

Mi-Heat AH-150W-5.0-E51

Mi-Heat AH-150W-5.0-E51 Electric Underfloor Heating System

USER MANUAL FOR 5m² HEATING MAT WITH E51 DIGITAL THERMOSTAT

1. Introduction

This manual provides detailed instructions for the installation, operation, and maintenance of your Mi-Heat AH-150W-5.0-E51 electric underfloor heating system. This system includes a 5m² aluminum heating mat and an E51 digital thermostat with an external floor sensor. Please read this manual carefully before installation and use to ensure safe and efficient operation.

The Mi-Heat electric underfloor heating system is designed for dry installation under various floor coverings such as laminate, parquet, and vinyl on HDF backing. It offers an environmentally friendly heating solution for living rooms, children's rooms, caravans, motorhomes, boats, and yachts.

2. Safety Instructions

- Installation must be carried out by a qualified electrician in accordance with local electrical regulations and standards.
- Always disconnect the power supply before performing any installation, maintenance, or repair work.
- The heating mat must not be cut or shortened. Only the support fabric network can be cut to adjust the mat's layout.
- Ensure the heating mat is not overlapped or installed in areas where it could be punctured or damaged.
- A Residual Current Device (RCD) with a tripping current of 30 mA is required for protection.
- Do not install the heating mat under fixed furniture without legs or heavy objects that could trap heat.
- Keep the thermostat away from direct sunlight, drafts, or other heat sources that could affect its temperature readings.

3. Package Contents

Verify that all components are present and undamaged before beginning installation:

- 1x Mi-Heat Aluminum Heating Mat (5m²)

- 1x E51 Digital Thermostat
- 1x External Floor Temperature Sensor
- 1x Aluminum Tape
- 2x Corrugated Pipes (for sensor and power cables)
- 1x User Manual

LIEFERUMFANG

SCOPE OF DELIVERY

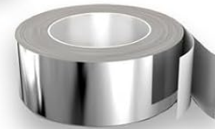
Mi-Heat ALU Heizmatte
Mi-Heat ALU Heating mat



**1x E51 Digital Thermostat
inkl. externem Temperatursensor**
*1x E51 Digital Thermostat
incl. external temperature sensor*



1x Aluminium Tape
1x Aluminium tape



2x Wellrohr
2x Corrugated pipe



Figure 3.1: Components included in the Mi-Heat underfloor heating system package. This includes the aluminum heating mat, E51 digital thermostat with external sensor, aluminum tape, and two corrugated pipes.

4. Product Specifications

4.1. Mi-Heat Aluminum Heating Mat

- **Power Consumption:** 150 W/m²
- **Operating Voltage:** 230 V
- **Max. Operating Temperature:** 80 °C
- **Min. Operating Temperature:** -10 °C
- **Heating Mat Width:** 50 cm

- **Cable Diameter:** 1.4 mm
- **Connection Cable Length:** 3.8 m
- **IP Protection Rating:** IPX7
- **Protection Measure:** Requires 30 mA RCD (Residual Current Device)
- **Technology:** Twin conductor technology



Figure 4.1: Key specifications of the Mi-Heat aluminum heating mat, including connection cable length, mat width, power, voltage, protective conductor, and twin technology.

4.2. E51 Digital Thermostat

- **Max. Switching Power:** 16 A / 3680 W
- **Control Type:** Two-point ON/OFF control
- **Operating Temperature:** 5-50 °C
- **Sensors:** Internal (room) and External (floor)
- **Temperature Setting Range (Internal/Room Sensor):** 5-55 °C
- **Temperature Setting Range (External/Floor Sensor):** 5-55 °C
- **Frost Protection:** Yes
- **Floor Limit Range:** 5-50 °C
- **Display/Backlight:** Yes/Yes

- IP Protection Rating: IP21
- Dimensions (W x H x D): 80 x 90 x 13/43 mm



Figure 4.2: Dimensions of the E51 Digital Thermostat and cable lengths for the integrated room temperature sensor, external floor sensor, and thermostat connection.

5. Installation Guide

The Mi-Heat aluminum heating mat is designed for dry installation, making it suitable for floating floor coverings. This section outlines the general steps for installation. Always consult a qualified electrician for electrical connections.

