

ENGINEERING
TOMORROW

Danfoss

Installation Guide

BasicPlus² WT-DM

Room thermostat



Installation Guide

WT-DM Installation Instruction

1 Installation Steps

The 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

1. Dimensions, see fig.4.
2. Wiring diagram, see fig.5. (S1,S2: floor sensor terminals; A+, B-: Modbus communication terminals).
3. WT-DM 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.
2. 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.

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3 Error Codes

Item	Display	Description
1	E1	room sensor failure
2	E2	floor sensor failure

4 Notes

1. Correct wiring is essential; using instrument to confirm L and N before wiring is recommended.
2. 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.
3. 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.
4. 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.
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 °C -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 temperature set range	5 °C -35 °C
Floor temperature set range	20 °C -45 °C
Communication protocol	Modbus RTU
Communication interface	RS485
Shell material	ABS + PC

安装指南

WT-DM 安装说明书

1 安装步骤

可通过以下网址下载《用户指南》：heating.danfoss.com.cn

1. **必须由经过专业培训合格的电工进行安装。**
2. 室内温控器应当安装在地面上方大约1.5米处，并且避免受到日光、气流或者其他热源（例如：电视）的影响。请见图1。
3. 首先，小心拆下前盖。请见图 2。
4. 在将背板固定至暗线箱之前，使用随附的螺钉连接导线，然后将盖子安装至背板。请见图3。

2 接线

1. 外形尺寸（请见图 4）。
2. 接线端子（请见图 5，S1，S2：地面温度传感器端子；A+，B-：Modbus通讯端子）。
3. WT-DM 经常与丹佛斯热电驱动器 TWA 配套使用。由于电源位置及热电驱动器的类型不同（常闭或常开），因此不

同情况的接线方式略有不同。请按照以下图示完成接线：

1. 当电源在温控器旁边时：
 - 与 TWA 230 V NC 型（常闭）驱动器连接（请见图 6）。
 - 与 TWA 230 V NO 型（常开）驱动器连接（请见图 7）。
2. 当电源在热电驱动器旁边时：
 - 与 TWA 230 V NC 型（常闭）驱动器连接（请见图 8）。
 - 与 TWA 230 V NO 型（常开）驱动器连接（请见图 9）。

3 错误代码

序号	显示屏	说明
1	E1	室温传感器故障
2	E2	地面温度传感器故障

4 注意事项

1. 正确接线至关重要；接线之前，建议使用万用表确定 L 与 N 线。
2. 电线剥皮不易过长，以免裸露部分相接触或触及金属 86 盒造成短路。
3. 注意固定温控器的螺栓不要挤压电线，以免电线破裂与螺栓造成短路。
4. 宜在墙面装修后再安装温控器，以避免装修粉尘或涂料从温控器顶部缝隙中进入温控器，损坏 PCB。
5. 继电器的最大负载为 3 A（纯阻性）或 1 A（感性负载，如：泵、电机）。如果负载超过限值，则继电器将会受损。
6. 请勿覆盖温控器，例如：将毛巾直接挂在温控器上。

7. 进行分室温控时，温控器所在房间与热电驱动器所在的回路要对应。

5 技术参数

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特点	说明
认证	CE 标志, EN60730
环境温度	-10 °C -60 °C
IP 防护等级	30
最大负载 (感性)	<1 A
最大负载 (阻性)	<3 A
功耗	2 W
电源	85-250 Vac, 50/60 Hz
室温设定范围	5 °C -35 °C
地面温度设定范围	20 °C -45 °C
通讯协议	Modbus RTU
通讯接口	RS485
外壳材料	ABS + PC

Fig. 1

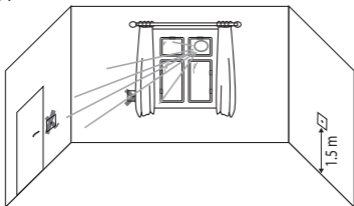


Fig. 2

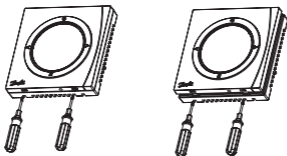


Fig. 3

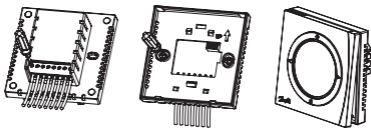


Fig. 4

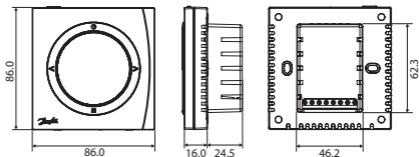


Fig. 5

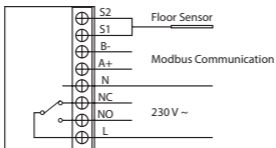


Fig. 6

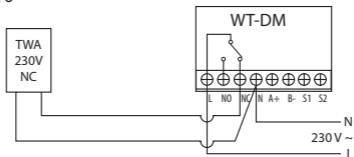


Fig. 7

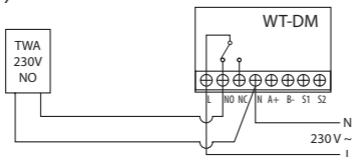


Fig. 8

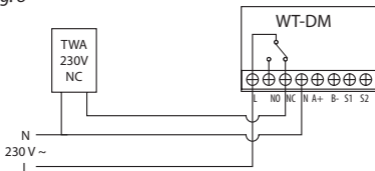
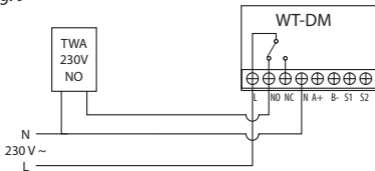


Fig. 9



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