



HIRED-HAND®

PC-DB Curtain Controller

with Timer Override

**Hired Hand, Inc.
1733 Co Rd 68
PO Box 99
Bremen, AL 35033**

PC-DB Curtain Controller

with Timer Override

1. WARNINGS	1
2. PHYSICAL DESCRIPTION	2
3. USE OF EQUIPMENT	2
4. INSTALLATION	2
5. SET-UP INSTRUCTIONS	2
5.1. CURTAIN TIMER	2
5.1.1. Description.....	2
5.1.2. Setting machine runtime	3
5.2. OVERRIDE TIMER	3
5.2.1. Description.....	3
6. OPERATION	4
6.1. MANUAL CONTROL	4
6.2. AUTOMATIC CONTROL	4
6.3. OVERRIDE.....	5
6.4. OPTIONAL OVERRIDE.....	5
7. WIRING DIAGRAM	5

1. Warnings

Warning!

When this controller is used in a life support heating and ventilation system where failure could result in loss or injury, the user should provide adequate back-up, or accept the risk of such loss or injury!

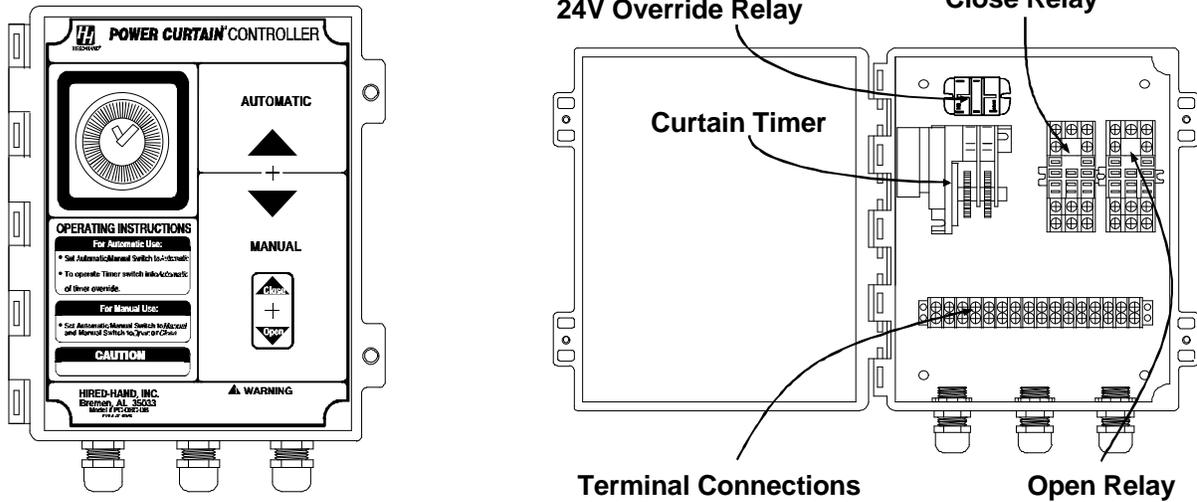
Warning!

Wiring and connections must comply with all national and local electrical codes. Installation by qualified electrician required!

Warning!

Electrical shock may occur if the enclosure is opened with power connected to the unit. Before opening the enclosure, make sure that all power sources to controller are disconnected!

2. Physical Description



The picture on the left above is the front of the controller. The picture on the right is a picture of the internals of the controller showing major components.

3. Use of Equipment

This Power Curtain Controller is built for use in agricultural enclosures for temperature control. The machine will operate one PowerTrak machine in response to temperature changes. Additionally, the controller has a timer override that will completely override the thermostat and close the curtain at selected times, and hold the curtain closed until the selected time.

4. Installation

1. Mount unit to wall near power supply.
2. Connect nine conductor wire from PowerTrak to the terminals shown on the wiring diagram in the back of this manual.
3. Connect thermostat to terminals as shown in the wiring diagram in the back of this manual.
4. (Optional) Connect optional override to the terminals shown on the wiring diagram in the back of this manual.
5. Close door and apply power to the machine.

