



## PRE-WIRE FOR 110 V AC MOTORS

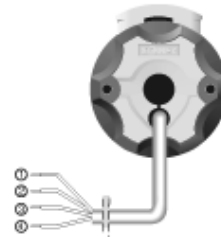
Hard-wired Switch Applications (1 or 4)

### Important Motor Information:

The 110 volt AC motors used in Insolroll Window Shading Systems are unique in some aspects and have wiring requirements that differ from many household devices.

1. Motors are directional to run shades up and down and have four electrical wires :

**Green - ground**  
**White - common**  
**Red - directional hot**  
**Black - directional hot**

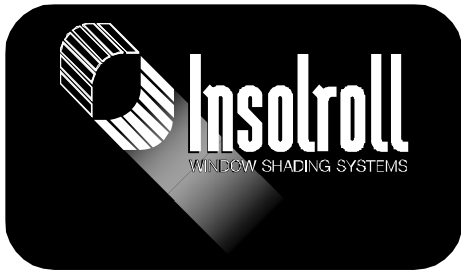


2. **110-volt AC motors cannot be wired in parallel** and multiple motors cannot be wired to a single pole switch. Directional leads must be isolated from one another. Failure to isolate the directional leads will burn out the motor.
3. Motors require 110-volt AC power.
4. Motors draw up to a maximum of 1 amps at start up.
5. Motors require a double throw switch - (up - off -down).
6. Motors are not designed for continuous operation and have built -in thermal cut-offs.
7. Motors have built-in limit switches to stop accurately when shades reach desired up and down positions.
8. Motors can be operated by wall switches, remote controls, automatic controls or interfaced with home automation systems.

### Additional Project Considerations:

9. The typical wiring layout for Insolroll Window Shading Systems requires that a single gang junction box or 4-wire connector be located within reach of the six foot motor pigtail. Check local building codes for specific details on 110 V AC wire connections.
10. Install junction boxes in locations that do not interfere with the operation of the shade, allows for the motor hookup and is aesthetically acceptable. Motors for Insolroll Window Shading Systems can be located on either the left or right side. For Pre-wire, leave 3-4 feet of extra wire near head of window. Check with window treatment installer for help with J-box locations.
11. On exterior installations, always install the motor wire with a drip loop to prevent water penetration.

**Typical hard-wired switch scenarios are attached. For additional wiring information, please call customer service.**



# PRE-WIRE FOR 110 V AC MOTORS

## Hard-wired Switch Applications (2 of 4)

### One motor wired to SPDT Switch

For a single shade to be operated by a single switch there should be a 14/3 (3 wire plus ground) wire run from the junction box to the desired switch location and AC power provided to this double throw switch. This diagram is for a designer switch. Rocker and toggle switch connections are slightly different. Refer to diagram with switch when installing.

**NOTICE:** For installation by a qualified electrician in accordance with national and local electrical codes, and the following instructions.

