## HELTUN HEATING THERMOSTAT HE-ZW-THERM-FL2 USER MANUAL V1.0

#### OVERVIEW

This is a programmable electronic room heating thermostat for flush mounting into most standard wall boxes. It is designed to maintain a constant ambient temperature, the criteria of which can be simultaneously either floor, room or both temperature sensors. It is recommended for the control of electric heating devices (radiators, convectors, electric fireplace), boilers or electric under floor heating. The heating element is directly controlled by a single pole switch. The maximum loading for the thermostat is 16A over which a contactor will be required. (16A-3600W @ 220V/240V.)

The thermostat has an LCD screen, six sensitive capacitive touch control buttons and two temperature sensors (external NTC floor sensor and a built-in room air temperature sensor). The thermostat is also equipped with built-in humidity, illumination and energy consumption sensors

The thermostat has an integrated 5th generation secure Z-Wave module which allows to use the device with Z-Wave Home Automation systems such as Fibaro, Vera, Zipato, SmartThings, Z-Way, HomeSeer and others. The thermostat can be associated and control up to 10 Z-Wave devices (relavs, switchers etc.)

One of six operation modes can be selected either manually or via the Z-Wave controller / gateway. The 6 operating modes are: COM - most comfortable (full power) mode, TIME control the temperature by day time, DRY - floor quick drying mode, ECO - energy saving mode, VAC - vacation mode and MAN - manual control mode. The thermostat protects the floor from overheating by automatically switching off the load when the temperature reaches a maximum of 40°C.

The LCD screen with white icons has a user-friendly interface, displaying: floor temperature, air temperature, humidity level, user set temperature, operating mode, time, weekday, relay and Z-Wave network statuses.

## TECHNICAL SPECIFICATIONS

- Front frame dimensions: 89x89x9mm
- Back dimensions: 53x53x28mm
- · Material: Flame retardant plastic, tempered glass
- · 4 frame colors: Silver, Chrome, Black, White
- · 6 glass colors: White, Black, Yellow, Green, Red, Blue
- LCD: 73x42mm, black with white icons.
- · 6 sensitive capacitive touch buttons
- Operating temperature: 0°C +50°C
- Power supply: 100V 230VAC, 50Hz/60Hz
- Power consumption: 1.5W
- Maximum resistive load: 16A, 3600W @220V
- Relav life time: 100.000 switches
- Internal ambient brightness sensor
- Internal temperature sensor
  - Measurement range: -30°C to +80°C
  - Accuracy: ±0.5°C
- Internal humidity sensor
- Measurement range: 0 80%RH
- Accuracy: +3.0%RH External floor temperature sensor
- NTC 10kOhm
- Measurement range: -30°C to +80°C
- Accuracy: ±0.5°C Energy consumption meter
- IP class: IP21
- Z-Wave Plus SDK: V6.71

## FUNCTIONAL SPECIFICATIONS

- Inclusion/exclusion into/from z-wave network Non Secure
  - S0 secure
  - S2 unauthorized, S2 authorized
- Association control of 10 devices from network
- 6 operation modes with individual temperature set point;
- COM, ECO, VAC, DRY, TIME, MANUAL 4 time schedule for 7 days of the week:
- · Morning, Day, Evening, Night Choosing a temperature sensor for operation:
- · Floor temperature only
  - Air temperature only
  - Floor + Air temperature
- Power regulator (Automatic ON/OFF timer)
- Usable with different NTC-sensor (1kOhm 100kOhm)
- · Temperature sensors calibration
- Temperature set intervals: 4.0°C to 37.0°C
- Temperature limiter: 40.0°C
- Choosing a temperature hysteresis: 0.1°C 9.5°C
- · Choosing a degree (Celsius / Fahrenheit)
- · Adjustable LCD brightness: Auto or Manual
- LCD standby mode

- · Child lock (touch buttons lock)
- Consumption meter
- Factory reset
- OTA function (Firmware update over the air).

