

## Replacement Motor

The CSM(I)-QMTDC-163 series, CSM(I)-QMTDC-250 series, and CSM(I)-QMTDC-275 series Crestron® shade motors can be easily removed and replaced. The CSM(I)-QMTDC series replacement motors are used to replace an existing shade motor.



### In the Box

- 1 CSM(I)-QMTDC Series Motor, Replacement Motor



## Motor Replacement

**CAUTION:** Roll up the fabric to prevent damage while replacing the motor.

### NOTES:

- A soft and clean work surface is required to perform this procedure.
- Remove the fascia and disconnect the motor cable before performing this procedure.

## Remove the Roller Shade Assembly from the Mounting Brackets

1. Remove the old motor from the motor mounting bracket.
  - For a CSM(I)-QMTDC-163 series motor, press the release button on the bottom of the shade motor.
  - For a CSM(I)-QMTDC-250 series or CSM(I)-QMTDC-275 series motor, squeeze the two metal release clips next to the shade motor.
2. Push the roller shade assembly towards the idler bracket to separate the motor from the bracket. The idler pin compresses to allow the motor end to swing out of the bracket.
3. Lift the idler end of the roller shade assembly and remove the idler pin from the keyhole in the idler bracket.
4. Place the roller shade on a soft, clean surface where it will not be damaged.

## Remove the Old Motor from the Roller Tube

**CAUTION:** Do not remove the motor by pulling on the control wire.

## Remove a CSM(I)-QMTDC-163 or CSM(I)-QMTDC-250 Series Motor

Pull the motor head to remove it from the tube.

**NOTES:** For CSM(I)-QMTDC-250 series motors:

- Removing the motor may require a firm, hard pull.
- If the motor is difficult to remove from the tube, reinstall the motor latch and use it to help pull the motor from the tube.

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### Remove a CSM(I)-QMTDC-275 Series Motor

1. Remove the motor latch from the motor. Save the motor latch for reassembly.
2. Roll the fabric around the hembar to expose the tube.
3. Reinstall the motor latch.
4. Remove the four screws from the tube.
5. Pull the motor head to remove it from the tube. If the motor is difficult to remove from the tube, reinstall the motor latch and use it to help pull the motor from the tube.

### Install the New Motor in the Roller Tube

#### CSM(I)-QMTDC-163 Series or CSM(I)-QMTDC-250 Series Motors:

1. Fully insert the new motor into the tube. The tube is designed so that the motor can be easily inserted in only one orientation.

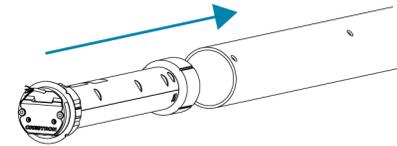
#### NOTES:

- If the motor does not easily slide into the tube, rotate the motor 180-degrees and then insert the motor into the tube.
- The CSM(I)-QMTDC-250 series motors will snap in place. Gently pull to ensure that the motor is properly secured in the motor tube.

2. Install the shade assembly according to the mounting bracket's installation guide.

#### CSM(I)-QMTDC-275 Series Motors:

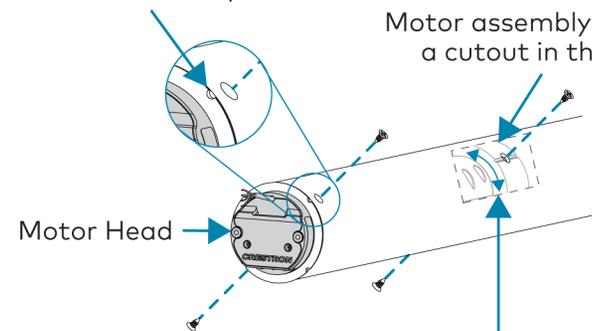
1. Insert the motor into the tube.



