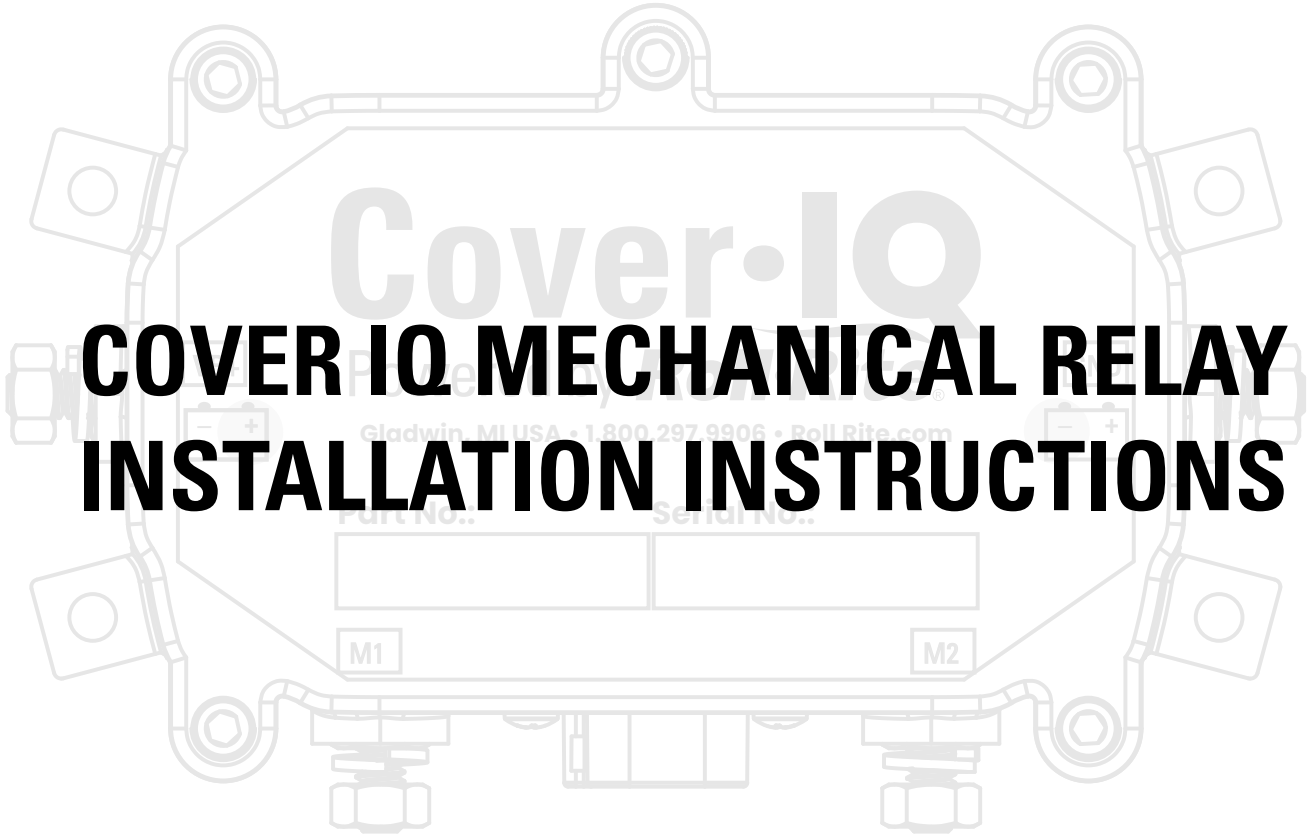


COVER IQ MECHANICAL RELAY INSTALLATION INSTRUCTIONS

Part #: 110017
Revised: 07/24/26 - WLH

Table of Contents

Safety Requirements

⚠ WARNING

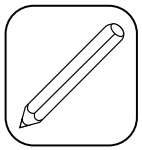
Failure to comply with requirements outlined in this document may result in serious injury or property damage