# INSTALLATION

We recommend the installation conforms to your local regulations and is undertaken by a qualified electrical engineer. Positioning of the thermostat is of the utmost importance and must be away from sunlight and sources of direct heat. We recommend installation about 1.5 metres above the floor

TIME MODE

and increasing in the evenings and early mornings.

regime then begins at 23.30 (bedtime)

Adjust home temperature according to personal habits by reducing it whilst away from home

The thermostat can be set individually for morning, day, evening and night. For example, it

can be assigned for Morning period start at 7.00, then Day starting at 9.00 (when absent for

work etc.), then Evening starting at 18:00 (half an hour before occupants return). The Night

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To set up the time and temperature for each period go to the Time menu by pressing and

To set up the start time for each period choose the period by pressing the 🕘 key than adjust

the time by pressing the and key for increase or MODE key for decrease. Do this action for all

To set up the temperature choose the week day by pressing the or key, choose the period by

pressing 🕘 key and adjust the temperature by pressing "+" or "-" keys. Do this action for

Note: TIME mode works only in case of the correct time being set. The time can be

automatically corrected by polling from your gateway if the Parameter 8 value is 1 or set

Note: In the TIME mode the SET POINT of the thermostat will be automatically changed

depending on the period. The SET POINT can be adjusted manually out of the TIME menu

To activate the settings mode, press and hold the de key for 3 seconds. The display will show

the settings menu. In the top left corner is the parameter number, in the left bottom corner is

the parameter display indication (the parameter name) and in the right top corner is the

To scroll the menu navigation just press the www. key to go up and the MODE key to go down.

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To leave the Settings mode to go to the main display mode press and hold the & key for 3

The thermostat will automatically leave to the display mode if no action is detected for 10

285

ZANG

MODE

holding the (1) key for 3 seconds. The display will show the Time menu

manually in Parameters 10, 11 and 12 in the settings menu

To change the parameters value press the "+" or "-" keys

13

RĿĿ

but it will be effective only until the next period.

4 periods: Morning, Day, Evening & Night.

every day of the week

SETTINGS MODE

parameter value

Param

Param

name

Param

Value

Param

Reduce

seconds

seconds

Value

Increase

numbe

245

2/10

MODE

Separate temperature settings can be made for all 4 periods for every day of the week

PARAMETERS LIST

Display

Indication

dEg

In1

ln2

Sen

Pon

POF

dry

tCr

tFo

dAv

tIH

tIL

AtL

AtH

Etl

FtH

Fsr

Atc

Ftc

HYS

dIF

brH

brL

Abr

Ab1

Ab2

Ab3

**bSA** 

nEt

Prr

Parameter 01 (dEg) - Degree mode

Factory default value is Celsius (°C).

Factory default value is 1.

Factory default value is 2

Parameter 04 (SEn) - Source sensor

and "-" to choose follow modes:

2)AF - Air sensor + Floor sensor

4) FA - Floor sensor + Air sensor

6) PA – Power regulator + Air sensor

internal room air temperature sensor.

cycle will be repeated constantly.

7) PF - Power regulator + Floor sensor

pressed manually.

1)A – Airsensor

3) F - Floor sensor

temperature sensor

5) P - Power regulator

Param

value

Param

number

increase

Param

number

reduce

Parameter 02 (In1) - External input mode

will not undertake any action if the input is open again.

Parameter 03 (In2) - Operating mode for external input action

Default

Value

°C

1

2

F

15

15

30

1

0

1

0

0

21/70

27 / 81

18/64

32 / 90

10

0/0

0/0

0.5/

0.9

0.2/

0.3

4

3

1

30

200

3000

6

Ecl

0

Description

Degree Mode

EXT input mode

Mode number for EXT input action

Source Sensor

Power Regulation ON time, min

Power Regulation OFF time, min

Dry Time, min

Time correction by controller

Time format

Week Dav

Time Hour

Time Minute

Air Temperature Minimum, °C / °F

Air Temperature Maximum, °C / °F

Floor Temperature Minimum, °C / °F

Floor Temperature Maximum. °C / °F

Floor Sensor Resistance, kO

Air Temperature Calibration, °C / °F

Floor Temperature Calibration, °C / °

Temperature Hysteresis, °C / °F

Temperature difference to send to

controller, °C / °F

Active display brightness level

Inactive display brightness level

Auto LCD brightness control

Auto brightness level 1 max lumens

Auto brightness level 2 max lumens

Auto brightness level 3 max lumens

Basic Set Action

Inclusion / Exclusion Mode

Power Meter total value & reset

Celsius (°C) or Fahrenheit (°F) degree mode can be choosen. Floor and air temperature, as

The thermostat can be connected to an external device (like security system) dry output

If parameter value is 0 no action will be take (the input state is ignored by the thermostat

logic). If parameter value is 1 the thermostat will be switched to the operating mode selected

in Parameter 3 if the output was short-circuited. The thermostat will go back to previous mode

as soon as the input is open. If parameter value is 2 the thermostat will be switched to the

operating mode selected in Parameter 3 if the output was short-circuited. But the thermostat

This parameter allows selecting which operating mode the thermostat should go to if the

