



# OPERATING MANUAL CUSTOMER LEVEL

Heat Pump Regulating Control  
web control® 321

**YOUR WAY TO  
INDEPENDENCE.**



Clean, economical and efficient  
use of energy.

# OPERATING MANUAL CUSTOMER LEVEL

Heat Pump Regulating Control web control® 321

## Safety Notice



Any changes and/or manipulations that differ to the specified described factory settings and changes **will invalidate the warranty.**

Turn off the heat pump at the heating emergency switch before opening the case. Or remove the fuse from electrical circuit board.



**Heliotherm Wärmepumpentechnik Ges.m.b.H.**

Sportplatzweg 18

A-6336 Langkampfen /Tirol



+43 (0) 5332 87496-0



+43 (0) 5332 87496-30



info@heliotherm.com

**www.heliotherm.com**

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### 1 CONTROL ELEMENT

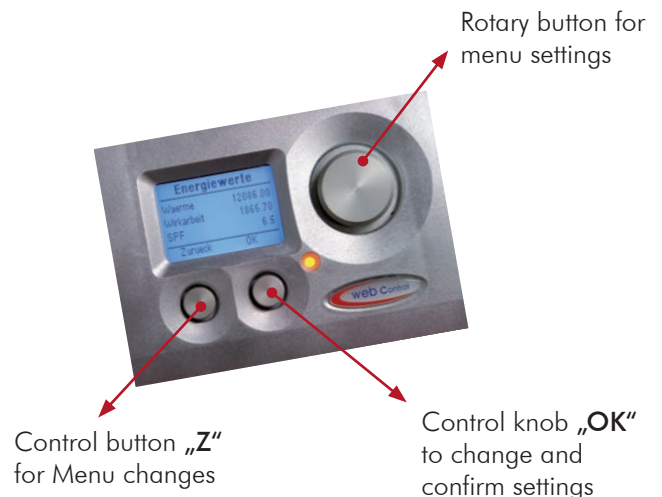
#### 1.1 Control Element web Control 321



#### 1.1 Menu Control

The menu can be controlled with 3 elements:

- For menu changes press the left button „Z“ key, to exit the previous level or the current level.
- To confirm and change values press the right button for „OK“. The menu selection is controlled with the right rotary button.
- Press the rotary button to obtain information about the current settings.



## 2 MAIN SETTINGS HEATING and MIXER

This menu displays the main parameters such as date, time, type of request setting, room temperature, domestic hot water temperature, and heating outlet time with current operating setting status.

**Date & time display:** DD.MM.YY hh:mm

*Clock settings see page 7, chapter - Time program.*

Main Setting	
31.07.03	10 : 23
Oper. mode	Summer
Demand	DHW
Menu	Ok

### 2.1 Operating Mode Setting

- a) Off: frost-safe
- b) Automatic: automatic DHW and heating
- c) Summer: prepare DHW
- d) Continuous oper.: Heating curve increase of 3 K
- e) Decrease mode: Heating curve decrease of 3 K
- f) Vacation: frost-safe, date adjustable
- g) Party: continuous mode is 2 hours
- h) Cooling: DHW and cooling

#### Changing operating mode



Turn the knob until your choice is displayed.

Activate your choice by pressing OK and turning the knob further to make another choice.

Confirm

*The current request is shown below (heating, domestic hot water, buffer tank and concrete dry out time).*

### 2.2 Daytime Room Temperature Setting

Settings for 10 - 30 °C.

The actual room temperature (actual space) is only displayed when a room temperature sensor is connected to the control unit.

Current status of - Heating time program

Current status for DHW

Main Setting	
Demand	DHW
Room	-Off- 20 C
DHW (44)	-Nor- 45 C
Menu	Ok

#### Changing the daytime room temperature setting



Turn the knob until your choice is displayed.

Activate your choice by pressing OK and turning the knob further to make another choice.

Confirm



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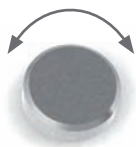
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### 2.3 Evening Room Temperature Setting

- The evening room temperature is automatically reduced with the **decrease temperature**.
- Time setting changes can be made in Menu Time Prog./Heating (as described on page 7).
- The decrease temperature changes can be made in Menu - Heating/Target value, which are set to - 3 Kelvin. (description on page 15)

### 2.4 Domestic Hot Water Temperature Settings

Setting range is 10 - 60 °C.



Turn the knob until your choice is displayed.



Activate your choice by pressing OK and turning the knob further to make another choice.



Confirm

Main Setting	
Room	-Nor- 20 C
DHW (44)	-Off- 45 C
BU_T (30)	25 C
Menu	Ok

### 2.5 Inlet Temperature Display

Left - Display Is-Inlet\_temperature

Right - Display of Inlet target\_temperature

The Inlet temperature results from the Heating curve (HC), the set Time program and the room correction factor.

(Time program settings: see page 7/Time program settings/Heating main settings)

Main Setting	
DHW (44)	-Off- 45 C
IH_temp. (27)	10 C
Blocked time	00:26:14
Menu	Ok

### 2.6 Display of Current Heat Pump Counter Status

The current heat pump mode is displayed in the left field. In the second row, right field is the remaining time until the setting expires and the heat pump changes to the next mode.

Display:

- a) Locked time: Time delay - hh:mm:sec
- b) OTm\_CP: Heating outlet time of circ. pump
- c) OTm\_ESP: Heating\_outlet time of energy source pump.
- d) Inject time: Expansion valve opens at start value.
- e) Start time

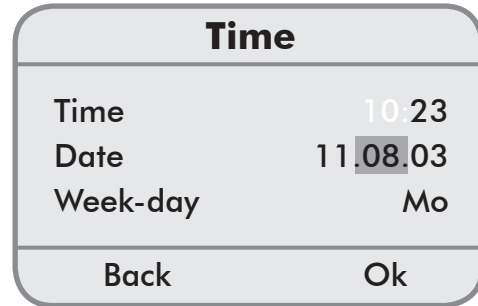
Main Setting	
IH_temp. (27)	10 C
Locked time	00:26:14
Menu	Ok

### 3 TIME PROGRAMS

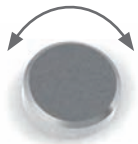
This section describes the settings for time, time intervals for heating, hot water, circulation pump, holiday and party.

#### 3.1 Time Setting (Time)

Here you can change and set the time, date and weekday.



##### Changing Time and Date



Turn the knob until your choice is displayed.



Activate your choice by pressing OK and turning the knob further to make another choice.



Confirm

#### 3.2 Heating Time Program Setting (TP-Heating)

This program sets the switching times of the Heating cycle.

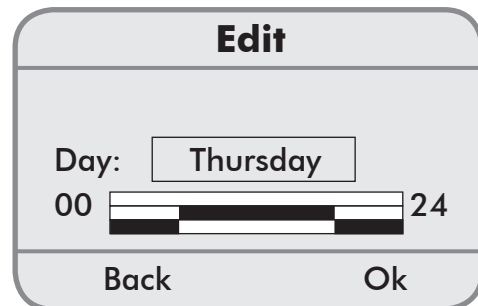
The heat pump is standard delivered with the following heating program parameters:

**Switch time 1:** MO - SU Decrease oper. mode from 00:00 to 06:00

**Switch time 2:** MO - SU Decrease oper. mode from 22:00 to 24:00

During the period which no switch time is defined, the time program will remain in normal operating mode.

If you wish to make changes in the switch times, go in to Menu - „Edit“.



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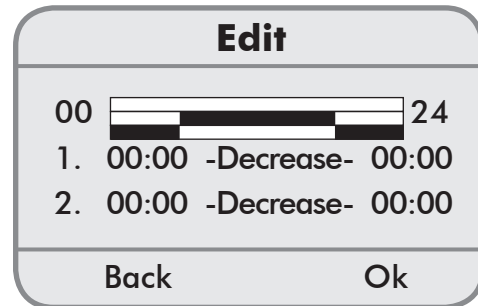
- **Edit:**

a) Select a desired day of the week. (MO-SU).

b) To „Edit“ select a switch time.  
After choosing the switch time, (1,2) you can specify its Start and End time point. The minimum time interval is 15 minutes.

For each day, up to 7 switch times may be performed. If a new switch time is defined, (switch time: 3, 4, 5), a new status and the switch times are to be entered (00:00 to 00:00) for Heating, Normal operation, and Decrease settings.

c) Diagram view:  
1. Row - Heating display  
2. Row - Normal operation display  
3. Row - Decrease display



### Changing values



Turn the knob until your choice is displayed.

