

Lewson®



Electric Underfloor Heating System

Installation Manual



WARNING:
Read all instructions before installing the floor heating module.

Dear User:

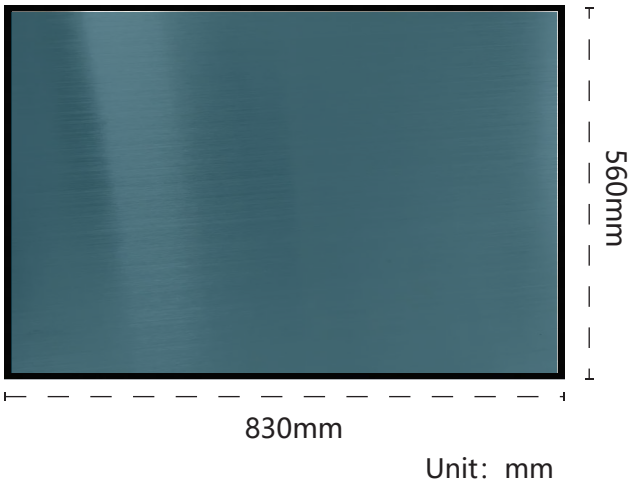
Thank you for choosing LEVSON Graphene Heating System products. To ensure proper use, please read this manual carefully before operation.

Check that all parts and accessories are complete according to the manual. Follow the installation steps provided and ensure correct commissioning.

 Warning	
 No Nailing	Do not drill, nail, or insert sharp objects into the floor heating area to prevent system damage.
 No Metallic Materials	The use of insulation materials containing metal, metallic moisture barriers, or flammable, explosive, and toxic materials is strictly prohibited.
 No Rough Handling	Damage to electrodes (bending or breaking) may cause sparking or tripping. Handle with care during transport and installation to avoid safety hazards.
 No Overlapping	Individual heating elements must not overlap during installation.
 Professional Installation Only	The floor heating system must be professionally designed, installed, and maintained.

Product Usage Instructions

Electric Underfloor Heating Module is an indoor heating product manufactured using graphene heating technology. It is suitable for various types of floor installations and features easy, "plug-and-play" setup. Utilizing self-regulating temperature technology, the maximum surface temperature of each module does not exceed 50°C, ensuring energy efficiency and power savings.



Product Parameters

MODEL	Rated Voltage	Power	Dimensions (L×W×T)	Breakdown Voltage (V)	Insulation Resistance
LS300	230VAC	90W/PC	830*560*21.5mm	≥1000V	≥50MΩ

Materials Preparation

Installation Materials Preparation

No.	Item	Qty.	No.	Item	Qty.
1	Underfloor Heating Module	As required	4	Classic Thermostat	As required
2	XPS Insulation Board	As required	5	Smart Thermostat	As required
3	Cloth Duct Tape	As required	6	Polypropylene (PP) Fabric	As required

Installation Tools Preparation

No.	Item	Qty.
1	Utility Knife	1
2	Scissors	1
3	Tape Measure	1
4	Hot Melt Knife	1

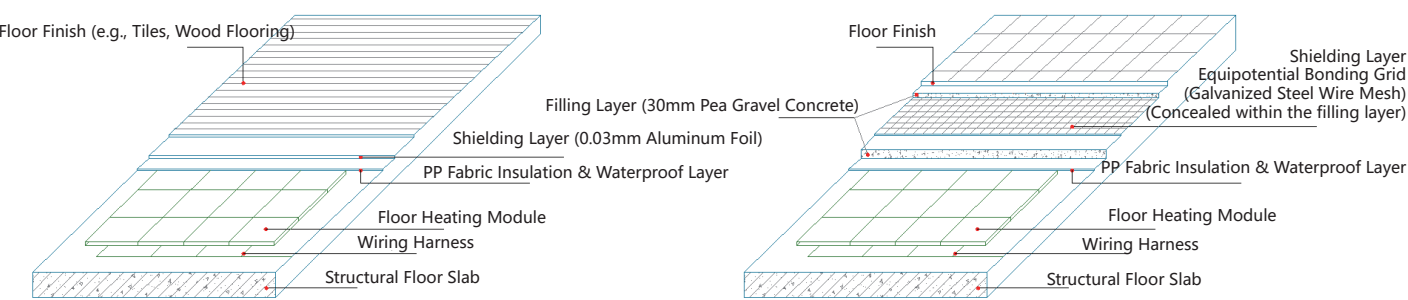
Acceptance Tool

No.	Item	Qty.
1	Megohmmeter	1
2	Infrared Thermal Imager	1
3	Clamp Meter	1
4	Multimeter	1

