HEATIT 7S NFC THERMOSTAT

Firmware 1.0
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Installers manual

Art.no. 54 305 85

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1. INTRODUCTION

Heatit 7S NFC is an electronic thermostat for electrical underfloor heating, designed to be mounted in a junction box. The thermostat has three modes; Comfort, Economy and Automatic.

Heatit NFC Thermostat has a built-in NFC chip to control the thermostat via a NFC app. All parameters can be configured from the app, in addition you can set up weekly programs via the app.

Heatit 7S NFC Thermostat is equipped with a single-pole switch and fits into System 55 frames. The thermostat can withstand a load of max 16A/3600W at 230VAC. We recommend a contactor for loads above 13A. The thermostat may be connected to two wired external sensors.

The thermostat is designed for electrical heating.

2. INSTALLATION

Installation must be done by a qualified electrician in accordance with the national building codes. Before installation, disconnect any power to the device from the mains. During installation of the device, power to the device must be disconnected AT ALL TIMES!

Start carefully releasing the front cover by pushing the release springs. Use e.g. a small slotted screwdriver. The front cover and frame may now be removed.

◯ Release springs

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CONTROLS

CE
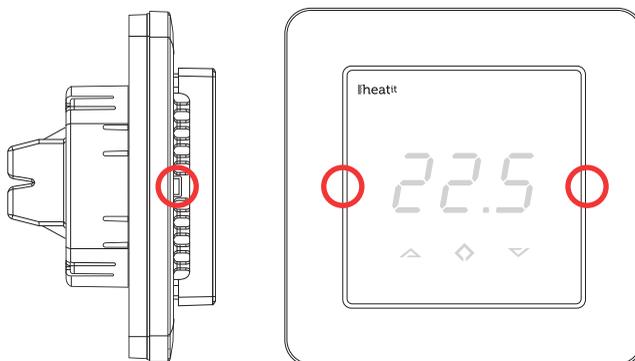
Connect the wires to the thermostat terminals. Use 1.5mm² or 2.5mm² according to load.

Max tightening torque for terminal screws: 2Nm

PILOT	Pilot Wire
HEATING (N)	Heating cable connection (Neutral)
N	Power connection (Neutral) 230VAC
L	Power connection (Live) 230VAC
HEATING (L)	Heating Cable connection (Live)
FLOOR SENSOR	Floor temp sensor, NTC type
EXTERNAL SENSOR	External temp sensor, NTC type
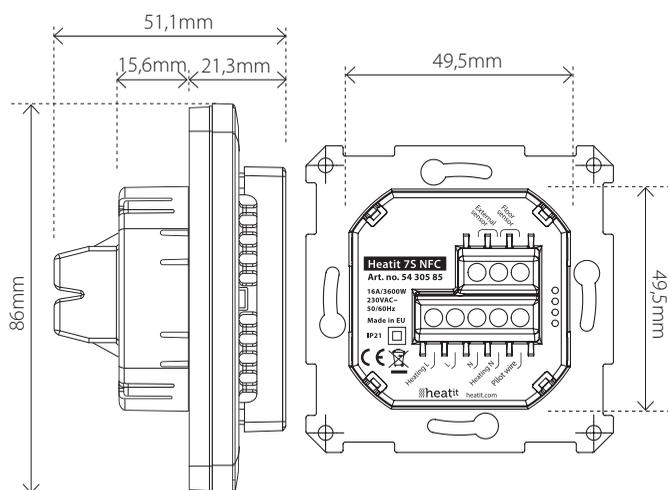
Use an extra screw connector to connect heating cable earth wire to mains earth wire. Next, position the thermostat and fasten it into the wall's junction box using 2-4 screws. Position the frame, then position and carefully press the front cover until it snaps in place. Check that the front cover is placed properly on sides. The front cover should now fit firmly fixed on all sides.

Note! The top cover has to be installed when the thermostat is connected to the main power source. The thermostat is not a SELV product. All voltage parts must be considered to be 230VAC.

3. STARTUP

After connecting the power to the thermostat for the first time, all parameters will have default settings. (Alternative settings are shown in parenthesis).

Heating mode	CO (ECO, Aut)	
Operating mode	F	Floor sensor
	A	Internal sensor
	AF	Internal sensor + floor sensor
	A2	External sensor
Floor sensor type	Default value 10kΩ (6.8, 10, 12, 15, 22, 33, 47kΩ)	
Calibration	0°C (-4°C…4°C)	
Display contrast	3 (0…9, A)	
Temperature limits:	FLo (Floor min temp.)	
	FHI (Floor max temp.)	
	ALo (Room min temp.)	
	AHI (Room max temp.)	

Note: Wooden floors require a floor sensor to be connected. Most manufacturers of wooden floors state that the maximum temperature must be limited to 27°C.