Note: When thermostat goes to MAN mode it will be in IDLE state till HEATING key is not

The thermostat has seven regulation modes based on different sensors values. Use keys "+"

1) A - Air sensor: Regulation (heating control) is based on the SET POINT applied to the

2) AF - Air sensor plus floor sensor: Regulation is based on SET POINT applied to the

internal room temperature sensor but also controlled by the floor temperature sensor

ensuring that the floor temperature remains within the set limits. The lower floor temperature

3) F - Floor sensor: Regulation is based on the SET POINT applied to the external floor

4) FA - Floor sensor plus air sensor: Regulation is based on SET POINT applied to the

external floor sensor but is also controlled by the internal air temperature sensor ensuring

that the room temperature remains within the set limits. The lower air temperature limit is

5) Power regulator: Regulation is based on the time settings for heating which will be ON during the time in Param 05 – POn and then OFF during the time in Param 06 - POf. This

limit is specified in Param 15 - FtL and the high temperature limit in Param 16 - FtH.

specified in Param 13 - AtL and the higher temperature limit in Param 14 - AtH

external input is short-circuited. 1=COM, 2=TIME, 3=DRY, 4=ECO, 5=VAC, 6=MAN.

contacts and control the thermostat operating modes depending on the contacts state.

well as set point and all parameters will be indicated in the chosen mode.

Available

Values

°C. °F

0.1.2

A AF F FA

P. PA. PF

10 - 90

10 - 90

5 - 90

0, 1

0, 1

1 - 7

0 - 23

0 - 59

.0-36.0 in °C

39 - 97 in °F

41 - 99 in °F

4.0-36.0 in °C

39 - 97 in °F

5.0-37.0 in °C

41 - 99 in °F

1 - 100

9.5-9.5 in °C

17 - 17 in °F

-9.5-9.5 in °C

17 - 17 in °F

0 1-9 5 in °C

0.1 - 17 in °F

0.1-1.0 in °C

.2 - 1.8 in °F

1 - 4 but

>=Param23

1 - 4, but

<=Param22

0, 1

0 - 5000

0 - 5000

0 - 5000

. 2. 3. 4. 5. 6

Inc, Ecl

0-999kwh

.0-37.0 in °C

2, 3, 4, 5, 6

Parameter

Number

01

02

03

04

05

06

07

08

09

10

11

12

13

14

15

16

18

19

20

21

22

23

24

25

26

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29

30

## Electrical power must be switched off during all aspects of installation.

1. Remove the front cover and back plate of the thermostat from the main box.

2. ENSURING THE POWER IS OFF and using a small cross head (Phillips) screwdriver connect the wires to the thermostat terminals: IN: Power connection

HEATING: Heating element connection

3. If using the thermostat for floor heating, connect the NTC temperature sensor wires to terminals NTC. 10 kΩ NTC sensor is included in the box but any NTC sensor can be used. If another sensor other than 10 kΩ NTC is used then ensure changing the sensor value in the thermostat settings (Parameter 17 - ESr)

If using an external device for the thermostat modes control, connect its dry contacts to terminals EXT

5. Making sure "TOP" is uppermost secure the back plate into the wall mounting box using the screws provided. Install the thermostat body by carefully aligning the top snap connectors and then pushing on the front cover with gentle pressure ensuring it snaps firmly into position all the way round.

6. Switch On the main power and the thermostat will start up showing the original default factory settings.

7. Remove protective film by pulling the tab in the top right hand side

#### DISASSEMBLY

1. ENSURE POWER IS SWITCHED OFF AND SCREEN IS BLANK. 2. To remove thermostat body grasp firmly and pull back from the bottom until all tabs disconnect 3. Remove screws from back plate and disconnect the wires

## TOUCH PANEL OPERATION

The touch panel has six touch buttons which require minimal pressure to operate.

- + Plus Minus
- ٢ Time
- õ Settings
- 2000 Manual Heating
- MODE Mode

"+" key will increase set point temperature by  $0.5^{\circ}$ C (or 1°E) and "=" key will decrease set point temperature by 0.5°C (or 1°F). The set point temperature is displayed in the bottom left corner of the display as "SET TEMP" Note: The minimum set point is 4.0°C (39°F) and the maximum set point is 37.0°C (99°F).

The thermostat has two working modes: HEATING and IDLE. In HEATING mode the operating state icon will appear on the right bottom corner of the display, and the icon will disappear in the IDLE mode

#### OPERATION MODE

Current mode is displayed in the middle right line of display under "HEATING MODE" field. The thermostat has 6 operating modes: COM - general comfort (full power) mode

TIME - time mode allows to set a different temperature for different periods of the day

- DRY-fast floor drving.
- ECO economy (power efficient / energy saving) mode.
- VAC-vacation (away) mode MAN - manual mode
- Change the mode by touching the MODE key and reselecting as above.