2. Ensure that a cusp on the motor crown aligns with the first screw hole in the roller tube. The cusp should be no further than 1/4 in. (7 mm) off center of the screw hole. Ensure that the motor head is flush with the roller tube.
3. Rotate the motor head so that the groove in the motor is shown through the second screw hole in the roller tube and then use a Phillips tip screwdriver and two supplied screws to secure the motor head to the tube. Do not overtighten.
4. Use a Phillips tip screwdriver and two supplied screws to secure the motor crown to the tube. Do not overtighten.

Align the cusp with the screw hole and secure with the provided screws

Motor assembly shown through a cutout in the roller tube.



Rotate the motor head until the groove is visible through the screw hole, and then install the screws.

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### Reinstall the Roller Shade Assembly

After the motor has been fully installed, roll the fabric back onto the tube (if applicable), and then install the shade assembly according to the mounting bracket's installation guide.

**NOTE:** Limits need to be set after installation. Refer to [Motor Programming](#) for details.

## Motor Wiring

### Routing the Cables

To ensure proper functionality and a clean look, consider the following when routing cables and making connections:

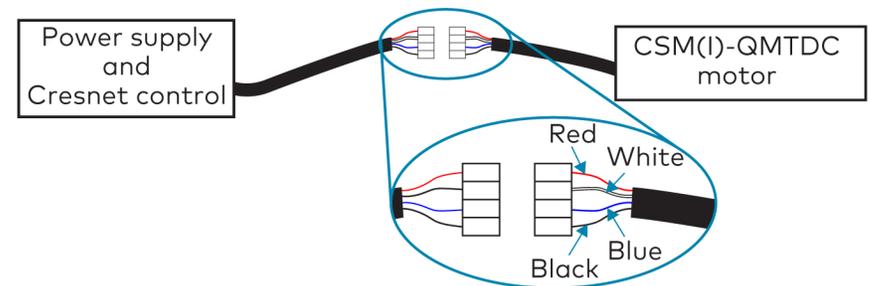
- The cables should exit the wall near the motor end of the shade assembly.
- Route the cables so that they remain out of sight.
- The brackets provide a cutout in the upper corner, which allows wiring to be easily run to the motor.
- A 2-pin connector may be required for shades with a large roll-up diameter.
- Use cable ties to secure the cables to the loop on the bracket.
- Ensure that the cables and connectors do not make contact with the shade fabric.

### Making the Connections

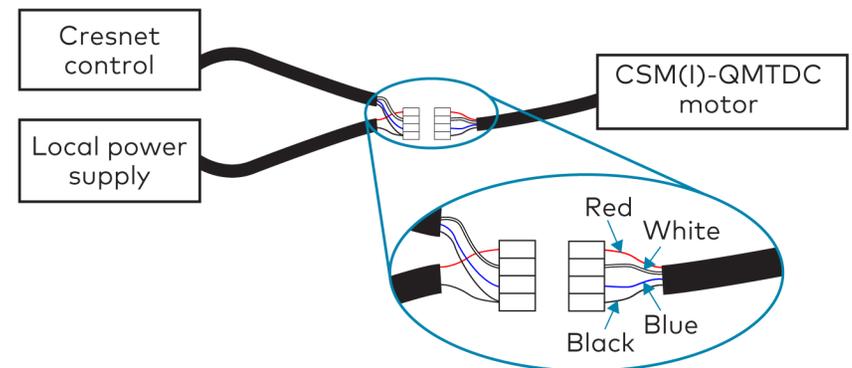
#### NOTES:

- When making the connections, do not use CRESNET-HP cable with the small connector. When using CRESNET-HP cable, replace the connector on the motor pigtail with the larger connector that is supplied with the shade.
- All shades should be home run from the power supply (sold separately).