4. TEXT ON SCREEN

4.1 Heating modes

CO	Comfort mode
ECO	Economy mode
Aut	Automatic mode

4.2 Configuration menu

OFF	Thermostat will be turned off. Hold down middle button for 5 seconds to turn the thermostat on again.
OPE	Operating mode (F, A, AF, A2)

	F	Floor sensor
	A	Internal sensor
	AF	Internal sensor + floor sensor
	A2	External sensor

SEn	Sensor menu. In this menu a correct NTC value of floor sensor (in modes F, AF) or external sensor (in mode A2) can be defined.
CAL	Calibration menu. Displayed room temperature can be adjusted to match the actual measured temperature.
Bri	Contrast of display can be adjusted in this menu between values 0...9 or A. In case of A, the brightness is regulated automatically according to ambient light intensity.
ALo/AHI	Room sensor low/high limit.
FLo/FHI	Floor sensor low/high limit.
ESC	Leave the menu and return to main screen.

4.3 Other features accessible from the main screen

don/dof	Display on/off function. Press and hold left and middle buttons for 5 secondss to change between don and dof.
rES	Factory reset. Press and hold middle and right buttons for 20 seconds to reset the thermostat to factory default settings.
LOC	Child lock. Press and hold left and right button for 10 seconds to activate child lock. When child lock is activated the thermostat ignores touch button inputs. Trying to make changes causes LOC text to appear on screen. Child lock can be deactivated by holding left and right button for 10 seconds.

4.4 Error messages

Er1	Internal error
Er3	Internal error
Er4	Floor sensor error. F or AF mode selected, sensor not connected or damaged.
Er5	External sensor error. A2 mode selected, sensor not connected or damaged.

5. USER INTERFACE

The thermostat is controlled by three capacitive touch buttons. These are:

- Left (Up)
- Middle (Confirm)
- Right (Down)

The red LED indicator on the right side of the user interface represents the thermostat's relay state. If the LED is on, the relay is closed, i.e. the heating element is switched on. If the LED is off, the relay is open.

6. STANDBY/MAIN SCREEN

If the thermostat remains untouched for a while, it will automatically go to standby screen. In case dof is activated, the standby screen will be totally black and in case don is activated, room temperature will be on the screen at low brightness.

The thermostat displays the main screen if any of the buttons are pressed. On the main screen it is possible to change the setpoint of CO or ECO mode by pressing left or right buttons (screen blinks during selection). If the left or right button is pressed in automatic (Aut) mode, the display shows current active setpoint according to schedule.

Heating mode can be toggled between CO, ECO and Aut by holding the middle button for 1 second.

The configuration menu is accessed by holding the middle button for 5 seconds. The left and right button allows you to navigate between configuration menu items, and a short push on middle button enters the selected menu. Configuration parameters can be changed by left and right button. A 1 second push on middle button confirms parameter selection, after that "Sto" is displayed.

7. USER MODES

7.1 Heating modes

The thermostat has 3 different heating modes:
Comfort (CO), Economy (ECO) and Automatic (Aut).

Comfort mode:	Comfort mode is used as "at home" mode with warm and comfortable setpoint (by default 21℃)
Economy mode:	Economy mode is used as "away" mode with lower, energy-saving setpoint (by default 18℃).
Automatic mode:	Automatic mode helps to save energy by changing the setpoint according to weekly schedule (see "Weekly Schedule" in chapter 8). The schedule can be configured from smartphone application only. By default, the weekly schedule is configured to constant 21℃ setpoint.

Pilot Wire

CO and ECO modes can also be toggled by pilot wire input. In case a full-period line voltage is applied to the pilot wire, the thermostat switches to ECO mode. If the line voltage is switched off from pilot input, the thermostat enters CO mode. Pilot wire input has no effect in automatic mode.

7.2 Operating modes

Operating mode A

In operating mode A, the thermostat regulates room temperature according to the built-in room temperature sensor. Parameters AHI and ALo limit setpoint selection range (FHI/FLo are not used).

Operating mode F

In operating mode F, the thermostat regulates floor temperature according to the floor sensor (a floor sensor must be connected). Minimum and maximum floor temperature values can be defined with FHI and FLo parameters (AHI/ALo are not used).

Operating mode AF

In operating mode AF the thermostat regulates room temperature according to the built-in room temperature sensor while ensuring that the floor temperature is within the limits of FHI and FLo settings (a floor sensor must be connected). This operating mode is practical for use with wooden floors, where floor temperature should not exceed 27℃. Parameters AHI and ALo limit setpoint selection range in mode AF, as in mode A.

Operating mode A2

In operating mode A2 the thermostat regulates temperature according to an external sensor temperature. Limits AHI/ALo and FHI/FLo are not used.

8. SMARTPHONE APPLICATION

The smartphone application allows you to control the thermostat by NFC (Near Field Communication). All the parameters of the thermostat can be configured through the app. In addition, the app allows you to create weekly schedules in automatic mode.

For iOS	**For Android**
Download and install the app from the link in the QR-code:	**Download and install the app from the link in the QR-code:**

8.1 Read configuration from thermostat

Each time the app is started, a "read" view is displayed, prompting you to place your phone near the thermostat. Move your phone close to the thermostat front panel (0…3 cm) and wait until the app displays a success (or failure) message. With a successful read operation, the main view is displayed and the phone may be moved away from the thermostat.

