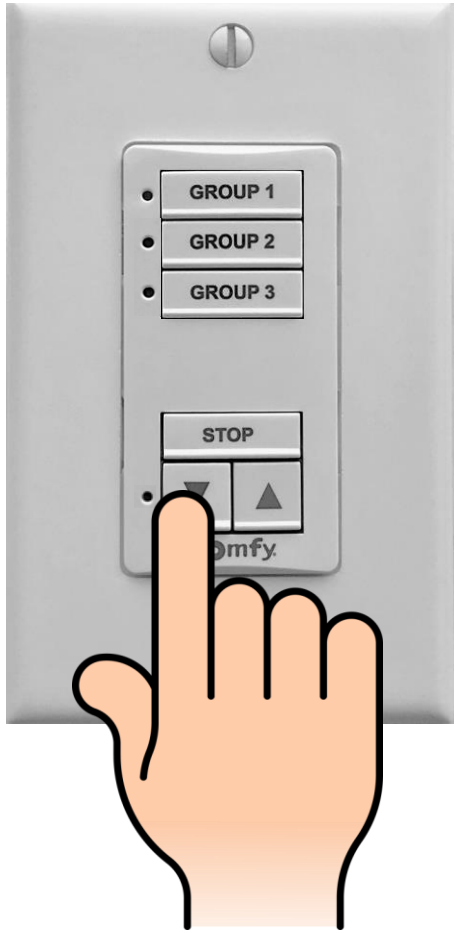
3 Up

2 Stop

1 Down

Systematic Design – AC Motors

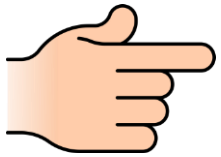
SDN DecoFlex™ Digital Keypad - Functions

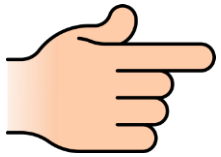


Sequential

1 Down

2 Stop

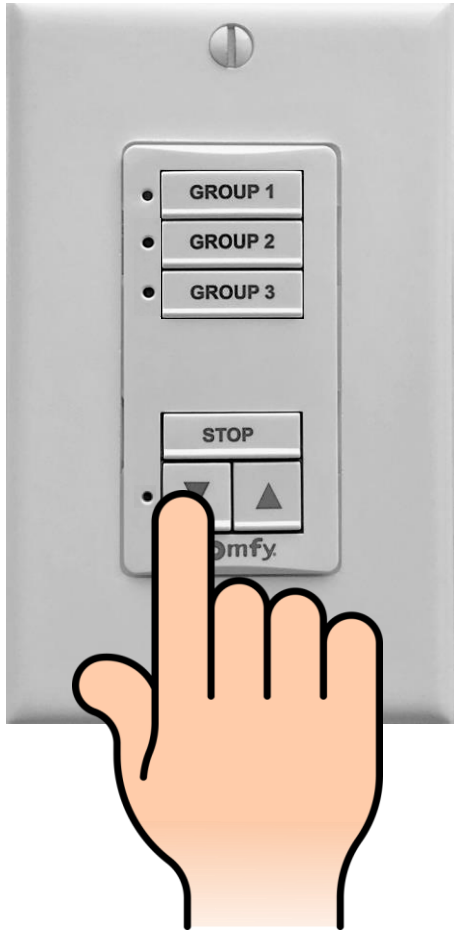

3 Up


2 Stop

1 Down

Systematic Design – AC Motors

SDN DecoFlex™ Digital Keypad - Functions

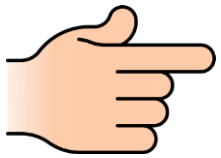


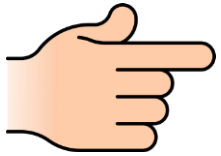
Sequential

1 Down

2 Stop

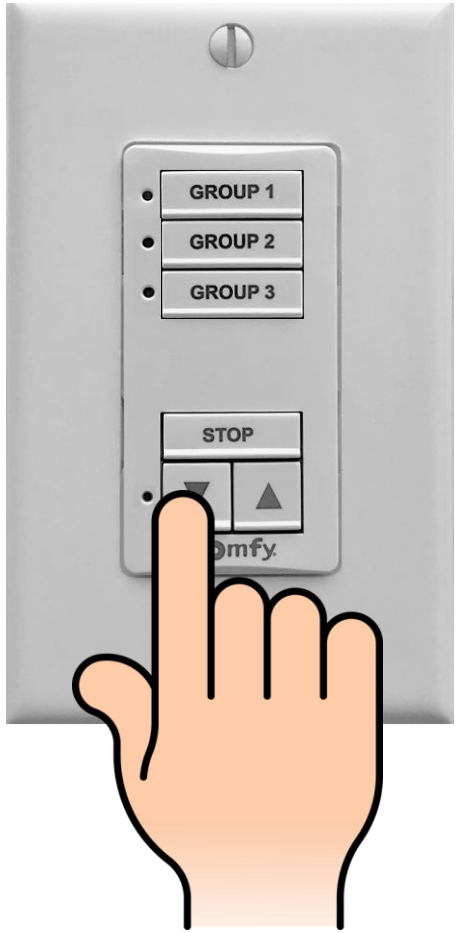
3 Up


2 Stop


1 Down

Systematic Design – AC Motors

SDN DecoFlex™ Digital Keypad - Functions

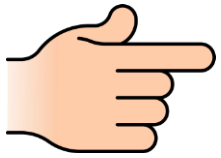


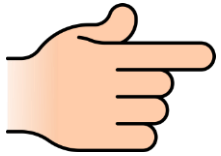
Sequential

1 Down

2 Stop

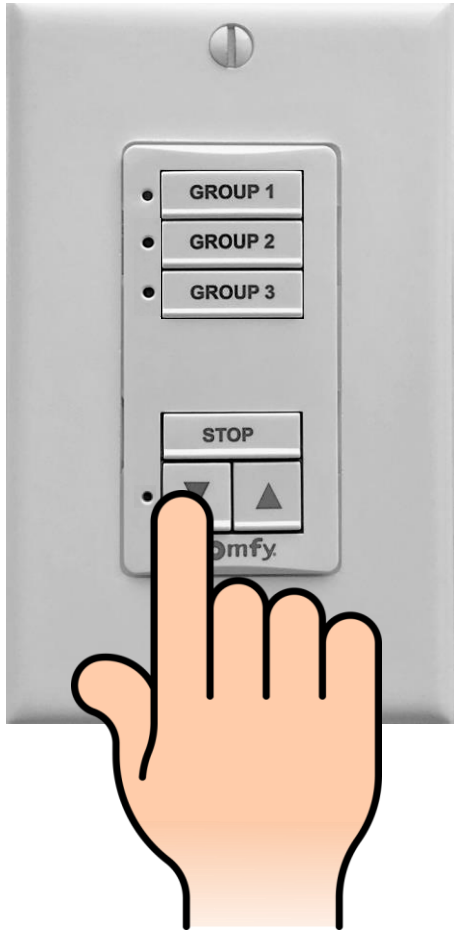
3 Up


2 Stop


1 Down

Systematic Design – AC Motors

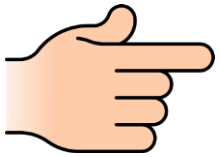
SDN DecoFlex™ Digital Keypad - Functions

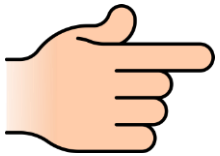


Sequential

1 Down

2 Stop

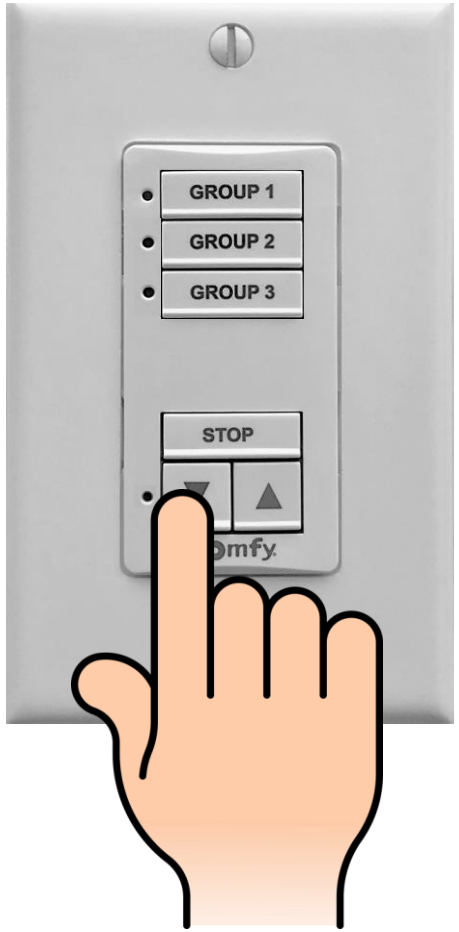

3 Up


2 Stop

1 Down

Systematic Design – AC Motors

SDN DecoFlex™ Digital Keypad - Functions



Sequential

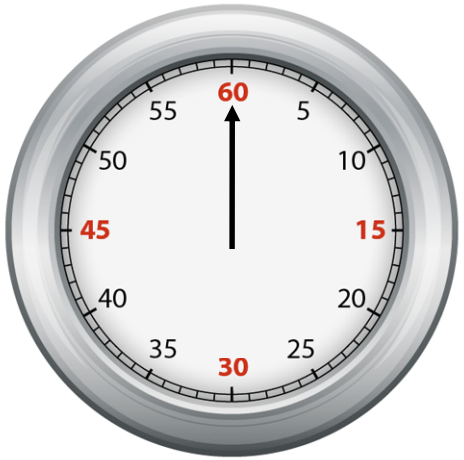
1 Down

~~2 Stop~~

3 Up

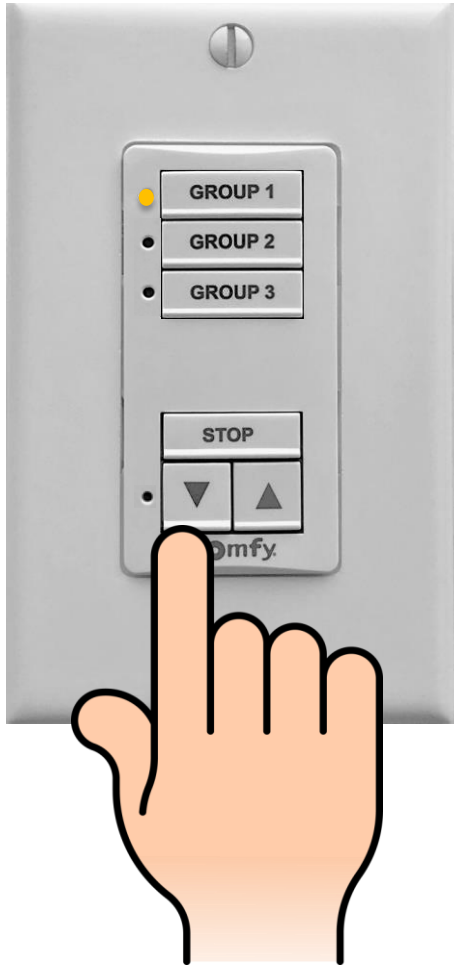
~~2 Stop~~

1 Down



Systematic Design – AC Motors

SDN DecoFlex™ Digital Keypad - Functions



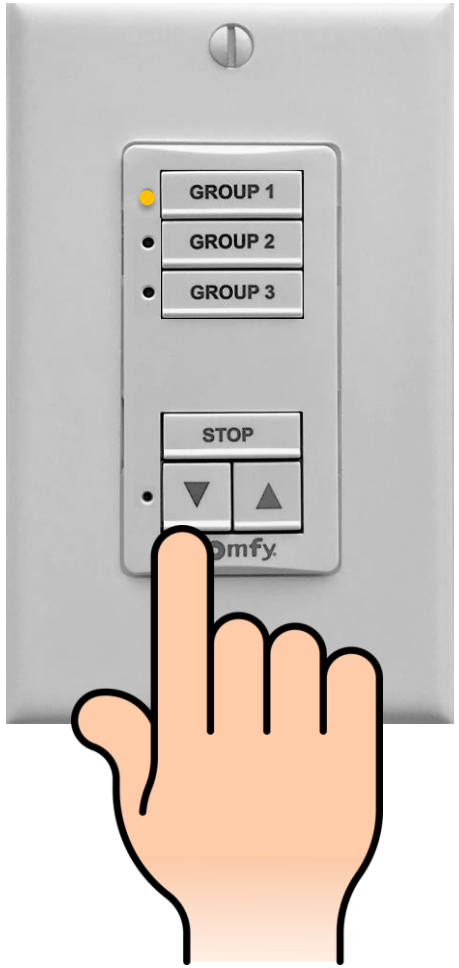
Group

Click!

Select Group

Systematic Design – AC Motors

SDN DecoFlex™ Digital Keypad - Functions



Group

Click!

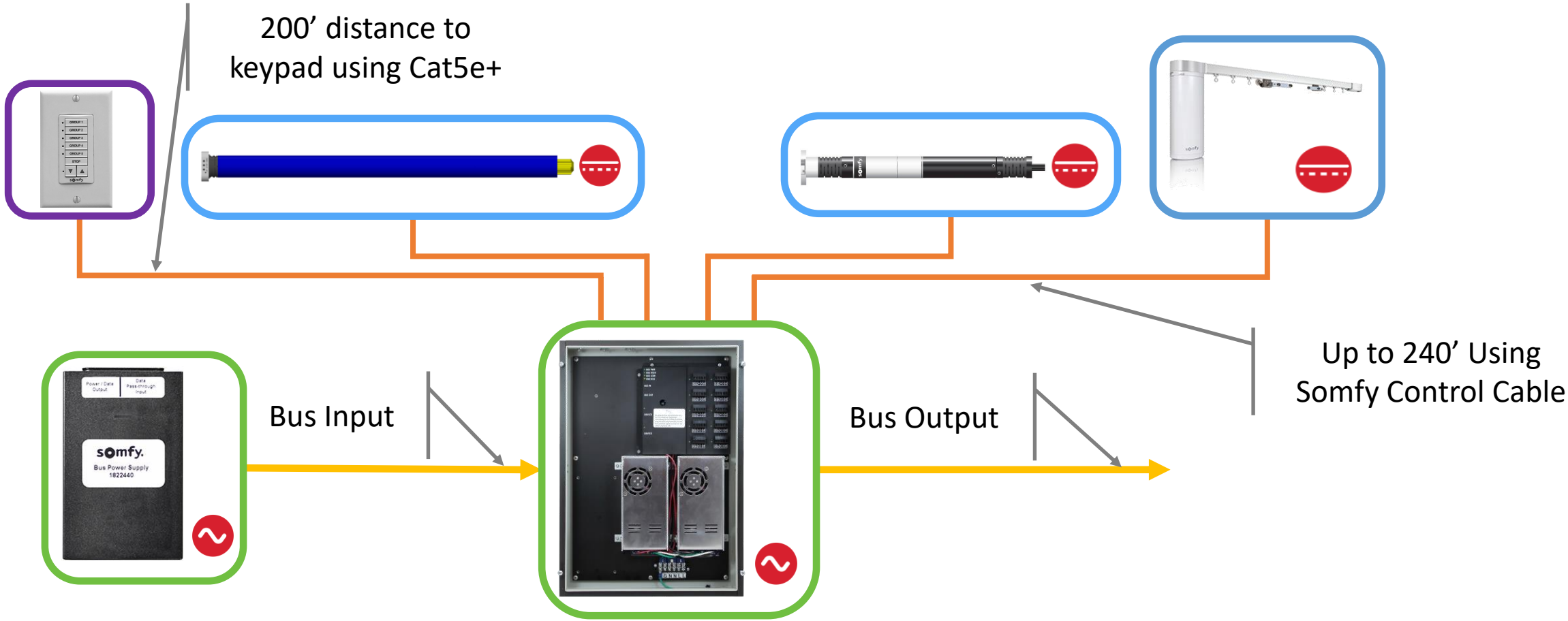
Go Down!

4

Systematic Design DC Motors

Systematic Design – DC Motors

Basic Application Diagram



SDN Low-voltage Motor Power and Data Cable

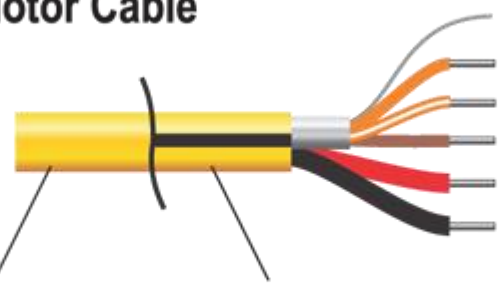
Features:

- 14 AWG power pair
- 22 AWG 3 conductor shielded triad for control
- Extra thick jacketing for durability and pulling
- NEC rated CL3R, RoHS II compliant
- 1000 Foot spools standard
- Non-Plenum 9020126 / Plenum 9020127

Wiring Distance to motor:

- 240ft with 14AWG wire

Somfy SDN Low-voltage Motor Cable
Data and Power Cable
24V DC / SDN Control
5 conductor cable



9020126 - Non-plenum Rated

9020127 - Plenum Rated

Systematic Design – DC Motors

Low Voltage Intelligent Motors

TECHNICAL CHARACTERISTICS	Sonesse® **ULTRA** 50 DC	Sonesse® 30
SOUND LEVEL*	≤ 38 dBA ULTRA Quiet	≤ 44 dBA
TORQUE	4 Nm	2 Nm
SPEED	25 rpm (adjustable speed)	28 rpm (adjustable speed)
NOMINAL VOLTAGE	24V - DC	24V - DC
CONTROL TECHNOLOGY	RTS | Somfy Digital Network	RTS | Somfy Digital Network | DRY CONTACT
CERTIFICATIONS	CE | UL	CE

Somfy DESIGNED FOR SILENCE

Sonesse 504 UQ	1134022
Sonesse 30	1000658

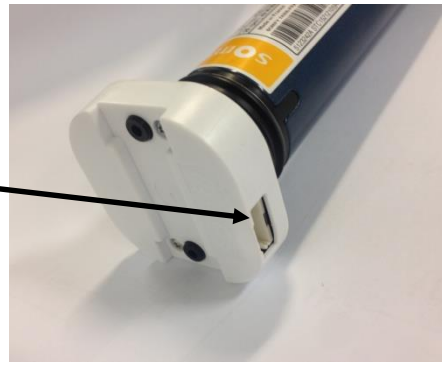
- 2 or 4 Nm lifting capacity (18-36lbs)
- Quiet motors < 38 or 44 dBA
- Connects to bus distribution using power panels
- Connect up to 20 motors to 20A circuit
- Encoder based for precise positioning within +/- 1/16

Low voltage motor, powered by the Power Panel for SDN

Systematic Design – DC Motors

Sonesse Ultra 50 DC RS485 Motor – Physical Connections

SDN & Power Connector

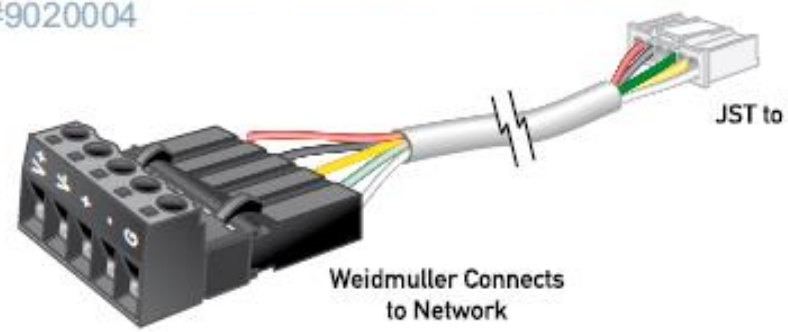


Standard power and data pigtail included with motor:

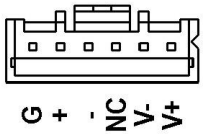
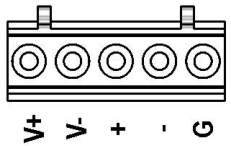
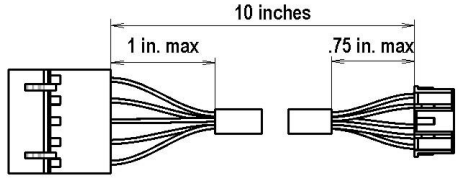
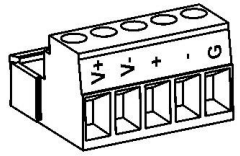
POWER

DATA

SONESSE® ULTRA 50 RS485 CONTROL CABLE
Part #9020004



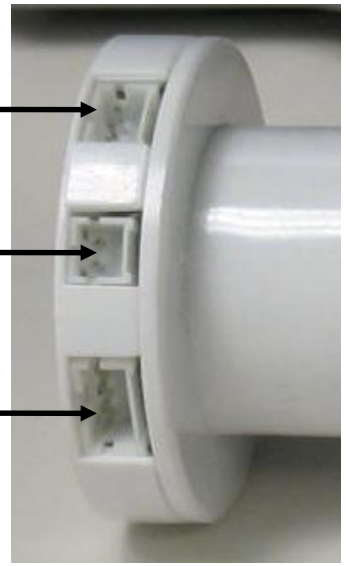
Pigtail: Data and Power

Motor Head Connection	DC Motor Port Connection	Cable Detail View	Connector Markings Detail View	Maximum Power Cable Length
				

GAUGE	LENGTH
14 AWG	240 Ft.
16 AWG	150 Ft.
18 AWG	100 Ft.

Systematic Design – DC Motors

Sonesse 30 RS485 Motor – Physical Connections



Standard power and data cables included with motor:

POWER

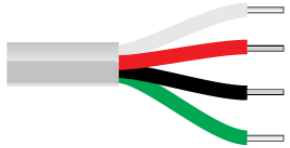
24V DC POWER CABLE
2 Conductor
7.5′ Length

stripe = positive

white = negative

DATA

RS485 Communication Cable
3 conductor
7.5″ length



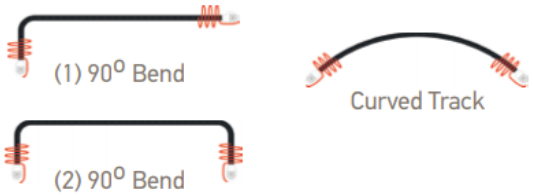
white = Not used
red = SDN (+)
black = SDN (–)
green = Bus power GND

Optional power and data pigtail available for this motor:

SONESSE® 30 DC RS485 CABLE DATA AND POWER PIGTAIL Part #9020261

Systematic Design – DC Motors

Low Voltage Intelligent Drapery Motor



Irismo 35

- Weights up to 77lbs
- Length of 32’

Power Supply	24V DC
Amperage	2 A
Average linear speed	87.5 RPM
Power consumption	< 3 W
Power cable type	13.2 ft. (4 m)
Control connector type	RJ12
DCT control circuit voltage	5V DC
Motor sound level	<44 dBA
Certifications	CE
Track maximum length	32 ft. (9.7 m)
Maximum number of junctions	2
Minimum bending radius	11.8 in. (30 cm)
Minimum curving radius	118 in. (300 cm)
Side opening max weight	77 lbs. (35 kg)
Center opening max weight	77 lbs. (35 kg)
Tandem alternative (see page 21)	154 lbs. (70 kg)

Available in straight and curved tracks

RS485 Module for Drapery Motors 1811129

Systematic Design – DC Motors

Low Voltage Intelligent RS485 Drapery Motor – Physical Connections

Irismo 35 DC Drapery Motor with SDN Enclosure/Control Kit Ref.1870282

RJ45 Connector

9025012 – DC Drapery Adaptor for SDN & Power Over Ethernet (POE) Gateway (included in the kit)

Systematic Design – DC Motors

Power Panel for SDN

- Add 10 motor device ports and 2 device ports to an SDN Bus
- Consumes 3 power units
- Includes a keyed door

Features:

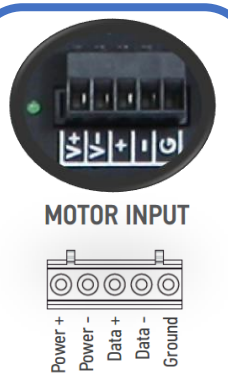
- Directly power two user interfaces
- System status LEDs:
  - Power
  - Communication
  - End of line notification
- Mis-wire protection
- Requires Bus Power Supply
- Wire Stubs DO NOT COUNT toward the cumulative wire distance
- Max 10 Power Panels on a Bus Segment
- Requires 3 Twisted Shielded conductors for communication and 2 conductors for power
- Recommend Somfy Low-Voltage Power & Data Cable

Wiring Distance to motor

- 240ft with 14AWG with Somfy Low-Voltage Power & Data Cable
- Supports voltages from 22.8V – 25.2 V

SDN Bus In/Out

SDN Device Ports



Power Panel for SDN
(1870259)

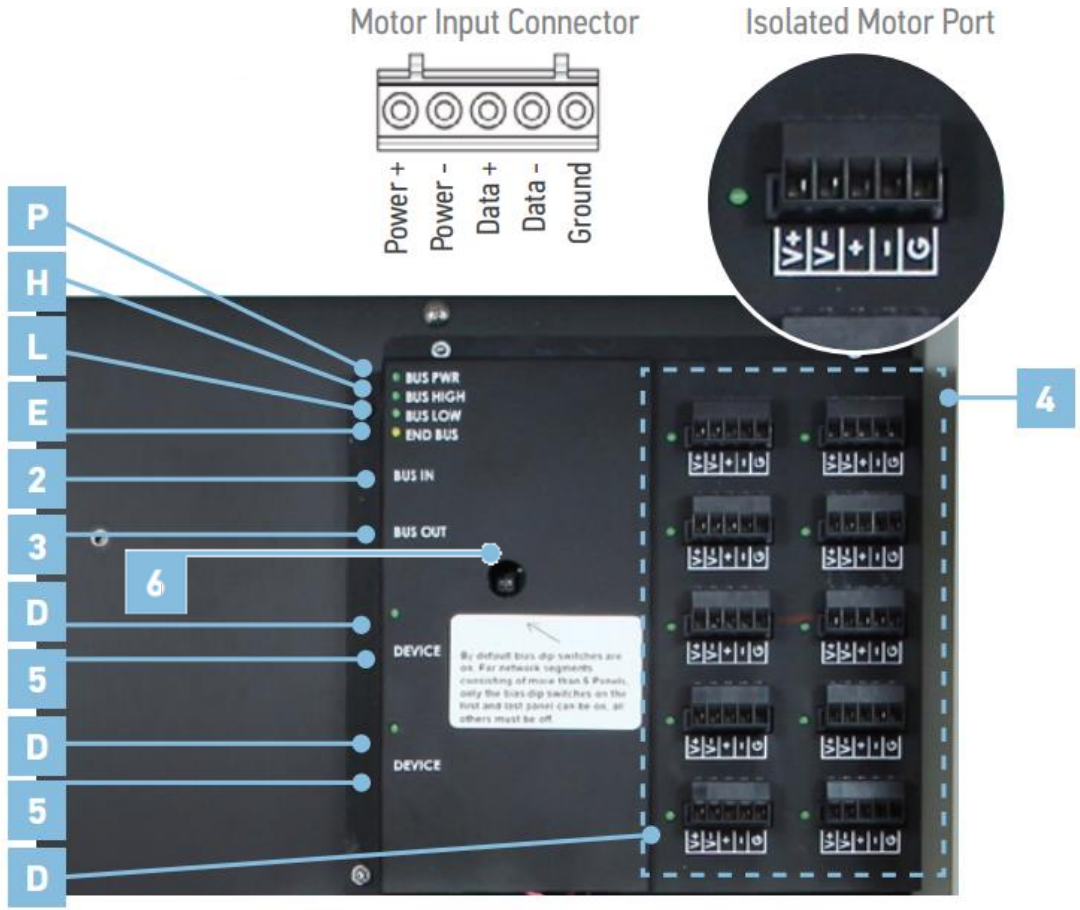
Systematic Design – DC Motors

Power Panel for SDN

	ELEMENT	FUNCTION
1	**Power Input**	Screw terminal block. Only use 14AWG solid or stranded.
2	**SDN Bus Input**	Input for bus signals
3	**SDN Bus Output**	Output for bus signals
4	**Isolated Motor Port**	10 low voltage motors to SDN network
5	**Device Port**	2 SDN devices to the SDN network (max. 200 ft. each)
6	**Dip Switches**	For SDN signal attenuation