Each operating modes has an individual temperature set points. The thermostat will operate automatically depending on the current SET TEMP point. To change the set point values choose the desired mode and press "+" key to increase or press "-" key to reduce the value. Alternatively control from your Z-wave gateway.

## MAN MODE

In this mode the thermostat logic is disabled and the heating state can be switched On/Off manually by pressing the 2000, key Note: if the MAN mode is enabled the SET POINT will indicate OFF.

COM (comfort) MODE This mode is recommended for normal comfort Factory default set point is 25.0°C (77°F)

This mode is recommended for use when absent.

Factory default set point is 15.0°C (59°F)

#### DRY MODE

This mode is recommended for use if a high floor temperature is required for a limited period of time for example after floor washing. By choosing DRY mode the thermostat will increase the temperature to the selected set point for a limited time specified in the "Dry Time" parameter. The time range of 5-90 minutes can be selected. After the drying time the thermostat will automatically change back to the TIME mode. To change the Dry Time, go to "Settings Mode" by pressing the 🕫 key for 3 seconds. Use the keys and or MODE to scroll the menu to Parameter 07, then use keys "+" and "-" to increase or

reduce the time. The value of Dry Time is in minutes. Factory default Dry time is 30 min.

Factory default set point is 30.0°C (86°F)

## ECO (energy saving) MODE

VAC (vacation) MODE

37.0°C (99°F).

This mode can be used if lower temperature and energy consumption is required. It can also be used at night or when absent from all or part of the property for a length of time. Factory default set point is 20.0°C (68°F)

Note: The minimum set point for each mode is 4.0°C (39°F) and the maximum set point is

6) PA - Power regulator + Air sensor: Regulation is based on the time set by Params 05 and 06 but also controlled by the internal air temperature sensor ensuring that the room temperature remains within the set limits. The air temperature limits are specified in Params 13 and 14

7) PF – Power regulator + Floor sensor parameters: Regulation is based on the time set by Params 05 and 06 but also controlled by the floor temperature sensor ensuring that the floor temperature remains within the set limits. The floor temperature limits are specified in Params 15 and 16

#### For example

In FA mode the SET POINT is set to 30°C. AtL is set to 24°C and AtH is set to 27°C:

a) If floor temperature is lower than 30°C and the room temperature is lower than 27°C the thermostat will operate in HEATING mode.

b) If the floor temperature is higher than 30°C or the room temperature is higher than 27°C then the thermostat will go to IDLE mode which switches off the heater. c) If the room temperature is lower than 24°C the thermostat will operate in HEATING mode

even though the floor temperature is higher than 30°C.

Attention: Be careful when setting the lower limitation (Param 13 - AtL and Param 15 - FtL) to be sure that the value is not too high and it can be reached. Otherwise the thermostat will always operate in the HEATING mode

Note: For safety reasons the thermostat will go to the IDLE mode if the floor temperature reaches 40°C despite the parameter settings.

Note: If there is no floor sensor installed or it becomes damaged (indicated by " - " in the "FLOOR TEMP") the regulation mode (A) will be automatically selected as the source sensor. This can only be changed to (P) or (PA). Regulation modes (F), (FA), (AF) and (PF) will not be able to be selected. Factory default value is F.

## Parameter 05 (POn) - Power regulation ON time

This parameter defines floor HEATING time in minutes when Power Regulator (P. PA or PF) is selected as the source sensor in Param 04. Time can be changed in range 10-90 minutes Factory default value is 15 minutes.

## Parameter 06 (POf) - Power regulation OFF time

Floor IDLE time in minutes when Power Regulator (P, PA or PF) is selected as the source sensor. Time can be changed in range 10-90 minutes. Factory default value is 15 minutes.

## Parameter 07 (dry) - Dry Time

This parameter specifies how long in minutes the thermostat will be in HEATING mode when the DRY mode is selected. After this time the thermostat will go to the TIME mode. The time range is 5-90 minutes. Factory default time is 30 minutes

## Parameter 08 (tCr) - Time correction by main controller

If this parameter value is 1 and the thermostat is connected to Z-Wave gateway the thermostat time and weekday will be periodically polled and corrected from the gateway. To switch off the auto correction set the parameter value 0 Factory default value is 1.

