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INSTRUCTION MANUAL FOR QUEEN BEE REARING INCUBATOR

The INCUBATOR that left the factory was carefully inspected before packing and transportation. We ask you to read the instruction manual carefully before starting the device. Following the instructions contained therein will protect you from inappropriate usage. Keep the manual so that you always have it at hand. Follow the operating instructions carefully to avoid mishaps. Instruction manual for queen bee rearing incubator: Start the device only after reading the instructions! The manufacturer is not responsible for damages caused by the use of the device contrary to its purpose or improper operation.

Usage:

1. The queen bee incubator should be operated only after reading these instructions.

2. Children should not play with the equipment. Unsupervised children should not perform cleaning and maintenance of the equipment. Children under 3 years old should stay away unless they are under constant supervision.
3. In the event of damage to the equipment, only a qualified person may carry out repairs. It is forbidden to do any repair work while the device is in operation
4. Caution: temperatures below 0°C may cause damage to the device! If stored or transported at negative temperatures, use of the device can begin after an 8-hour acclimatization period in a room with a positive temperature.
5. The water container located outside on the left side during operation of the device should be filled! Regardless of the reason, operation without liquid is prohibited. In an emergency situation during operation, the unit can be turned off through the switch to the neutral position located on the control panel.
6. The controller and the heating element and fan should be protected from moisture.
7. Before operation, the device should be washed. It is permissible to use cleaning agents, but only those permitted for use in the food industry. When washing, be careful to avoid dampness of the controller, ventilator and plug!

Safety instructions during transport
Before starting any transport work, disconnect the device from the electrical network. It is essential to secure the device for transportation.

Declaration of conformity
The manufacturer hereby declares that this product complies with the requirements of the Electromagnetic Compatibility Directive 2004/108/EC

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GENERAL TERMS OF USE

1. Fill the container with water. The device is equipped with an external container, which must be filled with water before use. (fig1).
2. The device shall be connected to the mains ONLY and ONLY in the OFF position
3. Regulation of airflow (fig2 and fig3). Depending on the room or ambient temperature. We recommend setting the airflow open in half. The warmer the room, the greater the airflow is advisable.
4. We place the queens on the movable drawers according to the need.
   Max quantity -+300pcs. See (fig.5)
5. Set the temperature and humidity. Recommended temperature 34-35ºC, humidity 60-70%.

NOTE: The device cannot operate without water in the container.

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Digital controller – incubators for queen rearing

Digital controller measures and regulates the temperature and humidity of air in closed rooms (mushroom farms, hatcheries, warehouses, laboratories etc.). Thanks to measurement sensors that do not require calibration it is easier to service the device if necessary. In addition, the controller is equipped with a programmable timer with working time and pause time that can be adjusted independently. The device has three outputs: one for temperature control (triac), one for humidity control (relay) and one for controlling the timer output (changeover relay).The system has an adjustable alarm threshold. If the temperature drops or rises by the threshold value from the initial activation temperature, e.g. due to sticking of the relay contacts, the ALARM indicator starts blinking and the ALARM relay is activated. The relay can be turned off by pressing the [UP] button.

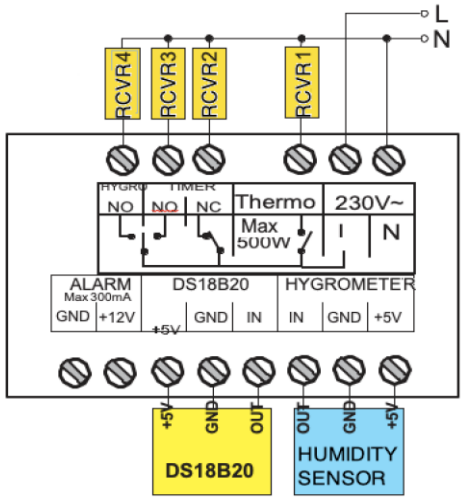
Programming the device:

