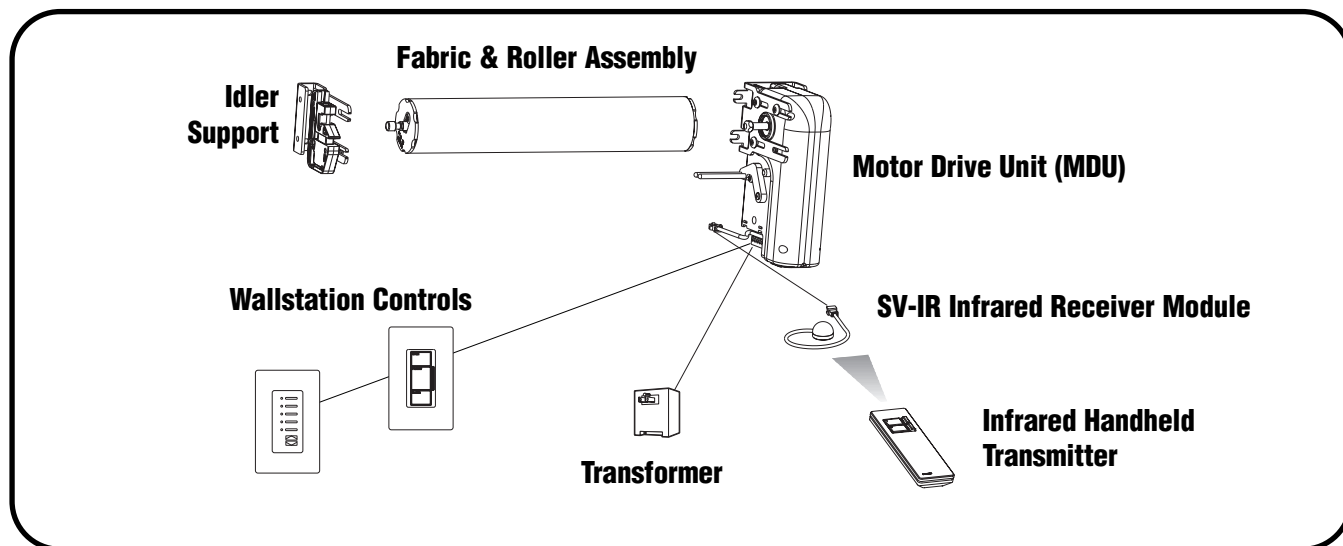


Contents

1	System Dimensions Overview	pg. 3
2	Fasten Mounting Brackets	pg. 4,5
3	Attaching MDU and Idler Support	pg. 6
4	Hanging the Shade	pg. 7
5	Wiring the System	pg. 8,9
6	MDU Setup	pg. 10,11
7	Shade Controls	pg. 12
8	MDU w/ SV-IR Module	pg. 13
9	Troubleshooting	pg. 14
10	Part Specs	pg. 15

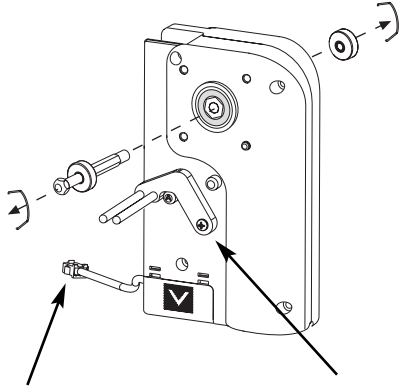
A Typical Sivoia™ Motorized Shade System

(Wallstation Controls, Transformer, SV-IR Infrared Receiver Module, and Infrared Remote Control not included with this Kit)



CARTON CONTENTS

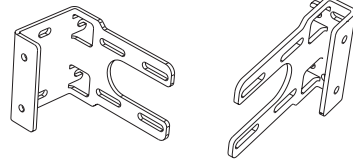
Motor Drive Unit (MDU)
(exploded view - ships assembled)



SV-IR Module Connecting Wire (SV-IR Module sold separately)

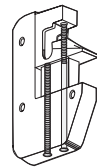
Home Position Reset Lever (A or B)

MDU & Idler Support Mounting Brackets

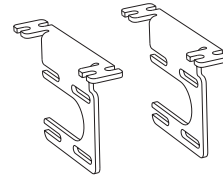


2" Pan-Head Mounting Bracket Screws (x8)

1/2" Idler and MDU Truss-head Screws (x8)



Idler Support



MDU & Idler Support Ceiling-Mount Brackets

TOOLS REQUIRED

- #2 Phillips Screwdriver
- 1/8 in. Straight Blade Screwdriver
- Power Drill: Drill Bits, Screwdriver Attachments
- Level
- Pliers
- Tape Measure
- Wire Cutter
- Wire Stripper

1

SYSTEM DIMENSIONS OVERVIEW

Use the following diagrams in conjunction with the *Sivoia* Order Invoice to accurately position the mounting brackets.

Figure 1: Standard Mounting Bracket Application

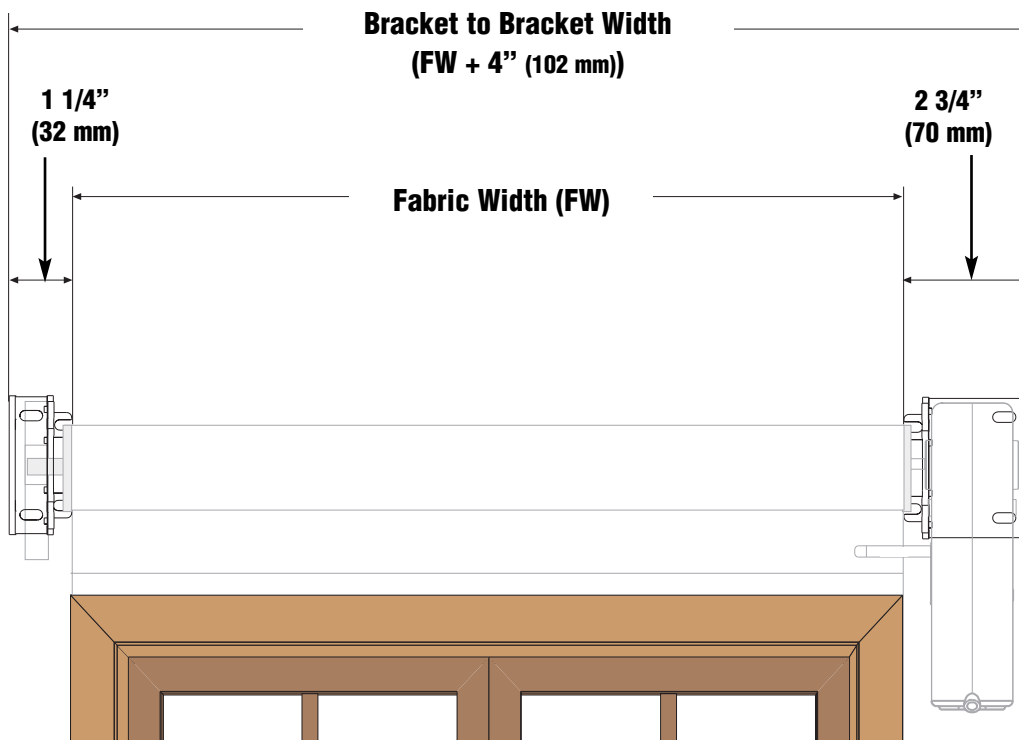
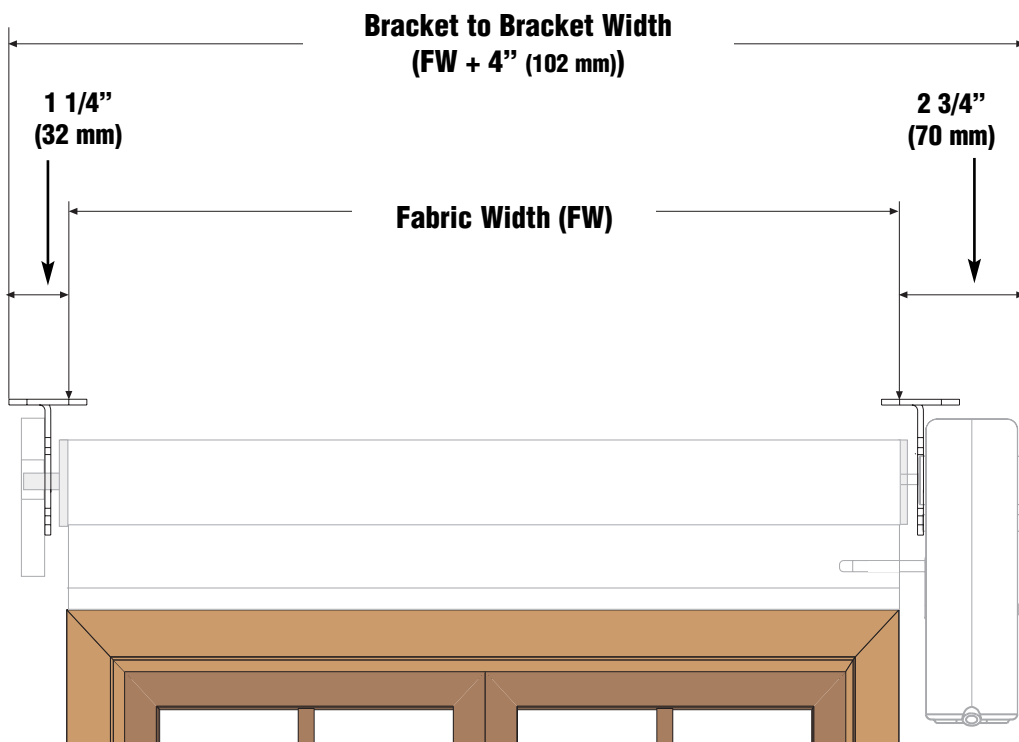


