



# MCD5-1999

# MWD5-1999



67384G 11/21 (MTE)  
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## INSTRUCTIONS

- English

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## **ILLUSTRATIONS**

Pages.....3-6

## **INTRODUCTION**

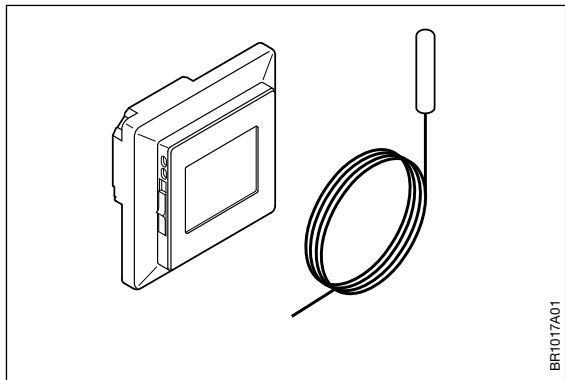
English..... 7



MCD5-1999  
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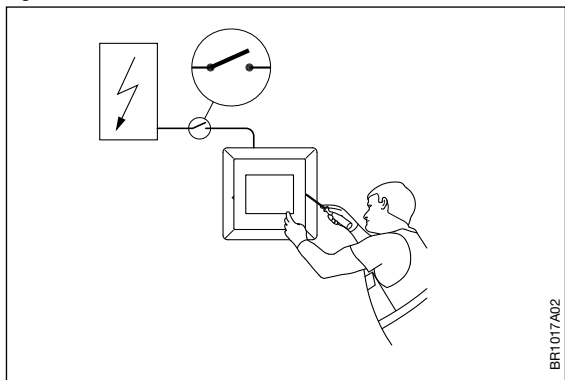


