



7-Seg NFC Thermostat

Installation and operating instructions

This manual describes the functions and technical specification of 7-segment NFC Thermostat. These instructions help the user to control the thermostat, and the electrician to install and setup the thermostat.

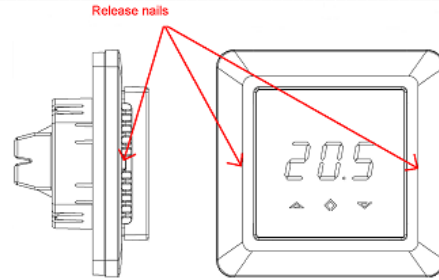
TECHNICAL SPECIFICATIONS

Display: LED-display 3x7-seg 13.2mm CA white
Power supply: 230V 50/60 Hz
Maximum load: 16A (resistive)
Temperature range: +5°C...+40°C
Temperature setback: Pilot Wire 230V 50/60 Hz
IP class: IP21
Color: Black/white
Sensors: Built-in room sensor and NTC floor sensor (support for external NTC sensor, not included)
Approvals: CE
Smartphone application requirements:
 Android 6.0 or later phone with NFC support

INSTALLATION

Installation must be done by a qualified electrician in accordance with wiring and building regulations. Before installation, disconnect any power to the thermostat's mains. During installation of the thermostat, power to the thermostat must be disconnected or isolated AT ALL TIMES!

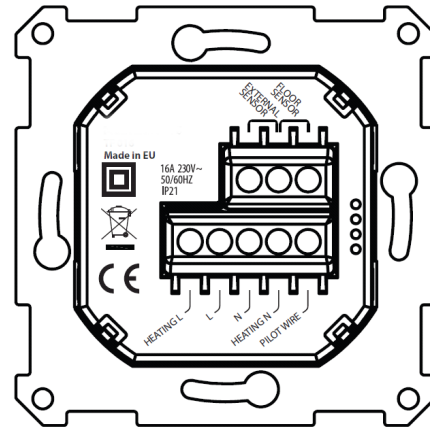
Start by carefully releasing the front cover by pushing the release nails.



Use e.g. a small slotted screwdriver. The front cover and the frame can now be removed.

Now connect the wires to the thermostat's terminals:
PILOT: Pilot wire
HEATING (N): Heating cable connection (Neutral)
N: Power connection (Neutral)
L: Power connection (Live)
HEATING (L): Heating Cable connection (Live)
FLOOR SENSOR: Floor temp sensor NTC type (6.8, 10, 12, 15, 22, 33 or 47kΩ)
EXTERNAL SENSOR: External temp sensor NTC (6.8, 10, 12, 15, 22, 33 or 47kΩ) type.

Use extra screw connector to connect heating cable earth wire to mains earth wire.



Next, position the thermostat and fasten it into the wall's mounting 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 both left and right side. The front cover should now be firmly fixed on all sides.

STARTUP

After connecting the power to the thermostat for the first time, all parameters will be on default settings. In brackets is other possible settings values.

| | |
|---------------------------|--|
| Heating mode | CO (ECO, Aut) |
| Operating mode | F, if floor sensor is assembled, else A (AF, A2) |
| Floor sensor type | 10kΩ (6.8, 12, 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 floor requires that a floor sensor is connected. Floor temperature shall be limited to 28°C max.

TEXT ON SCREEN

Heating modes:
CO: Comfort mode
ECO: Economy mode
Aut: Automatic mode

Configuration menu:

OFF: Thermostat will be turned off. Hold down middle button for 5s to turn the thermostat on again.

OPE: Operating mode (F, A, AF, A2)
 F: floor sensor
 A: built-in room sensor
 AF: built-in room 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

Other features (accessible from main screen):

don/dof: Display on/off function. Press and hold left and middle button for 5s to change between don and dof

rES: Factory reset. Press and hold middle and right button for 20s to reset the thermostat to factory default settings.

LOC: Child lock. Press and hold left and right button for 10s 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.

Error messages:

Er4/Er5: Sensor error. If F, AF or A2 operating mode is selected without having corresponding sensors connected, causes error message Er4 or Er5 to appear on screen

7-SEG NFC THERMOSTAT – USER MANUAL

1 User interface

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

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

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

2 Standby / Main screen

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

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

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

Configuration menu is accessed by holding middle button for 5s. Left and right button allow to navigate between configuration menu items and short push on middle button enters selected menu. Configuration parameters can be changed by left and right button. 1s push on middle button confirms parameter selection, after that the display shows text Sto.

3 Which mode should be used?

Heating modes

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

Comfort mode is used as "at home" mode with warm and comfortable setpoint (by default 21°C). Economy mode is used as "away" mode with lower, energy-saving setpoint (by default 18°C).

Automatic mode helps to save energy by changing the setpoint according to week schedule (see chapter 4). The schedule can be configured from smartphone application only. By default, the week schedule is configured to constant 21°C 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 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.

