

Danfoss



Instruction FH-CWD Thermostat

Index

1. Functional Overview.....	3
2. Mounting	3
3. Installation.....	4
4. General usage.....	4
5. Choosing room temperature control or both room and floor temperature control.....	5
6. Maximum floor temperature protection.....	6
7. Frost protection	7
8. Error messages.....	7
9. Technical Specifications.....	8
10. Figures and illustrations	12

IMPORTANT!




Protect the thermostat from dirt, fluids, concrete and do NOT insert any objects into it.

Do not cover the thermostat, for instance by hanging towels directly in front of it.

Installation must be done by an authorized electrician.

1. Functional Overview








Front - fig. 1

- ① Push button 
- ② Push button M
- ③ Up/down selectors  

Back - fig. 2

- Screw hole for flush mounting ①
- Terminals for cable mounting ②

Symbols in the display - fig. 3

	Room Sensor
	Floor Sensor
	Temperature indication
 SET	Set Room temperature
 SET	Set Floor temperature
	Floor heating – Active
	Frost Protection – Active

2. Mounting

! Wherever possible, the room thermostat should be installed where the effects of sunlight, draught, and other heaters (eg. TV's), etc. are avoided.

3. Installation

Installing the Room Thermostat- fig. 5 and fig. 6

- Remove the connection cable between front and back part.
- Connect the thermostat correctly to mains supply according to the Wiring Diagram - fig 6.
- Mount the thermostat by using the enclosed screws to the wall box.
- Mount the front correctly.

Wiring Diagram – fig. 6

The product must be connected to the following leads:


- Term L: Phase (L) AC85-250V, 50/60 Hz
- Term NO: Valve (NO)
- Term NC: Valve (NC)
- Term N: Neutral (N)
- Term 2: Empty
- Terminal S2: Floor sensor
- Terminal S1: Floor sensor

4. General usage



Turn ON/OFF the Room Thermostat Fig. 1 ①

- Turn the thermostat on or off by pressing .


Display of Room Temperatures - fig. 3


- The actual room temperature is shown in the display as default  88°.

Setting of Room Temperature Fig. 1 ③

- Press the ▲ ▼ to set the desired room temperature value,  **SET** is shown in the display.
- When releasing the ▲ ▼ selector the display returns to actual room temperature  88°.

5. Choosing room temperature control or both room and floor temperature control

Turn OFF the thermostat by pressing  Fig. 1 ①.

- Press and hold  Fig. 1 ① for 10 seconds. The display will show 01.
- Press ▲ ▼ Fig. 1 ③ to adjust desired control type.

01=room temperature control, only with room sensor, no floor sensor, check and setting only room temperature.


02=both room and floor temperature control, with room sensor and floor sensor, check and setting room temperature and maximum floor temperature limit.


Factory setting is 01.

6. Maximum floor temperature protection


The function allows you to set a maximum allowable floor temperature if for instance you want to protect real wood floors from damage due to excess heat. For specific maximum floor temperatures please refer to recommendations from floor suppliers.





Displaying the Floor Temperature

The function allows you to check the internal temperature of the floor. Works only with floor sensor. Turn ON the thermostat by pressing  Fig. 1 ①.

- Press **M** Fig. 1 ② shortly and  will flash in the display.
- The actual floor temperature is shown in the display.


Setting maximum floor temperature


Turn OFF the thermostat by pressing  Fig. 1 ①

- Press **M** Fig. 1 ② for 5 seconds until the display shows .
- Release **M** Fig.1 ②, and the display shows  **SET**.
- Press  or  Fig. 1 ③ to set the desired maximum floor temperature limit.
- Wait 5 seconds for the thermostat to exit SET mode and power off.

7. Frost protection

Using the Frost Protection Mode instead of turning the thermostat OFF completely may protect against damages due to low temperatures. The room temperature will be maintained around 5 °C.

- Turn OFF the thermostat by pressing  Fig. 1 ①.
- Press M Fig.1 ② for 3 seconds and release.
- Select 01 (00= disabled).

If the room temperature is lower than 5 °C the heating will be turned ON and  will be shown in the display. If the room temperature is higher than 7 °C the heating is turned OFF.

Factory setting is 00.

8. Error messages

E1 will be displayed when room sensor failure.

E2 will be displayed when floor sensor failure. E2 will be read when pressing **M** Fig. 1 ② to check floor temperature.

Any case, all relay output would be turned off.

9. Technical Specifications

Feature	Description
Approval	CE Marking, EN 60730
Colour	White RAL 9016
Dimensions	86 x 99 x 19mm
Adjustment mode	Push buttons
Programmable	No
Fault indication/ failure mode	If room sensor failure, E1 will be displayed. If floor sensor failor, E2 will be displayed. In any case, thermostat will turn off all output of relays.
Frost protection	Yes, if enabled: < 5 °C heating on > 7 °C heating off
Ambient temperature	- 10 °C – 60 °C
Precision	±1 °C
Hysteresis	1 °C, symmetrical around the setpoint temperature
IP class	30
LCD backlight/ nightlight	Yes

Instruction FH-CWD Thermostat

Feature	Description
LCD display	Yes
LED indicator	No
Max load, inductive	<1A
Max load, resistive	<3A
Mounting	Flush Mounting for European and Chinese built in sockets.
Network, wire	No
Network, wireless	No
Off-set function	Yes (+/-10 °C)
Power consumption	2 W
Power supply, battery	No
Power supply, net	85-250Vac 50/60Hz
Power backup settings	Retains settings in case of power cut saved on memory chip
Sensor, floor	Optional, 2 terminals (S1, S2) for external sensor mounting. Sensor type NTC 10K accuracy: $\pm 1\%$

Feature	Description
Sensor, floor - set range	20-45 °C
Sensor, room	NTC 100K accuracy: ±1%
Sensor, room - set range	5-35 °C
Shell material/ non inflammable	94V0/ Yes
Shell material, type	ABS+PC
Static protection	Yes

Instruction FH-CWD Thermostat

Fig. 1



Fig. 2

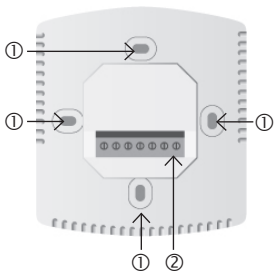


Fig. 3

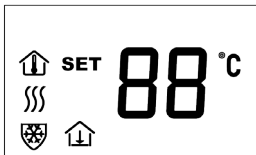


Fig. 4

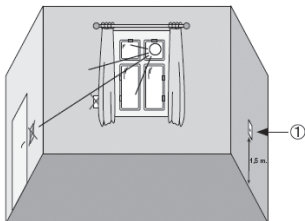


Fig. 5

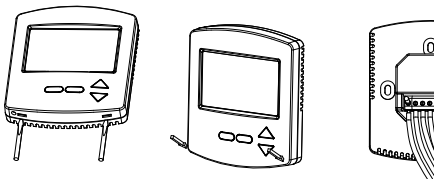
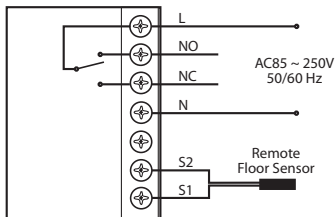
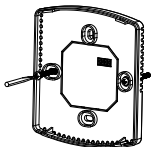
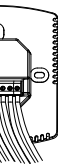


Fig. 6

FH-CWD



Instruction FH-CWD Thermostat



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