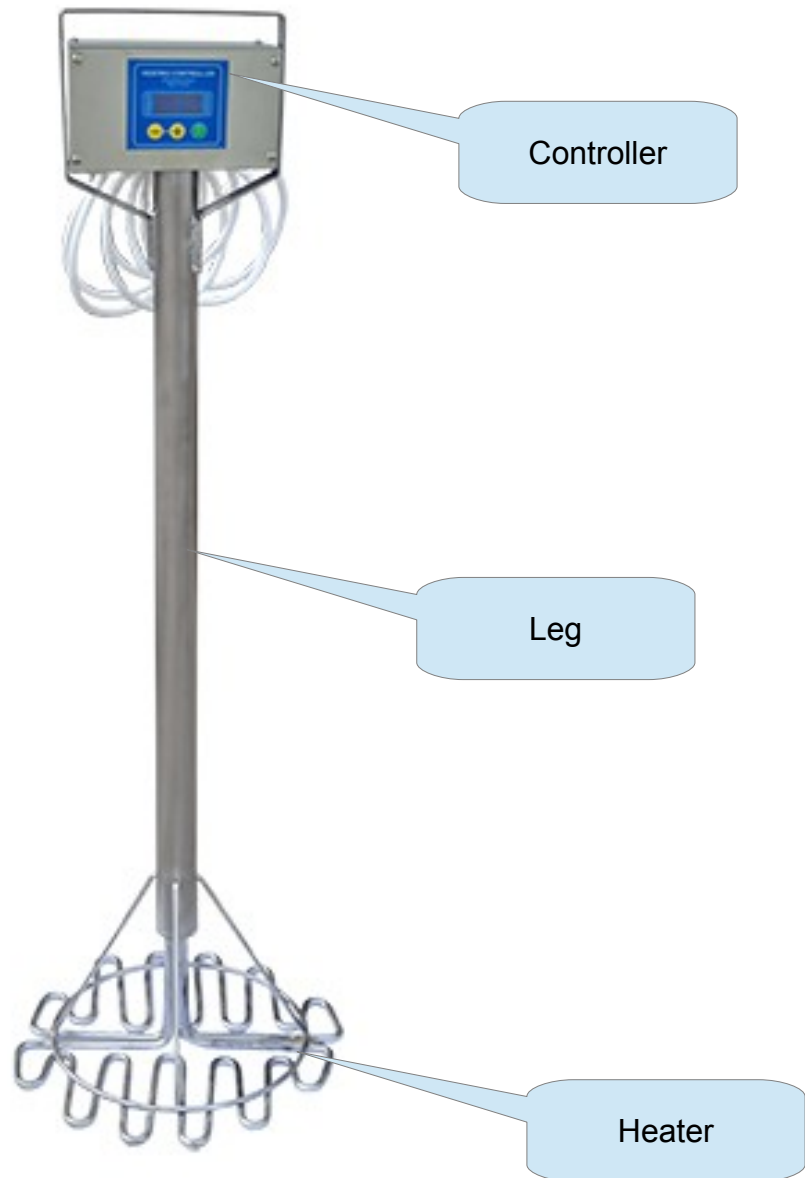


AHC-01

User's Manual



Honey Decrystallization Coil
Diameter: Ø 250mm, 330mm, 500mm

This device has been designed for honey decrystallization (in stainless tanks)



ELECTRICAL SAFETY

- 1) Device must be plugged into the grounded socket with voltage specified on the rating label.
- 2) Electricity supply must be fitted with a residual current device with a rated tripping current not exceeding 30mA. The operation of the overcurrent protection needs to be checked periodically
- 3) Check the condition of the cord periodically. If the supply cord is damaged and needs to be replaced, this function should be performed at the guarantor or by special service or by a qualified person in order to avoid danger. Do not use the device if the power cord is damaged.
- 4) In case of damage, in order to avoid hazard, repairs can only be carried out by a special service or a qualified person.
- 5) Pulling the cord is strictly forbidden. Keep the cord away from sources of heat, sharp edges and ensure it is in good condition