Figure 2: Ceiling-Mount Bracket Application



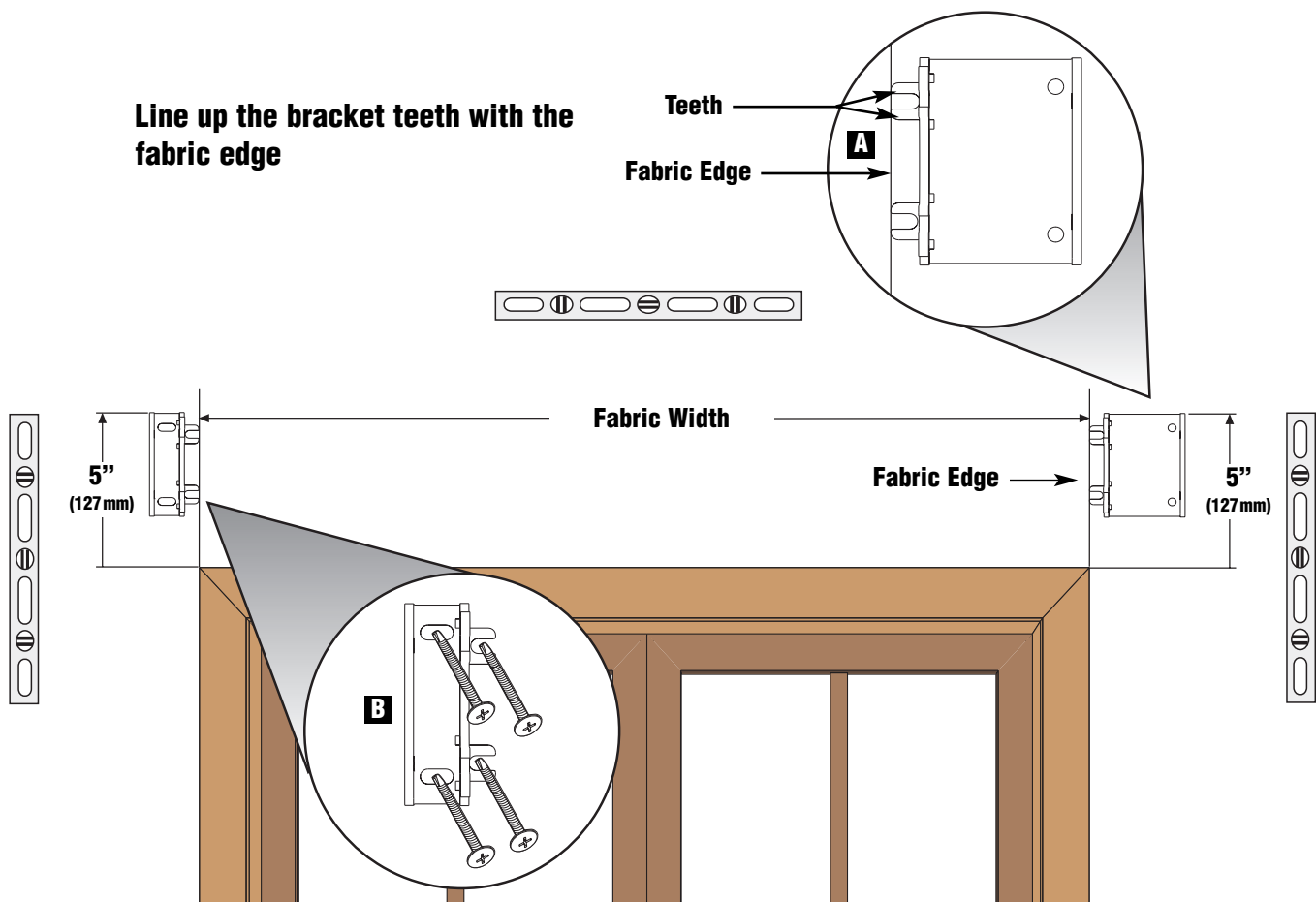
2

FASTEN MOUNTING BRACKETS

A. Position the bracket's "teeth" for each bracket at the ends of the fabric width as shown. Use a level to ensure the brackets are at the same height and parallel to the window casing.

Note: Fasten the top of the brackets 5" (127 mm) from the top of the window trim to ensure complete window exposure when the shades are in full up position.

B. Fasten the brackets to studs in the wall using four (4) pan-head mounting bracket screws.



Once the mounting brackets have been fastened to the wall, confirm the **Bracket to Bracket Width** as listed on the *Sivoia* Order Invoice. Refer to Figure 1 on page 3 for a detailed diagram. Make any necessary bracket position adjustments based on this assessment.