Pre-installation Preparation

- Site Inspection: Upon arrival, check if the leakage protection switch matches the load (estimated as $1\text{m}^2 \approx 1\text{A}$). If it does not match, notify the decoration company or electrician that it must be replaced before the residents move in.
- System Check: Verify that the pre-embedded pipelines and wiring meet the installation and load requirements for electric floor heating.
- Site Cleaning: Clean the site and remove any obstructions or protrusions to ensure the floor surface is clean and level.

Schematic Diagram of Floor Installation Structure



· Dry-laying

· Wet-laying

Installation Procedure



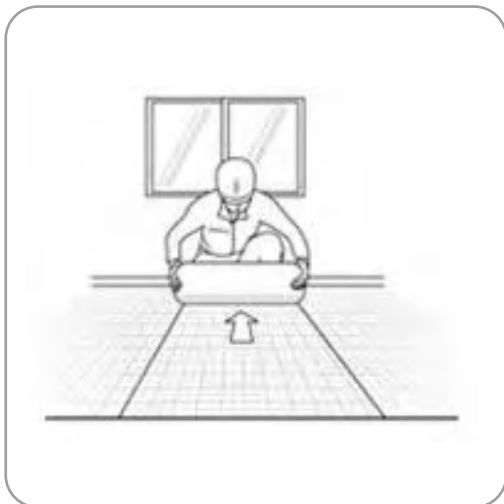
01 STEP

The designer shall measure the installation site and prepare the layout drawings.

02 STEP

Module Positioning

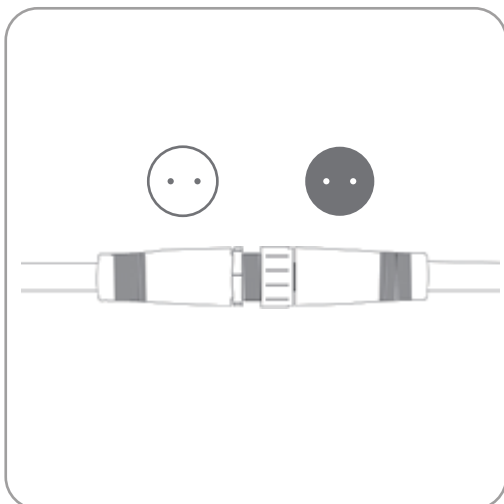
Filling Non-Heating Areas with XPS Underfloor Insulation Boards



- Carry out installation according to the approved design drawings. Ensure that the distance between the modules and walls, cabinets, and fixed furniture is accurate. Please note that the first module in the installation area must have its wiring end fitted with the **male connector** for cable harness connection.
- Areas not covered by heating modules must be fully filled with XPS underfloor heating insulation boards. Use cloth tape to bond the boards together to ensure a flat and even surface.

03 STEP

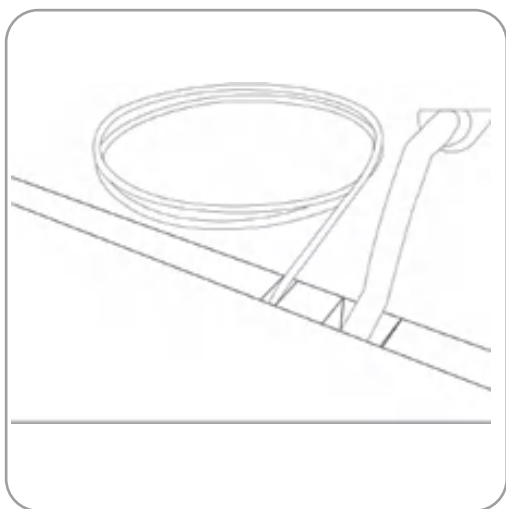
Cable Harness Connection



Before dry-laying and connecting the modules, remove the connector plug from the module terminal. After completing the connection, insert the connector back into its original position securely.

