RADEMACHER

Remote Sensor 9485-F
for DuoFern Room Thermostat 9485

Instruction manual for the electrical connection and installation

Item no.: 7000 01 03

VBD 653Z-02 (04.23)

1. This manual...

◆ ...describes the installation and electrical connection of the Remote Sensor 9485-F.

1.1 How to use this manual

◆ Please read this manual through completely and follow all the safety instructions
◆ This manual is part of the product - please store it in an accessible place
◆ When passing the Remote Sensor 9485-F on to a third party, this manual must be passed on as well
◆ Please request a replacement if this manual is lost
◆ Damage resulting from non-compliance with this manual and the safety instructions will void the guarantee, see the detailed operating manual for the configuration. We assume no liability for any consequential damage.

1.2 Related manuals

VBD 653-02 (xx.xx) -
DuoFern Room Thermostat 9485

2. Hazard symbols

The following hazard symbols are used in this manual to indicate safety instructions:

⚡ **Danger of fatal electric shock**

2.1 Levels of danger and signal words

⚠ **DANGER!**

This hazard will lead to serious injuries or death if not avoided.

⚠ **WARNING!**

This hazard may result in serious injuries or death if not avoided.

2.2 Symbols used and depictions

Depiction	Description
1.	**Steps to be taken**
2.	
◆	Itemisation
1) or a)	Lists
i	Further useful information
🧍	Please read the respective manual

3. Glossary - definition

Offset (sensor offset)

◆ The temperature measured on site can vary slightly from the room temperature if the DuoFern Room Thermostat 9485 is installed in a unfavourable position (e.g. behind a curtain or on a cool exterior wall)
◆ An adjustment of the measurement in the range of - 5.0°C to + 5.0 °C can be carried out using the sensor offset
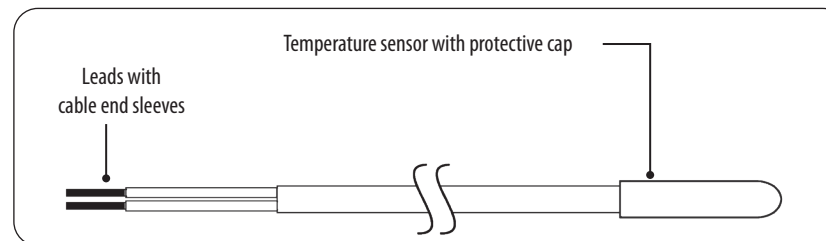
4. Included in the delivery

a) Remote Sensor 9485-F

b) 2 x Cable end sleeves (not illustrated)
c) 1 x Instruction manual (not illustrated)

5. General view of the Remote Sensor 9485-F

Temperature sensor with protective cap

Leads with cable end sleeves

6. Functional description

The Remote Sensor 9485-F is used to connect to the DuoFern Room Thermostat 9485.

The Remote Sensor 9485-F is optionally available as an external temperature sensor if the internal sensor cannot reliably record the room temperature. This may be useful if:

◆ The DuoFern Room Thermostat 9485 is installed in a thermally unfavourable position (e.g. on a cool exterior wall)
◆ Heavy loads (e.g. an electric heater) are switched on that significantly heat up the DuoFern Room Thermostat 9485 (self-heating)

Absolutely essential

If you are using the DuoFern Room Thermostat 9485 as a temperature limiter (e.g. for floor heating with special floor coverings), it is absolutely essential to use the Remote Sensor 9485-F as an external temperature sensor.

You can set up the appropriate configuration depending on the operating mode selected for the DuoFern Room Thermostat 9485.

🧍 To do so, please read the instruction manual for the DuoFern Room Thermostat 9485.

7. Technical specifications

Protection type:	IP68
Protection classes:	II (double insulation)
Permissible operating temperature:	-40°C to + 105 °C
Core cross section:	AWG 24 - 0.2 mm^2
Sensor diameter::	$\varnothing$ 5 mm
Connecting cable length:	3 m ($\varnothing$ 3.3 mm)

8. Safety instructions

⚡ **The use of defective devices can lead to personal injury and damage to property (electric shocks / short circuiting).**

◆ Never use defective or damaged devices.

8.1 Intended use

Use the Remote Sensor 9485-F only to connect the DuoFern Room Thermostat Type 9485.

8.2 Improper use

Using the Remote Sensor 9485-F for any other purpose than previously mentioned is not permissible.

8.3 Required expert knowledge of the installer

The electrical connection, installation and commissioning of the Remote Sensor 9485-F must be carried out by a qualified electrician with basic heating control knowledge in accordance with the instructions in this manual.

9. Safety instructions for the electrical connection

Read the specifications relating to the electrical connection detailed in the instruction manual of the DuoFern Room Thermostat 9485.

⚠ DANGER!

There is a risk of fatal electric shock when touching electrical components.

◆ All connection and installation work must only be carried out in an isolated, de-energised state.

◆ Disconnect all phases of the mains power cable to the room thermostat and secure it to prevent any reconnection.

◆ Check that the system is de-energised.

◆ As the remote sensor has 230 V potential, the cabling of the sensor (e.g. with an extension) must have basic insulation (against contact).