Fig. 1



BR1017A01

Fig. 2



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Fig. 3

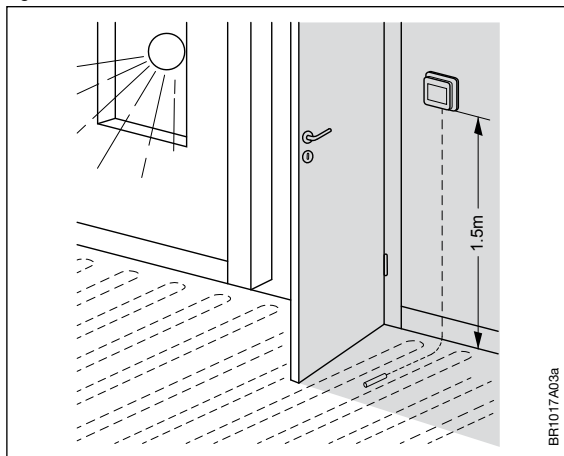


Fig. 4

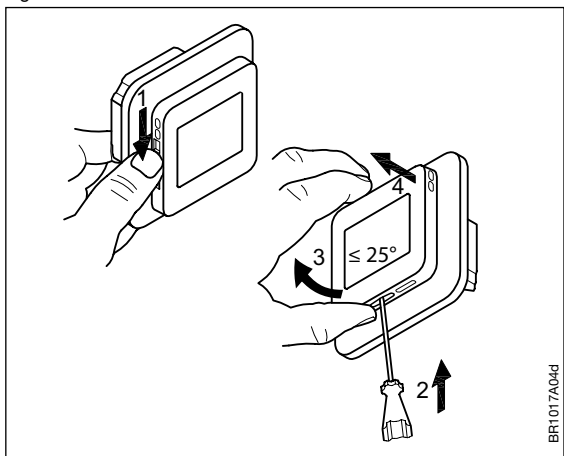


Fig. 5

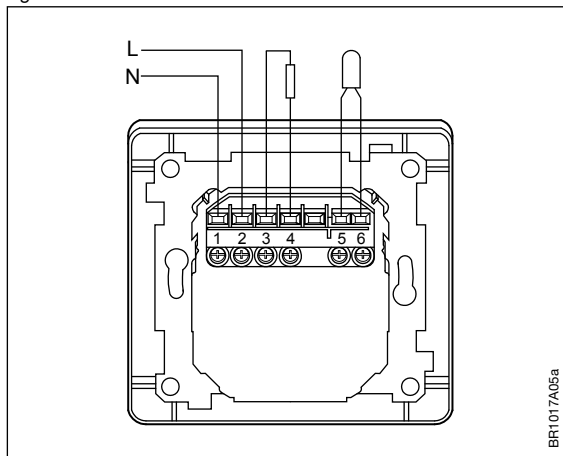


Fig. 6

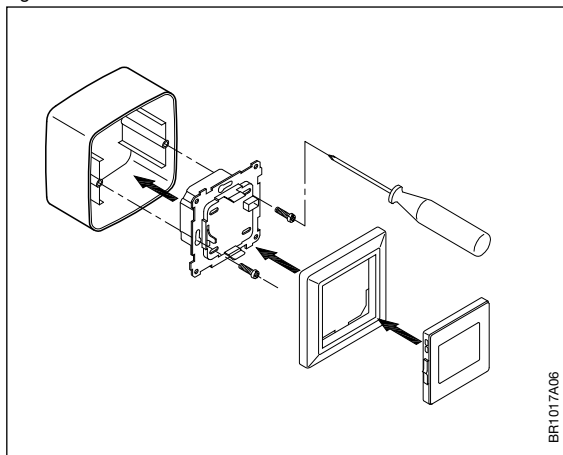
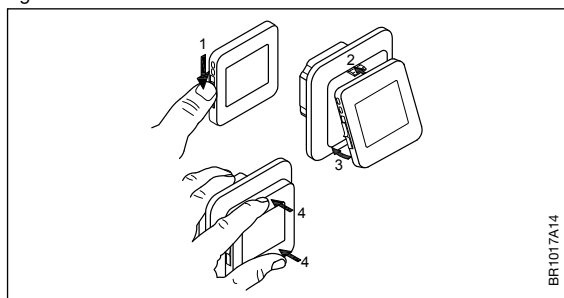
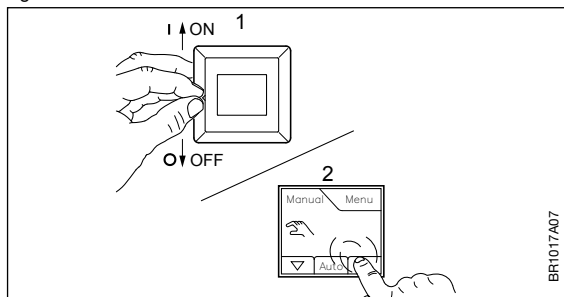


Fig. 7



BR1017A14

Fig. 8



BR1017A07

Fig. 9

NTC 12k $\Omega$ @ 25°Celsius		
°Celsius	°Fahrenheit	Ohm ( $\Omega$ )
-10°C	14°F	55076 $\Omega$
0°C	32°F	34603 $\Omega$
10°C	50°F	22284 $\Omega$
20°C	68°F	14675 $\Omega$
30°C	86°F	9860 $\Omega$

BR1017A17a



# MCD5-1999 MWD5-1999

*Instruction  
English*



## INTRODUCTION

The thermostat is an electronic PWM/PI thermostat for temperature control by means of an NTC sensor located either externally or internally within the thermostat.

The thermostat is for flush mounting in a wall socket. A baseplate for wall mounting is also available.

This thermostat can be used as a controller for electric room heating pursuant to EN 50559.

### Fig. 1 - Content

- Thermostat
- Sensor

### Product programme

OCD5-1999/MCD5-1999	Clock-thermostat with two sensors: floor sensor and built-in room sensor.
OWD5-1999/ MWD5-1999	WiFi Clock-thermostat with two sensors: floor sensor and built-in room sensor.

## IMPORTANT SAFETY INSTRUCTIONS

### Fig. 2 - Warnings



To avoid electric shock, disconnect the heating system power supply at the main panel before carrying out any work on this thermostat and associated components.

Installation must be carried out by qualified personnel in accordance with appropriate statutory regulations (where required by law).

Installation must comply with national and/or local electrical codes.

## Cautions



This instruction must be observed, otherwise the liability of the manufacturer shall be voided.

Any changes or modifications made to this thermostat shall void the liability of the manufacturer.

Maximum product lifetime is achieved if the product is not turned off but set at the lowest possible set point / frost protection when heat is not required.

## Notice



The language used in the original documentation is English.

Other language versions are a translation of the original documentation.

The manufacturer cannot be held liable for any errors in the documentation. The manufacturer reserves the right to make alterations without prior notice.

Content may vary due to alternative software and/or configurations.

