Section 1 - Motor Types, Names and Voltage

These instructions apply to all Draper medium duty motor operated window shades using the following motors:

<table>
<thead>
<tr>
<th>MOTOR NAME</th>
<th>MOTOR VOLTAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sonesse 50</td>
<td>120VAC</td>
</tr>
<tr>
<td>Sonesse Ultra 50</td>
<td>120VAC</td>
</tr>
<tr>
<td>Sonesse RTS</td>
<td>120VAC</td>
</tr>
<tr>
<td>Sonesse RTS Ultra</td>
<td>120VAC</td>
</tr>
<tr>
<td>Sonesse RS485</td>
<td>120VAC</td>
</tr>
<tr>
<td>Sonesse RS485 Ultra</td>
<td>120VAC</td>
</tr>
<tr>
<td>ST30 Dry Contact</td>
<td>24V</td>
</tr>
<tr>
<td>ST30 RTS</td>
<td>24V</td>
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<tr>
<td>ST30 485</td>
<td>24V</td>
</tr>
</tbody>
</table>

If you have any difficulties installing or servicing your Motorized FlexShade, call your dealer or Draper, Inc.
Important Safety Information

**WARNING**

Improper installation and use of Motorized FlexShade can result in serious injury or death. Primarily, injuries can occur when the Motorized FlexShade falls due to imprecise installation, mishandling of the Motorized FlexShade during installation or installation on an insufficient wall or ceiling structure. Please use extreme care.

1. Please read the following installation guidelines thoroughly and follow them carefully. Failure to do so may cause product to fall or otherwise fail, and could result in serious injury.

2. Installation and calibration of the Motorized FlexShade should only be performed by an authorized, qualified, and experienced professional. In particular, electrical work and wiring (indicated in diagram by dashed lines) must be completed only by a qualified professional electrician who has read this manual completely and is familiar with the construction and operation of this equipment and the hazards involved.

3. Do not affix the unit to wall or ceilings that have inadequate strength to permanently hold the unit during use. It is the owner's and installer's responsibility to confirm the wall or ceiling to which the unit attaches is sufficient to permanently hold the weight and stress loads of the unit at all times. Draper, Inc., is not responsible for improper installation, application, testing or workmanship related to the product at place of installation.

4. It is the installer's responsibility to make sure appropriate fasteners are used for mounting.

5. All brackets, fascia, head boxes, pockets, wall clips, and other hardware must be installed level. Motorized FlexShade must be level and square.

6. Never leave the area while operating the Motorized FlexShade during installation, maintenance, or normal operation, unless it is secure and safe.

7. Before testing or operation, carefully inspect the entire area and path of the shade and areas underneath the shade to be sure no persons or objects are in the area.

8. Turn off power and any nearby equipment or cables carrying electricity before connecting switches, wires, controls, or electrical components.

9. Make sure the limit switches are pointed down or accessible when placing the motor in brackets/endcaps.

10. All motors should be tested and limits set using test cord before shades are wired.

11. Do not wire motors in parallel without written permission from Draper, Inc.

12. During testing or operation, carefully watch the surrounding area for any potential safety concerns including nearby persons or objects.

13. After installation, the entire system, including all sensors, should be carefully tested to ensure safe and normal operation. Extreme care should be taken during testing to remain clear of moving parts to avoid possible injury.

14. Operation of Motorized FlexShade should be performed only by authorized and qualified personnel, who have been trained in the safe and effective operation of the Motorized FlexShade & understand its safety features.

15. The safety features of the Motorized FlexShade, including sensors, should never be disabled, bypassed or overridden. The system should not be operated until all safety features, including the sensors, are properly and completely installed, calibrated and tested.

16. Motorized FlexShade may need to comply with local, state or district rules and regulations, in particular when installed in schools. All applicable rules and regulations should be reviewed before installation and use.

