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Danfoss Underfloor heating

Find optimal thermal **comfort** with underfloor **heating** systems

With products for both electric and hydronic underfloor heating systems, our solutions will fit any new build or renovation project.



heating.danfoss.co.uk

Contents

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Click on a code number to view the item directly in the Product Store or to speak to a Danfoss expert to get more information

N.B. Underfloor heating relies on the heat produced being unrestricted. If it is restricted, it may cause "hot spots" and, at worst, discolour the floor. Things such as beanbags, mattresses laid directly on the floor may cause problems. Any object that allows air movement underneath it is OK

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Hydronic Underfloor Heating	3-16
Hard wired controls 230V	5
Danfoss Icon 230V	6-7
BasicPlus ² thermostats	8
TS710 time switch	9
Hard wired controls 24v	10
Danfoss Icon 24v	11
Thermal actuator TWA	12
Underfloor heating valve FHV-R	13
Floor heating manifold SSM	14
Floor heating manifold bundles	15
Accessories	16
Pipe fittings	17
Electric Underfloor Heating Mats	19-24
ECmat 100w for timber floors	21
ECmat 150w for concrete floors	22
ECmat 200w for high heat loss areas	23
Electric Underfloor Heating Controls	25-28
ECtemp Touch and ECtemp Next Plus	27
ECtemp Smart	28

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Hydronic Floor Heating Controls



Floor heating should be room controlled to balance the needs and desires of individuals around the home whilst also lowering your energy bill.

Which is why our hydronic floor heating controls combine perfect system balance from pre-setting valves with independent room control to provide optimal comfort and savings.

Each of our products offer significant benefits from child safety locks and tamper-proof designs to adaptive learning where the system uses intelligent forecasting to calculate when to initiate heating and reach the desired temperature in time for breakfast.

All our products have been through our advanced test centre to simulate different requirements. Using the results to refine our products in regards to heat absorbing and floor heating reaction time and more to offer you both secure comfort and significant energy savings.

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Hard wired controls

230V



- Wiring centre ideal for hydronic floor heating systems
- Can be connected to 230V thermal actuators
- Can control up to 8 zones
- Directly powered by standard 230Vac/50Hz without the need for external transformer

Hard-wired Systems Wiring Box - FH-WC 230V Output	
Code No.	088H012801
Number of zones (thermostats in/thermal actuator zones out)	8
Time channels (requires external 1-channel or 2-channel time control)	2 ⁽¹⁾
Boiler interlock relay, (voltage free) ⁽²⁾	SPST, 6(2)A
Pump interlock relay, (voltage free) ⁽²⁾	SPST, 6(2)A
Supply voltage	230Vac, ±15%, 50/60Hz
Output voltage (to zone thermostats and thermal actuators)	Max 250Vac
Output per channel	up to 0.5A
Dimensions (mm)	314 wide x 110 high x 81 deep

Notes:

(1) One of two time channels can be assigned at time of installation to each thermostat.

(2) Boiler and pump relays are activated whenever one or more zone thermostats call for heat.

[> Back to contents page](#)

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Danfoss Icon

230V



The Icon™ 230V Wiring Center can connect up to 14 thermal actuators from up to 8 room thermostats. It is provided with 230V Live circulation pump output and voltage-free relays for controlling a boiler. The relays are activated when one or more thermostats require heat.

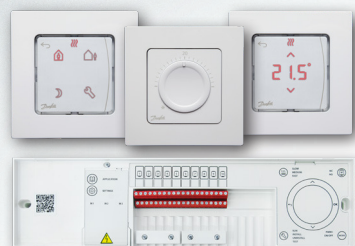
Danfoss Icon™ 230V Wiring Center, 8 channel, NP	
Code No.	088U1042
Max. number of thermostats	8
Max number of actuators	14
Supply voltage	220-240 V AC
Ambient temp. range, operation	0 °C to 50 °C
Output relay, boiler	Voltage-free Max. 2 A
Output relay, pump	230 V Max. 100 W

[> Back to contents page](#)

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Danfoss Icon 230V



- Dial, Display and Programmable models
- Controls up to 5x NC/NO actuators
- In-wall and on-wall installation
- Compatible with FH-WC Wiring centre
- User interface that fades out when not in use (Programmable/Display only)
- Intuitive and easy set up with pre-defined schedules (Programmable only)

