Light Dep Control Panel
Installation and Operation Instructions

The control panel stainless steel box comes with two keys, please don't lose your keys, only one way to insert the key is correct, don't use force to insert the key, turn the key 45 degree and try insert:)

Before you try to read this 7 page instruction and try to understand how these machines and timers will work together, to save you time and labor, we strongly suggest that you go through these two video instructions.
https://silkroadgreenhouse.com/products/automated-blackout-control-panel

Step 1: Mounting the Control Panel

-The control panel can be kept on a flat surface or mounted on the wall. There are 4 holes at the four corners of the control panel back plate for wall mounting.

Step 2: Connecting the 110v power supply

-When you first open the control panel box you will see 3 major areas. The top area is a transformer for the power supply. On top of the transformer there is a window showing a red sliding selector for 115v or 230v power input, it is set to 115v by default.

The transformer transforms 110v AD power to 24v DC power to be used by the two motors. The middle area is the main control components for the box. The bottom area is a row of 6 connection screws. The 6 connection screws are labeled 1,2,3,4,5,6. Number 1, 2, 3 screws are connected to 110v power plug. Number 4 screw is not used. Number 5 and 6 screws are what you will use for connecting the two 24v DC motors.

Step 3: Connecting the two motors to the control panel

WARNING: Never connect a motor's two wires to a single screw. This will short circuit the motor! Don't plug in the power plug yet.

We recommend that you have someone handy and knowledgeable in electricity to do the connection, preferably a licensed electrician. Electricity can be dangerous, don't electrocute yourself.

-Each motor has two wires, a positive red color wire and a negative white color wire. These two wires connect to connection screws 5 and 6 separately.

- Please make sure your wires are property trimmed so that they do not touch the neighboring screw or neighbouring wire, if it touches, it can cause a short circuit and damage the system. Loosen each screw until there is enough room and insert the copper wire.

First pair and twist together the first motor's white wire with the second motor's red wire and connect the two twisted wire to connection screw 5

Then pair and twist together the first motor's red wire with the second motor's white wire and connect the two twisted wire to connection screw 6.

You connect the wires of the two motors in opposite ways because we will need each motor to rotate in opposite directions in order to roll the blackout fabric in the correct direction from both sides of the greenhouse.

-The motor's turning direction is determined by the electrical polarity. Each motor can reverse its rotating direction when its wires are switched between connection screws 5 and 6.

In the field, you'll probably need to extend the motors' cables to connect the motors to the control panel. Please use 14 or 12 Gauge electrical wire to extend the motor wire.

If you have any confusion, please don't hesitate to call Henry Yu at 6304082201 for consultation

Step 4: Turning the Power On

-Once the two motors are connected to the connection screws 5 and 6, and the wires are properly trimmed and separate from each other, you can plug the machine to a 110v outlet, then turn the control panel Power button to the On position. It will light up green.

If the light does not turn on, then you need to open the control panel box and flip the circuit breaker switch to the on position. The circuit breaker is located on the left side of the middle area. It is labeled Tengen C10 and has a bright green switch.

If it still does not light up green, check to make sure the outlet your control box is plugged into has power.

Step 5: MANUAL Mode and AUTO Mode

The middle button has two states, MANUAL mode and AUTO mode. You should test and do set up in MANUAL mode.

MANUAL mode: is where you manually control the motors to open or close your blackout fabric.

The third button on the control panel only works for MANUAL mode. It has 3 states, DOWN, 0, and UP. In the 0 state, the two motors will not turn.

The DOWN and UP states refer to whether your blackout fabric is being let down, or rolled up.

When you set the motor to the DOWN or UP state, it will rotate to the number of rotations you set up using the green or red dial.

To set the number of rotations, open the blue cover located on the back clear plastic portion of the motor. You will see green and red dials with numbers 0 to 35. For the long range motor, a full 360 degree turn is about 120 revolution, so each of the 40 dots on the dial is equivalent to 3 revolutions.

The location of the small protruding arrow on each dial is set to the number of rotations needed. In order to set a number of rotations, simply push the dial in with your fingers and turn until you have a set number of rotations.

AUTO mode: when the middle switch is switched to AUTO Mode, the two motors will be controlled by controller timer, the third button has no function in AUTO mode.

Step 6: Adjust Motor Rotation Direction

Turn power on, turn the second button to MANUAL, turn the third button from 0 to UP, and see whether both motors are rotating in the tarp rolling up direction.

If it is rotating up, then the direction is correct. If it is rotating DOWN, then you can switch the two motors to be used on the opposite side of your greenhouses

You need to connect your motor wires in a way that the two motors rotate in directions match the DOWN and UP direction of the third button in manual mode.

Once you turn the motor in MANUAL mode to UP, you will see whether the red or green light is on, if the green light is on, then the green dial is the controlling dial, turn that to a number, such as 15, then the other dial to 0. just do the opposite for the other motor. These two motors should toggle between red and green light and controlling dial.

