DEVI 140F1161 Intelligent Electronic Timer Controlled Thermostat Installation Guide

Contents

DEVI 140F1161 Intelligent Electronic Timer Controlled Thermostat

Product Information

Specifications

- Product Name: DEVIregTM Room
- Type: Intelligent electronic timer-controlled thermostat with App control
- Installation: Wall mounted in standard EU wall mount boxes
- Control Modes: Floor, Room, Combined
- Features: Adaptive timer support, control of total heating and comfort heating, supports common frame systems

Product Usage Instructions

Safety Instructions

Make sure to shut off the mains power supply to the thermostat before starting the installation.

Installation Guidelines

Follow these guidelines when placing the thermostat:

- Do not place the thermostat on the inner side of a poorly insulated exterior wall.
- Install the thermostat more than 50 cm from window and door openings.
- Do not place the thermostat where it will be exposed to direct sunlight.
- Avoid installing the thermostat in direct wet areas (Zones 0, 1, and 2). Follow local regulations regarding IP classes.

User Guide

- The DEVIregTM Room thermostat can be used for controlling electric floor heating systems efficiently.
- It supports multiple control modes including Floor, Room, and Combined modes.
- The adaptive timer feature helps in efficient control of the heating system.

DEVI Control App

The DEVI Control App allows you to control the thermostat remotely via your smartphone. Refer to the DEVI Control App User Guide for detailed instructions on using the app.

Warranty

Refer to the warranty section for information on the warranty coverage and terms.

Disposal Instruction

Follow the disposal instructions provided to ensure proper disposal of the product at the end of its life cycle.

FAQ

Q: Can the thermostat be used in bathrooms?
A: The thermostat can be installed in bathrooms following local regulations regarding IP classes, but avoid direct wet areas (Zones 0, 1, and 2).

Introduction

The DEVIreg™ Room is a Thermostat for use with electric floor heating, the thermostat has multiple control modes: Floor, Room*, and Combined. The thermostat has adaptive timer support which provides an efficient way of controlling your electric floor heating system.
*requires special action.
The thermostat is specially designed for wall-mounted installation in standard EU wall mount boxes, in and on the wall, and can be used for control of total heating as well as comfort heating of the room. The thermostat supports a selection of commonly used frame systems for 55×55 (inner geometry) framing systems.

Among others, the thermostat has the following features:

- ECO design LOT20 compliance
- In App setup for specific flooring and room types.
- Support for 55×55-like frame systems.
- Simple knob operation for temp. control and features.
- Bluetooth connectivity on 2.4GHz frequency at a maximum power of 10 dBm.
- Access to thermostat via App for settings for easy access, setup, or remote troubleshooting.Firmware update via DEVI Control App.
- Works out of box with default parameters as thermostat.

Standard Compliance

Electrical safety, Electro-Magnetic Compatibility, and Radio aspects for this product is covered by compliance with the following relevant standards:

- EN/IEC 60730-1 (general)
- EN/IEC 60730-2-7 (timer)
- EN/IEC 60730-2-9 (thermostat)
- EN 301 349-1 and EN 301 349-17 (EMC standard for radio equipment operating in the 2,4 GHz band)
- EN 300 328 (Efficient use of radio spectrum for radio equipment operating in the 2,4 GHz band).

SIMPLIFIED EU DECLARATION OF CONFORMITY

Hereby, Danfoss A/S declares that the radio equipment DEVIreg™ Room is in compliance with Directive 2014/53/EU.
The full Declaration of Conformity can be found at
https://assets.danfoss.com/approvals/latest/281716/ID455643625457-0101.pdf

Safety instruction

Make sure that the mains power supply to the thermostat is shut off before starting the installation.
Important: When the thermostat is used to control a floor heating element, always use a floor sensor, and never set the maximum floor temperature to more than the manufacturer recommends for the specific flooring type. The device is limited to 35 °C floor temperature, due to compliance requirements. In special cases, the limit can be extended to 45 °C floor temperature after the unrecoverable breakout has been performed. Based on the setup in the app the thermostat has maximum temperature limitations imposed based on our recommendations.

- Electrical heating thermostats must always be installed according to local building regulations and wiring rules. Installation must be carried out by an authorized and/or qualified installer.
- The thermostat must be used in a wall-mounted installation supplied through an all-pole disconnection switch (fuse).
- Do not expose the thermostat/switch to moisture, water, dust, and excessive heat.
- This thermostat/switch can be used by children aged 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge, if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved, by a person responsible for their safety.
- Children should be supervised to ensure that they do not play with the thermostat/switch.
- The device is designed for permanent operation.

Instructional video material
To make it easy we show the features and functions of the product in videos that are present on our YouTube channel.

Installation Guidelines

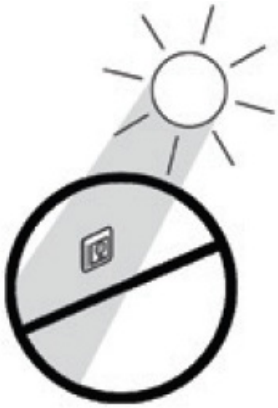
Follow these guidelines when placing the thermostat.