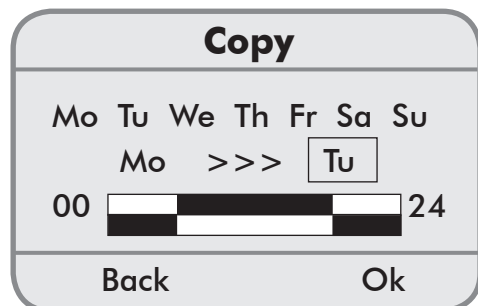
Activate your choice by pressing OK and turning the knob further to make another choice.

Confirm

- **Copy:**

The first row displays the days that are identically set.

A different days switch time can be copied in the next row.



### Copying switch times



Turn the knob until your choice is displayed.

Activate your choice by pressing OK and turning the knob further to make another choice.

Confirm

Back to main menu time program



### 3.3 Domestic Hot Water Time Program Setting (TP DHW)

This program determines the switch times for hot water preparation.

The heat pump is standard delivered with the following Domestic Hot Water program parameters:

**Switch Time 1:** MO - SU On from 05:00 to 20:00.

During the time period which no switch time is defined, the program remains inactive (off). The minimum DHW will be used as the „turn on again point“, during the „off“ operating mode. The DHW temperature will be heated to about 5 K over the DHW min. temperature and then deactivated again.

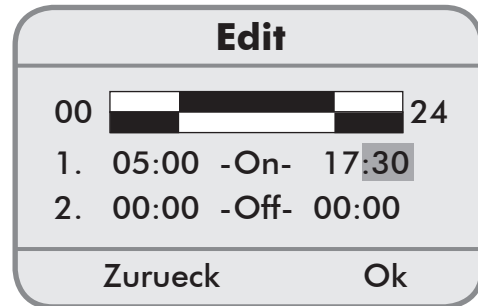
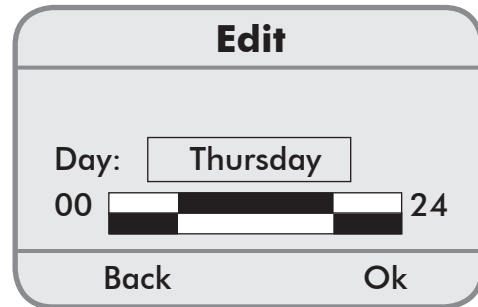
If you wish to make changes to the switch times, go to Menu - „Edit“.

- **Edit:**

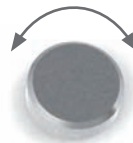
- Select the desired day (Monday - Sunday).
- To „Edit“ select a switch time.  
After choosing the switch time, (1) you can specify its Start and End time point.  
The minimum time interval is 15 minutes.

For each day, up to 5 switch times may be performed. If a new switch time is defined, (switch time: 2, 3, 4, 5), a new status and the switch times are to be entered (00:00 to 00:00).

- Graph view:
  - Row - Display On
  - Row - Display Off



Changing values



Turn the knob until your choice is displayed.



Activate your choice by pressing OK and turning the knob further to make another choice.



Confirm

# OPERATING MANUAL CUSTOMER LEVEL

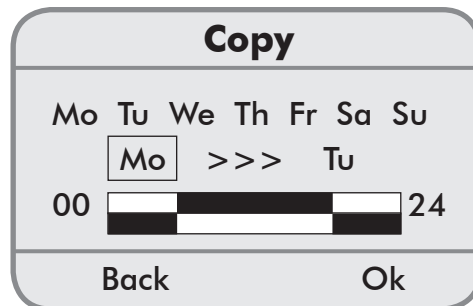
## Heat Pump Regulating Control web control® 321

If you wish to copy the set switch time of a day to another day(s), click on Menu „Copy.“

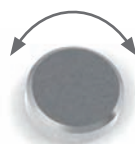
- **Copy:**

The first row displays the days that are identically set.

A different days switch time can be copied in the next row.



### Copying switch times



Turn the knob until your choice is displayed.



Activate your choice by pressing OK and turning the knob further to make another choice.



Confirm



Back to main menu time program

---

### 3.4 Circulation Pump Time Program Setting (TP Circ. Pump)

This program determines the switch times for the circulation pump.

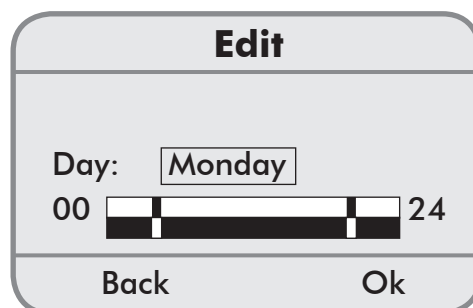
The heat pump is standard delivered with the following circulation pump parameters:

**Switch time 1:** MO - SU on from 06:00 to 06:30

**Switch time 2:** MO - SU on from 17:00 to 17:30

During the time period which no switch time is defined, the program remains inactive (off).

If you wish to make changes to the switch times, go to menu „Edit“.



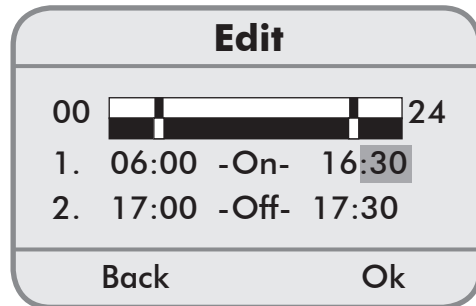
• **Edit:**

- a) Select the desired day (MO - SU).
- b) To „Edit“ select a switch time.  
After choosing the switch time, (1) you can specify its Start and End time point.  
The minimum time interval is 15 minutes.

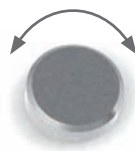
For each day, up to 5+ switch times may be before med.

If a new switch time is defined, (switch time: 3, 4, 5), a new status and the switch times are to be entered (00:00 to 00:00).

- c) Graph View:
  - 1. Row - Display On
  - 2. Row - Display Off



Changing values



Turn the knob until your choice is displayed.



Activate your choice by pressing OK and turning the knob further to make another choice.

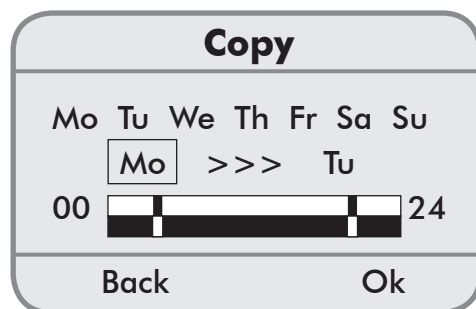


Confirm

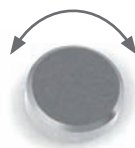
If you wish to copy the set switch time of a day for another day, click on Menu „Copy.

• **Copy:**

The first row displays the days that are identically set.  
A different days switch time can be copied in the next row.



Copying switch times



Turn the knob until your choice is displayed.



Activate your choice by pressing OK and turning the knob further to make another choice.



Confirm



Back to main menu time program

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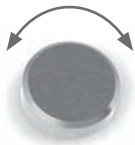
### 3.5 Vacation Time Program Setting (Vacation)

This program defines the length of time the HP should run in Frost-safe mode (off). The HP returns to the previously entered operating mode after the set time has expired.

**This setting should be cautiously set during Winter holidays. The HP program will complete the set times entered under Holiday/Depart and Holiday/Arrive program.**

Vacation	
Depart	13. 08. 08
Arrival	14. 08. 08
Activ	-On-
Back	Ok

#### Changing values



Turn the knob until your choice is displayed.

OK

Activate your choice by pressing OK and turning the knob further to make another choice.

OK

Confirm

Z

Back to main menu time program

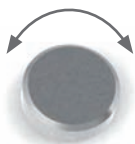
### 3.6 Party Time Program Setting (Party)

This program defines the length of time the HP should run in Frost-safe mode (off). The HP returns to the previously entered operating mode after the set time has expired.

The program is standard pre-defined to 2 hours.

Party	
Heat Tm:	02: 00
IHT min	30 C
Back	Ok

#### Changing values



Turn the knob until your choice is displayed.

OK

Activate your choice by pressing OK and turning the knob further to make another choice.