5. Set-up Instructions

5.1. Curtain Timer

5.1.1. Description

The curtain timer is a five minute electro-mechanical timer. Look at the picture above to get an idea of the different parts discussed in this section. This timer is very simply designed. A constant speed motor drives the two wheels at the same speed in the same direction. There are tabs attached to the wheels that will actuate switches on the timer body as they pass.

- The wheel on the right is the open wheel. As this wheel rotates, the tabs attached to this wheel will control the opening of the machine.
- The wheel on the left is the close wheel. As this wheel rotates, the tabs attached to this wheel will control the closing of the machine.

5.1.2. Setting machine runtime

Tabs may be attached to the timer wheels on either side. A tab attached to the right hand side of either wheel is the “ON” tab. As this tab strikes the switch, it will provide a path for current to operate the relay that will open or close the machine. However, a tab attached to the left hand side of either wheel is the “OFF” tab. As this tab moves past the switch, it will shut off the path for current that was opened by the “ON” tab.

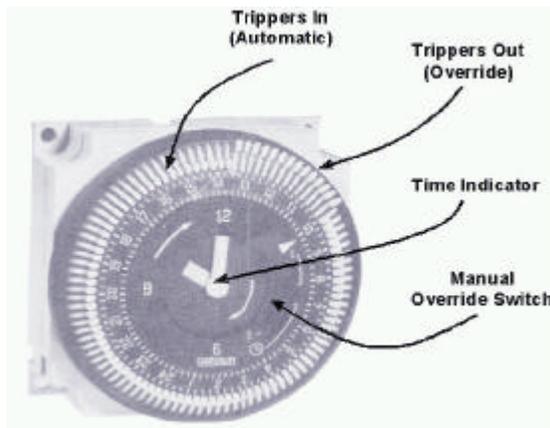
It is important that when adjusting the tab positions, that you keep the tabs on the open wheel at 180° to the tabs on the close wheel. This is to prevent the curtain from rapidly switching directions. This is important especially when using a curtain machine other than one designed by Hired-Hand.

You may place two or three sets of tabs on the wheels if you would like. This will allow you to run the machine in shorter time increments, but more often.

To increase the factory set runtime, place the off tab farther along the same wheel. Remember that a whole revolution of the wheel is five minutes. Shortening the span between the tabs decreases the runtime, and widening the gap between tabs increases the runtime.

5.2. Override Timer

5.2.1. Description



This controller has a timer operated override that will close the curtains at any time you select on the timer.

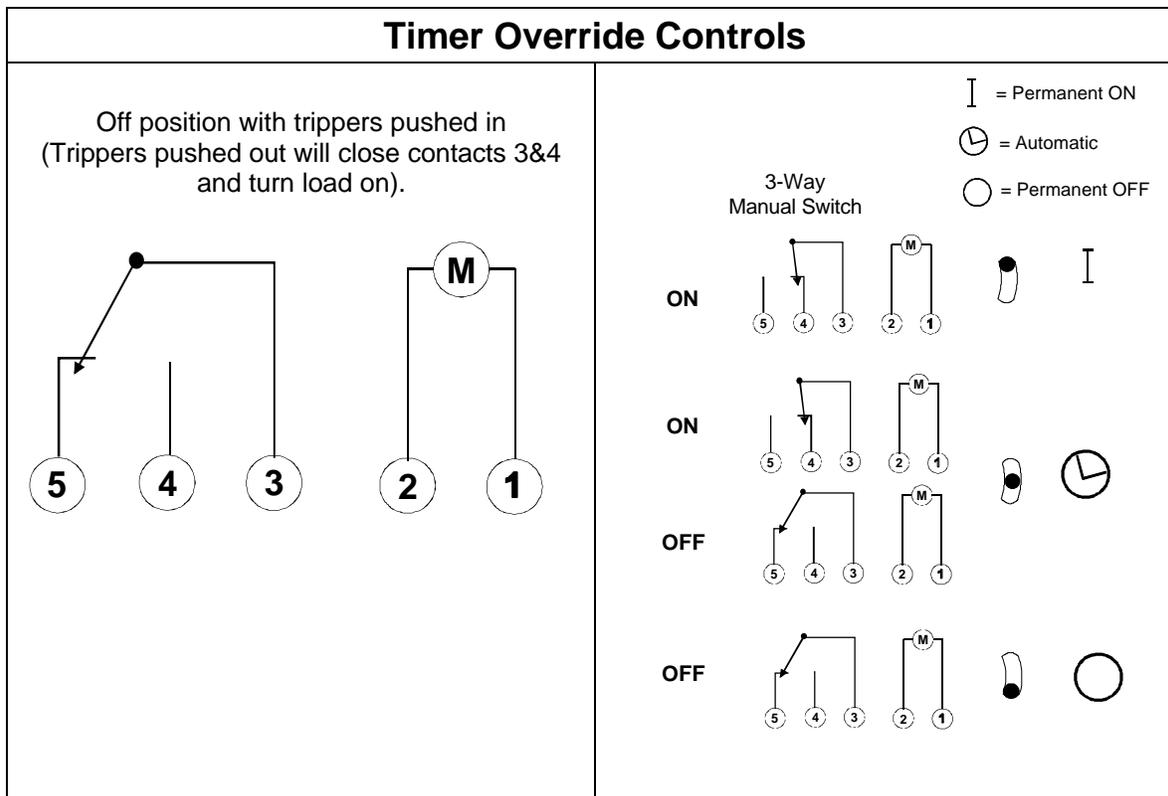
The picture on the left shows the timer that is installed on the left hand side of the controller face. The timer is a 24 hour timer that has switches (trippers) that represent fifteen minute intervals.