5.1. Preparation of the Subfloor

- Ensure the subfloor is clean, dry, level, and free from sharp objects.
- Install appropriate impact sound insulation (3-5mm recommended) over the subfloor.

AUFBAU ELEKTRISCHE FUSSBODENHEIZUNG

ELECTRIC UNDERFLOOR HEATING INSTALLATION

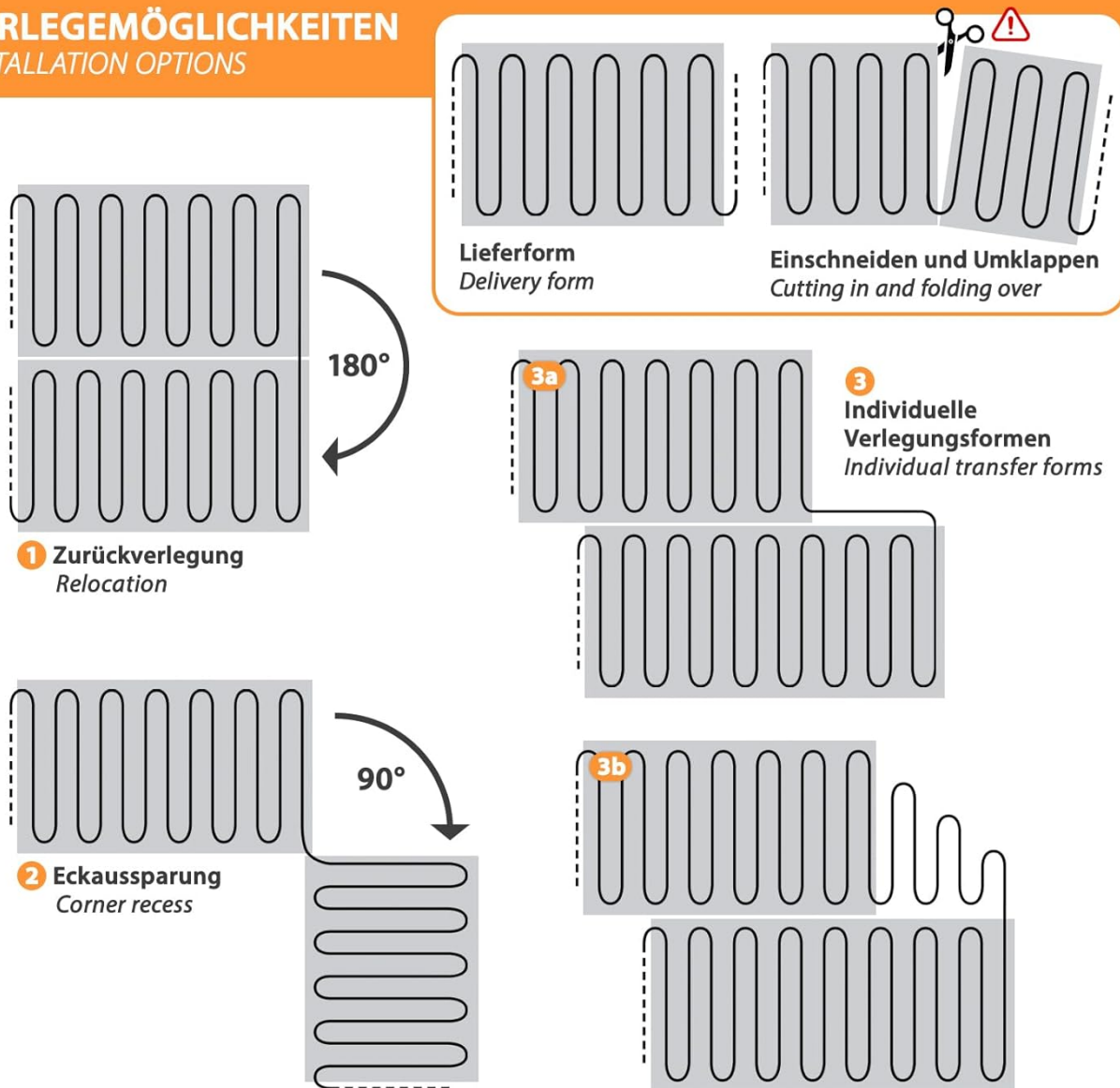


Figure 5.1: Diagram illustrating the layers of an electric underfloor heating installation, showing the underground, impact sound insulation, ALU heating mat, and laminate/parquet flooring.