LED Indicators

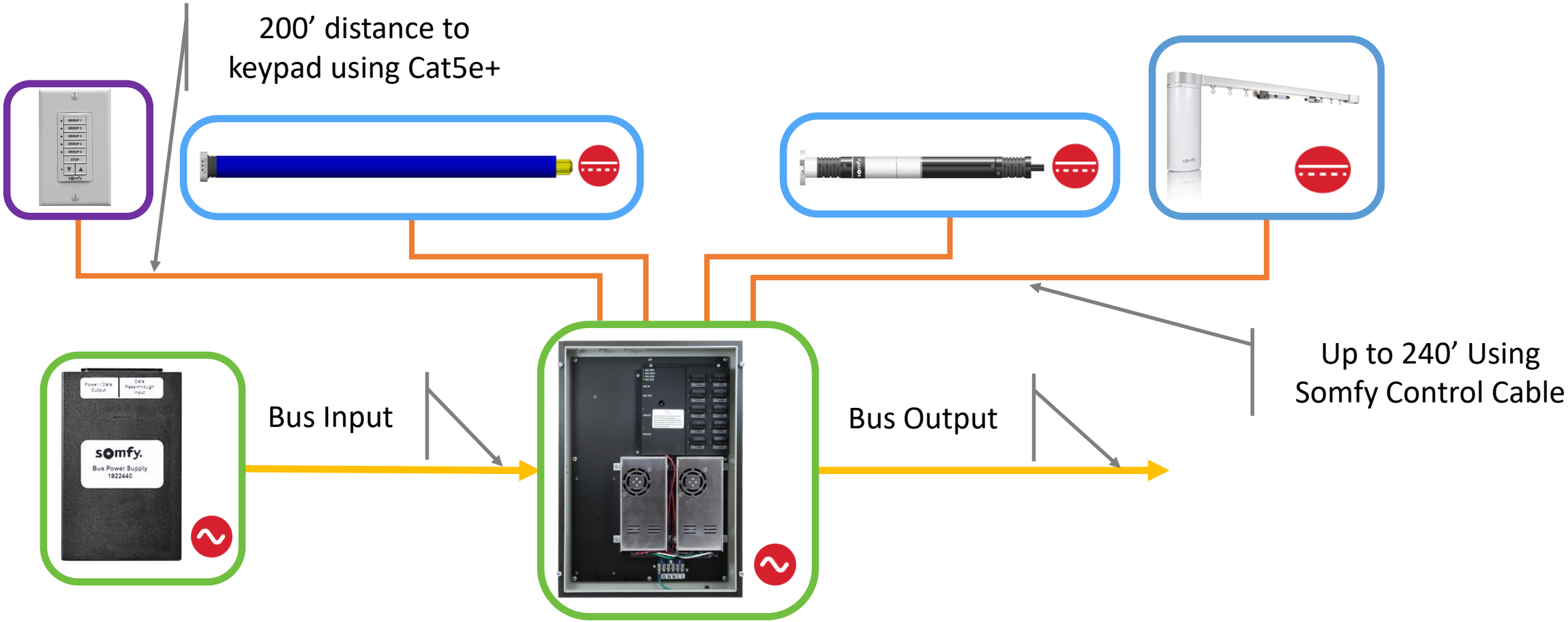
LABEL	ELEMENT	COLOR	FUNCTION ON	FUNCTION OFF
P	**Bus Power**	Green	Power	No Power
H	**Bus High (I)**	Green	No Data	Data
L	**Bus Low (A)**	Green	Data	No Data
E	**End of Bus**	Yellow	End of Bus	Not End of Bus
D	**Device LED**	Green	Device port powered	Device port not powered



Front view

Systematic Design – DC Motors

Power Panel for SDN



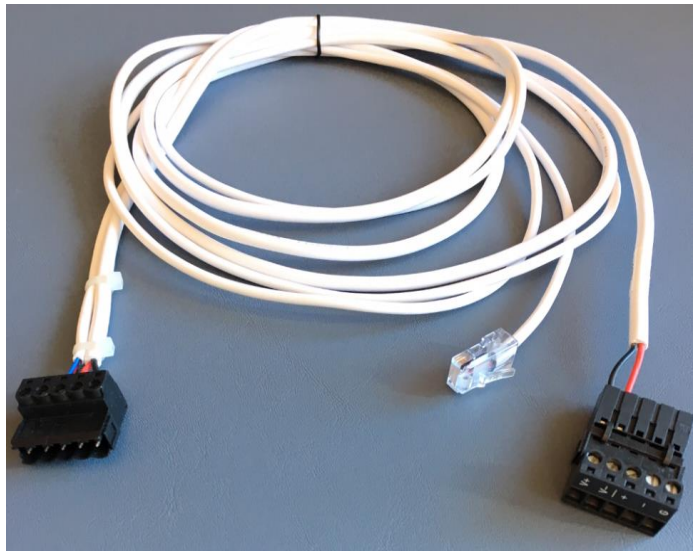
Systematic Design – DC Motors

RS485 Motor Accessories

9020743 - Sonesse Ultra 50 DC RS485 Weidmuller 5 position male connector alone

9025113 - Sonesse Ultra 50 DC RS485 Weidmuller 5 position female connector

9019873 RS485 Sonesse ULTRA 50 DC Setting Tool Cable, 20 ft.



Somfy does not sell these but recommends the RJ45 coupler from monoprice.com (item #7283)

Limit Setting or Reset Tools:

SDN RS485 Setting Tool
9017142

Reset Tool for Somfy ULTRA 50 DC Motor
ZMC Part # RS-045

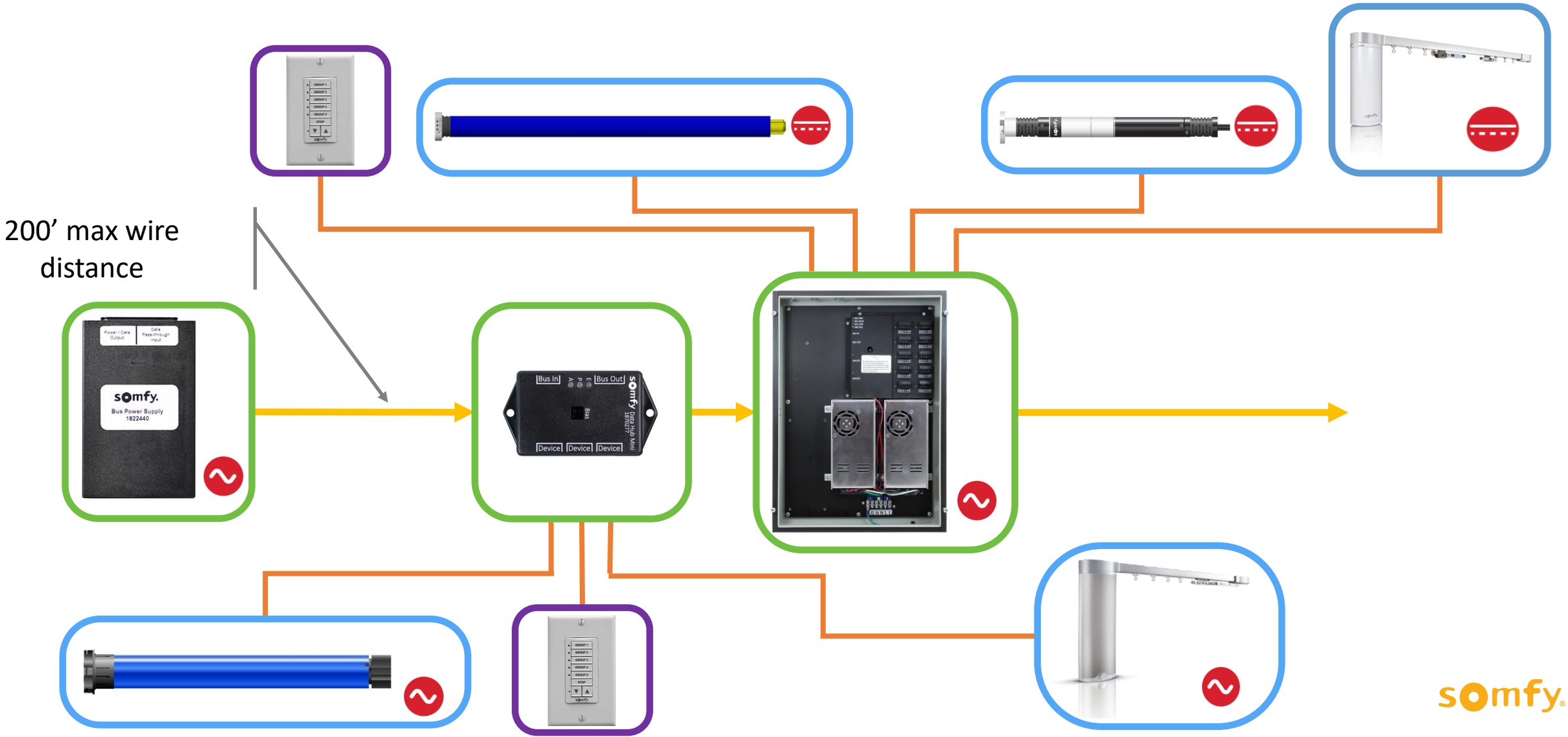
4

Systematic Design AC & DC Motors

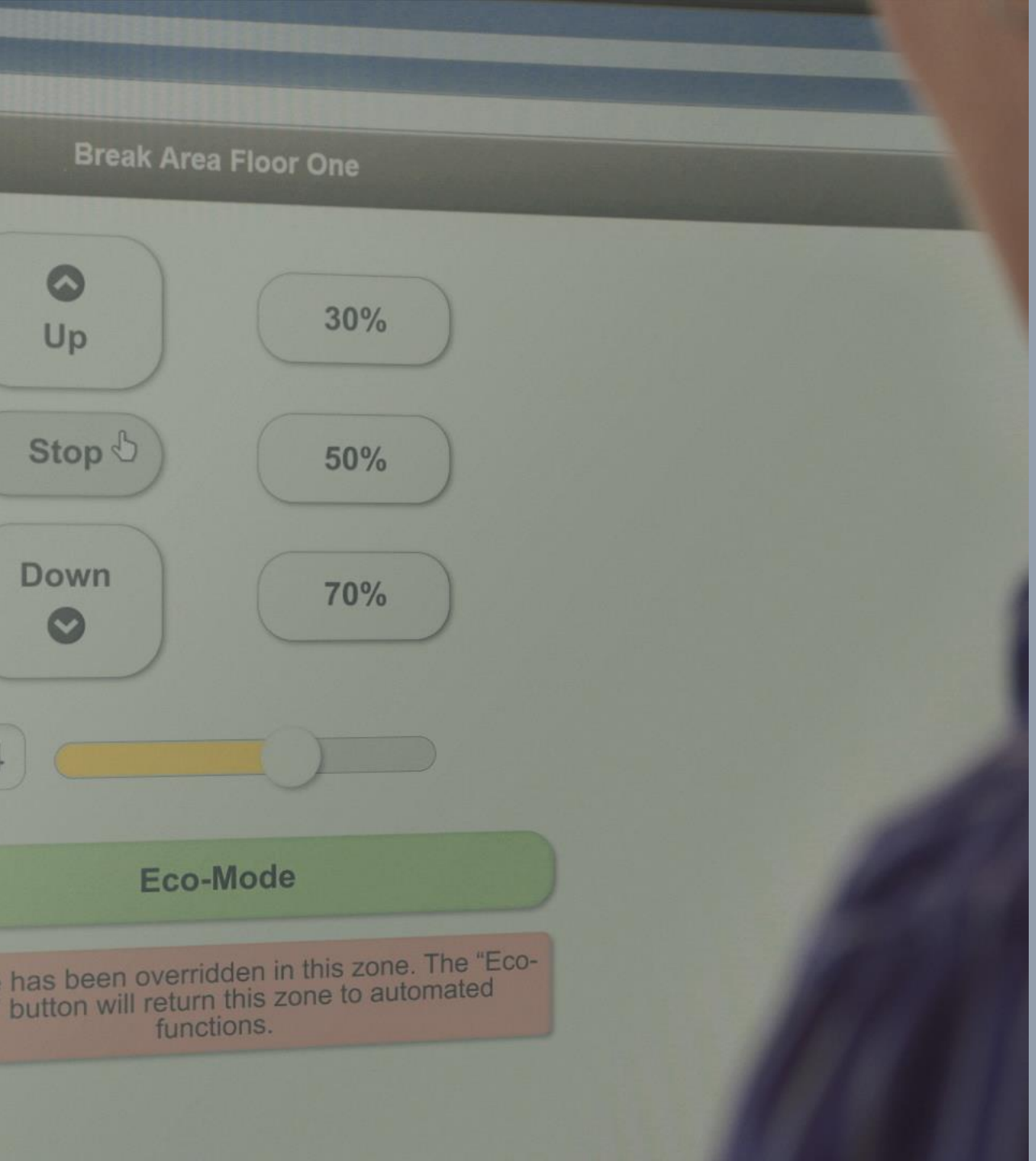
Systematic Design – AC & DC Motors

Basic Application Diagram

Somfy Digital Network RS485



somfy



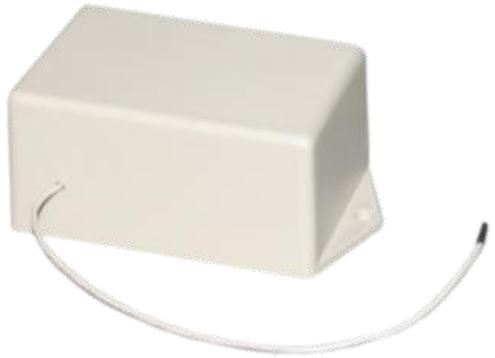
5

Specialty Devices

Specialty Devices

Radio Technology Somfy® – RTS Receiver for SDN

- Compatible with all RTS Controls
- Pairs with up to 5 RTS transmitter channels
- Powered and communicates over single wire
- How many receivers are needed?



RTS Receiver for SDN
(1822294)

- Wireless battery-powered control
- Provides Up, Stop, Down of SDN groups
- 65’ of range in optimal conditions
- Multiple color options
- Requires the SDN RTS Receiver

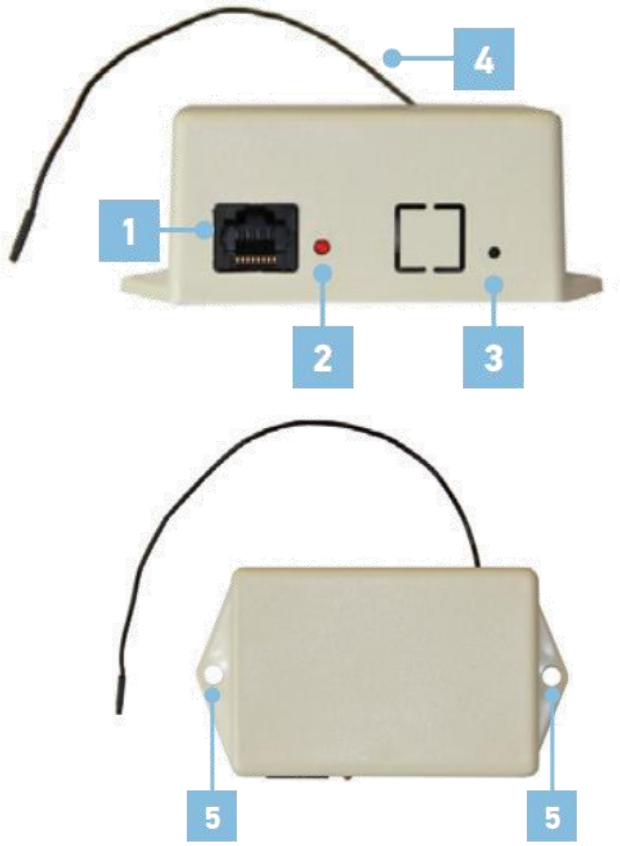
RTS Remotes
and Keypads

Control 1,5, or 16 Groups on one remote

Specialty Devices

Radio Technology Somfy® – RTS Receiver for SDN

	ELEMENT	FUNCTION
1	**SDN Input**	RJ45 port for SDN input
2	**LED**	LED Indicator
3	**Master Reset**	Factory Reset
4	**RTS Antenna**	RTS Antenna
5	**Mounting Flange**	Mounting Flange

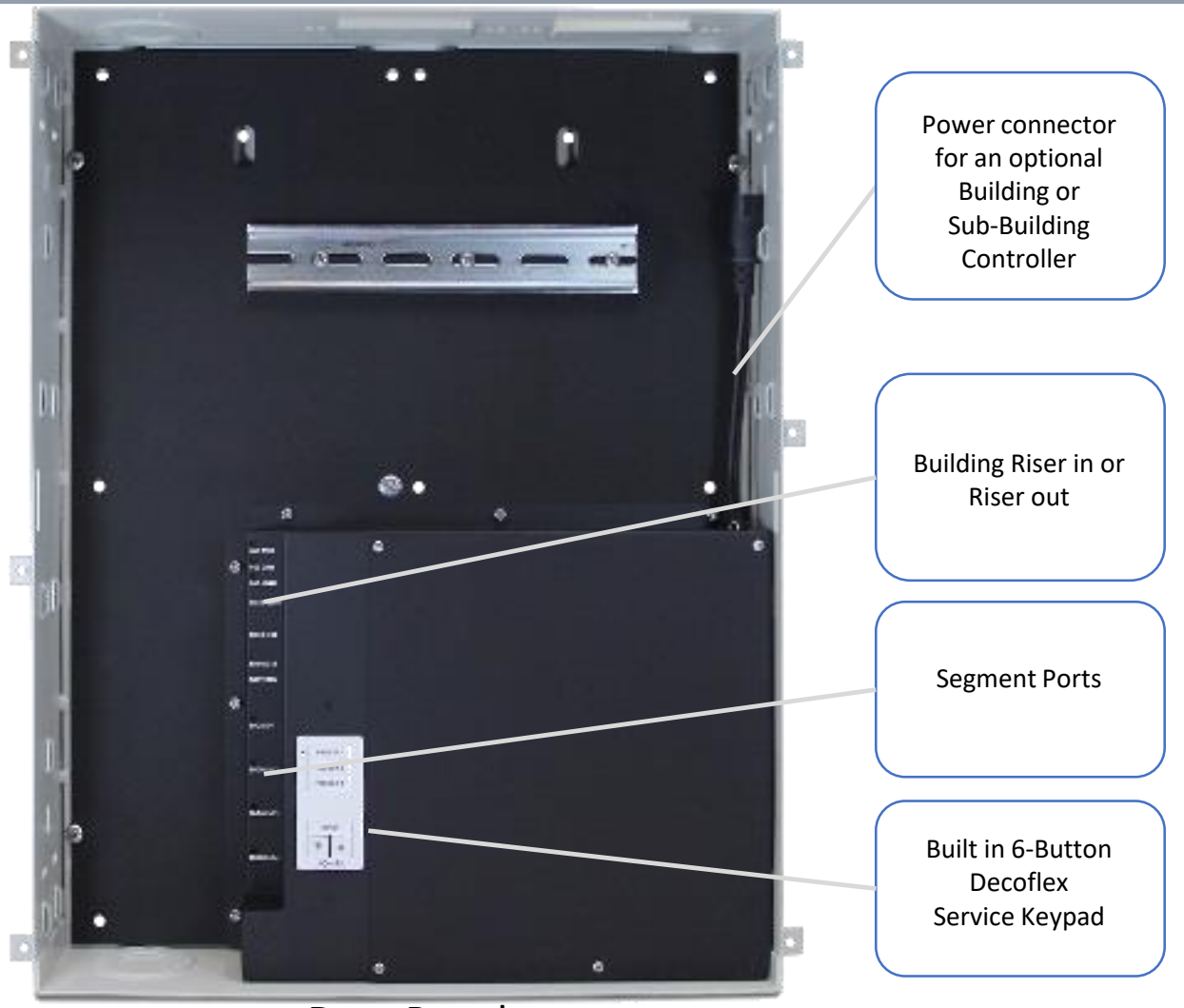


Specialty Devices
Data Panel

- Start or expand an SDN System
- Use for systems with multiple SDN Segments
- Includes a keyed door
- Requires a dedicated 12V AC outlet

Features:

- Provides 4 isolated SDN Bus segments
  - Up to 20 Bus Distribution Devices per segment
  - 100 units of bus power per segment
  - 1600 ft. total cumulative length
    - System status LEDs:
      - Bus power
      - Communication
      - End of line notification
- Mis-wire protection



Data Panel
(1870260)

Specialty Devices
Data Panel

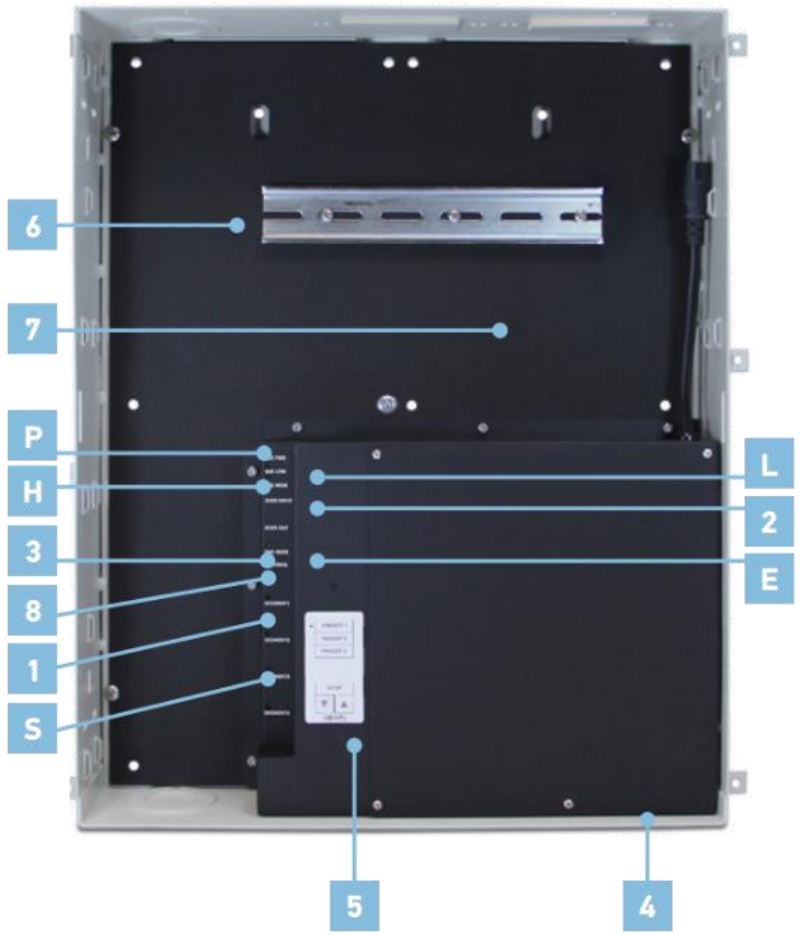
Somfy Digital Network RS485

	ELEMENT	FUNCTION
1	**4 Isolated Bus Segments**	Each segment support 1600 ft total wiring stub length, up to 20 Bus distribution devices and 100 power units
2	**SDN Riser Input**	Input from previous Data Panel
3	**SDN Riser Output**	Output to next Data Panel
4	**Power Input**	Flying leads with push-in connectors (Supports solid 12 & 14 AWG wiring)
5	**DecoFlex Digital Keypad**	Service keypad to test group or zone operation
6	**Empty DIN Rail**	Building Controller Mount
7	**Power Connection for animeo IP Building Controller**	(Optional use)
8	**Control Port**	Input for Controller

LED Indicators

LABEL	ELEMENT	COLOR	FUNCTION ON	FUNCTION OFF
H	**Bus Power**	Green	Power	No Power
P	**Bus High (I)**	Green	No Data	Data
L	**Bus Low (A)**	Green	Data	No Data
E	**End Riser**	Yellow	End of Riser	Not End of Riser
S	**Segment 1-4**	Green	Bus Segment Power On	Bus Segment Power Off

Front view



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Specialty Devices

Data Panel

Somfy Digital Network RS485

- Up To 20 Bus Distribution Devices
- 100 units of Bus Power
- 1600’ cumulative length

SDN Bus Segment 1

- Up To 20 Bus Distribution Devices
- 100 units of Bus Power
- 1600’ cumulative length

SDN Bus Segment 2

- Up To 20 Bus Distribution Devices
- 100 units of Bus Power
- 1600’ cumulative length

SDN Bus Segment 3

- Up To 20 Bus Distribution Devices
- 100 units of Bus Power
- 1600’ cumulative length

SDN Bus Segment 4

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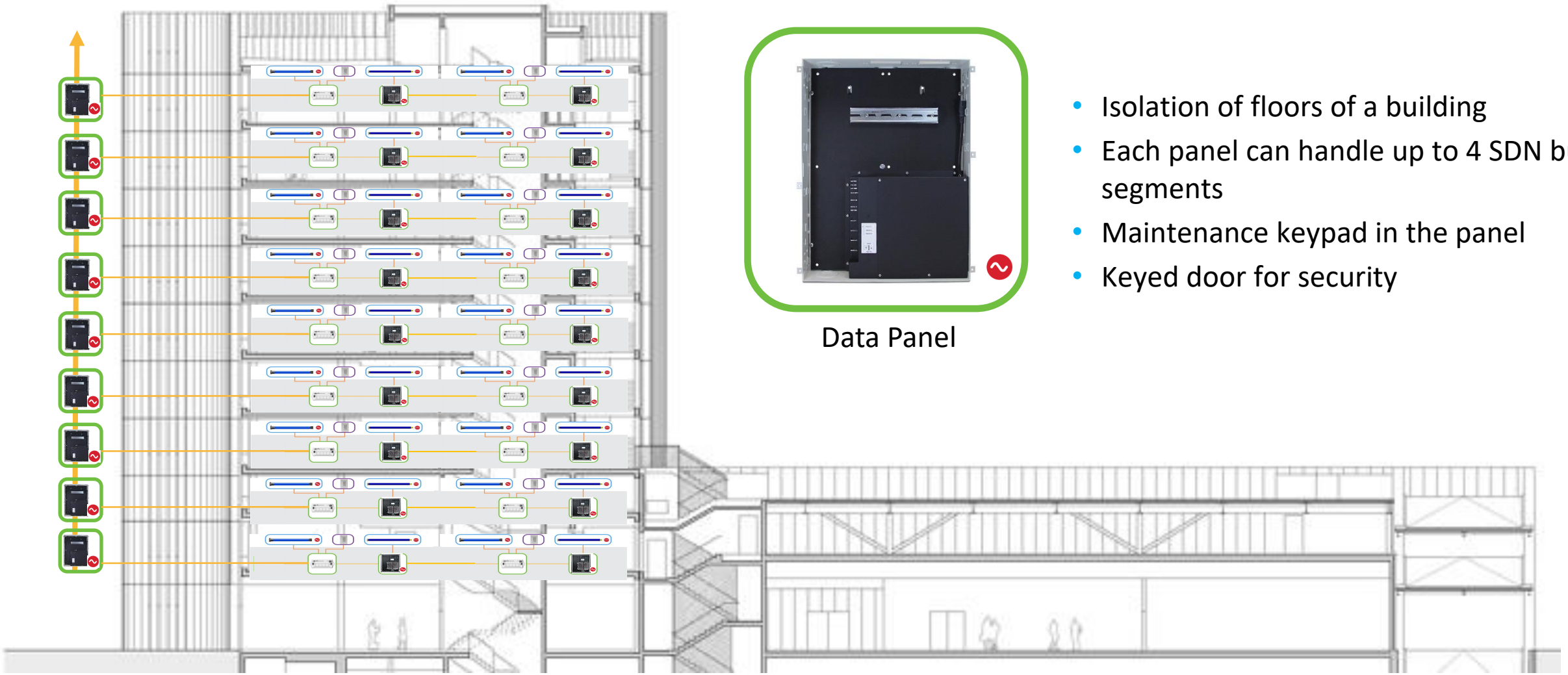
Specialty Devices

Data Panel



Data Panel

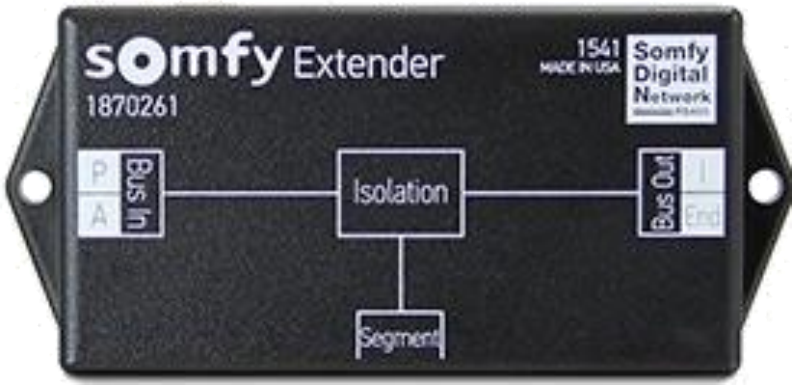
- Isolation of floors of a building
- Each panel can handle up to 4 SDN bus segments
- Maintenance keypad in the panel
- Keyed door for security

Specialty Devices
Extender

- Adds 1 isolated bus segment to an SDN system

Features:

- Create 1 isolated bus segment
  - Up To 20 Bus Distributions Devices per segment****
  - 100 units of bus power per segment
  - 1600 ft. of wire per segment
- System status LEDs:
  - Bus power
  - Communication
- Mis-wire protection