The following requirements shall be met when installing or servicing electrical components in Roll Rite Automated Tarp Systems:

- All connections to vehicle battery systems, vehicle battery chargers, and external power supplies shall be disconnected during all installation procedures
- Prior to installing wiring on positive terminals, check voltage on all wires and connection points using a voltmeter.
- The following personal protective equipment shall be worn at all times while installing components:
  - » Safety Glasses or Prescription Glasses with Side Shields
  - » Steel or Composite Toe Protective Shoes

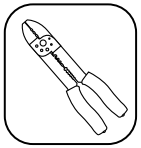
Recommended Tools and Equipment


Safety Glasses and Gloves


Pencil or Marker


Torque Wrench w/ 20 to 50in lbs


Nut Driver Set


Wire Cutters / up to 2AWG


Wire Insulation Stripping Tool
2 to 8 AWG

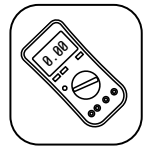

Wire Insulation Stripping Tool
16 to 18 AWG

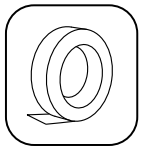

Wire Terminal Crimping Tool
2 to 8 AWG


Wire Terminal Crimping Tool
16 to 18 AWG


Heat Gun for
Heat Shrink Insulation


Tie Straps


Multi-meter w/ DC voltage
measurement capability


Electrical Tape

Vehicle Battery Connection Requirements

Main Power to Roll Rite System

- Source Voltage Line to Motor Reversing Relay shall be connected directly to the vehicle battery system.
- The Source Voltage Line shall include an in-line Roll Rite supplied manually resettable circuit breaker. The circuit breaker should be 12" max from the positive terminal of the vehicle battery system.
- Main Power and Ground Connection through a power distribution box are forbidden.

Main Ground to the Roll Rite System

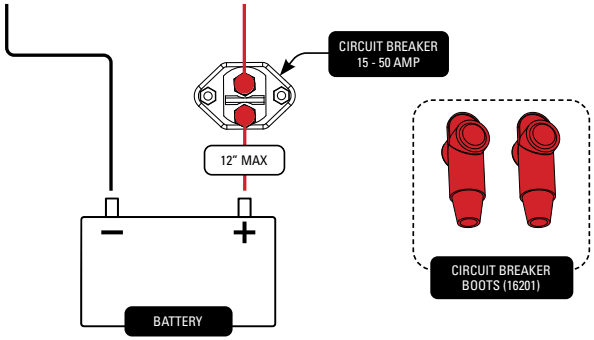
- Ground line to the Motor Reversing Relay shall be connected directly to the negative terminal of the vehicle battery system
- Battery terminals shall be coated with dielectric grease to prevent corrosion
- Appropriate ring terminal or battery terminal at the vehicle battery connection are required

System Circuit Breaker Requirements

- Only Roll Rite supplied Circuit Breakers shall be installed with Roll Rite Automated Tarp Systems
- The manually resettable circuit breaker shall be installed on the main positive wire, this should 12 inches max from the positive terminal of the vehicle battery system
- The circuit breaker shall be installed with red protective boots covering the input and output terminals
- Circuit Breaker shall be mounted on a vertical surface with the input and output wires entering and exiting from the sides. This is the only approved installation orientation for the circuit breaker.
- Terminals of the circuit breaker shall be no less than 2 inches from any surface on the vehicle in all directions

⚠ CAUTION

Failure to properly follow all requirements may result in present or future property damage Roll-Rite Motor Reversing Relays contain a hot at all times connection to the vehicle battery system. Care must be taken to prevent contact between battery supply terminals and conductive surfaces of the chassis.



NOTE: If the vehicle is equipped with a Battery Dissconnect Switch, refer to the manufacturers requirements for integration.

