SECTION 12 25 09

WINDOW TREATMENT MOTORS, CONTROLS, AND NETWORKED AUTOMATION SYSTEMS

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\*\* NOTE TO SPECIFIER \*\* Somfy; commercial motors and controls for window coverings.
This section is based on the products of Somfy, which is located at:
121 Herrod Blvd.
Dayton, NJ 08810
Toll Free: 800-64-SOMFY
Phone: 609-395-1300
Email: \_\_\_\_\_\_\_\_.
https://www.somfysystems.com
6411 Edwards Blvd,
Mississauga, ON L5T 2P7
Toll Free: 800-66-SOMFY
Phone: 905-564-6446
Email: \_\_\_\_\_\_\_\_.
https://www.somfysystems.com
[Click Here] for additional information.
Somfy is the leading global manufacturer of strong, quiet motors with electronic and app controls for interior and exterior window coverings. Over 270 million users worldwide enjoy the more than 150 million motors produced by Somfy.

1. GENERAL
	1. SECTION INCLUDES

\*\* NOTE TO SPECIFIER \*\* Delete items below not required for project.

* + 1. Motor Operators for the Following:
			1. Roller Shades.
			2. Curtains and drapes.
		2. Controls:
			1. Wired technology.
			2. Wireless technology.
			3. Digital network technology.
		3. Sensor Controls: Digital wired network.
		4. Power and data accessories.
		5. Integration accessories.
	1. RELATED SECTIONS

\*\* NOTE TO SPECIFIER \*\* Delete any sections below not relevant to this project; add others as required.

* + 1. Section 06 10 00 - Rough Carpentry. For wood blocking and grounds for mounting motors, controls, and accessories.
		2. Section 12 22 00 - Curtains and Drapes. For curtains and drapes.
		3. Section 12 24 13 - Roller Window Shades. For window shades.
		4. Section 26 05 19 - Low-Voltage Electrical Power Conductors and Cables. For power cables when scope of work to be by others.
		5. Section 26 05 53 - Identification for Electrical Systems. For identification of products and requirements.
		6. Section 26 09 23 - Lighting Control Devices. For balanced twisted pair cabling for control-voltage electrical power cables
		7. Section 26 09 33 - Central Dimming Controls. For lighting control system for control of motorized window shades via 0-10v technology.
		8. Section 26 09 36 - Modular Dimming Controls. For lighting control system for control of motorized window shades.
		9. Section 26 09 43.16 - Addressable-Luminaire Lighting Controls. For lighting integration into digital shading systems.
		10. Section 26 09 43.23 - Relay-Based Lighting Controls. For lighting integration into digital shading systems.
		11. Section 26 27 26 - Wiring Devices. For wall switches.
	1. SUBMITTALS
		1. Submit under provisions of Section 01 30 00 - Administrative Requirements.
		2. Product Data: For each type of product.
			1. Include component assembly details, material descriptions, dimensions of individual components and profiles, features, finishes, operating equipment, control systems, power and signal types, electrical and communications requirements and connections, wiring diagrams, and installation instructions.
		3. Sustainable and Healthy design credits can be achieved when using motorized drapery, windows, skylights, blinds, shades, fabric awnings, and other sun-control devices with networked automation controls that can contribute to sustainable and Healthy design LEED v4.1 and WELL v2, Green Globes, or IgCC credits during design and post construction.
		4. Sustainable Design Submittals:
			1. Product Data: For interior lighting.
				1. Data sheets for motor-operator system controls.
				2. Data sheets for BMS interface and networked automation controls.
			2. Building simulation for daylighting and building performance.
			3. Type III Environmental Product Declarations (EPD) if available.
			4. RoHS/CE and REACH compliant documentation.
		5. Shop Drawings:
			1. Include plans, elevations, sections, and mounting details.
			2. Include details of equipment assemblies. Indicate dimensions, weights, loads, required clearances, method of field assembly, components, and location and size of each field connection.
			3. Somfy Design Package or approved alternative.
			4. Description of Operations pertaining to automation schedule.
			5. Motor-Operator and Control Systems:
				1. Include details for power, signal, wiring, and:

\*\* NOTE TO SPECIFIER \*\* Delete options not required.

Line-voltage 120 Vac.

Low-voltage 24 Vdc.

Wired technology motors.

Wireless technology motors.

Digital network technology motors.

\*\* NOTE TO SPECIFIER \*\* Delete any of the following items not required.

* + - * 1. Installation instructions.
				2. System riser diagrams.
				3. Sensor positioning diagrams.
				4. Include requirements for interfacing with other systems.
				5. Include wiring detail for interconnection between components; gauge of wiring, wire limitations, connection to building electrical to follow local electrical code.
				6. Include final document package reflecting all changes to infrastructure, equipment type, locations, and other changes from original documentation.
				7. Include floor plan drawings to meet designated requirements of the building infrastructure and locations of all system components.
				8. Provide completed operation and maintenance manual including list of components and part numbers, and operation and maintenance instructions.
		1. Product Schedule: For each motor-operator unit and network controls, and controllers. Use same designations indicated on Drawings.
		2. Operation and Maintenance Data: For motor operators and control systems to include in operation and maintenance manuals.
		3. Warranty: Manufacturer's executed warranty documentation.
	1. QUALITY ASSURANCE
		1. Manufacturer Qualifications: Motor operators, controls, and controllers certified by a Nationally Recognized Testing Laboratory to provide CE Compliant, UL-listed and/or cURus certified wired ac and dc powered motors. Radio Transmitters, FCC (For US installations) and ISED (For Canada installations) certified.
			1. ISO 9001 certified including in-house engineering and product design activities.
			2. Controls manufacturer capable of supplying commissioning services for control systems.
			3. Motor manufacturer capable of supplying a full range of low-voltage (24 Vdc), main or line-voltage (120 Vac) motor and control products.
		2. Installer Qualifications: Trained by manufacturer of motor-operator and control system products.
		3. Source Limitations: Provide each type of product from a single manufacturing source to ensure uniformity.

\*\* NOTE TO SPECIFIER \*\* Include mock-up if the project size or quality warrant the expense. The following is one example of how a mock-up might be specified. When deciding on the extent of the mock-up, consider all the major different types of work on the project.

* + 1. Mock-Up: Construct a mock-up with actual materials in sufficient time for Architect's review and to not delay construction progress. Locate mock-up as acceptable to Architect and provide temporary foundations and support.
			1. Intent of mock-up is to demonstrate quality of workmanship and visual appearance.
			2. If mock-up is not acceptable, rebuild mock-up until satisfactory results are achieved.
			3. Retain mock-up during construction as a standard for comparison with completed work.
			4. Do not alter or remove mock-up until work is completed or removal is authorized.

\*\* NOTE TO SPECIFIER \*\* Delete article below if Work of this Section is not extensive or complex enough to justify a conference.

* 1. PRE-INSTALLATION CONFERENCE
		1. Preinstallation Conference: Conduct conference at Project site to review the following:
			1. Low-voltage wiring requirements and responsibilities.
			2. Separation of power and low voltage / data wiring.
			3. Wire labeling.
			4. Control locations.
			5. Connections to other equipment.
			6. Installer responsibilities.
			7. Pocket and/or mounting conditions.
			8. Review the Somfy Design Package or approved alternative provided through contractor's submittals.
	2. DELIVERY, STORAGE, AND HANDLING
		1. Deliver complete motorized roller shade and control systems and accessories in factory packages, marked with manufacturer, product name, unique motor identification code, and location of installation using same designations indicated on Drawings.
		2. Store equipment indoors in clean, dry space with uniform temperature to prevent condensation. Protect from exposure to dirt, fumes, water, corrosive substances, and physical damage.
	3. PROJECT CONDITIONS
		1. Environmental Limitations: Do not install motor operators and control systems until spaces are dry with ambient temperature and humidity conditions maintained at levels indicated for Project when occupied for its intended use.
		2. Field Measurements: Where motor operators and control systems are indicated to fit to other construction, verify dimensions of other construction by field measurements and indicate measurements on Shop Drawings.
			1. Allow clearances for operating hardware through entire operating range.
			2. Notify Architect of installation conditions that vary from Drawings. Coordinate fabrication schedule with construction progress to avoid delaying the Work.
	4. WARRANTY
		1. Manufacturer's Special Non-Prorated Warranty for Motor Operators and Control Systems: Manufacturer agrees to repair or replace motor and control system products not free from defects in material and workmanship under normal and proper use within specified warranty period.
			1. Warranty Period: Five years from date of manufacture.
1. PRODUCTS
	1. MANUFACTURERS

\*\* NOTE TO SPECIFIER \*\* Delete the USA or Canadian paragraph; whichever is not required.

* + 1. Acceptable Manufacturer: Somfy, which is located at: 121 Herrod Blvd., Dayton, NJ 08810; Phone: 800-64-SOMFY; 609-395-1300; Web: <https://www.somfysystems.com> .
		2. Acceptable Manufacturer: Somfy, which is located at: 6411 Edwards Blvd, Mississauga, ON L5T 2P7; Phone: 800-66-SOMFY; 905-564-6446; Web: https://www.somfysystems.com.
		3. Basis of Design Manufacturer: Subject to compliance with requirements, provide Somfy Systems; named motor operators and control systems.

\*\* NOTE TO SPECIFIER \*\* Delete one of the following two paragraphs; coordinate with requirements of Division 1 on product options and substitutions.

* + 1. Substitutions: Not permitted.
		2. Requests for substitutions will be considered in accordance with provisions of Section 01 60 00 - Product Requirements.

\*\* NOTE TO SPECIFIER \*\* Delete article if not required or delete paragraphs not required.

* 1. MOTOR OPERATORS - ROLLER SHADES
		1. Standard Motors:

\*\* NOTE TO SPECIFIER \*\* Delete controls options not required.

* + - 1. Controls: DCT low voltage.
			2. Controls: WT 120 Vac.
			3. Factory-assembled, electric motor and factory-prewired motor controls with connector that disconnects motor from power.
			4. Enclosures protecting controls and operating parts.