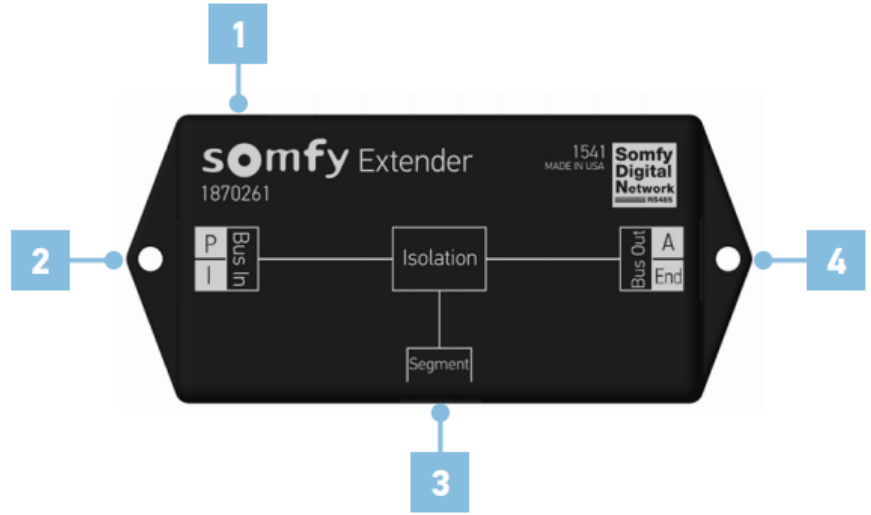


Extender
(1870261)

**** Depending on the bus distribution device

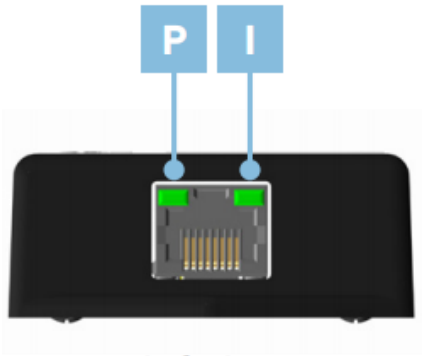
Specialty Devices
Extender

	ELEMENT	FUNCTION
1	**24V DC Power Input**	Provides power to segment
2	**SDN Bus Input**	Input for bus signals
3	**Segment Output**	Start of a new bus segment
4	**SDN Bus Output**	Output for bus signals

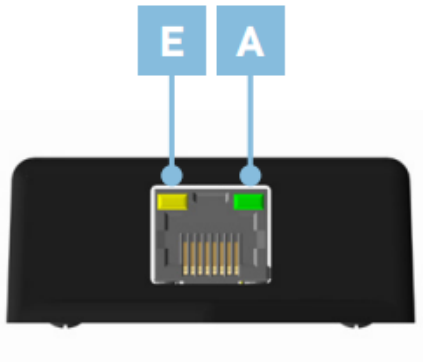


LED Indicators

LABEL	ELEMENT	COLOR	FUNCTION ON	FUNCTION OFF
P	**Bus Power**	Green	Power	No Power
I	**I (idle)**	Green	Data	No Data
E	**End (end of line)**	Yellow	End of Bus	Not End of Bus
A	**A (activity)**	Green	No Data	Data



Left view



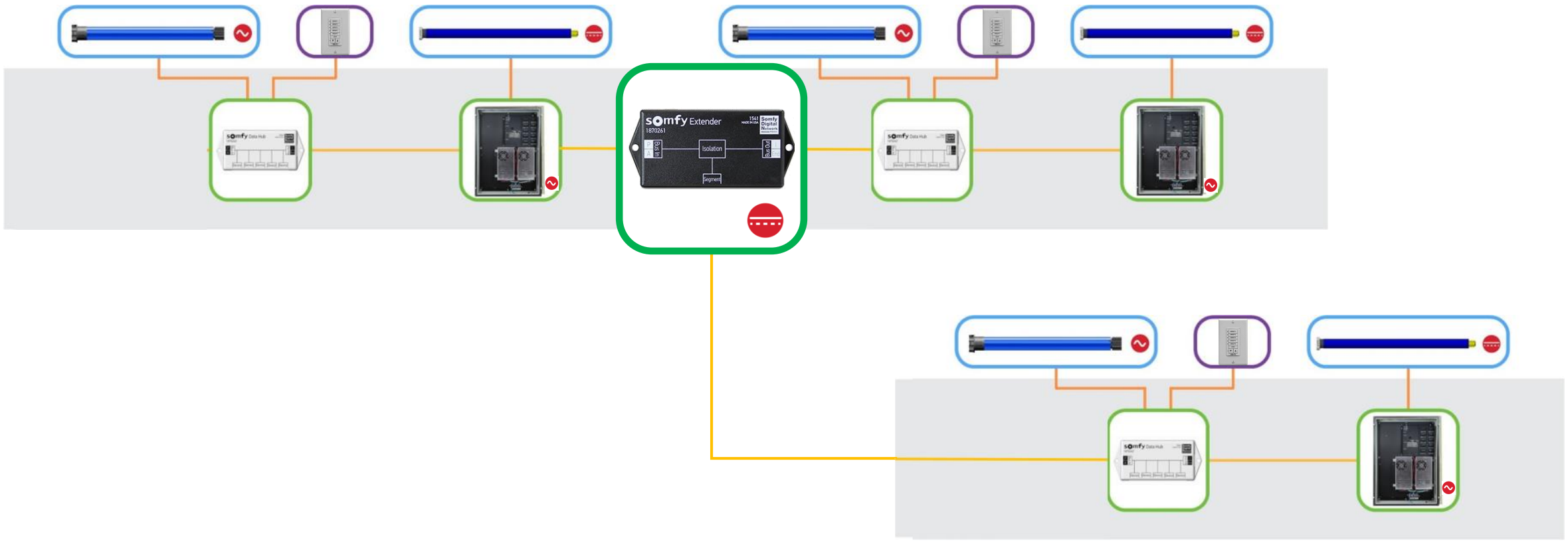
Right view

Specialty Devices

Extender

Somfy Digital Network RS485

Create a new bus segment in the middle of a run or split a bus.



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Specialty Devices
SDN Room Controller Hub

- Creates an isolated SDN room control of 4 motors using 1 device port (max 2 hubs)
- SDN Bus Power is provided by the motors using Grey motor cables
- Wiring stub length up to 200 ft.
- Smaller hub ideal to fit in shade pocket
- Uses standard SDN Keypad (several part numbers)

Features:

- System status LEDs:
  - Bus power
  - Communication
  - End of line notification

SDN Room Controller Hub
(1870278)

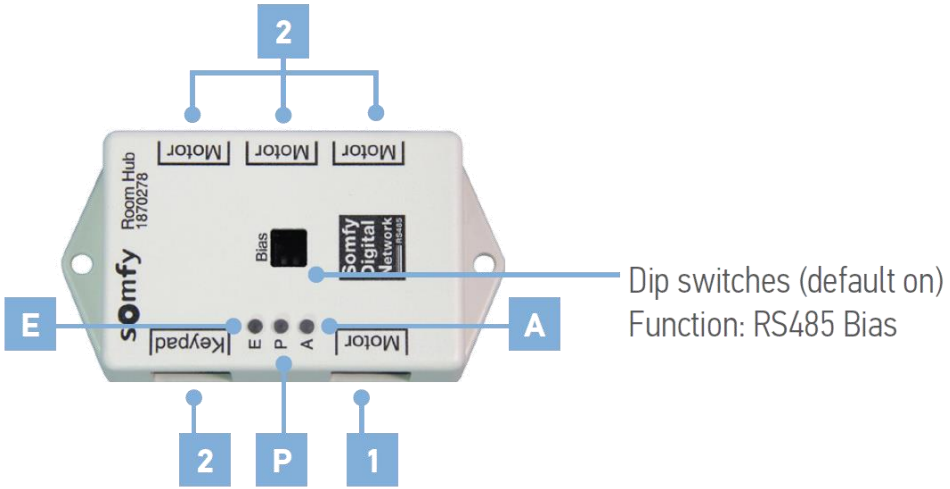
Specialty Devices

SDN Room Controller Hub

	ELEMENT	FUNCTION
1	**Device Port**	1 device port used to connect a DecoFlex Digital Keypad or RTS Receiver for SDN
2	**SDN Motor Ports**	Output for motor commands to a maximum of 4 RS485 motors

LED Indicators

LABEL	ELEMENT	COLOR	FUNCTION ON	FUNCTION OFF
A	**Data Activity**	Green	Flashes when transmitting data	
P	**Bus Power**	Red	Power	No Power
E	**End (end of line)**	Yellow	End of Bus	Not End of Bus

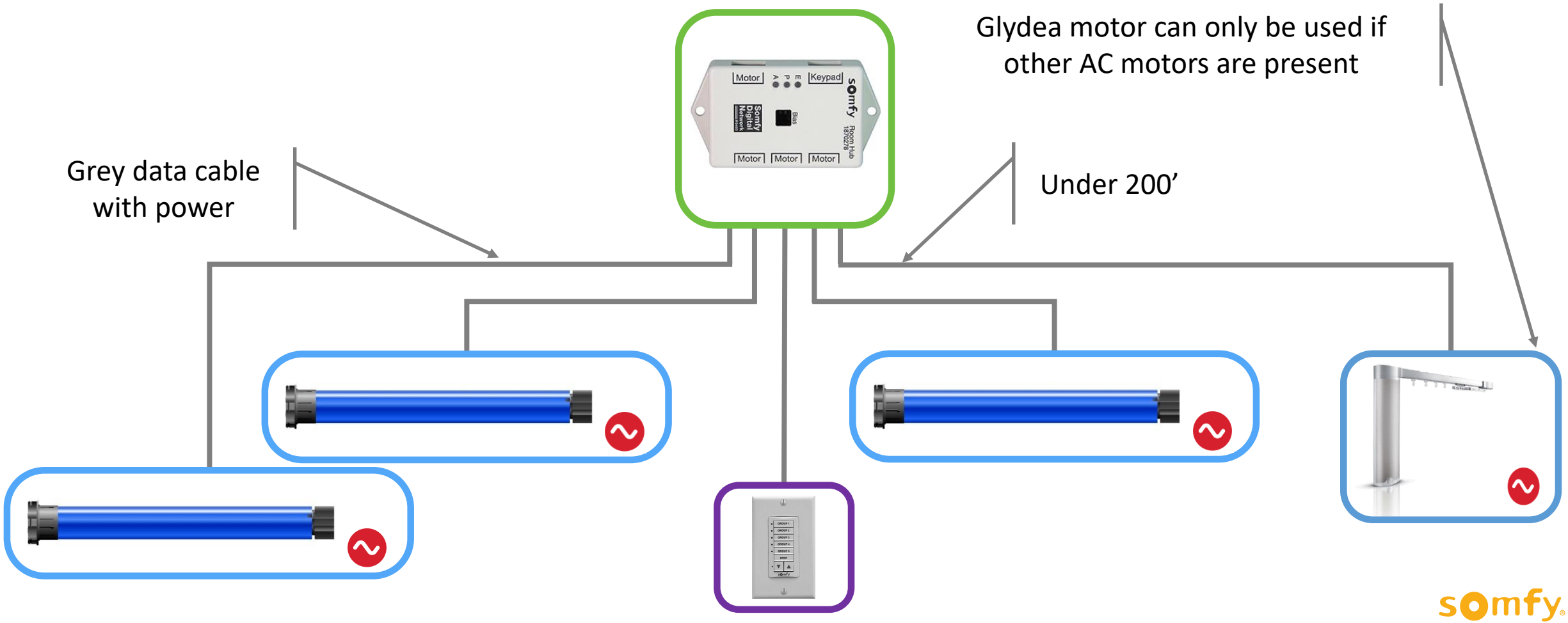


Specialty Devices

SDN Room Controller Hub

Somfy Digital Network RS485

Creates a room based system with up to 4 motors and one keypad



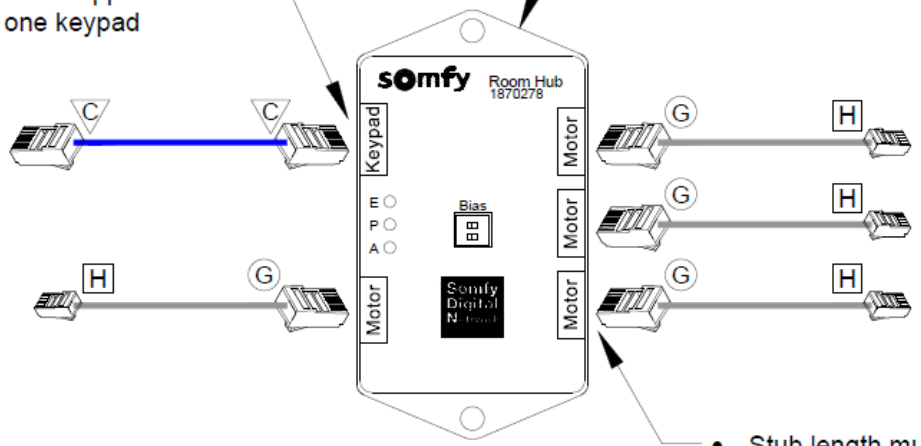
somfy

Specialty Devices

SDN Room Controller Hub

- Stub length must not exceed 200'
- Keypad Output can support Data and Power for one keypad

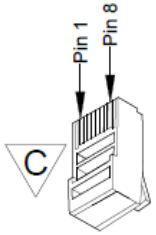
Room Controller Hub
#1870278



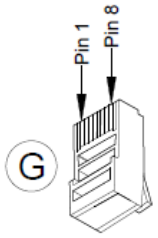
Grey Data Cable With Power
2.5 ft. long: #9018545
8 ft. long: #9018546
12 ft. long: #9018547
24 ft. long: #9018548

(Extend cable beyond 24 ft. with a Generic RJ-45 Coupler and CAT-5 or higher using Standard SDN Wiring Pinout.)

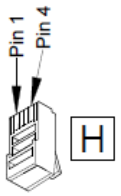
- Stub length must not exceed 200'
- Each Motor Output can support Data for one Motor
- Each Motor Output to be used with 500 Series RS485 AC Motors



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



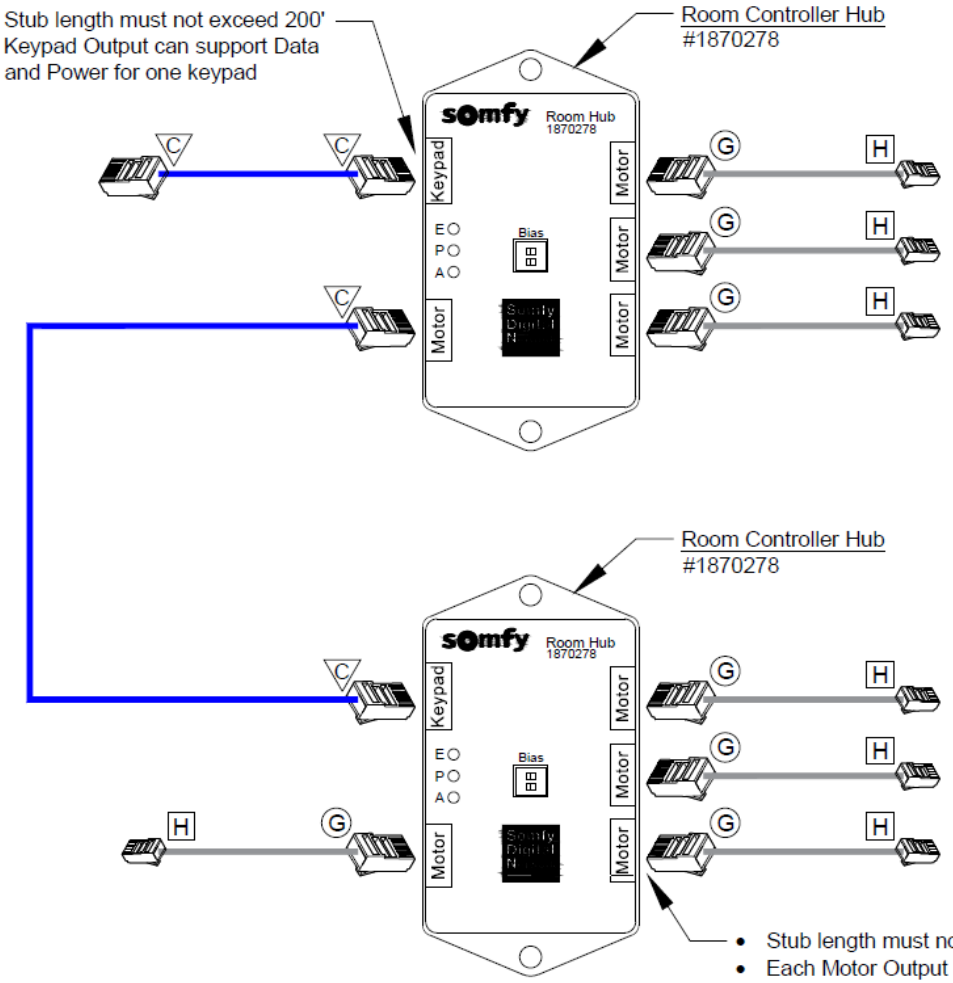
Grey Data Cable With Power Pinout			
4 Cond. 26AWG modular cable with RJ-45 and RJ-9			
Pin #	Color	Function	Pin #
1	Yellow	SDN RS485 (+)	1
2	Green	SDN RS485 (-)	2
4	Red	Power Out	3
8	Black	Ground	4



Specialty Devices

SDN Room Controller Hub

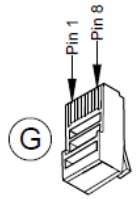
- Stub length must not exceed 200'
- Keypad Output can support Data and Power for one keypad



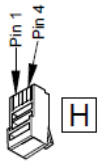
- Stub length must not exceed 200'
- Each Motor Output can support Data for one Motor
- Each Motor Output to be used with 500 Series RS485 AC Motors

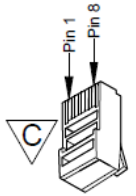
Grey Data Cable With Power
2.5 ft. long: #9018545
8 ft. long: #9018546
12 ft. long: #9018547
24 ft. long: #9018548

(Extend cable beyond 24 ft. with a Generic RJ-45 Coupler and CAT-5 or higher using Standard SDN Wiring Pinout.)



Grey Data Cable With Power Pinout			
4 Cond. 26AWG modular cable with RJ-45 and RJ-9			
Pin #	Color	Function	Pin #
1	Yellow	SDN RS485 (+)	1
2	Green	SDN RS485 (-)	2
4	Red	Power Out	3
8	Black	Ground	4





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

Specialty Devices

SDN Hub Comparison

Somfy Digital Network RS485

Hubs Comparison

Features & Benefits	Data Hub	Data Hub Mini	Room Hub
Part number	**1870262**	**1870277**	**1870278**
Number of Device Ports *("Open" refers to motors and keypads)*	5 (Open)	3 (Open)	1 Keypad & 4 motors
Maximum wiring distance from device ports	200 ft.	200 ft.	200 ft.
Typical project considerations	Overall system control	Overall system control	Room based control
Supports up to 1600 ft of SDN Bus wiring	Yes	Yes	N/A
Includes LED Bus status indicators *(Bus Power, Bus Activity & End of Line notification)*	Yes	Yes	Yes
SDN Data power supplied by:	SDN Bus	SDN Bus	Line-voltage (AC) RS485 Motors
Color	White	Black	Bone
Dimensions	4.88" L x 2.24" W x 0.90" H	3.03" L x 2.09" W x 0.90" H	3.03" L x 2.09" W x 0.90" H
Plug and Play using common RJ45 connectors	Yes	Yes	Yes
Compatible with Line and Low voltage SDN RS485 motors	Yes	Yes	Line-voltage (AC) RS485 Motors
Protects system components from mis-wire	Yes	Yes	Yes
Color of AC RS485 motor data cables used	Black	Black	Grey

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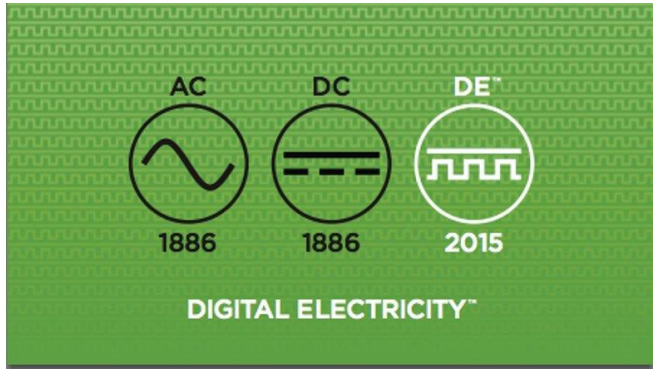
Specialty Devices

Digital Electricity™

- Power distribution that is safe to the touch
- Speed-to-deployment; speed-to-change; FLEXIBILITY
- Lower costs: Reduced conduit, install labor & electricity used
- Space savings in real estate needed for electrical equipment
- Reduction in 120VAC & 208VAC transformer costs
- Centrally back-up critical communications, apps, lights….with remote policy control!
  - No IDF or floor space needed for UPSs
  - One point of maintenance vs. hundreds of UPS locations
  - One point for UPS testing – batteries WORK when really needed
- Move/Add/Change flexibility with no stranded outlets/conduit/cable & no electricians
  - Just open quick-disconnect, move, and re-connect
- Act for Green – Reduction in raw material required, increased efficiency
- Riser, plenum, fiber duct, cable tray micro-trenching and utility pole comm. space legal
- **Highly Efficient Power Delivery!**



Specialty Devices

Digital Electricity™

AC or DC analog electricity from Grid, AC/DC Rectifier, Battery, Solar is converted to Digital Electricity by VoltServer Transmitter Line Cards

700 packets of Digital Electricity are sent every seconds over any two-conductor cable

VoltServer Receivers convert Digital Electricity back to Analog Electricity at correct voltage and power level for remote loads

Solar Power

Grid Power

Battery Backup

VoltServer Transmitter Line Cards perform a safety check after **every** Digital Electricity packet transmission

Use Digital Electricity hosted app and in-band data channel to policy control power delivery (e.g. On/Off/Level/Dim/Reset)

POE Switch

5G Radio

ONT

LED Lighting

Analog Electricity → Digital Electricity → Analog Electricity

Specialty Devices

Digital Electricity™ Transmitter

- Safe to the touch electrical distribution
- Extend power distribution up to 1,000 ft. per output port
- Use 12-18 AWG cable to distribute power
- The Digital Electricity™ Transmitter is designed to be either mounted flat on a desktop or rack-mounted in a 19” rack using provided rackmount brackets
- The management module provides the system with an ethernet communications interface. This allows the system to be connected to the user’s network and monitored remotely
- Dry contact input enabling the system to trigger the ETX8 SA policy software to enable features such as load shedding for battery backup

Digital Electricity™ Transmitter
(9026105)

Specialty Devices

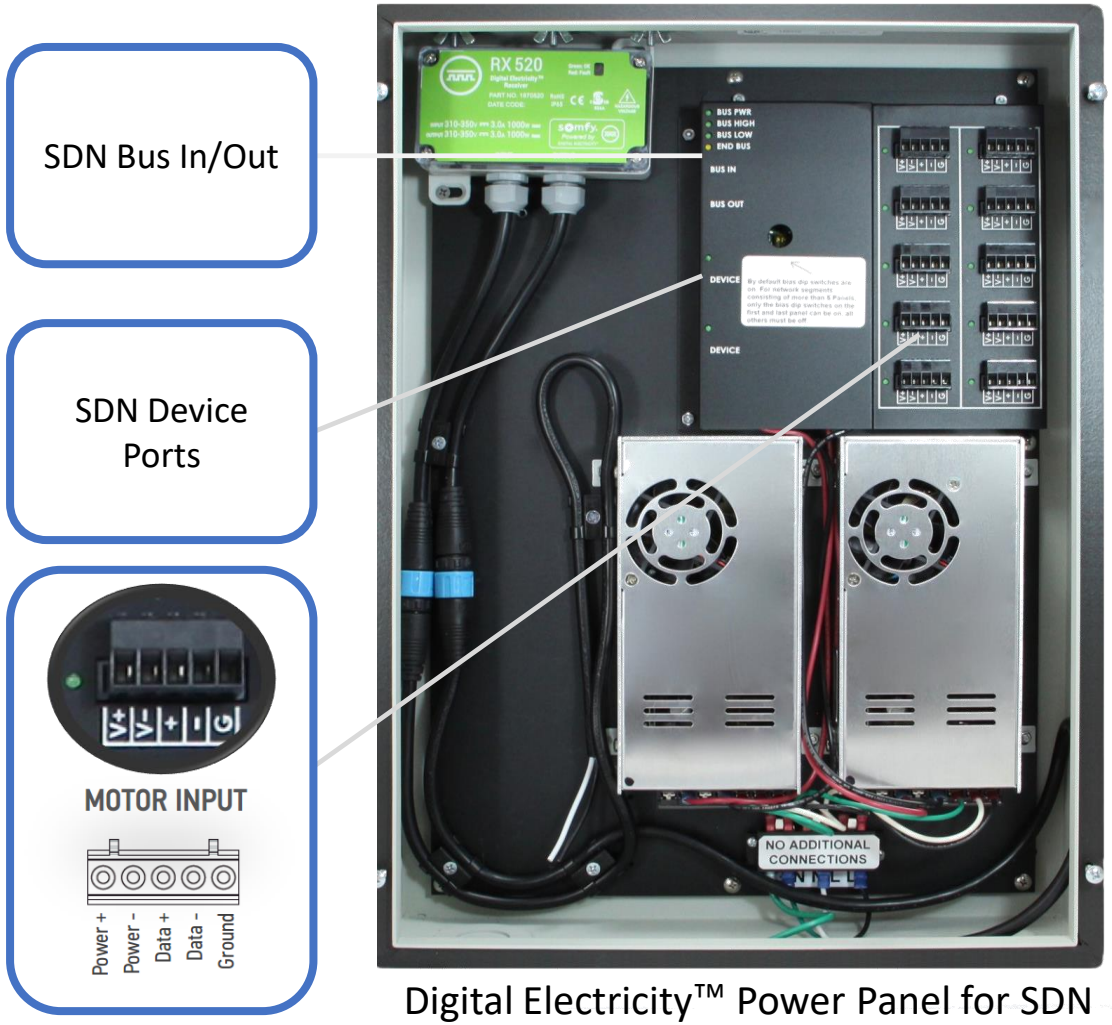
Digital Electricity™ Transmitter

	ELEMENT	FUNCTION
1	**Management Port**	The management module provides the system with an ethernet communications interface. This allows the system to be connected to the user's network and monitored remotely. **To connect to the interface, the VoltServer Discovery Tool is required.*
2	**DE Output Power Connections**	Output from the Transmitter for wiring to the Digital Electricity Receivers
3	**Input Power Connection**	Input power is provided via the supplied AC power cable. Ensure the provided cable is inserted into the connector on the back of the unit. Cables supplied with Transmitter: • IEC-320-C19 to NEMA L6-20P output cable is to be used for all input voltages greater than 125VAC and all input current greater than 11.25A. • IEC-320-C19 to NEMA 5-15P output cable may be used for voltages less than 125VAC and input current less than 11.25A. **Using the Digital Electricity Transmitter with a 120V AC circuit limits the use of the device from 8 channels to 4 channels available.**
4	**Dry Contact Port**	Dry contact input allows the system to trigger the Digital Electrictiy™ Transmitter SA policy software to enable features such as load shedding for battery backup.