- Install the thermostat in a suitable height on the wall (typical 80 – 170 cm)

- Do not place the thermostat on the inner side of a poorly insulated exterior wall.

- Install the thermostat more than 50 cm from window and door openings

- Do not place the thermostat in a way that it will be exposed to direct sunlight.



- The thermostat must not be installed in direct wet areas (Zones 0, 1 and 2).
- Always follow local regulations regarding IP classes, this doesn't mean that the thermostats can't be installed in bathrooms.

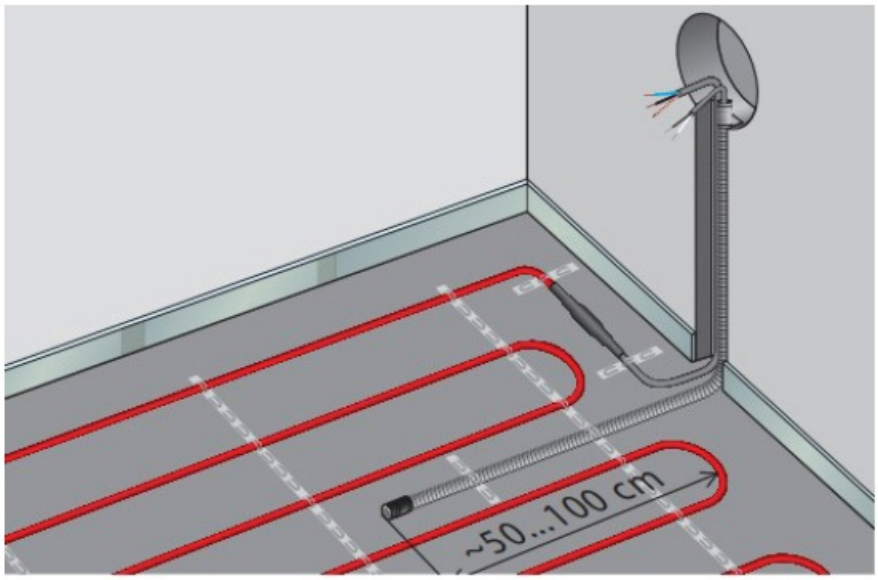
- Do not position the floor sensor close to door openings or at places where the sunlight or other heat sources are located in the floor.

Installation steps

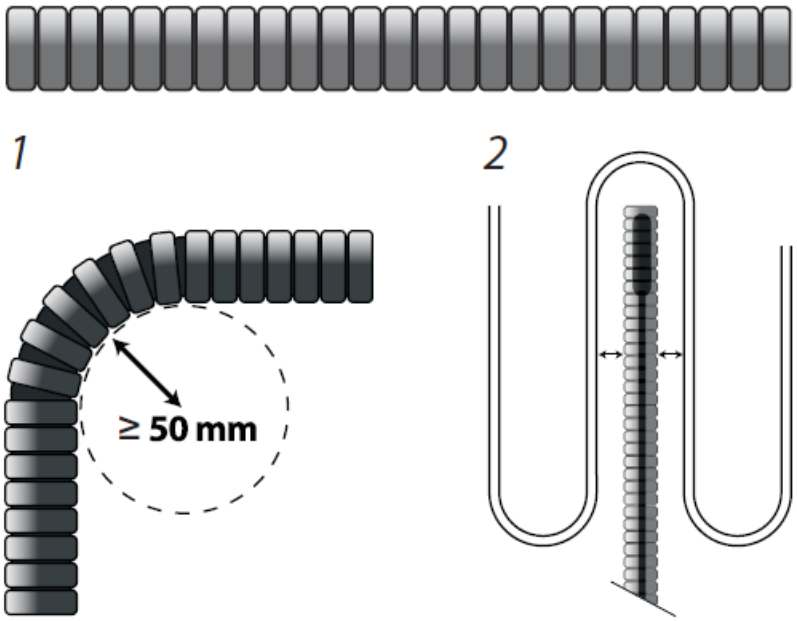
Description

1. Unpack the thermostat. Make sure all parts are delivered (1 pc. Thermostat unit ,1 pc. Power supply, 1 pc. Frame, 1 pc. Frame adapter, 1 pc. Spacer, and 1 pc. Wire sensor) along with the instructions written in local official language.

2. Place the floor sensor in the Flexpipe and make sure the sensor element is properly fixed inside a Flexpipe. The Flexpipe must guide the sensor cable all the way to the wall/connection box. Our mats have this product included. Sold separately as (140F1114).