Vehicle Battery Connection Requirements

Motor Reversing Relay Requirements

WARNING

The positive terminal of Roll Rite Motor Reversing Relay is hot at all times, breaker connected to the positive terminal of the vehicle battery energy system. Care must be taken to ensure the positive terminals meet the following:

1. **Connected only with the supplied fasteners to the correct torque (35 in-lbs) to prevent a loose, high-resistance connection, and strain relieved to prevent wire torque and vibration from loosening connection**
2. **Completely covered with the proper Red terminal boot**
3. **Failure to comply may result in excessive heat in the connection due to high resistance**

Mechanical Reversing Relay Requirements

- The Motor Reversing Relay shall be installed on a vertical plane with the wires from terminals (B+, B-, M2, M1) facing down. This is the only approved orientation of the motor reversing relay.
- Mount the relay in a location that it is protected from road debris, ice, snow, and road spray or bombardment
- Use the terminal boots supplied with the motor reversing relay, according to the following color codes:
- B+ is RED indicating the terminal is un-switched, fused, and hot at all times
- B- is Black
- M2 is Yellow
- M1 is Blue
- All terminals shall be coated with dielectric grease to prevent corrosion and long term connection from debris between electrical terminals
- Install the motor reversing relay such that the terminals are facing the vertical mounting surface on the vehicle body
- The motor reversing relay shall be attached to the surface using only threaded fasteners with torque specification consistent with the fastener size and type
- All terminal wires shall be strain relieved using insulated C-clamps attached to vehicle body to prevent wire vibration and torque loading from loosening electrical connections
- Route all electrical wires from the Motor Reversing Relay in a manner that will avoid wire insulation chafing, pinching, and wear from other items on the truck chassis or wear from the environment
- Torque all electrical connection fasteners to 35 in-lbs

WARNING: DO NOT USE RELAY IF DROPPED FROM 1 METER (3.2 FT) OR HIGHER!

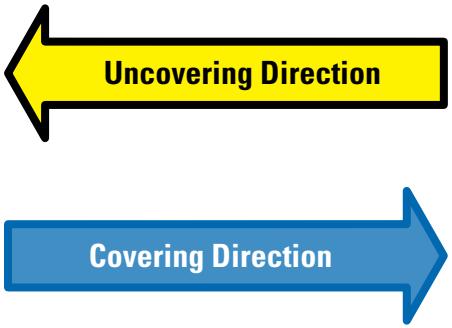
Tarp System Orientation for Side to Side Systems

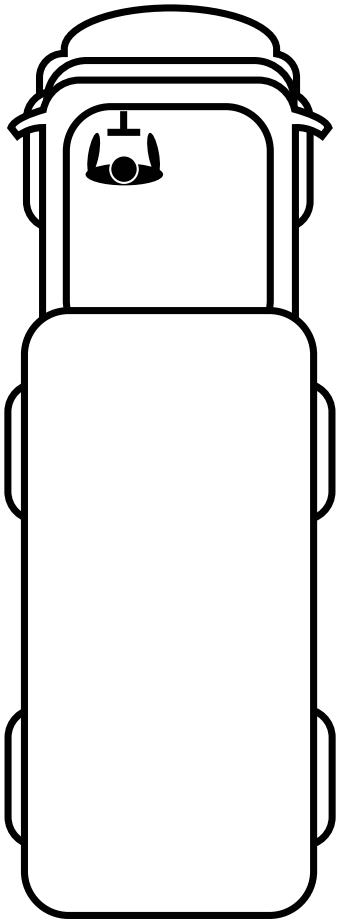
The wiring diagrams are presented with the following two system orientations relative to driver facing forward in the vehicle

Left Side Uncovering

Tarp System is fully uncovered and the axle is on the left side of the driver.

Tarp System is fully covered and the axle is in lock-down position on to the right of the driver.

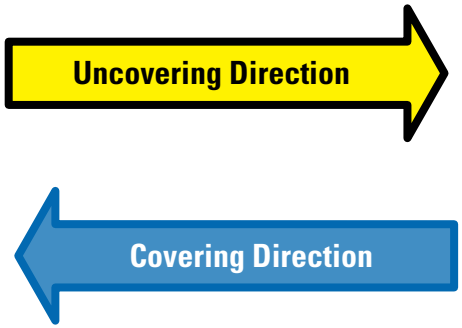




Right Side Uncovering

Tarp System is fully uncovered and the axle is on the right side of the driver.