USAGE SAFETY

- This device is not designed to be used by persons (including children) under the age of 18 or/and with limited physical, sensual or psychological abilities or persons who do not have experience or knowledge of the device. Keep away from children!
- No children nor animals in the nearest proximity of the working device. Easily accessible elements get hot during work.
- No children getting near the device.
- Do not leave the working device unattended.
- Improper use may result in severe injuries.
- Do not use any abrasives, sharp tools, metal scrubbers nor any other non contact-with-food certified materials.
- Prior to first use unpack the device and wash it thoroughly with soft scrubber and contact-with-food certified detergents. Rinse thoroughly after washing. (more info on cleaning materials on www.lyson.com.pl)
- **Washing the plugged in device is strictly forbidden!** Unplug the device before performing any maintenance.
- Do not move nor relocate the device whilst in use as it may result in falling over or damaging the device.
- Use heat protective clothing as the coil gets hot during use

DECRYSTALLIZATION COIL - MAINTENANCE



IMPORTANT!

Prior to first use, clean and rinse the device thoroughly!

Unplug the device before performing any maintenance !!!

Prior to first use, clean and rinse the device thoroughly. Wash the device with hot water and small amount of detergent (food contact certified). The device should be washed with an anti-static cloth. Protect the electronic components from getting wet. Rinse thoroughly with clean water after washing and leave to dry. Having completed the process, wash and dry the device.

Store in dry place.

Do not perform any maintenance of any elements by the use of chemicals.

Honey decrystallization with an immerse heater

Place the coil onto the settler's surface filled with crystalized honey.

Plug the device in and set the temperature controller. (initially max. 35 °C until the heater has immersed).

During the initial phase of decrystallization watch the coil carefully so it does not fall over.

Do not leave the device unattended.



IT IS IMPORTANT to set the lower temperature initially i.e.: 35°C. Increase the temperature **gradually**.

The implemented controller allows you to set the temperature between 30-55°C

Honey decrystallization should be performed at maximum temperature of 35°- 40° degrees C.

(it is crucial not to overheat honey as it (similarly to pollen) loses its positive attributes over 40°C).

Fresh honey is dense and transparent. After some period of

time it crystalizes naturally.
 Heating honey up to 40°C and maintain it at this level for few days causes transition from crystalized state into the liquid one.



Pic.1. Temperature controller



Heater Type	Fuse
Ø 250mm	10 A
Ø 330mm	10 A
Ø 500mm	10 A

Ustawienie Sterownika

1. Before plugging, make sure that the control is disabled.
2. Switch (0/1) on the control panel should be set to "0" .
3. Having plugged, switch (0/1) on the control panel from position "0" to position "1"
4. The controller should be programmed according to your needs.
5. To enter the programming mode "Prog" during the controller's booting press "+" and "-" simultaneously

Programming begins with:

T1 - first parameter - that is the drying temperature. The value will reduce by pressing the "-" button and increase by pressing the "+" button. Confirm the choice by pressing "ON/OFF".

Next, set the working hours, the value will reduce by pressing the "-" and increase by pressing the "+", confirm the choice by pressing "ON / OFF"

and minutes of work. The value will reduce by pressing the "-" and increase by pressing the "+", confirm the choice by pressing "ON / OFF".

Go to parameters T2, T3, and the duration of each parameter.

When setting these three parameters, proceed as above.

After storing these parameters onto controller's memory for each of the 3 steps ,the temperature range will be displayed as well as the total working time.

The controller will automatically reset and launch working mode.

After pressing the "ON / OFF" the unit will start, when you press the "ON / OFF" once again the work will be suspended.

Sample settings of 3 parameters

Stages	T1	S
STAGE 1	T1 = 35°C	S = 2 hours and 15 min.
STAGE 2	T2 = 40°C	S = 3 hours and 15 min.
STAGE 3	T2 = 45°C	S = 3 hours and 30 min.

The controller (after switch on) will launch the selected cycles. First Stage 1 - warm up to 38 ° C and maintaining the desired temperature for 2 hours and 15 minutes. Subsequently, the driver switches to Stage 2 and raises the temperature to 39 ° C and this will be maintained for the next 3 hours and 15 minutes.

