

ENGINEERING
TOMORROW

Danfoss

Installation Guide

BasicPlus² WT-D & WT-P Room Thermostats



1. Installation Steps

User Guide can be downloaded from: heating.danfoss.com.

- 1. Installation must be done by an authorised electrician.**
2. The room thermostat should be installed at approx. 1.5 m above floor and where the effects of sunlight, draught or other heat sources (eg. TV's) are avoided, see fig. 1.
3. First of all, carefully remove the cover, see fig. 2.
4. Connect the wire before mounting the back plate to the wall box using the enclosed screws. Then mount the cover to the back plate, see fig 3.

2. Wiring

Dimensions, see fig. 4. Wiring diagram, see fig. 5 (S1, S2: floor sensor terminals).

WT-D/P is often used with Danfoss TWA actuator.

Depending on the conditions of power location and actuator type (NC or NO), the wiring between room thermostat and actuator is different.

Follow the illustrations to complete the wiring:

1. When power supply location is close to room thermostat:
 - Connect to actuator TWA 230 V NC type, see fig. 6.
 - Connect to actuator TWA 230 V NO type, see fig. 7.

- When power supply location is close to actuator:
 - Connect to actuator TWA 230 V NC type, see fig. 8.
 - Connect to actuator TWA 230 V NO type, see fig. 9.

3. Error codes

Display	Description
E1	Room sensor failure
E2	Floor sensor failure

4. Notes

- Correct wiring is essential; using instrument to confirm L and N before wiring is recommended.
- Don't remove too much of the insulation cover from the wire to avoid short circuit caused by the naked wire touching the metal 86 size mounting wall box.
- Don't let the screw press or touch the wire when using screw to fix room thermostat in wall box. A short-circuit risk exists if the wire insulation cover is damaged by the screw, and if the naked wire connects with the screw.
- If walls must be painted, mount the room thermostat after painting, to avoid dust or paint material penetrating the room thermostat and thus damaging the PCB.

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5. The max load of relay is 3 A (resistive) or 1 A (inductive, such as pump, motor). The relay will be damaged if the load exceeds the limit.
6. Don't cover the thermostat, for instance by hanging towels directly in front of it.
7. The room thermostat should be connected to the corresponding loop actuator in individual room temperature control.

5. Technical Specifications

Feature	Description
Approval	CE Marking, EN60730
Ambient temperature	-10 - 60° C
IP Class	30
Max. load, inductive	<1 A
Max. load, resistive	<3 A
Power consumption	2 W
Power supply	85-250 Vac, 50/60 Hz
Room temp. set range	5 - 35° C
Floor temp. set range	20 - 45° C
Shell material	ABS + PC

Fig. 1

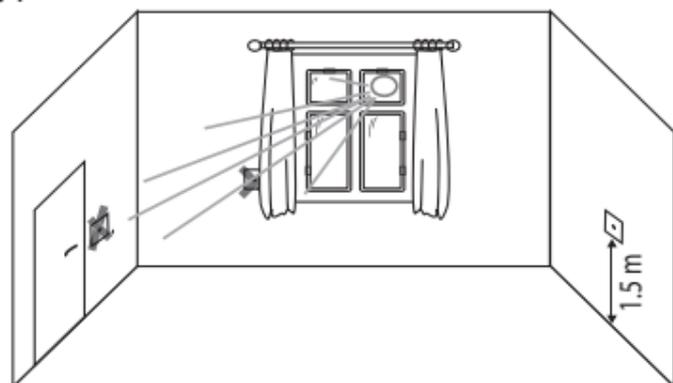


Fig. 2

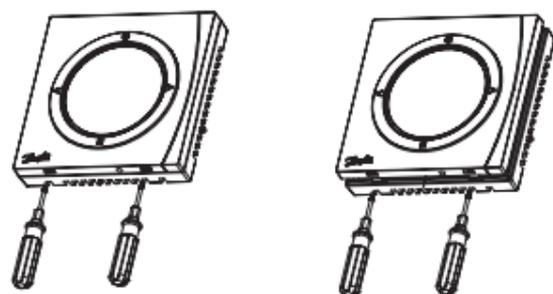
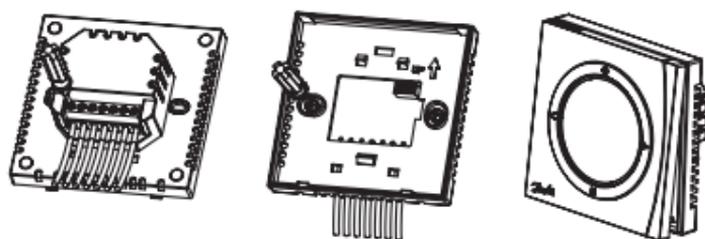