OK

Confirm

Z

Back to main menu time program

## 4 TEMPERATURES

### 4.1 Temperatures Display

This program displays all relevant heating temperatures such as, outside temperature and current temperature values.

- a) **Outside Temperature specified in °C**  
The value in parenthesis (\*) is the current temperature value, the other value is the average temperature value of the last 30 minutes.
- b) **Room temperature specified in °C**  
(displayed only when a room temp. sensor is present)
- c) **Domestic hot water temp. specified in °C**  
(displayed only when the installation is connected to a DHW unit)
- d) **Outlet Temp. specified in °C**
- e) **Inlet Temp. specified in °C**
- f) **Discharge Temp. specified in °C**
- g) **Evaporating Temperature specified in °C**
- h) **Evaporating Pressure specified in bar**
- i) **Condensing Temperature specified in °C**
- j) **Condensing Pressure specified in bar**

Temperatures	
Outside temp. (15)	16.0 C
DHW temp.	23.8 C
Outlet temp.	20.0 C
Back	

- k) **Sub-cooling Temperature specified in °C**
- l) **Fresh Water System Temperature specified in °C**  
(displayed only when a DHW and a Fresh water system are present)
- m) **Suction Line Temperature min. specified in °C**  
(displayed only for Air, Brine and Ground Water HP)
- n) **Energy sources - In-let temperature specified in °C**  
(displayed only for Air, Brine and Ground Water HP)
- o) **Energy sources - Outlet temperature specified in °C**  
(displayed only for Air, Brine and Ground Water HP)



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### 5 OPERATING HOUR METER

#### 5.1 OHM- Operating Hour Meter Display (Operating Hrs)

The maximum display of the OHM is 99,999 hours.  
The OHM can be reset by your heating specialist to 0.

The OHM program is divided as follows:

##### 1) OHM - Compressor:

- a) Total operating hours
- b) DHW
- c) Heating
- d) Switch impulse
- e) Beginning date of measurement

OHM Compressor	
Total	00110 h
DHW function	00050 h
Heat funct.	00060 h
Back	Ok

##### 2) OHM Pumps:

- a) Heating circulation pump - Switch impulse HCP
- b) DHW pump - Switch impulse DHW pump
- c) Circulation pump - Switch impulse Circulation pump
- d) Energy source pump - Switch impulse Energy source pump
- e) Beginning date of measurement

OHM Pumps	
HCP	00027 h
Switch impulse	00002
	-----
Back	Ok



## 6. HEATING CYCLE (Heating)

The Main Menu has already explained the Heating target value settings. Additional Heating target values can be set on Menu- Heating/Target value.

In addition to Target room temperature settings, this menu contains settings for increase heat temp. and decrease temp.

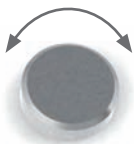
### 6.1 Desired Values

- a) **Room desired temperature specified in °C**  
For changes see Main Menu page 5/Daytime room temperature settings.
- b) **Increase heat temperature specified in Kelvin**  
The inlet heating desire value can be set higher by raising the increase temperature at certain times of the day (switch time settings in program are adjustable) thus avoiding delay in additional switch on times.
- c) **Decrease temperature specified in Kelvin**  
The inlet temp.- desire value of the heating system can be reduced for the evening decrease mode in the decrease temperature setting (switch time is adjustable in time program). The factory HP setting at delivery is 3 Kelvin.
- d) **Time program**  
Display of Time program status with resulting target value settings.

Desired_val.	
Desire Rm	20 C
IHT min	10 C
Incrheat Tp	3 K
Back	Ok

Desired_val.	
Incrheat Tp	3 K
Decr. Tp	-3 K
Tprog.	-Nor- 20 C
Back	Ok

#### Changing temperatures



Turn the knob until your choice is displayed.



Activate your choice by pressing OK and turning the knob further to make another choice.



Confirm

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### 6.2 Heating Curve (HeatCurve)

The heating curve peak describes the relationship between heat producer, i.e. inlet temperature change to outside temperature change and refers to the heat calculation underlying the deepest outdoor temperature.

An adjustment of the heating curve should basically only be done in small steps and with long time intervals ensuring steady condition can set in.

Adjustments are recommended in steps of 1-2 Kelvin in each case after 1-2 days. The most frequently occupied room should be used when observing the room temperatures.

During the regulating phase, additional external heat sources, such as fireplaces, stoves, etc. should not be used. No excessive ventilation should be performed during the observation period, as to not disturb the regulating process. With a correct heating curve setting, the room temperature remains constant despite all outside temperatures.

When the heating curve is properly adjusted, the indoor room temperature remains constant, despite outdoor temperature changes.

HeatCurve		
IH Desd	18 C	22 C
IH Desd	0 C	27 C
IH Desd	-15 C	30 C
Back		Ok

#### Heating Curve Setting:

IH_tgt._val with	Display Heating limit	15 to 30 °C
IH_tgt._val with	0° C	20 to 40 °C
IH_tgt._va with	-15° C	25 to 55 °C

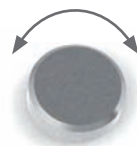
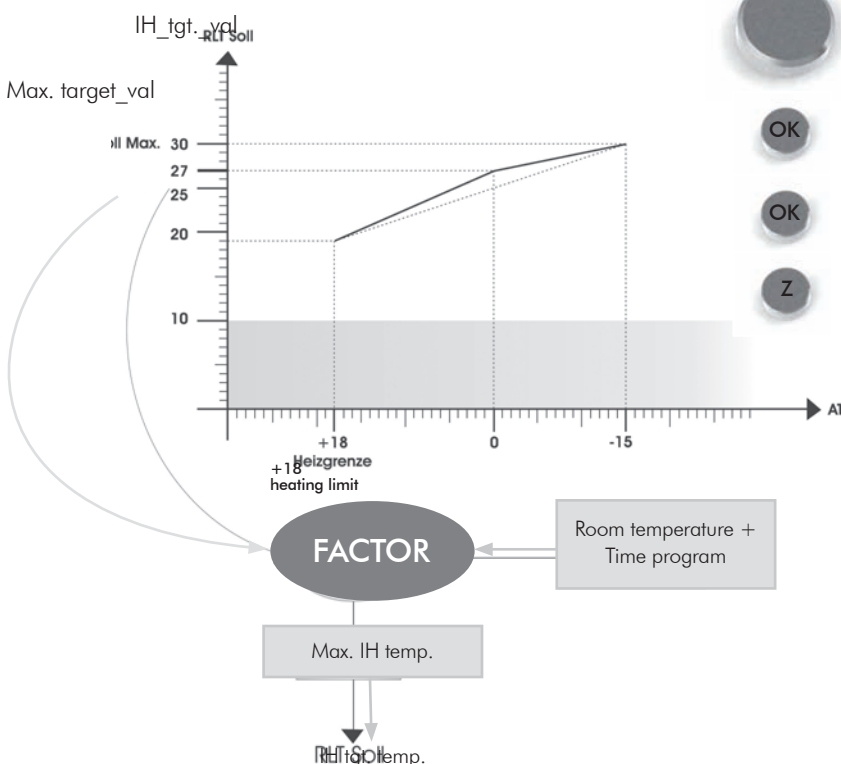
#### Factory Setting:

IH_tgt._val	20 °C at 18 °C Outside temperature
IH_tgt._val	25 °C at 0 °C Outside temperature
IH_tgt._val	30 °C at -15 °C Outside temperature

These values are suitable for underfloor heating.

#### Changing operating mode

- **Heating Curve View:**



Turn the knob until your choice is displayed.

OK

Activate your choice by pressing OK and turning the knob further to make another choice.

OK

Confirm

Z

Back to main menu time program

## 7 PREPARE DOMESTIC HOT WATER

### 7.1 Prepare Domestic Hot Water (DHW)

- **DHWP:**

- a) **Normal DHW temperature:**

The temperature may fall about 5 K hysteresis within the time program, then hot water will be prepared!

See basic menu page 8/Setting DHW temperature.

- b) **Minimum DHW temperature:**

The DHW temperature can be reduced to a minimum for the night decrease mode.

If the time program is set to normal, then the normal DHW temperature value will remain.

Is the time program deactivated, the minimum hot water temperature will be used as base point.

Switching time point and temperatures are adjustable in the time program.

Desired_val.	
DHW Norm	45.0 C
DHW Min	10.0 C
Back	Ok

Desired values adjusting range: DHW norm 10 bis 75 °C  
DHW min 5 bis 45 °C

### 7.2 Domestic Hot Water Circulation (DHW Circ.)

The task of a circulation system is to provide the consumer with hot water as quickly as possible when tapping for hot water.

