

Data Sheet

Danfoss *Icon*™ Programmable Room Thermostats, 230 V

Description



Danfoss *Icon*™ Programmable 088U1021



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 088H001600.

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 over-rided by using the three mode keys.

The thermostat can also operate 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
- 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 230 V NC or NO actuators
- Can be optimized for different heat sources 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 <i>Icon</i> ™ Programmable	In-wall	86 x 86 mm	Square, 70x70 mm	088U1021
Danfoss <i>Icon</i> ™ Programmable	On-wall	86 x 86 mm	N.A.	088U1025

Accessories

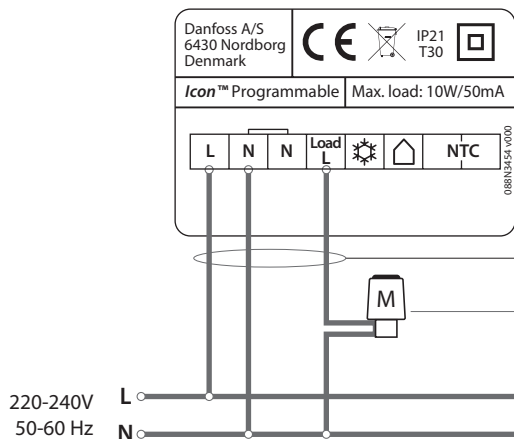
Product	Description	Code no.
Danfoss FH-WC, 230V	Wiring center, 8 channels, up to 16 outputs	088H001600
Danfoss <i>Icon</i> ™ Floor Sensor	47 kΩ, 3 m, IP 67	088U1110

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 °C to 35 °C (frost protection setting = 5 °C)	
Ambient temperature, storage	-20 °C 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		
Approval	CE, RohS, WEEE	
Colour	White RAL9010 / Dark Grey RAL7024	
Dimensions, in-wall versions	86 x 86 x 11 mm (088U1021)	
Dimensions, on-wall version	86 x 86 x 25 mm (088U1025)	

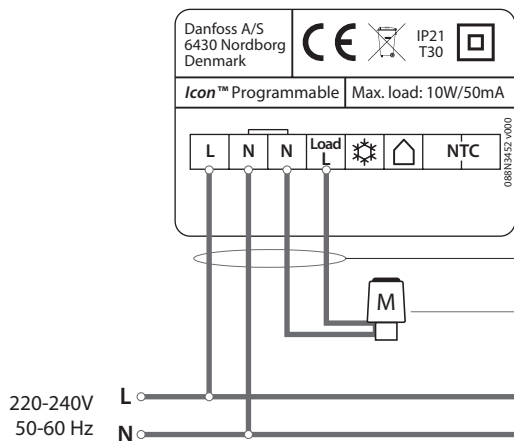
Application examples

Wiring without wiring center, neutral wire from main installation



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

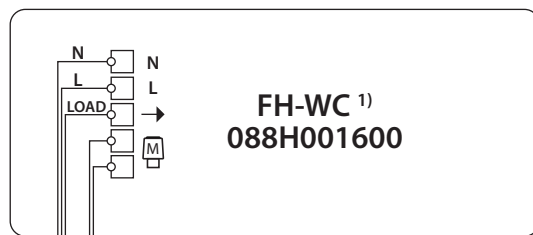
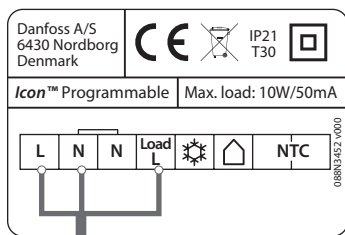
Max. 5 actuators, type NC or NO, 230V
Max. 10 W / Max. 50 mA continuous load
Max. 3 A inrush current \leq 100 ms



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 \leq 100 ms

Wiring with wiring center



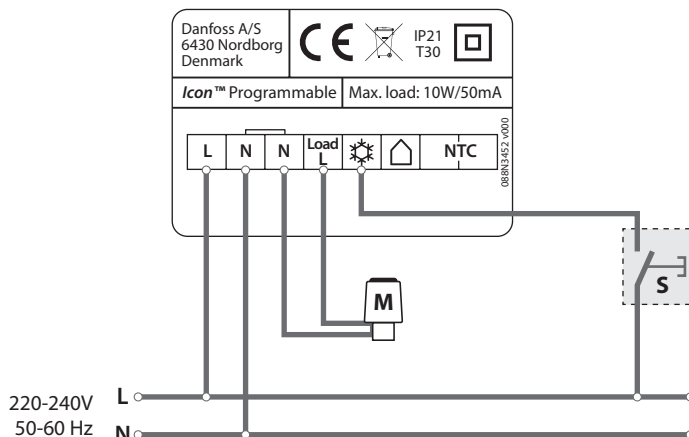
Min. 3G1.5 cable to thermostat (not counting Protective Earth)

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

¹⁾ Note! Wiring center FH-WC 088H001600 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