## Fig. 3 - Thermostat placement

### Mounting of sensor

The floor sensor contains a safety extra-low voltage (SELV) circuit, allowing it to be placed as close to the floor surface as possible without having to take account of the risk of shock should the sensor cable become damaged. The two wires connecting the sensor to the mounting box must be additionally insulated, e.g. shrink flex.

To prevent loose wires in the fixed installation from coming into contact with the terminal block for the floor sensor, they must be restrained using cable ties.

It is strongly recommended that the cable and sensor are placed in a non-conductive installation pipe embedded in the floor. The end of the pipe must be sealed and the pipe placed as high as possible in the concrete layer. Alternatively, the sensor can be embedded directly in the floor. The sensor cable must be led through a separate conduit or segregated from power cables.

The floor sensor must be centred between loops of heating cable.



The sensor cable may be extended up to 100 m by means of a separate two-core cable. Two vacant wires in a multi-core cable used, for example, to supply current to the floor heating cable must not be used. The switching peaks of such current supply lines may create interference signals that prevent optimum thermostat function. If a shielded cable is used, the shield must not be connected to earth (PE). The two-core cable must be placed in a separate pipe or segregated from power cables in some other way.

### **Mounting of thermostat with built-in sensor**

The room sensor is used for comfort temperature regulation in rooms. The thermostat should be mounted on the wall approx. 1.5 m above the floor in such a way as to allow free air circulation around it. Draughts and direct sunlight or other heat sources must be avoided.

### **Fig. 4 - Opening the thermostat**

1. Slide the power button down to Off "0".
2. Release the front cover ONLY by inserting a small screwdriver into the slot at the centre of the bottom side of the front cover to press and hold the catch securing the front cover.
3. Then carefully pull the front cover away, initially from the lower part of the thermostat, then from the upper part of the thermostat.

### **Fig. 5 - Connections**

Connect the wires in accordance with the diagram. The wires must be connected as follows:

- |            |                       |
|------------|-----------------------|
| Term. 1:   | Neutral (N)           |
| Term. 2:   | Live (L)              |
| Term. 3-4: | Output, max. 16 A     |
| Term. X:   | Do not connect        |
| Term. 5-6: | External floor sensor |

### **Fig. 6 + 7 - Mounting the thermostat**

1. Mount the thermostat in the wall socket.
2. Fit the frame and carefully press the cover onto the thermostat - starting with the upper part of the cover, then the lower part of the cover. Ensure that both the power slide button on the cover and the power switch pin in the thermostat are down.

3. Click the cover into place by applying light, even pressure.  
Warning! Do not apply pressure to the corners of the display cover or to the display itself.

DO NOT open the thermostat by releasing the four fixing clips on the back.

### Fig. 8 - Operating the thermostat

There is an ON/OFF switch on the left side of the thermostat: up is ON - down is OFF.

The resistive touchscreen requires a soft tap with your fingertip to register the touch.

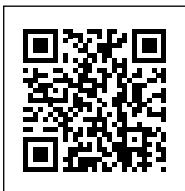
Installer Wizzard:

The first time the thermostat is connected, push the power slide button to On "I" The Installer Wizard on the touchscreen will guide you through the set up of:

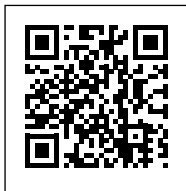
1. Region
2. Language
3. Date
4. Time
5. Floor Type

### Programming

See user manual.



<http://www.ojelectronics.com/MCD5>



<http://www.ojelectronics.com/MWD5>

### Fig. 9 - Troubleshooting

If the sensor is disconnected or short-circuited, the heating system is switched off. The sensor can be checked against the resistance table.

**Error codes**

E0: Internal fault. The thermostat must be replaced.

E1: Built-in sensor defective or short-circuited. Replace the thermostat, or use the floor sensor only.

E2: External sensor disconnected, defective or short-circuited.  
Reconnect the sensor if disconnected, or replace the sensor.

E5: Internal overheating. Inspect the installation.

**MAINTENANCE**

The thermostat is maintenance free.

Keep the thermostat's air vents clean and unobstructed at all times.

The thermostat may only be cleaned with a dry cloth.

