



OJ Electronics ECD4-1991 All in One DIN Rail Thermostat with Schedule Instructions

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ECD4-1991 All in One DIN Rail Thermostat with Schedule Instructions



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INTRODUCTION

The ECD4-1991 All-in-one is an electronic on/ off thermostat for 1 or 2 NTC sensors located externally.
An All-in-one thermostat for many application types:

- Electrical floor heating
- Frost protection
- Ice and snow melting
- Cooling

The thermostat should be DIN rail mounted.

This thermostat can be used as a controller for electric room heating pursuant to EN15500.

IMPORTANT SAFETY INSTRUCTIONS

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.

DISPOSAL AND RECYCLING

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.

PRODUCT PROGRAMME

ECD4-1991 Thermostat incl. floor sensor

SENSORS & ACCESSORIES

ETF-944/99-H External room sensor

FIG. 1 – INSTALLATION OF THERMOSTAT

The thermostat should be DIN rail mounted.

To prevent loose cables from the fixed installation from coming into contact with the terminal block for the floor

sensor, they must be restrained using cable ties.

Connections

Ensure that the main and load cables are connected as shown in the figure. Term.

1: Line (L1) 230 V $\pm 10\%$, 50/60 Hz

Term. 2: Neutral (L2/N)

Term. 3: Output for control, max. 100mA

Term. 4–5: Load, max. 16 A / 3600 W

Term. 6: Input, night setback (S)*

Term. 7: Input, frost protection (❄)

Term. 8-9: External floor sensor (SELV)

Term. 10-11: External room sensor (SELV)

Term. X: Do not connect

Note: Use a Phillips PH2 or slotted 4x0.8 mm screwdriver. Screws must be tightened to a torque of 0.5 Nm.

FIG. 1A+1B – NIGHT SETBACK / FROST PROTECTION

The thermostat has 2 inputs for night setback and frost protection.


 **Note:** Do not use night setback and frost protection at the same time.

FIG. 2 – MOUNTING OF SENSORS

You can use the thermostat with external sensors for room and/or floor.

The terminals for the sensor contain a safety extra-low voltage (SELV) circuit, allowing the sensor to be placed as close to the floor surface as necessary without the risk of electric shock, should the sensor cable become damaged.

Sensor cable recommendations

The following recommendations apply to all temperature sensor cables:

The sensor cable may be extended with additional two-core cable (max. sensor extension, see technical specification). The two wires from the sensor to the thermostat must be kept separate from high voltage wires/cables.

Place the sensor cable in a separate conduit or segregate it from power cables in some other way.

Never use two vacant wires in a multi-core cable.

Shielded cable does not connect the shield to earth (PE).

Mounting of external floor sensor

The floor sensor is used for comfort temperature regulation in rooms on the basis of floor temperature.

Insert the cable and sensor into a non-conductive conduit embedded in the floor.

The end of the conduit must be sealed and the conduit placed as high as possible in the concrete layer.

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

FIG. 3 – Mounting of external room sensor

The room sensor is used for comfort temperature regulation in rooms based of the room temperature.

The external room sensor must be mounted on the wall approx.

1.4 – 1.6 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.

OPERATING THE THERMOSTAT

To turn on the thermostat, push the power slide button up to On "I". The backlit display will briefly show the logo and then the home screen.

Settings

Allows settings in the menus "Event and User and Engineer settings" to be changed.

Press the center Menu button.

Press arrow < > until you see Event, User or Engineer settings.

Press OK to enter sub menus.

Read the manual for more information.

Programming

See user manual.

FIG. 4 – TROUBLESHOOTING

If a 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 sensor error. The thermostat must be replaced.

E1: External room sensor short-circuited or disconnected (terminal 10-11).

E2: External floor sensor short-circuited or disconnected (terminal 8-9).

E5: Thermostat overheated. Heating switched off. Thermostat will resume heating when temperatures again are

within limits.

Factory reset

Allows factory settings to be restored. Your personal settings will be deleted from the thermostat.

Press the center menu button.

Press arrow until you see Engineer settings and press OK.

Press arrow < > to find Factory reset and press OK

Read the manual for more information.

MAINTENANCE

The thermostat is maintenance free.

APPROVAL AND STANDARDS CE marking

OJ electronics hereby declares under sole responsibility that the product complies with the following European Parliament directives:

- LVD – Low voltage : 2014/35/EU
- EMC – Electromagnetic compatibility : 2014/30/EU
- RoHS – Hazardous substances: 2011/65/EU and amendment annex II: EU/2015/863
- Eco-design frame directive. req. for energyrelated products: 2009/125/EC.