Fig. 3



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Fig. 4

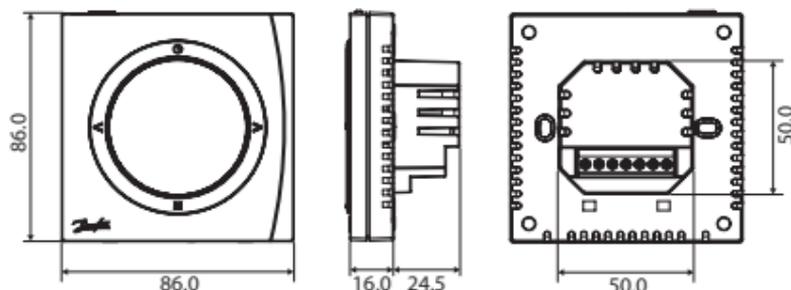


Fig. 5

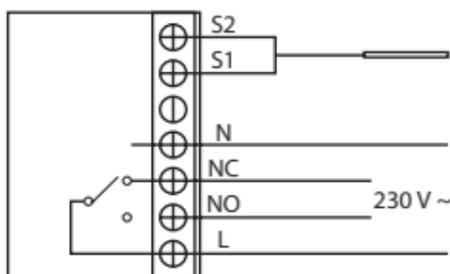


Fig. 6

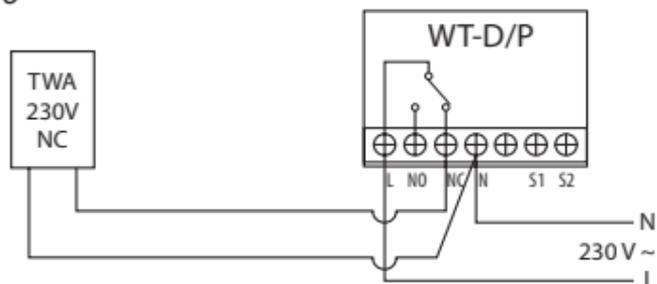


Fig. 7

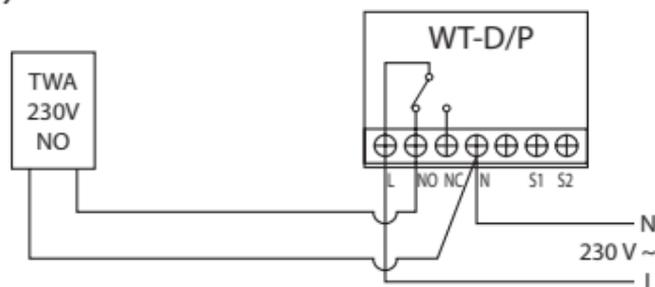


Fig. 8

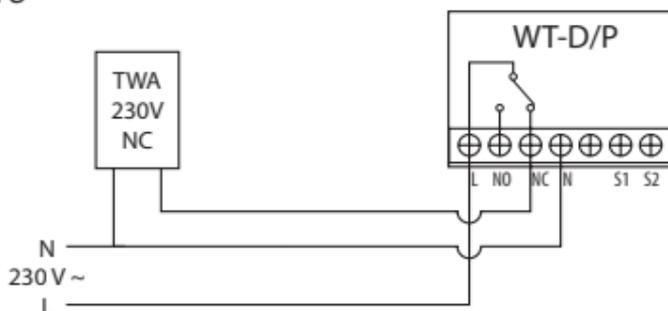
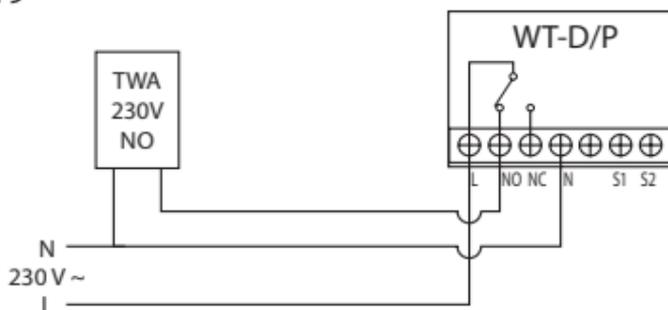


Fig. 9





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Ordering

Product	Type	Supply voltage	Output voltage	Code no.
Basic Plus ² WT-T Toggle	WT-T	230 V AC	230 V AC	088U0620
Basic Plus ² WT-D Display	WT-D	85–250 V AC	85–250 V AC	088U0622
Basic Plus ² WT-DR Display and Relay	WT-DR	85–250 V AC	85–250 V AC	088U0624
Basic Plus ² WT-P Programmable	WT-P	85–250 V AC	85–250 V AC	088U0625
Basic Plus ² WT-PR Programmable and Relay	WT-PR	85–250 V AC	85–250 V AC	088U0626

Accessories

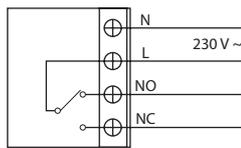
Product	Type	Code no.
BasicPlus floor sensor	FH-CWF	088U0610