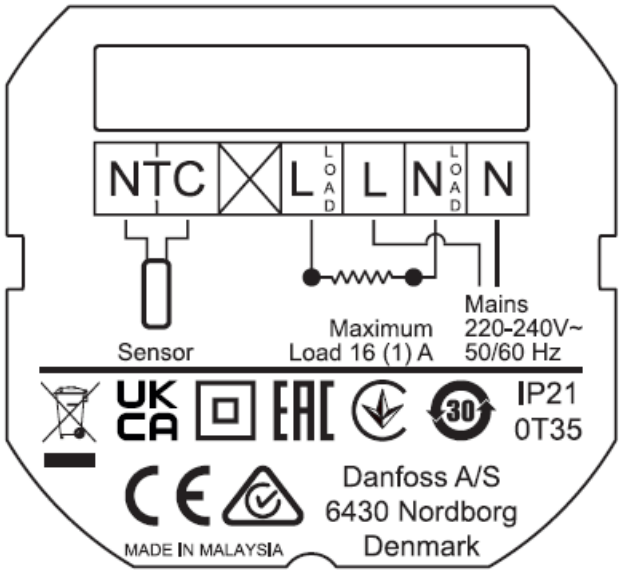


3. The bending radius for the Flexpipe must be more than 50 mm.
4. Make sure the floor sensor is located with equal distances between two heating cables (> 2 cm) located at a representative position.
5. For thin floor constructions: the Flexpipe should be flush with the sub-floor surface, countersink the Flexpipe if possible.

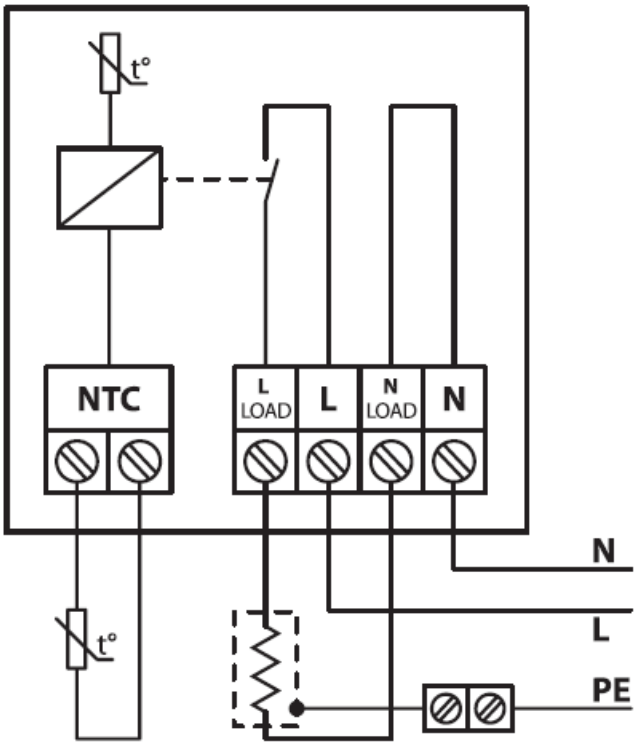


For thicker constructions: the Flexpipe including the sensor should be located such that the sensor is exposed to a representative heating level, our recommendation is still that the sensor must be located equidistant between the cables or mat runs.

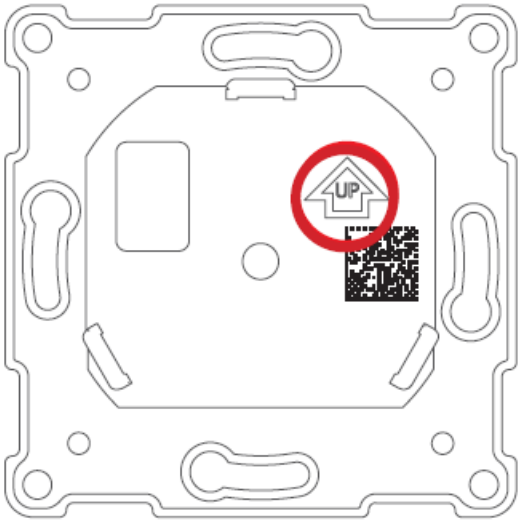
6. Ensure that the wiring circuit is disconnected and voltage-free, and turn off the all-pole disconnect.
7. Connect the wires according to the wiring diagram on back of the power supply of the thermostat. Ensure that the terminals are properly fastened and wires are securely connected.



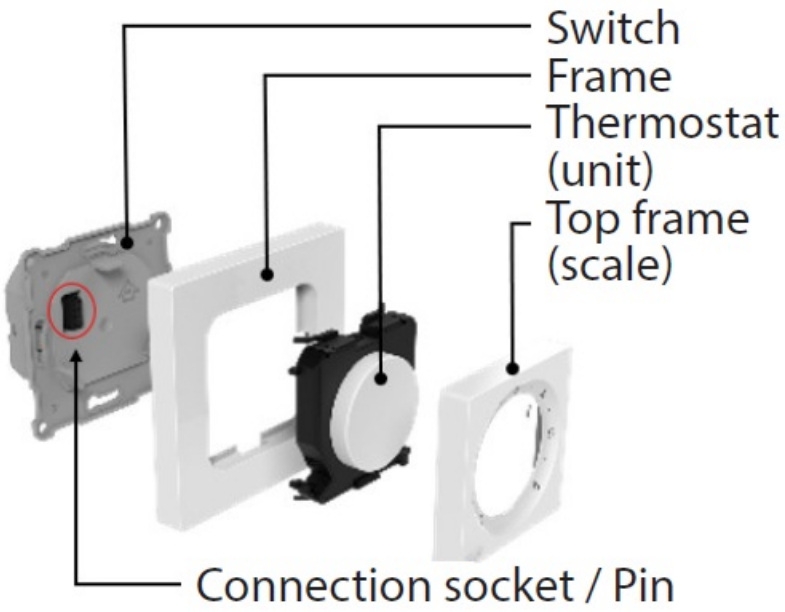
8. The screen/PE wire from the electric heating element must be connected to the PE wire from the main power supply using a separate connector.