## Parameter 09 (tfo) - Time format

24-hours or 12-hours time indication format can be chosen. 0 = 24 hours format. 1 = 12 hours (AM/PM) format Factory default value is 0.

#### Parameter 10 (day) - Week day

This parameter allows manually adjustment of the day of the week in case the thermostat is not connected to any gateway or Parameter 08 (auto correction) selected as 0.

#### Parameter 11 (tIH) - Hour

This parameter allows manual adjustment of the hours.

Parameter 12 (tIL) - Minute This parameter allows manual adjustment of the minutes.

#### Parameter 13 (AtL) – Air Temperature Minimum (Lowest level)

Room temperature low limit. Reading of internal temperature sensor. It has effect only if FA or PA is selected as the source sensor in Param 04 Eactory default value is 21°C or 70°E Note: AtL value cannot be higher than AtH value - 1°C

## Parameter 14 (AtH) - Air Temperature Maximum (Highest level)

Room temperature high limit. Reading of the internal temperature sensor. It has effect only if FA or PA is selected as the source sensor Factory default value is 27°C or 81°E. Note: AtH value cannot be lower than AtL value + 1°C

Parameter 15 (FtL) - Floor Temperature Minimum (Lowest level) Floor temperature low limit. Reading of external NTC temperature sensor. It has effect only if AF or PF are selected as the source sensor Factory default value is 18°C or 64°F. Note: FtL value cannot be higher than FtH value - 1°C

## Parameter 16 (FtH) - Floor Temperature Maximum (Highest level)

Floor temperature high limit, Reading of the external NTC temperature sensor. It has effect only if AF or PF are selected as the source sensor Factory default value is 32°C or 90°F. Note: FtH value cannot be lower than FtL value + 1°C

## Parameter 17 (FSr) - Floor sensor resistance

If the external floor NTC temperature sensor is used it is necessary to select the correct ohm value (resistance) of the sensor.  $1 - 100 \text{ k}\Omega$  is available to select. In the box is included one floor NTC 10kΩ temperature sensor with a three metre connection wire Factory default value is 10kΩ.

Note: If the floor sensor is disconnected or damaged "--" will indicate on the display FLOOR **TEMP** field

# Parameter 18 (Atc) - Room Air Temperature Calibration

This parameter defines the offset value for room air temperature. If the internal air temperature sensor is not correctly calibrated changes of temperature can be made by adjusting the values by up to +/- 9.5°C or +/- 17°F. This value will be added or subtracted from the internal air temperature sensor reading. Factory default value is 0

#### Parameter 19 (Ftc) - Floor Temperature Calibration

This parameter defines the offset value for floor temperature. Should the external floor temperature sensor not be correctly calibrated then temperature changes are able to be adjusted by up to +/- 9.5°C or +/- 17°F. This value will be added or subtracted from the floor temperature sensor reading. Factory default value is 0

## Parameter 20 (HYS) – HYSTERESIS (HYS)

The hysteresis value for temperature control. The thermostat will stabilize the temperature with selected hysteresis. For example, if the SET POINT is set for 25°C and HYSTERESIS is set for 0.5°C the thermostat will change the state to HEATING if the temperature will be lower than 24.5°C and it will change the state to idle if temperature reaches 25.5°C The hysteresis can be changed from 0.1°C up to a maximum of 9.5°C in Celsius mode and from 0.1°F to 17°F in Fahrenheit mode. Factory default values are 0.5°C or 0.9°F.

## Parameter 21 (dIF) - Temperature difference to send to controller

The thermostat will send a new temperature to the gateway only in case if the temperature change is greater or equal than the value specified in this parameter. From 0 1C to 1 0C can be chosen Factory default value is 0.2C Note: The thermostat is very sensitive to changes of ambient temperature and can often vary

by ±0.1C, therefore it is recommended to set this parameter from 0.2 and above to reduce the load on your Z-Wave network.

## DISPLAY BRIGHTNESS

The thermostat has two states of brightness. Active state - when press any key and commence adjustments. Inactive state - after five seconds of inactivity it will revert to inactive state The display brightness in either state can be adjusted

## Parameter 22 (brH) - Display brightness high level

The brightness level can be selected in the active state from values 1 (lowest brightness) to 4 (highest brightness) but the level cannot be lower than the level of brightness for the inactive state (param 23) Factory default value is 4.

#### Parameter 23 (brL) - Display brightness low level

This parameter defines the brightness level of the display in the inactive state. The level can he selected from values 1 to 4 but the level cannot be higher than the level of brightness for the active state (param 22). Factory default value is 3.

