ENGINEERING
TOMORROW

Danfoss *Icon*™ Programmable
Room Thermostats, 230 V

Description

Danfoss *Icon*™ Programmable 088U1020

Danfoss *Icon*™ Programmable 088U1025

Danfoss *Icon*™ is a range of flush and surface mounted room thermostats for hydronic floor heating applications.

Danfoss *Icon*™ Programmable is mains powered and can be used as a stand-alone thermostat or in combination with wiring center 088H0016.

The thermostat uses a triac output and can control up to 5 thermal actuators.

The user can choose between 7 pre-defined heating schedules. A schedule can be temporarily overrided by using the three mode keys.

The thermostat can also operature without scheduling (constant room temperature setpoint).

The thermostat uses forecast (adaptive learning).

The thermostat uses a "touch on glass" interface with a shine through display. The display is "OFF" in normal operation.

Features

- Accurate PWM-control
- Compatible with 3'rd party wall frames
- Shine through display with mode keys
- 7 pre-defined schedules and forecast
- Range limitation via user menu
- Neutral design and simple user interface
- Frost protection setting
- Can be used with 230V NC or NO actuators
- Can be optimized for different heatsources via service menu
- Valve exercise feature
- Can be used in systems with cooling
- Has input for global setback
- Can be used with floor sensor (optional)
- Very high UV-resistance

Ordering

Product	Version	Size	For junction box	Code no.
Danfoss *Icon*™ Programmable	In-wall	80 x 80 mm	Euro, Ø68 mm	**088U1020**
Danfoss *Icon*™ Programmable	In-wall	86 x 86 mm	Square, 70x70 mm	**088U1021**
Danfoss *Icon*™ Programmable	In-wall	88 x 88 mm	Swiss type	**088U1022**
Danfoss *Icon*™ Programmable	On-wall	86 x 86 mm	N.A.	**088U1025**

Accessories

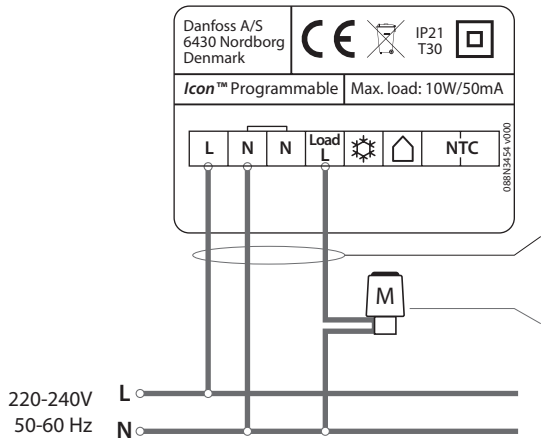
Product	Description	Code no.
Danfoss FH-WC, 230V	Wiring center, 8 channels, up to 16 outputs	**088H0016**
Danfoss *Icon*™ Floor Sensor	47 kΩ, 3 m, IP 67	**088U1110**

Technical specifications

Type	Electronic thermostat with touch user interface	
User interface	Capacitive touch and shine through display	
User interface features	Heating icon, arrow up/down, confirm key, back key, Home, Away, Night, Settings	
Display type	Hybrid: red single LED's and custom segment	
Display features	Switches OFF after 10 sec. with no interaction	
Real time clock	Yes, std. Gregorian calendar. 8 hrs. running reserve (new product) down to 1.5 hrs. running reserve in year 10 after installation.	
Automatic daylight saving time	Standard, can be turned off	
Heating schedules	7 x pre-defined schedules (P0-P6) 5/2 days (weekdays and weekends)	
Temperature setting range	5 - 35° C (frost protection setting = 5° C)	
Ambient temperature, storage	-20 to 60° C	
Ambient temperature, used in application	0 to + 40° C	
Controller, type	Adjustable Pulse Width Modulation	
Change over, cooling	Yes, via 230 V input terminal	
Global setback/Away	Yes, via 230 V input terminal	
Max. continuous load (output)	< 50 mA /10 W (= 5 pcs. Danfoss TWA actuators)	
Max. inrush current (actuator)	3 A ≤ 100 ms	
Power consumption	0.2 W	
Power supply (excl. actuators)	220-240 V, 50/60 Hz	
Sensor, room	NTC 47 kΩ	
Sensor, floor (optional)	NTC 47 kΩ, 3 m, IP 68	
Shell material	White parts: PC ASA Grey parts: PC, 10% glass	
IP and Protection class	IP: 21	Protection class: II
ErP class	ErP Product Class 4 (2%)	
Approval	CE, RohS, WEEE	
Colour	White RAL9010 / Dark Grey RAL7024	
Dimensions, in-wall versions	80 x 80 x 11 mm (088U1020) 86 x 86 x 11 mm (088U1021) 88 x 88 x 13 mm (088U1022)	
Dimensions, on-wall version	86 x 86 x 25 mm (088U1025)	