Before wet-laying and connecting the modules, remove the connector plug from the module port. After completing the connection, wrap it with waterproof tape and insert it back into its original position. Finally, seal the gap around the opening with silicone to ensure a waterproof finish.

After all modules are connected, connect the standard wiring harness to the modules according to the design drawings. The connection method is the same as that used



04 STEP

Thermostat Floor Sensor Installation

For dry installation, according to the thermostat position shown in the design drawings, insert the temperature sensor into the sensor port of the nearest module, to a depth of approximately 10 cm.

For wet installation, all modules except the one used for installing the temperature sensor must have their sensor ports sealed with silicone. After the temperature sensor is installed, the sensor port of that module must also be sealed with silicone to ensure waterproof protection.

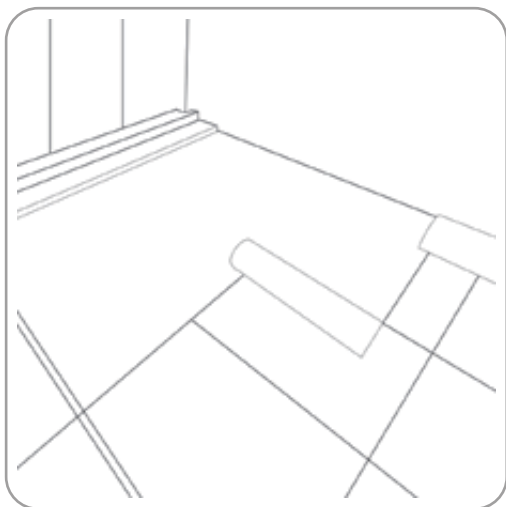


05 STEP

Cutting Grooves and Fixing the Main Cable Bus

Use a hot cutting tool to cut grooves in the insulation board according to the design drawings. Embed the main cable bus into the grooves to keep the surface flat.

After embedding, secure and seal the grooves using cloth tape.



06 STEP

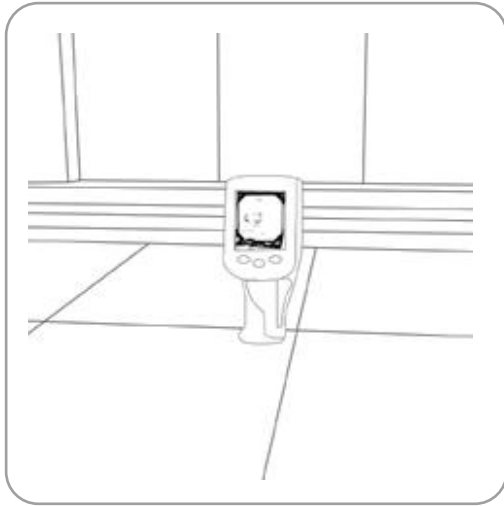
Installation of Waterproof and Insulation Layer

For dry installation:

Overlap the polypropylene (PP) fabric by **5–10 cm** at the edges. Seal all joints with cloth tape to ensure complete waterproofing. The fabric should extend up the wall by approximately **100 mm**.

For wet installation:

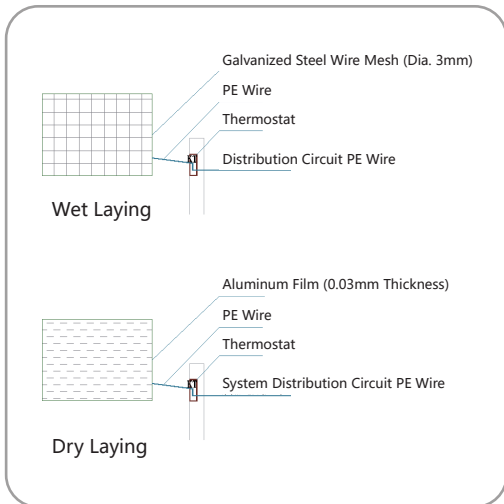
Two layers of polypropylene fabric must be applied for waterproof protection. The two layers shall be laid **perpendicularly (cross-laminated)** to each other.