#### Cresnet QMT® Shade Motor with the Power and Control Coming from the Same Source

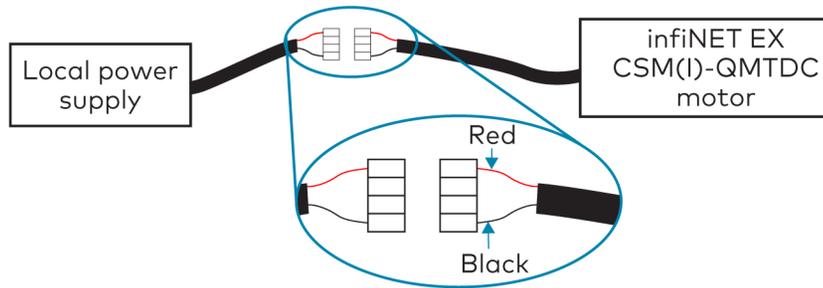


#### Cresnet QMT Shade Motor with the Power and Control Coming from Separate Sources



## Replacement Motor

Wire the inNET EX® Wireless QMT Shade Motor



## Motor Programming

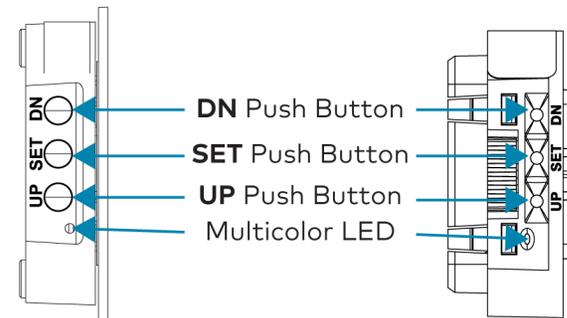
The Crestron® digital CSM(I)-QMTDC shade motors are programmed locally using the buttons on the motor. The information in this guide serves as a detailed programming overview of the Crestron CSM (I)-QMTDC shade motors.

**NOTE:** The procedures described in this document can also be performed remotely using a control system. The timeout and LED indicators are the same as described in this document.

## Controls and Indicators

The Crestron CSM(I)-QMTDC shade motors have **UP**, **SET**, and **DN** (down) push buttons that are used to program the shade. The shade motors have a multicolor LED that lights red, amber, green, blue, or white to provide confirmation, operating mode, and error state feedback. The **UP** button is located closest to the LED, the **SET** button is the second button from the LED, and the **DN** button is the third button from the LED.

Crestron CSM-QMTDC Motor Multicolor LED and Push Button Orientation



## Replacement Motor

### Test the Shade

Before the shade is operated, test the motor to ensure that the shade travels in the correct direction when being operated.

**NOTE:** Before using the CSM(I)-QMTDC shade motor, ensure the device is using the latest firmware. Check for the latest firmware for the CSM(I)-QMTDC shade motor at [www.crestron.com/firmware](http://www.crestron.com/firmware). Firmware is loaded onto the device using Crestron Toolbox™ software.

### Test the Motor Direction

Press the **DN** button to lower the shade about 1 inch. If the shade travels up, reverse the motor direction.

**NOTE:** Reversing the motor direction resets all previously set limits. After either the upper or lower limit is set, the motor automatically enters Limit Setup mode for the opposite limit. Follow the procedure in [Set the Shade Limits](#) to reassign limits.

To reverse the shade direction, press and hold the **SET** button for 10 seconds. The red LED lights for 3 seconds.

### Test the Shade Travel

Test the travel of the shade fabric to ensure that it does not come in contact with building materials and that the upper and lower shade limits are properly set.

**WARNING:** Care has been taken to ensure that the shade is properly balanced. Prior to initial operation, confirm that the brackets are adjusted so that the shade hangs level and plumb. Upon startup, run the shade all the way down and check for plumb. Observe the shade closely as it rolls up. If the shade begins to telescope, stop immediately and take the appropriate action to ensure the shade tracks properly. To prevent damage to the fabric from telescoping, do not leave the shade unattended during the first few cycles of operation. Failure to follow these instructions may result in damage to the edge of the fabric, which is not covered by the warranty.