17. Failure to precisely follow installation guidelines invalidates all warranties.

18. Custom products/installations may not be reflected in this manual. Call Draper, Inc., if you have questions about the installation of custom products or any questions about your installation.

**Before Beginning Installation**

1. Look for any job site conditions that could interfere with installation or operation of the system.

2. Read carefully and be sure to understand all installation instructions and all related operations manuals. These instructions are intended to as a guide for the installer and owner. They should be followed closely and combined with the expertise of experienced qualified installers. Draper, Inc., is not responsible for improper installation, application, testing or workmanship related to the product at place of installation. Please retain all instructions for future use.

3. Open cartons lengthwise.

4. Locate and lay out all pieces.

5. Inspect all boxes to make sure you have received the proper Motorized FlexShade and parts. Controls may be shipped separately, or in same carton as Motorized FlexShade.

6. If you have any difficulties with installing, servicing or operating your Motorized FlexShade, call your dealer or Draper, Inc., (765) 987-7999.
Section 2 - Mounting Brackets (Brackets Only Installation)

1. Mark wall, jamb or ceiling for placement of mounting brackets.

**Caution:** Before mounting shades, verify measurements on the card provided with the shade, and ensure the brackets are installed at the correct width.

2. Drill small starter hole in mounting surface (if necessary).

3. Attach brackets using appropriate fasteners for mounting surface.

   The installer is responsible for selecting mounting hardware appropriate for site conditions.

   **Please Note:** The brackets shown are for standard 120V motors. Hardware for other motors will vary. 24V shades use the same hardware as Manual FlexShades. Please review manual shade instructions for parts information.

4. Place operator (motor) end onto its bracket. If a coupled unit, see separate instruction sheet for Coupled FlexShades.

5. Slide notched pin on idler end into slot on bracket. Slip retainer clip onto idler end between bracket and roller (see Fig. 2).

   *Don't forget: install retainer clip on shaft between bracket and roller!

   **Please Note:** Install motor so that limit switches are pointed down or accessible.

Section 3 - Mounting Endcaps for Fascia

1. Snap end covers into place (see Fig. 3).

2. Mark wall, jamb or ceiling for placement of mounting endcaps.

3. Drill small starter hole (if necessary) in mounting surface.

4. Mount endcaps using appropriate fasteners for surface. If this is a coupled unit, be sure to mount coupled endcap in the center position.

   **Please Note:** Installer is responsible for selecting mounting hardware appropriate for site conditions.

   **Caution:** Before mounting shades, verify measurements on the card provided with the shade, and ensure the endcaps are installed at the correct width.

5. Place operator (motor) end into its endcap (see Fig. 4).

6. For coupled units see separate instruction sheet for Coupled FlexShades.

7. Slide notched pin into idler endcap and attach retainer clip (see Fig. 4).

   *Don't forget: install retainer clip on shaft between bracket and roller!

   **Please Note:** Install motor so that limit switches are pointed down or accessible.
Section 3.2 - Attaching Fascia to Endcaps

1. Place groove along top of fascia over endcaps, and snap into place (see Fig. 5).

   Endcaps must be installed the correct distance apart for fascia to be properly attached with full engagement. Fascia is not fully seated until it clicks into place on both ends. Once in place, check for secure fit. If not secure, secure with appropriate fastener (not included).

Section 3.3 - Reverse Roll Fascia

1. Mark mounting points.
2. Slide endcaps into extrusions.
3. Using pre-drilled holes in endcaps, mark the fascia for drilling.
4. Attach endcaps to fascia using included hardware.
6. Install roller/fabric/operator assembly according to relevant instructions.
7. Attach endcap covers to endcaps. Use double-sided tape to help secure in place.

Section 4 - Surface Headbox or Pocket Headbox

1. Snap endcap covers onto endcaps. (See Section 3.2 - Attaching Fascia to Endcaps: Step 1)
2. Place endcaps into back/top portion of wall/ceiling headbox or into pocket extrusion of large pocket headbox. Using pre-drilled holes in endcaps, mark the headbox for drilling.

