

## **“Weather Watcher” Four Station Mist Propagation Controller Installation, Operation & Maintenance Manual**

by  
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For the large scale propagator who may grow in open air beds, or who may have a series of 2 or more glasshouses or igloos. Control is by the "Weather Watcher" Sensor which measures changes in light intensity and air temperature, and automatically adjusts the mist cycle rate accordingly. This Multi-area controller provides a cycle of 4 outputs to 24v solenoid valves. Each 'area' has its own variable mist duration so moisture can be set for each station and maximum use made of a limited water supply.

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Specifications: 240v AC, 50Hz, 10 watts Dimensions: 22 x 29 x 10 cm Construction: Sheetmetal box, bakelite panel
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### **INSTRUCTIONS**

#### **INSTALLATION:**

1. A filter is recommended in the main water feed line before the solenoid valves. Nozzles should be mounted on risers (not on overhead pipes), and all nozzles fed from one valve should be level.
2. Secure the unit to wall, adjacent to power point, in a weather- and dust-protected position (shed/ office/ meter box).
3. Plumb sol.valves (24v AC, 3 watt maximum) into mist sprinkler system as required, each valve supplying an 'area' of sprinklers. Take figure-8 cable back from each valve to control unit and terminate on front panel. (Remove terminal board plastic cover plate - 2 small nuts.) When terminating cables to the terminal board, strip and twist wires well so that hair wires will not cause short circuits.
4. Firmly secure the sensor inside the shadehouse/glasshouse above the propagation area in a position where it will not be knocked and not under mist. If at any time it is subject to direct sunlight a flat shelf should be secured above it to act as a shade. Take the figure-8 wire back to the unit and connect to "Sensor" positions on the terminal board, the red striped wire going to the terminal labelled 'red'. The sensor will need to be calibrated before using the system.
5. Calibrate sensor. Set switches all to up (Auto) and duration knobs to minimum,

then turn on power. The sensor must be in its final position. Calibration can only be done when the unit is not outputting. If an output starts during the procedure, stop and continue when cycle is finished. A second person to call out the reading may be needed here. The calibration should be carried out on a hot sunny day. If done in wintertime it should be done again in summer. No further adjustment of this is required from then on.

#### **CALIBRATION**

- A. Slacken off grub screw on the sensor and push up the centre white rod about 30mm.
- B. Set the "W.W." knob until meter reads 50uA.
- C. Keeping hands away from white rod, lightly pull it down into grey body until meter reading just starts to drop. (See also Note below.)
- D. Lightly tighten the grub screw to hold in this position.
- E. The "W.W." knob (below meter) is now used to give your desired output rate: When meter reads high (50uA) cycle rate is maximum (1 cycle about every 7 minutes). When meter reads 25 microamps cycle rate is doubled to 14 minutes, and so on. When meter reads zero cycle stops.

NOTE: If pulling the centre rod down level with grey section does not cause the meter reading to drop then there is too much sunlight falling directly onto the sensor from the glasshouse or tunnelhouse roof, rendering the calibration impossible. It will also cause the temperature sensor to read high (not true air temperature). In this case a small "shelf" should be secured few centimetres above the sensor. Then re-do the calibration procedure.

**OPERATION:**

1. Set individual knobs to your requirements. (See 'Panel Description' below.)
2. Observe misting for some hours and readjust knobs if necessary till misting is correct.
3. NOTE: The 'cycle' is a sequential one, that is: Area 1 mists followed by 2, 3 and 4 in turn, then stops for a duration determined by "W.W." knob setting plus light and heat conditions.
4. NOTE: Mist only one area at a time or overload may occur, also water pressure may fall too low.

**PANEL DESCRIPTION:**

- 1. AREA CONTROLS (4 INDIVIDUAL AREAS):**
  - a) - Duration knob: for setting 'on' time for each area - 5 seconds to 60 seconds approx.
  - b) - Override switch, 3 positions:
    - Up = 'auto' or normal, i.e. sensor controlled.
    - Centre= 'off', stops misting in this area.
    - Down = 'on', the override will mist this area until switched back to normal.
  - c) - Indicator light, shows when this area is misting.
- 2. FUNCTION SWITCH (ALL AREAS/CYCLE): 3 POSITIONS:**
  - a) - Up = 'auto', (sensor controlled), normal position.
  - b) - Centre= 'off' - set here during wet weather if misting not required, in preference to turning power off.
  - c) - Down = 'repeat misting' or continuous repetition of programmed cycle.
- 3. OVERLOAD (ELECTRONIC FUSE):**
  - a) - Overload indicator light, shows when short circuit occurs.
  - b) - Reset button. In the event that an overload has occurred on an output, overload will occur and red light will show. Correct the fault then push button to reset.
- 4. "W.W." SENSOR CONTROLS:**
  - a) - Meter, misting rate indicator.
  - b) - "W.W." knob, for normal adjusting of misting rate.