9. Fasten the thermostat's power supply to the wall terminal box using screws in a minimum 2 of the designated holes on the power supply unit.
   Notice: place the thermostat according to the – arrow

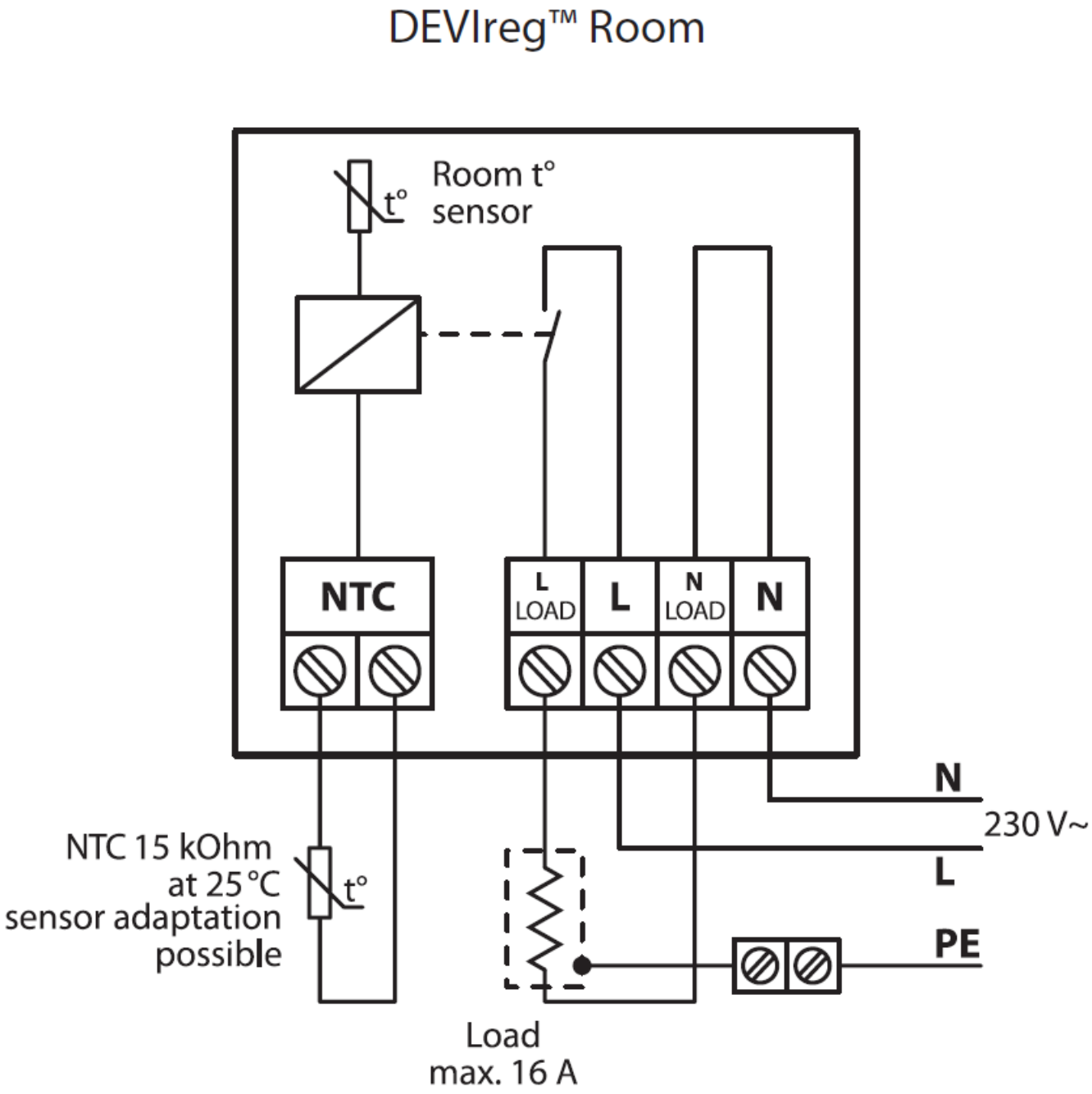


10. Attach the frame and the Top frame to the thermostat. After that attach the thermostat tothe Power supply unit by a soft press until all parts are firmly connected.
11. Carefully attach the thermostat to the Power supply – take care that the connector pins are not bent.