Specialty Devices

Digital Electricity™ Power Panel for SDN

- 10 isolated low voltage motor ports
- 2 isolated device ports
- Includes bus segment status LEDs
  - Power
  - Communication
  - End of line notification
- Protects system components from mis-wire
- Can mount on-wall or in-wall (between studs)
- Separated line and low-voltage areas
- Front cover includes two handles with keyed locks
- CSA approved



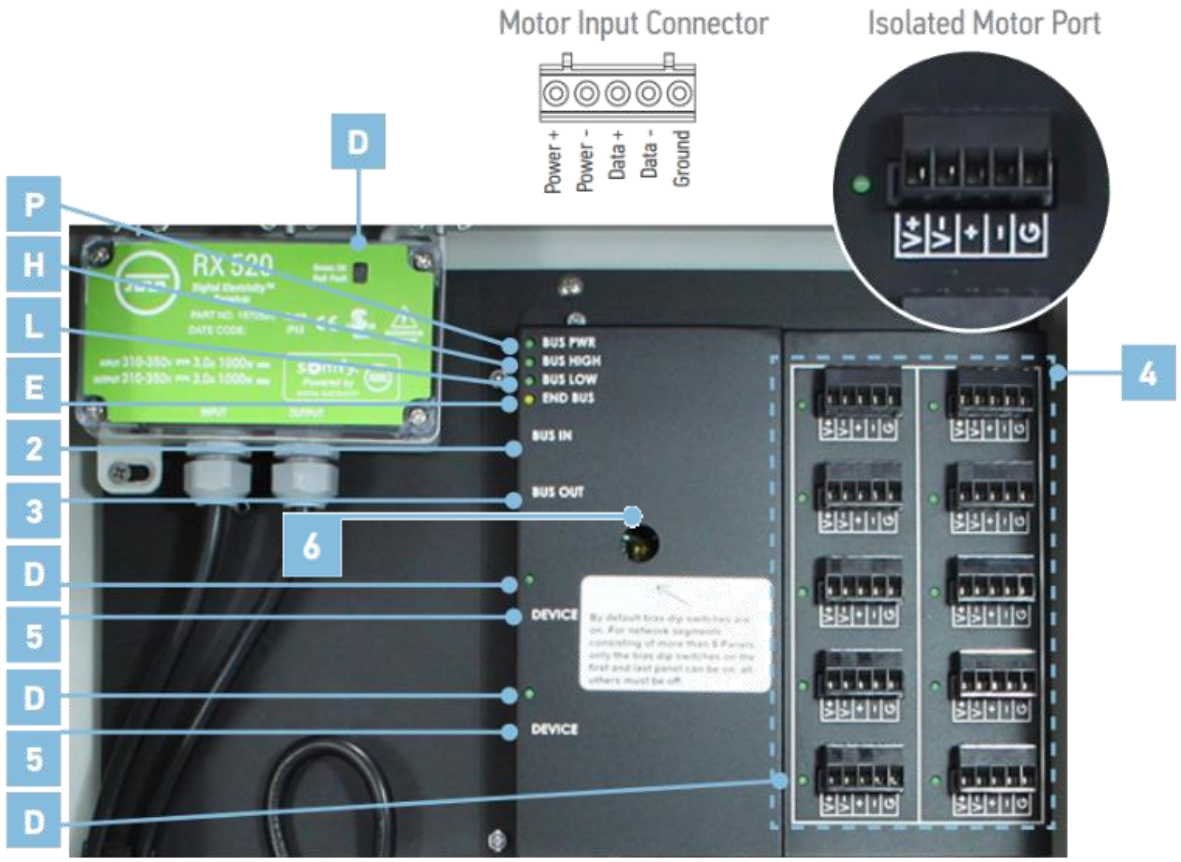
Digital Electricity™ Power Panel for SDN (1870628)

Specialty Devices

Digital Electricity™ Power Panel for SDN

	ELEMENT	FUNCTION
1	**Power Input**	Screw terminal block. Only use 14AWG solid or stranded.
2	**SDN Bus Input**	Input for bus signals
3	**SDN Bus Output**	Output for bus signals
4	**Isolated Motor Port**	10 low voltage motors to SDN network
5	**Device Port**	2 SDN devices to the SDN network (max. 200 ft. each)
6	**Dip Switches**	For SDN signal attenuation

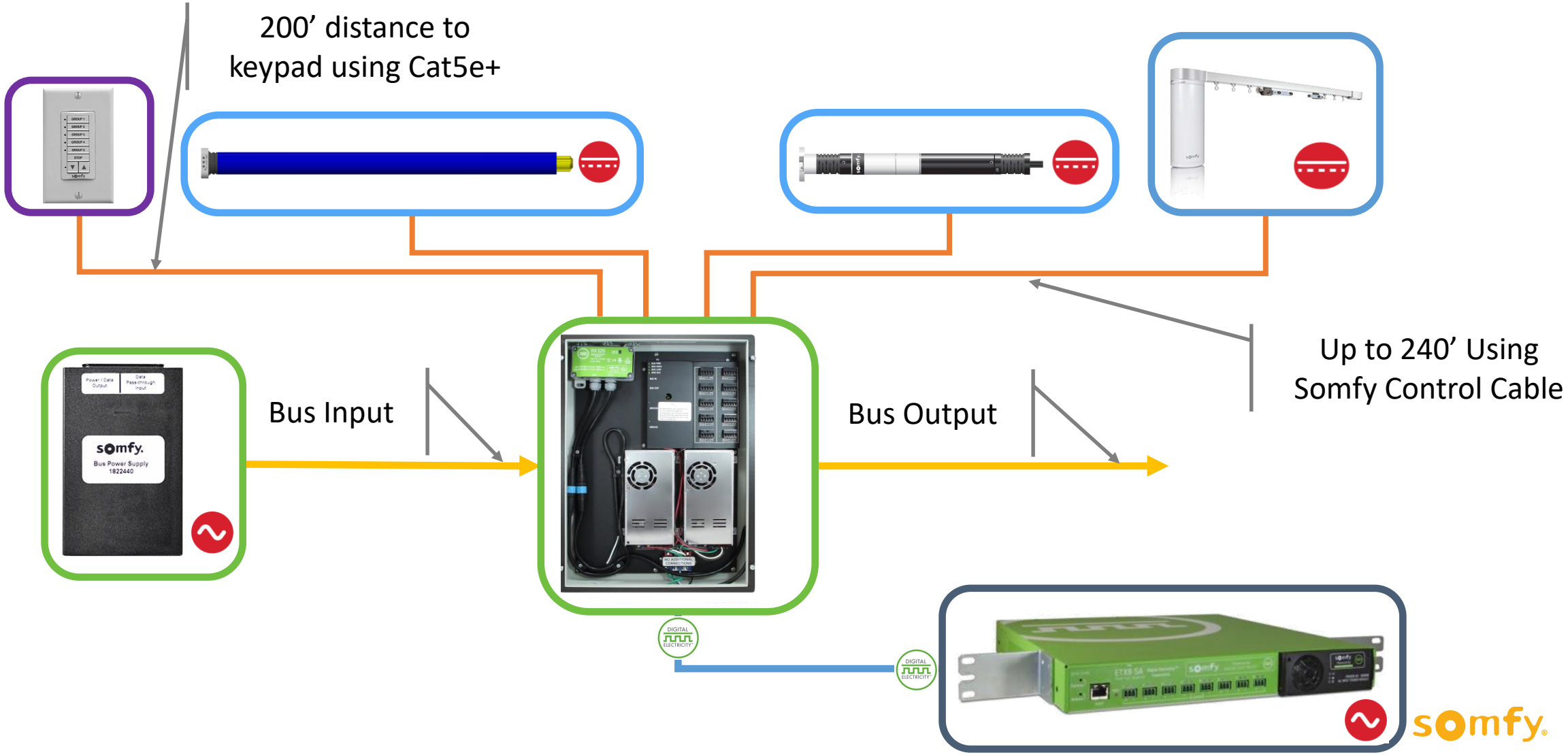
LED Indicators				
LABEL	**ELEMENT**	**COLOR**	**FUNCTION ON**	**FUNCTION OFF**
P	**Bus Power**	Green	Power	No Power
H	**Bus High (I)**	Green	No Data	Data
L	**Bus Low (A)**	Green	Data	No Data
E	**End of Bus**	Yellow	End of Bus	Not End of Bus
D	**Device LED**	Green	Device port powered	Device port not powered



Front view

Specialty Devices

Digital Electricity™ Application Diagram



Centralized Power, Control & Data Distribution

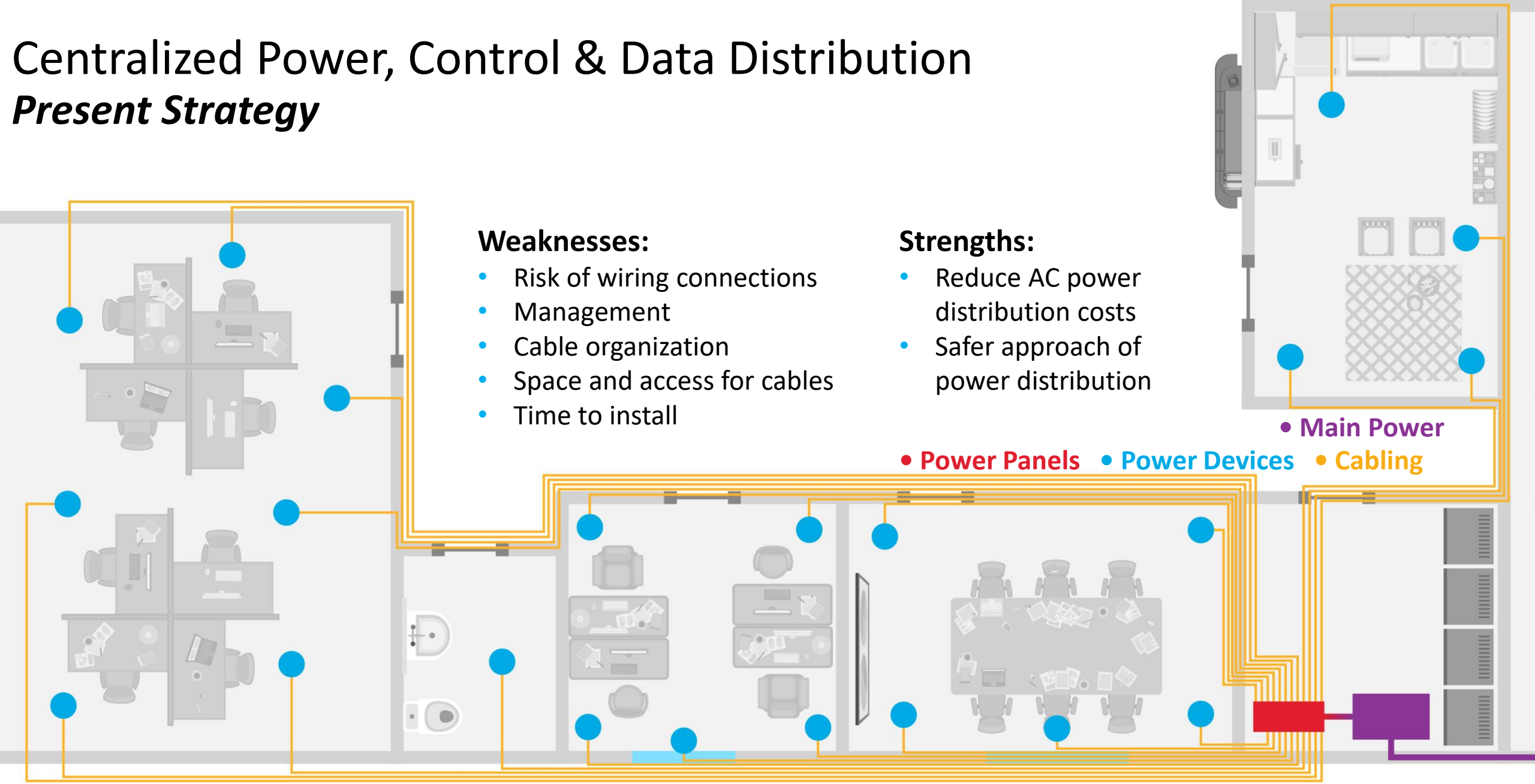
Present Strategy

Weaknesses:

- Risk of wiring connections
- Management
- Cable organization
- Space and access for cables
- Time to install

Strengths:

- Reduce AC power distribution costs
- Safer approach of power distribution



Decentralized Power & Data Distribution

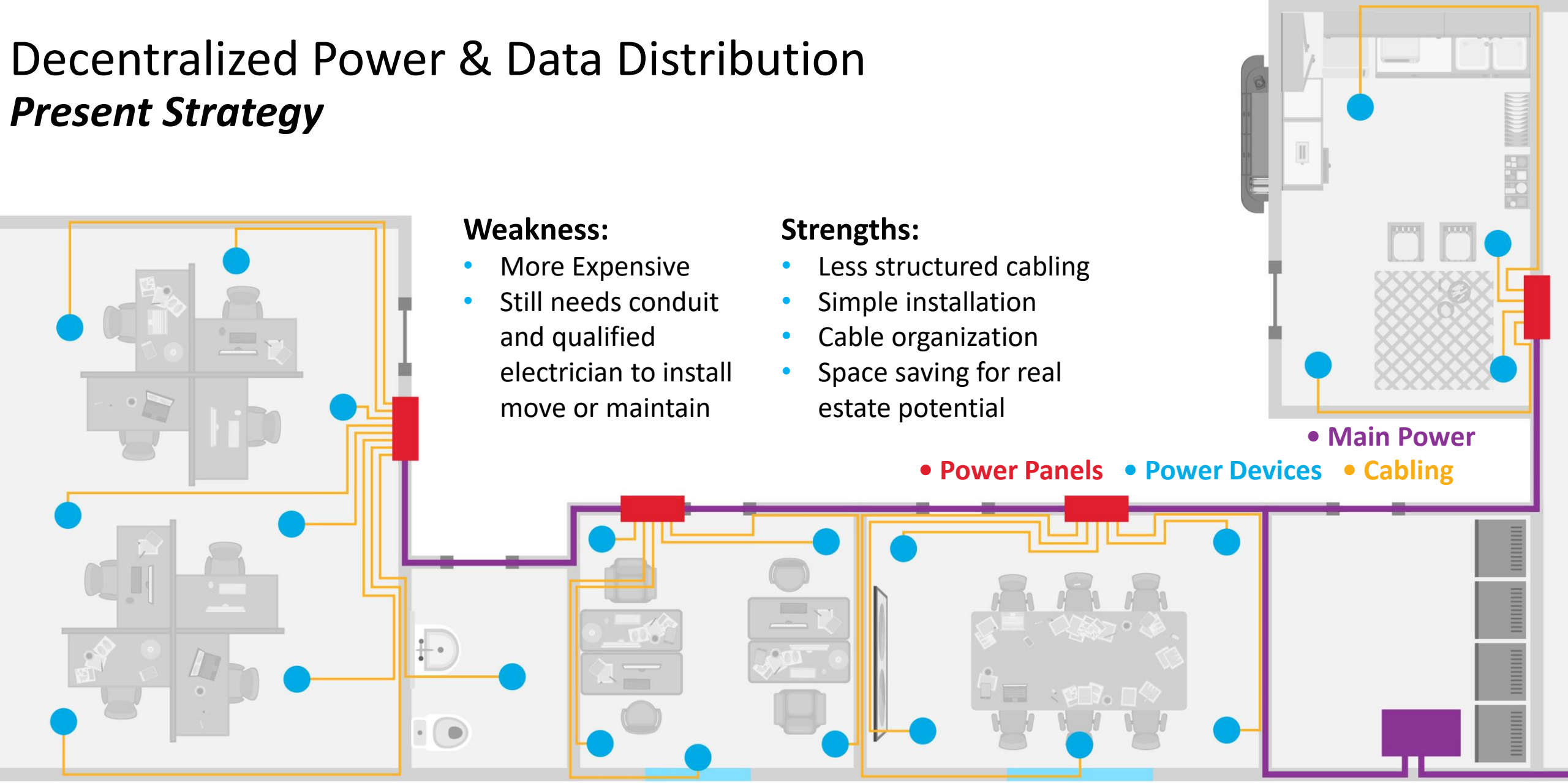
Present Strategy

Weakness:

- More Expensive
- Still needs conduit and qualified electrician to install move or maintain

Strengths:

- Less structured cabling
- Simple installation
- Cable organization
- Space saving for real estate potential



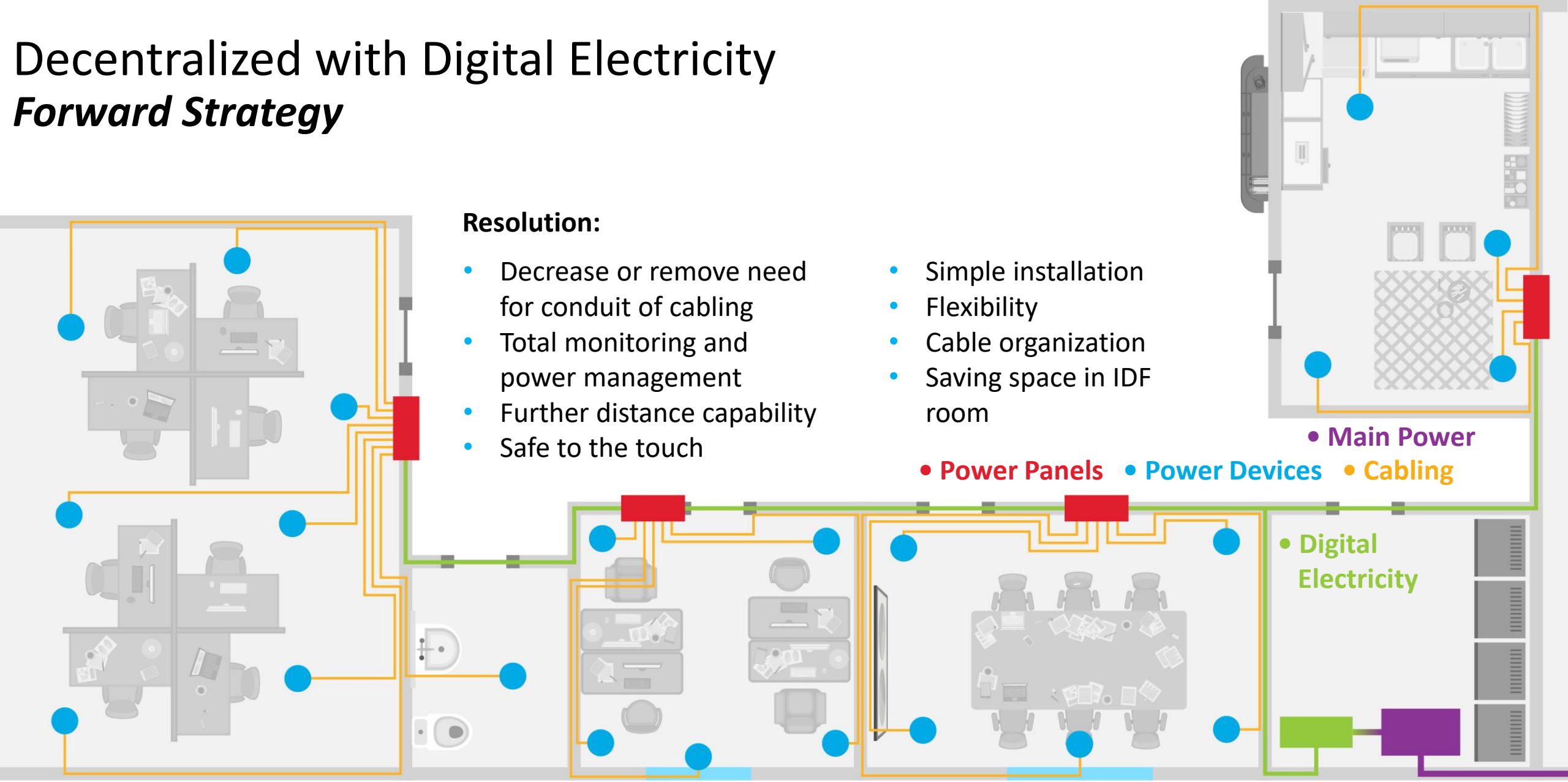
Decentralized with Digital Electricity

Forward Strategy

Resolution:

- Decrease or remove need for conduit of cabling
- Total monitoring and power management
- Further distance capability
- Safe to the touch

- Simple installation
- Flexibility
- Cable organization
- Saving space in IDF room



Specialty Devices

Universal Automation Interface Plus

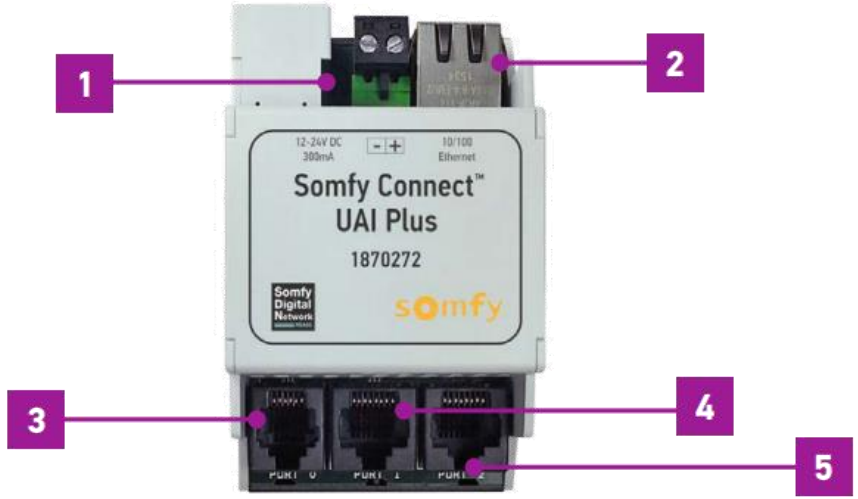
- SDN commission and integrate over IP/Wi-Fi
  - There is a serial port present. This is for integration purposes, not commissioning
- Setup wizard for commissioning (programming)
- No use of hexadecimal addresses. Use of common names
- Drag and drop grouping into a table
- Embedded programming software
- Easily discovered using the “Network” tab in your Window Folder on your PC
- Programming is password protected
- Firmware update over network with internet access
- 250 motor limit
- Only 1 installer needed to program SDN
  - No need for a second “runner” while programming
- Integration report that can be printed or email

Somfy Connect Universal Automation Interface Plus (1870272)

Specialty Devices

Universal Automation Interface Plus

	ELEMENT	FUNCTION
1	**External Power input**	12-24V DC power supply
2	**Ethernet Port**	Ethernet input
3	**Port 0**	N/A
4	**Port 1**	RS-232 Input/SDN Bus Power input
5	**Port 2**	SDN connection



Specialty Devices

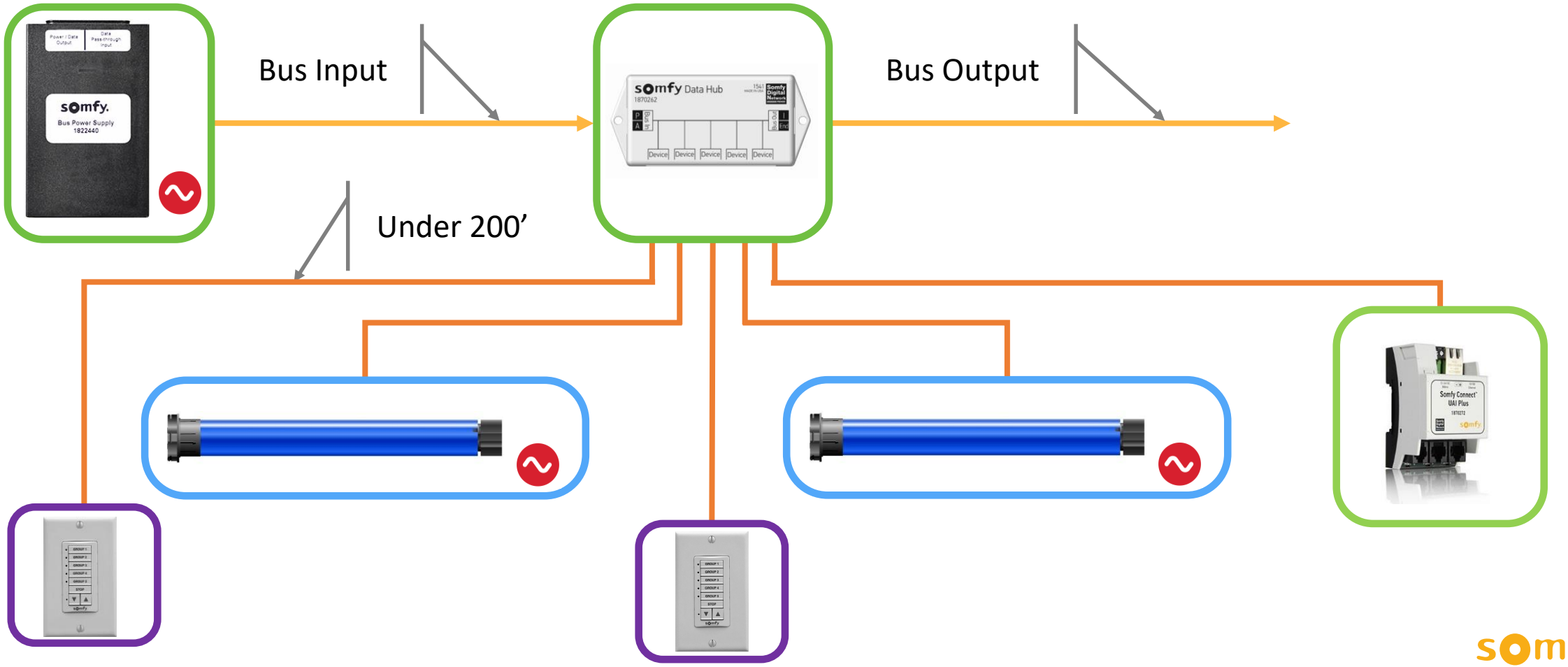
Universal Automation Interface Plus

Integrates with

- Control 4
- Crestron
- Savant
- RTI
- URC – Universal Remote Control
- Elan
- Lutron

Specialty Devices

Universal Automation Interface Plus

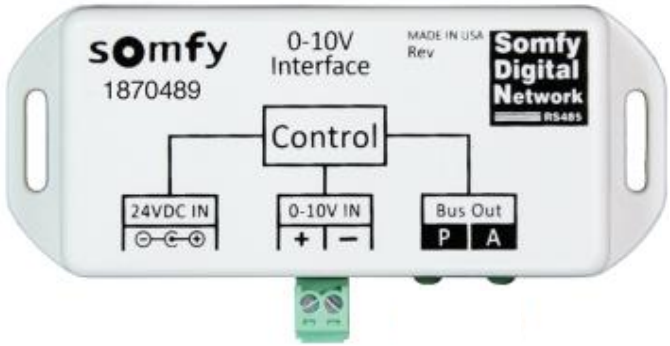


Specialty Devices

0-10V Interface (11 Position Version)

The 0-10V Interface is a Somfy Digital Network™ (SDN) device which receives lighting industry standard 0-10V control input to operate SDN RS485 motors.