Description	Code Number
230V	
Danfoss Icon™ Room Thermostat, 230V dial in-wall	088U1001
Danfoss Icon™ Room Thermostat, 230V display in-wall	088U1011
Danfoss Icon™ Room Thermostat, 230V programmable in-wall	088U1021
Danfoss Icon™ 230V Dial Featured, NSB, remote sensor (air/floor)	088U1006
Danfoss Icon™ 86x86 Tamperproof cover	088U1113
Danfoss Icon™ Floor Sensor for 24V & 230V	088U1110
TS2A Remote Air Temperature Sensor (only for 088U1006)	087N7748

[> Back to contents page](#)

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BasicPlus² Thermostats



WT-D, WT-DM, WT-DR, WT-P & WT-PR:

- 3 selectable temperature control modes
- Floor sensor terminals
- Voltage-free auxiliary SPST relay (WT-DR & WT-PR only)

WT-T:

- Set optimal thermal comfort with the dial
- Frost symbol for minimal energy consumption whilst avoid freezing temperatures

Basic Plus ² Thermostat	Description	Code No.
WT-T	Dial with LED indicator	088U0620
WT-D	LCD display with push buttons	088U0622
WT-DR	LCD display with push buttons. Voltage-free auxiliary relay	088U0624
WT-P	LCD display with push buttons, programmable	088U0625
WT-PR	LCD display with push buttons, programmable. Voltage-free auxiliary relay	088U0626
WT-DM	LCD display with push buttons. Modbus communication (BMS)	088U0627
FH-CWF	Floor sensor for use with WT-DR or WT-PR	088U0610

[> Back to contents page](#)

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TS710 Time Switch



- Single channel switching with volt free relay
- 7 Day, 5/2 Day & 24Hr schedules
- 1, 2 or 3 heating periods (2, 4 or 6 events)
- Auto, Boost, On or Off modes
- Holiday override
- Battery back-up
- Service Due Timer

Description	Code No.
LCD backlit display with push buttons	087N7881

Hard wired controls 24v output



- Incorporates separate boiler and pump interlocks
- Convenient and easy to wire
- Connects up to 10 actuators to the room thermostats
- Single room temperature control
- Manual night set-back
- Optional connection for floor sensor
- Tamper-proof

Hard wired Systems Wiring Box - FH-WC 24V Output	
Code No.	088H001701
Number of zones (thermostats in/thermal actuator zones out)	10
Time channels (requires external 1-channel or 2-channel time control)	2 ⁽¹⁾
Boiler interlock relay, (voltage free) ⁽²⁾	SPST, 6(2)A
Pump interlock relay, (voltage free) ⁽²⁾	SPST, 6(2)A
Supply voltage	24Vac, +/- 15%, 50/60Hz
Output voltage (to zone thermostats and thermal actuators)	24Vac
Output per channel	up to 0.5A
Dimensions (mm)	314 wide x 110 high x 61 deep

Notes:

(1) One of two time channels can be assigned at time of installation to each thermostat.

(2) Boiler and pump relays are activated whenever one or more zone thermostats call for heat.

Wired Controls, 24V Output	Code No.
FH-WT, Dial setting room thermostat with setback	088H0022
FH-WP, Tamperproof room thermostat	088H0023
FH-WF, Floor sensor for FH-WS room thermostat, 30kohm, 20°C, cable length 3m	008H0025

[> Back to contents page](#)

[> Back to contents page](#)

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Danfoss Icon 24V



- Display and Programmable models
- Controls up to 5x NC/NO actuators
- In-wall and on-wall installation
- Compatible with FH-WC Wiring centre
- User interface that fades out when not in use (Programmable/Display only)
- Intuitive and easy set up with pre-defined schedules (Programmable only)



Description	Code Number
24V	
Danfoss Icon™ Room Thermostat, 24V Display On-wall	088U1055
Danfoss Icon™ Room Thermostat, 24V Display In-wall	088U1051
Danfoss Icon™ Room Thermostat, Wireless, Display On-wall	088U1081
Danfoss Icon™ Room Thermostat, Wireless, Infrared, Display On-wall	088U1082
Danfoss Icon™ Room Thermostat, Wireless, Dial On-wall	088U1080
Danfoss Icon™ Floor Sensor for 24V and 230V	088U1110
Danfoss Icon™ Master, 24V, 10 channel, NP	088U1147
Danfoss Icon™ Master, 24V, 15 channel, NP	088U1148
Danfoss Icon™ Zigbee Module	088U1130
ICON™ App Module	088U1101
ICON™ Expansion Module	088U1100
ICON™ Wireless Module	088U1103
ICON™ Repeater	088U1102