**NOTE:** For Crestron Horizontal Sheers, the lower limit is defined as the point before the hem bar tilts.

To test the lower limit:

1. Using the **DN** button, lower the shade until it reaches its lower limit. Stop and adjust the mounting brackets if the fabric contacts any building materials.
2. Verify that the shade stops at the desired lower limit. If the shade does not travel to the desired lower limit, adjust the shade limits. For details, refer to [Set the Shade Limits](#).

To test the upper limit:

1. Using the **UP** button, raise the shade until it reaches its upper limit. Stop and adjust the mounting brackets if the fabric contacts any building materials.
2. Verify that the shade stops at the desired upper limit. If the shade does not travel to the desired upper limit, adjust the shade limits. For details, refer to [Set the Shade Limits](#).

## Replacement Motor

### Set the Shade Limits

If necessary, set the lower and upper shade limits. If the shade limits are not set, the red LED flashes three times, pauses for 1 second, flashes once, pauses for 5 seconds, and then repeats this code until the limits are set.

#### NOTES:

- Limit Setup mode exits after 8 seconds of inactivity.
- If a limit is not set after the upper or lower limit is saved, the motor automatically enters Limit Setup mode for the opposite limit. This typically occurs after the motor direction has been reversed and both limits are erased.
- For Crestron Horizontal Sheers, the lower limit is defined as the point before the hem bar tilts.

Set the lower limit for the shade:

1. Press and hold the **SET** button for 4 seconds to enter Limit Setup mode. The LED alternates between amber and green.
2. Press and release the **DN** button to begin lower limit setup. The green LED flashes.
3. Use the **UP** and **DN** buttons to set the shade to its desired position.
4. Press and hold **SET** for 4 seconds. The LED turns solid red to confirm that the lower limit was successfully set.

Set the upper limit for the shade:

1. Press and hold **SET** for 4 seconds to enter Limit Setup mode. The LED alternates between amber and green.
2. Press and release the **UP** button to begin upper limit setup. The amber LED flashes.
3. Use the **UP** and **DN** buttons to set the shade to its desired position.
4. Press and hold **SET** for 4 seconds. The LED turns solid red to confirm that the upper limit was successfully set.

### Joining an infiNET EX® Network (infiNET EX Interfaces Only)

The device connects to the Crestron network via the infiNET EX communications protocol. Use the procedures outlined below to join or leave an infiNET EX network and to verify communications between the device and the control system.

#### Joining an infiNET EX Network

Before a device can be used in a lighting system, it must first join an infiNET EX network by being acquired by an infiNET EX gateway.

**NOTE:** A device can be acquired by only one gateway.

1. Put the infiNET EX gateway into Acquire mode from the unit itself or from Crestron Toolbox, as described in its manual at [www.crestron.com/manuals](http://www.crestron.com/manuals).

**NOTE:** In an environment where multiple gateways are installed, only one gateway should be in Acquire mode at any time.

2. Place the device into Acquire mode.
  - a. Press the **SET** button three times, and then press and hold it down (tap-tap-tap-press+hold) until the white LED on the device flashes once (this can take up to 10 seconds).
  - b. Release the button to start the acquire process. The LED flashes slowly to show that the device is actively scanning the infiNET EX network.
    - The LED turns on for 5 seconds to show that the device has been successfully acquired to the infiNET EX network.
    - The LED flashes quickly to indicate that the device was not successfully acquired by the infiNET EX network. Press the **SET** button to acknowledge failure to acquire the infiNET EX network. Ensure the gateway is in Acquire mode and within range before attempting the acquire process again.

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- Once all devices have been acquired, take the gateway out of Acquire mode. Refer to the gateway's manual for details.

## Leaving an infiNET EX Network

To leave an infiNET EX network, put the device into Acquire mode, as described in [Joining an infiNET EX Network](#) when no gateway is in Acquire mode.