12. After the electrical installation is completed, turn on the all-pole disconnect (fuse).
13. The thermostat is now ready for use.
    The thermostat does not require any settings to be performed in the app, however this will be required to modify advanced features, schedules, and more.
14. Dismount the thermostat front for replacement.
    Perform steps 11 and 10 carefully in the mentioned order, detachment can be done without tools or with a flathead screwdriver.

Connection scheme



Technical specifications

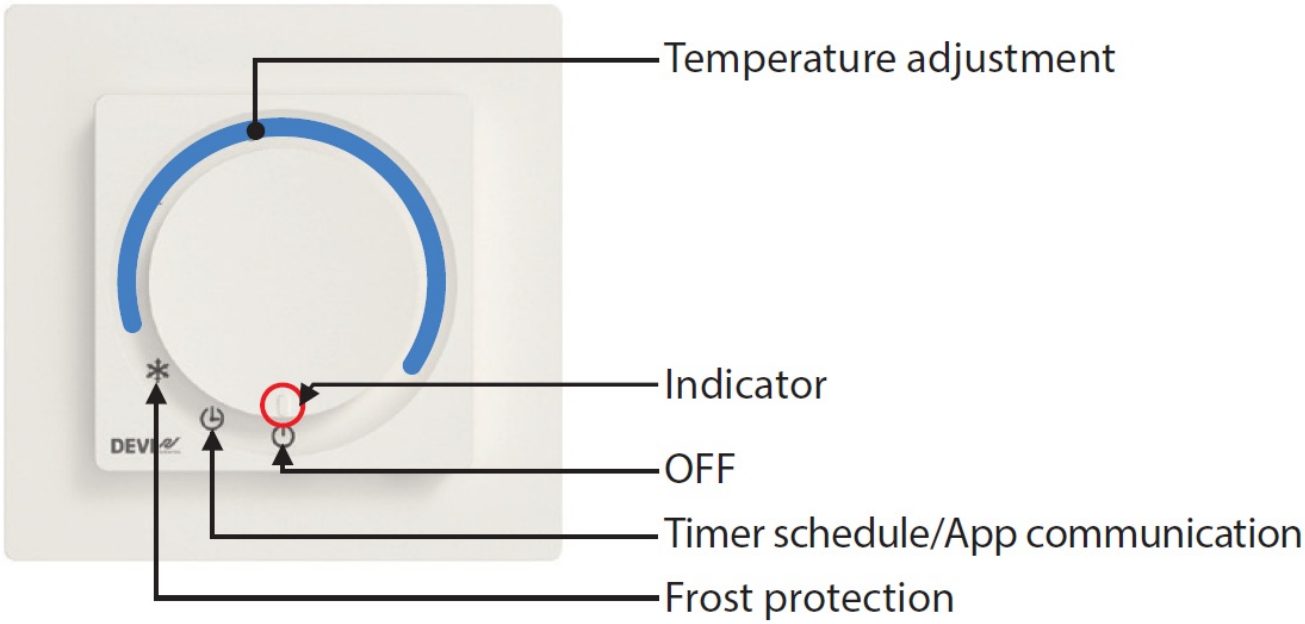
Operating voltage	220-240 V~, 50/60 Hz	
Power consumption	OFF: <175mW	Idle: <200mW
Contact rating: – Resistive load – Inductive load	 230 V ~ 16A/3680 W Cos φ = 0,3 max . 1 A	
Floor sensor	NTC 15 kΩ @ 25°C, 3 m . (default)*	
Control	PWM (Pulse Width Modulation)	
Temperature control range	Room temperature: 15 °C to 35 °C Floor temperature: 5 °C to 35 °C (45 ˚C after breakout)	
Ambient temperature range	0 °C to 35 °C	
Frost protection	4 °C to 14 °C (default value 5 °C)	
IP class	21	
Protection class	Class II –	
Maximum cable size	1 x 4 mm2 or 2 x 2,5mm2 /terminal	
Controller type	1B	
Software class	A	
Pollution degree	2 (Domestic use)	

Over voltage category	III
Temperature for Ball pressure test	75 °C
Storage temperature	-25 °C to 60 °C
Timer functions	3 periods per day . Resolution of timer is 30 minutes . Timer backup for 1 hour
Dimensions	85 mm x 85 mm x 20-24 mm (in wall depth:22mm)
Weight	204 g

standard DEVI sensor 140F1091 3m

User Guide

Product interface



When knob is in temp adjustment mode the thermostat will not run the time schedule program.

Knob position	Description
OFF	In this position the thermostat is not active.
Timer schedule / App communication	In this position the thermostat is running in schedule mode. In this position the thermostat is ready for App configuration/modification.
Frost protection	In this position the thermostat is operating in frost protection mode.
Temp adjustment	By turning the knob clockwise the temperature will increase.