[> Back to contents page](#)

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Thermal Actuator TWA



- Simple two wire operation
- Can be used with a wide variety of small seated valves
- Available in Normally Open and Normally Closed configurations
- Suitable for use on AC and DC circuits
- Position indicator

Description ⁽¹⁾	Connection	Code No.
TWA-A NC (230V)	RA	088H3112
TWA-A NO (230V)	RA	088H3113
TWA-A NC (24V)	RA	088H3110
TWA-A NO (24V)	RA	088H3111
TWA-A NC (24V), complete with end switch	RA	088H3114
TWA-K NC (240V)	M30x1.5 ⁽²⁾	088H3142
TWA-K NO (240V)	M30x1.5 ⁽²⁾	088H3143
TWA-K NC (24V)	M30x1.5 ⁽²⁾	088H3141
TWA-K NO (24V)	M30x1.5 ⁽²⁾	088H3140

Notes:

(1) When mounted on a 2-port valve, Normally Closed (NC) versions are open when power is applied.

(2) Connection to Heimeier, MNG and Oventrop valves with M30x1.5 connection. Other valves must be verified individually to ensure correct valve closing measurement and valve top geometry.

[> Back to contents page](#)

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Underfloor Heating Valve FHV-R



- Includes valve enclosure, valve sensor and fascia plate
- Easy to use
- No wiring
- Minimises running cost
- Good performance (self-acting proportional)
- Good value for money
- Ideal for one zone systems

Feature	FHV-R
Code No. for valve and enclosure (does not include sensor)	003L1000
FJVR sensor (temperature range 10-50°C). Order separately	003L1040
Installation position	Return
Connection sizes, see page 19 for pipe fittings options	G3/4", BSP, male
Integrated air-vent and air-vent key	•
Maximum operating pressure	6 bar
Maximum differential pressure	0.6 bar

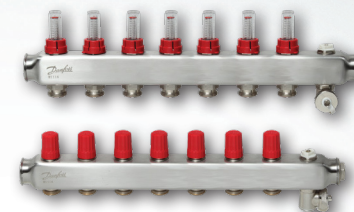
[> Back to contents page](#)

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Floor Heating Manifold Stainless Steel

- Pre-assembled in sets
- Individual shut-off of each circuit
- Individual flowmeter per circuit
- Allows individual room control of water flow and heat supply
- Return manifold is equipped with integrated pre-setting valves



Description	Type	Code No.
Stainless steel manifold set, 2+2 with flowmeter	SSM-2F	088U0752
Stainless steel manifold set, 3+3 with flowmeter	SSM-3F	088U0753
Stainless steel manifold set, 4+4 with flowmeter	SSM-4F	088U0754
Stainless steel manifold set, 5+5 with flowmeter	SSM-5F	088U0755
Stainless steel manifold set, 6+6 with flowmeter	SSM-6F	088U0756
Stainless steel manifold set, 7+7 with flowmeter	SSM-7F	088U0757
Stainless steel manifold set, 8+8 with flowmeter	SSM-8F	088U0758
Stainless steel manifold set, 9+9 with flowmeter	SSM-9F	088U0759
Stainless steel manifold set, 10+10 with flowmeter	SSM-10F	088U0760
Stainless steel manifold set, 11+11 with flowmeter	SSM-11F	088U0761
Stainless steel manifold set, 12+12 with flowmeter	SSM-12F	088U0762

[> Click to view accessories](#)

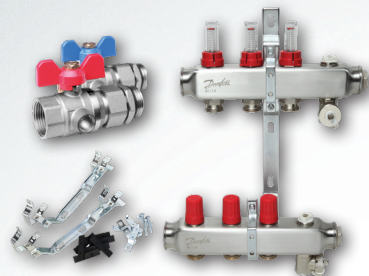
[> Click to view pipe fittings](#)

[> Back to contents page](#)

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Floor Heating Manifold Bundles