\*\* NOTE TO SPECIFIER \*\* Delete switching option not required.

* + - 1. Switching: low voltage Dry contact cable.
			2. Switching: 120 Vac Power or polarity cable.
			3. Accessories necessary for a complete installation.
			4. Coordinate operator wiring requirements and electrical characteristics with building electrical system and contractor.
			5. Electrical Components: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
			6. Electric Motor tested for standards CAN/UL 325, and CSA-C22.2 No. 247.

\*\*NOTE TO SPECIFIER\*\* Delete electric motor paragraphs not required.

* + - 1. Electric Motor: Tubular, enclosed in roller.
				1. Basis of Design Product: Somfy Systems; Sonesse 30 DCT.

\*\* NOTE TO SPECIFIER \*\* Delete control interface options not required, follow switching option above.

* + - * 1. Control Interface: Wired; local control via dry contact switching.
				2. Control Interface: Wired; group control via dry contact switching.
				3. Control Interface: Wired; local control and group control via dry contact switching.
				4. Electrical Characteristics: 24 Vdc, 0.8 Amps.

Sound Level: 47 dBA or less.

* + - * 1. Low Voltage Power and Data Cable: Two Cables; Two-wire for power, Four-wire for dry contact control; non-removable, 6 ft (1.8 m).
			1. Electric Motor: Tubular, enclosed in roller. cURus certified.
				1. Basis of Design Product: Somfy Systems; Sonesse 40 WT.

\*\* NOTE TO SPECIFIER \*\* Delete control type not required.

* + - * 1. Control Type: Wired; local control via 120 Vac Momentary or Maintained Single Pole Double Throw Decora Switch.
				2. Control Type: Wired; group control, 120 Vac Momentary or Maintained Double Pole Double Throw Decora Switch.
				3. Control Type: Wired; local control and group control, low voltage dry contact switch, low voltage Momentary or Maintained Decora Switch via Motor Controller.
				4. Electrical Characteristics: 120 Vac, 60 Hz, 0.95-1.2 Amps.

Torque: 35.4 in-lbsf (4 N/m) - 53.1 in-lbsf (6 N/m).

Sound Level: 44 dBA or less.

Speed: Depending on motor torque, sub-contractor to use same motor torque for all roller shades.

* + - * 1. Power Cable: Four-wire SJTW cable on Motor with Fast Connector: 1.6 ft (480 mm) long.

Extension cable to be supplied by roller shade contractor.

Four-wire Fast Connector Extension Cable with Open Leads:

Length: 4.4 ft (1.3 m). - 22.4 ft (6.8 m).

* + - * 1. Product Environmental Profile Type III EPD Certified.
			1. Electric Motor: Tubular, enclosed in roller cULus certified.
				1. Basis of Design Product: Somfy Systems; Sonesse 50 RA.

\*\* NOTE TO SPECIFIER \*\* Delete control type not required.

* + - * 1. Control Type: Wired; local control via 120 Vac Momentary or Maintained Single Pole Double Throw Decora Switch.
				2. Control Type: Wired; group control, 120 Vac Momentary or Maintained Double Pole Double Throw Decora Switch.
				3. Control Type: Wired; local control and group control, low voltage dry contact switch, low voltage Momentary or Maintained Decora Switch via Motor Controller.
				4. Electrical Characteristics: 120 Vac, 60 Hz, 1.2 - 1.67 Amps.

Torque: 53.1 in-lbsf (6 N/m) - 88.5 in-lbsf (10 N/m).

Sound Level: 47 dBA or less.

\*\* NOTE TO SPECIFIER \*\* Delete Power cable option not required.

* + - * 1. Power Cable: Four-wire SJTW cable. 6.5 ft (1.98 m) long.

\*\* NOTE TO SPECIFIER \*\* Delete one of the two following paragraphs.

Hard-wired.

With quick disconnect plug.

* + - * 1. Power Cable: Four-wire SJTW cable on Motor with Fast Connector; 1.6 ft (480 mm) long.

Extension cable to be supplied by roller shade contractor.

Four-wire Fast Connector Extension Cable with Open Leads:

Length: 4.4 ft (1.3 m). - 22.4 ft (6.8 m).

* + - * 1. Product Environmental Profile Type III EPD Certified.
			1. Electric Motor: Tubular, enclosed in roller.
				1. Basis of Design Product: Somfy Systems; Sonesse ULTRA 50 RA.

\*\* NOTE TO SPECIFIER \*\* Delete control type options not required.

* + - * 1. Control Type: Wired; local control via 120 Vac Momentary or Maintained Single Pole Double Throw Decora Switch.
				2. Control Type: Wired; group control, 120 Vac Momentary or Maintained Double Pole Double Throw Decora Switch.
				3. Control Type: Wired; local control and group control, low voltage dry contact switch, low voltage Momentary or Maintained Decora Switch via Motor Controller.
				4. Electrical Characteristics: 120, 60 Hz, 0.95 Amps.

Sound Level: 38 dBAultra-quiet.

\*\* NOTE TO SPECIFIER \*\* Delete Power cable option not required.

* + - * 1. Power Cable: Four-wire SJTW cable. 6.5 ft (1.98 m) long.

\*\* NOTE TO SPECIFIER \*\* Delete one of the two following paragraphs.

Hard-wired.

With quick disconnect plug.

* + - * 1. Power Cable: Four-wire SJTW cable on Motor with Fast Connector; 1.6 ft (480 mm) long.

Extension cable to be supplied by roller shade contractor.

Four-wire Fast Connector Extension Cable with Open Leads:

Length: 4.4 ft (1.3 m) - 22.4 ft (6.8 m).

* + 1. Radio-Controlled Motors:
			1. Factory-assembled, of size and capacity and with features, characteristics, and accessories suitable for conditions indicated.
			2. Enclosures protecting controls and operating parts.
			3. Accessories required for reliable operation without malfunction.
			4. Coordinate operator wiring requirements, radio control requirements, and electrical characteristics with building electrical system and contractor.
			5. Electrical Components: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
			6. Electric Motor tested for standards CAN/UL 325, and CSA-C22.2 No. 247.

\*\* NOTE TO SPECIFIER \*\* Delete electric motor options not required.

* + - 1. Electric Motor: Tubular, enclosed in roller.
				1. Basis of Design Product: Somfy Systems; Sonesse 30 RTS.

\*\* NOTE TO SPECIFIER \*\* Delete control type option not required. "TaHoma" is RTS or "Radio Technology Somfy" app control device.

* + - * 1. Control Type; Radio: Local control and group control via Switches.
				2. Control Type; Radio: Local control and group control via TaHoma App Control, and Switches.
				3. Electrical Characteristics: 24 Vdc, 0.8 Amps.

Sound Level: 42 dBA or less.

* + - * 1. Low Voltage Power Cable: Two-wire with weidmuller; 10 in. (250 mm) non removable.
				2. cULus Listed.
			1. Electric Motor: Tubular, enclosed in roller.
				1. Basis of Design Product: Somfy Systems; Sonesse 40 RTS.

\*\* NOTE TO SPECIFIER \*\* Delete control type not required. "TaHoma" is RTS or "Radio Technology Somfy" app control device.

* + - * 1. Control Type; Radio: Local control and group control via Switches.
				2. Control Type; Radio: Local control and group control via TaHoma App Control, and Switches.
				3. Electrical Characteristics: 120 Vac, 60 Hz, 0.95-1.2 Amps.

Torque: 35.4 in-lbsf (4 N/m) - 53.1 in-lbsf (6 N/m).

Sound Level: 44 dBA or less.

Speed: Depending on motor torque, roller shade contractor to use same motor torque for all roller shades.

* + - * 1. Power Cable: Three-wire SJTW cable on Motor with Fast Connector; 1.6 ft (480 mm) long.

Extension cable to be supplied by roller shade contractor.

Three-wire Fast Connector Extension Cable with Open Leads:

Length: 4.4 ft (1.3 m). - 22.4 ft (6.8 m).

* + - * 1. Product Environmental Profile Type III EPD Certified.
			1. Electric Motor: Tubular, enclosed in roller.
				1. Basis of Design Product: Somfy Systems; Sonesse 50 RTS.

\*\* NOTE TO SPECIFIER \*\* Delete control type not required. "TaHoma" is RTS or "Radio Technology Somfy" app control device.

* + - * 1. Control Type; Radio: Local control and group control via Switches.
				2. Control Type; Radio: Local control and group control via TaHoma App Control, and Switches.
				3. Electrical Characteristics: 120 Vac, 60 Hz 1.2 - 1.67 Amps.

Torque: 53.1 in lbsf (6 N/m) - 88.5 in lbsf (10 N/m).

Sound Level: 47 dBA or less.

\*\* NOTE TO SPECIFIER \*\* Delete power cable option not required.

* + - * 1. Power Cable: Three-wire SJTW cable. 9.8 ft (3 m) long. Hard wired.
				2. Power Cable: NEMA 5-15P; three-wire cable with molded plug. 9.8 ft (3 m) long. Molded plug.
				3. Power Cable: Three-wire SJTW cable on Motor with Fast Connector; 1.6 ft (480 mm) long.

Extension cable to be supplied by roller shade contractor.

Three-wire Fast Connector Extension Cable with Open Leads:

Length: 4.4 ft (1.3 m). - 22.4 ft (6.8m).

* + - * 1. Product Environmental Profile Type III EPD Certified.
			1. Electric Motor: Tubular, enclosed in roller.
				1. Basis of Design Product: Somfy Systems; Sonesse ULTRA 50 RTS.

\*\* NOTE TO SPECIFIER \*\* Delete control type options not required. "TaHoma" is RTS or "Radio Technology Somfy" app control device.

* + - * 1. Control Type; Radio: Local control and group control via Switches.
				2. Control Type; Radio: Local control and group control via TaHoma App Control, and Switches.
				3. Electrical Characteristics: 120 Vac. 60 Hz, 0.95 Amps.

Sound Level: 38 dBA ultra-quiet.