User interface/ daily use

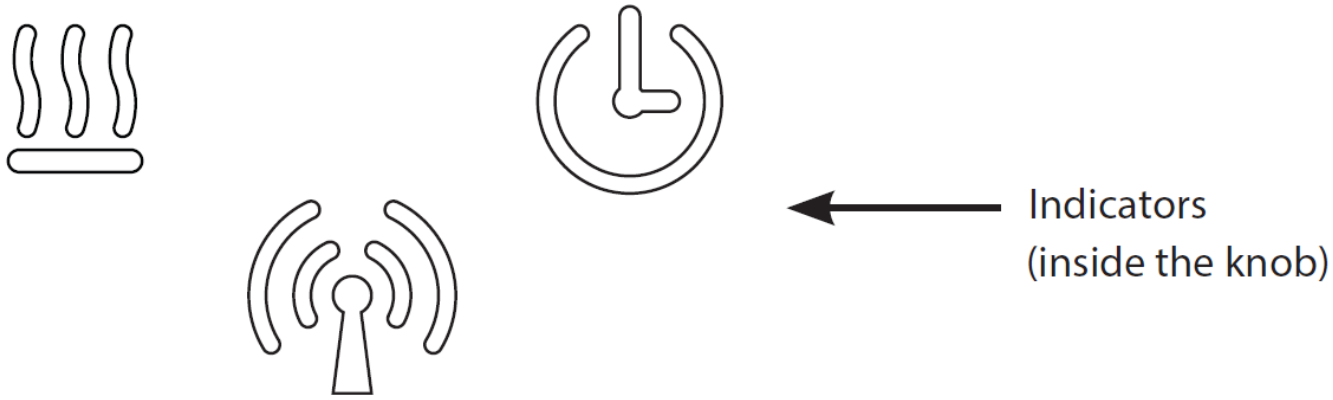
- On the thermostat the temperature can be directly adjusted using the knob/dial by setting the indicator on the wanted temperature, this will disregard any schedule, however, still adhere to any set min/max limitations (can be set in the app).
- The positions Frost protection, Timer schedule or OFF can be selected using the knob/dial.
- Selecting the Frost protection mode will see the thermostat ensure that the frost temperature is maintained, this value can be set between 4-14 °C (default 5 °C) in the app.
- Selecting the timer schedule / app communication mode the device will be connectable in the DEVI control app, the communication is done via Bluetooth 4.2, where temperatures, settings, schedule, limits and more can be set to the desired level.
- Selecting the OFF mode will disable the thermostat completely.
- When the thermostat is in all other positions than Timer schedule/App communication the app can only display

limited information, in OFF the app and thermostat will be completely OFF and nothing will be indicated or communicated to the app.

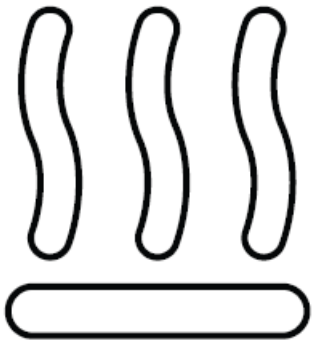
- To pair the thermostat with the app, place the thermostat in the App communication position and start the process in the app , the device will blink with the communication indicator. After the app has initiated the communication with the thermostat, the user needs to turn the dial out to manual temperature setting and back into the App communication position, this is to validate with what thermostat the paring is wanted.

Indicators

The indicators are shine through and are within the knob of the product, these will light up when needed.



All indicators fade out after a duration (default 20 seconds) unless an error is present. Additionally, indicators will “wake up” upon manual interaction with the thermostat, heating state change, schedule event, app connection or errors/warnings appearing.

Heat indicator 	• This indicator lights up and turns **red** when the thermostat switches **on** and delivers current to the electric heating element . After some seconds th e indicator fades out . • This indicator lights up and turns **green** when the thermostat is powere d and OK . After some seconds the indicator fades out . • The indicator flashes **red** when an error is present, this will persist until error is alleviated, heating will not be activated/activatable .
Data communication 	• This indicator flashes **white** when initiating data communication betwee n the thermostat and communication device unit . • The indicator flashes in part of the paring process • The indicator is constant lightning **white** when communication between the thermostat and communication device is prese nt . The indicator turns off when communication stops .

Schedule 	• This indicator lights up **white** when the built in schedule changes from Non active to active and vice versa . After some seconds, the indicator fade s out . • The indicator flashes in part of the paring process . • This indicator flashes **white** when there are warnings . The warning will be present until App communication is activated, however the indicator will only flash for a duration (default 20 sec onds) . Warnings will be displayed in the App .