## Verifying Communications Status

To check the communications status of the device, tap the **SET** button three times and then press and hold it down (tap-tap-tap-press+hold) for up to 2 seconds. The LED flashes to indicate the communications status. Refer to the following table for details.

LED	Communications Status
Turns on for 5 seconds	The device is communicating with the control system.
Flashes twice	The device was previously joined to the network but is not communicating with the gateway.
Flashes once	The device is not joined to the network.

## LED Diagnostics

The LED flashes to provide a visual reference that the motor is operating normally or if it is in an error state.

## Normal Operation

The following table provides a list of possible LED patterns encountered during normal operation. All LEDs extinguish after 1 minute of inactivity if there are no errors to report.

### LED Patterns

LED Pattern	LED Color	Operating Mode
Two fast flashes, then pause (1/8-second on, 1/8-second off, 1/8-second on, 5/8-second off)	Blue	A firmware upgrade over the Cresnet® network is in progress.
Slow flash (1/2-second on, 1/2-second off)	Blue	The motor's internal firmware upgrade is in progress.
Solid	Blue	The motor is in Bootloader mode.
Fast flash (1/4-second on, 1/4-second off)	White	The motor is in Identify mode.
Slow flash (1/2-second on, 1/2-second off)	Green	The motor is moving from a local button press.
Solid	Green	The motor is communicating with the control system program.
Slow flash (1/2-second on, 1/2-second off)	Red	The motor is not communicating with the control system.

## Replacement Motor

### Error State

Crestron CSM(I)-QMTDC motors display error codes using the red LED on the interface. The LED flashes a pattern to indicate the error.

For example, when a 3-3 LED flash pattern occurs, the LED flashes three times, pauses for 1 second, flashes three times, pauses for 5 seconds, and then repeats until the error is corrected. When a 2-1 LED flash pattern occurs, the LED flashes two times, pauses for 1 second, flashes once, pauses for 5 seconds, and then repeats this code until the error is corrected.

The flash patterns are listed in the following table. Refer to [Troubleshooting](#) for possible corrections.

### LED Blinking Patterns

LED Error Code	Error State
3-1	The motor limits are not set.
3-3	An obstruction is blocking the shade fabric from moving freely.
3-4	A motor over-current error exists. Check for obstacles or any sources of excessive friction.
3-5	A motor duty-cycle error exists. Reduce the operating duty cycle of the motor to correct the error.
3-6	There is a communications error between the motor and Cresnet or infiNET EX control board.
2-1	There is no traffic on the network. Check to ensure that proper Cresnet wiring is maintained, or for infiNET EX devices, ensure that the motor is connected to a gateway.
2-2	The motor is not being polled by the control system. Ensure that the Net ID matches the control system program and that the program is running on the control system.

### Troubleshooting

The following table provides corrective action for possible trouble situations. If further assistance is required, please contact a Crestron customer service representative.

#### Crestron CSM(I)-QMTDC Motor Troubleshooting

Trouble	Possible Cause(s)	Action
The motor cannot be controlled, and all of the LEDs are off.	There is no power provided to the motor.	Check the power connections between the power supply and motor.
	The power connection is reversed between the motor and the power supply.	Ensure that the power connection to the motor is not reversed.
The motor moves in the opposite direction.	The motor direction is reversed.	Reverse the direction of the motor.
The motor intermittently stops working.	The motor is exceeding its maximum duty cycle.	Reduce the duty cycle of the motor operation.
	The motor is encountering an obstacle or excessive friction, which is causing it to stop.	Verify that all components are aligned and running smoothly.
	The load on the motor is exceeding its maximum rating.	Verify that the fabric weight and tube size do not exceed the rating for the motor.
The LED is blue.	The motor is stuck in the bootloader.	Reload firmware to the motor.

## Replacement Motor

### Additional Information

#### Original Instructions

The U.S. English version of this document is the original instructions. All other languages are a translation of the original instructions.

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