07 STEP

Infrared Thermal Imaging Test

Use a megohmmeter to measure the insulation resistance between the main circuit of the underfloor heating modules and ground. The value should be greater than 5 MΩ. At the same time, measure the total resistance of the heating elements. The measured resistance should be close to the theoretical value, with a tolerance within $\pm 10\%$. All test results must be recorded in detail. If any abnormality is found, the entire wiring and heating elements must be checked and the issue rectified immediately.



08 STEP

System Grounding Process (Subject to local regulations)

Wet Laying: Add a shielding layer within the filling layer by installing a layer of Galvanized Steel Wire Mesh (Dia. 3mm). Use a PE Wire to connect the wire mesh to the System Distribution Circuit PE Line.

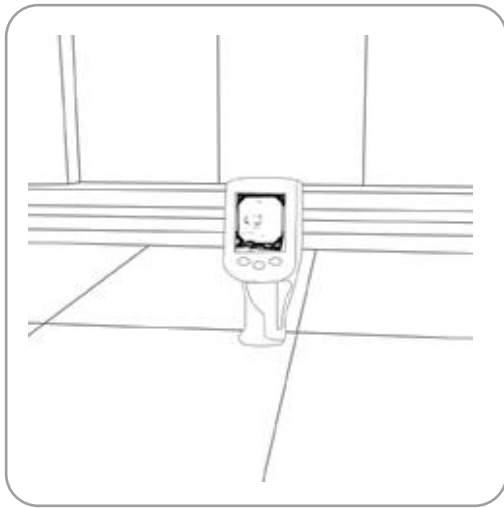
Dry Laying: Add a shielding layer above the waterproof layer by installing a layer of Aluminum Film (thickness $\delta = 0.03\text{mm}$). Use a PE Wire to connect the aluminum film to the System Distribution Circuit PE Line.



09 STEP

Thermostat Installation

A certified electrician must connect all terminals according to the wiring diagram on the back of the thermostat. Perform a thorough inspection to ensure all connections are secure and there are no loose connections.



10 STEP

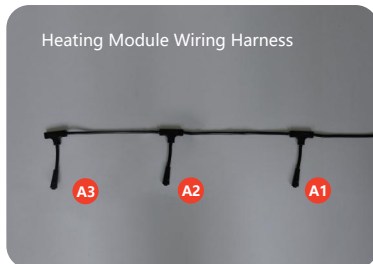
Commissioning and Trial Run

Inspect the power supply lines entering the thermostat and confirm the installation of a Residual Current Device (RCD/Leakage Protector). Conduct a trial run according to the User Manual. Test and record relevant data to verify that the system is functioning correctly.

Perform a Thermal Imaging Inspection to ensure all modules are operating normally and heat distribution is uniform.