Default settings and out of the box settings

The DEVIreg™ Room will have the following settings out of the box:

- Maximum Room temperature 35˚C
- Maximum floor temperature: 28˚C
- Minimum floor temperature 5˚C

If the thermostat is placed onto the schedule (clock) icon without having the app connected, the temperature is default 21˚C

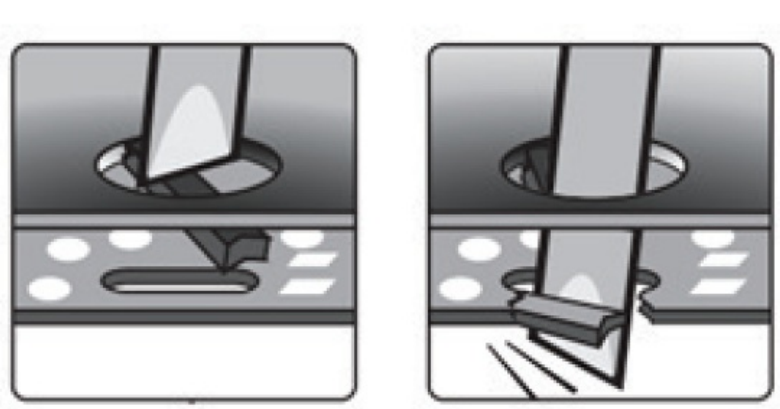
Factory reset

- To perform a factory reset the thermostat needs to be powered and correctly mounted, on the bottom of the device (circled below) is a pin hole, by pressing a needle into this pinhole a button will be activated, after 20-30 seconds of activation of this button the thermostat will perform a factory reset. All indicators will flash briefly to inform about successful factory reset.
- The thermostat will briefly be rebooting please allow for up to 5 seconds for the thermostat to be back to a responsive state.
- Performing an factory reset will reset errors and warnings.
- Alternative method, the front cover on the thermostat can be removed using the slot on the bottom of the thermostat and the button can be activated with a finger or similar.

- The factory reset can only be performed whilst the thermostat is powered.

Breakout

- To enable the thermostat to go up to a floor temperature of 45°C, or to use the room only control functionality. A permanent modification must be made, this can invalidate your warranty on the product and connected products.
- The higher maximum temperature limit or alternative control mode needs to be set in the app after the action has been performed.
- To best perform the action the thermostat unit needs to be dismounted from the power supply, on the back of the thermostat there is a hole as shown below, to perform the breakout the plastic seal in the hole needs to be broken and thereafter the PCB trace needs to be broken. The action is best performed with a flathead screwdriver or similar as shown below.
- Whilst doing the breakout please take care not to damage any other components on the circuit board.



DEVI Control App:

DEVI Control App User Guide:

REFERENCE TO APP MANUAL
To pair the thermostat with the app, initiate the app and follow the instructions provided in the app.

App enabled functions

- wizard assisted installation scheduling
- pre-heating (adaptive heating)
- thermostat limits adaptation
- control mode changeability
- child lock
- settings lock
- warning and error readout
- information export
- help function
- complete overview of data and functions

Warnings and error messages

Warning table

Warning	Description	Reference
W1	Schedule overwritten due to manual dial setting	Set when Schedule is active (Set in App) but dial has been turned to set a manual setpoint
W2	Invalid clock	If time is totally invalid – less than 2021 or above 2050 or use production date or first time connected to App
W3	Child lock is enable	Will be active if child lock is enable and the user tries to change the setpoint or mode with the potentiometer (or encoder)
W5	Set temperature not achievable	Warning given when the room/floor temperature from schedule or manual setpoint can’t be reached within 40 PWM periods (Output from heating control)
W8	Maximum Floor Temperature Limit reached	Set if Maximum Floor Temperature is reached while in Combi Mode while Room Temperature is not at Set point
W10	Temperature set above maximum temperature limit	Set, if maximum temperature is lower than the current temperature knob/ potentiometer is pointing at . Like Max set to 25°C and knob is set to 27°C

Error table

Error type	No	Description	Solution	Need restart
Floor Sensor	E1	Connection	Contact	The thermostat
disconnected		to sensor	installer or	requires a restart
		is lost	local Danfoss	to operate again
			service	
Floor Sensor	E2	Sensor	Contact	The thermostat
short-		short-	installer or	requires a restart
circuited		circuited	local Danfoss	to operate again
			service	
Thermostat	E3	Thermostat	Wait until	The thermostat
overheated		is over-	thermostat	needs no restart
		heated,	cools down	but will start
		heating is		heating when
		turned off .		the temperature
				is lowered
Room sensor	E4	Room tem-	Contact	
disconnected		perature	installer or	
		sensor value	local Danfoss	
		too low .	service	

Room sensor	E5	Room tem-	Contact	
short-		perature	installer or	
circuited		sensor value	local Danfoss	
		too high .	service	
Unrecover-	E6	Power	Contact	
able error,		supply is	installer or	
Power supply		detected as	local Danfoss	
		defective	service	
Potentiom-	E9	Potenti-	Contact	The potentiometer
eter / dial		ometer is	installer or	is reading a value
error		detected as	local Danfoss	that is outside of
		defective	service	the given range
Invalid com-	E10	Bluetooth	Retry /	Bluetooth
munication		communi-	Contact	communication
		cation error	installer or	has encountered
			local Danfoss	an unexpected /
			service	faulty command
Unrecover-	E11	Unrecover-	Contact	
able error		able error	installer or	
			local Danfoss	
			service	

Factory reset will reset all errors and warnings.