#### Parameter 24 (Abr) - Auto brightness

The thermostat can adjust its display brightness automatically depending on the illumination of the ambient environment. The comfort brightness of the screen can be chosen depending on the room illumination in Parameters 25, 26 and 27. Value 1 = Active the function Value 0 = Inactive the function Factory default value is 1.

Note: The illumination of the environment can be checked at any time in the centre of the display (on time position) in the device MENU on Parameter 24 or via your Z-Wave gateway

#### Parameter 25 (Ab1) - Auto brightness level 1 max lumens

The value indicates the maximum level of ambient illumination during which the brightness of the display will be at level 1 (at the lowest level). For example if this parameter value is set 30 and the ambient illumination is in range 0-30 the display will be in lowest brightness level. As soon as the illumination will be 31 or higher the display brightness will be changed to Level 2. Factory default value is 30

#### Parameter 26 (Ab2) - Auto brightness level 2 max lumens

This parameter indicate the maximum illumination for display brightness level 2. In case if the illumination is in range Parameter 25 (Ab1) - Parameter 26 (Ab2) the display brightness will be on level 2. If the illumination drops below the value of parameter 25 the brightness of the display will be decreases to level 1, and if the illumination increases beyond the value of parameter 26 the display brightness will rise to level 3. Factory default value is 200

#### Parameter 27 (Ab3) - Auto brightness level 3 max lumens

This parameter indicate the maximum illumination for display brightness level 3. In case if ambient illumination raise above this value the display brightness will be changed to Level 4 Factory default value is 3000.

#### Parameter 28 (bsA) - Basic Sat Action

This parameter defines to which mode the thermostat operating mode will be changed to if the Basic Set command is received. If the received value of the Basic Set command is 0 (OFF state) the thermostat will go to MAN

mode and switch off the heating element (IDLE mode). If the received value of the Basic Set command is 1 or higher (ON state) the thermostat will

change its mode regarding the value defined in this parameter.

If the parameter value is 1 the thermostat will go to the COM operating mode, value 2 is for the TIME mode, Value 3 is for the DRY mode, Value 4 is for the ECO mode, Value 5 is for the VAC. Value 6 is for the MAN.

If the parameter value is 6 (change to manual mode) and the Basic Set value is 1 or higher (ON) the thermostat will go to the MAN mode and switch ON the HEAT mode Factory default value is 6.

#### Parameter 29 (nEt) - INCLUSION / EXCLUSION MODE

If the thermostat is included in the z-wave network the antenna will be indicated in the main display and Inc will be indicated in the Param value. If the thermostat is not included in the network, no antenna will be indicated in the main display and the Param value will be ECL To include or exclude the thermostat into/from your home automation gateway, activate inclusion or exclusion mode on your gateway then go to Param 29 in the device Menu and press "+" key for inclusion and the "-" key for exclusion

For more details go to point "Z-Wave Functions" – "Network" of this manual.

## Parameter 30 (Prr) - Power Meter values & reset

The Heltun thermostat monitors the load and total power consumption. The current load is indicated in this Param values in the center of display (time position) in W. The data of total consumption in kWh is indicated in the top right corner of the display

If the device is included to the Z-Wave network it will also send the data of the current load and total consumption to the main controller The thermostat, even when the electricity is disconnected, maintains the electric

consumption record in its memory.

To reset the consumption memory press and hold "+" key (about 3 seconds) until the parameter total consumption value will be changed to 0.

#### CHILD LOCK-LOC

To activate the child lock mode, press and hold the www. key till the icon 🔓 will be indicated in the bottom center of the display (about 5 seconds). To deactivate the child lock press the key www. until the icon 🖬 disappears.

Parameter

Number

01

02

03

04

05

06

07

08

09

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

26

27

28

29-50

51

52

53

54

55

56

57

58

59

60 - 63

64 - 67

68 - 71

72 - 75

76 - 79

80 - 83

Paramete

Size

1 byte

1 byte

1 byte

1 byte

1 hvte

1 byte

1 byte

1 byte

1 bvte

1 byte

1 byte

1 byte

2 bytes

2 bytes

2 bytes

2 bytes

1 byte

1 byte

1 hvte

1 byte

1 byte

1 byte

1 bvte

1 byte

2 bytes

2 bytes

2 bytes

1 byte

1 byte

2 bytes

EFFECTIVE UPON INSTALLATION.