There are 2 different ways:

- a) **Time-controlled operation of the circulation pump:**

Counter: Yes, switching time points in the time program are adjustable.

The factory default setting is switched to No.

- b) **Flow monitor in the hot water pipe:**

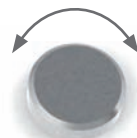
After opening a tap, the circulation pump will be turned on, and off again after adjusted time.

The circulation pump remains off during the turn on delay time.

Tapping acts as a remote control.

DHW Circ.	
After.runTm	00:01:00
Turn on delay	00:10:00
Counter	No
Back	Ok

Changing operating mode



Turn the knob until your choice is displayed.



Activate your choice by pressing OK and turning the knob further to make another choice.



Confirm



Back to main menu time program

**Circulation Settings:**

After run time:	1 to 15 min.
Repeat turn on delay:	1 to 10 min.
Counter:	Yes/No
Flow monitor:	flow monitor status displayed

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### 8 MANUAL

This menu displays all analog inputs and outputs and digital types which are manually set.

The setting „manual“ can ONLY be performed by the **heat pump installer/heating expert**.

<b>Manual</b>	
DHW_temp.	
Buffer_temp	
Main Switch	
<b>Back</b>	

### 9 SAFETY

The sub-menu „retrieve“ displays, whether the individual safety-related components are working properly (OK) or faulty settings and/or errors (alarm) show up.

<b>Safety</b>	
HP switch	OK
Condens._press.	OK
Condens._temp.	OK
<b>Back</b>	<b>Ok</b>

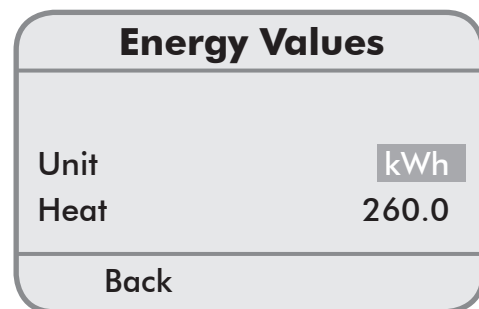
## 10 EFFICIENCY

Provided that a calorimetric meter or an electric meter is installed with the heat pump, then the present meter readings in the field of heat quantity can be read in kWh or cumulated electric power consumption.

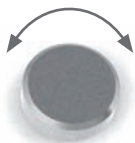
Under SPF data point (Seasonal Performance Factor), is displayed the heat pump's total seasonal performance.

### Energy Values

- a) Unit/Choice of unit kWh or MWh
- b) Heat
- c) Electric consumption
- d) SPF/SPF total specification
- e) Measured since/Start-up date



### Changing temperatures



Turn the knob until your choice is displayed.

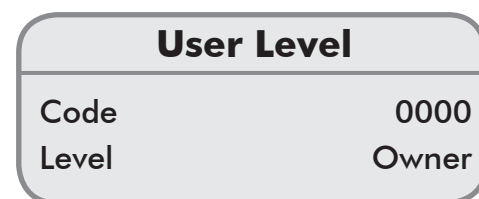


Activate your choice by pressing OK and turning the knob further to make another choice.



Confirm

## 11 USER LEVEL



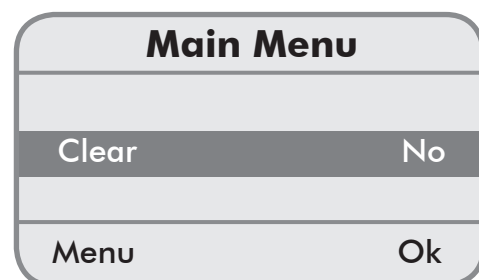
## 12 CLEAR

If the heat pump should switch to „Error“ due to an operational error (red LED), e.i. a sensor has exceeded the specified limit, select in Main Menu „ Clear“ then press the function „Yes“.

This resets the error and the heat pump operation will be restarted.

Should there be a defective heat pump component, this Error message will be displayed again.

Contact your heating expert contractor should this occur.







## 13 MENU TREE

### 13.1 Main Menu:

Main settings	Sub-menu on page 5
Time programs	Sub-menu on page 7
Temperatures	Sub-menu on page 13
Operating Hrs	Sub-menu on page 14
Heating	Sub-menu on page 15
DHW	Sub-menu on page 17
Mixer 1*	
Mixer 2*	
Solar installation*	
Manual	Sub-menu on page 18
Safety	Sub-menu on page 18
Efficiency	Sub-menu on page 19
User level	Customer/Technician/Expert
Clear	Sub-menu on page 19

\* Depending on heat pump type, software and settings.

