

PRODUCT SPECIFICATION

Mini de-crystallising chamber 90 L



Name ID	Parameter W204100
Capacity	90 L (18 jars 900 ml)
Total Power	100 W
Temperature range	30 - 55°C
Internal dimensions	380x540x340 mm W x H x D
External dimensions	550x810x440 mm W x H x D
Heating controller	HC 01
No. of shelves	2
Fan	230V / 14 Wat
Heater	80Wat

De-crystallising chamber 490 L



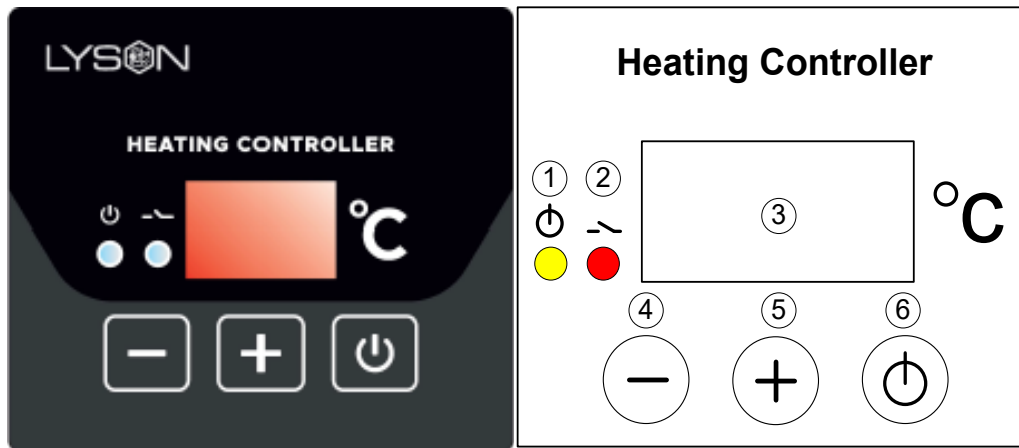
De-crystallising chamber for barrel/pallet



The adjustable fan (anemostat) is mounted from the top of the chamber. A thermal switch (by the temperature regulator) is mounted on the chamber. It switches on at the temperature of 80°C. The chambers are made of 4 cm thick polyurethane insulating plates, they are equipped with 4 castor wheels with brakes (chamber 490L) and 4 castor wheels without brakes (chamber for barrel / pallet). Shelves are made of stainless steel. The frame is made of black powder-coated sheet metal.

Name	Parameter	Name	Parameter	Parameter
ID	W204100A	ID	W40780	W40781
Capacity	490 L	Capacity	Beczka 300 kg	Paleta 120x120cm
Total Power	1kW	Total Power	2kW	2kW
Temperature range	30 - 55°C	Temperature range	30 - 55°C	30 - 55°C
Internal dimensions	690x1010x740 mm W x H x D	Internal dimensions	910x1220x1290 mm szer. x wys. x głębokość	1310x1220x 1290 mm szer. x wys. x głębokość
External dimensions	875x1205x865 mm W x H x D	External dimensions	1135x1290x1535 mm W x H x D	1520x1290x 1535 mm W x H x D
Heating controller	HC 01	Heating controller	HC 01	HC 01
No. of shelves	4	No. of shelves	0	0
Fan	230V / 14W	Fan	230V / 14W	230V / 14W
Heater	1kW	Heater	2kW	2kW

These devices are equipped with MHC 01 heating controller



1.1. Controller set up

1. Make sure that the controller is switched off before plugging the device in.
2. The main switch (0/1) on the control panel should be in position "0"
3. After plugging in, switch the main switch (0/1) on the control panel from position "0" to position "1"
4. Programmed the controller according to your needs.
5. Longer pressing and holding the button and then releasing it will start the mode of setting the work time indicated on the display with message (Pro.). In this mode, use the "+" and "-" buttons, to define the time after which the controller will automatically switch off. Exiting this mode and approval of the settings is performed by short pressing the "ON/OFF" button.