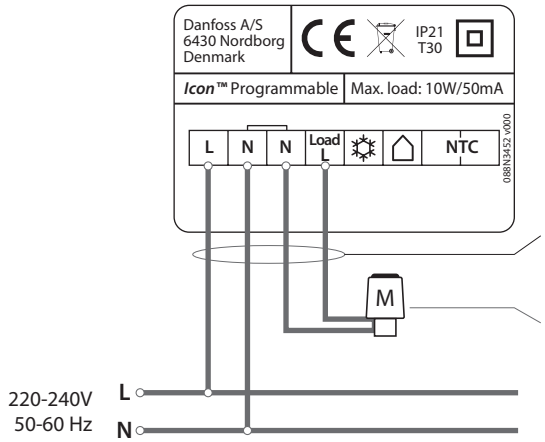
Application examples

Wiring without wiring center, neutral wire from main installation



Min. 3G1.5 cable to thermostat (not counting Protective earth)

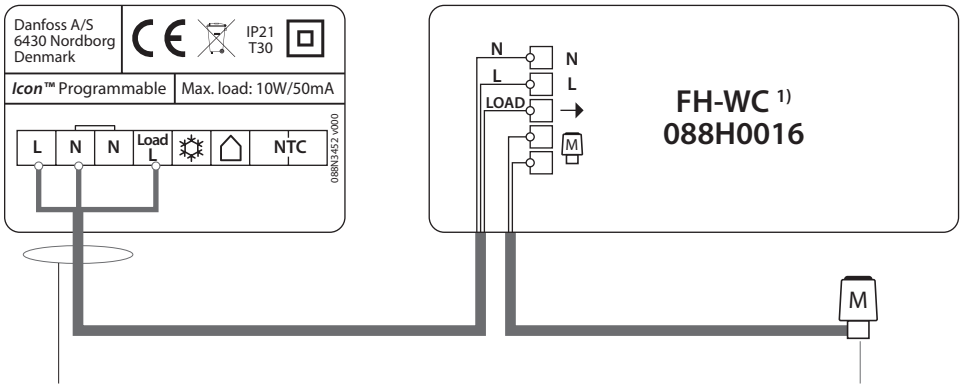
Max. 5 actuators, type NC or NO, 230V
Max. 10 W / Max. 50 mA continuous load
Max. 3 A inrush current ≤ 100 ms



Min. 4G1.5 cable to thermostat (not counting Protective earth)

Max. 5 actuators, type NC or NO, 230V
Max. 10 W / Max. 50 mA continuous load
Max. 3 A inrush current ≤ 100 ms

Wiring with wiring center



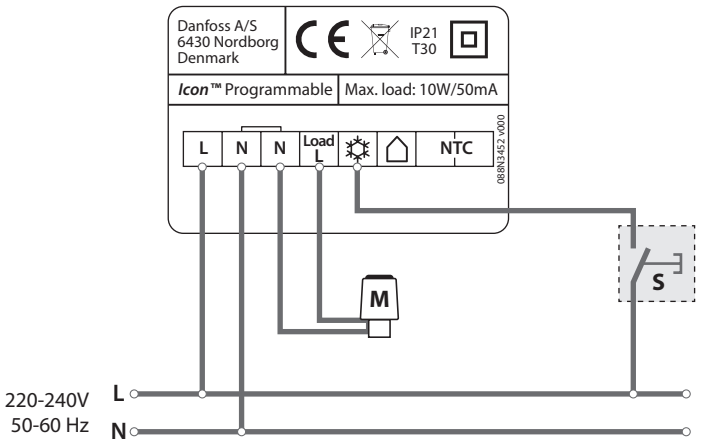
Min. 3G1.5 cable to thermostat (not counting Protective Earth)