- Interface for controlling Somfy Digital motors through 0-10V Input
- 0-10V is a standard type of control for many Lighting companies
- Grouping up to 20 motors (4 Data Hubs) per interface



0-10V Interface (11 Position)
(1870489)

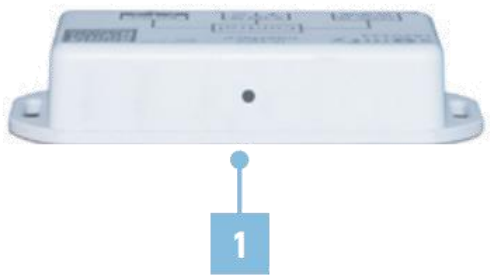
Specialty Devices

0-10V Interface (11 Position Version)

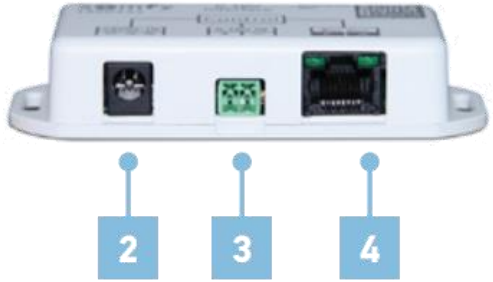
	ELEMENT	FUNCTION
1	**Reverse Button**	Reverse shade position percentage
2	**Power Input (5.5 mm Female Barrel Connector)**	Supply 24V DC power to device
3	**0-10V Input (screw clamp connector)**	Input from Control System
4	**SDN Bus Power and Data Output (Female RJ45)**	Output for bus data and power

LED Indicators				
LABEL	**ELEMENT**	**COLOR**	**FUNCTION ON**	**FUNCTION OFF**
P	**Bus Power**	**Green**	Power	No Power
A	**A (activity)**	**Green**	Data	No Data

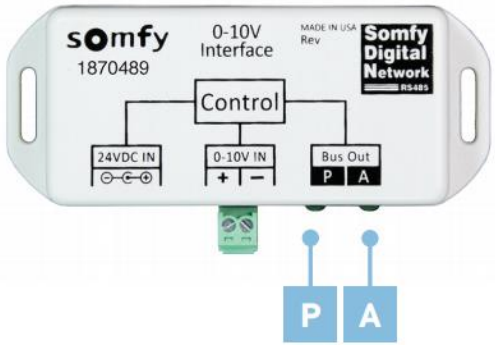
Back Side



Front Side



Top Side



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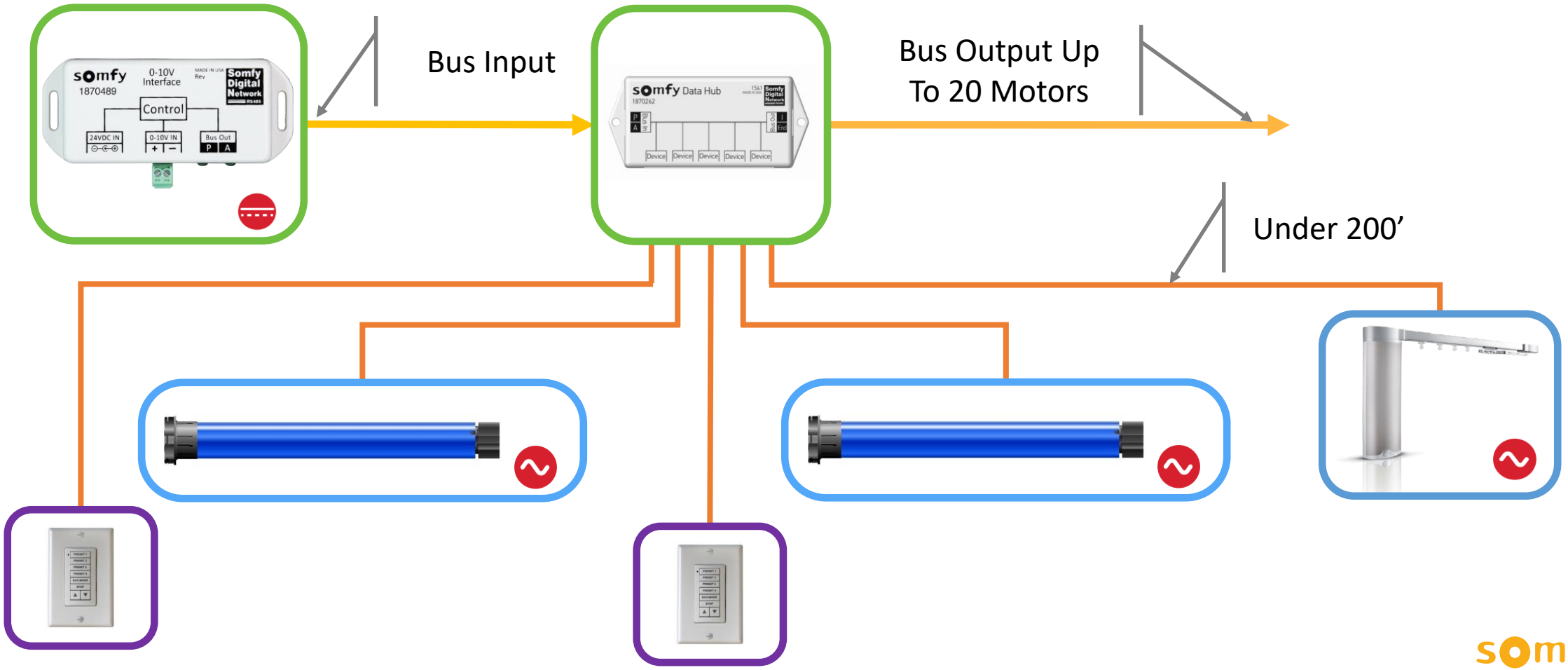
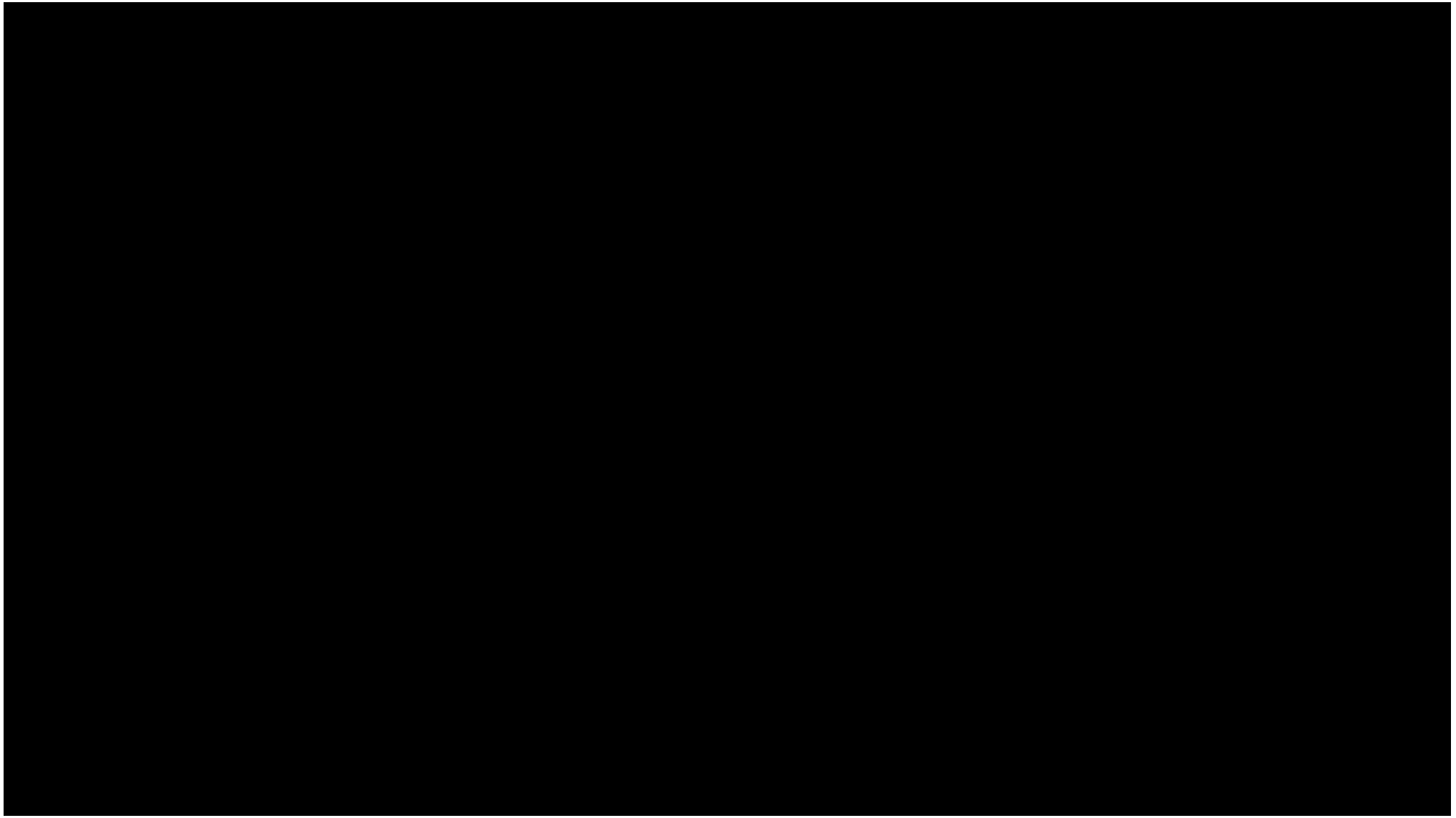
Specialty Devices

0-10V Interface (11 Position Version)



Specialty Devices
animeo IP

animeo® IP



Specialty Devices

animeo IP – System Comparison

animeo® IP

Stand Alone SDN	Somfy Digital Network RS485	animeo® IP
Device to device communication		Centralized control
Lowest common denominator features		Firmware based features
One by one programming		Single program
No automation		Sensor and time based automation
Just motors and keypads		Motors, keypads and centralized controller

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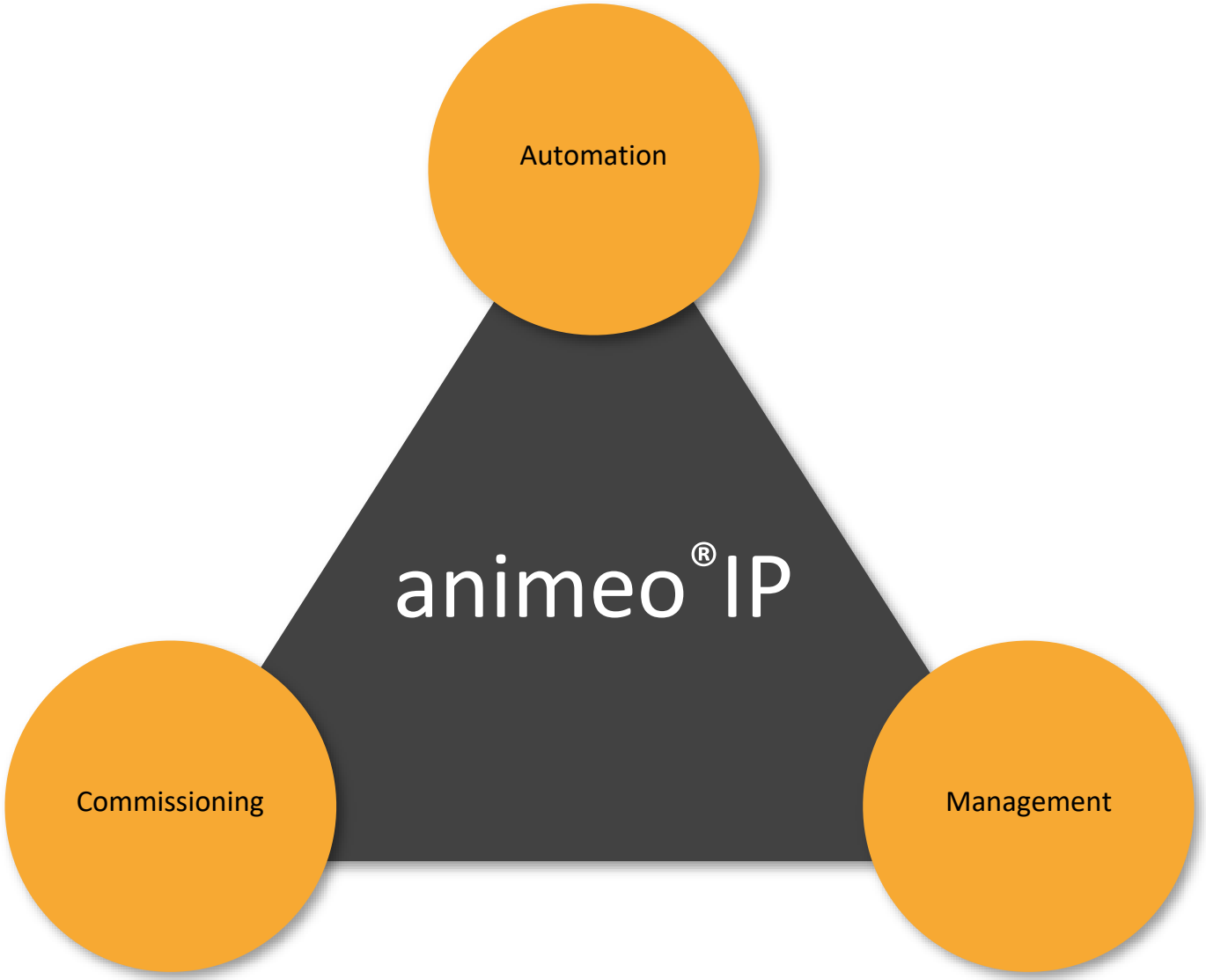
Specialty Devices

animeo IP – Benefits of animeo IP Automation

animeo® IP



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Specialty Devices

animeo IP – Benefits of animeo IP Automation

animeo® IP

Solar Entrance Depth Management

Time Based Events

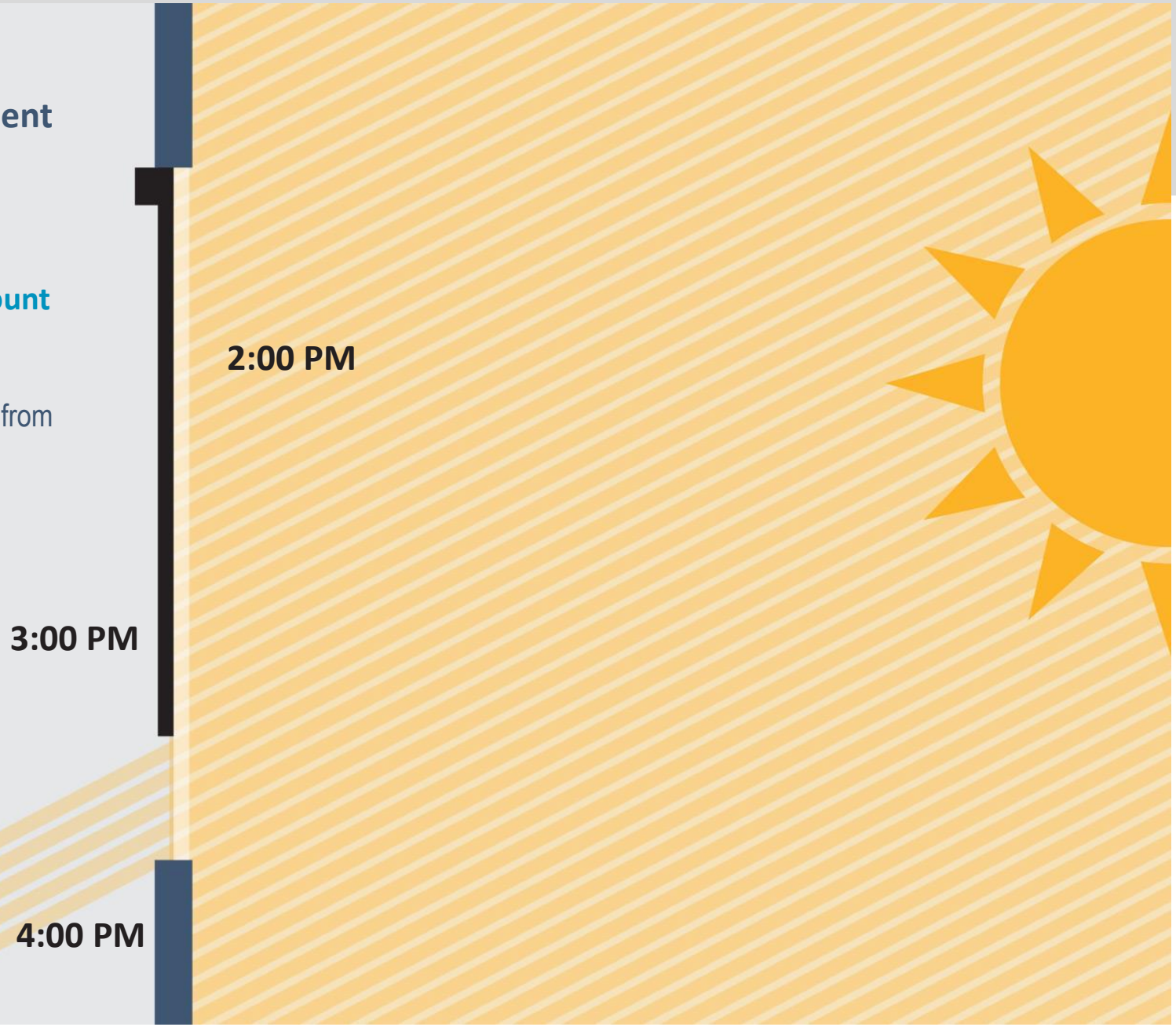
Sensor Based Automation Events

somfy

How does Solar Depth Entrance Management influence extended daylight zones?

This is done by allowing a predetermined amount of sunlight to enter the workspace

Automatically position the shades to block the solar rays from furnishings, such as desks, computers or TVs.



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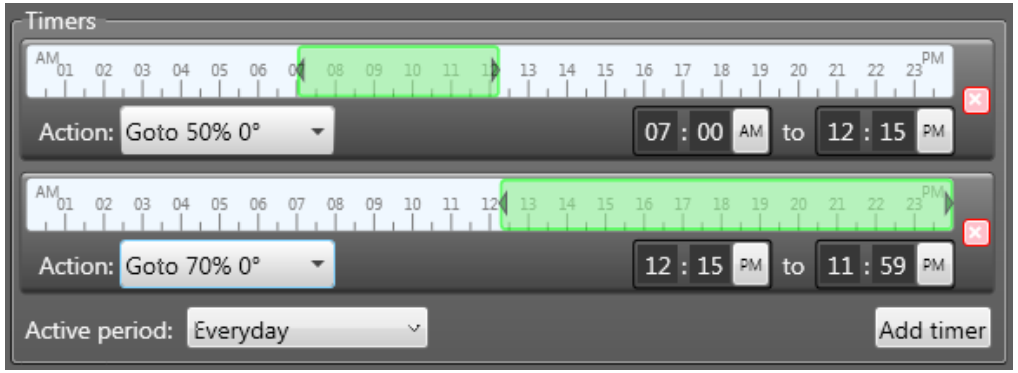
Time Based Events

- Real time events
- Schedule motor positioning
- Cascade timers, each with independent positioning
- Configuration error checking to stop overlapping
- Event accuracy ensured by hardware
- Real Time Clock (RTC)
- Maximum of 24 timers per zone



Sensor Based Automation

- Automated actions based on configured sensor thresholds
- Sun (Light Level)
- Wind (Speed and Direction)
- Precipitation (Rain or Snow)
- Temperature
- Scalable Solution

Specialty Devices

animeo IP – Building Controller

animeo® IP

- Solar depth entrance management for dynamic facade control
- Sensor-threshold-based motor control
- Accurate time & astronomic motor control
- Network-based motor control with user account access
- Facility manager access to global system status & control
- Integration-ready for third party control systems and BMS systems
- System auto discovery of motors, sensors and keypads
- IP connectivity for Sub Controller connections, virtual keypads, remote access and programming
- System can be expanded with the addition of a Sub Controller
- 200 max motor limit

animeo IP Building Controller (1822314)

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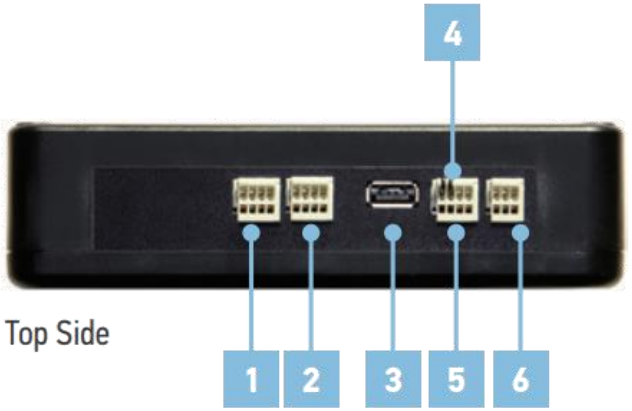
Specialty Devices

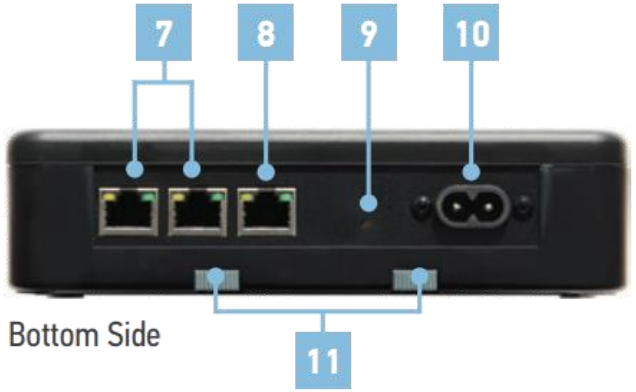
animeo IP – Building Controller

animeo® IP

	ELEMENT	FUNCTION
1	**SDN Bus**	Connection to SDN Bus
2	**Sensor Bus**	Connection to SDN sensor bus
3	**Service**	USB connection for service
4	**Alarm Input**	N/C input allowing for system override from 3rd party controller
5	**Key In**	N/O input allowing for system override from 3rd party controller
6	**Error Out**	Digital output for notification of system failure 24V DC @ 1A (N/C or N/O)
7	**animeo IP Network**	10/100 mbps Internal network for connecting to Sub Controllers
8	**External Network**	10/100 mbps Network connection to LAN for virtual keypads and remote access
9	**Status Indicator**	Solid Green = initial system boot up Rapid Green/Red Flash saving configuration Green Flash* = system normal Red Flash = system has experienced an error *Speed of flash indicates system load
10	**Power Input**	100V AC – 240V AC switching power supply
11	**Din-rail mounting pins**	For din-rail mounting



Top Side



Bottom Side

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Specialty Devices

animeo IP – Sub Building Controller

animeo® IP

- Expands system motor capacity up to 200 motors
- Additional connection point for sensors
- Integrated IP switch for simplified connectivity of additional Sub Controllers (pass through)
- Sun tracking for dynamic facade control
- Sensor threshold based motor control
- Accurate time & astronomic motor control
- System auto discovery of motors, sensors, keypads

animeo IP Sub-Controller (1860201)

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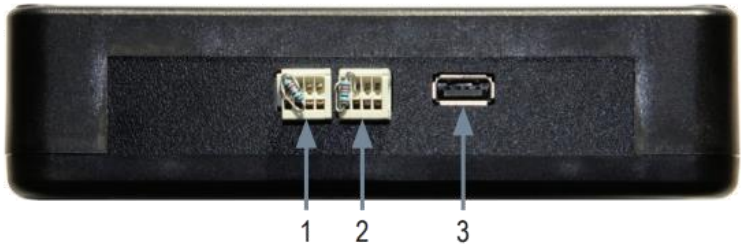
Specialty Devices

animeo IP – Sub Building Controller

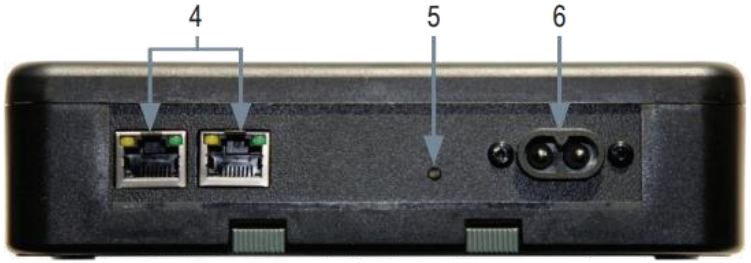
animeo® IP

	ELEMENT	FUNCTION
1	**SDN Bus**	SDN Bus for motor & keypad connection
2	**Sensor Bus**	SDN Bus for environmental sensor connection
3	**Service**	USB Connection for service
4	**Animeo IP Network**	10/100 Internal Network for connecting to Sub Controllers
5	**Status Indicator**	Solid Green = initial system boot up Rapid Green/Red Flash = configuration commit Green Flash* = system normal Red Flash = system has experienced an error (not failed) *Speed of flash indicates system load
6	**Power Input**	100V AC – 240V AC switching power supply

TOP SIDE



BOTTOM SIDE



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Specialty Devices

animeo IP – Sensor Options

animeo® IP

Compact Sensor Station

- Simple buildings
- All in one design
- 3 fixed direction sun sensors
- One Compact Sensor

Outside Sensor Box and Individual sensors

- Complex buildings
- Up to 13 positional sun sensors
- Separate sensors allow for up to 300 ft. of separation

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Specialty Devices

animeo IP – Sensor Options

animeo® IP

- Six independent sensors
  - Wind speed
  - Heated rain
  - Temperature
  - Sun intensity (3)
- Auto-discoverable
- Pole or wall mountable
- Weather tight RJ45 connector

Compact Sensor Station
(9015047)

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Specialty Devices

animeo IP – Sensor Options

animeo® IP

	ELEMENT	FUNCTION
1	**Sensor Bus Connection**	RJ45 connection for data + power (SDN Bus w/ power)
2	**Sun Sensor**	Western Sun Sensor (sensor mounting southern exposure)
3	**Sun Sensor**	Southern Sun Sensor (sensor mounting southern exposure)
4	**Sun Sensor**	Eastern Sun Sensor (sensor mounting southern exposure)
5	**Rain Sensor**	Measure precipitation
6	**Wind Sensor**	Measure wind speed
7	**Temperature Sensor**	Measure temperature
8	**Mounting Bracket**	Wall or Pole mount bracket

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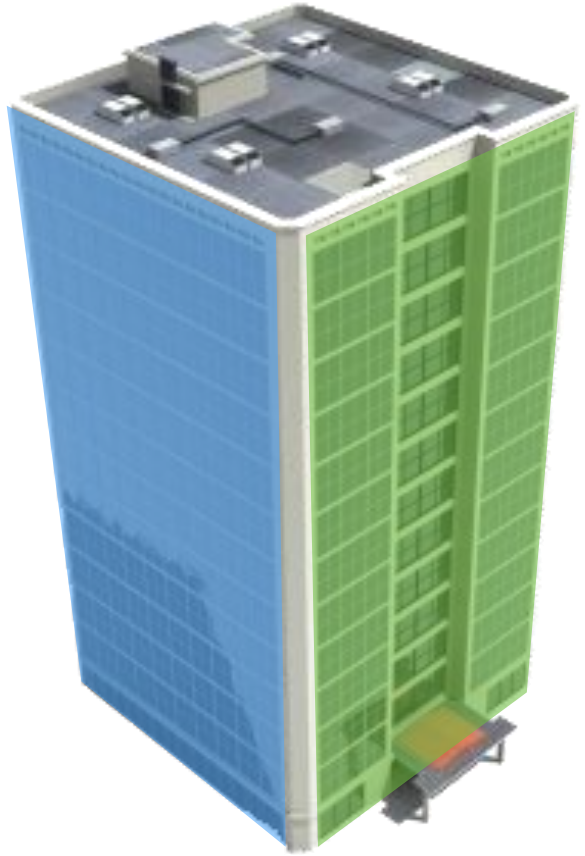
Specialty Devices

animeo IP – Sensor Options

animeo® IP



- All in one sensor:
  - (3) Sun Sensors
  - Rain Sensor
  - Wind Sensor
  - Temperature Sensor
- Powered & communicates over one SDN Cat5
- Heated for cold environments

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Specialty Devices

animeo IP – Sensor Options

animeo® IP

- The Outside Sensor Box can be mounted directly to the sensor station mast
- Up to 8 sun sensors, 2 wind speed sensors (standard or heated), 1 wind direction sensor, 1 rain sensor, 1 outside temperature sensor can be connected to the Outside Sensor Box
- Only the 24V AC power supply and data communication supply cables need to connect to the Outside Sensor Box
- All wiring is easy to install using spring clamp connectors
- Simple to connect and setup using animeo® IP building control solutions
- Status display through LED's for clear monitoring of connected and functioning individual sensors
- Can be mounted up to 120’ away from the Building Controller

Outside Sensor Box
(9001606)

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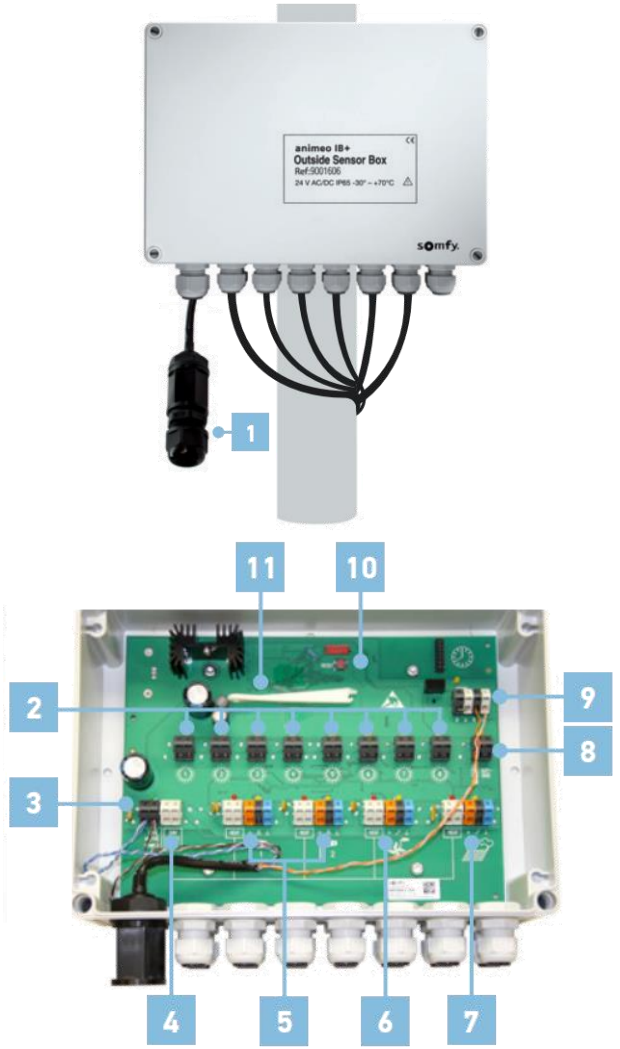
Specialty Devices

animeo IP – Sensor Options

animeo® IP

	ELEMENT	FUNCTION
1	**Weatherproof RJ45 Jack**	Powered SDN bus
2	**Sun Sensor Input 1-8***	Records input from Sun Sensor 1-8
3	**Bus Power Input***	24V DC in for powering Sensor Box & Sensors
4	**Heater Input***	24V DC for heated sensors (additional Power supply and CAT5 required)
5	**Wind Sensors Input 1-2***	Records the input from the Wind Sensor
6	**Wind Direction Input***	Records the input from the Wind Sensor
7	**Rain Sensor Input***	Records the input from the Rain Sensor
8	**Outside Temperature Sensor Input***	Records the input from the Outside Temperature Sensor
9	**Sensor Bus***	Sends the commands from the sensors to the bus line
10	**Reset Button**	Push button reset to reboot the sensor box
11	**Terminal Connection Tool**	Opens spring clamp terminal connections