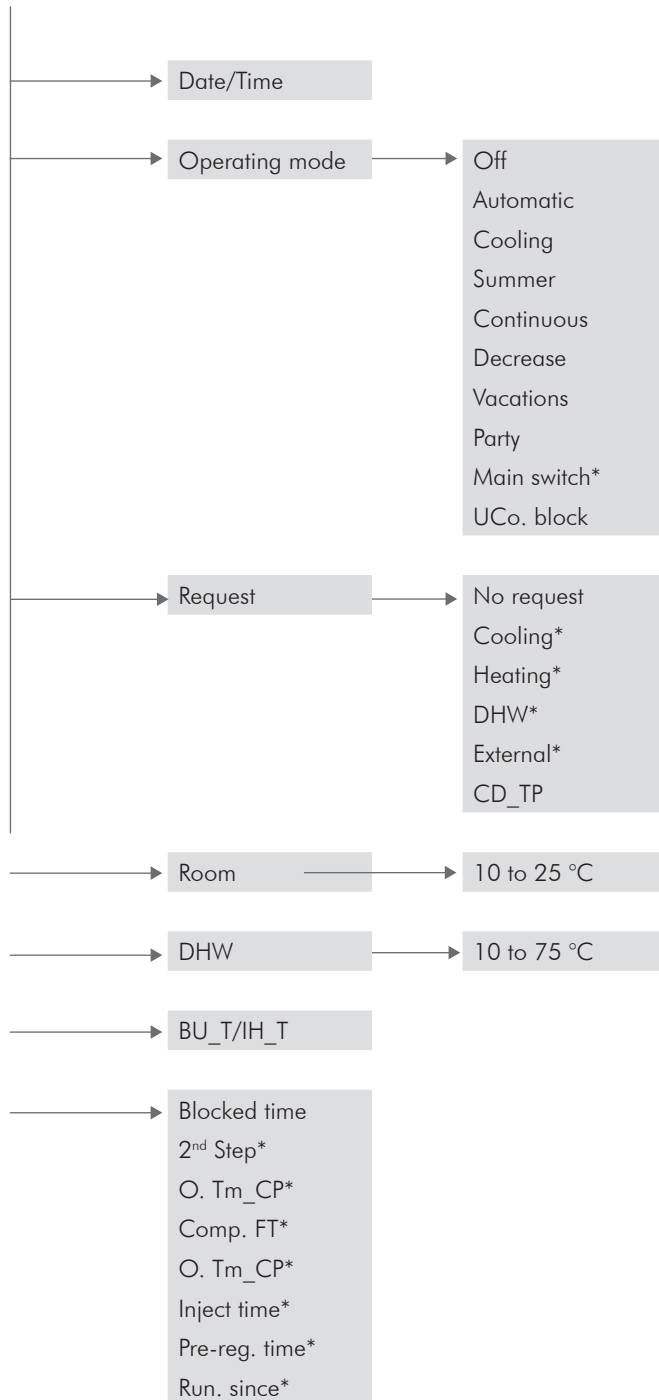
# OPERATING MANUAL CUSTOMER LEVEL

## Heat Pump Regulating Control web control® 321

MAIN MENU

### 13.2 Main Settings:

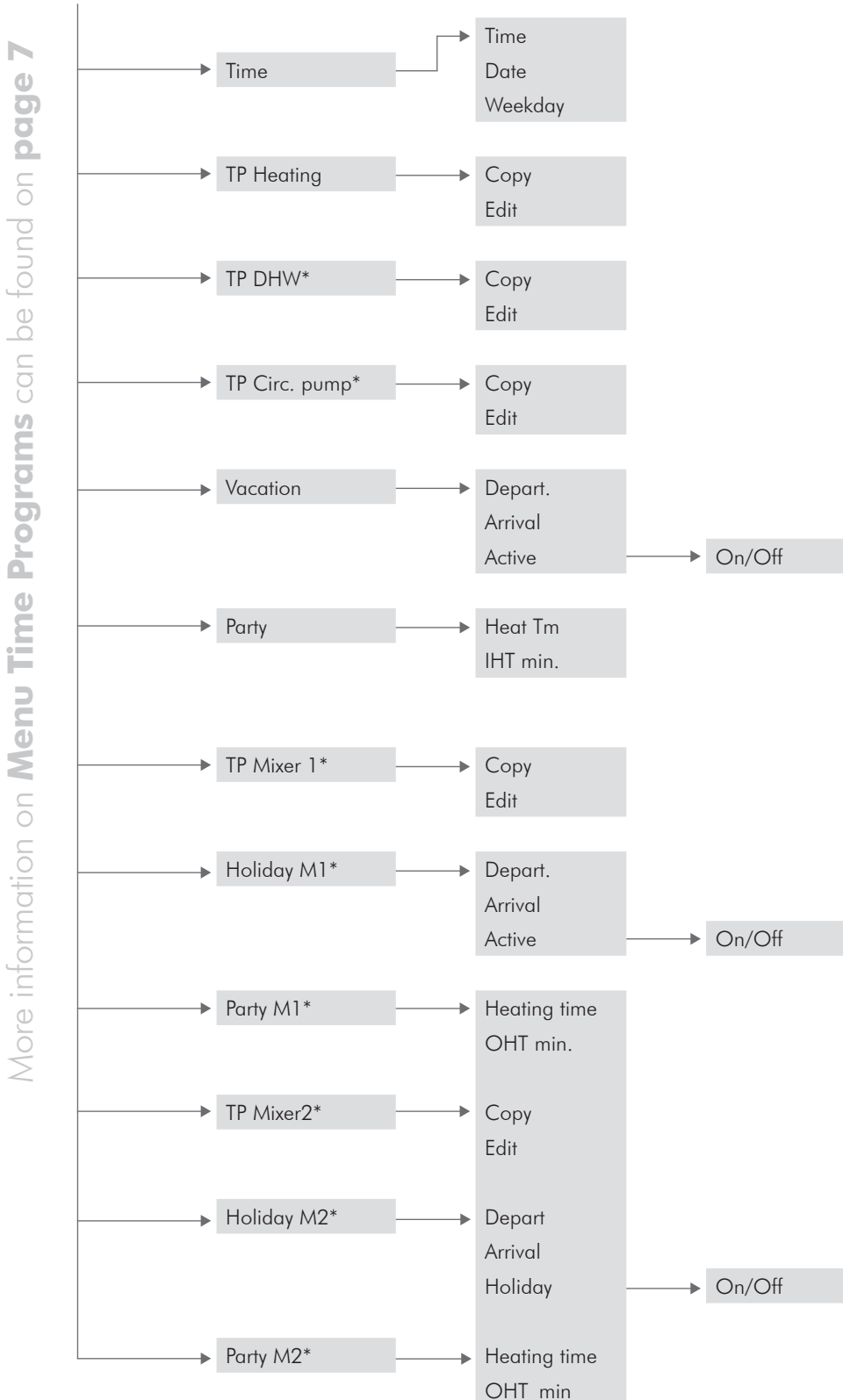
More information on **Menu Main Settings** can be found on **page 5**



\* Depending on heat pump type, software and settings.

MAIN MENU

13.3 Time Program Settings:



\* Depending on heat pump type, software and settings.

# OPERATING MANUAL CUSTOMER LEVEL

## Heat Pump Regulating Control web control® 321

MAIN MENU



### 13.4 Temperatures:

More information on **Menu Temperatures** can be found on **page 13**

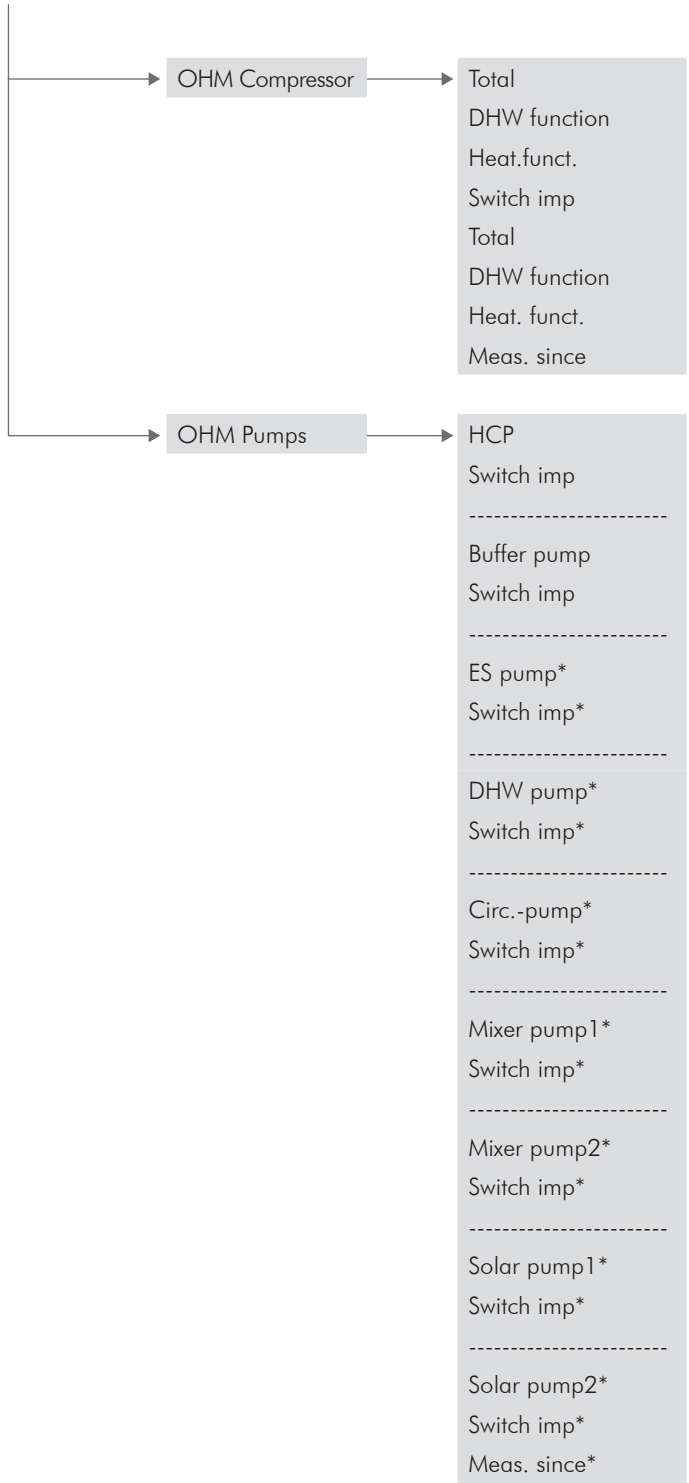
- Outside temp.
- Room\_temp.\*
- DHW\_temp\*
- Outlet\_temp
- Inlet\_temp
- Buffer\_temp\*
- Disch\_temp
- Air inlet temperature\*
- Comp\_oil\_temp.\*
- Suction line temp.\*
- FWS temp\*
- Evapor\_temp.
- Evapor\_press.
- Condens.\_temp.
- Condens.\_press.
- Sub-cooling\*
- M1 outlet\_temp.\*
- M1 inlet\_temp.\*
- M2 outlet\_temp.\*
- M2 inlet\_temp.\*
- Solar KT1\*

\* Depending on heat pump type, software and settings.