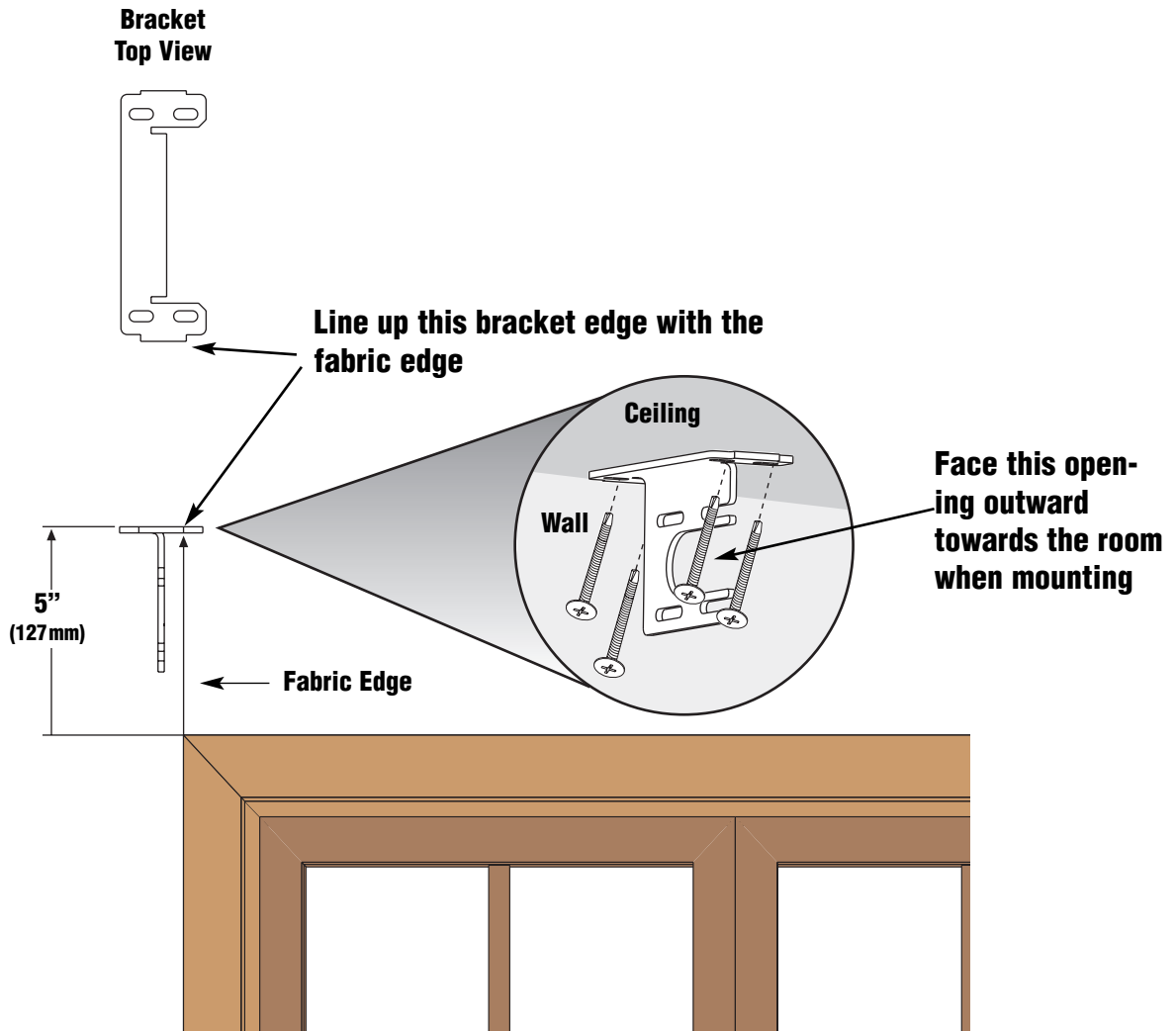
2

FASTEN MOUNTING BRACKETS (CONT'D)

For Ceiling-Mount Applications...

Follow steps A & B from the previous page, then line up and fasten the brackets as shown.

Note: Make sure the opening of the ceiling bracket faces outward towards the room.

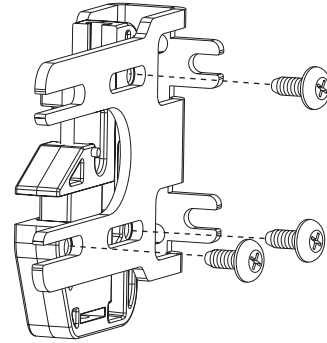


Once the ceiling-mount brackets have been fastened to the ceiling, confirm the **Bracket to Bracket Width** as listed on the *Sivoia* Order Invoice. Refer to Figure 2 on page 3 for a detailed diagram. Make any necessary bracket position adjustments based on this assessment.

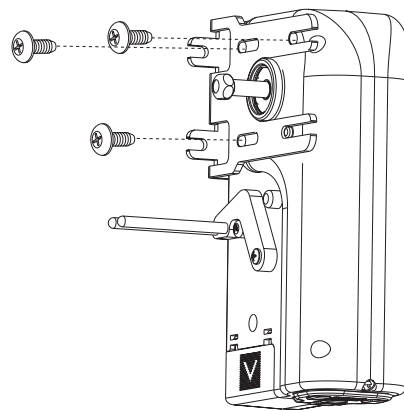
3

ATTACH MDU and IDLER SUPPORT

A. Attach the idler support to the mounting bracket using three (3) truss-head screws.



B. Attach the MDU to the mounting bracket using three (3) truss-head screws.



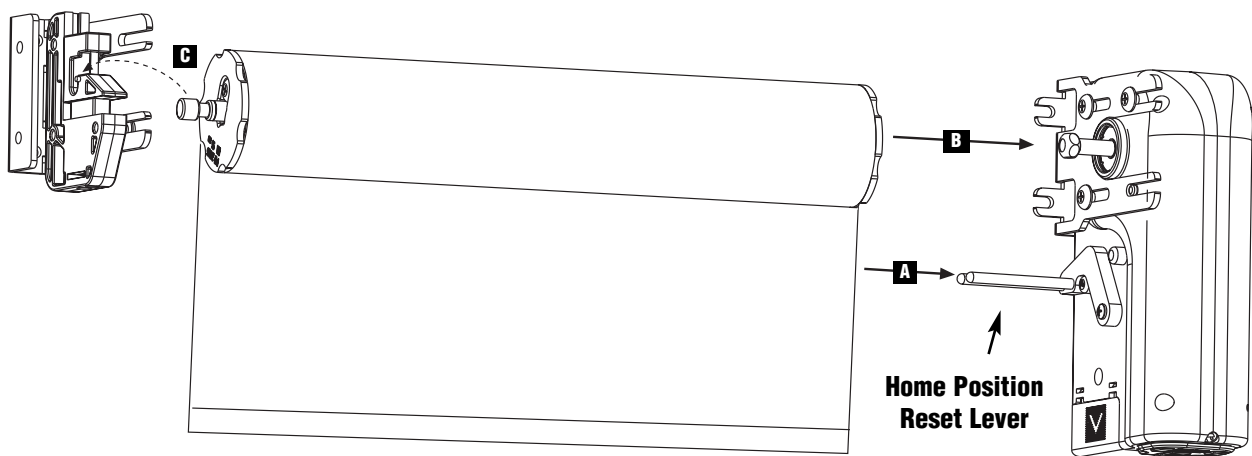
4

HANGING THE SHADE

A. Unwrap approximately 1 ft. (0.3 m) of material and insert the edge of the material between the guide posts of the home position reset lever.

B. Attach the shade to the MDU first by engaging the roller's hexagonal socket with the motor's hexagonal drive ball. You may need to rotate the roller in order to push the shade over the hexagonal drive ball.