1.2. Starting work

1 - operation status

indicator lights on - temperature regulator is on, indicator does not light - temperature regulator is off (the controller works as a normal thermometer), indicator blinks - temperature regulator is on and preheating process is in progress

2 - heating relay state indicator

The indicator lights up - contacts of the relay are closed (heating on), the indicator does not light up - contacts are opened (heating off)

3 - display

Operation mode – default mode, automatically selected when the controller is powered on. The display indicates the measured temperature. The indications are given in °C.

Settings mode – selected by pressing the + or – button. The display indicates the set temperature. The value is displayed in °C. The value displayed flashes and after a while returns to the measured temperature display mode.

Run time setting mode (Pro.) - activated by pressing the "ON/OFF" button. The display indicates the operating time, counting from the moment of switching on, after which the thermostat will automatically switch off. The indication is given in hours.

Display brightness setting mode (d.br.) - activated by holding down the "ON/OFF" button. The display, with all segments lit, shows the currently set brightness. Reaching the setting limit is signalled by flashing.

The following modes are available after entering the appropriate code.

Calibration mode (CAL.) code L-1 – activated by holding down the "ON/OFF" button. The display shows the calibrated temperature (temperature measured taking calibration into account). The indication is given in °C.

Pre-heating time setting mode (P.tl.) code L-2 – activated by holding down the "ON/OFF" button. The display indicates the operating time, counting from the moment of switching on, for which the controller performs the preheating, maintaining the preheating temperature programmed by the manufacturer. The message "OFF" indicates that the preheating function is deactivated. The indication is given in minutes. If preheating is activated, the controller will display "HC2" at start-up.

Preheat temperature setting mode (P.tE.) code L-3 – activated by holding down the "ON/OFF". The display shows the preheating set temperature value. P... indicated in oC.

Preset temperature limit setting mode (L.t.h.) code L-4 – activated by holding down the "ON/OFF" button. The display shows the maximum value of the preset temperature that can be set. The L... indication is given in °C.

4 – button "-" decrease value

Operating mode – Pressing the button will decrease the set temperature value. During pre-heating the possibility of changing the set temperature is blocked.

Run time setting mode – pressing the button will decrease the time after which the thermostat automatically switches off.

Display brightness setting mode – pressing the button will decrease the brightness of the display.

Calibration mode – pressing the button will decrease the value of the indicated temperature, and thus calibrating the measurement.

Pre-heating time setting mode – pressing the button will decrease the time after which the thermostat automatically switches from the preheating phase to the heating phase.

Preheat temperature setting mode – pressing the button will decrease the value of the desired temperature to be maintained during preheating.

Preset temperature limit setting mode – pressing the button will decrease the value of the maximum preset temperature value that can be set.

5 - button "+" increase value

Operating mode – Pressing the button will increase the set temperature value. During pre-heating the possibility of changing the set temperature is blocked.

Run time setting mode – pressing the button will increase the time after which the thermostat will automatically switch off.

Display brightness setting mode – pressing the button will increase the brightness of the display.

Calibration mode – pressing the button will increase the value of the indicated temperature and thus calibrating the measurement.

Pre-heating time setting mode – pressing the button will increase the time after which the thermostat automatically switches from the preheating phase to the heating phase.

Preheat temperature setting mode – pressing the button will increase the preset temperature to be maintained during preheating.

Preset temperature limit setting mode – pressing the button will increase the value of the maximum preset temperature value that can be set

6 - "ON/OFF" button

Briefly pressing the button alternately turns the regulator on (ON) and off (OFF). In the OFF state, the regulator acts as a thermometer. In the ON state, the controller will turn the heater control output on and off to maintain the temperature set by the user.

Longer pressing and holding the button will activate the run time setting mode, indicated by the displayed message (Pro.). In this mode, using the "+" and "-" buttons, the user can define the time after which the controller will automatically switch off, i.e. go into the OFF state. Exiting this mode and confirming the settings is done by short pressing the "ON/OFF" button.