⚠ WARNING!

Incorrect wiring may lead to short-circuits and destroy the device.

Follow the pin assignment detailed in the connection diagram.

9.1 Important information regarding the electrical connection

Maximum length of lead

The maximum length of lead to connect the Remote Sensor 9485-F must not exceed 10 m.

9.2 Electrical connection

The Remote Sensor 9485-F must be connected with the terminals of the DuoFern Room Thermostat 9485 marked with "**S**" and "**N**".
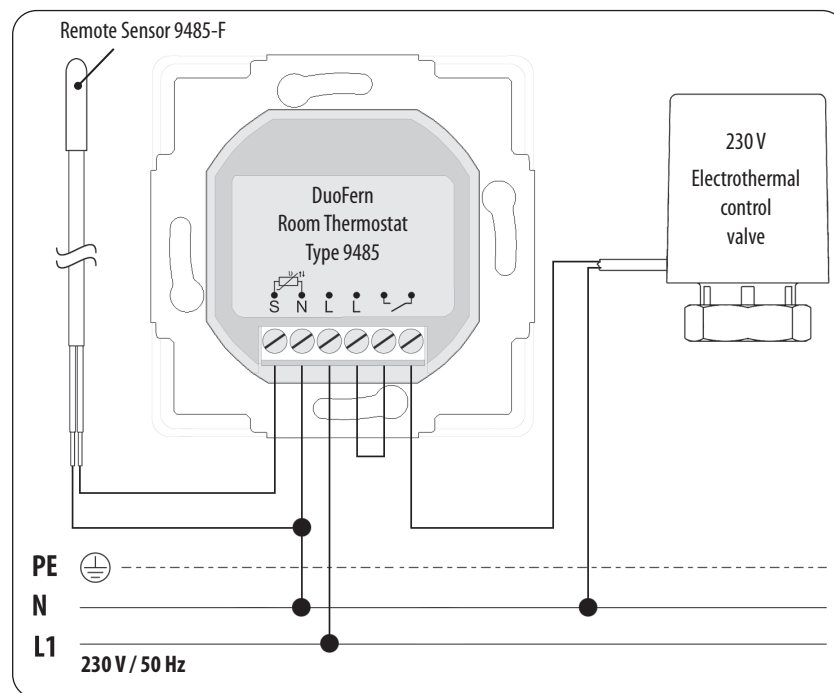
1. **Ensure that the mains power cable to the DuoFern Room Thermostat 9485 is current-free and check that the mains power cable is current-free.**

2. **Remove the insulation on all leads down to 6 mm in length.**

3. **Connect the cable end sleeves provided to the stripped ends of the connecting cable.**
   Use a suitable crimping tool (crimper).

4. **Connect the Remote Sensor 9485-F in accordance with the connection diagram.**

5. **Securely lay all connecting cables right into the flush-mounted box.**

6. **The installation of the DuoFern Room Thermostat 9485 into the flush-mounted box is carried out after the electrical connection.**

ℹ The desired operating mode can be set in menu 9.7.1 and the external temperature sensor can be activated after the connection.

9.3 Connection diagram

DuoFern Room Thermostat 9485 with a 230 V control valve

Remote Sensor 9485-F

DuoFern
Room Thermostat
Type 9485

S N L L

230 V
Electrothermal
control
valve

PE
N
L1
230 V / 50 Hz

10. Installing the remote sensor

Do not lay the cable of the Remote Sensor 9485-F parallel to the live mains power cable if at all possible.

1. **Select a suitable installation site.**
   You should position the Remote Sensor 9485-F centrally between two heating conductors to achieve the best possible heat distribution in the floor.

2. **Lay the connecting cable and the Remote Sensor 9485-F in a conduit.**
   This makes it easier to replace the Remote Sensor 9485-F at a later stage (e.g. in case of a defect).

3. **Seal the conduit with an appropriate protective sleeve.**

11. Settings on the DuoFern Room Thermostat 9485

You can configure the necessary settings in menu 9.7 "Installer settings".

Read the specifications in the instruction manual of the DuoFern Room Thermostat 9485.

Performing a sensor test

You can view the readings of the internal sensor and the Remote Sensor 9485-F (as an external sensor) in menu 9.7.7 "Sensor test" to check the installation.

Setting the sensor offset

The sensor can be adjusted by an offset, see menu 9.7.2 "Sensor offset", should deviations in the temperature measurement occur (e.g. due to the length of the lead and the contact resistances). An offset setting range of between -5.0℃ and +5.0℃ (in 0.1℃ steps) is possible.

11.1 Error messages on the DuoFern Room Thermostat 9485

Error 4
The temperature sensor provides invalid readings.

◆ Perform a hardware reset

◆ Please check the cabling

12. Simplified EU Declaration of Conformity

CE RADEMACHER Geräte-Elektronik GmbH hereby declares that the Remote Sensor 9485-F complies with Directive 2011/65/EU (Restriction of the Use of Certain Hazardous Substances).

The full text of the declaration of conformity is available on the following website:

www.rademacher.de/ce

Warranty conditions

Information on our warranty conditions is enclosed separately with this product.