\*\* NOTE TO SPECIFIER \*\* Delete power cable option not required.

* + - * 1. Power Cable: Three-wire SJTW cable (hard-wired) 9.8 ft (3 m) long.
				2. Power Cable: NEMA 5-15P; three-wire cable with molded plug. 9.8 ft (3 m) long.
				3. Power Cable: Three-wire SJTW cable on Motor with Fast Connector; 1.6 ft (480 mm) long.

Extension cable to be supplied by roller shade contractor.

Three-wire Fast Connector Extension Cable with Open Leads:

Length: 4.4 ft (1.3 m). - 22.4 ft (6.8m).

* + - 1. Electric Motor: Tubular, enclosed in roller.
				1. Basis of Design Product: Somfy Systems; Sonesse ULTRA 50 DC RTS.

\*\* NOTE TO SPECIFIER \*\* Delete control type options not required. "TaHoma" is RTS or "Radio Technology Somfy" app control device.

* + - * 1. Control Type; Radio: Local control and group control via Switches.
				2. Control Type; Radio: Local control and group control via TaHoma App Control, and Switches.
				3. Electrical Characteristics: 24 Vdc, 1.5 Amps.

Sound Level: 38 dBA ultra-quiet.

* + - * 1. Low Voltage Power Cable (Pigtail): Two-wire with weidmuller; 10 inches (250 mm) long.
				2. cURus Listed.
			1. Electric Motor: Tubular, enclosed in roller with manual override.
				1. Basis of Design Product: Somfy; LT50 RTS CMO (Compact Manual Override).

\*\* NOTE TO SPECIFIER \*\* Delete control type not required. "TaHoma" is RTS or "Radio Technology Somfy" app control device.

* + - * 1. Control Type; Radio: Local control and group control via Switches.
				2. Control Type; Radio: Local control and group control via TaHoma App Control, and Switches.
				3. Electrical Characteristics: 120 Vac, 60Hz, 1.5 -2.1 Amps.

Torque: 22.1 lbs-ft (30 N/m). - 36.9 in lbsf (50 N/m).

Speed: Depending on motor torque, roller shade contractor to use same motor torque for all roller shades.

* + - * 1. Override crank to be supplied by roller shade contractor, samples, and specifications to be supplied to consultant with shop drawings.

\*\* NOTE TO SPECIFIER \*\* Delete power cable and length options not required.

* + - * 1. Power Cable: Three-wire cable SJTW (hard-wired) 6 ft (1.88 m) long.
				2. Power Cable: NEMA 5-15P; cable with molded plug 6 ft (1.88 m) long.
		1. Networked Intelligent Motors:
			1. Factory-assembled, of size and capacity and with features, characteristics, and accessories suitable for conditions indicated.
			2. Enclosures protecting controls and operating parts.
			3. Accessories required for reliable operation without malfunction.

\*\* NOTE TO SPECIFIER \*\* Delete one of the two following paragraphs.

* + - 1. Low voltage wiring from motor controls to motors through digital network communication supplied by roller shade contractor.
			2. Low voltage wiring from motor controls to motors supplied by others.
			3. Coordinate operator wiring requirements and electrical characteristics with building electrical system and contractor.
			4. Electrical Components: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
			5. Electric Motor tested for standards CAN/UL 325, and CSA-C22.2 No. 247.

\*\* NOTE TO SPECIFIER \*\* Delete electric motor options not required. Somfy Digital Network™ (SDN) is a "standalone or integrated window treatment control system."

* + - 1. Electric Motor: Tubular, enclosed in roller.
				1. Basis of Design Product: Somfy Systems; Sonesse 30 DC RS485.

\*\* NOTE TO SPECIFIER \*\* Delete control type and communication network options not required.

* + - * 1. Control Type Network: Automated control or Standalone window treatment control system.
				2. Control Type Network: Control via lighting control system.
				3. Control Type Network: Control via audio-visual system.
				4. Control Type Network: Control via BMS.
				5. Communication Network: Bus connected SDN.
				6. Communication Network: PoE gateway for power and control over IP Network.
				7. Electrical Characteristics: 24 Vdc, 0.8 Amp.

Sound Level: 44 dBA or less.

* + - * 1. Low Voltage Power and Data Cable: Five-wire with weidmuller; 10 in (250 mm) long non-removable.
				2. Listed: cULus.
			1. Electric Motor: Tubular, enclosed in roller.
				1. Basis of Design Product: Somfy Systems; Sonesse ULTRA 50 DC RS485.

\*\* NOTE TO SPECIFIER \*\* Delete control type and communication network options not required.

* + - * 1. Control Type Network: Automated control or Standalone window treatment control system.
				2. Control Type Network: Control via lighting control system.
				3. Control Type Network: Control via audio-visual system.
				4. Control Type Network: Control via BMS.
				5. Communication Network: Bus connected SDN.
				6. Communication Network: PoE gateway for power and control over IP Network.
				7. Electrical Characteristics: 24 Vdc, 1.5 Amps.

Sound Level: 38 dBA ultra-quiet.

* + - * 1. Low Voltage Power and Data Cable (Pigtail): Five-conductor pigtail with inline detachable terminal block; 10 inches (250 mm) long.
			1. Electric Motor: Tubular, enclosed in roller. cURus certified.
				1. Basis of Design Product: Somfy Systems; Sonesse ULTRA 50 RS485.

\*\* NOTE TO SPECIFIER \*\* Delete control type network options not required.

* + - * 1. Control Type Network: Automated control or Standalone window treatment control system.
				2. Control Type Network: Control via lighting control system.
				3. Control Type Network: Control via audio-visual system.
				4. Control Type Network: Control via BMS.
				5. Electrical Characteristics: 120 Vac. 60 Hz, 0.95 Amps.

Sound Level: 38 dBA ultra-quiet.

\*\* NOTE TO SPECIFIER \*\* Delete power cable options not required.

* + - * 1. Power Cable: Three-wire cable SJTW (hard-wired); 9.8 ft (3 m) long.
				2. Power Cable: NEMA 5-15P; three-wire cable with molded plug; 9.8 ft (3 m) long.
				3. Power Cable: Three-wire SJTW cable on Motor with Fast Connector; 1.6 ft (480 mm) long.

Extension cable to be supplied by roller shade contractor.

Three-wire Fast Connector Extension Cable with Open Leads:

Length: 4.4 ft (1.3 m) - Length: 22.4 ft (6.8 m).

\*\* NOTE TO SPECIFIER \*\* Delete data cable options not required. The black data cables are for SDN and Somfy's "animeo® IP" systems. The gray data cables are for the SDN Room Controller Hub.

* + - * 1. Data Cable: RJ9/RJ45. Black. Length: 2.5 ft (0.76 m) - 24 ft (7.32 m) long.
				2. Data Cable: RJ9/RJ45. Gray. Length: 2.5 ft (0.76 m) - 24 ft (7.32 m) long.
			1. Electric Motor: Tubular, enclosed in roller.
				1. Basis of Design Product: Somfy Systems; Sonesse 50 RS485.

\*\* NOTE TO SPECIFIER \*\* Delete control type network and electrical characteristics, options not required.

* + - * 1. Control Type Network: Automated control or Standalone window treatment control system.
				2. Control Type Network: Control via lighting control system.
				3. Control Type Network: Control via audio-visual system.
				4. Control Type Network: Control via BMS.

Electrical Characteristics: 120 Vac, 60 Hz 1.2 - 1.67 Amps.

Torque: 53.1 in lbsf (6 N/m) - 88.5 in lbsf (10 N/m).

Sound Level: 47 dBA or less.

\*\* NOTE TO SPECIFIER \*\* Delete power cable options not required.

* + - * 1. Power Cable: Three-wire cable SJTW (hard-wired); 9.8 ft (3 m) long.
				2. Power Cable: NEMA 5-15P; three-wire cable with molded plug; 9.8 ft (3 m) long.
				3. Power Cable: Three-wire SJTW cable on Motor with Fast Connector; 1.6 ft (480 mm) long.

Extension cable to be supplied by roller shade contractor.

Three-wire Fast Connector Extension Cable with Open Leads:

Length: 4.4 ft (1.3 m) - Length: 22.4 ft (6.8 m).

\*\* NOTE TO SPECIFIER \*\* Delete data cable options not required. The black data cables are for SDN and Somfy's "animeo® IP" systems. The gray data cables are for the SDN Room Controller Hub.

* + - * 1. Data Cable: RJ9/RJ45. Black. Length: 2.5 ft (0.76 m) - 24 ft (7.32 m) long.
				2. Data Cable: RJ9/RJ45. Gray. Length: 2.5 ft (0.76 m) - 24 ft (7.32 m) long.
			1. Electric Motor: Tubular, enclosed in roller.
				1. Basis of Design Product: Somfy; LT50 RS485.

\*\* NOTE TO SPECIFIER \*\* Delete control type network, not required.

* + - * 1. Control Type Network: Automated control or Standalone window treatment control system.
				2. Control Type Network: Control via lighting control system.
				3. Control Type Network: Control via audio-visual system.
				4. Control Type Network: Control via BMS.
				5. Electrical Characteristics: 120 Vac. 60 Hz, 1.8 - 2.1 Amps.

Torque: 132 in-lbsf (15 N/m) - 308 in lbsf (35 N/m).

Sound Level: 55 dBA or less.

Speed: Depending on motor torque, roller shade contractor to use same motor torque for all roller shades.

\*\* NOTE TO SPECIFIER \*\* Delete power cable options not required.

* + - * 1. Power Cable: Three-wire cable SJTW (hard-wired); 9.8 ft (3 m) long.
				2. Power Cable: NEMA 5-15P; three-wire cable with molded plug; 9.8 ft (3 m) long.
				3. Power Cable: Three-wire SJTW cable on Motor with Fast Connector; 1.6 ft (480 mm) long.

Extension cable to be supplied by roller shade contractor.

Three-wire Fast Connector Extension Cable with Open Leads:

Length: 4.4 ft (1.3 m) - Length: 22.4 ft (6.8 m).