   Please Note: The installer is responsible for selecting mounting hardware appropriate for site conditions.

   Caution: Before mounting shades, verify measurements on the card provided with the shade, and ensure the endcaps are installed at the correct width.

3. Drill holes in back or top, depending on whether you will be mounting the headbox to the wall or ceiling, or in a pocket.
4. Attach endcaps and Surface Headbox back/top or Large Pocket Headbox extrusion to wall, ceiling or pocket using mounting hardware appropriate for site conditions.
5. Install shade (See Section 3.1 - Mounting Endcaps for Fascia.
6. Attach headbox fascia or pocket closure (see Fig. 7).

   Note on surface style headbox: Fascia is not fully seated until it clicks into place on both ends. Once in place, check for secure fit. If not secure, secure with appropriate fastener (not included).
**Section 5 - Electrical Connections**

Shade operates on 110-120V, 60 Hz. current. Shade is shipped with internal wiring complete and control switch(es) fully boxed, and standardly supplied with a 6’ cable lead. Longer lead can be substituted by removing two screws in motor end of roller, removing lead, plugging new lead in, and replacing screws. Wire to connect shade to switch(es) and switch(es) to power supply should be furnished by installer. Connections should be made in accordance with attached wiring diagram, and wiring should comply with national and local electrical codes. **DO NOT** wire motors in parallel without written permission from Draper.

All operating switches should be “off” before power is connected.

*Please Note:* For low voltage wiring requirements, Draper recommends consulting with a professional low voltage electrical contractor. It is very important that shielded and stranded CAT 5 cable be used to prevent any electrical interference.

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**Section 6 - Limit Switch Adjustments**

**Section 6.1 - Standard and Quiet Motors**

⚠️ **Caution:** Be sure all switches are in “off” position before adjusting limit switches. Always be prepared to shut off manually when new adjustment is being tested. Do not allow the shade roller to become exposed by running the shade fabric too far down. Shade may be severely damaged if allowed to run too far up or down. Each shade’s limit switch must be set if using group control system. Motor should be installed so limit switches are pointed down or accessible.

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**Section 6.1.1 - Push Button Limits**

1. Fully depress both limit switch push buttons, then operate wall switch to make sure system works properly.
2. Raise shade to desired “up” stop position.
3. Set upper limit by depressing and releasing the proper (back) push button.
4. Lower shade to desired “down” stop position.
5. Set lower limit by depressing and releasing the proper (front) push button.

**Section 6.1.2 - Screw-Type Limits**

1. Determine which direction of fabric travel corresponds with arrows on motor.
2. Operate shade to desired “down” stop position.
   - Set limit by turning the proper socket toward the “+” to lower the limit, and “-” to raise it.
3. Operate shade to desired “up” stopping position.
   - Set limit by turning the proper screw toward the “-” to raise the limit, and “+” to lower it.

**Section 6.2 - Limit Adjustments (485 Motors)**

1. Connect the 485 switch to the motor via the terminal blocks, or via the modular port using four conductor modular cable. When using modular cable, the cable connectors MUST **NOT** be crimped in reverse, as with standard telephone cable.
2. Set the slide switch to the lower position. Press and hold the DOWN button on the switch to move the viewing surface to the desired lower limit. If the shade moves in the opposite direction, release the DOWN button and press and hold down the STOP button for four seconds. This will reverse the operation of the UP and DOWN switches.
3. Move slider switch into center position. Wait a couple of seconds.

*Please Note:* If you move the slider switch from down to up in one motion it sets the two limits in the same position.

4. Set the slide switch to the higher position. Move the shade to the desired upper limit by pressing and holding the UP button on the wall switch.
5. Return the slide switch to the center position to return to normal operation.
6. To set the shade to an intermediate position, move the shade to the desired position and press the STOP button. Press and hold the STOP button for at least three seconds to record the position.