Technical specifications

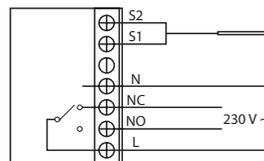
Feature	WT-T	WT-D/DR	WT-P/PR
Type	Dial with LED indicator	LCD display with push buttons	LCD display with push buttons, programmable
Operating room temperature	Off, 5 - 30° C	Off, 5 - 35° C	
Operating floor temperature	-	Off, 20 - 45° C	
Ambient temperature	-10 - 60° C		
Fault indication	-	Yes	
Hysteresis	1° C, below the setpoint temperature	1° C, symmetrical around the setpoint temperature	
LCD backlight	-	Yes, white	
Max. load, inductive	< 1 A		
Max. load, resistive	< 3 A		
Auxiliary relay	-	Volt-free relay (WT-DR and WT-PR), e.g. boiler	
Temperature calibration	No	Yes (+/-10° C)	
Power consumption	7 W	2 W	
Power supply	230 V AC ±10 %, 50/60 Hz	85–250 V AC, 50/60 Hz	
Sensor, room	NTC 10K, accuracy: ±1%	NTC 100K, accuracy: ±1%	
Sensor, floor	-	Optional (FH-CWF)	
Shell material	ABS, non-inflammable		
IP class	30		
ErP class			
Approval	CE marking, EN 60730		
Colour	White RAL9010/Dark Grey RAL7024		
Dimensions	86 × 86 × 30 mm	86 × 86 × 16.0 mm	

Wiring connections

Room thermostat, WT-T

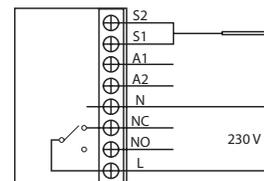


Room thermostat, WT-D/P



S1, S2: floor sensor

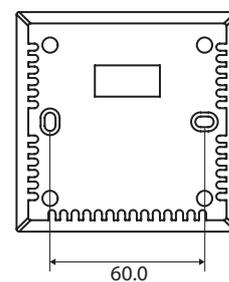
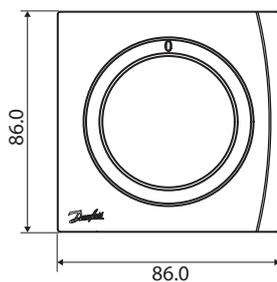
Room thermostat, WT-DR/PR



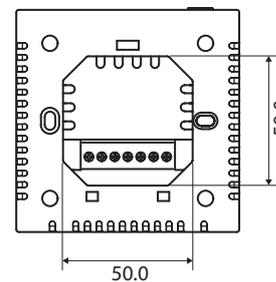
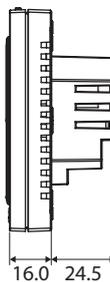
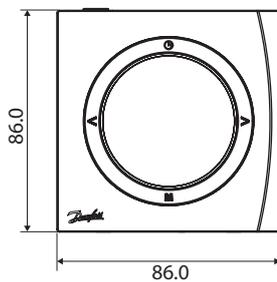
S1, S2: floor sensor
A1, A2: volt-free auxiliary relay, e.g. boiler

Dimensions

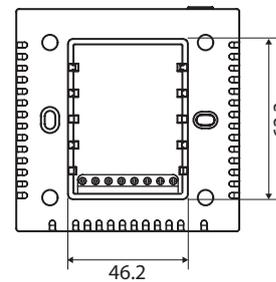
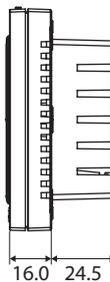
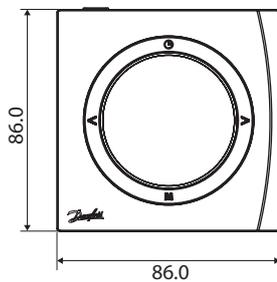
Room Thermostat, WT-T (Dial)



Room Thermostat, WT-D/WT-P



Room Thermostat, WT-DR/WT-PR



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Fax: +45 7449 0949**EU DECLARATION OF CONFORMITY****Danfoss A/S****HydronicS Division, Danfoss Climate Solutions Segment**

declares under our sole responsibility that the

Product category: Thermostat**Type designation(s):**

088U0620	Basic Plus2, WT-T Toggle
088U0622	Basic Plus2, WT-D Display
088U0625	Basic Plus2, WT-P Programmable

Covered by this declaration is in conformity with the following directive(s), regulation(s), standard(s) or other normative document(s), provided that the product is used in accordance with our instructions.

Low Voltage Directive (2014/35/EU) and Electromagnetic Compatibility Directive (Directive 2014/30/EU)

- EN 60730-1: 2011 - Automatic electrical controls for household and similar use – Part 1: General requirements
- EN 60730-2-9:2010 Automatic electrical controls for household and similar use – Part 2-9: Particular requirements for temperature sensing controls

Restriction of the use of certain hazardous substances Directive (2011/65/EU), including amendment 2015/863.

- EN IEC 63000:2018 Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances

Date: 20 March 2024 Place of issue: Ljubljana	Issued by Signature:  <small>DocuSigned by:</small> Samo Krancan <small>49CB37CCBD05404...</small> Name: Samo Krancan Title: Sustainability and Compliance Director	Date: 21 March 2024 Place of issue: Kolding	Approved by Signature:  <small>DocuSigned by:</small> Nanna Aage Lundsgaard <small>02742C4F8E8A4FD...</small> Name: Nanna Aage Lundsgaard Title: Vice President, Head of RD&E, Hydronic Division
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