Tarp System is fully covered and the axle is in lock-down position on to the left of the driver.

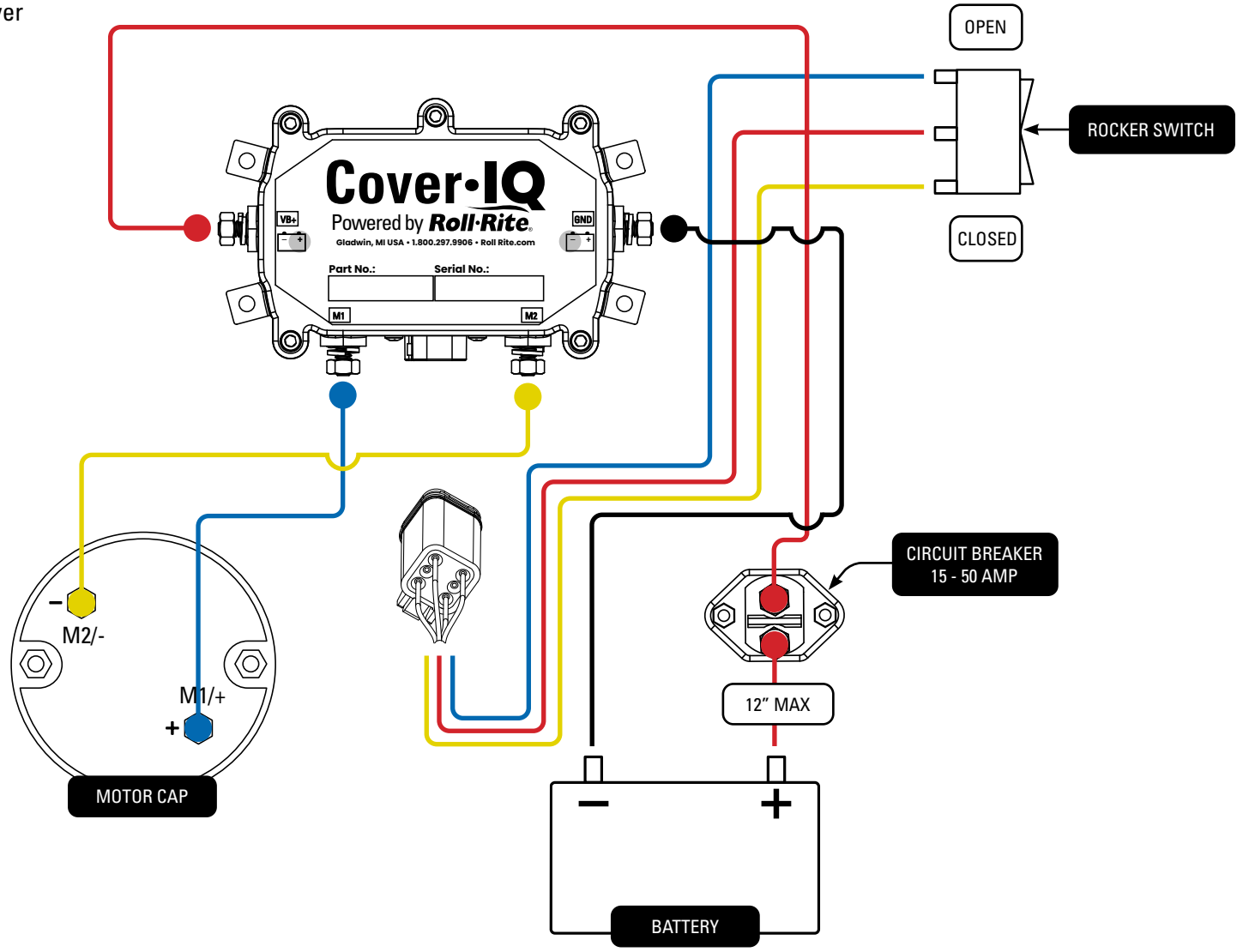


For Front to Back, flip style tarp systems, follow the orientation of the Right Side Opening Side to Side Systems.