C. Insert the idler pin into the upper slot of the idler support and drop it into place.

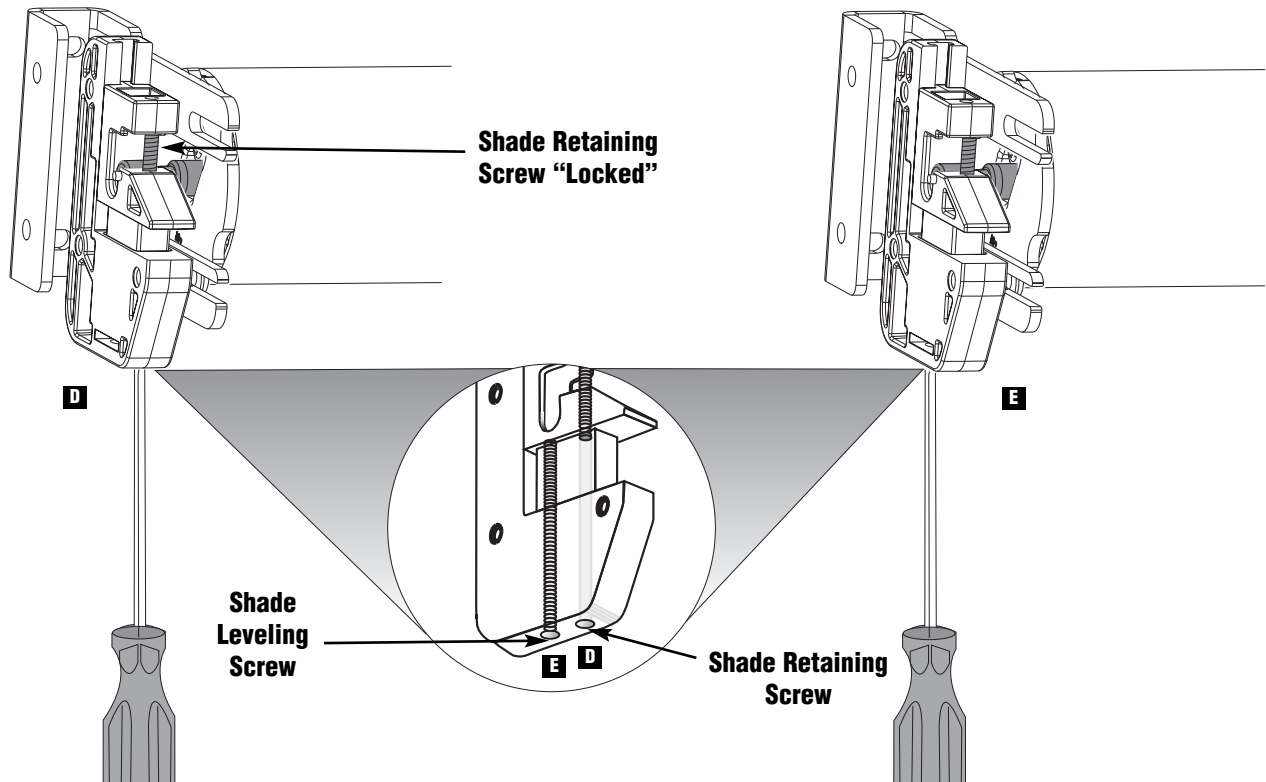


4

HANGING THE SHADE (CONT'D)

D. Tighten the idler's shade retaining screw to keep the idler pin secure/ "locked".

E. Adjust the shade leveling screw to level the shade roller.



CAUTION! Not setting the shade retaining screw into the "locked" position prior to operating the unit can result in damage to the system.

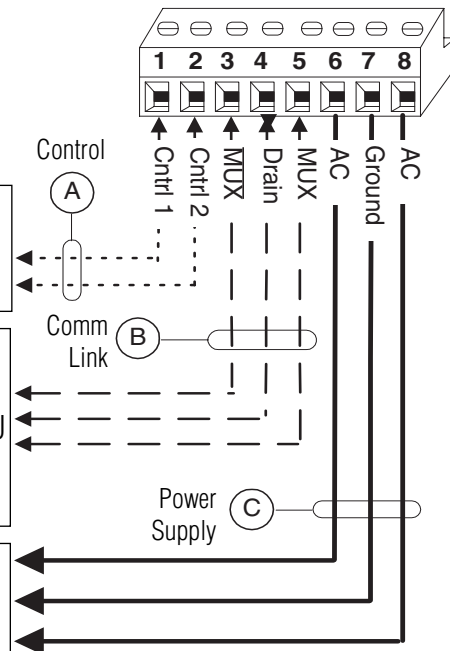
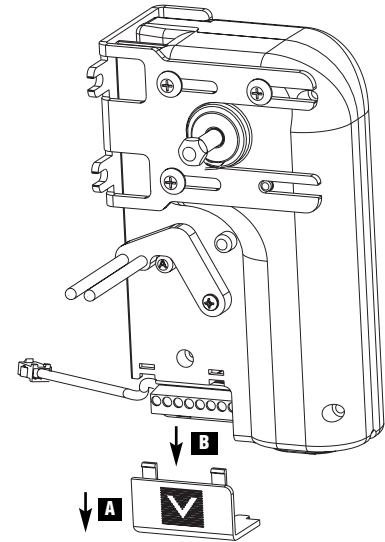
5

MDU WIRING - SINGLE MOTOR

Connecting Wires to the MDU Terminal Block

The terminal block located at the bottom of the MDU is the wire connection point for: power, communication, keypads, and interfaces.

- A.** Remove terminal block cover (if not yet removed) by pressing in on the cover and then pulling downward.
- B.** Grasp terminal block and pull down to separate from connecting block.
- C.** Connect wires to the terminal block according to the diagram below.
- D.** Replace the terminal block and the terminal block cover.



To a *Sivoia* wall mounted keypad, or a *Sivoia* interface such as the SV-CCI or the SV-GRXI. The CNTRL1 and CNTRL2 wires are polarity sensitive.

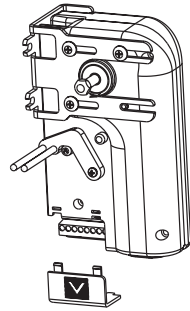
Do not connect if there is only one MDU in the system. If there are multiple MDU's in the system, the MDU's must be wired together. Connect the MUX, Drain, and MUX terminals of each MDU together in a daisy chain or homerun configuration.

Wire to a *Sivoia* plug-in transformer, junction box mount transformer, or a *Sivoia* power panel. Each MDU must be EARTH grounded. One *Sivoia* transformer can power **ONLY ONE MDU** regardless of shade size.