Then, the controller will enter Stage 3 and again raise the temperature to 40 ° C and that will be maintained for the next 3 hours and 30 minutes.

After the end of the cycle, the controller will turn off.

General Information

Microprocessor controller AHC-01 is a two-stage temperature controller executing the programmed heating cycle. Each heating cycle consists of 3 steps. For each of those steps one can define its duration and the temperature's stabilized value. After the cycle has completed (total time period defined in the cycle), the controller will switch itself off.

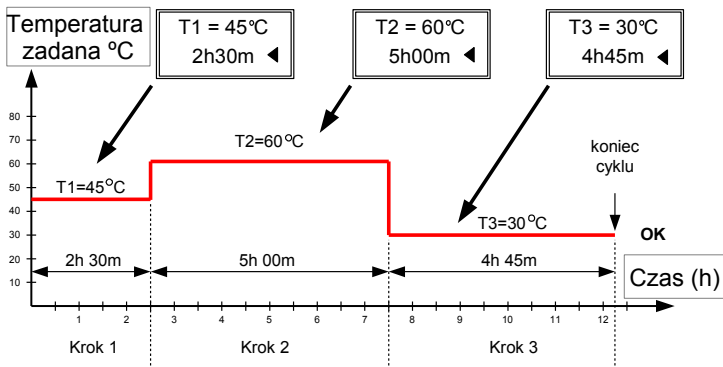


Fig.1 example of heating cycle: T1 = 45 ° C, 2h30m -> T2 = 60 ° C, 5h00m -> T3 = 30 ° C, 4h45m.

HEATING CYCLE PROGRAMMING MODE

In order to determine (programm) the heating cycle one should enter the cycle programming mode. Entering programming mode can only be done if the heating cycle is switched off and "+" and "-" are pressed simultaneously.

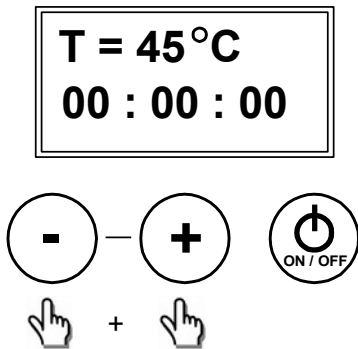


Fig.2 Enter the cycle's programming.

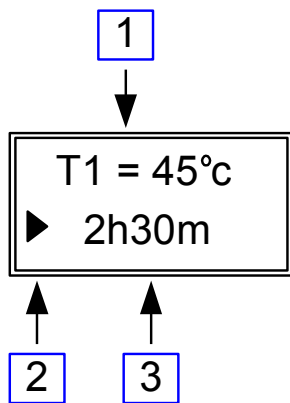
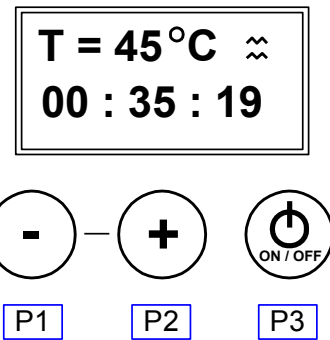


Fig.3. Cycle programming screen menu

Programming (inputting parameters of heating cycle) takes place on the screen menu programming mode (Figure 3). When programming the cycle for each step, we set the temperature [1] and the duration [3]. The value of the currently selected parameter, is modified by "+" and "-". The choice of the parameter to modify is done in the following sequence - by repeatedly pressing the "ON / OFF". Current, modified parameter is indicated by [2]. After entering the parameters onto the controller's memory each of the 3 steps on the screen there will be displayed adjustable temperature range - for example, in Figure 1 it will be: (30-60) ° C, and the total duration of the cycle. After short time the controller will automatically reboot and launch working mode, waiting to be activated.

WORKING MODE

This mode is the default mode in which the driver starts when you turn on the power. Manning the driver comes down to execution on or off the heating cycle (the P3) and selecting one of the three screen view mode.