Module Connection and Thermostat Wiring Diagram

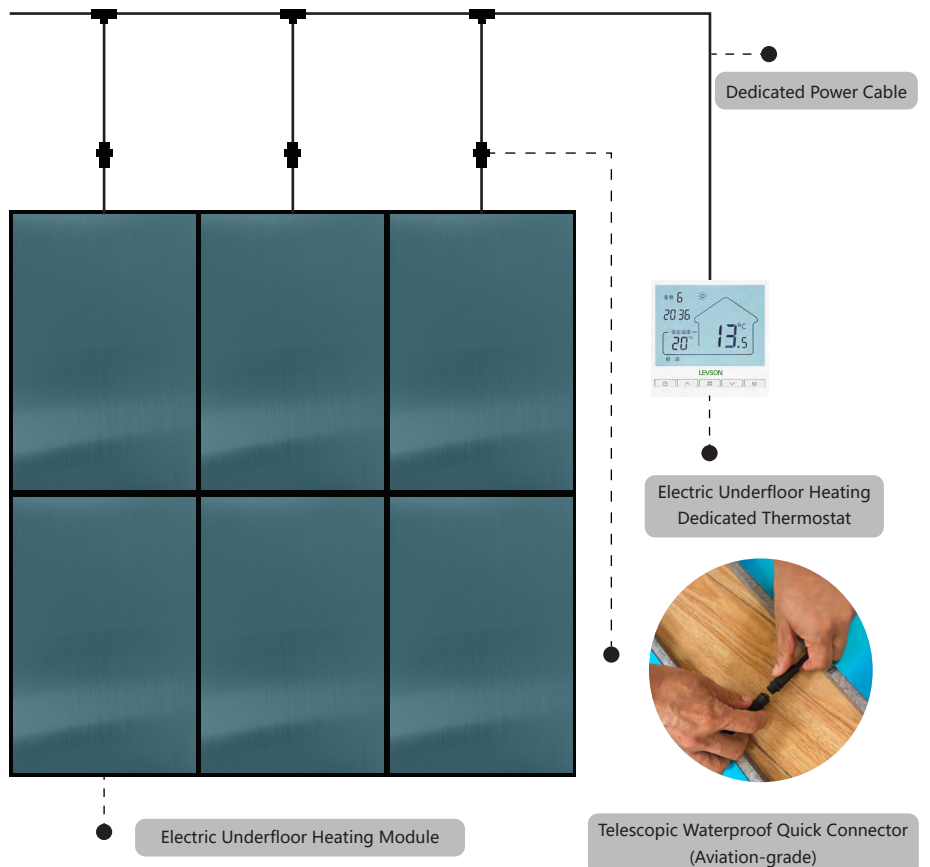
- Connect the M terminals of the heating modules to the A terminals of the dedicated wiring harness (A1, A2, A6).
- Connect the M terminal of one module to the F terminal of the adjacent module.



M



F



Installation Precautions

1.The materials used, including their type, specifications, and models, must comply with the design requirements and relevant standards. All products must be supplied with complete and valid certification documents.

2.Wiring inside conduits shall only be carried out after confirming that the underfloor heating modules have been correctly installed.

Before pulling the wires, the junction boxes must be thoroughly cleaned. Ensure correct colour coding of conductors and leave an appropriate length of spare wire.

3.The thermostat shall be installed on a wall away from direct sunlight. Installation must be level and plumb, at the correct height, flush with the wall surface, and securely fixed in accordance with electrical installation acceptance standards.

All wiring must be carried out carefully so that neither the conductor core nor the insulation is damaged.

4.All installers must wear soft-soled shoes. After sealing the conduits, the entire working area shall be cleaned. Once installation is completed, the underfloor heating modules must be powered on for a trial heating test to check whether the system is operating correctly.

5.The completed radiant floor heating surface must not be subjected to heavy impact, strong knocking, or striking.

Drilling, chiselling, or inserting any objects into the floor is strictly prohibited.

Product Usage Precautions

1.Heating time depends on the floor finish.

When installed under laminate flooring, the surface temperature reaches about **29 °C in 30 minutes**.

When installed under a **3 cm mortar layer**, it takes about **90 minutes** to reach **29 °C**.

Do not switch the thermostat on and off frequently. Allow it to regulate the temperature automatically.

2.Do not alter the building structure, including walls, doors, windows, or floor finishes, without notifying the installer in advance.

The manufacturer is not responsible for any performance issues caused by unauthorized modifications.

3.Increasing the thermostat setting does not accelerate heating and will only increase energy consumption.

Set the thermostat to the required temperature.

(Recommended indoor temperature in winter: 18–22 °C.)

4.Avoid excessive heat loss caused by frequently opening doors and windows.

5.When rooms are unoccupied, set the temperature to **10–12 °C**.

This is more energy-efficient than reheating a cold room and avoids unnecessary power consumption.

6.When wooden flooring is installed directly above the heating modules, do not cover the heated area with carpets, mats, or other objects, as this may block heat dissipation and create a fire risk.

7.Do not block the thermostat or place heat sources near it. Do not change its position without authorization.

Keep the thermostat dry and clean, and prevent dust or debris from entering, which may affect temperature accuracy.

8.Operate the thermostat strictly according to its user manual. Do not overload or disassemble it.

During the first heating season, initially set the temperature **2–4 °C above the ambient temperature**, then adjust to the desired level after the room temperature stabilizes. This helps protect flooring and furniture from sudden temperature changes.

9.Drilling, nailing, or any operation that may damage the heating modules is strictly prohibited in the heated floor area.

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Made in P.R.C