Manifold with Flow meter	Bracket	Ball Valves	Fittings (16x2 Alupex)	Code
SSM bundle 2+2	UK	Set	4	088U0652
SSM bundle 3+3	UK	Set	6	088U0653
SSM bundle 4+4	UK	Set	8	088U0654
SSM bundle 5+5	UK	Set	10	088U0655
SSM bundle 6+6	UK	Set	12	088U0656
SSM bundle 7+7	UK	Set	14	088U0657
SSM bundle 8+8	UK	Set	16	088U0658
SSM bundle 9+9	UK	Set	18	088U0659
SSM bundle 10+10	UK	Set	20	088U0660
SSM bundle 11+11	UK	Set	22	088U0661
SSM bundle 12+12	UK	Set	24	088U0662

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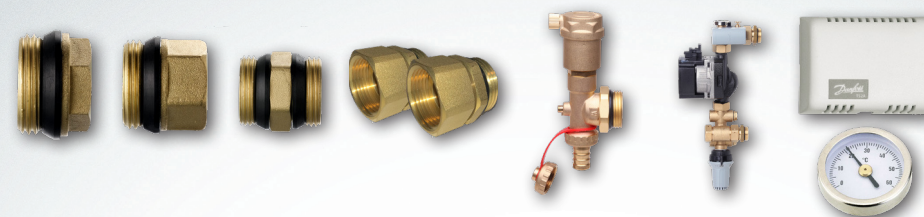
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[> Back to contents page](#)

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Accessories



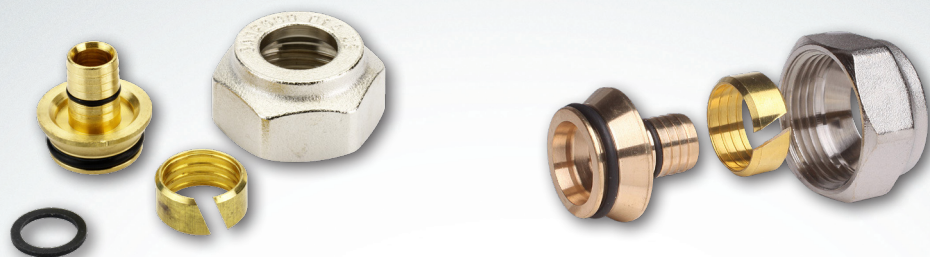
Accessories	Type	Code No.
End section - automatic airvent and purge valve	FHF-EA	088U0785
End section - manual airvent and purge valve	FHF-EM	088U0786
End caps - set	FHF-E	088U0582
Connection pieces - set	FHF-C	088U0583
Reduction bushes/pieces - set - 1" - 3/4"	FHF-R	088U0584
Mounting brackets - set (for use with FHM-C1)	FHF-MB	088U0585
Mounting brackets (UK) - set	-	088U0596
2 x ball valve 1" with tail piece - for connection to manifold and for blocking of floor heating system	FHF-BV	088U0822
1 x thermometer 0-60°C, Ø35mm - for flow/return temperature measurement	FHF-T	088U0029
T1" Manifold Union Nut - Set	-	088U0820
Pump Shunt, UPM3 15-70	FHM-C1	088U0094

[> Back to contents page](#)

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Pipe Fittings



Fittings options for SSM Manifold	Description	Code No.
PEX Pipe		
15 x 2.5 - PEX	15x2.5mm fitting for valves with 3/4" external thread	013G4155
16 x 2.0 - PEX	16x2.0mm fitting for valves with 3/4" external thread	013G4156
16 x 1.5 - PEX	16x1.5mm fitting for valves with 3/4" external thread	013G4157
16 x 2.2 - PEX	16x2.2mm fitting for valves with 3/4" external thread	013G4163
17 x 2.0 - PEX	17x2.0mm fitting for valves with 3/4" external thread	013G4162
18 x 2.5 - PEX	18x2.5mm fitting for valves with 3/4" external thread	013G4159
18 x 2.0 - PEX	18x2.0mm fitting for valves with 3/4" external thread	013G4158
20 x 2.5 - PEX	20x2.5mm fitting for valves with 3/4" external thread	013G4161
20 x 2.0 - PEX	20x2.0mm fitting for valves with 3/4" external thread	013G4160
ALUPEX Pipe		
14 x 2.0 - ALUPEX	14x2.0mm fitting for valves with 3/4" external thread	013G4184
16 x 2.0 - ALUPEX	16x2.0mm fitting for valves with 3/4" external thread	013G4186
18 x 2.0 - ALUPEX	18x2.0mm fitting for valves with 3/4" external thread	013G4188
20 x 2.0 - ALUPEX	20x2.0mm fitting for valves with 3/4" external thread	013G4190

[> Back to contents page](#)

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Electric Floor Heating Mats



Installing an ECmat in any room of your home creates that luxurious feeling a warm floor gives. ECmat can be installed under tiles, stone, laminate, carpet, wood and vinyl flooring giving you the ultimate choice in how you decorate your rooms.