MAIN MENU

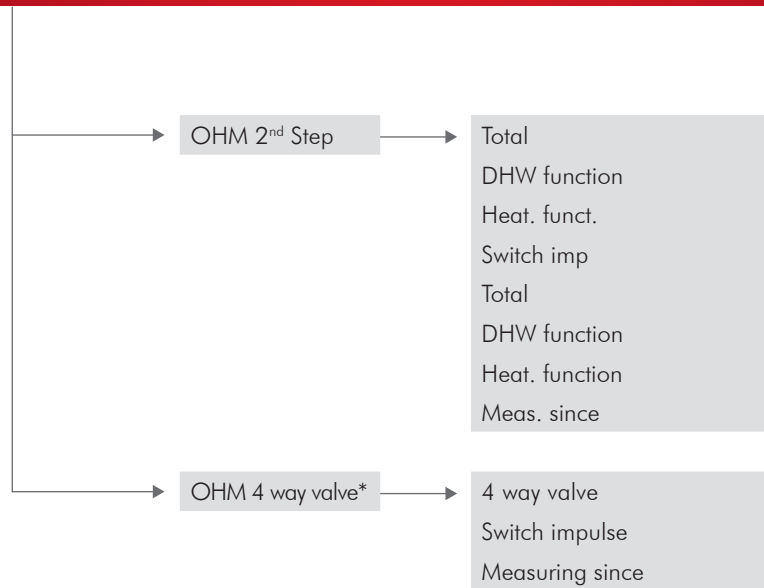
13.5 Operating Hours:

More information on Menu OHM can be found on page 14

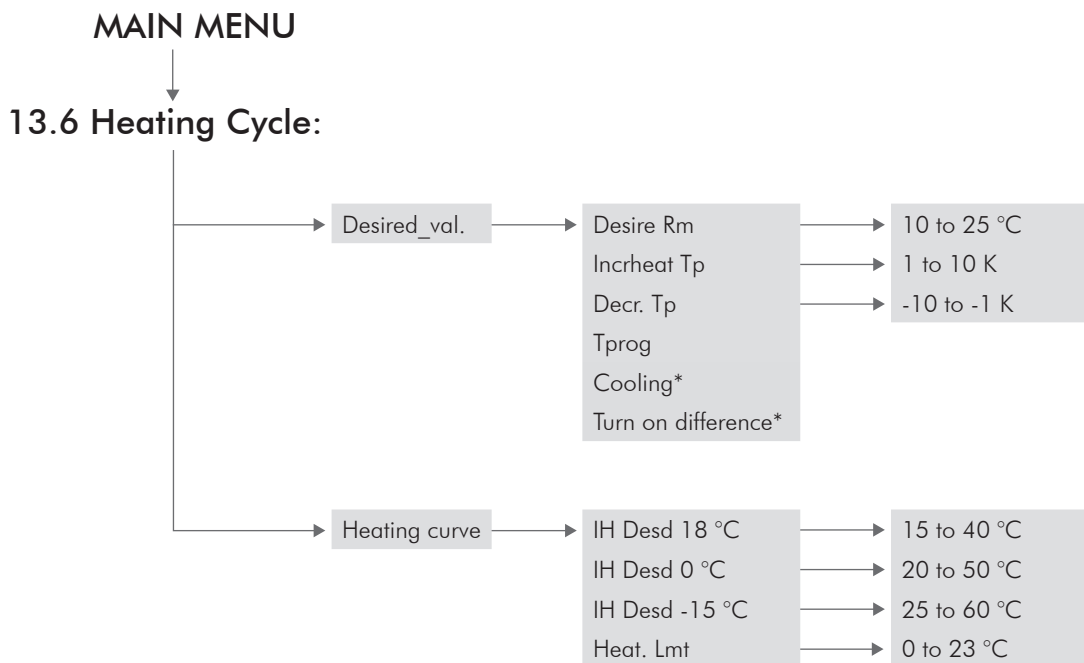


# OPERATING MANUAL CUSTOMER LEVEL

## Heat Pump Regulating Control web control® 321

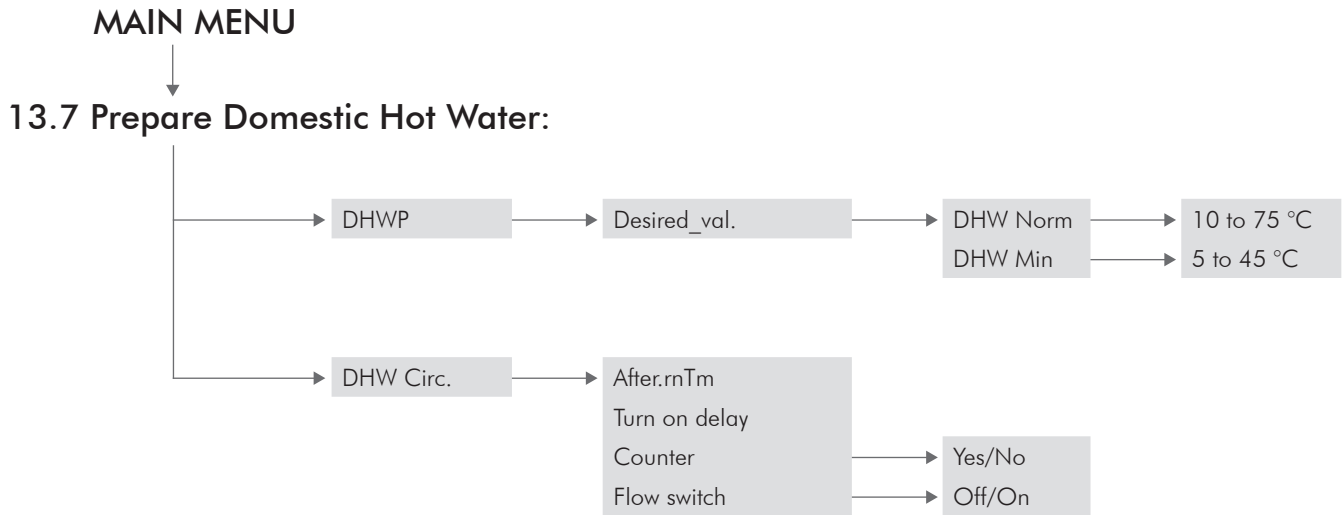


\* Depending on heat pump type, software and settings.