2-YEAR LIMITED WARRANTY

If the product is defective

purchased it: or

be sent to you

Default

Value

0

1

2

3

15

15

30

1

0

1

0

0

210

270

180

320

10

0

0

5

2

4

3

30

200

3000

6

50

0600

0900

1800

2300

240

200

230

180

Description

Degree Mode

EXT input mode

Mode number for EXT input action

Source Sensor: 1=A, 2=AF, 3=F, 4=FA

5=P, 6=PA, 7=PF

Power Regulation ON time, min

Power Regulation OFF time, min

Dry Time, min

Time correction by controller

Time format

Week Day

Time Hour

Time Minute

Air Temperature Minimum in °C.

value X 10, e.g. 22.5°C=225

Air Temperature Maximum in °C, x10

Floor Temperature Minimum in °C, x10

Floor Temperature Maximum in °C, x10

Floor Sensor Resistance, kΩ

Air Temperature Calibration in °C, x10

Floor Temperature Calibration in °C x10

Temperature Hysteresis in °C, x10

Temperature difference to send to

controller, value X 10

Active display brightness level

Inactive display brightness level

Auto LCD brightness control

Auto brightness level 1 max lumens

Auto brightness level 2 max lumens

Auto brightness level 3 max lumens

Basic Set Action

Reserved by manufacturer

Touch buttons sensitivity 20=Supper

sensitive. 70=lowest sensitivity.

Morning start time. Format: HHMM

e.g.08:00 should be sent as 0800

Day start time, Format: HHMM,

Evening start time. Format: HHMM.

Night start time. Format: HHMM.

Monday Morning temperature, valueX10

Monday Day temperature, valueX10

Monday Evening temperature, valueX10

Monday Night temperature, valueX10

Tuesday schedule temperatures:

P60=morning t°C, P61=day t°C,

P62=evening t°C, P63=night t°C

Wednesday schedule temperatures

Thursday schedule temperatures

Friday schedule temperatures

Saturday schedule temperatures

Sunday schedule temperatures

Heltun warrants this product to be free from defects in the workmanship or materials, under

normal use and service, for a period of two (2) years from the date of purchase by the

consumer. If at any time during the warranty period the product is determined to be defective

(i) return it, with a bill of sale or other dated proof of purchase, to the place from which you

(ii) contact Heltun Customer Care at support@heltun.com. Customer Care will make the

determination whether the product should be returned or whether a replacement product can

THIS WARRANTY DOES NOT COVER REMOVAL OR REINSATLLATION COSTS.

THIS WARRANTY SHALL NOT APPLY IF IT IS SHOWN BY HELTUN THAT THE

DEFECT OR MALFUNCTION WAS CAUSED BY DAMAGE WHICH OCCURRED

WHILE THE PRODUCT WAS IN THE POSSESSION OF A CONSUMER THIS

WARRANTY SHALL NOT OBLIGATE HELTUN FOR ANY LABOR COSTS AND SHALL

NOT APPLY TO DEFECTS IN WORKMANSHIP OR MATERIALS FURNISHED BY

YOUR INSTALLER AS CONTRASTED TO DEFECTS IN THE THERMOSTAT ITSELF

IMPLIED WARRANTIES OF MERCHANTABILITY OF FITNESS FOR A PARTICULAR

PURPOSE SHALL BE LIMITED IN DURATION TO THE AFORESAID TWO YEAR PERIOD. HELTUN'S LIABILITY FOR INCIDENTAL OR CONSEQUENTIAL

DAMAGES, OTHER THAN DAMAGES FOR PERSONAL INJURIES, RESULTING

FROM ANY BREACH OF THE AFORESAID IMPLIED WARRANTIES OR THE ABOVE

LIMITED WARRANTY IS EXPRESSLY EXCLUDED. THIS LIMITED WARRANTY IS

VOID IF DEFECT(S) RESULT FROM FAILURE TO HAVE THIS THERMOSTAT

INSTALLED BY A QUALIFIED HEATING AND AIR CONDITIONING CONTRACTOR JE THE LIMITED WARRANTY IS VOID DUE TO FAILURE TO USE A QUALIFIED

CONTRACTOR, ALL DISCLAIMERS OF IMPLIED WARRANTIES SHALL BE

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or malfunctions. Heltun shall repair or replace it (at Heltun's option)