Longer pressing and holding the button starts the display brightness setting mode – indicated by the message (d.br.). In this mode, using the "+" and "-" buttons, the user can set the brightness of the display segments. Exiting this mode and confirming the settings is done by short pressing the "ON/OFF" button.

Longer pressing and holding the button activates the calibration mode which is indicated by a displayed message (CAL.). In this mode, using the "+" and "-" buttons, the user can adjust the temperature readings to the actual temperature value. Exiting this mode and confirming the calibration settings is done by short pressing the "ON/OFF" button.

Note – the controllers supplied are already calibrated.

Longer pressing and holding the button will activate the mode of preheating time setting indicated by the displayed message (P.tl.). In this mode, using the "+" and "-" buttons, the user can define the time after which the controller will automatically switch from the preheating phase to the actual heating phase. Switching off the preheating is indicated with "OFF" message. To leave this mode and confirm the settings press the "ON/OFF" button.

Longer pressing and holding the button will start the mode of setting the preheating temperature indicated by the displayed message (P.tE.). In this mode, using the "+" and "-" buttons, the user can define the desired temperature to be maintained during pre-heating. To exit this mode and confirm the settings press the "ON/OFF" button.

Longer pressing and holding the button will activate the mode of setting the preset temperature limit, signalled by the displayed message (L.t.h.). In this mode, using the "+" and "-" buttons, the user can set the upper limit of the desired temperature setting. To exit this mode and confirm the settings press the "ON/OFF" button.

Note – all settings and operating status (on or off) of the controller are stored in the controller's memory.

Access codes

During start-up of the controller (displayed controller's name, software version, settings values) press and hold the "-" and "+" buttons. After displaying "-" - - " buttons may be released and the appropriate code may be entered. The code is confirmed with the "ON/OFF" button.

CODE	ACCESS LEVEL
Random	L-0
157	L-1
314	L-2
628	L-3
942	L-4

Run time setting mode (code L-0)

Display brightness setting mode (code L-0)

Calibration mode (code L-1)

Pre-heating time setting mode (code L-2)

Preheat temperature setting mode (code L-3)

Preset temperature limit setting mode (code L-4)

1.3. Error codes

The MHC-01 controller features advanced error detection algorithms. The detection of any error triggers an emergency stop action and brings up the error report screen. The error report screen is displayed continuously. It is therefore necessary to turn off the power, remove the source of the error and turn the controller back on.

ERROR CODE	DESCRIPTION
(E-0) CPU STATUS	Internal controller fault
(E-3) $T < T_{min}$	T1 measured temperature too low.
(E-4) $T > T_{max}$	T1 measured temperature too high.
(E-5) Button -	pressed/faulty „-„ button
(E-6) Button +	pressed/faulty „+„ button
(E-7) Button ON/OFF	pressed/faulty „ON/OFF“ button

1.4. Controller's specifications

CONTROLLER SPECIFICATIONS (FOR FW: 0.1 VERSION)	
Measuring range*:	-50°C ... +250°C
Read-out resolution:	0,1°C
Measurement accuracy	± 1,5 °C
Minimum set temperature value:	30°C
Maximum set temperature value:	Range: 45°C ... 95°C
Run time setting range:	1 ... 96 hours
Preheating temperature range:	30°C ... 40°C
Preheating time range:	0 ... 60 minutes
Adjustment mode	Two way
Electrical parameters	
Main circuit power supply:	12VDC ±10%, Min. 200mA
PCU voltage	100...240VAC 50/60Hz
Thermometer connection:	PT1000
Connection type:	Relay, NO type connector
Max connection load:	AC1 - 9A 230V
Max heater power:	2000W 230VAC
Trwałość łączeniowa wyjścia:	> 3 x 10 ⁴ for 10A 230VAC
Max connection cycles AC1	600 cycles/h
Work conditions requirements	
Controller's work temperatures:	0°C...55°C
Storage temperature:	0°C...60°C
Humidity:	Max 65% dla 25 °C