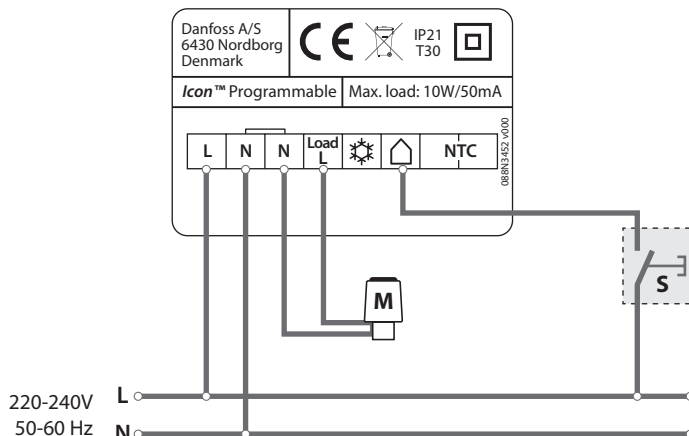
S: Can be mechanical switch Summer / Winter or relay activated by external device.

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



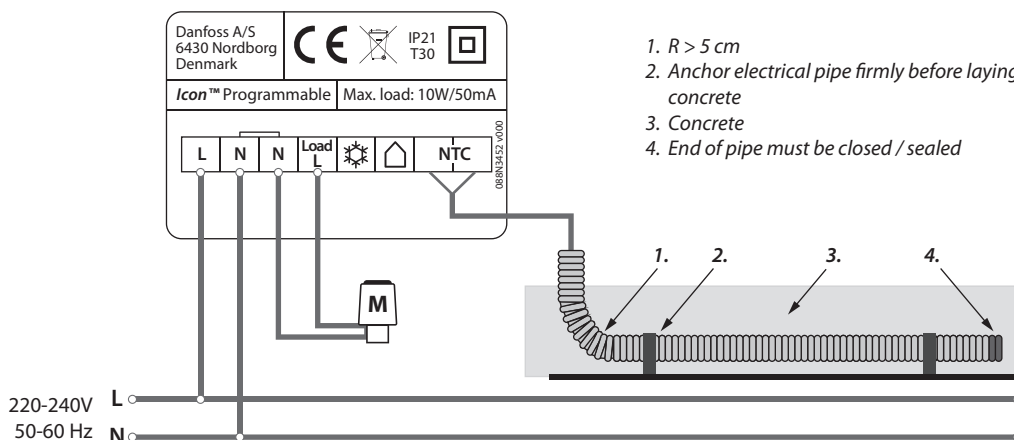
S: Can be mechanical switch Home / Away or relay activated by external device.

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



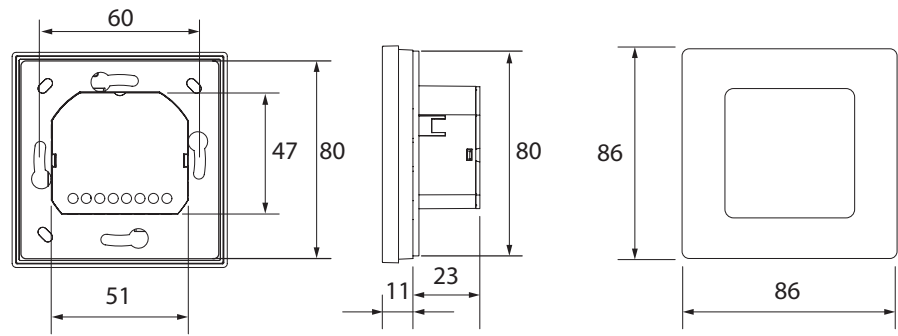
1. $R > 5\text{ cm}$
2. Anchor electrical pipe firmly before laying concrete
3. Concrete
4. End of pipe must be closed / sealed

Note!

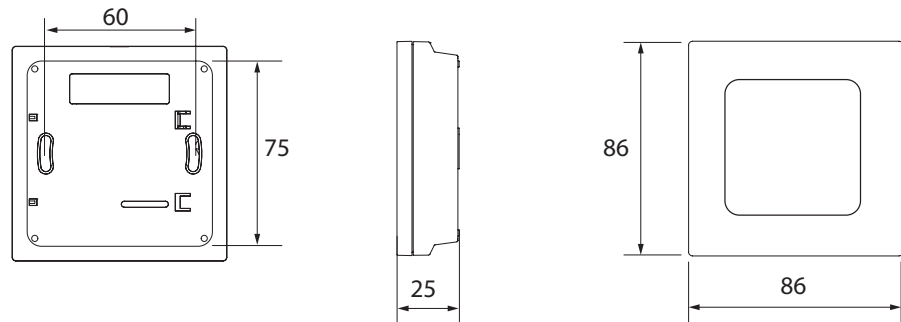
Use Danfoss 47 K Ω NTC sensor, code no.: 088U1110

Always route external sensors in a suitable electrical pipe!

Dimensions



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