\*\* NOTE TO SPECIFIER \*\* Delete data cable options not required. The black data cables are for SDN and Somfy's "animeo® IP" systems. The gray data cables are for the SDN Room Controller Hub.

* + - * 1. Data Cable: RJ9/RJ45. Black. Length: 2.5 ft (0.76 m) - 24 ft (7.32 m) long.
				2. Data Cable: RJ9/RJ45. Gray. Length: 2.5 ft (0.76 m) - 24 ft (7.32 m) long.

\*\* NOTE TO SPECIFIER \*\* Delete article if not required or delete paragraph options not required.

* 1. MOTOR OPERATORS - CURTAINS AND DRAPES
		1. Standard Motors:

\*\* NOTE TO SPECIFIER \*\* Delete controls option not required.

* + - 1. Controls: DCT.
			2. Controls: WT.
			3. Factory-assembled, complete with electric motor and factory-prewired motor controls with a connector that disconnects motor from power.
			4. Enclosures protecting controls and operating parts.

\*\* NOTE TO SPECIFIER \*\* Delete switching option not required.

* + - 1. Switching: Data communication cable.
			2. Switching: Power or polarity cable.
			3. Accessories necessary for a complete installation.
			4. Wiring from motor controls to motors.
			5. Coordinate operator wiring requirements and electrical characteristics with building electrical system.
			6. Electrical Components: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

\*\* NOTE TO SPECIFIER \*\* Delete electric motor options not required.

* + - 1. Electric Motor: Motorized drapery track system with quiet operation, timing belt for precise control, touch motion, manual override, and adjustable speeds.

\*\* NOTE TO SPECIFIER \*\* Delete basis of design, control type, and motor mount options not required. DCT uses a three-wire "Dry Contact Technology" connector with communication switching.

* + - * 1. Basis of Design Product: Somfy Systems; Glydea Ultra 35 DCT.

Max Drapery Weight Capacity: 77 lbs at 32 ft (35 kg at 9.8 m) wide.

* + - * 1. Basis of Design Product: Somfy Systems; Glydea Ultra 60 DCT.

Max Drapery Weight Capacity: 132 lbs at 32 ft (60 kg at 9.8 m) wide.

* + - * 1. Control Type: Wired; local control via dry contact switching.
				2. Control Type: Wired; group control via dry contact switching.
				3. Control Type: Wired; local control and group control via dry contact switching.
				4. Motor Mount: Left side and top mount.
				5. Motor Mount: Left side and bottom mount.
				6. Motor Mount: Right side and top mount.
				7. Motor Mount: Right side and bottom mount.
				8. Electrical Characteristics: 120 Vac. 60 Hz, 0.8 Amps.
				9. Average Linear Speed: 4.9 to 7.86 inches/s (125 to 200 mm/s).

Silent Mode: 2.95 inches/s (75 mm/s).

* + - * 1. Power Cable: NEMA 5-15P; three-wire cable with molded plug.
				2. Control Connector Type: RJ12.
				3. Sound Level: 44 dBA or less. Silent Mode: 38 dBA ultra-quiet.
				4. Certifications: cTUVus, CE.
			1. Electric Motor: Motorized drapery track system with quiet operation, timing belt for precise control, touch motion, manual override, and adjustable speeds.

\*\* NOTE TO SPECIFIER \*\* Delete basis of design, control type, and motor mount options not required. WT uses a four-wire "Wired Technology" motor with power switching.

* + - * 1. Basis of Design Product: Somfy Systems; Glydea Ultra 35 WT.

Max Drapery Weight Capacity: 77 lbs at 32 ft (35 kg at 9.8 m) wide.

* + - * 1. Basis of Design Product: Somfy Systems; Glydea Ultra 60 WT.

Max Drapery Weight Capacity: 132 lbs at 32 ft (60 kg at 9.8 m) wide.

* + - * 1. Control Type: Wired; local control via Momentary or Maintained Single Pole Double Throw Decora Switch.
				2. Control Type: Wired; group control, Momentary or Maintained Double Pole Double Throw Decora Switch.
				3. Control Type: Wired; local control and group control, dry contact switch, Momentary or Maintained Decora Switch via Motor Controller.
				4. Motor Mount: Left side and top mount.
				5. Motor Mount: Left side and bottom mount.
				6. Motor Mount: Right side and top mount.
				7. Motor Mount: Right side and bottom mount.
				8. Electrical Characteristics: 120 Vac. 60 Hz, 0.8 Amp.
				9. Average Linear Speed: 4.9 to 7.86 inches/s (125 to 200 mm per s).

Silent Mode: 2.95 inches/sec (75 mm/sec).

* + - * 1. Power Cable: Four-wire cable (hard-wired).
				2. Sound Level: 44 dBA or less. Silent Mode: 38 dBA ultra-quiet.
				3. Certifications: c TUV us, CE.
			1. Electric Motor: Motorized drapery track system with quiet operation, timing belt for precise control, touch motion, manual override, and adjustable speeds.

\*\* NOTE TO SPECIFIER \*\* Delete control type and motor mount options not required. Motorized drapery tracks using "Irismo™" motors require a low-voltage power source.

* + - * 1. Basis of Design Product: Somfy Systems; Irismo 35 Mini DC DCT.
				2. Control Type: Wired; local control via dry contact switching.
				3. Control Type: Wired; group control via dry contact switching.
				4. Control Type: Wired; local control and group control via dry contact switching.
				5. Motor Mount: Left side and top mount.
				6. Motor Mount: Left side and bottom mount.
				7. Motor Mount: Right side and top mount.
				8. Motor Mount: Right side and bottom mount.
				9. Electrical Characteristics: 24 Vdc, 2 Amp, via plug-in power supply. Outlet required.
				10. Power Cable: 2 conductor, 13.2 ft (4 m) attached to motor power port.
				11. Control Connector Type: RJ12.
				12. Maximum Track Length: 32 ft (9 m).
				13. Max Drapery Weight Capacity: 77 lbs at 32 ft (35 kg at 9.8 m) wide.
				14. Average Linear Speed: 4.9 to 7.86 inches/sec (125 to 200 mm/sec).
				15. Sound Level: 44 dBA or less.
				16. Certifications: CE.
			1. Track: Single drapery.

\*\* NOTE TO SPECIFIER \*\* Delete track type, mount, and length options not required.

* + - 1. Somfy's "Gyldea" and "Irismo 35" may use curved tracks.
				1. Track Type: One way.
				2. Track Type: Center opening.
				3. Track Type: Asymmetrical.
				4. Track Type: One way with bend.
				5. Track Type: Center opening with bend.
				6. Track Type: One way with two bends.
				7. Track Type: Center opening with two bends.
				8. Track Type: One way with continuous curve.
				9. Track Type: Center opening with continuous curve.
				10. Track Mount: Wall.
				11. Track Mount: Ceiling.
				12. Track Length: 32 ft (9 m) maximum.
				13. Track Length: 36 ft (10.9 m) maximum.
		1. Radio Controlled Motors:
			1. Factory-assembled, of size and capacity and with features, characteristics, and accessories suitable for conditions indicated, complete with electric motor.
			2. Enclosures protecting controls and operating parts.
			3. Accessories required for reliable operation without malfunction. Include wiring from motor controls to motors.
			4. Coordinate operator wiring requirements, radio control requirements, and electrical characteristics with building electrical system.
			5. Electrical Components: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

\*\* NOTE TO SPECIFIER \*\* Delete electric motor options not required.

* + - 1. Electric Motor: Motorized drapery track system with quiet operation, timing belt for precise control, touch motion, manual override, and adjustable speeds.

\*\* NOTE TO SPECIFIER \*\* Delete Basis of design, control type, and motor mount options not required. Motorized drapery tracks using "Glydea®" motors require a line-voltage power source. "TaHoma" is RTS or "Radio Technology Somfy" app control device.

* + - * 1. Basis of Design Product: Somfy Systems; Glydea Ultra 35 RTS.

Max Drapery Weight Capacity: 77 lbs at 32 ft (35 kg at 9.8 m) wide.

* + - * 1. Basis of Design Product: Somfy Systems; Glydea Ultra 60 RTS.

Max Drapery Weight Capacity: 132 lbs at 32 ft (60 kg at 9.8 m) wide.

* + - * 1. Control Type: Radio; local and group control via Switches.
				2. Control Type: Radio; local and group control via TaHoma App Control, and Switches.
				3. Motor Mount: Left side and top mount.
				4. Motor Mount: Left side and bottom mount.
				5. Motor Mount: Right side and top mount.
				6. Motor Mount: Right side and bottom mount.
				7. Electrical Characteristics: 120 Vac, 0.8 Amp.
				8. Average Linear Speed: 4.9 to 7.86 inches/s (125 to 200 mm/s). Silent Mode: 2.95 inches/s (75 mm/s).
				9. Power Cable: SJTW NEMA 5-15P; three-wire cable with molded NEMA plug.
				10. Sound Level: 44 dBA or less. Silent Mode: 38 dBA ultra-quiet
				11. Certifications: c TUV us, CE.
			1. Electric Motor: Motorized drapery track system with quiet operation, timing belt for precise control, touch motion, manual override, and adjustable speeds.

\*\* NOTE TO SPECIFIER \*\* Motorized drapery tracks using Irismo motors require a low-voltage power source.

* + - * 1. Basis of Design Product: Somfy Systems; Irismo 35 Mini DC RTS.

\*\* NOTE TO SPECIFIER \*\* Delete control type and motor mount options not required. TaHoma is RTS or Radio Technology Somfy app control device.