The ECmat is ideal to use on new builds and renovations as the mats are only 3.5mm thick, which limits the raising of the floor to the bare minimum.

We recommend you install the mats on top of insulation boards to get the best out of your heating.

Danfoss Warranty

We are so confident of the quality of our Danfoss cables that every mat comes with our unique 20-year Danfoss warranty.

This comprehensive warranty includes the cost of installation, the product and the flooring.

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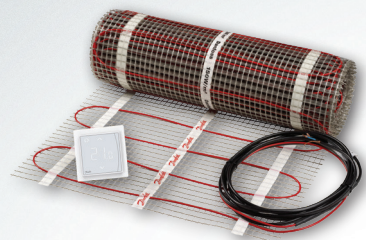
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ECmat 100W

For timber based floors



- Operation voltage: 220 - 240V
- Output: 100W/m²
- Screen: 100% coverage; alu-foil; 0.5mm² tinned copper drain wire
- Cold lead: 4m DTWB, 2 x 1.0mm², earthed
- Outer sheath: PVDF
- Min. installation temperature: -5°C
- Standard compliance: IEC60335-2-96

Code No.	Description	Ω	Category
088L0215	50W, area to be warmed 0.5m ²	1058	6
088L0216	100W, area to be warmed 1.0m ²	529	6
088L0217	150W, area to be warmed 1.5m ²	352	6
088L0218	200W, area to be warmed 2.0m ²	264	6
088L0219	250W, area to be warmed 2.5m ²	211	6
088L0220	300W area to be warmed 3.0m ²	176	6
088L0221	350W, area to be warmed 3.5m ²	151	6
088L0222	400W, area to be warmed 4.0m ²	132	6
088L0223	500W, area to be warmed 5.0m ²	105	6
088L0224	600W, area to be warmed 6.0m ²	88.1	6
088L0225	700W, area to be warmed 7.0m ²	75.5	6
088L0226	800W, area to be warmed 8.0m ²	66.1	6
088L0227	900W, area to be warmed 9.0m ²	58.7	6
088L0228	1000W, area to be warmed 10.0m ²	52.4	6
088L0229	1200W, area to be warmed 12.0m ²	44.1	6

Suitable for laying directly onto wooden sub-floors or wooden overlays.
To heat larger areas fit a suitably sized supply contactor.
All Danfoss underfloor heating systems must be RCD protected.

[> Click to view electric heating controls](#)

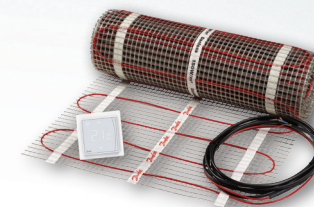
[> Back to contents page](#)

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ECmat 150W

For concrete based floors



- Operation voltage: 220 - 240V
- Output: 100W/m²
- Screen: 100% coverage; alu-foil; 0.5mm² tinned copper drain wire
- Cold lead: 4m DTWB, 2 x 1.0mm², earthed
- Outer sheath: PVDF
- Min. installation temperature: -5°C
- Standard compliance: IEC60335-2-96

Code No.	Description	Ω	Category
088L0200	75W, area to be warmed 0.5m ²	705	6
088L0201	150W, area to be warmed 1.0m ²	352	6
088L0202	225W, area to be warmed 1.5m ²	235	6
088L0203	300W, area to be warmed 2.0m ²	176	6
088L0204	375W, area to be warmed 2.5m ²	141	6
088L0205	450W area to be warmed 3.0m ²	117	6
088L0206	525W, area to be warmed 3.5m ²	100	6
088L0207	600W, area to be warmed 4.0m ²	88.1	6
088L0208	750W, area to be warmed 5.0m ²	70.5	6
088L0209	900W, area to be warmed 6.0m ²	58.7	6
088L0210	1050W, area to be warmed 7.0m ²	50.3	6
088L0211	1200W, area to be warmed 8.0m ²	44.0	6
088L0212	1350W, area to be warmed 9.0m ²	39.1	6
088L0213	1500W, area to be warmed 10.0m ²	35.2	6
088L0214	1800W, area to be warmed 12.0m ²	29.3	6

Suitable for use on concrete and wooden subfloors with thermal/cement backerboards overlay.
To heat larger areas fit a suitably sized supply contactor.
All Danfoss underfloor heating systems must be RCD protected.