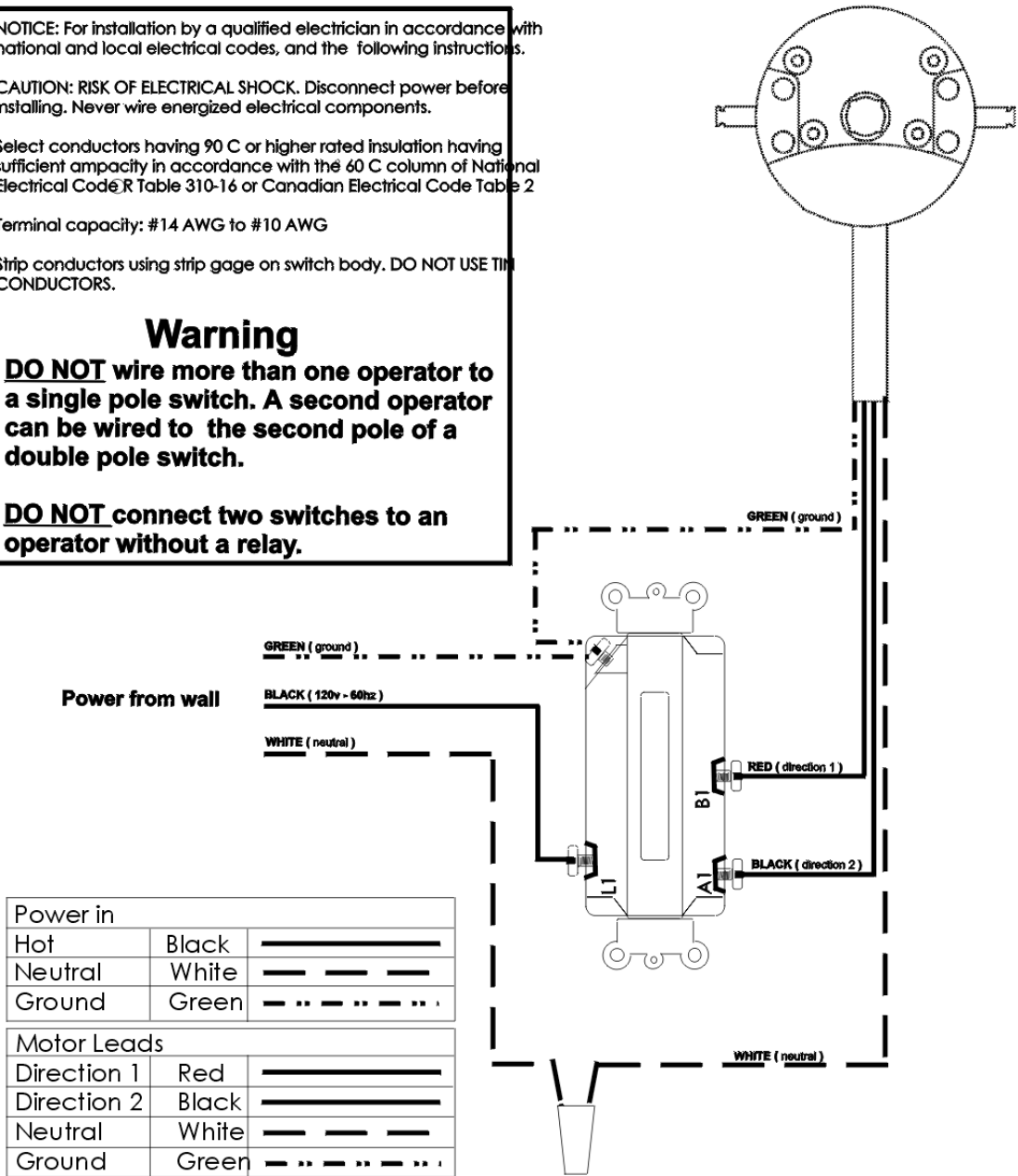
**CAUTION: RISK OF ELECTRICAL SHOCK.** Disconnect power before installing. Never wire energized electrical components.

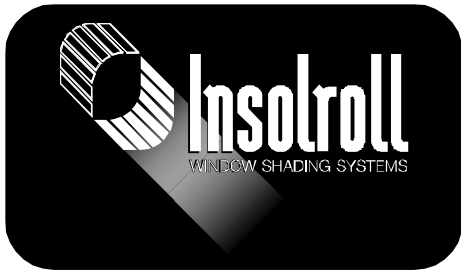
Select conductors having 90 C or higher rated insulation having sufficient ampacity in accordance with the 60 C column of National Electrical Code Table 310-16 or Canadian Electrical Code Table 2

Terminal capacity: #14 AWG to #10 AWG

Strip conductors using strip gage on switch body. **DO NOT USE TIN CONDUCTORS.**

**Warning**  
**DO NOT** wire more than one operator to a single pole switch. A second operator can be wired to the second pole of a double pole switch.  
**DO NOT** connect two switches to an operator without a relay.