At any time you want the curtains or vents to be closed, you slide the tripper that corresponds to the time on the dial to the outer position.

When the timer reaches that position, the controller will close the curtains and override the controller. Any time the switches are in the inner position (automatic position) the controller will work in the normal fashion.

The timer has a manual override switch that can be used to set the timer as automatic, permanently on, or permanently off. This switch is pointed out in the picture above.

The override also has a three position switch called the manual override switch. This switch allows you to manually override the controller, or to disable the override function. The switch positions are explained in the Timer Override Controls chart below:



6. Operation

6.1. Manual Control

When the Automatic/Manual switch is in Manual, the controller will open and close the curtains or vents whenever the bottom switch is in its open or close position. The center position of the switch is the off position.

6.2. Automatic Control

When the controller is in automatic, the controller will move the curtains or vents as needed by the temperature set on the thermostat.

Under normal conditions, the controller will move the machine once every five minutes. The machine will open if temperature is higher than the thermostat setpoint, and the machine will close if temperature is lower than the thermostat setpoint.

To adjust the amount of time the machine runs each five minutes:

1. Turn off power to the control box.
2. Find the timer switch.
3. Move the two tabs farther apart to increase the time the curtain machine moves, and move the tabs closer together to shorten the time the machine moves.

4. Close control box lid, and re-apply power.

The DB in the controller name refers to the Dead-Band operation of the controller. To use the dead-band feature you must have a two stage thermostat. This thermostat is available at your Hired-Hand dealer. The dead-band is a three to four degree temperature band which satisfies the controller. Any time the temperature is inside this band, the controller will not close or open the curtain machine automatically. However, if temperature should exceed the dead-band, the controller will operate to return temperature to the band.

To place the controller in automatic operation, select “Automatic” with the top toggle switch on the control box.

6.3. Override

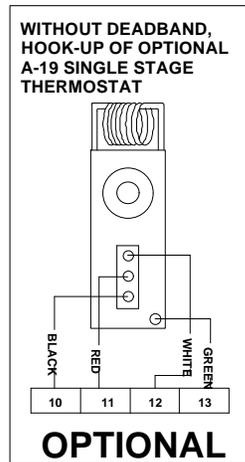
Remember that when the timer is “on”, the curtain will be closed. And whenever the timer is “off” the curtain will run as the controller tells it to. This timer is only used to override the controller, not to supplement it’s operation.

6.4. Optional Override

If you have a weather station, or some other system you want to automatically close the curtains, you may do so by hooking to the machine as an optional override. This connection is normally open, and will close whenever a 24 Volt source is applied. The connections are shown along the terminal strip on the wiring diagram below.

7. Wiring Diagram

Below is a wiring diagram of the internals of the controller. All connections are shown, as well as thermostat hookup.



NOTE :

1. WIRES FROM TIMER MOTOR CONNECT TO POSITIONS 1 & 2 ON TERMINAL BLOCK.