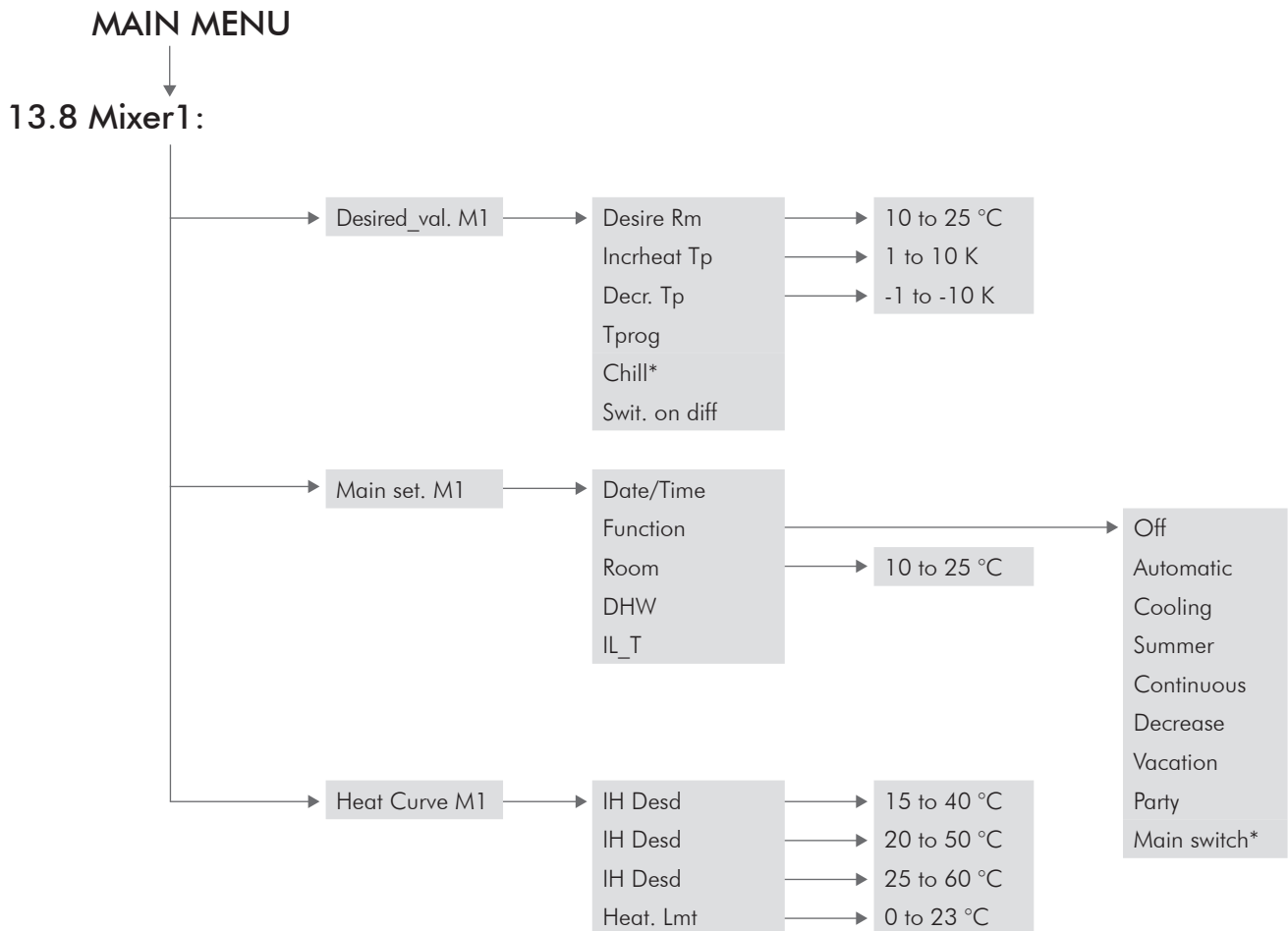


More information on **Menu Heating Cycle** can be found on **page 15**





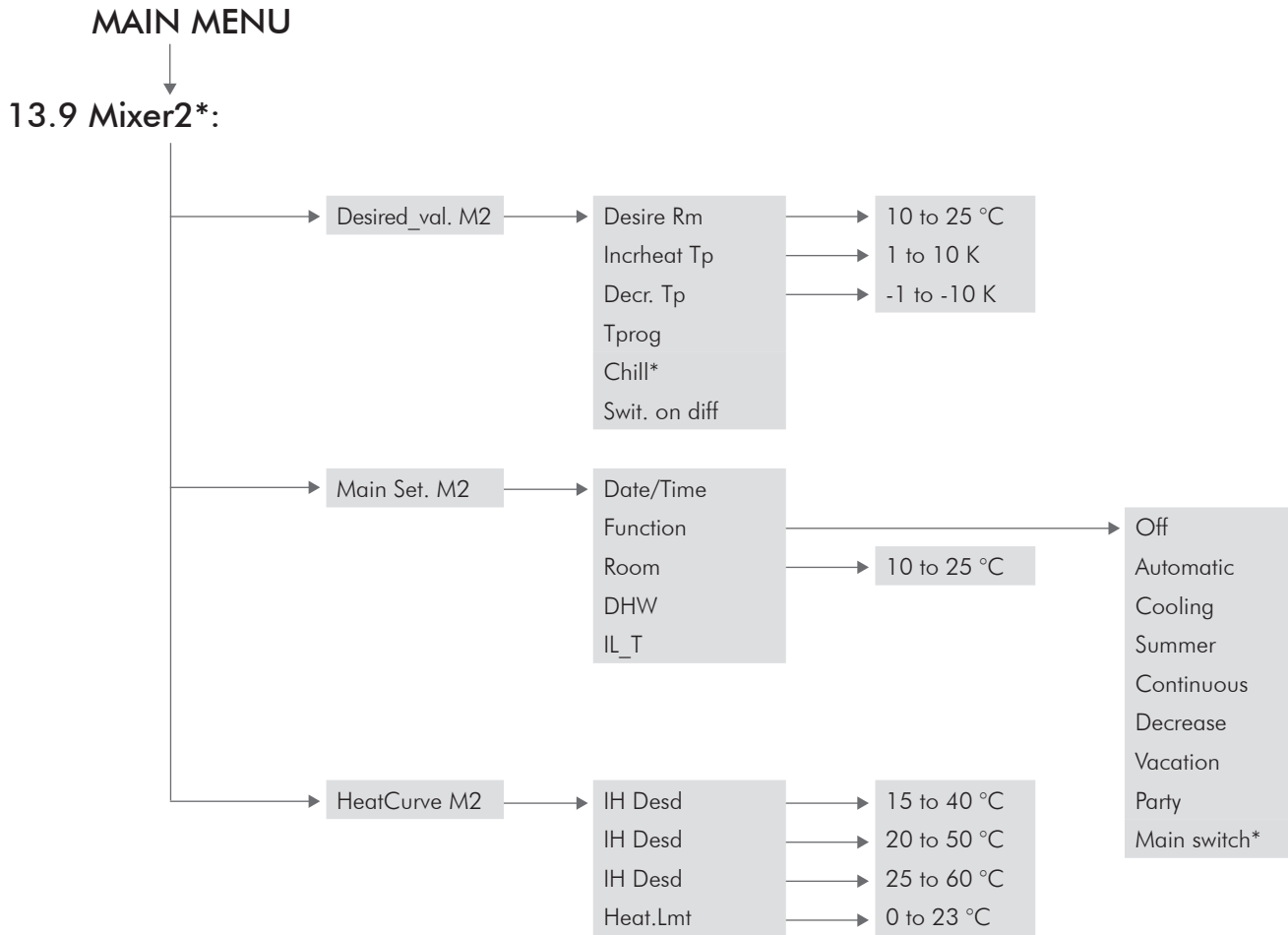
More information on **Menu DHW** can be found on **page 17**



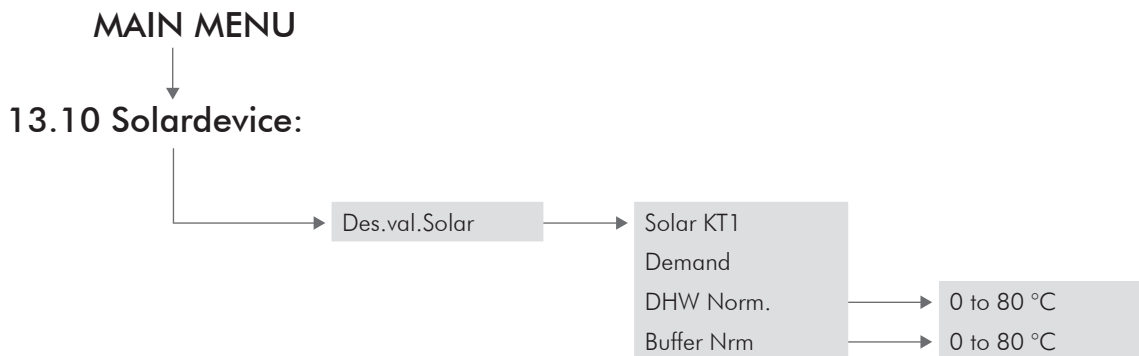
\* Depending on heat pump type, software and settings.

# OPERATING MANUAL CUSTOMER LEVEL

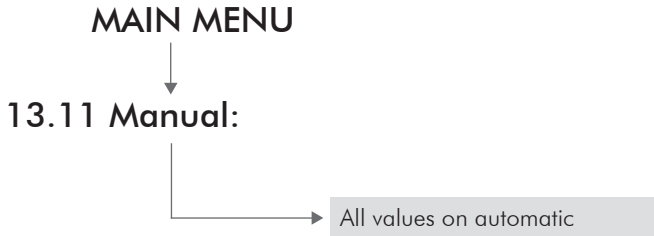
## Heat Pump Regulating Control web control® 321



\* Depending on heat pump type, software and settings.

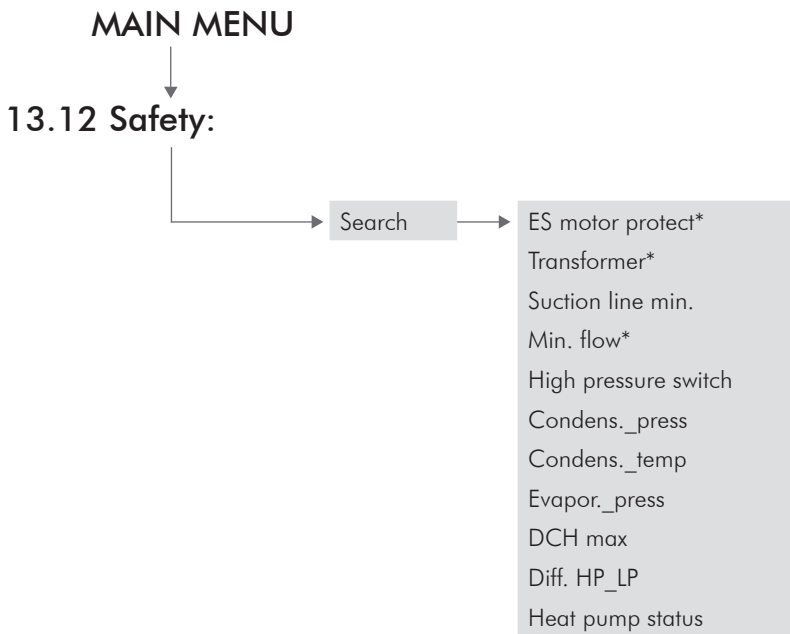


\* Depending on heat pump type, software and settings.