[> Click to view electric heating controls](#)

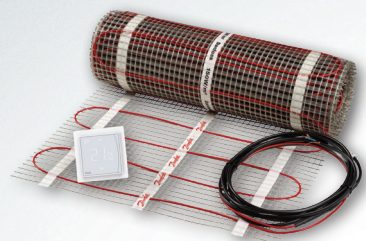
[> Back to contents page](#)

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ECmat 200W

For high heat loss areas



- Operation voltage: 220 - 240V
- Output: 200W/m²
- Screen: 0.5 mm² Cu + 100% Alu-foil with PET
- Cold lead: 3m DTWB, 1.0mm²
- Outer sheath: PVDF
- Min. installation temperature: -5°C
- Standard compliance: IEC60335-2-96

Code No.	Description	Ω	Category
088L5400	87W, area to be warmed 0.5m ²	608	6
088L5405	215W, area to be warmed 1.0m ²	246	6
088L5410	285W, area to be warmed 1.5m ²	186	6
088L5415	430W, area to be warmed 2.0m ²	123	6
088L5420	500W, area to be warmed 2.5m ²	106	6
088L5425	605W, area to be warmed 3.0m ²	87.4	6
088L5430	695W, area to be warmed 3.5m ²	76.1	6
088L5435	845W, area to be warmed 4.0m ²	62.6	6
088L5440	990W, area to be warmed 5.0m ²	53.4	6
088L5445	1210W, area to be warmed 6.0m ²	43.7	6
088L5450	1385W, area to be warmed 7.0m ²	38.2	6
088L5455	1665W, area to be warmed 8.0m ²	33.8	6
088L5460	1715W, area to be warmed 9.0m ²	30.8	6
088L5465	2070W, area to be warmed 10.5m ²	25.6	6

Suitable for use on concrete sub-floors or wood/concrete with thermal backer board.

Tile/Stone finish only.

To heat larger areas fit a suitably sized supply contactor.

All Danfoss underfloor heating systems must be RCD protected.

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[> Back to contents page](#)

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Electric Floor Heating Controls



Our range of thermostat controls include stylish designs, intuitive controls and the ability to control your heating remotely.

They all have a floor sensor which ensures a precise control of your floor heating system. Keeping it nice and warm without getting too hot or risking damage to the floor construction. The ECtemp intelligent thermostats provide you with the easiest way to save energy and money on electrical heating.

A user-friendly menu navigation makes programming your heating system simple to complete.

ECtemp™ Smart when combined with the ECtemp Smart™ App also allows you to control your electrical floor heating from virtually anywhere via an internet connection. By using the intelligent functionalities featured in the ECtemp Smart, you can save up to 30% on your energy bill.

Danfoss Warranty

All ECtemp thermostats come with a no-quibble 5 year warranty so you know your heating controls are in safe hands.

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ECtemp Touch



The ECtemp Touch is the simplest, easiest-to-use controller developed for electric floor heating. It has an intuitive touch screen, the ability to work with other manufacturers' electric floor heating and several cost saving features to make it easy for you to get the best out of it - All with a simple touch.

Code No.	Product	Category
088L0122	ECtemp Touch - Pure White	7

ECtemp Next Plus



The Danfoss ECtemp Next Plus is an electronic programmable thermostat used for controlling electrical floor heating elements.

The thermostat is designed for fixed installation only and ensures optimal energy savings whilst upholding optimal thermal comfort in the room.

Code No.	Product	Category
088L0121	ECtemp Next Plus - Pure White	2

[> Back to contents page](#)

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ECtemp Smart with ECtemp Smart App

The ECtemp Smart is a 7-day programmable thermostat with a sleek, stylish design and touchscreen operation. It can be paired with up to 10 mobile devices via the ECtemp Smart™ App - compatible with both iOS and Android devices. Temperature range: 5-35° C.



Code No.	Product	Category
088L1140	ECtemp™ Smart Pure White	7
088L1141	ECtemp™ Smart Polar White	7
088L1143	ECtemp™ Smart Black	7

[> Back to contents page](#)

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