* + - * 1. Control Type: Radio; local control and group control via Switches.
				2. Control Type: Radio; local control and group control via TaHoma App Control, and Switches.
				3. Motor Mount: Left side and top mount.
				4. Motor Mount: Left side and bottom mount.
				5. Motor Mount: Right side and top mount.
				6. Motor Mount: Right side and bottom mount.
				7. Electrical Characteristics: 24 Vdc, 2 Amp, via plug-in power supply; outlet required.
				8. Power Cable: 2 conductor, 13.2 ft (4 m) attached to motor power port.
				9. Max Drapery Weight Capacity: 77 lbs at 32 ft (35 kg at 9.8 m) wide.
				10. Average Linear Speed: 4.9 to 7.86 inches (125 to 200 mm/s).
				11. Sound Level: 44 dBA or less.
			1. Electric Motor: Motorized drapery track system with quiet operation, timing belt for precise control, touch motion, manual override, and adjustable speeds.
				1. Basis of Design Product: Somfy Systems; Irismo 45 WireFree RTS.

\*\* NOTE TO SPECIFIER \*\* Delete control type and motor mount options not required. TaHoma is RTS or Radio Technology Somfy app control device.

* + - * 1. Control Type: Radio; local control and group control via Switches.
				2. Control Type: Radio; local control and group control via TaHoma App Control, and Switches.
				3. Motor Mount: Left side and top mount.
				4. Motor Mount: Left side and bottom mount.
				5. Motor Mount: Right side and top mount.
				6. Motor Mount: Right side and bottom mount.

\*\* NOTE TO SPECIFIER \*\* Contact Somfy for other available battery options.

* + - * 1. Electrical Characteristics: 26.5 Vdc; rechargeable (Li-ion) battery 2950 mAh.

Lifespan per Battery Charge: Approximately 9 months based on 20 ft (6.1 m) linear track with 99 lbs (44.9 kg) of drapery fabric weight, one cycle per day (one open, one close).

* + - * 1. Max Drapery Weight Capacity: 99 lbs at 33 ft (45 kg at 10 m) wide.
				2. Average Linear Speed: 4.9 to 7.86 inches/s (125 to 200 mm/s).
				3. Sound Level: 44 dBA or less.
			1. Track: Single drapery.

\*\* NOTE TO SPECIFIER \*\* Delete track type, track mount, and track length options not required.

* + - * 1. Track Type: One way.
				2. Track Type: Center opening.
				3. Track Type: Asymmetrical.
				4. Track Type: One way with bend.
				5. Track Type: Center opening with bend.
				6. Track Type: One way with two bends.
				7. Track Type: Center opening with two bends.
				8. Track Type: One way with continuous curve.
				9. Track Type: Center opening with continuous curve.
				10. Track Mount: Wall.
				11. Track Mount: Ceiling.
				12. Maximum Track Length: 32 ft (9 m).
				13. Maximum Track Length: 36 ft (10.9 m).
		1. Networked Automation Controlled Motors:
			1. Factory-assembled, of size and capacity and with features, characteristics, and accessories suitable for conditions indicated, with electric motor.
			2. Enclosures protecting controls and operating parts.
			3. Accessories required for reliable operation without malfunction.
			4. Wiring from motor controls to motors or radio controls to motors.
			5. Coordinate operator wiring requirements, controls, and electrical characteristics with building electrical system.
			6. Electrical Components: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

\*\* NOTE TO SPECIFIER \*\* Delete electric motor options not required.

* + - 1. Electric Motor: Motorized drapery track system with quiet operation, timing belt for precise control, touch motion, manual override, and adjustable speeds.

\*\* NOTE TO SPECIFIER \*\* Delete basis of design, control type, wpower cable, and motor mount options not required. Motorized drapery tracks using Glydea® motors require a line-voltage power source.

* + - * 1. Basis of Design Product: Somfy Systems; Glydea Ultra 35 RS485.

Max Drapery Weight Capacity: 77 lbs at 32 ft (35 kg at 9.8 m) wide.

* + - * 1. Basis of Design Product: Somfy Systems; Glydea Ultra 60 RS485.

Max Drapery Weight Capacity: 132 lbs at 32 ft (60 kg at 9.8 m) wide.

* + - * 1. Control Type: Network; automated control via standalone window treatment control system.
				2. Control Type: Network; automated control via lighting control system.
				3. Control Type: Network; automated control via audio-visual system.
				4. Control Type: Network; automated control via BMS.
				5. Electrical Characteristics: 120 Vac, 0.8 Amp.
				6. Power Cable: Four-wire cable SJTW (hard-wired).
				7. Power Cable: NEMA 5-15P; three-wire cable with molded plug.
				8. Motor Mount: Left side and top mount.
				9. Motor Mount: Left side and bottom mount.
				10. Motor Mount: Right side and top mount.
				11. Motor Mount: Right side and bottom mount.
				12. Average Linear Speed: 4.9 to 7.86 inches/s (125 to 200 mm/s). Silent: 2.95 inches/s (75 mm/s).
				13. Control Connector Type: RJ45.
				14. Sound Level: 44 dBA or less. Silent Mode: 38 dBA ultra-quiet.
				15. Certifications: c TUV us, CE.
			1. Electric Motor: Motorized drapery track system with quiet operation, timing belt for precise control, touch motion, manual override, and adjustable speeds.
				1. Basis of Design Product: Somfy Systems; Irismo 35 Mini DC DCT with RS485 Drapery Module.

\*\* NOTE TO SPECIFIER \*\* Delete control type, communication network, and motor mount options not required.

* + - * 1. Control Type: Network; automated control via standalone window treatment control system.
				2. Control Type: Network; automated control via lighting control system.
				3. Control Type: Network; automated control via audio-visual system.
				4. Control Type: Network; automated control via BMS.
				5. Communication Network: Bus connected SDN.
				6. Communication Network: PoE gateway for power and control via IP Network.
				7. Motor Mount: Left side and top mount.
				8. Motor Mount: Left side and bottom mount.
				9. Motor Mount: Right side and top mount.
				10. Motor Mount: Right side and bottom mount.
				11. Electrical Characteristics: 24 Vdc, 2 Amp, via plug-in power supply. Outlet required.
				12. Power Cable: 2 conductor, 13.2 ft (4 m) attached to motor power port.
				13. Control Connector Type: RJ45.

SDN Irismo 35 24V Mini DC Control Enclosure Kit.

* + - * 1. Max Drapery Weight Capacity: 77 lbs at 32 ft (35 kg at 9.8 m) wide.
				2. Average Linear Speed: 4.9 to 7.86 inches/s (125 to 200 mm/s).
				3. Sound Level: 44 dBA or less.
			1. Track: Single drapery.

\*\* NOTE TO SPECIFIER \*\* Delete track type, track mount, and track length options not required.

* + - * 1. Track Type: One way.
				2. Track Type: Center opening.
				3. Track Type: Asymmetrical.
				4. Track Type: One way with bend.
				5. Track Type: Center opening with bend.
				6. Track Type: One way with two bends.
				7. Track Type: Center opening with two bends.
				8. Track Type: One way with continuous curve.
				9. Track Type: Center opening with continuous curve.
				10. Track Mount: Wall.
				11. Track Mount: Ceiling.
				12. Maximum Track Length: 32 ft (9 m).
				13. Maximum Track Length: 36 ft (10.9 m).

\*\* NOTE TO SPECIFIER \*\* Delete article if not required or delete paragraph options not required.

* 1. CONTROLS - WIRED

\*\* NOTE TO SPECIFIER \*\* Wired motors can be modified for radio control at any time. WT control or DCT control can integrate with third-party control systems used for setting multiple motor positions.

* + 1. Key Switch: Three-position, key switch-operated control station with open, close, and center off (stop) function.

\*\* NOTE TO SPECIFIER \*\* Delete contact option not required.

* + - 1. Contact: Maintained.
			2. Contact: Momentary.

\*\* NOTE TO SPECIFIER \*\* Single Pole Double Throw switch is used for 1 to1 connection with motor. Double Pole Double Throw Switch can support two motors per switch.

* + - 1. Basis of Design Product: Somfy Systems; Indoor key switch.
			2. Switch Type: Single Pole Double Throw.
			3. Switch Type: Double Pole Double Throw.
			4. Electrical Characteristics: 120Vac, 60Hz.
		1. Wired Decora Switch: Three-position, switch-operated control station with open, close, and center off (stop) functions.

\*\* NOTE TO SPECIFIER \*\* Delete contact option not required.

* + - 1. Contact: Maintained.
			2. Contact: Momentary.

\*\* NOTE TO SPECIFIER \*\* Delete decorator, switch style, switch type, electrical characteristics, and finish options not required. Single Pole Double Throw switch is used for 1-to1 connection with motor. Double Pole Double Throw Switch can support two motors per switch.

* + - 1. Basis of Design Product: Somfy Systems.
				1. Decorator: AC.
				2. Decorator: DC.
				3. Switch Style: Paddle.
				4. Switch Style: Toggle.
				5. Switch Style: Rocker.
				6. Switch Type: Single Pole Double Throw.
				7. Switch Type: Double Pole Double Throw.
				8. Electrical Characteristics: 120 Vac, 60 Hz.
				9. Electrical Characteristics: 24Vdc.
				10. Electrical Characteristics: Dry Contact.
				11. Finish: White.
				12. Finish: Ivory.
		1. Dry Contact Individual/Group Button/Keypad: Momentary-contact, wall-switch-operated control station with open, close, and stop functions.

\*\* NOTE TO SPECIFIER \*\* Delete basis of design options not required, Requires use of Somfy's "IGC 4n1"Motor Controller. Contact Somfy for additional control options.

* + - 1. Basis of Design Product: Somfy Systems. DecoFlex Dry Contact Keypad.
			2. Basis of Design Product: Somfy Systems. Smoove 1 Origin IB+.
			3. Basis of Design Product: Somfy Systems. Animeo Decora Single Switch.
			4. Basis of Design Product: Somfy Systems. Animeo Decora Dual Switch.

\*\* NOTE TO SPECIFIER \*\* Delete finish option not required, Ivory applies only to the DCT Switch.

* + - 1. Finish: White.
			2. Finish: Ivory.
		1. Wired Individual/Group Motor Controller: Programmable microprocessor controller with open, stop, close, and preset intermediate position functions.
			1. Basis of Design Product: Somfy Systems; IGC 4n1 Motor Controller.
			2. Motor Connections: Four or less per Motor Controller.
			3. Shade Positions: Three Intermediate Positions, Open, stop, close.