Rys.4. Temperature controller's elements

ITEM DESCRIPTION	FUNCTION
P1	Changing the view of the currently displayed screen. After re-powering the controller will start displaying the last selected view.
P2	Changing the view of the currently displayed screen. After re-powering the controller will start displaying the last selected view.
P3	Enable / disable the heating cycle. The switch's state is stored even if there is a power failure. Holding the button while switching the cycle off will reset the cycle time and re-enable it will start a full cycle - performed by counting time from zero and re-checking if the the minimum temperature has been reached.

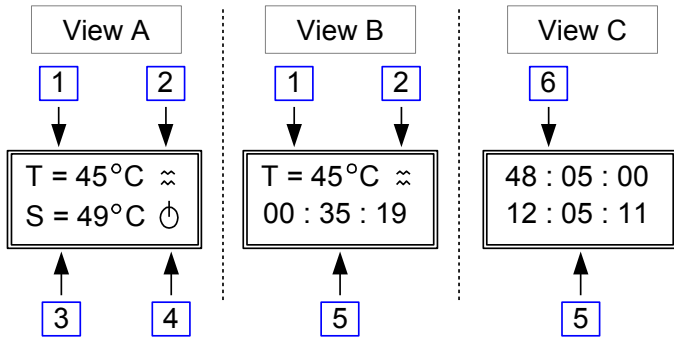


Fig 2 2. Work mode screen views

SCREEN VIEW	DESCRIPTION OF VIEW
A	Current temperature and temperature setpoint
B	Current temperature and implemented heating cycle.
C	Specified and elapsed time

DESCRIPTION OF ITEM	FUNCTION
1	current temperature - measured.
2	Heater control graphics. Heater turn on - graphics displayed, heater turned off - no graphics.
3	Set temperature - set during the programming cycle
4	Graphics indicating the controller's work. Cycle on – graphics on, cycle off – no graphics.
5	Heating cycle elapsed time
6	Heating cycle set time

TECHNICAL PARAMETERS

Each temperature controller AHC-01 consists of a microprocessor controller board (identical for all variants of the controller) and the power-executing module, connected with a driver by a special tape. The full set is also equipped with a dedicated, digital temperature sensor.

MICROPROCESSOR CONTROLLER	
Measured temperature range	0°C do +85°C
Stabilized temperature setting range:	+30°C do +55°C
Type of control:	Bistable (ON / OFF)
Resolution read / temperature settings:	1°C
Hysteresis of temperature adjustment	±1°C

Guaranteed accuracy of temperature measurement	±0.5°C within the range 0°C do 85°C
Heating cycle number of steps	3
Minimum step duration	1 minute
Maximum step duration:	32 hours 59 min.
Maximum total step duration:	≈ 99 hours (4 days 3 hours)
Default cycle parameters for Step 1	+45°C / 6h
Default cycle parameters for Step 2	+45°C / 21h
Default cycle parameters for Step 3	+45°C / 21h

ERROR CODES

Error messages :

- errors displayed on the screen indicated by "E-xxx" where xxx corresponds to the number of error as per the following table,
- error detection causes the immediate shutdown of the heating circuit
- Controller's restart can only be made after turning the power off, eliminating the fault and re-powering
- power cut erases the controller's error memory

ERROR CODE	ERROR DESCRIPTION
E-100	Program memory error
E-101	Configuration memory error
E-102	Memory error
E-200	Down / locked "-" button
E-201	Down / locked "+" button
E-202	Down / locked the "ON / OFF"
E-301	Sensor faulty
E-302	Sensor's temperature too high (value exceeds the range)
E-303	Sensor's temperature too low(value exceeds the range)
E-304	heating cycle temperature too high
E-305	Heating cycle temperature too low

E-304 – error indicated if the measured temperature exceeds the highest preset temperature cycle by 10 ° C.

E-305 – error displayed when despite the elapsed time of 2 steps, the measured temperature has not reached the threshold (minimum preset temperature less 5°C). Short beep indicates the minimum temperature reached.