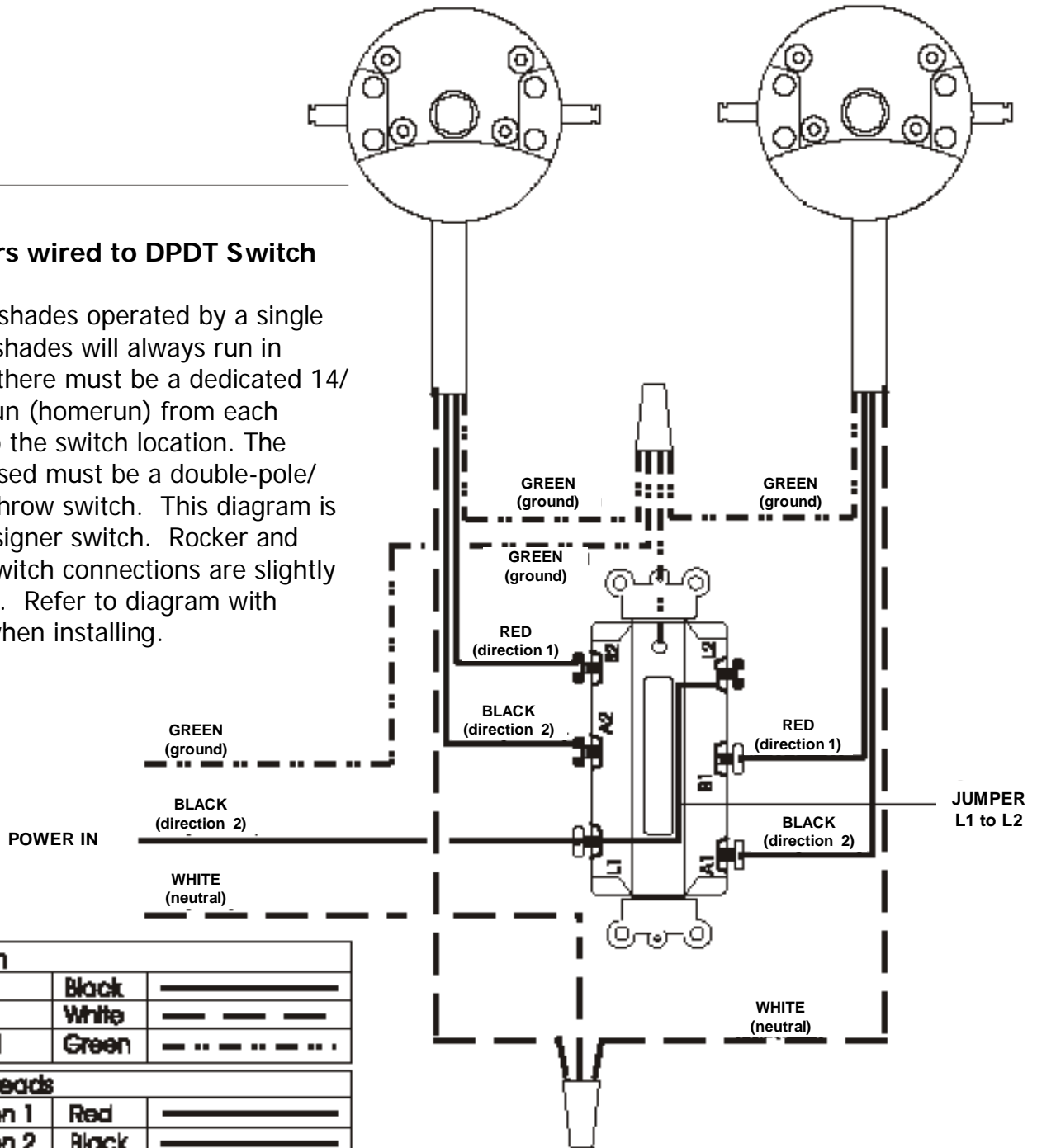


# PRE-WIRE FOR 110 V AC MOTORS

Hard-wired Switch Applications (3 of 4)

## 2 motors wired to DPDT Switch

For two shades operated by a single switch (shades will always run in unison) there must be a dedicated 14/3 wire run (homerun) from each motor to the switch location. The switch used must be a double-pole/double throw switch. This diagram is for a designer switch. Rocker and toggle switch connections are slightly different. Refer to diagram with switch when installing.

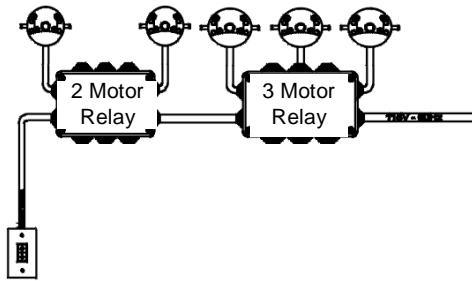


Power In		
Hot	Black	—————
Neutral	White	- - - - -
Ground	Green	- . . - . . - . .
Motor Leads		
Direction 1	Red	—————
Direction 2	Black	—————
Neutral	White	- - - - -
Ground	Green	- . . - . . - . .