Available

Values

°C. °F

0, 1, 2

, 2, 3, 4, 5, 6

, 2, 3, 4, 5,

6.7

10 - 90

10 - 90

5 - 90

0, 1

0.1

1 - 7

0 - 23

0 - 59

40 - 360

50 - 370

40 - 360

50 - 370

1 - 100

-95 - 95

-95 - 95

1 - 95

1 -10

1 - 4. but

-Param23

1 - 4 but

<=Param22

0.1

0 - 5000

0 - 5000

0 - 5000

. 2. 3. 4. 5. 6

20 - 70

0000 - 2359

0000 - 2359

0000 - 2359

0000 - 2359

40 - 370

40 - 370

40 - 370

40 - 370

40 - 370

40 - 370

40 - 370

40 - 370

40 - 370

40 - 370

# FACTORY RESET-RES

By pressing and holding the "MODE" key for 6 seconds, the thermostat will enter the Factory Reset mode and "Res" will appear in left bottom corner, "y" in top left corner and "n" in top right corner. Press "+" key if reversion to factory reset is required or the key and to cancel. The factory reset will change all the parameters to the original factory defaults and will also exclude from the Z-Wave network.

# Z-WAVE NETWORK

# Inclusion

To include the thermostat in the Z-Wave network 1. Go to the "SETTINGS" mode by pressing and holding the set key for 3 seconds 2. Go to "Parameter 29 - nEt" of the menu by using the menu by usi "MODE" key for scrolling down in parameters. 3. In the value position will be seen the current state of the network. It should be ECL. If Inc is

indicated, an exclusion must be first performed 4. Start the inclusion mode from the gateway

5. Press "+" key to start inclusion process 6. Lines will be moving in value position.

7. The "Inc" should appear in the value position if the inclusion has been successful. The "Err"

will appear if the inclusion was not completed.

Note: In case the device has been part of the Z-Wave network before and not excluded since, inclusion is not possible. In this case, exclusion must be performed before inclusion.

If the thermostat is included in the network, in the bottom right corner of the main screen the antenna icon will be displayed with connection lines Tal. If not on the network then it will be displayed without lines Y

Security: S0, S2 unauthorized and S2 authorized inclusion modes are supported. If you use S2 authorized inclusion mode the security key should be used in inclusion process. NOTE: Be sure to save this key. Without the key it is impossible to perform an inclusion in S2 authorized mode

#### Exclusion

- To exclude the thermostat from the 7-Wave network
- 2. Go to "Parameter 29 nEt" of the menu
- 3. In the value position the current state of network state will be displayed. It should be "Inc". if the "ECL" is indicated the device is already excluded.
- Start the exclusion from the gateway.

5. Press the "--" key to start the exclusion process

6. Lines will be moving in the value position.

the thermostat goes to HEATING mode.

GENERIC\_TYPE\_THERMOSTAT

Supported Command Classes:

COMMAND CLASS METER.

COMMAND CLASS CLOCK

COMMAND\_CLASS\_SECURITY,

COMMAND CLASS VERSION.

COMMAND CLASS SECURITY 2.

COMMAND CLASS ASSOCIATION,

COMMAND CLASS POWERLEVEL

COMMAND CLASS SUPERVISION

COMMAND CLASS CONFIGURATION,

COMMAND CLASS CONFIGURATION

COMMAND CLASS BASIC

SPECIFIC\_TYPE\_SETPOINT\_THERMOSTAT

COMMAND CLASS THERMOSTAT MODE,

COMMAND CLASS SENSOR MULTILEVEL,

COMMAND CLASS TRANSPORT SERVICE

COMMAND CLASS ZWAVEPLUS INFO,

COMMAND\_CLASS\_THERMOSTAT\_SETPOINT,

Z-WAVE DEVICE TYPE:

7. The "Ecl" should appear with successful deletion 8. If the "Err" appear then start the exclusion process again.

Group 1 is for Life Line and used to connect Z-Wave gateway.

COMMAND\_CLASS\_THERMOSTAT\_OPERATING\_STATE,

COMMAND CLASS MULTI CHANNEL ASSOCIATION,

THERMOSTAT SETTINGS USING Z-WAVE PROTOCOL (GATEWAY)

COMMAND CLASS ASSOCIATION GRP INFO.

COMMAND CLASS DEVICE RESET LOCALLY,

COMMAND\_CLASS\_FIRMWARE\_UPDATE\_MD

All configuration parameters are accessed through

COMMAND CLASS MANUFACTURER SPECIFIC

If the thermostat is included in the network in the bottom right corner of the main screen the antenna icon will be displayed with connection lines Tat. If not on the network it will be displayed without lines Y

#### Association

Association enables the thermostat to control other 7-Wave products from the network Up to ten other products from different manufacturers can be within the association grouping. The thermostat has two association groups: Through Group 2 the thermostat sends Basic Set command. It sends Basic Set command

with value 0 (Off state) when thermostat goes to IDLE mode and sends 255 (ON state) when