If necessary, the settings can be reread from the thermostat by tapping the orange "Read" button in the top right corner of the screen.

8.2 Main view

In the main view you may select the desired heating mode (Off, Eco, Comfort, Automatic) and change setpoint values.

Main view (Comfort mode selected)

8.3 Weekly schedule

When automatic mode is selected, a weekly schedule may be configured. A schedule of each weekday may be viewed and modified by tapping on circular weekday buttons. You may add up to three time periods with different setpoints and durations per day by tapping "Add time period". The base temperature value defines the setpoint between these periods.

The weekday button changes color tone if the schedule of the day is different compared to other days. Days with same schedule settings have the same color tone.

In order to copy one weekday schedule to the next, tap "Copy to" and select the weekdays where you want to paste the schedule of the currently selected day.

Weekly schedules may be reset by tapping "Delete schedule" in the bottom left corner of the main view.
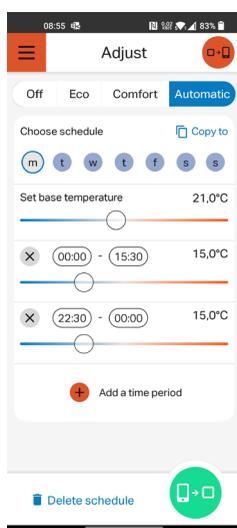
Main view (Automatic mode selected)

8.4 Advanced settings

Advanced settings that are present in the configuration menu of the thermostat (operating mode, sensor type, etc.) can be changed from the side menu in the app, under "Advanced settings. "The side menu is accessed by tapping the "burger" icon in top left corner of the main view.

One additional parameter under advanced settings is configurable only from the app - namely "Adaptive start". If adaptive start is enabled, heating in automatic mode is turned on in advance before each positive setpoint change (i.e., when changing from a low temperature to a higher temperature). The temperature setpoint configured in the schedule is reached approximately at the specified time. If adaptive start is turned off, the thermostat simply changes the setpoint according to schedule, and heating is not turned on in advance.

8.5 Import/export temperature profile

It is possible to export (save) or import (load) your temperature profile in the phone memory. The temperature profile includes all the data in the main view: heating mode (Off, CO, ECO, Aut), CO and ECO setpoints and weekly schedule data. Advanced settings in the side menu are not stored under temperature profile to avoid false configuration if more than one thermostat is configured from the same smartphone.
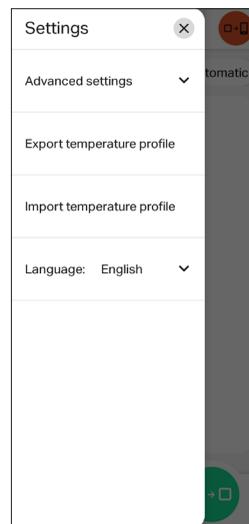
Side menu

8.6 Writing new configurations for the thermostat

To write new configurations for the thermostat, tap "Send" button in the bottom right corner of the screen.
When the "Write" screen appears, hold the phone close to thermostat front panel and wait until success or failure message is displayed (do not remove the phone from thermostat before this message appears).

8.7 Time

During every NFC write operation the clock inside the thermostat is automatically synchronized to allow correct operation of automatic mode. In case of power failure the clock remains operational for 24 to 48 hours. Please note that the thermostat does not automatically adjust to/from daylight saving time.

8.8 Text on thermostat display related to NFC data exchange

During read or write operation the display shows "nFC", indicating that the NFC field is active. After a successful write operation the thermostat displays the text "Sto".

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PRODUCT INFO Heatit 7S NFC

FEATURES

- NFC thermostat
- LED-display, 7 segment
- Floor sensor
- Internal room sensor
- External sensor (not included)
- Adaptive regulation
- 3 modes: Comfort, Economy and Automatic
- Weekly schedule
- Setback temperature through pilot wire
- Child lock
- Calibration for internal sensor
- Smartphone requirements: Iphone 7, Android 6.0 or later + NFC support
- English/Swedish/Suomi language options

TECHNICAL DATA

Protocol	NFC
Rated voltage	230VAC 50Hz
Max load	3600W (resistive loads only)
	Use contactor for loads higher than 13A
Max current	16A
Power consumption	0.5W
Ambient temperature	5℃ to 40℃ (during operation)
Temperature range	5℃ to 40℃
Hysteresis	0.5℃
Compatible with NTC sensors with values	6.8, 10, 12, 15, 22, 33 og 47kΩ @ 25℃
IP Code	IP 21
Approvals	CE

Approved for use in bathrooms.

TERMINAL

Use 1.5mm² or 2.5mm² according to load.

MAINTENANCE

The device is maintenance-free, but must never be covered.

ART. NO.	PRODUCT	COLOR
54 305 85	Heatit 7S NFC Thermostat	White RAL 9003