5.2. Laying the Heating Mat

- Unroll the aluminum heating mat over the impact sound insulation.
- To change direction or fit the mat around obstacles, **only cut the support fabric network. Do not cut the heating cable itself.**
- Use the aluminum tape to secure the mat sections and ensure good thermal contact.
- Ensure the heating cables are evenly spaced and do not overlap.

VERLEGEMÖGLICHKEITEN INSTALLATION OPTIONS



ACHTUNG! Nur das Trägergewebe durchtrennen - nicht das Heizkabel!
CAUTION! Only cut the support fabric network - not the heating cable!

Figure 5.2: Various installation options for the heating mat, demonstrating how to relocate, create corner recesses, and form individual transfer shapes by cutting only the support fabric.

5.3. Thermostat and Sensor Installation

- Install the E51 digital thermostat in a standard electrical box at a suitable height on the wall.
- Route the external floor sensor cable through one of the corrugated pipes and place the sensor centrally between two heating cables, ensuring it is not directly over a heating element. The corrugated pipe allows for future replacement of the sensor.
- Route the heating mat's connection cable through the second corrugated pipe to the thermostat.
- Connect the heating mat, floor sensor, and power supply to the thermostat according to the wiring diagram provided with the thermostat. This must be done by a qualified electrician.

5.4. Final Flooring Installation

Once the heating mat and thermostat are installed and tested, you can proceed with laying your chosen floating floor covering (laminare, parquet, vinyl on HDF backing) directly over the aluminum heating mat. Ensure the flooring manufacturer's guidelines for underfloor heating compatibility are followed.

6. E51 Digital Thermostat Operation

The E51 digital thermostat provides precise control over your underfloor heating system with various features for comfort and energy efficiency.

6.1. Key Features

- **Weekly Programming:** Set custom heating schedules for 5/2, 6/1, or 7-day cycles.
- **Frost Protection Function:** Automatically activates heating if the temperature drops below a set minimum to prevent freezing.
- **Key Lock/Child Lock:** Prevents unauthorized changes to settings.
- **Actual/Set Temperature Display:** Shows both the current room/floor temperature and your desired set temperature.
- **Automatic Activation:** Heats automatically when the actual temperature falls below the set temperature.

