"Weather Watcher" Classic Single Area Mist Propagation Controller Installation, Operation & Maintenance Manual

by
Jeffery Electronics - Contact Brett Jeffery 0415 222160

What is Mist Propagation?

It is the system of keeping the foliage of cuttings covered by a fine film of moisture and the medium damp but not wet. Electronic mist does this automatically by sensing weather changes and activating an electric tap (solenoid valve) as required. It promotes faster, healthier growth by:

a) allowing maximum light and warmth into glasshouse without foliage 'burn'
b) use of maximum leaf surface for faster root and top growth
c) lower leaf temperatures reduce dehydration
d) aerated medium - no leaching of nutrients
e) high humidity.

NOZZLES: It is important to use true misting nozzles. Water pressure should be at least 25 psi (180 kPa) for correct atomisation. Typical suitable nozzles pass 17 litres/hour at 40 psi (275 Kpa) over a 1 metre diameter circle as a very fine mist.

What is "Weather Watcher"?

It is a type of sensor developed by Jeffery Electronics to overcome some problems of the 'leaf' type of sensor - primarily the build up of residue on the sensor head from the evaporation process.

The WW sensor is built inside the control unit. Two components measure light intensity and air temperature, the 2 factors most directly affecting growth of plants. It constantly 'tracks' these conditions and adjusts the misting rate to maintain the user's set requirement. The sensor is designed to not operate at night (ie during darkness).

INSTRUCTIONS

INSTALLATION:

1. Mist nozzles should be on upright stands and all at the one level. If suspended from above the bench serious dripping problems arise and air entering the pipes will cause uneven misting
2. A by-pass tap should be plumbed around the unit's solenoid valve so that manual misting can be done in the event of a power loss.
3. A filter in the line before the solenoid valve is essential to protect both the valve and the fine mist nozzles from clogging.
4. **Try to flush all grit, hacksaw shavings, sand, etc. from the line** before installing the controller to protect the valve and nozzles.
5. The unit should have its own **unshared** power point and is positioned on the water line near the power point. Allow clearance so that unit can be relocated back on top of the valve in an upright position. It is preferable that the unit faces into the glasshouse to receive reflected light from the plant area.
6. **The controller is simply installed by undoing a wingnut on top to release the valve body which is plumbed into the line and the unit then screwed back on top - do not overtighten.**
7. THE UNIT SHOULD NOT RECEIVE DIRECT SUNLIGHT (eg. When measuring air temperature a thermometer is not placed in direct sunlight) - a shade should be provided so the unit only ever receives diffused light.
8. The unit should be located so that mist does not fall on it.

OPERATION:

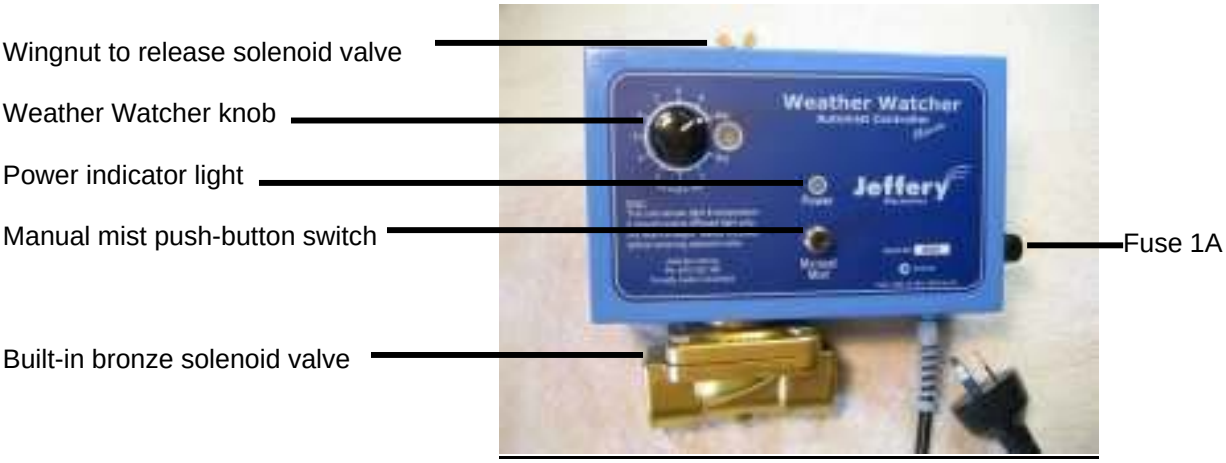
1. Set "W.W." knob to centre position between 5 and 6 on the dial.
2. Turn on water. Plug unit into power, switch on. Unit will mist every time it is powered on.
3. **Unit will wait for a period determined by weather conditions then nozzles will spray for 4 seconds. This cycle then repeats**. The 4-second burst is constant, duration between bursts varies with weather.
4. TO SET YOUR REQUIRED RATE: Leave for a few hours then observe if foliage is too wet or too dry. Adjust "W.W." knob by small increments accordingly.
5. If the unit is turned off for any length of time it is advisable to remove it from the water line and put in a dry place.
6. The 'Manual Mist' button can be pressed at any time to manually open the valve.
7. The unit is designed to give a mist when it is initially powered on.

IMPORTANT POINTS:

1. Never turn on power to unit if solenoid valve body is not in position.
2. Always turn power off before removing unit from plumbing (eg. when adjusting plumbing or cleaning sol.valve).

Ensure that light to the window at front top left does not become obstructed.

3. **CAUTION: 240 VOLTS INSIDE UNIT - do not remove back cover plate.**



SOLENOID VALVE SERVICE:

Occasionally, the solenoid valve may come on and not turn off. To identify the cause of the fault, turn the power off to the unit. If the water stays on then it is most likely a small piece of solid matter is jamming the valve open or its diaphragm is split. If the water goes off then the fault is in the electronics. Phone Brett Jeffery at Jeffery Electronics 0415 222160 to arrange repair.

Try to flush grit from new pipes before installing the controller and then regular cleaning of your filter gauze may prevent the problem.

PROCEDURE FOR CLEANING THE SOLENOID VALVE:

1. Unplug the unit from power.
2. Turn off the water.
3. Remove unit from the valve, ie. unscrew wingnut on top.
4. Remove 4 hexagonal screws from valve.
5. Carefully lift off top half of valve, placing a finger underneath at centre to catch the plunger which can easily fall out and get lost.
6. Observe the position of all internal parts in order to replace them correctly.
7. Remove the diaphragm, clean and clear out centre hole and the small hole in the neoprene disc.
8. Momentarily turn on water to flush out any remaining grit.
9. Reassemble valve - replace unit on valve.
10. Turn on water - turn on power.