Regulation EU 2015/1188 req. for local space heaters.

UKCA marking

OJ electronics Ltd hereby declares under sole responsibility that the product complies with the following UK legislations:

- LVD – The Electrical Equipment (Safety) Regulations 2016
- EMC – The Electromagnetic Compatibility Regulations 2016
- RoHS – The Restriction of the use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012

Applied standards:

EN 60730-1, EN IEC 60730-2-9.

Classification

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

TECHNICAL SPECIFICATIONS	
Thermostat	
Purpose of control	Electric underfloor heating.
Method of mounting	DIN-rail.
Supply Voltage	230 VAC $\pm 10\%$ 50/60 Hz
Max. pre-fuse	16 A
Built-in circuit breaker	2-pole, 16 A
Enclosure rating	IP 20
Wire size, terminals	1.5-2.5mm ²
ELV limits realized	SELV, 12 VDC
Output relay	Make contact – SPST – NO
Output, load	Max. 16 A/ 3600 W
Control principle	PWM/PI or ON/OFF
Standby consumption	0.5 W
Ambient operating temp.*	-10/+60°C
Control range temperature	-10/+80°C
Floor limit temperature	-25/+80°C
Night setback	– 30/+ 30°C
Frost protection	0/+15°C
Dimensions	H/88, W/53, D/58 mm
DIN module size	3xM36
Display	H/25, W/38 mm. segment backlit
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

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

EXTERNAL SENSOR	
Purpose of control	Measure floor temperature
Method of mounting	In pipe embedded in the floor
Sensor type	NTC (12kOhm)
Max. cable length	30 m

Note: Please follow the “Sensor cable recommendations”.
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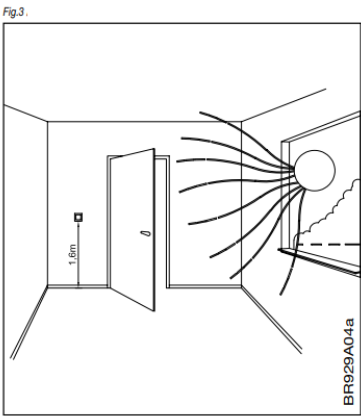
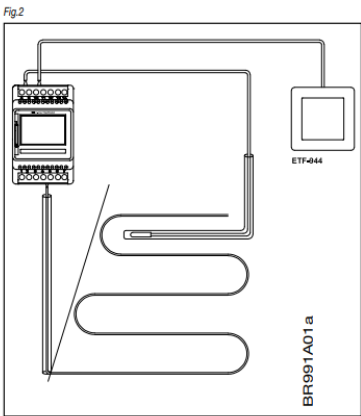
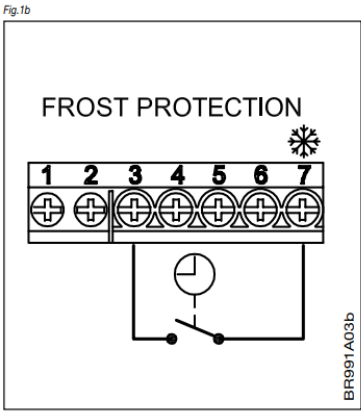
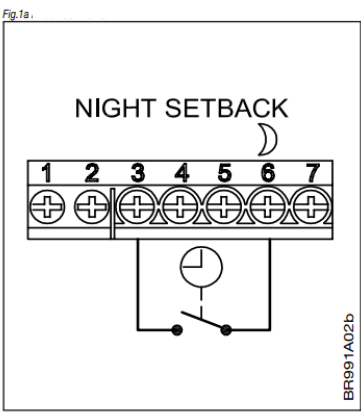
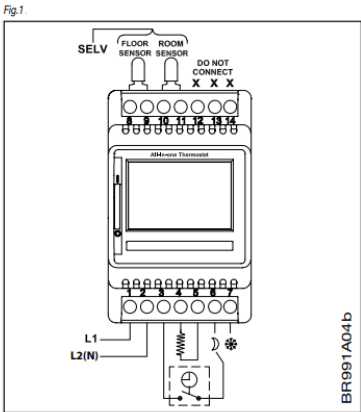


Fig.4

Sensor	
Temp.(°C)	Value (ohm)
-10	64000
0	38000
10	23300
20	14800
30	9700

BR991A08

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References

- [User Manual](#)

[Manuals+](#), [Privacy Policy](#)

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