Note: * shows elements that include LED indicators



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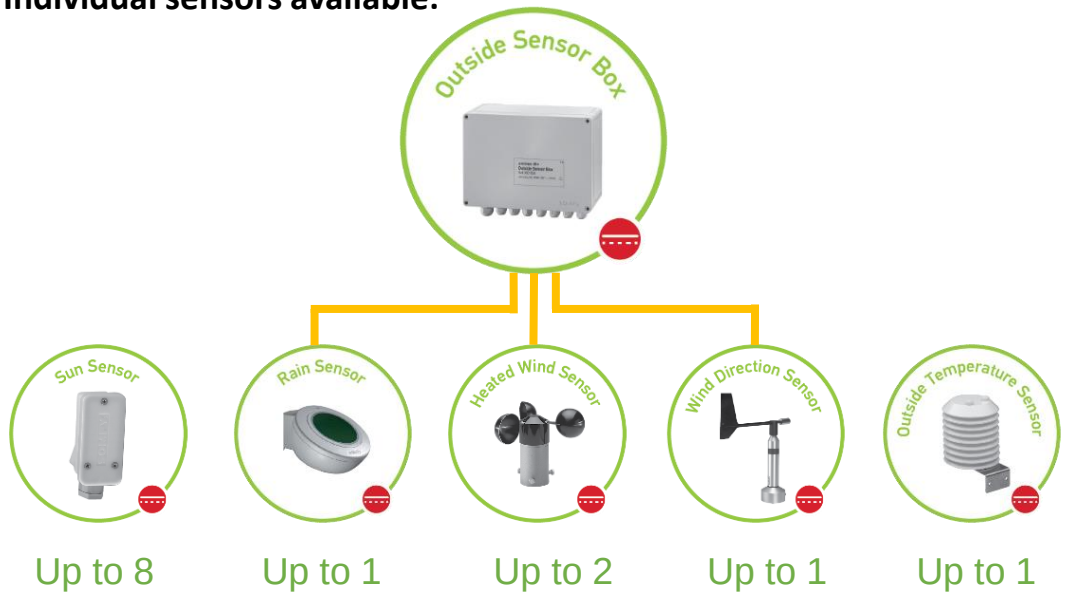
Specialty Devices

animeo IP – Sensor Options

animeo® IP

Individual sensors available:



- Powered & communicates over one SDN Cat-5 (heated sensors required additional power supply)
- Distance from Bus Power supply cannot exceed 75’ over 24 AWG or 120’ over 22 AWG Category cable.
- Can be expanded to include more sensors with an Outside Extension Box

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Specialty Devices

animeo IP – Sensor Options

animeo® IP

- Complete design including 4 Sun, 1 Wind Speed and 1 Outside Temperature Sensor
- Wall mount brackets included
  - Rooftop mounting brackets are sold separately (#9014300)
- Powered by 24V DC Bus Power Supply (#1822440)
- Power and data cables for each sensor are protected inside the sensor mast
- Compass included for exact sensor positioning
- Monitors:
  - Sun (4 cardinal directions)
  - Outside Temperature
  - Wind Speed
- Additional sensors may be added to the Complete Sensor Station (max. sensor cable length of 328 ft. or 100m)

Complete Sensor Station Mast (9013726)

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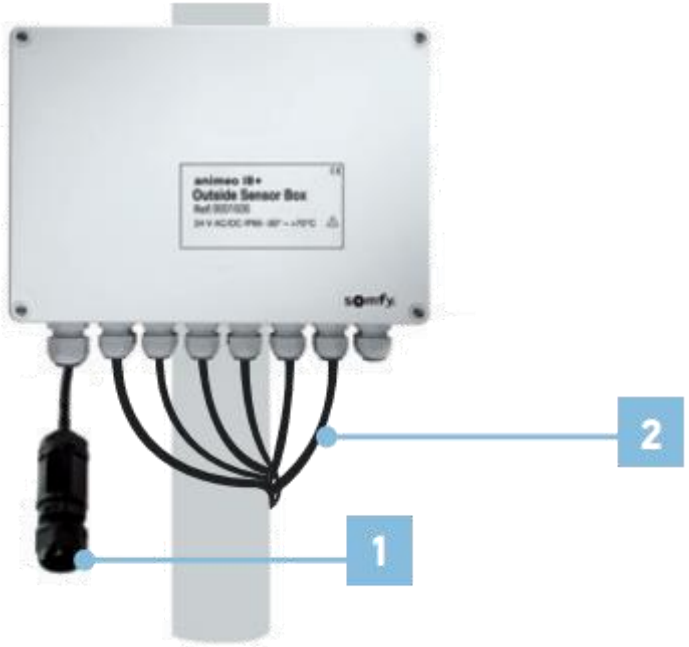
Specialty Devices

animeo IP – Sensor Options

animeo® IP

	ELEMENT	FUNCTION
1	**Weatherproof RJ45 Jack**	Sensor Bus Connection
2	**Weatherproof Sensor Cable Collars**	Pre-installed sensor cable collars



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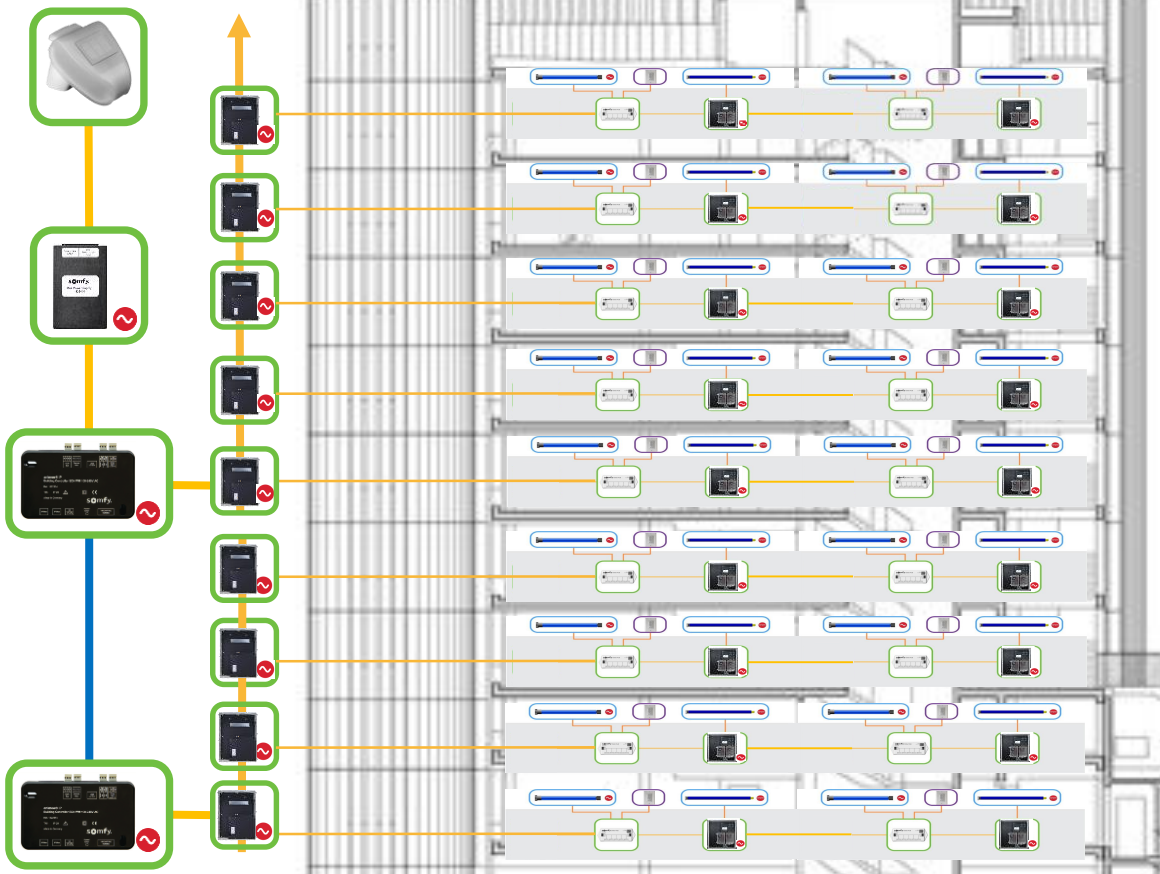
Specialty Devices

animeo IP – Best Practices

Somfy Digital Network RS485



animeo IP Building Controller

- Connect the Building Controllers over the Ethernet ports

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6

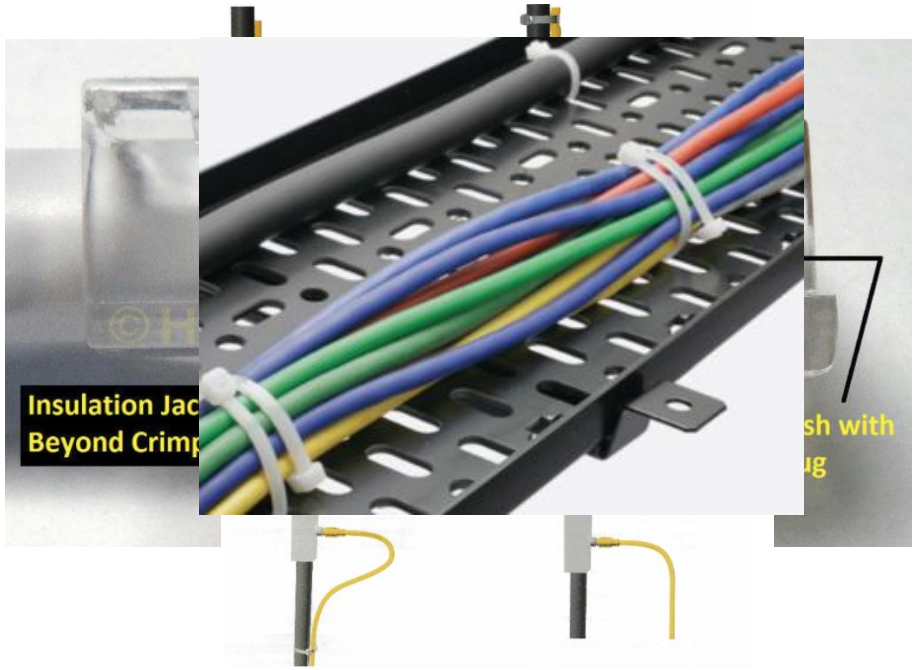
SDN Troubleshooting

SDN Troubleshooting
Cable Terminations

INCLUDE: What are proper handling of Cat5e terminations

- List details to consider for proper termination processes
- Bend radius
- Boots covering connectors
- Zip tying stress

Examples of proper wiring



Examples of poor wiring

Wiring Checklist

- Check **all** connection points
- Use a cable tester to prove out runs
- Don’t assume the guys that ran the wires tested wires
- Do they have 100’ of wire coiled up in the rafters?
- Do the motors have power NOW?
- Can you move the motor with setting tool?
- Break the system down and add 1 segment and 1 motor to the bus at a time
- Can you move the motor over the network with motor config. software?

SDN Troubleshooting

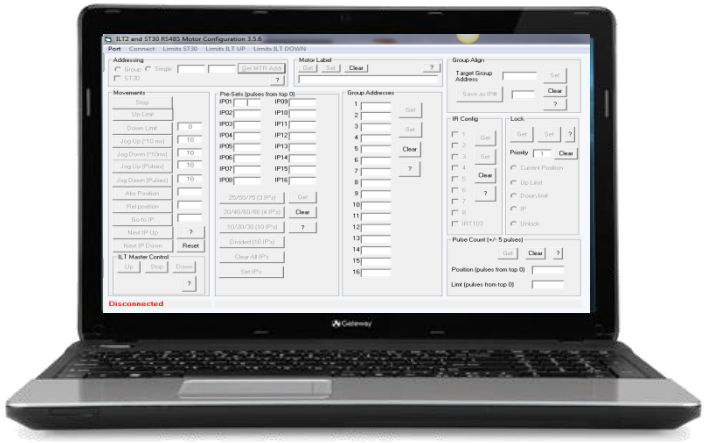
System Troubleshooting

- Test stand-alone operation with FFFFFF commands
- Use status LEDs to assess
  - Is there Power?
  - Is there multiple End of Line?
  - Is there Activity?
  - Is the Bus Locked?
  - Fully Operational in SDN Configuration Tool

7

Commissioning

Commissioning
Tools & Software



Commissioning Tools

Tools:

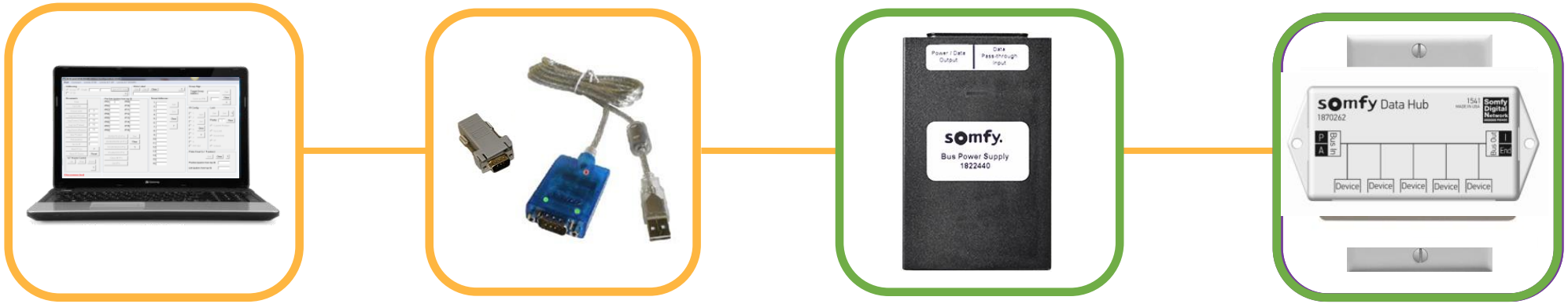
- Motor Limit Setting & Address Reader Tool
- USB-485 Adapter
- Bus Power Supply

Software:

- Motor configuration software
- Keypad configuration software

Commissioning
Tools & Software

Somfy Digital Network RS485



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Commissioning

RS485 Motor Limit Setting & Address Reader Tool

RS485 setting tool functions:

- Discover motors
- Motor limit setting
- Advance motor settings
  - Rotation direction
  - Intermediate positions
  - Reset limits and rotation direction (factory mode)
- Compatible with:
  - Sonesse 50 AC RS485
  - Sonesse 50 DC RS485
  - LT50 AC RS485
  - Sonesse 30 RS485
- Updatable software

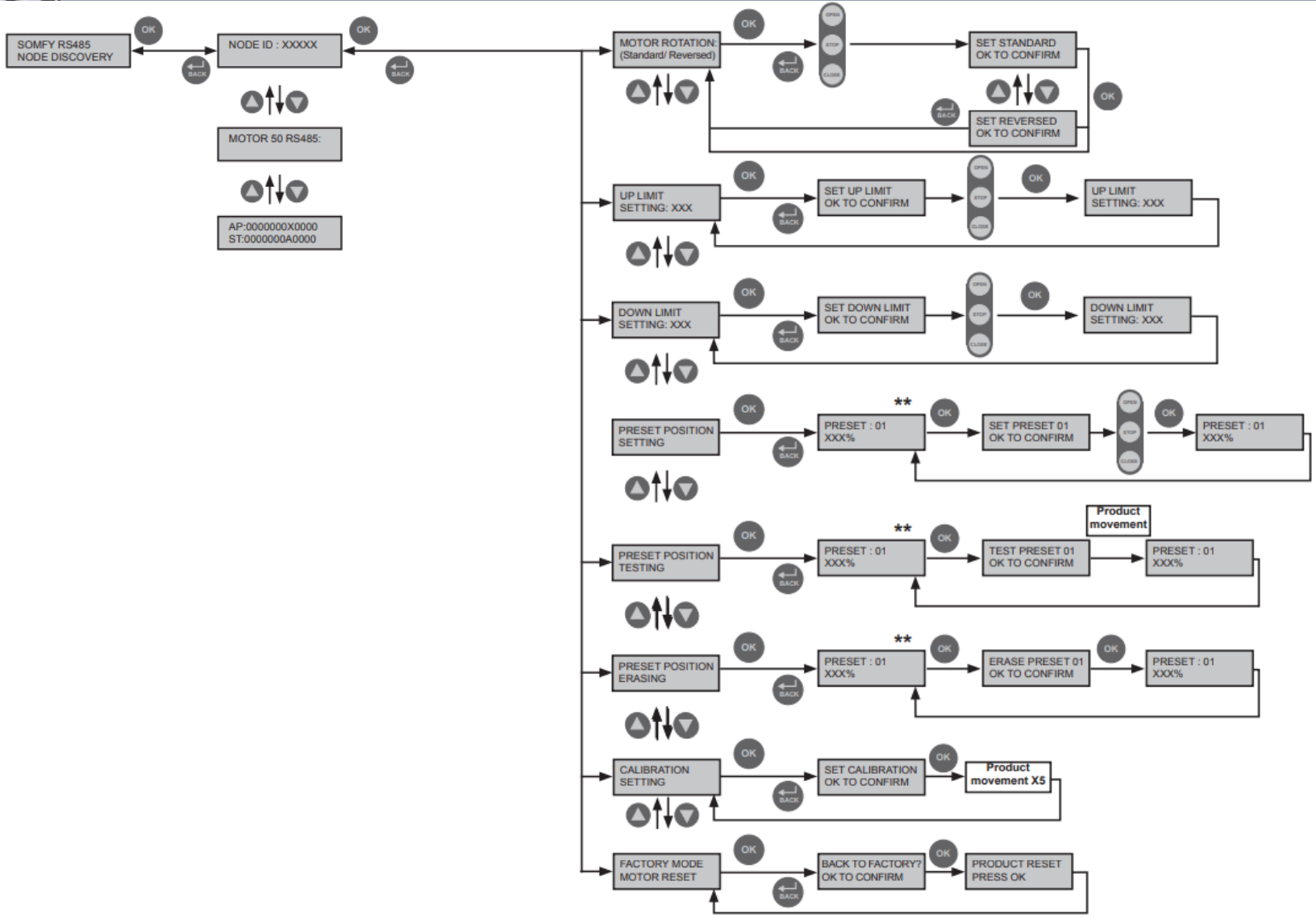
RS485 Motor Limit Setting & Address Reader Tool (9017142)

Commissioning

RS485 Motor Limit Setting & Address Reader Tool

Commissioning

RS485 Motor Limit Setting & Address Reader Tool

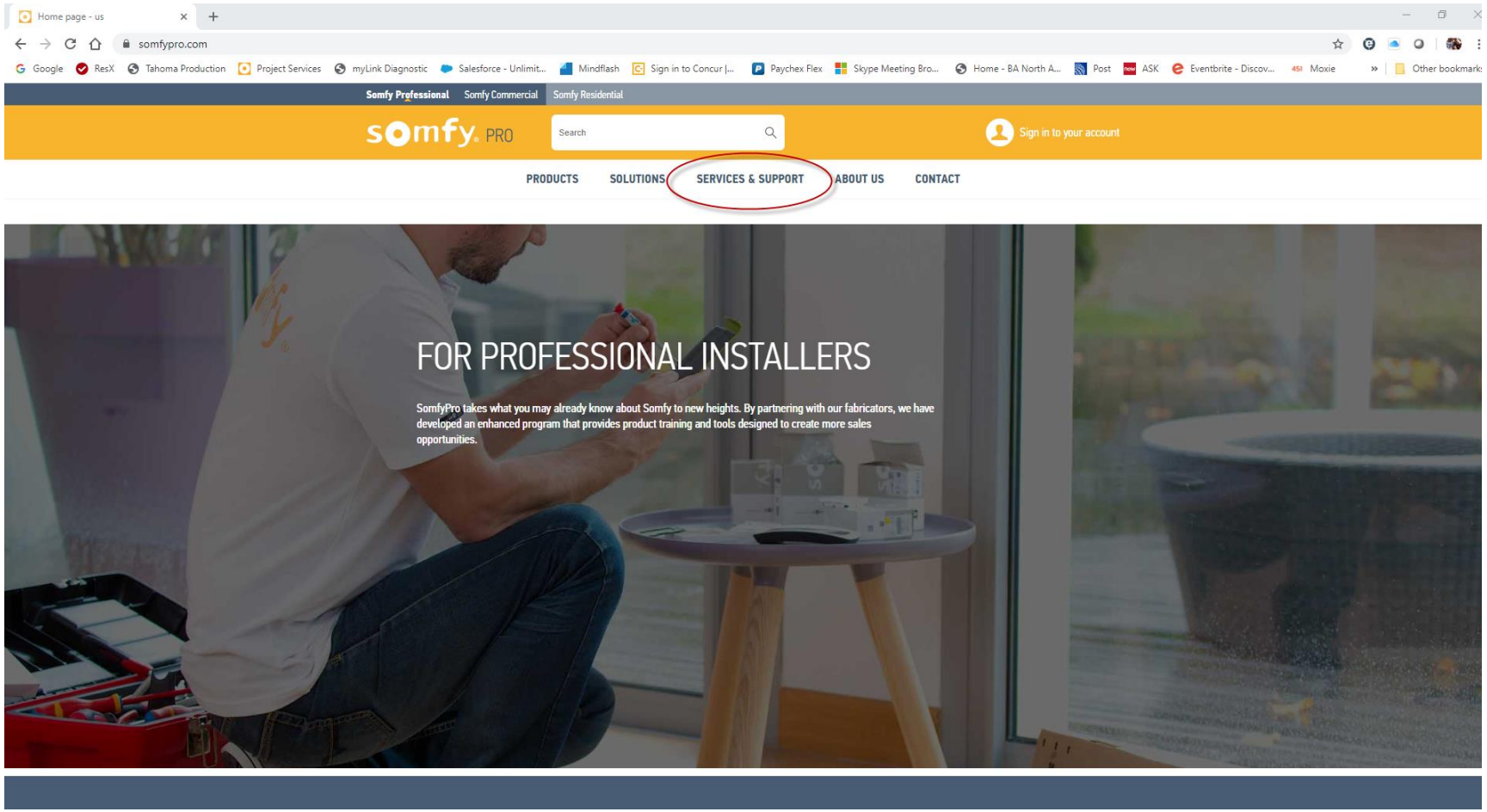


Commissioning

Where to Find Software

Always refer to Somfypro.com Support section

for the most current version of the PC Software.



8

Project Services

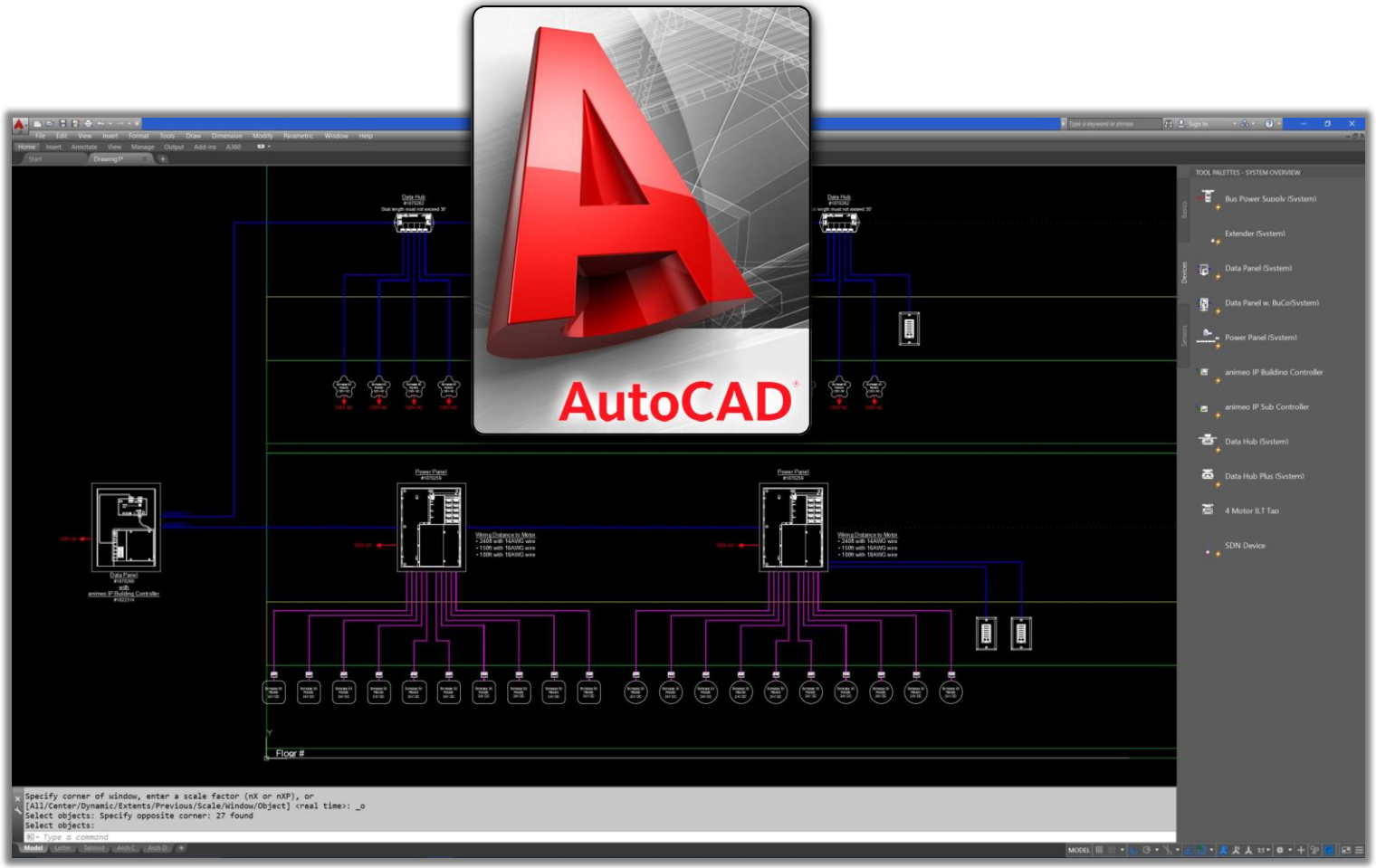
Project Services

Standard Technical Documentation

Somfy Digital Network RS485

AutoCAD Based Drawings -

- Industry Standard
  - Easily understood by all trades
    - Architect
    - Engineer
    - Electrician
    - Integrator
- AutoCAD Tools
  - Drawing Templates
  - Clearly defined wiring
  - Cleary defined components
  - Somfy blocks available