Press and hold the [MODE] button until the top display flashes and the [tE] symbol is displayed on the bottom. Use the [UP] or [DOWN] buttons to set the temperature value. Press the [MODE] button and the symbol [hI] will appear on the lower display. Use the [UP] or [DOWN] buttons to set the humidity value that will **trigger the humidity relay**.
Press the [MODE] button again to exit programming mode and to save the settings in the memory of the device. Press and hold the [MODE] button to enter advanced functions.
The lower display will show tE.H. Use the [UP] or [DOWN] buttons to set the hysteresis that will **turn off the temperature output** (e.g. by setting the temperature for turning of the relay to 30°C, and hysteresis to 5°C the relay will turn off if the temperature drops below 25°C).
If you set the hysteresis to 0 the temperature will be controlled according to the PID algorithm.
Press the [MODE] button on the lower display. HI.H will show up. Use the [UP] or [DOWN] buttons to set the hysteresis level that will **turn off the humidity relay** (e.g. set the humidity to 50% and hysteresis to 5%. The relay will be turned on when the humidity levels reach 50% and turned off when they drop below 45%).
Press the [MODE] button again. Setting the timer. The operating indicator flashes green. Set the time for **timer relay break**. The upper display shows the hours while the lower one shows minutes. Use the [UP] or [DOWN] buttons to set the hour value. Press the [MODE] button. Use the [UP] or [DOWN] buttons to set the minute value.
Press the [MODE] button again. The working indicator will flash red. The upper display shows hours and minutes, while the lower display shows [oN]. Set the **timer relay operation time**. Use the [UP] or [DOWN] buttons to set the hour value. Press the [MODE] button. Use the [UP] or [DOWN] buttons to set the minute value.
Press the [MODE] button again. [BEL] will appear on the upper display, while [ON] or [OFF] will appear on the lower display. Press [UP] or [DOWN] buttons to turn [On] or [OFF] **the buzzer sound**.
Press the [MODE] button again. The upper display will show the value for the alarm threshold, while the lower display will show [AL]. Set t**hreshold value** using the [UP] or [DOWN] buttons.
Press [MODE] button again briefly to exit programming mode and to save the settings in the memory of the device.
Press and hold the [MODE] button to enter the service functions. This model of the device can "scale" the thermometer and the hygrometer. If the temperature or the humidity measured with the reference thermometer and hygrometer deviates from the one measured by the controller, these deviations can taken into account when programming the device. When you enter the scaling function, the symbol [ot] will appear on the display. Set the value to compensate for the deviations in the range from -9.9 to +9.9 degrees. Press [MODE]. The symbol [oh] appears on the display. Set the humidity value in the range from -9 to +9%. These values will be saved in the memory of the device and will be subtracted or added to the measured value.
Press the [MODE] button again to enter the PID parameter settings. From there you can set:
P.- proportional constant - calculates the heating time according to the following formula: tp = P*dT*0.1s
I - calculates the heating time according to the following formula: ti=sum_of_measurements ((I*dT*0.1s)/100)
D - differential constant - calculates the heating time according to the following formula: td =D*ddT*0.1s
PE - the period when the reheating takes place.
Where: dT - difference between the current temperature and the one that has been set,
ddT -temperature increase
The total heating time is tc=tp+ti-td
Setting a negative hysteresis value will result in reverse operation for a given relay. Setting the negative hysteresis of the thermocontroller will change its operating mode to heating. Setting the negative hysteresis of the humidity controller will change its operating mode to humidifying.

Technical data:

-Measuring temperature	-50.....+120OC
-Thermostat working range	-50.....+120OC
-Measurement accuracy	±1°C
-Resolution	0.1°C
-Thermostat hysteresis adjustment	-9.9.....+120OC
-Humidity Measurement	10..... 99%
-Adjusting the humidity control threshold	10 ..... 98%
-Humidity control hysteresis	-9..... 9%
-TIMER's working range	1 sec... 99hrs
-TIMER's pause range	1 sec... 99hrs
-Display unit	LED 10mm red
-Operating temperature	0...50°C
-Data storage	non-volatile EEPROM
-Power supply voltage	230V~
-Capacity of relay contacts	Max.3A/230V
-Casing dimensions	72x72x72mm
-Dimensions of the mounting hole	65x65x80mm
- Length of the DS18B20 sensor cable	1.5 m (max 10m)
- Length of the humidity sensor cable	1.5 m (max 5m)

How to connect:



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