

The Solatube® daylight dimmer can be controlled by a DPDT (Double-pole, Double-throw) switch¹. A QSE-IO can be used to mimic a DPDT switch through programming in the Quantum® system.

It is important to keep in mind this requires additional database programming in the Quantum® system. The Lutron® Quantum® system is to be programmed such that the QSE-IO relays return to their normally open connections for just a moment before reversing the orientation of power applied to the Solatube® relay. This follows the guidelines established in the Solatube® Daylight Dimmer Integration Guide, DAYLIGHT DIMMER APPLICATION SCHEMATIC Rev 05.

The diagram on page 2 shows the connections from one or more Solatube® daylight dimmer to a QSE-IO.

Programming Instructions:

To Open a Solatube® Daylight Dimmer:

1. Open all CCOs and delay one second. The delay ensures the +5 V_{DC} from the Solatube® daylight dimmer is not being connected directly to common.
2. Close CCO2 and CCO3. Maintain at least 20 seconds; this applies 5 V_{DC} from black to red.

To Close a Solatube® Daylight Dimmer:

3. Open all CCOs and delay one second. The delay ensures the +5 V_{DC} from the Solatube® daylight dimmer is not being connected directly to common.
4. Close CCO1 and CCO4. Maintain at least 20 seconds; this applies 5 V_{DC} from red to black.

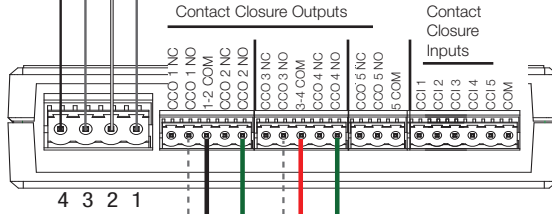
Relay Side A (Black)	Relay Side B (Red)	Solatube Dimmer Action
+5 V _{DC}	Common	Open
Common	+5 V _{DC}	Close

¹ Any version of the Solatube® that is not controllable with a DPDT switch would require a different solution than the one presented in this app note. Contact Lutron for assistance.

Wiring Details

QS Data Link (to control units, window treatments, and wallstations)

- 1: Common
- 2: 24 VAC
- 3: MUX
- 4: MUX



CCI and CCO terminals each hold one 28-16 AWG (0.08-1.5 mm²) wire

One QSE-IO required per *control group* of Solatubes. (Each control group requires four Normally Open (NO) terminals.)

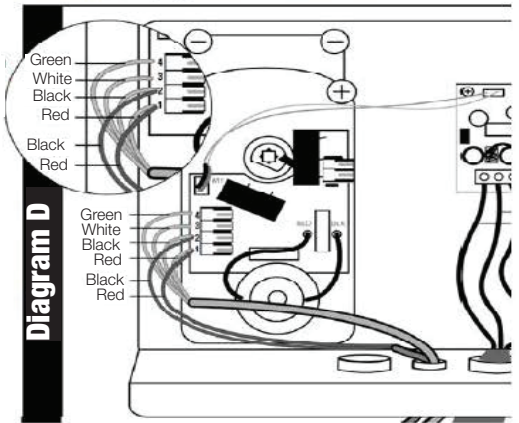
Green
White
Black
Red

+5 VAC	Green
Common	White
Relay Side A	Black
Relay Side B	Red

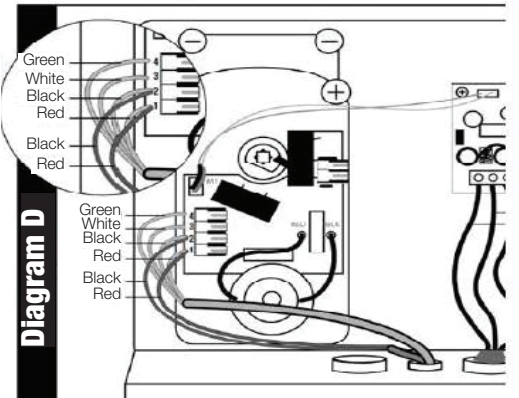
Green
White
Black
Red

To additional Solatube® daylight dimmers (10 max)

Solatube® Daylight Dimmer Detail




Solatube® Daylight Dimmer Detail



IMPORTANT DESIGN CONSIDERATIONS:

1. Each QSE-IO can control one control group of up to 10 Solatube® daylight dimmers.
2. Only ONE Solatube® daylight dimmer in a control group should have the green and white wires connected to the QSE-IO. The green and white wires are connected to the power supply inside the Solatube® daylight dimmer.
3. The QSE-IO functionality described in the application note is ONLY possible in a Quantum® system.

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