More information on **Menu Manual** can be found on **page 18**

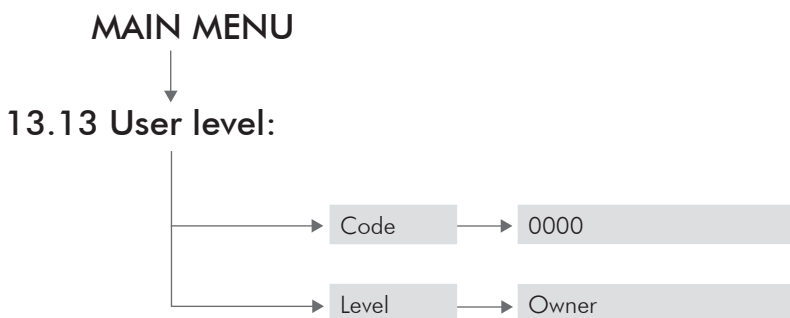
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\* Depending on heat pump type, software and settings.

More information on **Menu Safety** can be found on **page 18**

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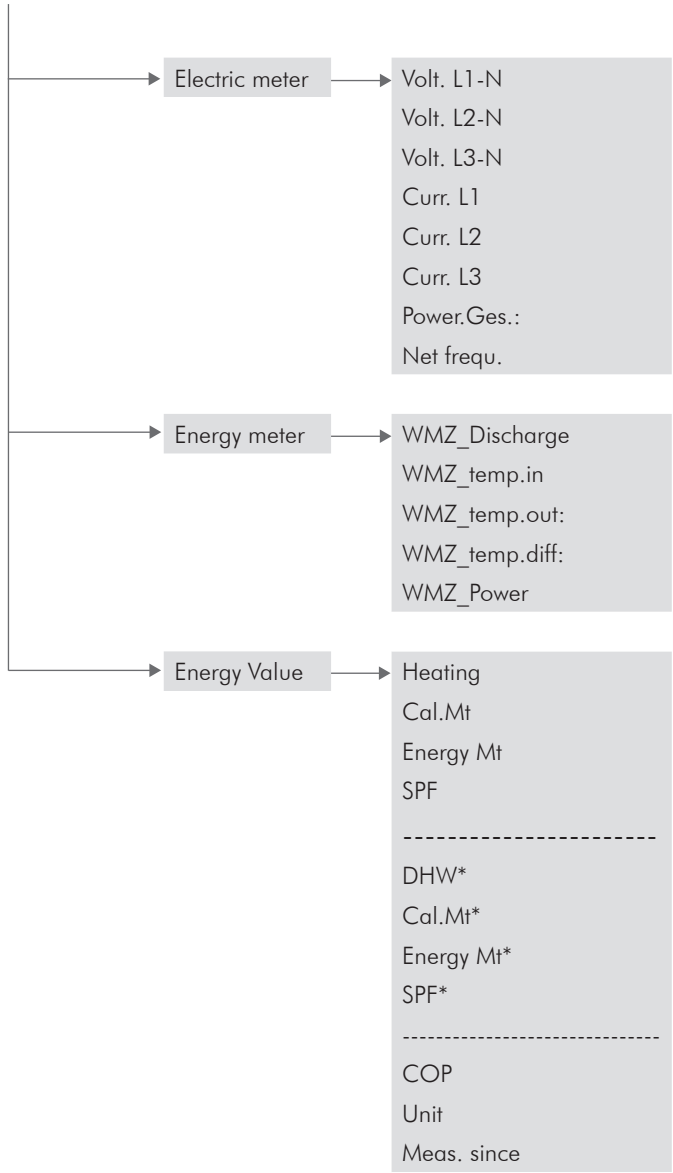
# OPERATING MANUAL CUSTOMER LEVEL

## Heat Pump Regulating Control web control® 321

More information on **Menu Efficiency** can be found on **page 18**

### MAIN MENU

#### 13.14 Efficiency:\*



\* Depending on heat pump type, software and settings.

### MAIN MENU

#### 13.15 Clear:





MAIN MENU



13.16 Vacuum:



# OPERATING MANUAL CUSTOMER LEVEL

## Heat Pump Regulating Control web control® 321

### HELIO THERM - GENERAL SAFETY INFORMATION

#### User Responsibilities:

Heliotherm heat pumps are designed and manufactured in harmonized accordance to the European and national guideline standards. This ensures maximum security.

This security can only be guaranteed when the heat pump operator works with the utmost care and takes all necessary measures of expert installation.

The operator must ensure that:

- The heat pump is used only for its intended area of use (see the Heliotherm technical product folder, or Heliotherm expert level manual)
- The heat pump is set to operate under good operating condition. In particular, make sure that the heat pump safety devices are regularly tested and are in proper function.
- Proper working clothes are to be provided for operating, maintenance and repairs.
- Heliotherm operating manuals, including technical wiring diagrams are to be available at site and in proper legible condition.
- Only suitably qualified and authorized persons are to operate, maintain and repair the heat pump.
- All safety and warning labels are NOT to be removed and should remain legible for everyone!

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#### Safety Symbols Explanation

In this manual, the following safety symbols are used. They are to inform the reader with special attention to the text on this safety labels.



**DANGER!**  
Life and health threatening!



**WARNING!**  
Hazards to machine, material or environment



**NOTICE!**  
Information to better understand the heat pump's processes.



### Basic safety measures

Heliotherm instructions should be kept close to the heat pump unit, so that the assigned person can make necessary changes or adjustments.

Make sure all safety notices and signs on the heat pump are always in good legible condition. All damaged or illegible safety signs and notices must be replaced immediately!

Before beginning with the Starting-up phase of heat pump, please be sufficiently informed on the following:

- 1) Handling and setting regulating control safety features.
- 2) On site, check over thoroughly for any damages to the heat pump. Any damages or defects detected should be taken care of or reported to the Heliotherm expert partner.
- 3) Always make sure that only certified installers are working on the heat pump unit and that no other person is endangered during the Start-up phase of the heat pump.
- 4) All items and other materials that are not needed for the operation of the machine should be removed from the working area.

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### Working on electrical equipment

All electrical work on the heat pump is to be performed by a qualified electrician only and carried out without electrical voltage.

Periodically check the electrical equipment. Ensure all terminal connections are not loose, damaged cables must be replaced immediately!

All electrical cables should be enclosed. Never clean electrical equipment with water or similar liquids!

# OPERATING MANUAL CUSTOMER LEVEL

## Heat Pump Regulating Control web control® 321

### Protecting the environment

Take special precautions with the setup and maintenance as well as the shutdown of a heat pump unit; that substances that are dangerous to the environment do not burden the ground or drains, such as grease, oils, coolants, solvents cleaning fluids and the like. These substances should be collected in appropriate containers, be stored, transported and disposed of properly.

**Environmental protection and prevention with proper waste disposal is to be conscientiously met in your local area!**

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### Heat pump modifications

Any planned changes to the heat pump must be approved in writing by Heliotherm or Heliotherm expert partner.

For safety reasons, any unauthorized changes made without Heliotherm unapproval or a Heliotherm expert partner will void the warranty.

Only original spare parts and original accessories are to be used when servicing the heat pump. All parts are designed specifically for the heat pump and made to fit according to standards. When using other components not expressly authorized, we render no guarantee that other used parts will function or fit properly and comply with safety standards.

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### Special Hazards

**Please take special attention to special hazards which can lead to serious injury or damage to the heat pump.**

When setting up the heat pump the following points must be observed:

- Leaking of lubricants may cause burns when coming in contact with skin.
  - There are sharp corners in the heat pump which can cause injury when the heat pump cover is open.
  - Electrostatic procedures can damage electronic components.
  - Improperly fastened heat pump parts can fall or overturn.
  - Always turn-off heat pump unit first and allow it to cool prior to performing work on the compressor. Serious danger of burns may occur since the surface temperature can be over 100 C°.
  - Incorrectly cable line layout, e.g. in a too small radius can lead to melting and burning of cables.
- .....





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