Mechanical Reversing Relay with Rocker Switch or Rotary Switch

Tarp Uncovering to Left Side of the Driver

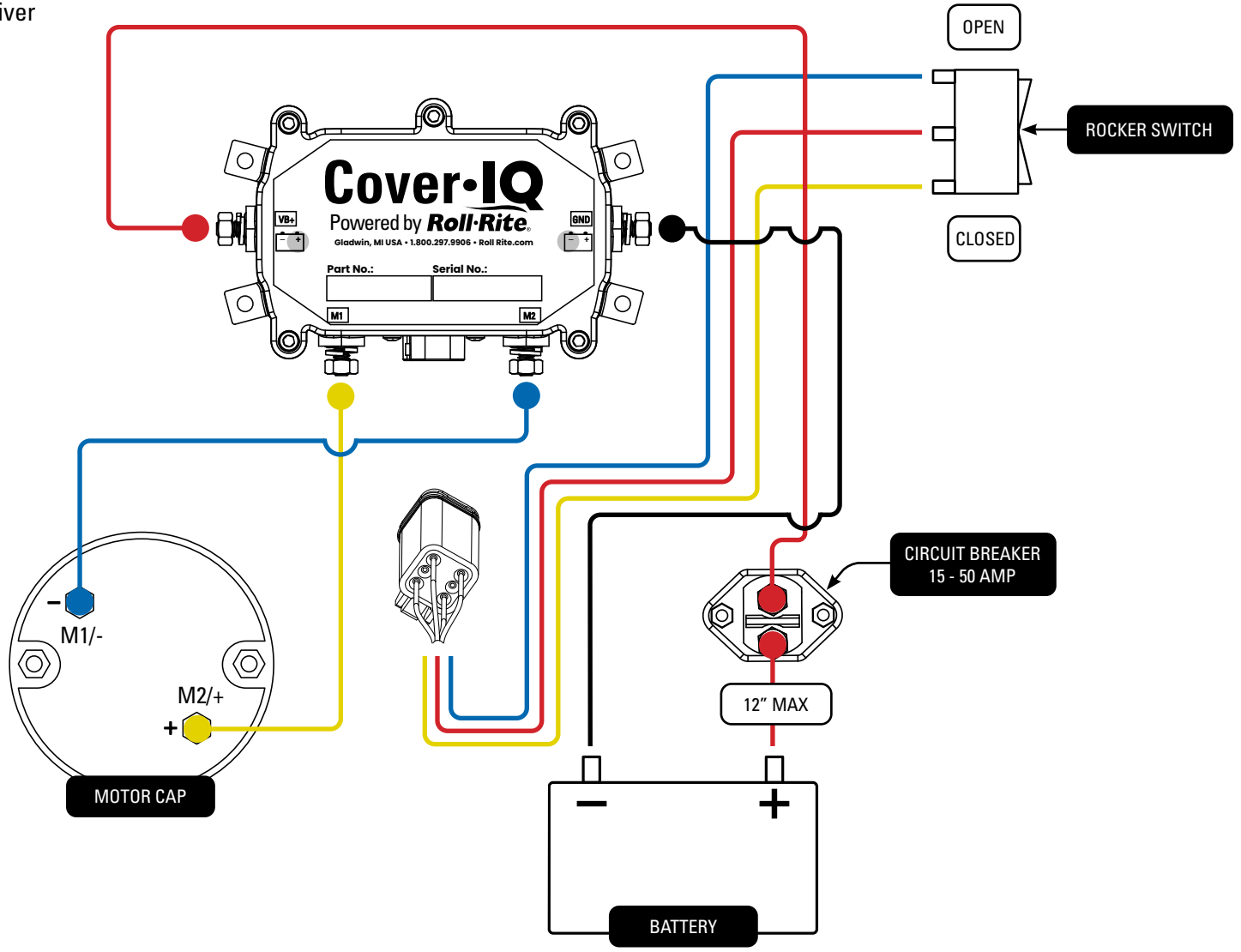
Note: The wiring harness has a Black wire that will not be used for switch. Tape off Black wire to harness after switch installation.