Operating modes

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

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

In operating mode AF the thermostat regulates room temperature according to built-in room temperature sensor and at the same time ensures that floor temperature is within limits of FHI and FLO (floor sensor must be connected). This operating mode is useful in case of wooden floors, where floor temperature shall not exceed 28°C. Parameters AHI and ALO limit setpoint selection range in mode AF, like in case of mode A.

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

4 Smartphone application

Android smartphone application allows to control the thermostat over NFC (Near Field Communication) interface. All the parameters of thermostat can be configured through the app. In addition, the app allows to create week schedule for automatic mode.

Download and install the app from following link, present on QR-code:



"Unknown sources" must be enabled under phone's security settings to be able to install this app. Before starting the app, enable NFC interface of the phone. First time a welcoming screen is displayed, press "Start using the app".

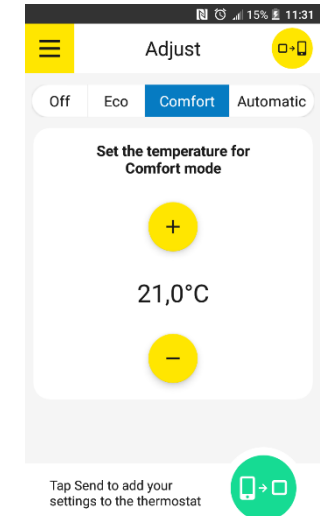
Read configuration from thermostat

Each time the app is started a "read" view is displayed, which asks to place your phone near the thermostat. Move your phone close to thermostat's front panel (0...3 cm) and wait until the app displays success (or failure) message. In case read operation succeeded the main view is displayed and the phone can be moved away from thermostat. If necessary, settings can be read from thermostat again by tapping yellow "Read" button in top right corner of the screen:



Main view. Select heating mode and configure setpoints

In the main view it is possible to select heating mode (Eco, Comfort, Automatic, Off) and change setpoint values.



Main view (Comfort mode selected)

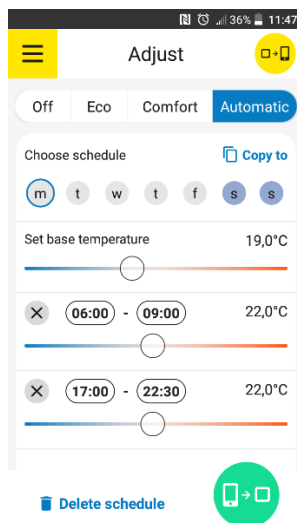
Week schedule

When automatic mode is selected, a week schedule can be configured. Schedule of each weekday can be viewed and modified by tapping on round-shaped weekday buttons. It is possible to add up to 3 time periods with different setpoint and duration per one day by tapping "Add time period". Base temperature value defines the setpoint between these periods.

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.

To copy the same schedule to other weekdays, tap "Copy to" and select weekdays where you want to copy the schedule of currently selected day.

Week schedule can be reset by tapping "Delete schedule" in the bottom left corner of the main view.



Main view (Automatic mode selected)

Advanced settings

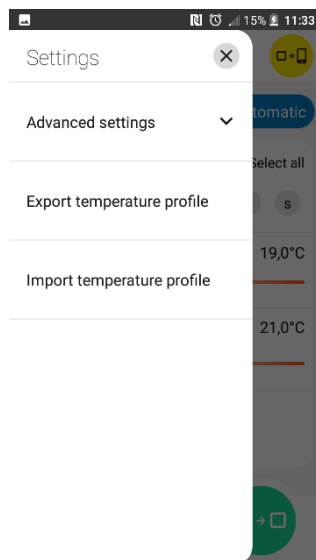
Advanced settings that are present in configuration menu of the thermostat (operating mode, sensor type etc.) can be changed from the side menu of the app, under "Advanced settings". Side menu is accessed by tapping the "burger" icon in top left corner of the main view.

One additional parameter under advanced settings is configurable only from the app - this is "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 low temperature period to higher temperature period). Temperature setpoint configured in schedule is reached approximately at the same time as specified. If adaptive start is turned off, the thermostat simply changes the setpoint according to schedule and heating is not turned on in advance.

Import / export temperature profile

It is possible to export (save) or import (load) your temperature profile in phone's memory. Temperature profile includes all the data that is on

the main view: heating mode (Off, CO, ECO, Aut), CO and ECO setpoints and week schedule data. Advanced settings that are present in the side menu are not stored under temperature profile to avoid false configuration in case more than one thermostat is configured from the same smartphone.



Side menu

Write new configuration to thermostat

To write new configuration to thermostat, tap "Send" button in the bottom right corner of the screen:



"Write" screen appears which tells to move the phone close to thermostat (like in case of read operation). Hold the phone close to thermostat's front panel and wait until success or failure message is displayed (do not remove the phone from thermostat before this message appears).

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...48 hours. Please note that the thermostat does not automatically change between summer and winter time.

Text on thermostat display related to NFC data exchange

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

Download manual in Swedish, English or Norwegian via this QR code:

