

Brinsea

HUMIDITY MANAGEMENT MODULE TYPE H122

USER INSTRUCTIONS

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1.0 INTRODUCTION

These instructions detail the installation and operation of your new H122 Automatic Humidity Management Module. Please read them carefully before setting up your machine to achieve best results and keep these instructions safe for future reference. The H122 module is optional accessory for the Brinsea Octagon 100 or 250 egg incubators and cannot be used in any other application. The H122 offers convenient and refined measurement and control of humidity within the incubator. If the Octagon 100 or 250 incubator has been ordered from new with the H122 fitted then only the operational instructions apply. If the H122 is to be retro-fitted to an Octagon 100 or 250 please first follow the installation instructions (in the shaded sections.)

These instructions are limited to the operation and function of the H122 humidity Control Module only, please refer to your incubator instructions for more general guidelines on humidity in incubation.

FEATURES

- Continuous metering of relative humidity
- Proportional control easily set against scale
- Precision bulk polymer sensor
- Pumped water flow - not level dependent

2.0 UNPACKING

The H122 comprises:

- 1 **Type H122 Humidity module unit**
Containing all control and indication functions and the water pump.
- 1 **Sensor unit**
Contains sensors and wick reservoir. Fits through the fan mounting plate at the rear of the incubator.
- 1 **Sensor unit clip**
Screws to the fan mounting plate of the rear of the incubator to receive the sensor unit
- 1 **Length water tube (3.0m)**
Silicone rubber tube for interconnecting and for peristaltic pump replacement.
- 1 **Sensor flex (1m)**
Flex with jack plugs for connecting between control unit and sensor unit.
- 2 **Sheets evaporating pad**
To be cut to suit the incubator
- 4 **Fixing screws**
For securing the H122 module to the incubator

- 2.1 Remove all tape and packing from the module and parts. Retain the carton and packing materials to enable the unit to be repacked. Please take care not to discard the pack of heavy white evaporating pad paper.
- 2.2 Identify each part and check that they are all present and undamaged. If there are any parts damaged or missing please contact your retailer or Brinsea Products (at the address at the end of the document)

3.0 PRINCIPLE OF OPERATION

The sophisticated bulk polymer sensor provides a highly accurate, linear signal of the relative humidity level within the incubator back to the Humidity Module which then displays this level on the large meter.

The control system operates a tiny in-built water pump which transfers exactly the amount of water required into the incubator to maintain the required relative humidity which is set by the user. The control system compensates for changes in relative humidity level and, within working limits, will maintain a constant relative humidity level.

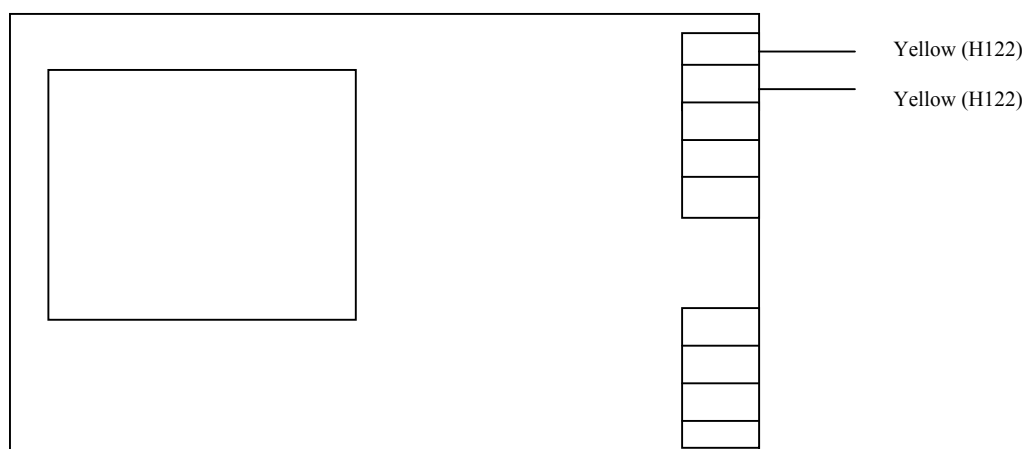
4.0 INSTALLATION

Fitting the Module (when purchased separately from the incubator)

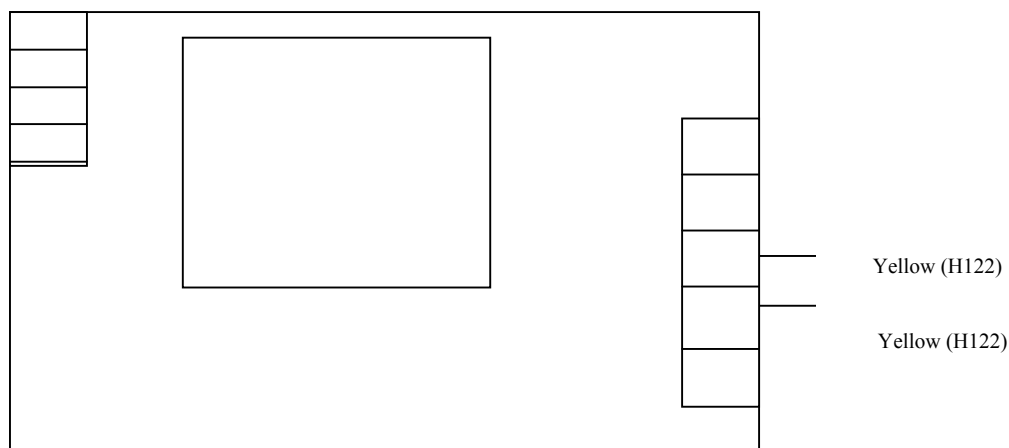
Fitting of this part must be carried out by a suitably qualified person