Step 7: Install Fabric Rolling Pipe

-Once the motors are set to rotate to the correct direction, you can install ¾ inch 20 feet long EMT pipe (1 inch exterior diameter) on the motor connector. Use multiple EMT pipes to fit to the length of your greenhouse length.

You can connect two EMT pipes with a smaller diameter EMT pipe and self drilling screws.

-Then use plastic film clamps to clamp your blackout film on to the EMT pipe.

- Last, use the bolt to install each of your motors on to a 3/4 inch EMT pipe arm.

Step 8: Adjust Motor Number of Rotation

You need to adjust the number of rotations of the motor so it will roll down or roll up your blackout fabric to its full extent, not more, not less, just enough.

Each rotation rotates about 4 inch fabric on average, 3 rotation is 1 foot. If you want to roll down or up 20 foot fabric in each side of the greenhouse, then it is about 60 rotation, and you can set the control dial arrow to the 20 mark dot.

When setting the number of rotations, you always set the controlling dial to a rotation number and you always set the other dial to 0 rotations. As the motor rotates, the small white gear connecting the two dials will crank the one we set to 0 rotation and set it to the same number of rotations that the initial dial has rotated. Now, when the motor toggle to run in it’s opposite direction, it will rotate for the exact same number of rotations as the initial dial was set to.

The red and green lights simply correspond to the dial that is currently being ticked down. It does not make a difference if you have red or green as DOWN or UP. Since you have 2 motors that will need to run in opposite directions to roll up your blackout fabric, one will always be running green and one will always be running red. Position them accordingly, depending on your setup.

As long as you have the motor rotating in the correct direction, whether it is rolling up or rolling down your fabric, and the controlling dial is set to the number of rotations you want and the opposite color’s dial set to 0 rotation, the system will work correctly.

Step 9: Connect the motor to pipe:

First, connect the motor rotating axle to the narrower end of the pipe adaptor, insert the screw and tighten the screw. This will attach the pipe adaptor to the motor.

Then insert a ¾ inch electrical conduit pipe into the wider end of the pipe adapter, drill holes on both sides of the pipe, and insert a screw on each side of the pipe adaptor to attach the pipe to the pipe adapter.

Step10: Setting the Timer for Auto Mode

Once the two motors' rotational direction are adjusted correctly, and the number of rotations adjusted to fit for your greenhouse fabric traveling distance, the next step is to set the timer for everyday automation.

The timer is located at the right hand side of the middle area in the controller box. You need to lift the timer cover to do time setting. The timer's cover is small, only about a centimeter. Please do not be too rough in trying to open the timer cover. If you look at the area right below where the RMSCSH THC15A is written, you will see the distinction of the timer's cover. There is no latch or release. Simply grip only the timer's cover, and pull a little to open.

The timer's interface will be locked until you fully press the MANUAL C/R button minimal 4 times consecutively. It will stay unlocked from the last button press for 15 seconds and lock again if 15 second passed with no action.

Please follow the MULTIFUNCTION WEEKLY PROGRAMMABLE ELECTRONIC TIMER manual to first set the timer to your local time correctly, also set your week day correctly. It is default set to 24h mode (there is also 12h mode). Refer to the manual again to set your first program.

The timer can be set to 8 different weekly schedules of DOWN and UP times, and will only run one schedule at any given time.

In the beginning, please just set one program 1 ON and 1 OFF on each and every week day, make sure all the other settings are blank

--, so you will not get confused. Refer to the timer's manual to see all the different kinds of weekly schedules you can set up!

Step 11: Set for Auto Mode

-Turn the controller to AUTO mode, the two motors will run to tick down to 0 on the control dial and will stop there. To make it run to 0 faster, you can push the controlling dial set button and set the number to less than 5, so it will run to stop soon.

Then when the timer 1 ON kicks off on each day, the two motors will start from a state that is opposite from its current state, the controlling dial will toggle on both motors, make sure that is the state you want each motor to start on each day. When 1 OFF kick start on each day, the motor state will toggle again to reverse the previous action.

Set the controlling dials (the dial that light up is the controlling dial, the green dial, or the red dial) on the two motors to the same correct number of rotations (this is assuming, as in most cases, that your blackout fabric is an even length on either side.). These controlling dials are the ones you should be setting, and their opposite colored dials should be set to 0.

Now the controller will roll up and roll down your blackout fabric according to the set time and direction and weekly schedule.

Step 12: Watch and Confirm

After initial timer and Auto mode set up, at least watch the automated system for a few days to confirm everything is set correctly and works correctly. Don't let anything obstruct or block the motor or the rotating fabric so the roll up and roll down actions can be executed to their completion.

If you have any questions, contact Henry Yu at 630-408-2201 for support.

We also have instruction videos on our website, the website is http://silkroadgreenhouse.com/accessories.html

Thanks and best of luck with your greenhouse control panel and motors! We appreciate your business and hope you succeed in your growing business !!!