\*\* NOTE TO SPECIFIER \*\* Delete control device options not required.

* + - 1. Control Device Types: Key Switch.
			2. Control Device Types: Decora Switch.
			3. Control Device Types: Keypad.
			4. Control Device Types: Radio receiver.
			5. cULus Rated - UL certified E160923.
			6. Plenum Rated NEMA Enclosure.
			7. Accessories:
				1. IGC 4n1 RTS Radio Receiver to be used with Somfy RF transmitters, providing wireless open, stop, close functions.
				2. Decoflex Dry Contact Keypad for IGC 4n1 providing three intermediate shade positions, open, stop, and close functions.
				3. Momentary Indoor Key or Momentary Decorator Paddle Switch providing open, or close functions.
				4. Animeo Decora Single/Dual Switch providing open, stop, close functions.
			8. Operating Features:
				1. Group switching for configurable individual or group zone control.
				2. Capable of accepting input from third-party automation control system via a momentary Dry Contact signal.
				3. Override Switch: Individual or master.

\*\* NOTE TO SPECIFIER \*\* Delete article if not required or delete paragraph options not required.

* 1. CONTROLS - WIRELESS TECHNOLOGY
		1. Wireless Remote Control: Electric controls with NEMA ICS 6, Type 1 enclosure for remote-control activation of shades:

\*\* NOTE TO SPECIFIER \*\* Delete remote option not required. Handheld remote for roller shades can also control motors in curtains and drapes.

* + - 1. Handheld Radio Control Remote: LCD; 433.42 MHz.
			2. Handheld Radio Control Remote: Tactile button; 433.42 MHz.

\*\* NOTE TO SPECIFIER \*\* Delete basis of design options not required.

* + - * 1. Basis of Design Product: Somfy Systems; Telis 16 has an LCD display for channel selection; Sixteen channel.
				2. Basis of Design Product: Somfy Systems; Situo 1; Single channel.
				3. Basis of Design Product: Somfy Systems; Situo 5; Five channel.
				4. Finish: Pure.
				5. Electrical Characteristics: Battery operated.
				6. IP Rating: IP 30.
				7. Optimal RF Range: 65 ft (20 m) radius under optimal conditions, FCC Approval Part 15, Class B.
				8. Control Functions: Open, Close, My (stop).
				9. Accessories:

Wall mount holder with screw cover and screw kit.

* + - 1. Wireless Control Table Top: Button-operated station; 433.42 MHz.
				1. Basis of Design Product: Somfy Systems; DecoFlex WireFree RTS Table Top.

\*\* NOTE TO SPECIFIER \*\* Delete channel, table top finish, engraved buttons options not required. "Table Top Finish" applies when specifying table top housing. Delete it not required.

* + - * 1. Channel - Wireless Transmitter: Five.
				2. Channel - Wireless Transmitter: Four.
				3. Channel - Wireless Transmitter: Three.
				4. Channel - Wireless Transmitter: Two.
				5. Channel - Wireless Transmitter: Single.
				6. Table Top Finish: Black.
				7. Table Top Finish: Silver.
				8. Table Top Finish: White.
				9. Custom Engraved Buttons: Yes.
				10. Custom Engraved Buttons: No.
				11. Electrical Characteristics: Battery operated.
				12. Optimal RF Range: 65 ft (20 m) radius under optimal conditions, FCC Approval Part 15, Class B.
				13. Control Functions: Open, Close, My (stop).
		1. Wireless Keypad Control: 433.42 MHz electric controls with NEMA ICS 6, Type 1 enclosure for remote-control activation of shades:
			1. Wireless Control Wall Switch: Button-operated keypad station.
				1. Basis of Design Product: Somfy Systems; DecoFlex WireFree RTS Switch.

\*\* NOTE TO SPECIFIER \*\* Delete mounting, channel, finish, and engraved button options not required.

* + - * 1. Mounting: Surface.
				2. Mounting: Recessed.
				3. Mounting: Flushed.
				4. Channel - Wireless Transmitter: Five.
				5. Channel - Wireless Transmitter: Four.
				6. Channel - Wireless Transmitter: Three.
				7. Channel - Wireless Transmitter: Two.
				8. Channel - Wireless Transmitter: Single.
				9. Wall Switch Finish: White.
				10. Wall Switch Finish: Black.
				11. Wall Switch Finish: Ivory.
				12. Custom Engraved Buttons: Yes.
				13. Custom Engraved Buttons: No.
				14. Electrical Characteristics: Battery operated.
				15. Optimal RF Range: 65 ft (20 m) radius under optimal conditions, FCC Approval Part 15, Class B.
				16. Control Functions: Open, Close, My (stop).
			1. Wireless Control Surface-Mounted Wall Switch: Button-operated keypad station.

\*\* NOTE TO SPECIFIER \*\* Delete basis of design switch plate, channel, finish, and engraved button options not required. Somfy's "Smoove®" double wall switch is available only in Pure finish.

* + - * 1. Basis of Design Product: Somfy Systems; Smoove 1 RTS.
				2. Basis of Design Product: Somfy Systems; Smoove 4 RTS.
				3. Switch Plate: Single.
				4. Switch Plate: Double.
				5. Channel - Wireless Transmitter: Single.
				6. Channel - Wireless Transmitter: Four.
				7. Wall Switch Finish: Pure.
				8. Wall Switch Finish: Black.
				9. Wall Switch Finish: Silver Matte.
				10. Wall Switch Finish: Light Bamboo.
				11. Wall Switch Finish: Walnut.
				12. Wall Switch Finish: Cherry.
				13. Wall Switch Finish: Amber Bamboo.
				14. Custom Engraved Buttons: Yes.
				15. Custom Engraved Buttons: No.
				16. Electrical Characteristics: Battery operated.
				17. Optimal RF Range: 65-ft (20-m) radius under optimal conditions, FCC Approval Part 15, Class B.
				18. Control Functions: Up, Down, My (stop).
		1. App Control:
			1. Wireless Control Interface: RTS 433.42 MHz, 2.4 GHz WiFi, or direct wired network connection with WEP, WPA2, TKIP, open and mixed mode encryption; multiple single-zone units may be joined to create a multi-zone system; capable of serving as an Internet protocol (IP) to radio bridge for third-party control systems.
				1. Basis of Design Product: Somfy Systems; TaHoma.

\*\* NOTE TO SPECIFIER \*\* Delete integration to third part systems, and control functions, options not required. Somfy's "TaHoma" will support 2.4 GHz network. Apps require iOS 7 or higher. Controls up to 40 channels of up to 40 individual motorized products or up to 40 groups of motorized products. Controllable using voice control devices like Amazon's "Alexa" and IFTTT services like "Google Assistant." For control drivers, see URC and ELAN (requires dealer login to access each).

* + - * 1. Integration to third-party systems; App Control.
				2. Integration to third-party systems; Voice Control.
				3. Control Functions: Open, Close, My (stop).
				4. Control Functions: Timer.
				5. Control Functions: Scene.
				6. Channels: 40 RTS Channels available.
				7. Enclosure: ABS; cULus listed; UL 94 V-0 flame rating; RoHS compliant.
				8. Electrical Characteristics: 120 Vac; 60 Hz; wall-mounted power supply.
				9. IP Rating: IP30 for indoor use only.
				10. Timer Control: Clock timer based on astronomic timeclock with 60-minute sunrise and sunset offset.

Programmable for Regular Events: 24-hour and Seven-day.

\*\* NOTE TO SPECIFIER \*\* Optional. Delete if not required.

* + - * 1. Ethernet Adaptor for direct wired network connection.
		1. Wireless Technology Accessories: Repeaters, integration devices, timers, and indoor and outdoor sensor.

\*\* NOTE TO SPECIFIER \*\* Delete device options not required.

* + - 1. Basis of Design Product: Somfy Systems; RTS Repeater.
			2. Integration Device: Somfy Systems; RTS Dry Contact Interface.
			3. Integration Device: Somfy Systems; Universal RTS Interface II (URTSI).
			4. Integration Device: Somfy Systems; TaHoma.

\*\* NOTE TO SPECIFIER \*\* Delete article if not required or delete paragraph options not required.

* 1. CONTROLS - DIGITAL NETWORK TECHNOLOGY

\*\* NOTE TO SPECIFIER \*\* Networked automation controls can include sun sensors, wind sensors, sun/wind sensors, timers, software programs for scenarios, network interface (computers, smartphones), and transmitters (handheld remotes, wireless wall switches, and table top remotes). Dry contact input is used for low-voltage control of building automation systems. Somfy's Somfy Digital Network (SDN) RS485 controls are a two-wired bus with open protocol communication between building automation systems and controller devices operating motors.

* + 1. Digital Communications Network:
			1. Balanced multi-point digital actuators integrated into the following:

\*\* NOTE TO SPECIFIER \*\* Delete system options not required.

* + - * 1. System: Standalone.
				2. System: Building Management.
				3. System: Audio/Video.
				4. System: Low Voltage Lighting Control.

\*\* NOTE TO SPECIFIER \*\* To include automation and a dedicated Solar Management System, add Somfy's "animeo® IP" to Somfy's "Somfy Digital Network™ (SDN)."

* + - 1. Basis of Design Product: Somfy Systems; Somfy Digital Network (SDN) RS485.
				1. Linear Bus Wiring: ANSI/TIA/EIA RS-485 standard, capacitance controlled, unshielded twisted pair cable.

Bus Distribution Components:

\*\* NOTE TO SPECIFIER \*\* SDN Data Hub 5 motors/controls per hub and SDN Data Hub Mini 3 motors/controls per hub are used for connecting motors and controls to SDN bus lines. Delete hub option not required.

SDN Data Hub.

Data Hub Mini.

\*\* NOTE TO SPECIFIER \*\* SDN Room Controller Hub is used for standalone room-based installations. Delete if not required.

SDN Room Controller Hub.