Eco Design Sheet

To comply with ECO design regulations for electric local space heaters 1188/2015 the following table is to be filled in with the specifics of the heating system. Herein the thermostat information for this specific product is prefilled, please fill any/ all blank slots.

Information requirements for electric local space heaters

Model identifier(s): DEVIreg™ Room					
Item	**Sym- bol**	**Value**	**Unit**	**Item**	**Unit**
Heat output				**Type of heat input, for electric storage local space heaters only (select one)**	
Nominal heat output	*Pnom*		kW	manual heat charge control, with integrated thermostat	[yes/no]
Minimum heat output (indicative)	*Pmin*		kW	manual heat charge control with room and/ or outdoor temperature feedback	[yes/no]
Maximum continuous heat output	*Pmax,c*		kW	electronic heat charge control with room and/ or outdoor temperature feedback	[yes/no]
Auxiliary electricity consumption				fan assisted heat output	[yes/no]
At nominal heat output	*elmax*	<0,00062	kW	**Type of heat output/ room temperature control (select one)**	
At minimum heat output	*elmin*	<0,00062	kW	single stage heat output and no room temperature control	[no]
In standby mode	*elSB*	<0,000175	kW	Two or more manual stages, no room temperature control	[no]
				with mechanic thermostat room temperature control	[no]

				with electronic room temperature control	[no]
				electronic room temperature control plus day timer	[no]
				electronic room temperature control plus week timer	[yes]
				Other control options (multiple selections possible)	
				room temperature control, with presence detection	[no]
				room temperature control, with open window detection	[no]
				with distance control option	[no]

				with adaptive start control	[yes]
				with working time limitation	[no]
				with black bulb sensor	[no]
Contact details		Danfoss A/S, Nordborgvej 81, 6430 Nordborg, Denmark			

Warranty

- A 2-year product warranty is valid for: thermostats incl. DEVIreg™ Room.
- Should you, against all expectations, experience a problem with your DEVI product, you will find that Danfoss offers DEVIwarranty valid from the date of purchase that was no later than 2 years from production date on the following conditions:
- During the warranty period Danfoss shall offer a new comparable product or repair the product if the product is found to be faulty by reason of defective design, materials or workmanship. The decision to either repair or replace will be solely at the discretion of Danfoss.
- The decision to either repair or replace will be solely at the discretion of Danfoss. Danfoss shall not be liable for any consequential or incidental damages including, but not limited to, damages to property or extra utility expenses. No extension of the warranty period following repairs undertaken is granted.
- The warranty shall be valid only if the WARRANTY CERTIFICATE is completed correctly and by the instructions, the fault is submitted to the installer or the seller without undue delay and proof of purchase is provided. Please note that the WARRANTY CERTIFICATE must be filled in, stamped and signed by the authorized installer performing the installation (Installation date must be indicated). After the installation is performed, store and keep the WARRANTY CERTIFICATE and purchase documents (invoice, receipt or similar) during the whole warranty period.

- DEVIwarranty shall not cover any damage caused by incorrect conditions of use, incorrect installation or if installation has been carried out by non-authorized electricians. All work will be invoiced in full if Danfoss is required to inspect or repair faults that have arisen as a result of any of the above. The DEVIwarranty shall not extend to products that have not been paid in full. Danfoss will, at all times, provide a rapid and effective response to all complaints and inquiries from our customers.
- The warranty explicitly excludes all claims exceeding the above conditions.
- For full warranty text visit **www.devi.com**. **devi.danfoss.com/en/warranty/**

WARRANTY CERTIFICATE

The DEVIwarranty is granted to:

- Address Stamp
- Purchase date
- Serial number of the product
- Product Art. No.
- Connected output [W]
- Installation Date
- Signature
- Connection Date
- Signature
- Not mandatory

Disposal instruction

This symbol on the product indicates that it may not be disposed of as household waste. It must be handed over to the applicable take-back scheme for the recycling of electrical and electronic equipment.

- Dispose of the product through channels provided for this purpose.
- Comply with all local and currently applicable laws and regulations

Danfoss A/S Nordborgvej 81 6430 Nordborg Denmark
DanfossA/S
DEVI **devi.com** +45 7488 8500
E-Mail: **EH@danfoss.com**

Room thermostat

- 220-240V~
- Load 16 A/3680 W @ 230V ~
- 50/60Hz

- 0T35°C
- IP21

Danfoss Ltd. 22 Wycombe End HP9 1NB, GB
MADE IN MALAYSIA

Documents / Resources

	DEVI 140F1161 Intelligent Electronic Timer Controlled Thermostat [pdf] Installation Guide 140F1161 Intelligent Electronic Timer Controlled Thermostat, 140F1161, Intelligent Electronic Timer Controlled Thermostat, Electronic Timer Controlled Thermostat, Timer Controlled Thermostat, Controlled Thermostat, Thermostat

References

- Welcome to DEVI | Danfoss
- User Manual