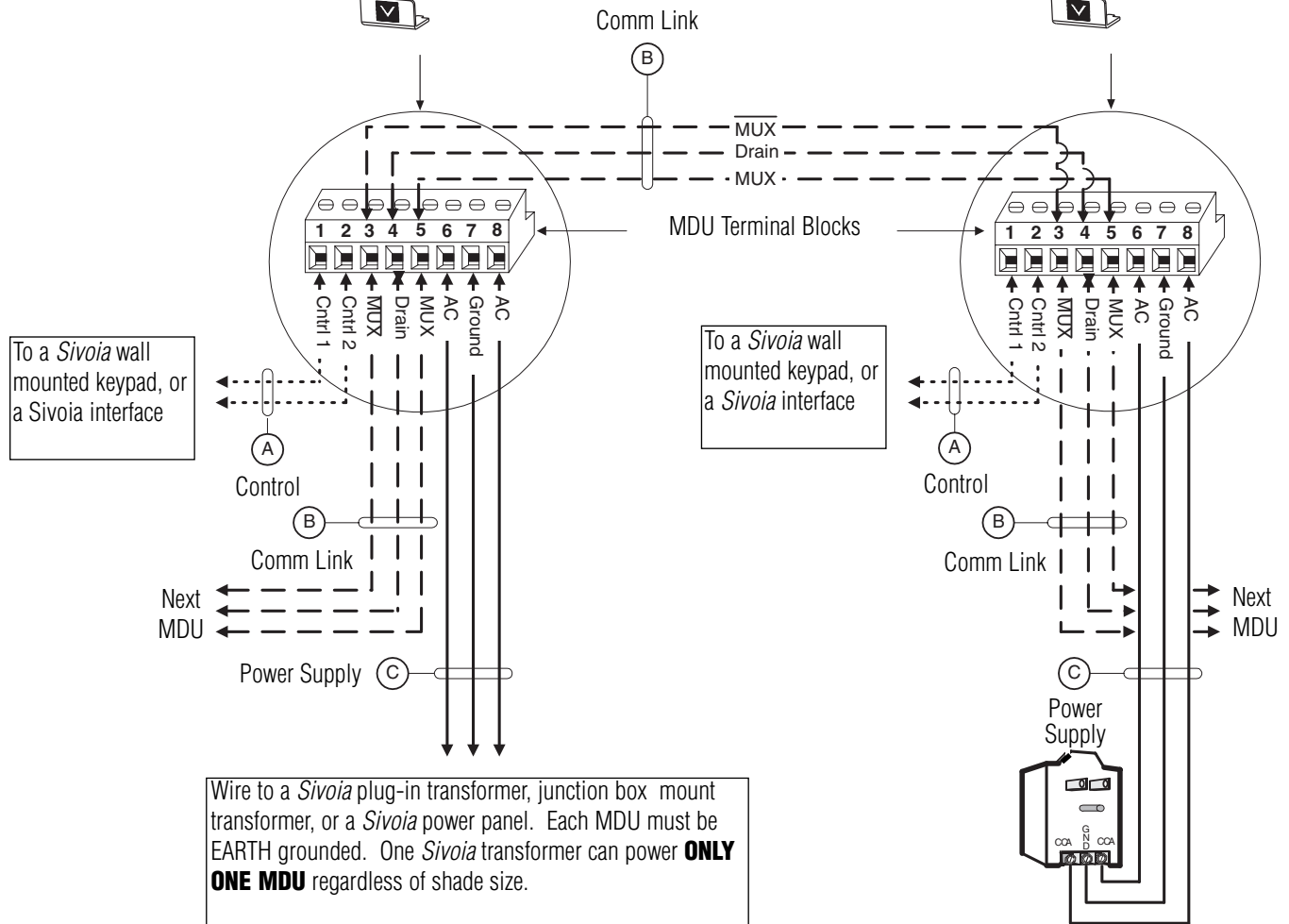
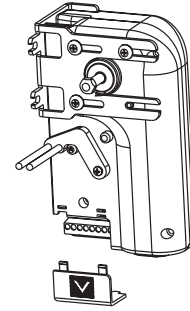
Wire Type	Description	Max. Length
Control (A)	2 conductors / #22-24 AWG	Control to MDU: 250 ft. (76 m)
Comm Link (B)	3 conductors (2 shielded, 1 drain) / #24 AWG Belden® wire model #1883A	4000 ft. (1333 m) per system 1000 ft. (333 m) from MDU to MDU
Power Wires (C)	3 conductors: 2 / #18-22 AWG (24 VAC power supply) 1 / #18-22 AWG (earth ground)	Transformer to MDU: #18 AWG - 150 ft. (46 m) #20 AWG - 100 ft. (31 m) #22 AWG - 60 ft. (18 m)
Comm & Power (D) (B & C combined)	6 conductors: 2 / #18 AWG (24 VAC power supply) 1 / #18 AWG (earth ground) 3 [2 / #22 AWG shielded, 1 / #24 AWG drain] (comm link) (Lutron wire model no. SV-CBL-MDU-250)	MDU to <i>Sivoia</i> power panel: 200 ft. (61 m)
SV-IR Extension Cable (E)	3 conductors #22 AWG Lutron model # SV-IR-EXT-10	50 ft. (15 m) per system - total of 5 SV-IR-EXT-10, 10 ft. (3 m) each

5

MDU WIRING - WIRING MULTIPLE MOTORS TOGETHER



A maximum of 64 MDU's can be wired together per system





Wire Type	Description	Max. Length
Control (A)	2 conductors / #22-24 AWG	Control to MDU: 250 ft. (76 m)
Comm Link (B)	3 conductors (2 shielded, 1 drain) / #24 AWG Belden® wire model #1883A	4000 ft. (1333 m) per system 1000 ft. (333 m) from MDU to MDU
Power Wires (C)	3 conductors: 2 / #18-22 AWG (24 VAC power supply) 1 / #18-22 AWG (earth ground)	Transformer to MDU: #18 AWG - 150 ft. (46 m) #20 AWG - 100 ft. (31 m) #22 AWG - 60 ft. (18 m)
Comm & Power (B & C combined)	6 conductors: 2 / #18 AWG (24 VAC power supply) 1 / #18 AWG (earth ground) 3 [2 / #22 AWG shielded, 1 / #24 AWG drain] (comm link) (Lutron wire model no. SV-CBL-MDU-250)	MDU to <i>Sivoia</i> power panel: 200 ft. (61 m)
SV-IR Extension Cable (E)	3 conductors #22 AWG Lutron model # SV-IR-EXT-10	50 ft. (15 m) per system - total of 5 SV-IR-EXT-10, 10 ft. (3 m) each


6

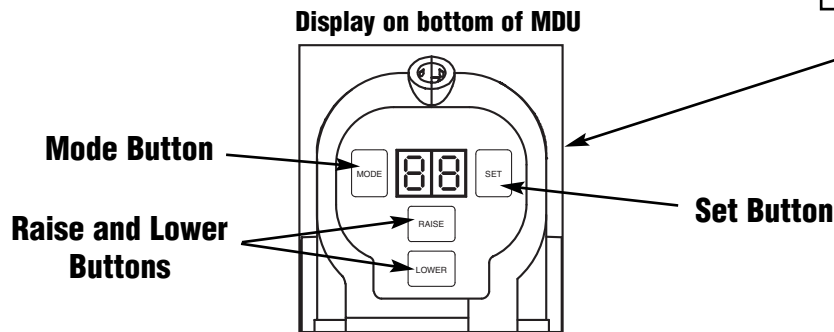
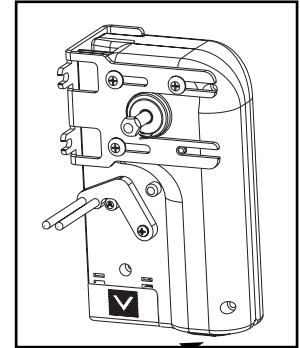
MOTOR DRIVE UNIT (MDU) SETUP - SINGLE MDU

Each *Sivoia* MDU must be setup when first plugged in. If there is only one MDU in the system, the home position, upper limit and lower limit are the only setups required. Follow the programming steps outlined in the programming table below. If the system has multiple MDU's, follow the single MDU setup directions for each MDU and then continue with the setup codes for multiple MDU systems on the next page.






 **Home Position:** Calibrates the shade position with respect to the hembar so that the upper and lower limits can be set properly.