**APPROVALS AND STANDARDS****Regulations**

OJ Electronics A/S hereby declares that the product is in conformity with the following directives of the European Parliament:

LVD - Low Voltage Directive

EMC - Electromagnetic Compatibility

RoHS - Restriction of the use of certain Hazardous Substances

RED - Radio Equipment Directive

**Applied standards and approvals**

According to the following standard:

EN 60730-1, EN 60730-2-9, EN 300 328, EN 301 489-17,

EN 301 489-1, EN 62479, EN 50559

**Classification**

Protection from electric shock must be assured by appropriate installation. Must be installed according to the requirements of Class II (reinforced insulation).

**ENVIRONMENT AND RECYCLING**

Protect the environment by disposing of the package in compliance with local regulations for waste processing.

**Recycling of obsolete appliances**

Equipment containing electrical components must not be disposed of along with domestic waste.

It must be separately collected together with electrical and electronic waste in accordance with current local regulations.

**TECHNICAL SPECIFICATIONS**

Purpose of control	Electrical underfloor heating
Method of mounting.	Wall mounting in a socket or mounting box
Supply voltage	100-240 VAC $\pm$ 10% 50/60 Hz
Max. pre-fuse	16 A
Built-in interrupter	2-pole, 16 A
Enclosure rating	IP 21
Wire size, terminals	Current $\leq$ 13 A - 1.5 mm <sup>2</sup> , solid core wire Current > 13 A to 16 A - 2.5 mm <sup>2</sup> , solid core wire
ELV limits realized	SELV 24 VDC
Output relay	Make contact - SPST - NO
Output, load	Max. 16 A / 3600 W
Control principle	PWM/PI
Standby consumption	$\leq$ 0.5 W
Battery backup	5 years (storage)
Battery life, typical	5 years (storage) 10 years (powered)
RF frequency band*	2.4 GHz
WiFi*	IEEE 802.11 b/g/n - 2.4GHz
Security*	WPA/WPA2
Dimensions	OxD5: H/82, W/82, D/40 mm MxD5: H/84, W/84, D/40 mm MxD5-UA: H/115, W/84, D/40 mm
Build-in depth	22mm
Weight	$\leq$ 200 g
Display	176x220 pixels TFT - resistive touch
Control pollution degree	2
Overvoltage category	III
Type of action	1.B
Software class	A
Rated impulse voltage	4kV
Ball pressure temperature (TB)	125°C
EU registered design	DM/082270

Note: At very low ambient temperatures the display may respond slowly.

\* Only valid for WiFi Thermostats

# DECLARATION OF CONFORMITY

No.: 1013a (front side)

en

## Name and address of the manufacturer

Manufacturer: OJ ELECTRONICS A/S

Address: Stenager 13B, 6400 Soenderborg, Denmark.

## This declaration of conformity is issued under the sole responsibility of the manufacturer.

Identification of apparatus:

OCD5-1999-xxSy	Electronic thermostat
OCD5-1999-xxPy	Electronic thermostat with power measurement
OWD5-1999-xxPy	Electronic thermostat with WiFi module
MCD5-1999-xxSy	Electronic thermostat
MCD5-1999-xxPy	Electronic thermostat with power measurement
MWD5-1999-xxPy	Electronic thermostat with WiFi module

xx are replaced by any letters from A-Z or leaved blank.

For different colors of plastic on the front and frame the y are replaced by a number.

## The object of the declaration described above is in conformity with the relevant Union harmonization legislation:

Reference n°	Title
2014/30/EU	EMC Directive DIRECTIVE 2014/30/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 26 February 2014 on the harmonization of the laws of the Member States relating to electromagnetic compatibility
2014/35/EU	Low Voltage Directive DIRECTIVE 2014/35/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 26 February 2014 on the harmonization of the laws of the Member States relating to the making available on the market of electrical equipment designed for use within certain voltage limits
2011/65/EU	RoHS Directive DIRECTIVE 2011/65/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 8 June 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment
2014/53/EU	RED Directive DIRECTIVE 2014/53/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 April 2014 on the harmonization of the laws of the Member States relating to making available on the market of radio equipment and repealing Directive 1999/5/EC

## Harmonized standards

N°	Issue	N°	Issue
EN 60730-1	2011	EN 300 328	V1.9.1
EN 60730-2-9	2010	EN 301 489-17	V2.2.1
EN 50559	2013	EN 301 489-1	V1.9.1
		EN 62479	2010

Soenderborg, date 2018-01-04

(signature)

Approval Manager: Palle Jensen of the signatory empowered to bind OJ ELECTRONICS A/S