Max. 5 actuators, type NC, 230V
Max. 10 W / Max. 50 mA continuous load
Max. 3 A inrush current ≤ 100 ms

[1] ***Note!*** *Wiring center FH-WC 088H0016 only supports NC actuators, and does not support cooling change-over or global setback.*

Application examples

How to set thermostats to cooling mode from external device



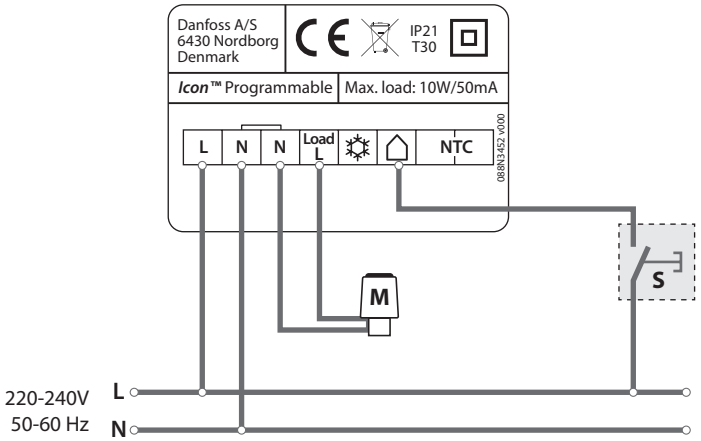
S: *Can be mechanical switch Summer / Winter or relay activated by external device.*

Use the same phase which supplies the thermostat.

The thermostat/room remains in cooling mode as long as the phase is live onto the ❄ terminal.

Note! Switch not delivered by Danfoss.

How to set thermostats to Away (global standby) from external device



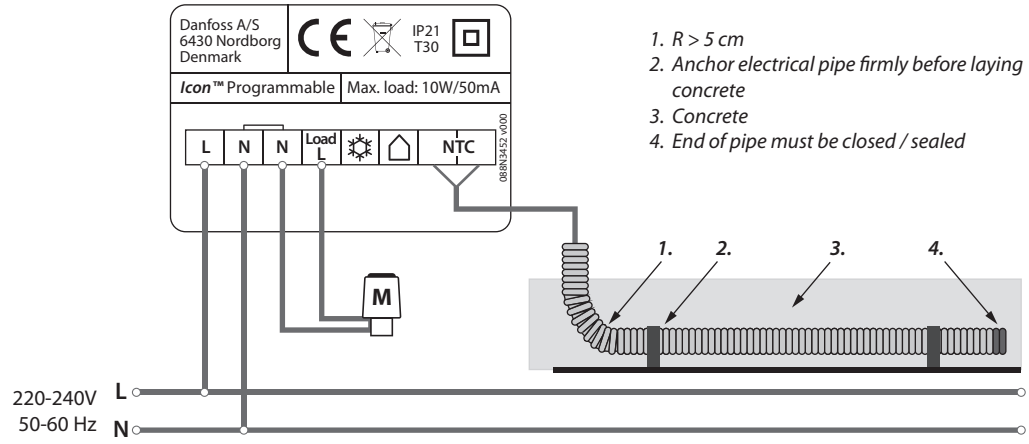
S: *Can be mechanical switch Home / Away or relay activated by external device.*

Use the same phase which supplies the thermostat.

The thermostat/room remains in Away mode as long as the phase is live onto the ⌂ terminal.

Note! Switch not delivered by Danfoss.