Mechanical Reversing Relay with Rocker Switch or Rotary Switch

Tarp Uncovering to Right Side of the Driver

Note: The wiring harness has a Black wire that will not be used for switch. Tape off Black wire to harness after switch installation.



Switch Requirements

DANGER

Roll Rite Rocker and Rotary switches contain hot-at-all-times connection at the center terminal of the switch. No exterior installation of the rocker or rotary switch is permitted. Contamination from an outside environment may connect the switch center input to the command line, resulting in unexpected movement of the tarp system.

- Use only a Roll Rite supplied Rocker Switch or Rotary Switch with the motor reversing relay
- Roll Rite switches shall be installed inside the cab of the vehicle only, using Roll Rite switch bracket
- Switch terminals shall be protected from contact with conductive materials
- Switch harness shall be fully insulated
- Switch spade terminal connections shall be fully seated, preventing exposed conductive surfaces

Gear Motor Installation Requirements

- Gear Motor shall be mounted using all mounting hardware provided
- Electric Motor connections shall be fully coated in dielectric grease
- Yellow and Blue Terminal boots shall be installed, fully covering the motor terminals
- Electric motor connection torque requirement: 22 in.lb

Troubleshooting the System

Use Pin Point Tests to Isolate the Fault.

Table 1: Mechanical Relay with Rocker Switch Pin Point Tests

Problem	Likely Cause	Action
Tarp System will not Cover or Uncover	Vehicle Battery Low	Charge Vehicle Battery -or- Start Engine to operate Alternator
Tarp System will not Cover or Uncover	System Breaker is open due to short circuit in system -or- System breaker is open due to motor stall condition for several seconds	Close Breaker and operate the system. If breaker continues to open: (1) Check all positive wires in system are not shorted to the truck or trailer chassis (2) Check that all positive wire terminal connections to the right of the breaker are not shorted to the truck or trailer chassis (3) Check that neither yellow nor blue motor wires are not shorted to truck or trailer chassis (4) Disconnect the battery and ground from the motor controller. Check the continuity [Ω] between and BAT+ terminal of motor controller and GND terminal of the motor controller. If this value of resistance is less than kΩ replace the Motor Controller. (5) Disconnect the motor terminals. Check the continuity [Ω] between the M1 motor terminal and the motor cap stud. If the value is less than 1 kΩ replace the motor. Complete the same test between M2 and the motor cap stud.
Tarp System will not Cover or Uncover	Motor Relay Rocker or Rotary Switch Failure	Check the rocker or rotary switch continuity [Ω]. (1) Check continuity between switch Red Power Terminal and Green Open output. The value should be OL when the switch is open and less than 0.5 Ω when the switch is closed. (2) Complete the same test between the Red Power Terminal and the Blue Close output. The value should be OL when the switch is open and less than 0.5 Ω when the switch is closed. If any test fails, replace the switch.
Tarp System will not Cover or Uncover	Motor Relay Rocker or Rotary Switch Harness Failure	Check the rocker or rotary switch harness continuity [Ω]. (1) Check continuity Ω of each of the three wires (1) Red, (2) Yellow and (3) Blue. Resistance values should be less than 0.2 Ω. If any wire is found to have high resistance, replace the harness. (2) Plug the harness Red, Blue and Green wires into the known good switch. (3) Connect the Positive terminal to a 12V source. (4) Connect a volt meter between the 12V source ground and the end of the green harness. (5) Press the Open switch. The voltmeter should read 12V. If it does not, replace the harness. (6) Repeat steps 3, 4, and 5 on the blue wire, using the Close option on the switch.