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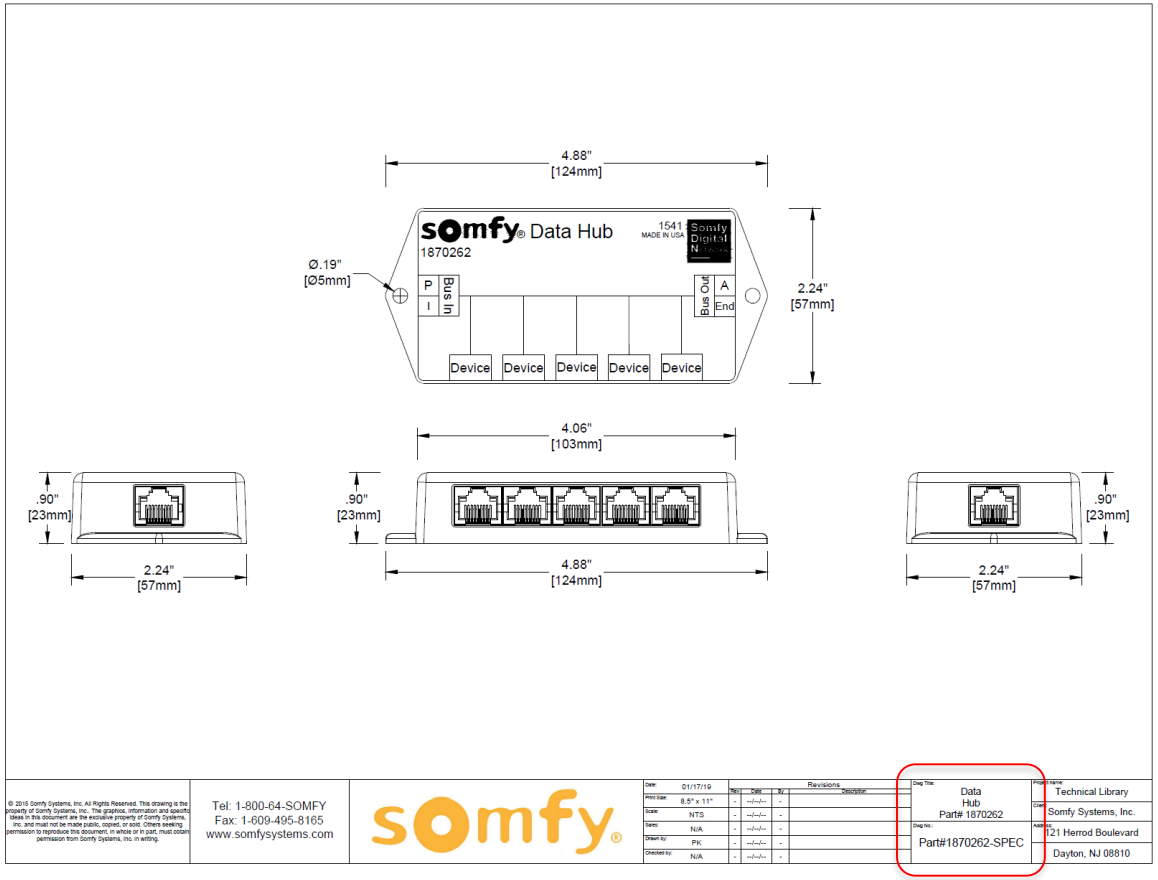
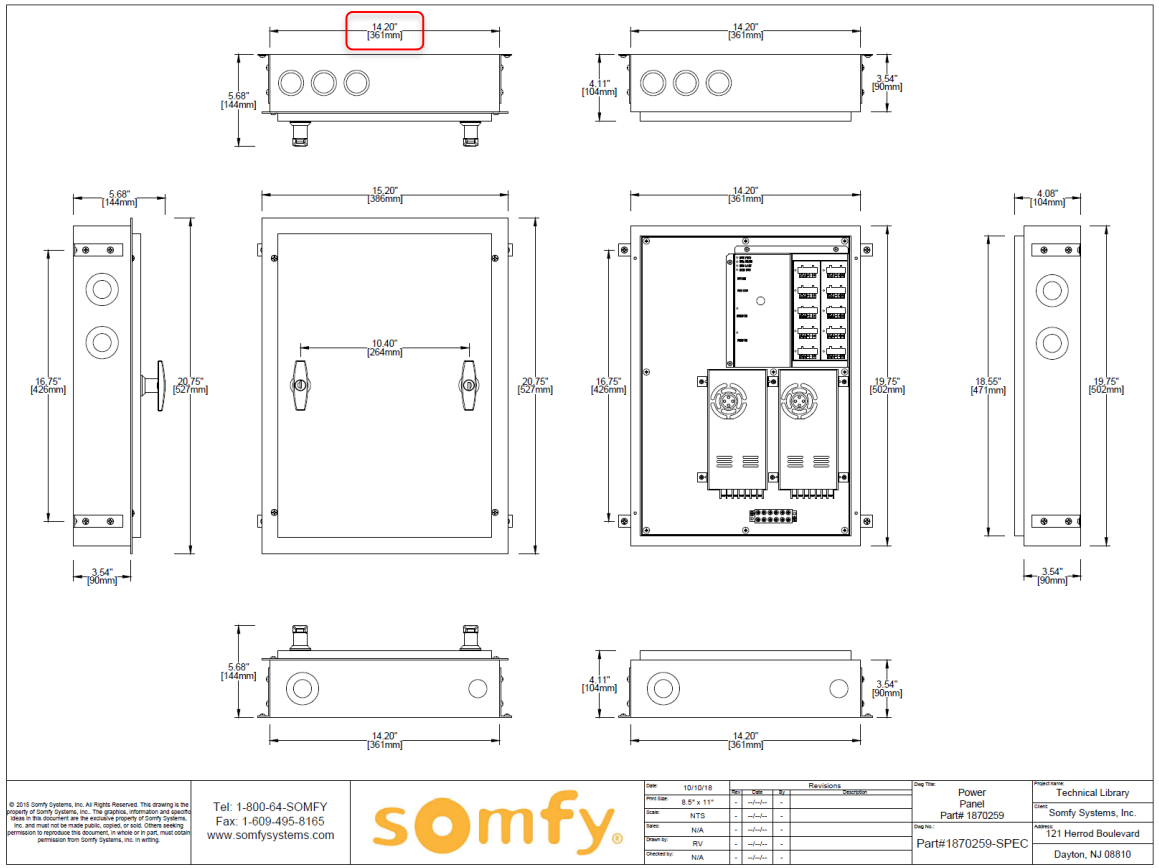
Physical Specifications -



Product Name & Part Number

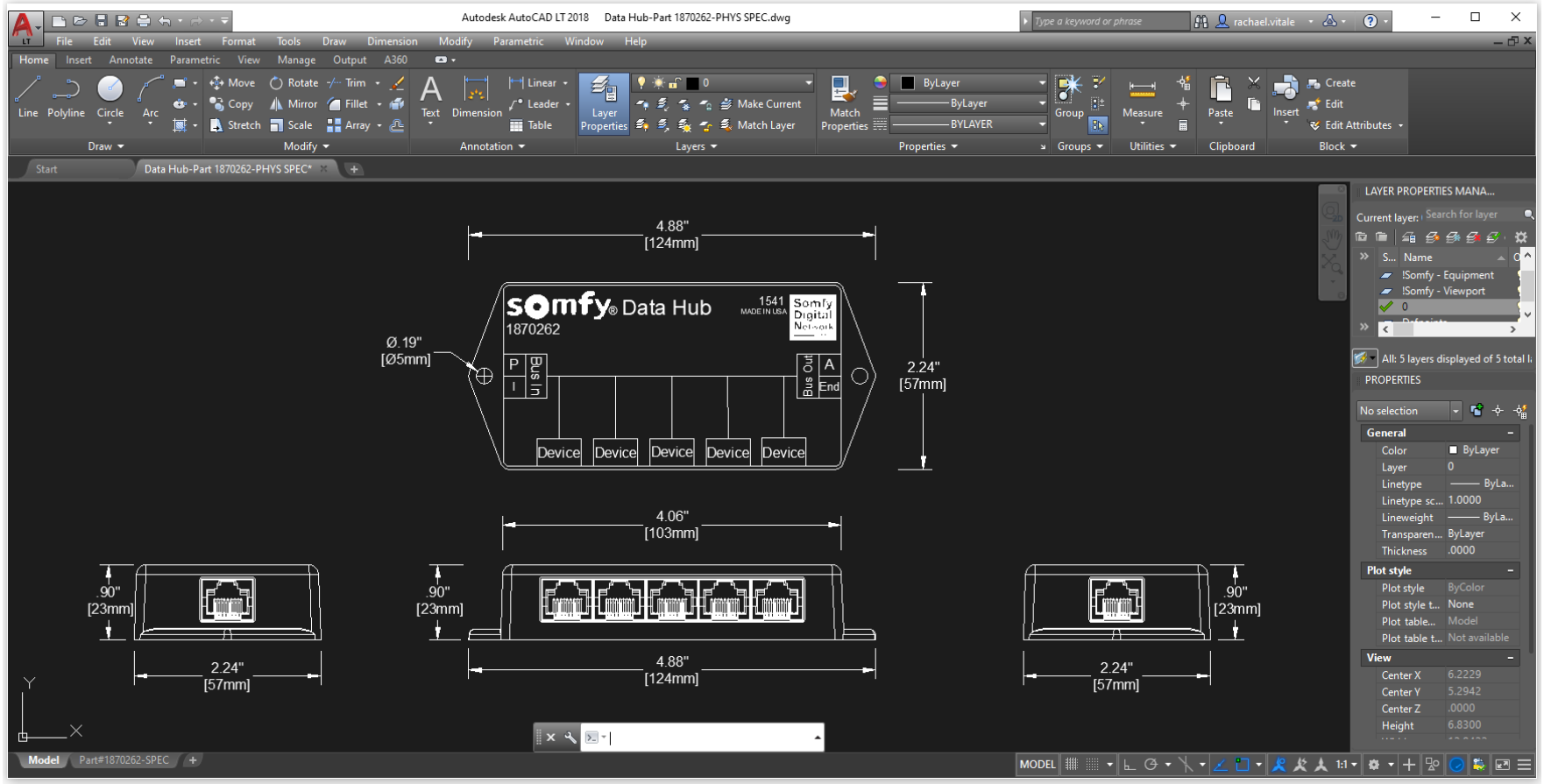
Product Dimensions
[Imperial & Metric]



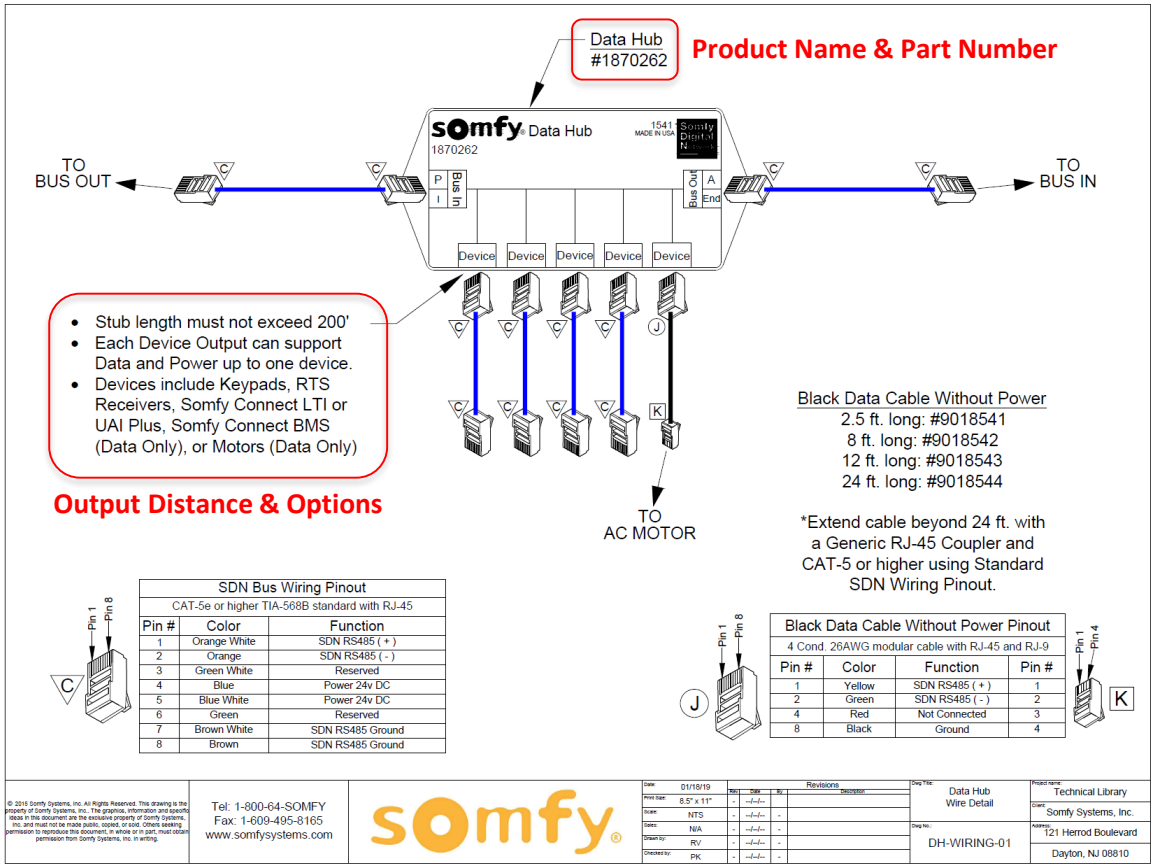
Project Services

Standard Technical Documentation

Physical Specifications -



Wire Details – Devices, Controls, Sensors, Integration



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

Black Data Cable Without Power Pinout			
4 Cond. 26AWG modular cable with RJ-45 and RJ-9			
Pin #	Color	Function	Pin #
1	Yellow	SDN RS485 (+)	1
2	Green	SDN RS485 (-)	2
4	Red	Not Connected	3
8	Black	Ground	4

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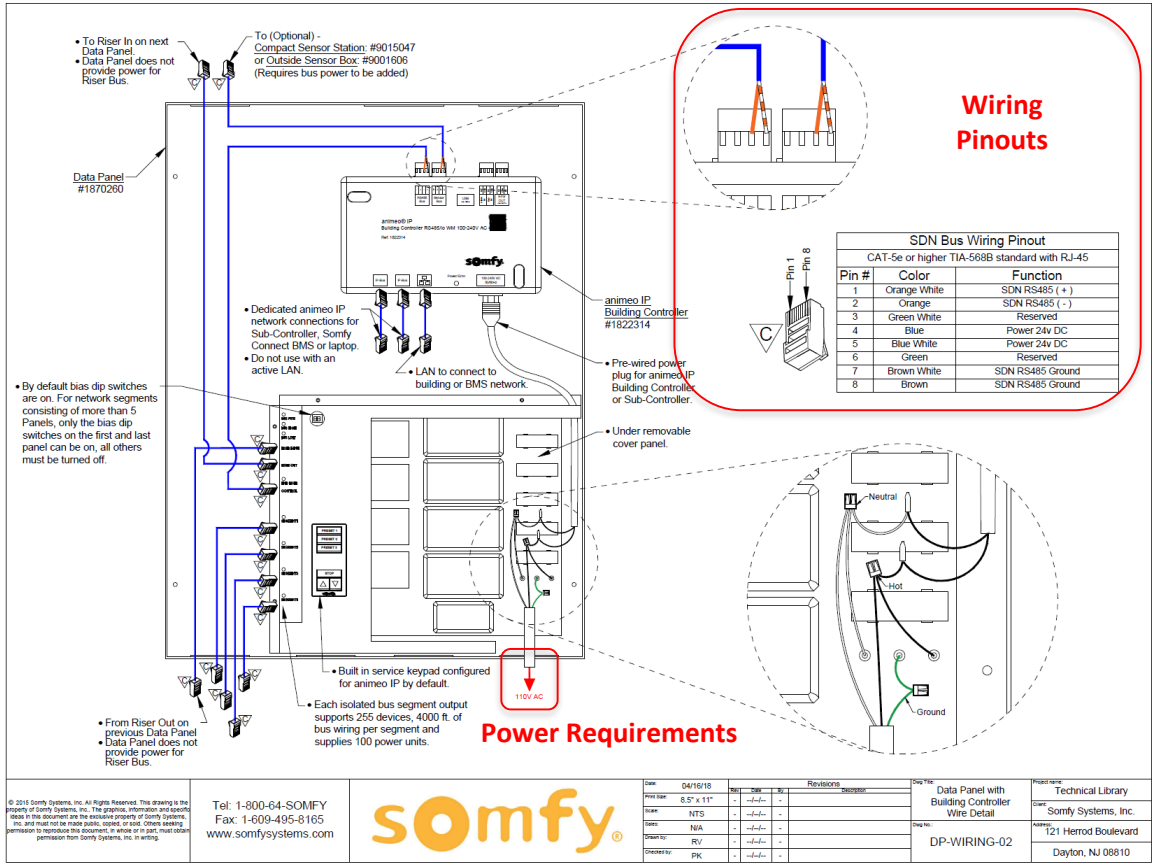
Tel: 1-800-64-SOMFY
Fax: 1-609-495-8165
www.somfysystems.com

Date:	01/18/19	Revisions				Dwg Title:	Data Hub Wire Detail
Print Size:	8.5" x 11"	Rev	Date	By	Description	Project name:	Technical Library
Scale:	NTS	-	--/--/--	-		Client:	Somfy Systems, Inc.
Sales:	N/A	-	--/--/--	-		Dwg No.:	DH-WIRING-01
Drawn by:	RV	-	--/--/--	-		Address:	121 Herrod Boulevard
Checked by:	PK	-	--/--/--	-			Dayton, NJ 08810



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

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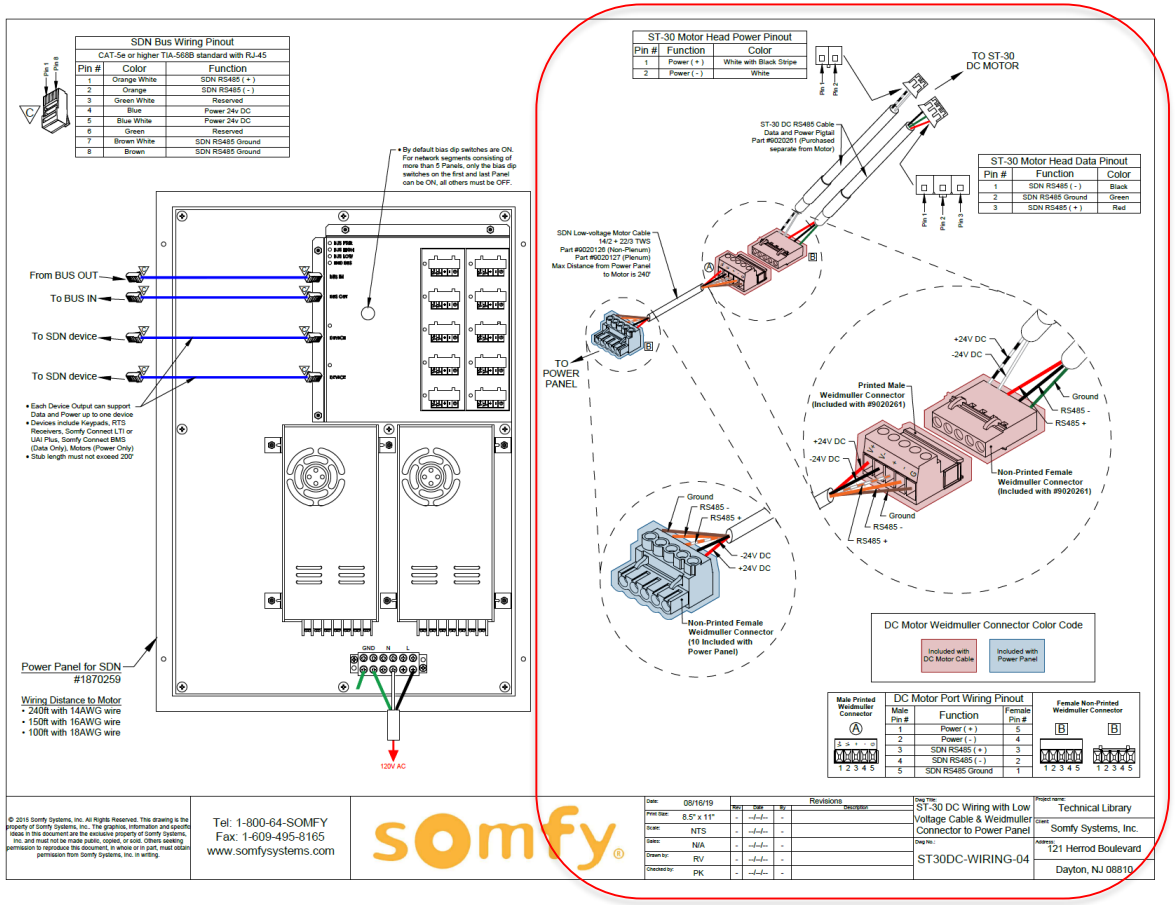
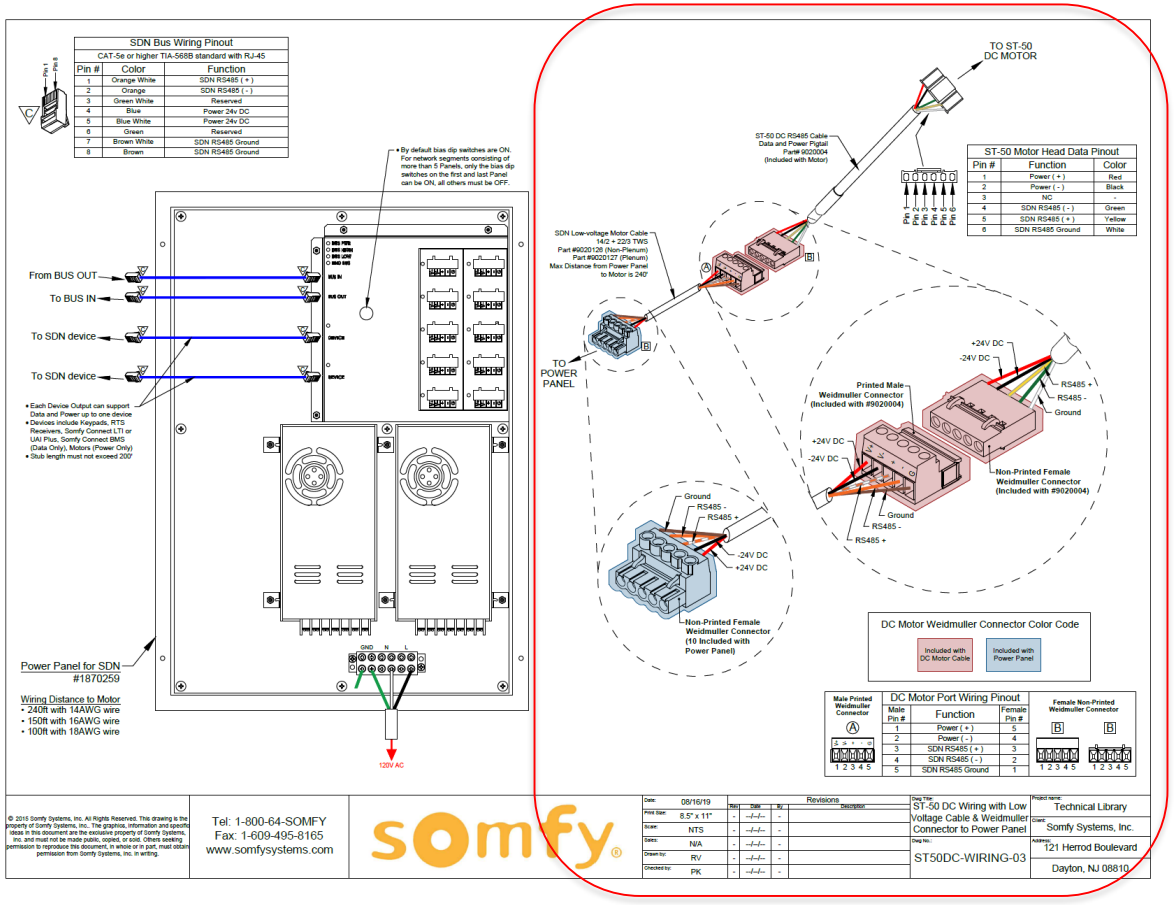
Tel: 1-800-64-SOMFY
Fax: 1-609-495-8165
www.somfysystems.com

Date:	04/16/18	Revisions				Dwg Title:	Data Panel with Building Controller Wire Detail
Print Size:	8.5" x 11"	Rev	Date	By	Description	Project name:	Technical Library
Scale:	NTS	-	--/--/--	-		Client:	Somfy Systems, Inc.
Sales:	N/A	-	--/--/--	-		Dwg No.:	DP-WIRING-02
Drawn by:	RV	-	--/--/--	-		Address:	121 Herrod Boulevard
Checked by:	PK	-	--/--/--	-			Dayton, NJ 08810

Wire Details – DC Motor

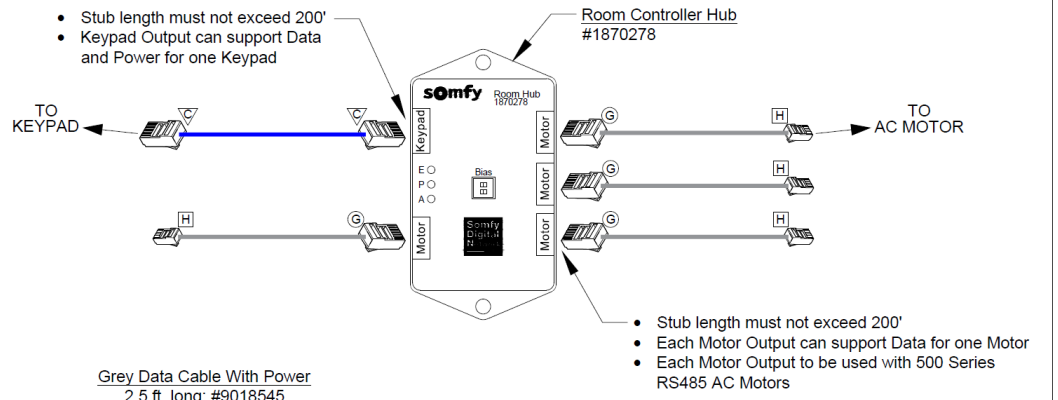


ST-30 DC Motor



ST-50 DC Motor

Wire Details – All Possible Wiring Options



Grey Data Cable With Power
2.5 ft. long: #9018545
8 ft. long: #9018546
12 ft. long: #9018547
24 ft. long: #9018548

*Extend cable beyond 24 ft. with a Generic RJ-45 Coupler and CAT-5 or higher using Standard SDN Wiring Pinout.

Grey Data Cable With Power Pinout			
4 Cond. 26AWG modular cable with RJ-45 and RJ-9			
Pin #	Color	Function	Pin #
1	Yellow	SDN RS485 (+)	1
2	Green	SDN RS485 (-)	2
4	Red	Power Out	3
8	Black	Ground	4

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

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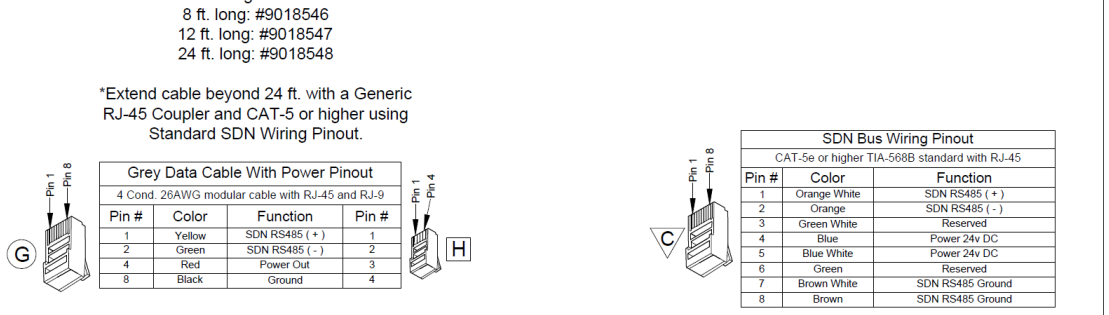
www.somfysystems.com

Date:	01/18/19
Print Size:	8.5" x 11"
Scale:	NTS
Sales:	N/A
Drawn by:	RV
Checked by:	PK

Revisions

No.	Date	By	Description
-	--/--/--	-	

Dwg Title: Room Controller Hub Wire Detail
Dwg No.: RCH-WIRING-01
Project name: Technical Library
Client: Somfy Systems, Inc.
Address: 121 Herrod Boulevard, Dayton, NJ 08810



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 (-)
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6	Green	Reserved
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Grey Data Cable With Power
2.5 ft. long: #9018545
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12 ft. long: #9018547
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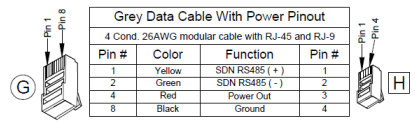
*Extend cable beyond 24 ft. with a Generic RJ-45 Coupler and CAT-5 or higher using Standard SDN Wiring Pinout.