\*\* NOTE TO SPECIFIER \*\* SDN Data Panel is used for Somfy's RS485 motors headend. Delete if not required.

SDN Data Panel.

\*\* NOTE TO SPECIFIER \*\* Power Panel for SDN is used for low-voltage motors. Delete if not required.

Power Panel for SDN.

* + - * 1. Electrical Characteristics: Bus-connected control devices for SDN data such as keypads, sensors and receivers powered directly from bus line using a 24 Vdc NEC Class 2 power supply.
				2. Wire and Connectors: Category 5e balanced twisted pair cable, ethernet patch cables, RJ45 connectors and Weidmuller connectors.

\*\* NOTE TO SPECIFIER \*\* Solar Management System Paragraph is for a dedicated solar management system.

* + 1. Solar Management System: Digital network system integrating solar tracking, timed events, digital keypads, and weather sensors to operate motorized window coverings. Microprocessor controller for setting, changing, and adjusting control features of motorized window coverings.

\*\* NOTE TO SPECIFIER \*\* Offers more advanced control features. System limitations are not based on a quantity of motors and are expanded by the amount of motor controllers and network communication typology.

* + - 1. Basis of Design Product: Somfy Systems; animeo IP.
				1. Controller Type: Building Controller.

Electrical Characteristics: 120 Vac, 1.25 Amps.

Motor Technology: Somfy Digital Network RS485 Networked Motors.

Network Characteristics:

Manage individually addressed intelligent motors and controls.

Allow for intelligent keypads, schedules, motor grouping and virtual switches to be configurable and managed from its own internal IP network, building internal network, or remotely over the internet.

Up to 200 motors on Building Controller, system expansion through the use of animeo IP Sub Controllers.

Dedicated Motor Bus Segment and Sensor Bus Segment.

\*\* NOTE TO SPECIFIER \*\* Delete interface controls and sensors options not required.

Interface Controls: Personal computer.

Interface Controls: Virtual Keypad.

Interface Controls: Low voltage lighting control system integration.

Interface Controls: Dry Contact to Audio Video system integration.

Interface Controls: Building Management System Integration.

Sensors: M8 Weather Station.

Sensors: M13 Weather Station.

Sensors: Sensor Station Mast.

Sensors: Outside Sensor Box and Sun Sensors.

Sensors: Inside Sensor Box.

PC Software: animeo IP Visual Configuration graphical user interface.

Certifications: UL Listed.

* + - * 1. Controller Type: Sub Controller.

Electrical Characteristics: 120 Vac, 1.25Amps.

Motor Technology: Somfy Digital Network RS485 Networked Motors.

Network Characteristics:

Manage and support for an additional 200 intelligent motors.

Expansion of the system for additional sensors and controls.

Certifications: UL Listed.

* + 1. Digital Keypad: Digital button-operated wall station.

\*\* NOTE TO SPECIFIER \*\* Delete Basis of Design options not required.

* + - 1. Basis of Design Product: Somfy Systems; DecoFlex digital keypad for animeo IP.
			2. Basis of Design Product: Somfy Systems; DecoFlex digital keypad for SDN.
			3. Basis of Design Product: Somfy Systems; SDN DecoFlex digital keypad for group control.
			4. Electrical Characteristics: Cable and connector to SDN bus power.
				1. Power: 24 Vdc, supplied by SDN Bus with LED status indicators.
				2. Wire and Connectors: Category 5e balanced twisted pair cable, Ethernet patch cables, and RJ45 connectors. Up to 200 ft (20 m) from an SDN device port.

\*\* NOTE TO SPECIFIER \*\* Delete control functions and button configurations options not required, SDN Decoflex for group control only applies to Up, Down, Stop, Groups.

* + - 1. Control Functions: Up, Down, Stop, three presets.
				1. Button Configurations: Six button digital keypad.
			2. Control Functions: Up, Down, Stop, five presets.
				1. Button Configurations: Eight button digital keypad.
			3. Control Functions: Up, Down, Stop, ECO-MODE.
				1. Button Configurations: Six button digital keypad.
				2. Button Configurations: Eight button digital keypad.
			4. Control Functions: Up, Down, Stop, groups.
				1. Button Configurations: Six button digital keypad for 3 groups.
				2. Button Configurations: Eight button digital keypad for 5 groups.
			5. Face Plate: Lexan 945U material in standard Decora-style with color to match switch.

\*\* NOTE TO SPECIFIER \*\* Delete color options not required.

* + - * 1. Color: Black.
				2. Color: Ivory.
				3. Color: White.
			1. Temperature Range: Ambient temperature; indoor use only.
		1. Power Over Ethernet: Provide communication between Building Power over Ethernet Networks and motorized shades, for control and operation of individual or groups of motorized shading.
			1. Basis of Design Product: Somfy Systems; SDN Power over Ethernet (PoE) Gateway.
				1. Electrical and Network Characteristics:

Power Input: 47-51 Vdc via Cisco CDB-8U UPOE Switch, 60-Watt Ports.

PoE wiring should not exceed standard networking wiring 330 ft (100 m).

Power Output: 51 Watts for Somfy SDN intelligent network motors.

Power and Data Cable: Connection between SDN Gateway to Motor.

Basis of Design Product: Somfy SDN Low-Voltage Motor Cable; with maximum distance of 240 ft (73 m).

\*\* NOTE TO SPECIFIER \*\* Delete cable type option not required.

Cable Type: Plenum.

Cable Type: Non-Plenum.

* + - * 1. Integration Capabilities: JSON standard using Somfy Synergy API or CoAP.
				2. Operating characteristics: Indoor conditioned space use only.
				3. Material: Aluminum enclosure.
				4. Mounting on Metal Surfaces or Studs utilize Somfy PoE Gateway Mounting Clips.
				5. Override Switch Using Local Keypad Control:

\*\* NOTE TO SPECIFIER \*\* Delete basis of design option not required.

Basis of Design Product: Somfy Systems; DecoFlex Digital Keypad for animeo IP.

Basis of Design Product: Somfy Systems; PoE Touch Panel Room Controller.

\*\* NOTE TO SPECIFIER \*\* Delete electrical and network characteristics and color options not required.

Electrical and Network Characteristics: Power: 24-48 VDC, Non-isolated PoE (802.3af compliant), 4 to 7 Watts.

Electrical and Network Characteristics: PoE wiring should not exceed standard networking wiring 330 ft (100 m).

Color: White.

Color: Black.

Display/Touch: 5.77 in. LCD, with capacitive touch supporting multi-touch gesture.

Material: ABS and LCD.

* + - * 1. Approvals: cULus Listed, RoHS compliant.
				2. Installation: Wall-mount on US NEMA standard single gang electrical box.

\*\* NOTE TO SPECIFIER \*\* Delete article if not required or delete paragraph options not required.

* 1. SENSOR CONTROLS - DIGITAL WIRED NETWORK

\*\* NOTE TO SPECIFIER \*\* All sensor measurements are sent through Somfy's Outside Sensor Box data connection for digital network systems. Up to maximum of eight individual sensors can be used in combination with Somfy's Outside Sensor Box to cover eight individual facade orientations.

* + 1. Digital Weather Station: Provides environmental automation through controller for Somfy's "animeo" building control solutions with real-time weather information from sensors that monitor wind speed and direction, rain, temperature, and sun intensity.

\*\* NOTE TO SPECIFIER \*\* Delete basis of design option not required.

* + - 1. Basis of Design: Somfy Systems; Weather Station M8.
			2. Basis of Design: Somfy Systems; Weather Station M13.
				1. Electrical Characteristics: 24 Vdc supplied by Bus and Sensor Station Power Supply.
				2. IEC Application Protection: Class II.
				3. IP Rating: IP 44 in working position.
				4. Data Cable: RJ-45; less than 150 ft (45.7 m) from power supply.

\*\* NOTE TO SPECIFIER \*\* Delete sensors option not required.

* + - * 1. Sensors: 4 fixed position sun sensors.
				2. Sensors: 8 fixed position sun sensors.
				3. Accessories:

\*\* NOTE TO SPECIFIER \*\* Delete accessories not required.

Weathertight RJ45 connector.

Mounting Bracket: Pole.

Mounting Bracket: Wall.

\*\* NOTE TO SPECIFIER \*\* All sensor measurements are sent through Somfy's Outside Sensor Box data connection for digital network systems. Up to maximum of eight individual sensors can be used in combination with Somfy's Outside Sensor Box to cover eight individual facade orientations.

* + 1. Digital Complete Sensor Station: An aluminum mast with a pre-mounted and prewired Somfy's "Outside Sensor Box," four sun sensors, one wind speed sensor and one outside temperature sensor, and can be equipped with additional sensors such as sun sensors and a rain sensor. Provides environmental automation through controller for Somfy's "animeo" building control solutions with real-time weather information from sensors that monitor wind speed and direction, rain, temperature, and sun intensity.
			1. Basis of Design Product: Somfy Systems; Complete Sensor Station.
			2. Electrical Characteristics: 24 Vdc supplied by Bus and Sensor Station Power Supply.
			3. IEC Application Protection: Class II.
			4. IP Rating: IP 44.
			5. Data Cable: RJ-45; less than 150 ft (45.7 m) from power supply.
			6. Accessories:

\*\* NOTE TO SPECIFIER \*\* Delete accessories not required.

* + - * 1. Weathertight RJ45 connector.
				2. Mounting Bracket: Pole.
				3. Mounting Bracket: Wall.
		1. Inside Sensor Box: For connection to external push buttons or key switches per zone and up to two inside temperature sensors. Somfy's Inside Sensor Box can be integrated into Somfy's animeo solutions.
			1. Basis of Design Product: Somfy Systems; Inside Sensor Box.
			2. Electrical Characteristics: 120 Vac.
			3. IP Rating: IP 20.
			4. Housing Material: ABS.
			5. Accessories: Wall mounting bracket.
		2. Outside Sensor Box: Interface between the sensor stations or individual sensors to Somfy's "animeo" building control solutions.
			1. Basis of Design Product: Somfy Systems; Outside Sensor Box.
			2. Electrical Characteristics: 24 Vdc, powered via Bus and Sensor Station Power Supply.