*Please Note:* Pressing and releasing the UP button on the switch will move the shade to its upper limit. Pressing and releasing the DOWN button will move the shade to its lower limit. While the motor is in motion, pressing the STOP button for less than two seconds will stop the shade at its present position. Once the motor is stopped, pressing the STOP button will move the shade to its intermediate position. Pressing and holding the STOP button, when the motor is at rest or in motion, for at least three seconds will record a new position.

**Section 6.3 - Limit Switch Adjustments—RTS Motors**

For limit setting instructions on these motors, see Draper's RFRC_Motor_Prog_Inst available in the motorized shades section of www.draperinc.com.
Motorized FlexShade® with Sonesse or Sonesse Ultra 120VAC Operator

Endcap (L) for Fascia
Endcap Cover (L)
Endcap (R) for Fascia
Endcap Cover (R)
Brackets Only (L)
Brackets Only (R)
Bracket
Retainer
Clip

Fascia
M12 Cable

Controls & System Overview
Sonesse 120VAC Motors

NOTE: Test shade operation. If shade direction does not correspond with the switch orientation, turn power back off and switch the red and black wires from the motor to the switch. Do not wire motors in parallel without written permission from Draper.

Dashed Wiring by Electrician

Motorized FlexShade® with Sonesse RTS or Sonesse Ultra RTS 120VAC Operator

Endcap (L) for Fascia
Endcap Cover (L)
Endcap (R) for Fascia
Endcap Cover (R)
Brackets Only (L)
Brackets Only (R)
Bracket
Retainer
Clip

Fascia
M12 Cable

Controls & System Overview
Sonesse RTS 120VAC Motors

Dashed Wiring by Electrician

RTS MOTOR 120V

Telis 1 RF Remote

Deco Flex Wireless Keypad

110-120V Line
Motorized FlexShade®
with 485 Sonesse (ILT)
120VAC Operator

Controls & System Overview
Sonesse 485 120VAC Motors

- Bus Power Supply
- LAN
- Wall Switch
- M12 Connections
- Data Cable with RJ45 Connector
- Dashed Wiring by Electrician

Endcap (R) for Fascia
Brackets Only (R)
Endcap (L) for Fascia
Brackets Only (L)
M12 Cable
Endcap Cover (R)
Endcap Cover (L)
Fascia

Motorized FlexShade®
with 485 Sonesse (ILT)
120VAC Operator
Motorized FlexShade® with ST30 24V DC Operator
(RTS Shown)

Controls & System Overview
Sonesse 485 - 24V DC Motors

Multiple 485 Motors

Wall Switch

24V Power Panel
5, 10, 15, 20

Buy Panel Supply

110-120V Line

Wiring Distance to Motor
240 ft with 14AWG
150 ft with 16AWG
100 ft with 18AWG

Dashed Wiring by Electrician

Wall Switch

24V MOTOR

24V MOTOR

24V MOTOR

Dashed Wiring by Electrician

Endcap (L) for Fascia

Endcap Cover (L)

Brackets Only (L)

Retainer Clip

110V Outlet

Bus Power Supply

24V MOTOR

24V MOTOR

24V MOTOR

Dashed Wiring by Electrician

Controls & System Overview
Sonesse 24V DC Motors

Single Dry Contact Motor

Wall Switch

24V Power Panel
5, 10, 15, 20

Dashed Wiring by Electrician

Wiring Distance to Motor
240 ft with 14AWG
150 ft with 16AWG
100 ft with 18AWG

Controls & System Overview
Sonesse RTS 24V DC Motors

Single RTS Motor

Wall Switch

24V Power Panel
5, 10, 15, 20

Dashed Wiring by Electrician

Wiring Distance to Motor
240 ft with 14AWG
150 ft with 16AWG
100 ft with 18AWG

Motorized FlexShade®

Fascia

Endcap (R) for Fascia

Brackets Only (R)

Power Cable

Antenna

Endcap Cover (R)

Motorized FlexShade®

Motorized FlexShade®