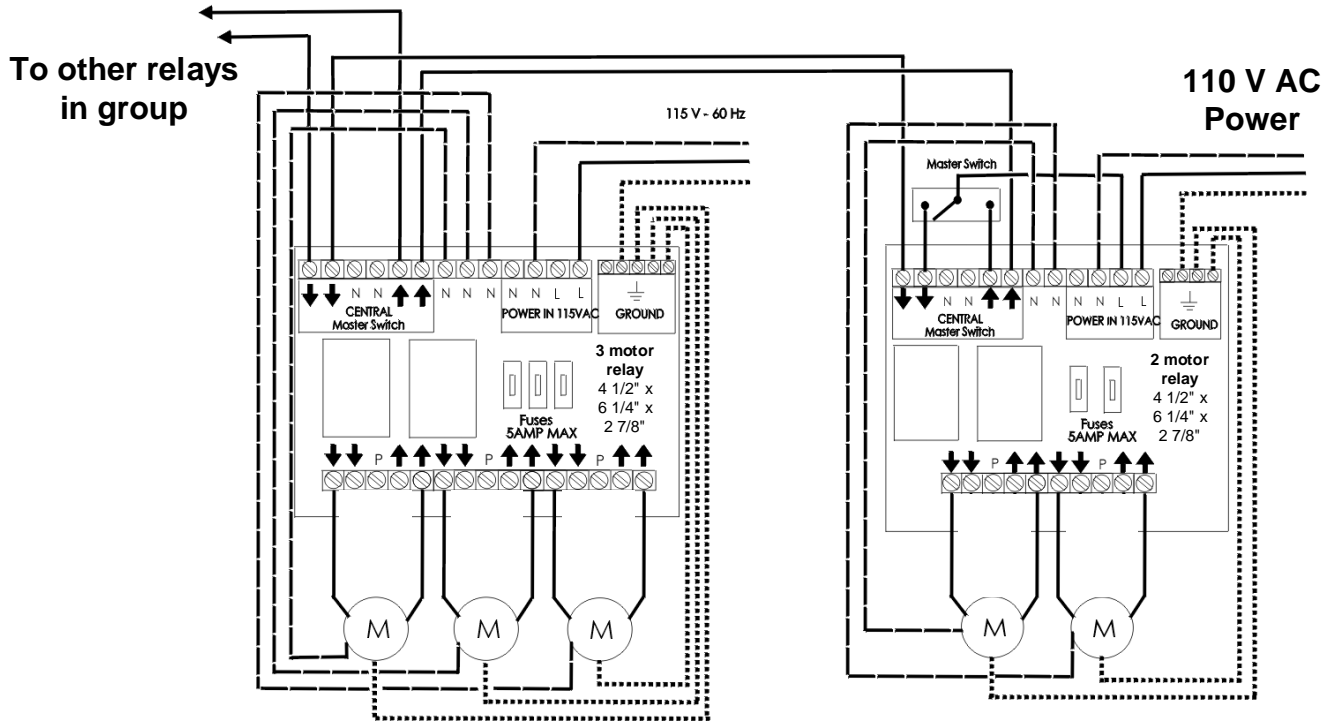
# PRE-WIRE FOR 110 V AC MOTORS

## Hard-wired Switch Applications (4 of 4)



- Ground (Green) -----
- Hot Power L1 (Black) \_\_\_\_\_
- Common -----
- Motor (M) (M)
- Motor Direction (Red/Black) ▲▼

Note:  
Connections are only at terminals



### Use Relays for Group Control Switching

To operate more than two shades on a single switch group control relays must be used. The pre-wire when using group controls requires that there be a dedicated 14/3 wire run (homerun) from the junction box at each motor location to the relay location and **AC power provided to relay location**. A 14/3 switch leg then must run from relay location to desired switch location. Relays are often located in attics, basements, closets or cabinets.