\*\* NOTE TO SPECIFIER \*\* Contact manufacturer for cable length limitation.

* + - 1. Data Cable: RJ-45; less than 150 ft (45.7 m) from power supply.
			2. Sensors: Support for up to 8 sun sensors.
				1. Outside Sensor Extension Box: Support for 4 additional sun sensors.
			3. IP Rating: IP 65.
			4. Housing Material: ABS.

\*\* NOTE TO SPECIFIER \*\* Delete accessories not required.

* + - * 1. Weathertight RJ45 connector.
				2. Mounting Bracket: Pole.
				3. Mounting Bracket: Wall.

\*\* NOTE TO SPECIFIER \*\* Electrical Characteristics: 24 Vac/dc sensor measuring sun luminosity, sending readings through Somfy's Outside Sensor Box data connection for Somfy's animeo® systems. Up to maximum of eight sun sensors can be used in combination with Somfy's Outside Sensor Box to cover eight individual facade orientations.

* + 1. Digital Sun Sensor: Sensor measuring luminosity sending data through outside sensor box connection for "animeo" building control solutions.
			1. Basis of Design Product: Somfy Systems; Sun Sensor.
			2. Cable: Two conductor.
			3. IP Rating: IP 43.
			4. Luminosity Angle: 150 degree range.

\*\* NOTE TO SPECIFIER \*\* Delete article if not required or delete paragraph options not required.

* 1. POWER AND DATA ACCESSORIES
		1. Transformers and Power Distribution: used with RTS motors.
			1. Certifications: UL 508, UL 60950-1, TUV EN 60950-1 approved. cULus Certified.

\*\* NOTE TO SPECIFIER \*\* Delete basis of design, motors per transformer, and electrical characteristics options not required. Consult manufacturer for specific transformer/power supply requirements and information.

* + - 1. Basis of Design: Somfy Systems; Plug-in Wall Type, for one motor.
			2. Basis of Design: Somfy Systems; Power Distribution Enclosure Kit; for up to twenty 24v DC motors per kit.
			3. Electrical Characteristics: 120 Vac 1 - 11A; coordinate with division 26.
			4. Power Distribution Enclosure Kit: Motors fused at 2 A per motor terminal.
		1. Bus Power Supply for Digital Network: Provides power to the digital network and sensor bus.
			1. Basis of Design Product: Somfy Systems; Bus and Sensor Station Power Supply.
			2. Electrical Characteristics: Input 120 Vac; plugs into outlet; Output: 24 Vdc 1 Amps.
			3. Power Cord: 26 inches (660 mm) line-voltage, ac (IEC-320 C6).
			4. UL listed and CE approved.
		2. Motor Power/Control Distribution Panel: Used with digital controls for motor power and communication through the digital network bus for intelligent motors.

\*\* NOTE TO SPECIFIER \*\* Adds 10 isolated motor ports and two isolated device ports to a SDN bus segment. The isolated motor ports support up to 240 ft (73 m) of power and data wiring to individual low-voltage intelligent motors. Delete if not required.

* + - 1. Power Panel: provides power and data to a maximum of 10 Motors.
				1. Basis of Design Product: Somfy Systems; Power Panel for SDN.
				2. Electrical Characteristics: Input 120 Vac 7.2A; Output 24Vdc fused 2A per motor.

Power and Data wiring up to 240 ft (73 m) from motor to power panel using Somfy SDN Low-Voltage Motor Cable.

Two isolated device ports up to 200 ft (20 m).

* + - * 1. Listed: cULus.

\*\* NOTE TO SPECIFIER \*\* Adds four isolated bus segments to an SDN system. Additional isolated bus segments support up to 255 devices, 4000 ft (1219 m) of bus wiring per segment and supplies 100 power units. Delete if not required.

* + - 1. Data Panel: Creates head-end and riser bus distribution network.
				1. Basis of Design Product: Somfy Systems; Data Panel.
				2. Electrical Characteristics: Input 120 Vac 3.35 A; Output 24 Vdc 1 Amp per segment.
				3. Provides four isolated digital network bus segments to the SDN system.
				4. Built-in override keypad Decoflex Digital Keypad.

\*\* NOTE TO SPECIFIER \*\* Delete article if not required or delete paragraphs not required.

* 1. INTEGRATION ACCESSORIES
		1. RTS Motors - Universal RTS Interface: Allow third-party automation systems to control RTS motorized solutions.
			1. Basis of Design Product: Somfy Systems; Universal RTS Interface II (URTSI II).

\*\* NOTE TO SPECIFIER \*\* Control up to 16 URTSIs together for up to 256 channels (via RS485).

* + - 1. Channels: 16; RTS controls per URTSI.
			2. Power Input: 9 Vdc, 200 mA; UL approved.
			3. RF Range: 65-ft (20-m) radius under optimal conditions, FCC Approval Part 15, Class B.
			4. Serial Inputs: RS232, RS485, or IR.
		1. Network Intelligent Motors - Building Management System (BMS) Interface: Provide communication between BMS and network intelligent motors, operating either individual motors, or groups via Standalone SDN or animeo IP. Additional features of retrieving sensor data from animeo IP sensor bus.
			1. Basis of Design Product: Somfy Systems; Somfy Connect BMS Interface V2.
			2. Power Input: 9 to 24 Vdc power supply plugs into an ac outlet.
			3. Data Point Capacity: 4500 maximum.
			4. Integration Capabilities: Modbus, BACnet MS/TP, BACnet IP, Metasys N2 by JCI.
			5. Certifications: CE, FCC, IC Canada, RoHS3 and REACH complaint.
		2. Network Intelligent Motors - Universal Digital Automation Interface: Allows third-party automation systems to control network intelligent motors; one interface per motorized system for up to 250 motors per interface.
			1. Basis of Design Product: Somfy Systems; Somfy Connect Universal Automation Interface (UAI) Plus.
			2. Power Input: 24 Vdc, powered via Bus and Sensor Station Power Supply.

\*\* NOTE TO SPECIFIER \*\* Delete communication input option not required.

* + - 1. Communication Input: RS232 protocol.
			2. Communication Input: IP Ethernet protocol.
			3. Communication Output: Somfy's "SDN RS485" protocol.
			4. Integration: Third-party drivers utilizing Somfy Synergy API.
			5. UL listed and CE approved.
			6. Operating Characteristics: Indoor conditioned space use only.

\*\* NOTE TO SPECIFIER \*\* Somfy's SDN 0-10 V Interface is a Digital Network (SDN) device that receives industry standard 0-10 V control input to operate Somfy's "SDN RS485" motors. This product is plug and play operating as a group device controlling all motors in a group without having to program the interface.

* + 1. Network Intelligent Motors - Building Control Systems 0-10 V Integration Interface: Provides integration between low voltage lighting control systems 0-10 V analog output and network intelligent motors, operating either individual or groups via Standalone SDN or animeo IP.
			1. Basis of Design Product: Somfy Systems; SDN 0-10 V Interface V2.
			2. Electrical Characteristics: 120C AC 60Hz 20mAmps.
			3. Power and Data Output: 24 Vdc SDN bus output.
			4. Integration Capabilities: Industry standard 0-10 V analog input.
			5. Mounting: Junction box mounted plenum rated enclosure.
			6. UL Listed.
			7. Operating Characteristics: Indoor conditioned space use only.
1. EXECUTION
	1. EXAMINATION
		1. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances, operational clearances, blocking, accurate locations of connections to building electrical system, lighting, and other conditions affecting performance of the Work.
		2. Proceed with installation only after unsatisfactory conditions have been corrected.
	2. PREPARATION
		1. Clean surfaces thoroughly prior to installation.
		2. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
	3. MOTOR CONTROLLER INSTALLATION
		1. Comply with NFPA 70, Article 400, for flexible cords and cables.
		2. Comply with NECA 1 and NECA 130.
		3. Comply with FCC guidelines.
		4. Install window treatment motor operators and stationary control systems level, plumb, and aligned with adjacent units in accordance with manufacturer's written instructions.

\*\* NOTE TO SPECIFIER \*\* Electrical connections paragraph below is for hard-wired motor operators and control systems. Delete if not required.

* + 1. Electrical Connections: Connect wired motor operators and stationary control systems to building electrical system in accordance with NEC requirements.
			1. Grounding: Provide electrical grounding in accordance with NFPA 70.

\*\* NOTE TO SPECIFIER \*\* Delete the following paragraph is not required.

* + 1. Networked BMS: Connect networked automation controls for motorized equipment to BMS.
		2. Sun, Rain, and Wind Sensor Locations: Mount on exterior in accordance with manufacturer's written instructions.
	1. ADJUSTING
		1. Adjust motorized equipment to operate smoothly, easily, safely, and free from binding or malfunction throughout entire operational range.
			1. Adjust motor-limit settings in accordance with manufacturer's written instructions for specific locations and placements.
			2. Program each motor-operator control system to manufacturer's standard settings or Owner-provided program settings.

\*\*NOTE TO SPECIFIER\*\* Delete the following paragraph if there is no automation using animeo IP, or integration to Building Management System (BMS).

* + 1. Commissioning Control Systems: Perform commissioning of integrated automation control systems and connection to BMS.

\*\* NOTE TO SPECIFIER \*\* Delete the remaining paragraphs not required.

* + - 1. Managed by shade manufacturer/supplier.
			2. Managed by motor and control manufacturer.
			3. Managed by digital network integrator.
			4. Managed by \_\_\_\_\_\_\_\_ aka, The Commissioning Agency.

\*\* NOTE TO SPECIFIER \*\* Contact manufacturer for fee-based window treatment control system commissioning support. System should be commissioned, and operation based on pre-project planning and optimal system performance led by occupant comfort or energy savings.

* 1. CLOSEOUT ACTIVITIES
		1. Demonstration and Training: Engage a factory-authorized service representative to demonstrate and train Owner's maintenance personnel to adjust, operate, and maintain units.

END OF SECTION