 **Upper Limit:** The position the shade moves to when it opens.

 **Lower Limit:** The position the shade moves to when it closes.



Programming Table

STEPS	MODE	ADJUST	SET
STEP 1 <i>This step must be repeated each time a shade is installed or replaced!</i>	Home Position: Press the Mode button on the MDU until the display reads 	No adjustment is necessary.	Press the Set button. The shade will move and set its Home Position automatically. The display will then go blank.
STEP 2	Upper Limit: Press the Mode button on the MDU until the display reads 	Use the Raise and Lower buttons on the MDU to set the highest desired point of shade travel.	Press the Set button to save the current position as the "Upper Limit." The display will read  and blink for 4 seconds, then go blank.
STEP 3	Lower Limit: Press the Mode button on the MDU until the display reads 	Use the Raise and Lower buttons on the MDU to set the lowest desired point of shade travel.	Press the Set Button to save the current position as the "Lower Limit." The display will read  and blink for 4 seconds, then go blank.

Multiple MDU Set-Up Codes

LR **Link Address:** Each MDU must be set to a unique Link Address number to allow the MDU's to communicate on the communication link. There are 64 link addresses available, meaning the maximum number of MDU's in a single system is 64.

RR **Room Address:** The room address groups MDU's on the communication link. A group is defined as all MDU's with the same room address number. There are 32 room addresses available in a single system, therefore, a system can have up to 32 groups. Typically, all MDU's in a room will be set to the same room address. Use the room address to help determine how keypads will control the MDU's in the system. Refer to the control station setting table below for information on how the room address setting affects how the system is controlled by keypads or interfaces.

IR **IR Address:** Used to set the IR address a MDU will respond to. Some IR hand controls have the ability to control sub-groups of shades within a group, as defined by the room address described above. There are 8 subgroups available. Each IR address (subgroup) is made up of two parts, the IR address number (1,2,3 or 4) and its shade location (F or r), the FRONT shade or the REAR shade. Any number of MDU's can have the same IR address. The IR address can also be used to determine subgroups of the MDU's when a keypad or interface is used to control the system. Refer to the control station setting table below for information on how the IR address affects how the system is controlled by keypads or interfaces.

CS **Control Station:** Determines which MDU's in the system will respond to a "Group" keypad or "Group" interface control that is wired to the MDU being setup. It is not necessary to change the control station setting of an MDU that does not have any keypads or interfaces wired to it.

Control Station Setting Table

MDU CS Setting	Which MDU's in a System Will Respond	What MDU Address Settings Determine which MDU in the System Will Respond
0	All MDU's with the same room address RR	Room address RR
1	All MDU's with the same room address RR and the same IR address	Room address RR IR address IR
2	All MDU's in the system	Not dependent on RR and IR address settings
3	All MDU's with the same room address RR and the same Front (F) or Rear (r) assignment in the IR address	Room address RR Front or Rear in the IR address IR
4	All MDU's with the same room address RR and the same number (1, 2, 3, or 4) in the IR address setting	Room address RR Same number (1, 2, 3, or 4) in the IR address IR
5	All Front MDU's or all Rear MDU's in the system	Front or Rear in the IR address IR

SPECIAL NOTES:

There are two types of *Sivoia* keypads and interfaces, **group** and **individual** types. The table to the left describes how a group type controls a system depending on the **CS** setting of the MDU it is wired to. An individual type only controls the MDU it is wired to, regardless of the **CS** setting of the MDU it is wired to.

Group keypads/interfaces and individual keypads/interfaces can be wired to the same MDU. A maximum of 9 keypads/interfaces can be wired to one MDU.

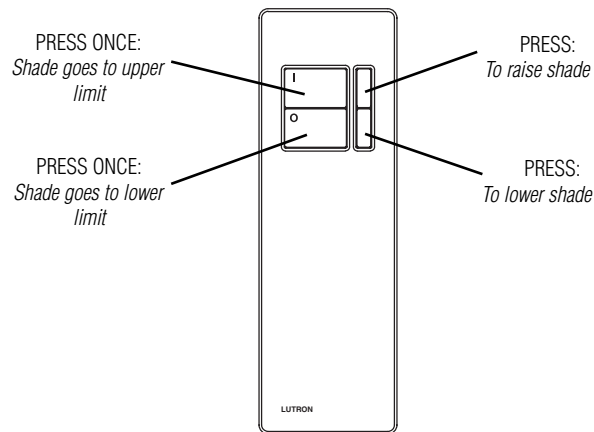
Any keypad or interface **CANNOT** be wired to more than one MDU.

PL **Scene Lockout:** Turns off the ability to set or adjust PRESET stop points. To activate, set the scene lockout setting to 1. To deactivate, set the scene lockout setting to 0. Changing this setting on any MDU will adjust all the MDU's in the system. It is not necessary to deactivate the scene lockout setting from the same MDU it was activated it on.

7

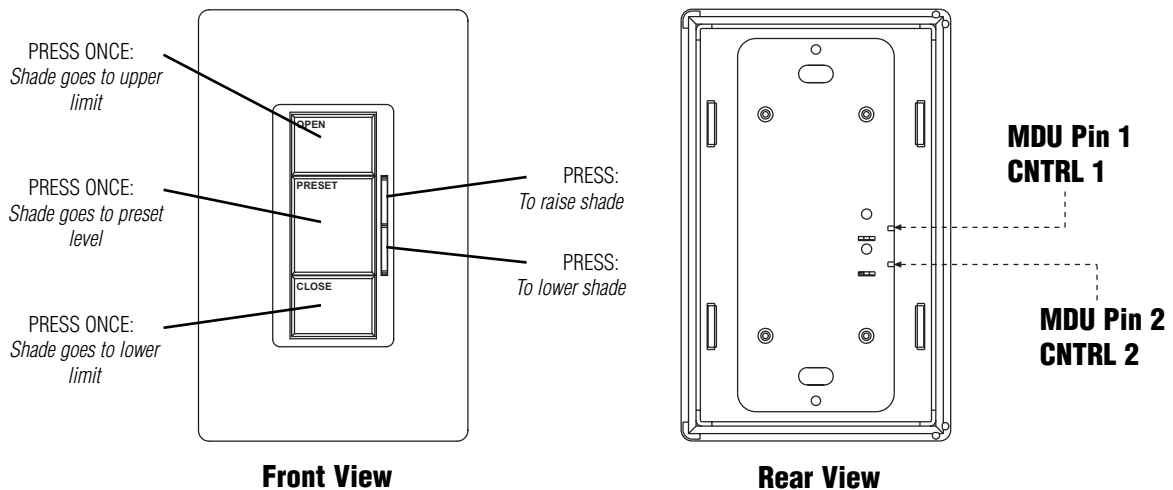
SHADE CONTROLS

Split Button Open/Close Infrared Handheld Transmitter - SV - OCIT



Note: Pressing any button while shade is moving will stop the shade.