Grey Data Cable With Power Pinout			
4 Cond. 26AWG modular cable with RJ-45 and RJ-9			
Pin #	Color	Function	Pin #
1	Yellow	SDN RS485 (+)	1
2	Green	SDN RS485 (-)	2
4	Red	Power Out	3
8	Black	Ground	4

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Date:	01/18/19
Print Size:	8.5" x 11"
Scale:	NTS
Sales:	N/A
Drawn by:	RV
Checked by:	PK

Revisions

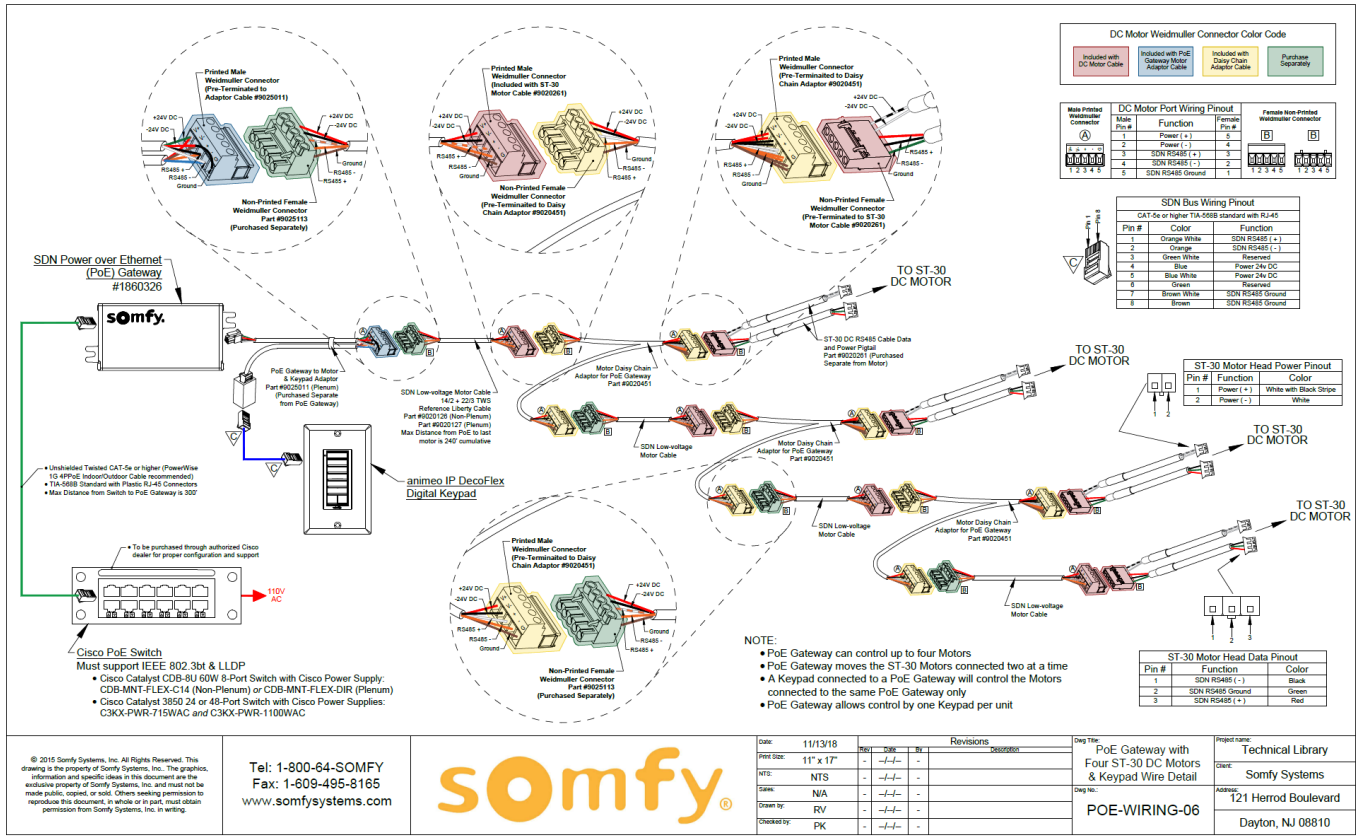
No.	Date	By	Description
-	--/--/--	-	

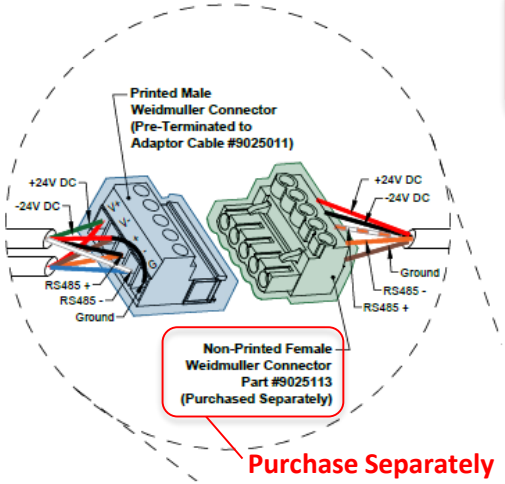
Dwg Title: Two Room Controller Hubs Wire Detail
Dwg No.: RCH-WIRING-02
Project name: Technical Library
Client: Somfy Systems, Inc.
Address: 121 Herrod Boulevard, Dayton, NJ 08810

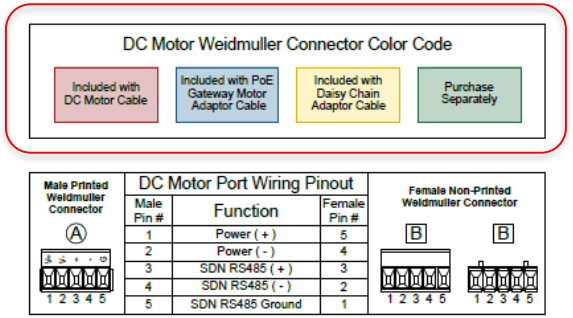
Project Services
Standard Technical Documentation

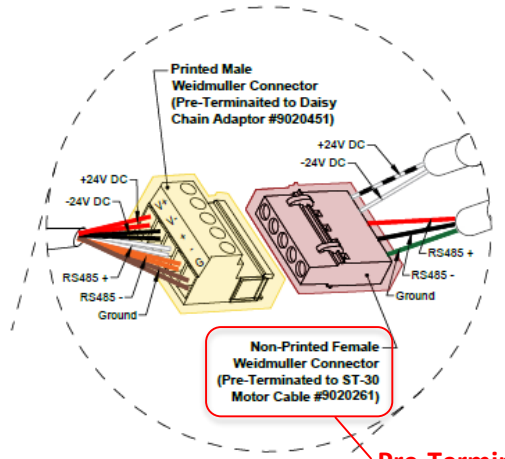
Somfy Digital Network RS485

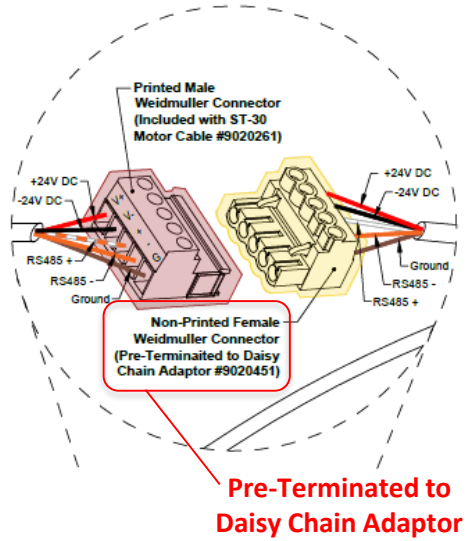
Wire Details – Simplified Ordering Process











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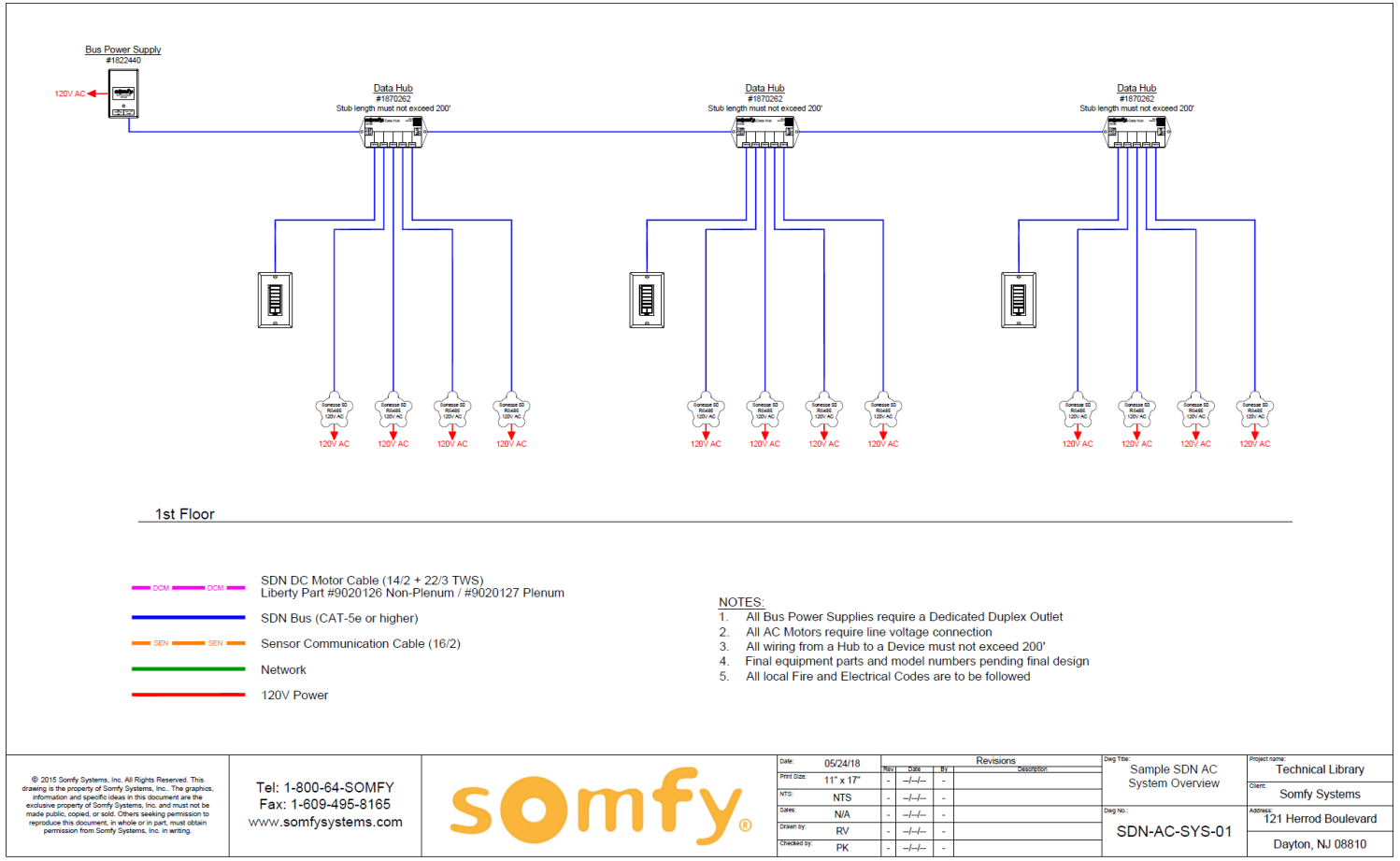
Project Services
Standard Technical Documentation

System Overview Diagrams -

- Ultimate Pre-sale Tool!
- Full systems in a snapshot
- Demonstrates the size, scope and course of an intelligent motor bus line
- Compare Systems side by side:

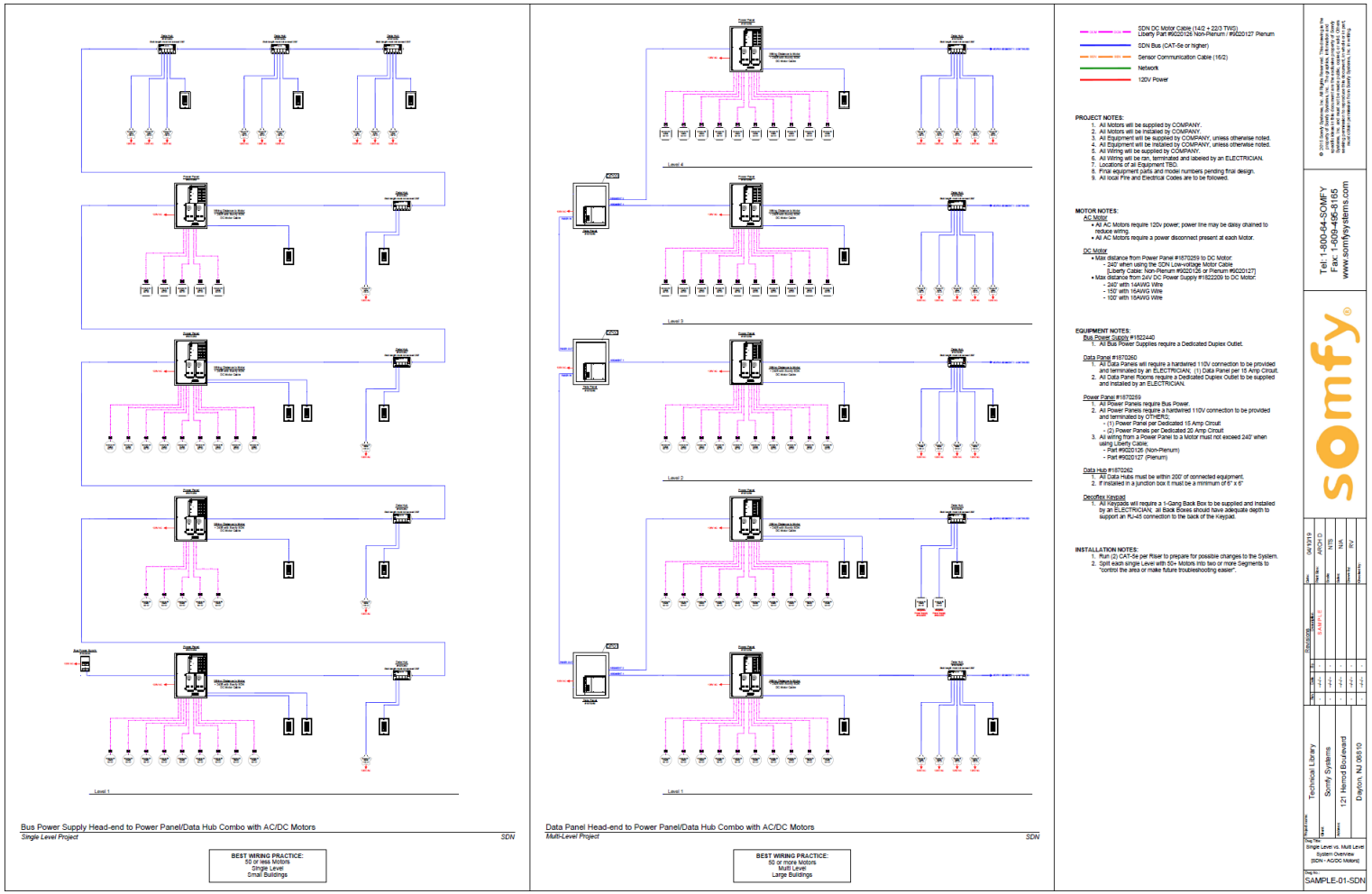


Project Services
Standard Technical Documentation

System Overview Diagrams -

- Ultimate Pre-sale Tool!
- Full systems in a snapshot
- Demonstrates the size, scope and course of an intelligent motor bus line
- Compare Systems side by side:

Small Scale vs. Large Scale
SDN System
with AC & DC Motors



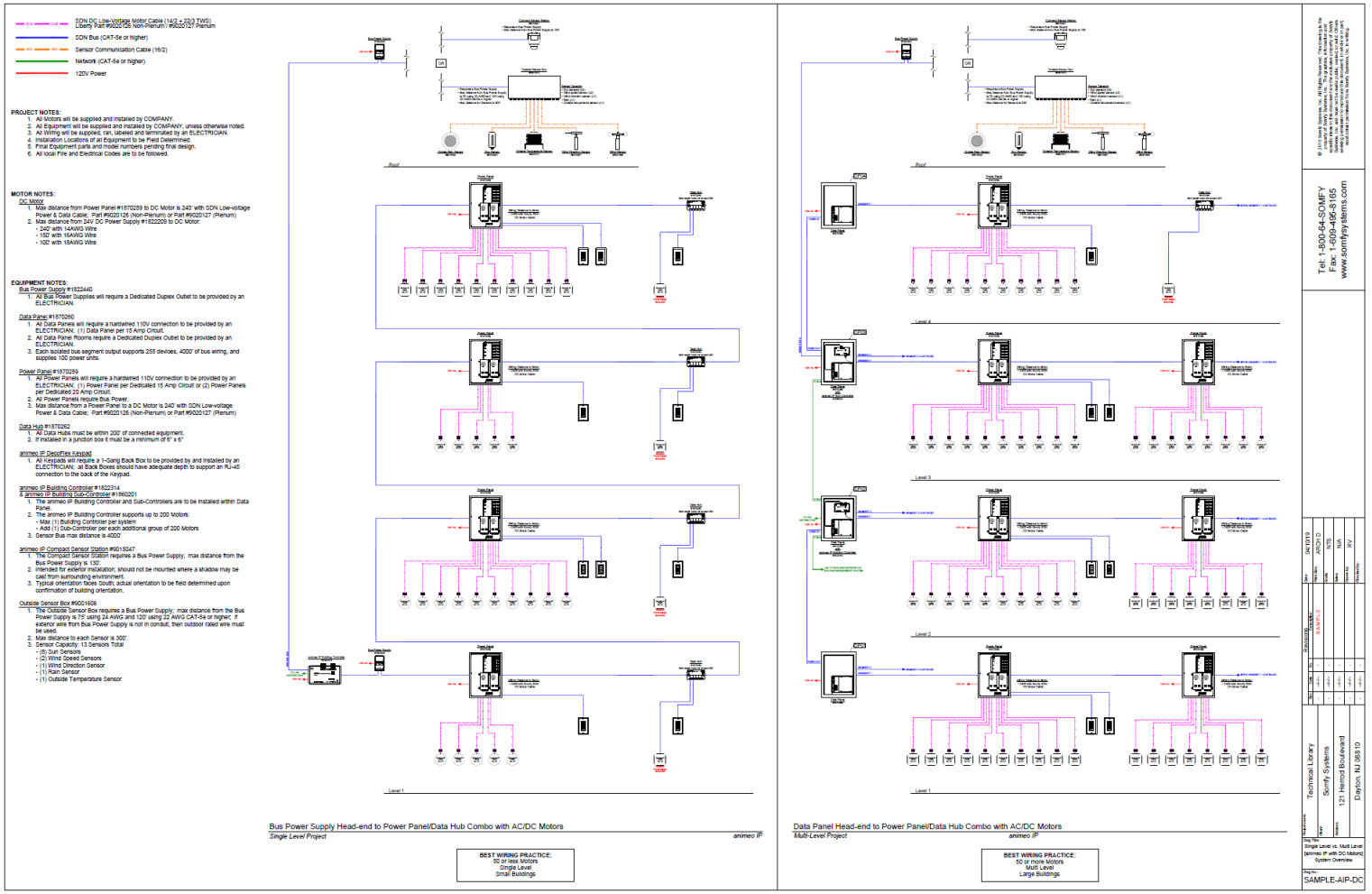
Project Services
Standard Technical Documentation

Somfy Digital Network RS485

System Overview Diagrams -

- Ultimate Pre-sale Tool!
- Full systems in a snapshot
- Demonstrates the size, scope and course of an intelligent motor bus line
- Compare Systems side by side:

Small Scale vs. Large Scale
animeo IP System
with DC Motors



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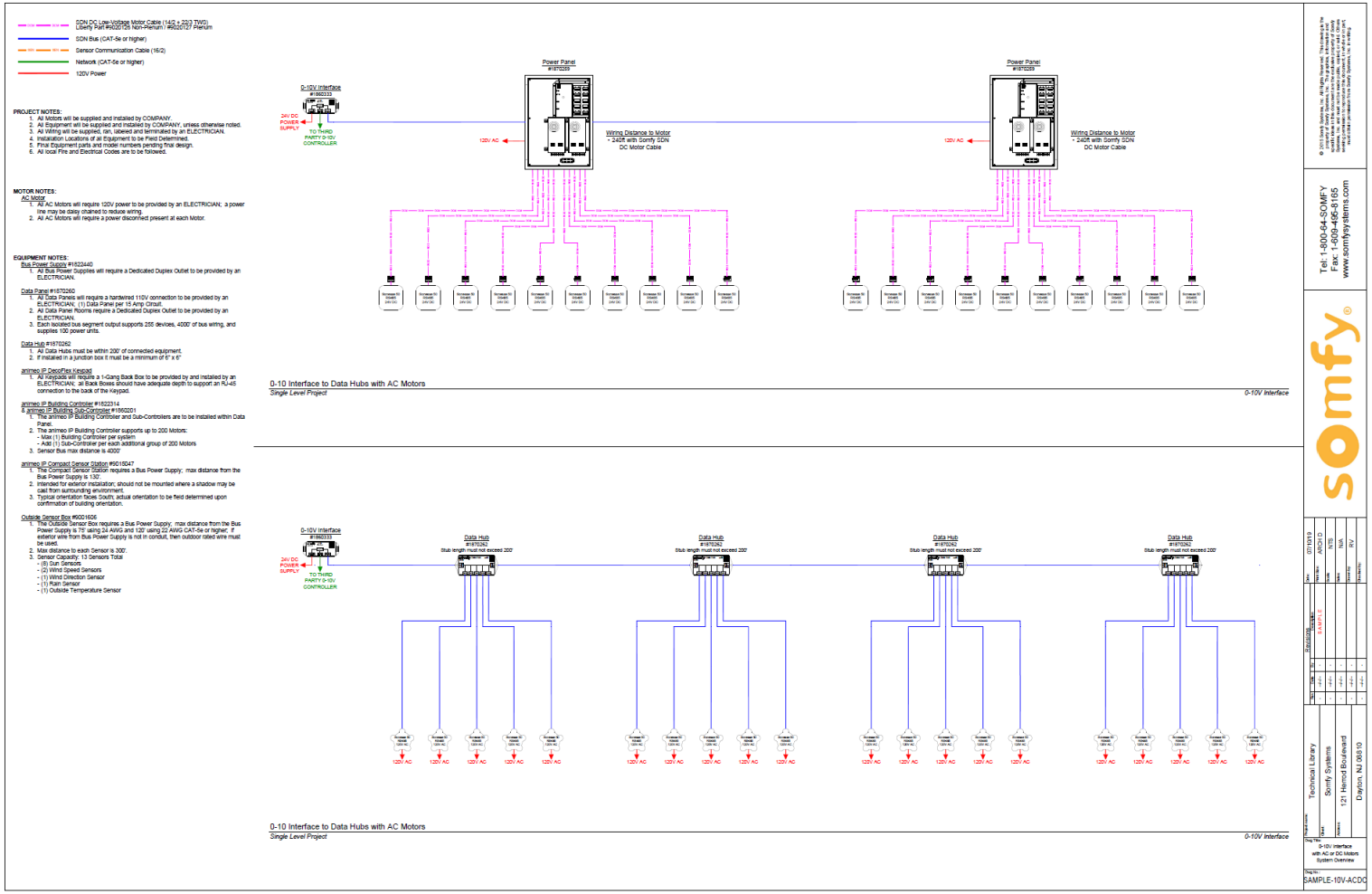
Somfy Digital Network RS485

System Overview Diagrams -

- Ultimate Pre-sale Tool!
- Full systems in a snapshot
- Demonstrates the size, scope and course of an intelligent motor bus line
- Compare Systems side by side:

0-10V Interface
DC Motors vs. AC Motors



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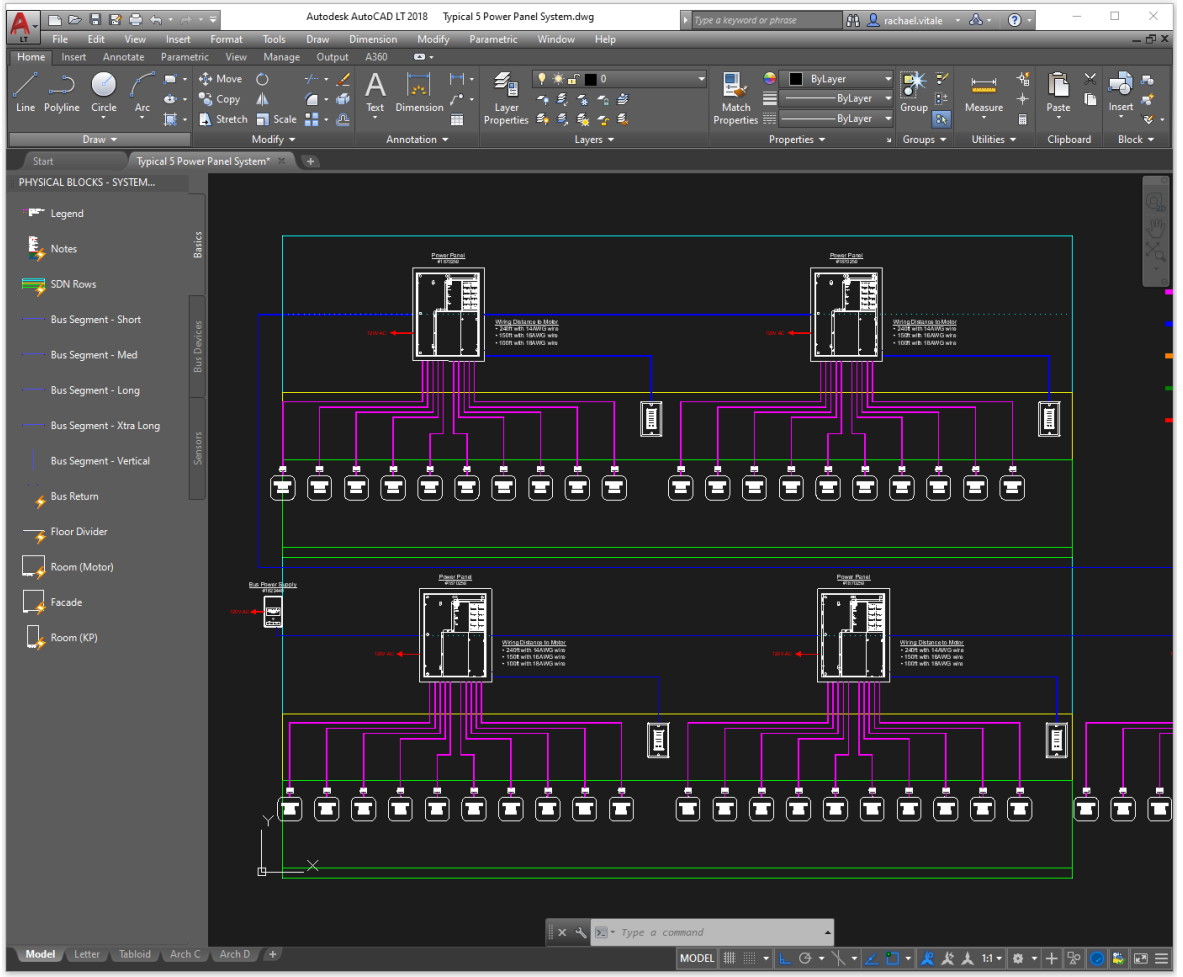
Project Services

Custom Technical Documentation

Somfy Design Suite -

- Simple drag and drop solution to create custom System Overview diagrams for your projects
- AutoCAD experience not required to use!
- Purchase includes:
  - AutoCAD add-on
  - Startup webinar hosted by Project Services
  - Free support and updates to the Design Suite
- Components include product names, part numbers, wiring requirements and restrictions
- Title block templates include project name, project address and dealer on all drawings



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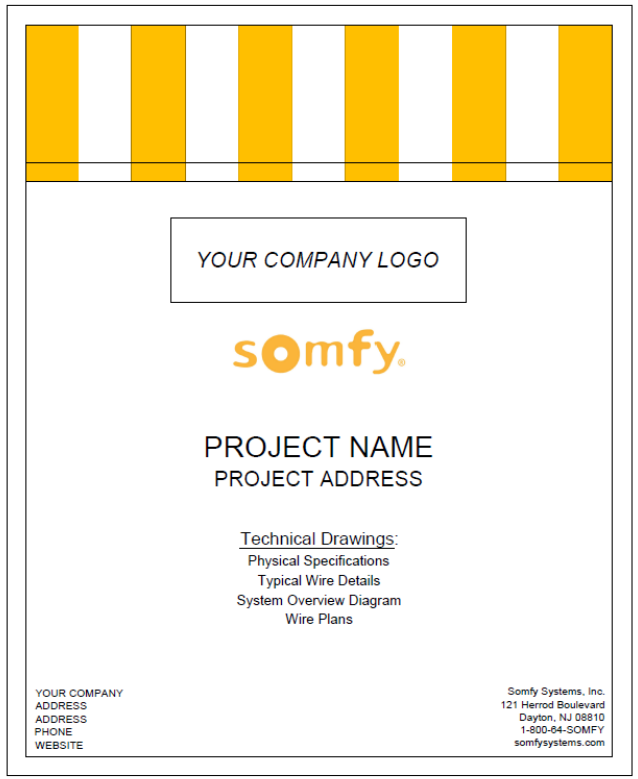
Custom Technical Documentation

Somfy Digital Network RS485

Complete Design Package -

Created by SOMFY

~~03/02/20 - REV 0 - FOR REVIEW ONLY~~
~~03/10/20 - REV 1 - FOR REVIEW ONLY~~
03/20/20 - REV 2 - FOR REVIEW ONLY



For YOU

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Project Services
Support Summary

- Free General Documentation
  - Physical Specification PDFs and DWG
  - Typical Wire Detail PDFs
  - Typical System Overview PDFs
- Somfy Design Suite System Overview AutoCAD Add-On for purchase
  - Provides the tools for you to create your own professional standardized documents
  - Currently supporting the creation of System Overview documents.
  - Future Releases to support Wire Plans and more…
- Fee Based Project Specific Documentation
  - Medium to Large System Overviews
  - Project Specific Wire Details
  - Wire Plans
  - Elevations
  - Complete Design Packages
- Fee Based Commissioning Service
  - Job specific quotes based on many factors such as type of system, size, custom programming, location, and duration.

SDN Tech Training Presentation

Thank you!

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