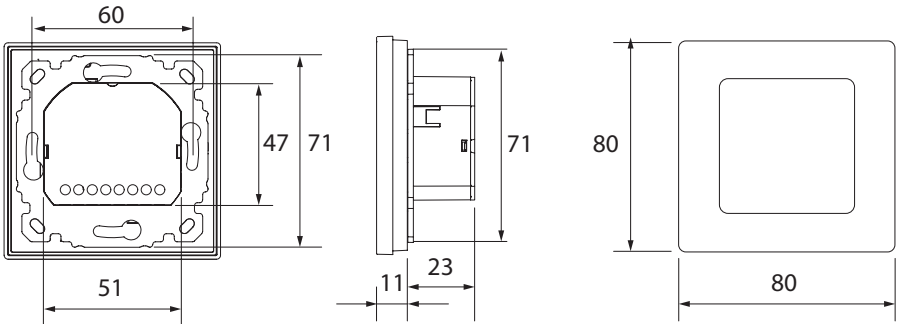
How to install a floor sensor



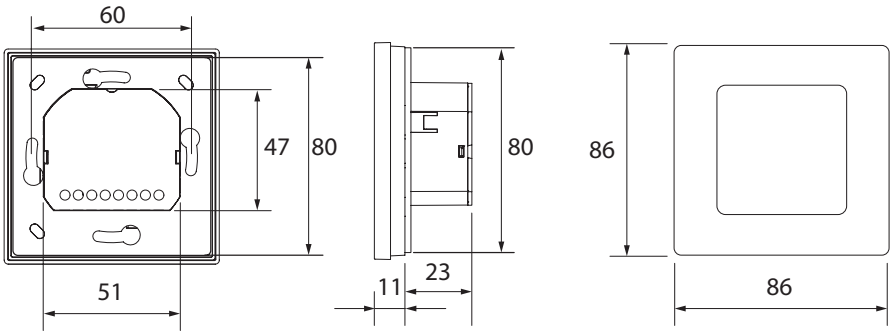
1. *R > 5 cm*
2. *Anchor electrical pipe firmly before laying concrete*
3. *Concrete*
4. *End of pipe must be closed / sealed*

Note!
Use Danfoss 47 KΩ NTC sensor, code no.: 088U1110
Always route external sensors in a suitable electrical pipe!

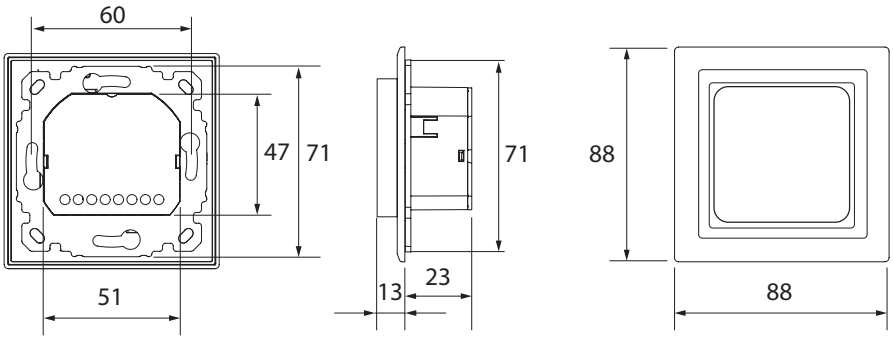
Dimensions



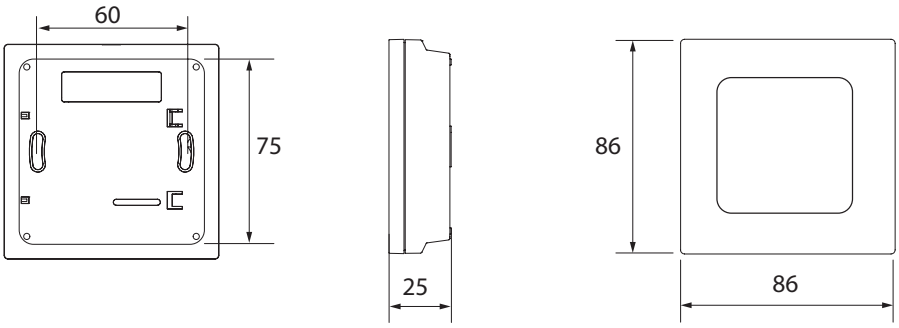
Danfoss *Icon*™ Programmable 088U1020



Danfoss *Icon*™ Programmable 088U1021



Danfoss *Icon*™ Programmable 088U1022
(incl. Feller EDIZIOdue frame and adapter)



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