Surface Mount Group Wall Keypad - SV-1PG-WH

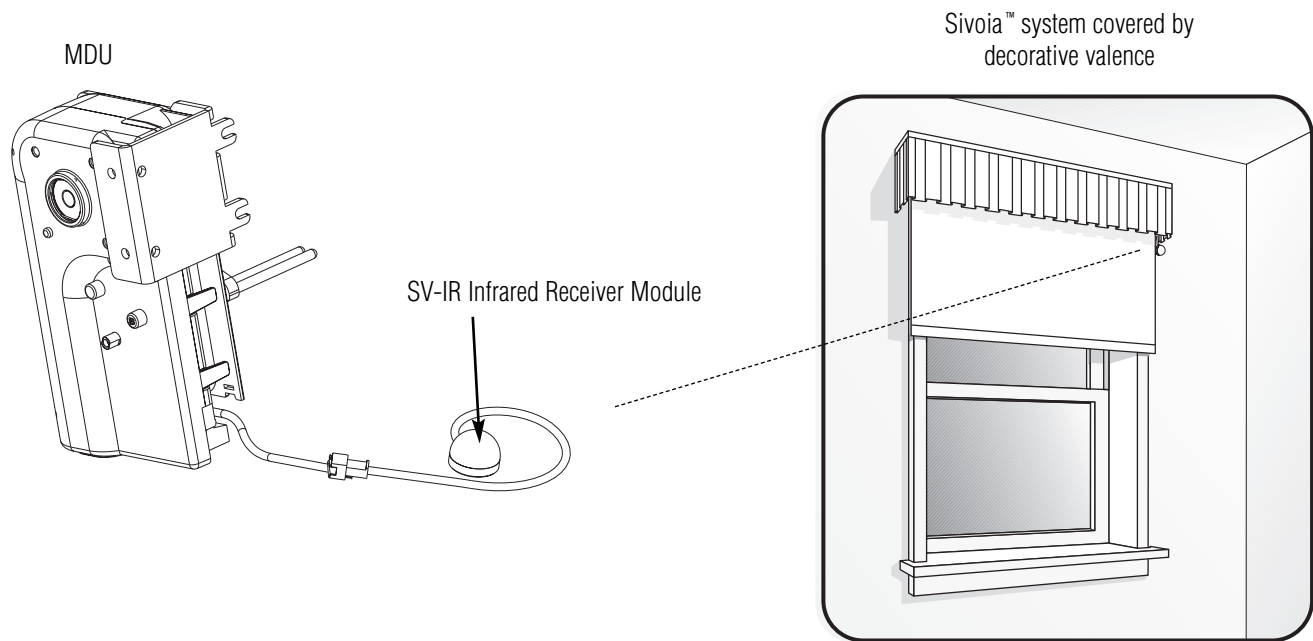


SETTING PRESET:

- 1.) Use the Raise and Lower buttons until shade is at the level you wish to store as the "PRESET".
- 2.) Press and hold the Preset button (approximately 4 seconds) until **Pr** appears in the MDU's LED display.



Note: Pressing any button while shade is moving will stop the shade.



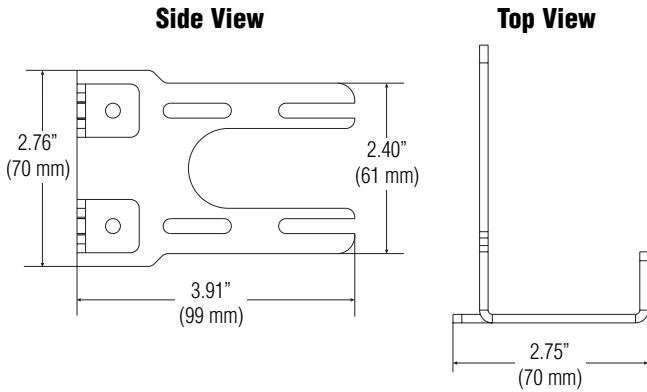
The SV-IR allows the MDU to be controlled directly with a *Sivoia* Infrared Handheld Transmitter (SV-OCIT, SV-3PIT, or SV-4GD-OCIT). The SV-IR receiver connects to the MDU via a 20" (51 cm) cable. This provides the SV-IR receiver ample mounting range to offset any infrared signal restriction caused by a protective/decorative covering for the shade system. To extend the IR receiver mounting range, add up to five (5) SV-IR-EXT-10 extension cables (10 ft [3 m] each).

Note: To control an individual shade with an IR transmitter, the SV-IR **must** be connected to that MDU. If there is a Group/Subgroup of MDU's with the same Room/IR Address (see page 11), the SV-IR need only be connected to one of those MDU's to control the entire Group/Subgroup.

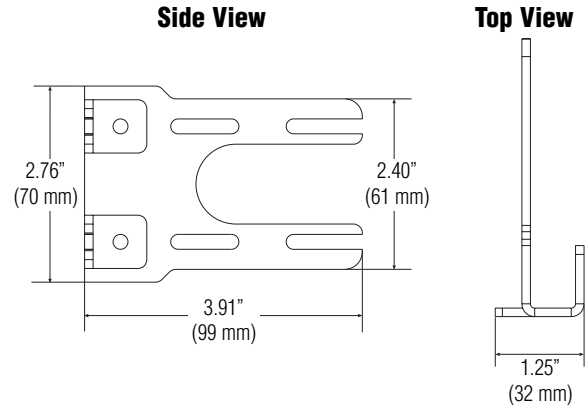
- The SV-IR receiver must be located to allow line-of-sight reception of infrared signals.
- The SV-IR has a range of 30' when receiving infrared signals.
- The SV-IR must **NOT** be located near lighting fixtures or in direct sunlight.
- The SV-IR must be located within 50 ft. (15 m) of the MDU it is connected to. Add up to five (5) SV-IR-EXT-10 extension cables (10 ft [3 m] each).

PROBLEM	SOLUTION
The shade will not go up or down.	<ol style="list-style-type: none"> 1. Check power to the motor unit by pressing the MODE button. If the LED display does not show HP check that: <ul style="list-style-type: none"> • transformer is plugged into a live outlet. • power wiring is not shorted. • power wiring terminal is not miswired or disconnected. 2. If the LED display shows HP, try to raise and lower the shade using the buttons marked raise and lower on the motor drive unit. If the shade does not respond, the shade material or weight bar may be binding on the roller frame or end brackets. Check for and clear all obstructions.
The shade does not respond to control.	<ol style="list-style-type: none"> 1. Check that power is connected to the shade. 2. Check that the wall keypad has been wired correctly. 3. Check that the control terminal block is connected securely and in the proper order. 4. Check batteries if using IR remote
The shade does not roll straight. (Fabric veers or telescopes)	<ol style="list-style-type: none"> 1. If the shade veers or telescopes toward the right, correct by lowering shade completely and place a piece of tape as close to the left edge of the roller as possible. If shade veers or telescopes towards the left, tape must be placed as close to the right edge of the roller as possible. Note multiple pieces may be necessary.