BEFORE STARTING DISCONNECT THE UNIT FROM THE MAINS SUPPLY

- 4.1 The Humidity Module is mounted on the plastic rail on top of the incubator immediately behind the temperature control housing. Locate the unit in position and drill four 2mm fixing holes in the mounting rail corresponding to the holes in the H122 housing.
- 4.2 Remove the cover of the temperature control and remove the power supply cover. Identify which power supply circuit is fitted from the diagrams below. Connect the two yellow captive leads from the H122 to the two right hand connections as below as shown (either way around). Ensure all existing connections are left as they were:



Later power supply circuit layout:



- 4.3 Refit the power supply cover and temperature control cover.
- 4.4 Remove the two plugs fitted into the black panel on the rear of the incubator. Replace one with the sensor clip by drilling two 3 mm holes and fastening the clip with the screws provided. **Note:** On some early incubators these plugs may be missing - if so please contact the Service dept. at the address below.
- 4.5 Fit the self adhesive tube guide clip to the back of the plastic rail to retain the tubes neatly.
- 4.6 Drill a 4mm hole through the second plug and replace it in the hole. Pass a length of tubing from the suction side of the pump on the H122, through the guide clip and through the hole in the plug and into the water reservoir in the incubator.

Mounting the sensor unit

- 4.7 Feed the unconnected outlet pipe through the sensor mounting bracket on the back of the incubator and clip the sensor unit into the bracket.
- 4.8 From inside the incubator feed the outlet pipe through the guide clip at the back of the machine and into the evaporating tray.
- 4.9 Cut a piece of evaporating pad to 100 x 280mm and place on the tray to the rear of the incubator and lay the outlet pipe on top of the pad.
Note: The second 'V' shaped piece of evaporating pad described in the incubator instructions **must not** be used in conjunction with the Humidity Module.
- 4.10 Ensure that there are no kinks in the tubing especially where they pass through the guide clips.
- 4.11 Connect the signal wire from the Module housing to the sensor unit.

5.0 OPERATION

The module will be factory calibrated but may be returned to the address below for re-calibration for a small charge.

- 5.1 Fill a suitable container with water and place the pump inlet tube into the container.
- 5.2 Press the power supply switch . Power indicator will light. Turn the humidity control knob anti-clockwise to minimum.
- 5.3 The meter will give a readout of humidity, at incubation temperature this will usually be a fairly low figure. Allow 5 minutes for the reading to stabilise and adjust the humidity control knob to raise the humidity, the pump will run and the 'pump run' indicator will light. To achieve the desired relative humidity level allow 30minutes between adjustments and use the meter reading as your guide to turning the control knob up or down.
- 5.4 When the humidity level is stable the pump will cut in and out evenly, pumping small amounts of water to offset moisture losses as incubator air is passed out through ventilation holes.
- 5.5 Refer to your incubator instructions for suggested humidity levels.

6.0 ROUTINE MAINTENANCE

6.1 Changing the pump tube

The peristaltic pump will need to have its tube replaced about every 3 months. Cut a length of tube to about 140mm (5½"). Remove the connectors and pull off the old tube. Replace with the new tube, avoiding twists. Use the diagram on the product label to thread the tube correctly over the pump head. The tension must be sufficient to ensure complete occlusion of the tube without unnecessary flattening between the pump rollers. Adjust tube length as necessary. Ensure that the tube does not stick together if left for long periods.

6.2 Changing the evaporating pad

Change the pad as necessary to maintain good evaporating efficiency. If chicks are to be hatched in the incubator, change the pad after each hatch to avoid bacterial contamination.

6.3 Cleaning the sensor

Fluff and dust will eventually contaminate the sensor. To ensure accuracy periodically pull the sensor from the black sensor unit and gently brush the filter material exposed between the slots to remove any contamination and replace. This procedure will need to be performed after each hatch if the sensor is exposed to the airborne down of hatchlings.

7.0 TROUBLESHOOTING

The control module is calibrated from 0 to 100% RH and is theoretically capable of controlling throughout most of the range. However, the minimum and maximum levels of humidity achievable in an incubator depend upon several factors, particularly the fresh air ventilation rate. You may need to allow 24 hours for humidity to stabilise after making changes.

If you cannot get the level of RH you want, consider these notes:

7.1 Humidity will not go low enough

First increase the fresh air ventilation level - enlarge ventilation holes in the incubator cabinet. This will help to dilute the moisture given up by the eggs. There will still remain a lower limit determined by the moisture content of the ambient air, particularly in warm humid conditions. This can only be countered by dehumidification of the room air outside the incubator with proprietary dehumidifier but is rarely a problem in practice.

7.2 Humidity will not go high enough

Restrict fresh air ventilation to the minimum safe level. Remember chicks need to breathe! Increase evaporating pad area. If the pad is too small, you may have a flood in your incubator.

Do not attempt to achieve higher than 80% RH.

Check that water is reaching the incubator when the pump runs – if not check the whole length of the tubing for kinks and check that the tubing around the pump has not become permanently flattened. If it has, replace the pump tube.

7.3 If further problems are experienced please contact your retailer or Brinsea Products at the address below.

8.0 SPECIFICATIONS

Sensing method:	Precision bulk polymer. Sensor accuracy +/- 3%. Hysteresis 0% r.H. Response time 2 minutes
Water Transfer:	In-built peristaltic pump Maximum water flow rate 33ml/hour
Control setting and metering:	Indicated in % RH (linear)
Electrical supply:	15v AC from temperature control module on incubator
Dimensions: (module)	170 x 200 x 90mm (WxDxH)

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