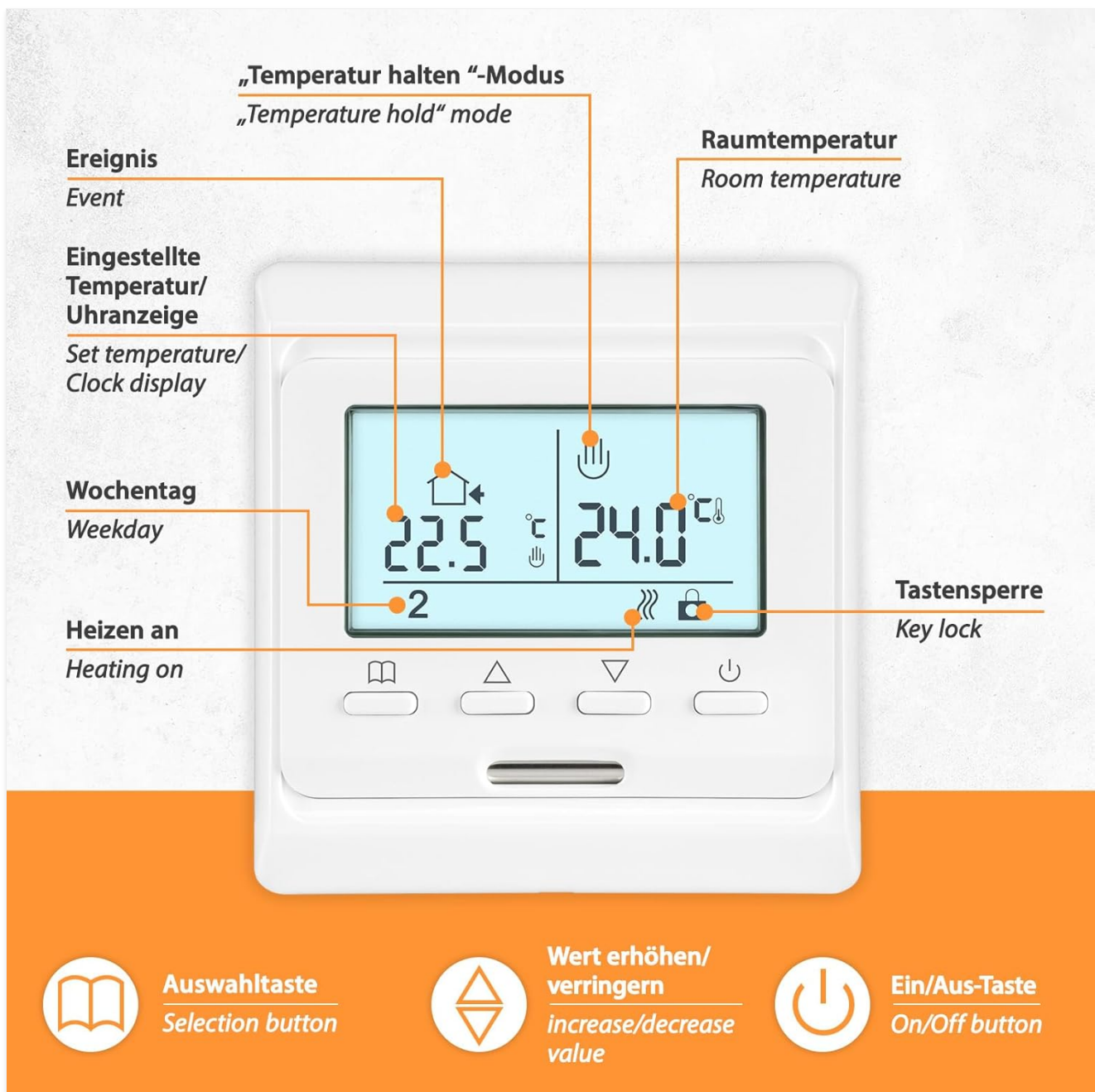


Figure 6.1: Overview of the E51 Digital Thermostat's main features, including frost protection, key lock, weekly programming, and actual/set temperature display.

6.2. Controls and Display Elements

- **Display:** Shows room temperature, set temperature, time, day of the week, heating status, and key lock status.
- **Selection Button:** Used to navigate through menus and confirm selections.
- **Increase/Decrease Value Buttons:** Adjust temperature settings, time, and program parameters.
- **On/Off Button:** Powers the thermostat on or off.
- **"Temperature Hold" Mode:** Allows temporary override of programmed settings.



Figure 6.2: Detailed view of the E51 Digital Thermostat's display and control buttons, indicating functions like selection, value adjustment, and power.

6.3. Basic Operation

1. **Power On/Off:** Press the On/Off button to switch the thermostat on or off.
2. **Setting Temperature:** Use the increase/decrease buttons to adjust the desired temperature. The thermostat will automatically maintain this temperature.
3. **Programming:** Refer to the detailed instructions in the thermostat's specific manual for setting weekly

programs, time, and other advanced features.

4. **Key Lock:** Activate the key lock function to prevent accidental changes. Consult the thermostat manual for activation/deactivation steps.

7. Maintenance

- The heating mat itself requires no maintenance once installed.
- Clean the thermostat regularly with a soft, dry cloth. Do not use abrasive cleaners or solvents.
- Ensure the thermostat's ventilation slots are not blocked to allow for proper temperature sensing.
- Periodically check the electrical connections for any signs of wear or damage. This should be done by a qualified electrician.

8. Troubleshooting

Problem	Possible Cause	Solution
Heating system not turning on.	No power supply; Thermostat off; RCD tripped; Wiring issue.	Check circuit breaker/RCD; Ensure thermostat is on; Verify power connections (consult electrician).
Floor not heating sufficiently.	Temperature setting too low; Floor sensor faulty or incorrectly placed; Heat loss.	Increase set temperature; Check floor sensor placement; Ensure proper insulation.
Thermostat display is blank.	No power to thermostat; Thermostat faulty.	Check power supply; Contact customer support if power is present.
Thermostat shows error code.	Sensor fault; Internal error.	Refer to the E51 thermostat's specific manual for error code meanings and solutions. Contact customer support if the issue persists.

9. Warranty and Support

For warranty information, technical support, or spare parts availability, please contact your retailer or the manufacturer directly. Keep your proof of purchase for warranty claims.