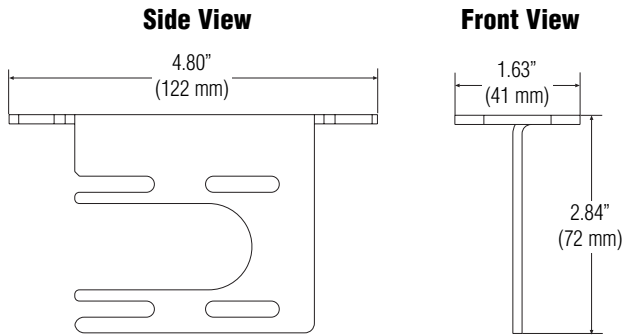
MDU Mounting Bracket



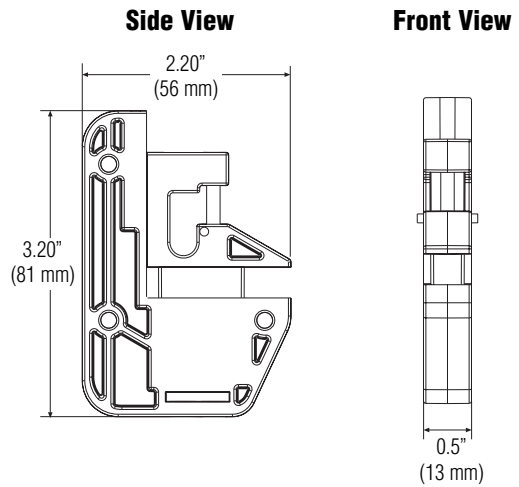
Idler Mounting Bracket



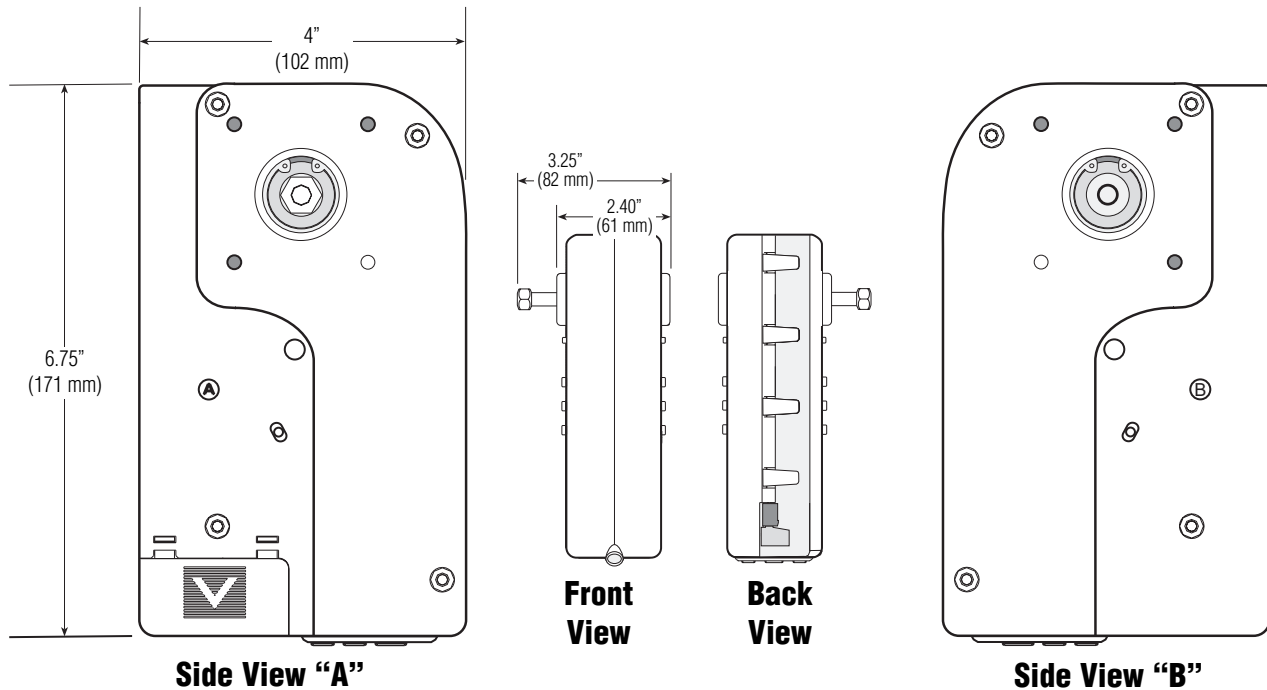
Ceiling-Mount Bracket



Idler Support



MDU Dimensions



LIMITED WARRANTY

SIVOIA™ MOTORIZED WINDOW SHADE SYSTEM EIGHT YEAR LIMITED WARRANTY

Vimco warrants, for eight years from shipment, each new *SIVOIA* Motorized Window Shade System to be free from defects in materials or workmanship under conditions of normal use and specified ambient temperature when installed and operated in accordance with Vimco product specifications, applicable local electrical and building codes, applicable National Electrical Code provisions, and the Safety Standards of Underwriter's Laboratories.

What Vimco Will Do

Upon the return of a system or system component, subsequently determined by Vimco to be defective, Vimco will, in its sole discretion, repair or replace the defective system or system component, provided that Vimco was promptly notified of the alleged defect within the warranty period, and provided that the system or system component was properly installed, wired, insulated, used, and maintained, as determined solely by Vimco. Vimco shall not be required to remove, install, or re-install any system or system component alleged to be defective.

Vimco will issue a credit for the cost of the repair or the replacement in accordance with the following schedule:

For the first 2 years after the date of shipment	100%
For years 3, 4, and 5 after the date of shipment	50%
For years 6, 7, and 8 after the date of shipment	25%

What This Warranty Does Not Cover

- Damage or improper operation determined by Vimco to be due to normal wear and tear, or to abuse, misuse, or accident, such as:
 - Use of incorrect line voltages;
 - Use of incorrect fuses or circuit breakers;
 - Failure to follow operating instructions provided by Vimco;
 - Unauthorized repairs or adjustments or alterations;
 - Direct exposure to corrosive materials;
 - Vandalism;
 - Fire, flood, "Acts of God", and other factors beyond the control of Vimco.
- The cost of labor, including any labor required to remove, install, or re-program any replacement item.
- Components and equipment external to the *SIVOIA* Motorized Window Shade System, such as:
 - Non-Lutron lighting and automation systems;
 - Building wiring; and
 - Other manufacturers' equipment, including, but not limited to:
 - Time clocks;
 - Audio-visual equipment; and
 - Photo sensors.
- The cost of repairing or replacing property or equipment other than the warranted system.

How to Get Service under This Warranty

Should you experience the need for service under this warranty, please contact your *SIVOIA* Motorized Window Shade System service representative immediately; or

Contact Vimco by telephone toll-free at:

1-800-446-1503; or

By mail to: VIMCO Shading Systems
11520 Sun Shade Lane
Ashland, VA 23005

or;

By E-mail: info@vimco.com

LIMITATIONS AND EXCLUSIONS

THIS WARRANTY IS EXCLUSIVE. THERE ARE NO OTHER EXPRESS WARRANTIES.

THE IMPLIED WARRANTY OF MERCHANTABILITY IS LIMITED TO TWO YEARS FROM THE DATE OF SHIPMENT. VIMCO SHALL NOT BE LIABLE FOR ANY REPAIR WORK UNDERTAKEN WITHOUT ITS PROPER WRITTEN CONSENT, OR FOR INCIDENTAL, CONSEQUENTIAL, OR SPECIAL DAMAGES. VIMCO'S LIABILITY ON ANY CLAIM FOR DAMAGES ARISING OUT OF OR IN CONNECTION WITH THE MANUFACTURE, SALE, INSTALLATION, DELIVERY, USE, REPAIR, OR REPLACEMENT OF THE SHADING SYSTEM SHALL NEVER EXCEED THE PRICE PAID FOR THE SYSTEM. SOME STATES DO NOT ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS, SO THE ABOVE LIMITATION MAY NOT APPLY TO YOU. SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATION OR EXCLUSION MAY NOT APPLY TO YOU.

This product may be covered under one or more of the following U.S. Patents: 5,467,266; 5,671,387; 5,848,634; 6,100,659; DES. 317,593; DES. 344,068; DES. 370,663; DES. 378,814; DES. 387,736 DES. 391,924; DES. 396,448; AND DES. 437,585; and corresponding foreign patents. U.S. and foreign patents pending. Lutron is a registered trademark of Lutron Electronics Co., Inc. The VIMCO logo is a registered trademark of Virginia Iron & Metal Company, Inc. Sivoia is a trademark of Lutron Electronics Co., Inc.

© 2001 Virginia Iron & Metal Company, Inc.

Internet: www.vimco.com, www.lutron.com



VIMCO
Made and printed in U.S.A.
P/N 045-003 Rev. B 7/01