LANDLORD TOOLS

MAXIMIZING PROFITABILITY

Hardware Installation Manual

Hardware Overview

The Landlord-Tools Heat Meter is easy to install. To ensure a smooth installation, please note the following requirements:

- The system is designed for **2-wire zone relay controllers**—a common setup where all your thermostats connect to a central relay controller.

- The meter needs to communicate with our data center. Although the data transmitted is minimal, a stable internet connection is essential.

- The metering box includes two wires that connect it to your zone relay controller. Install the meter within a few feet of the controller.

- Powered by a small 5V transformer, the meter requires access to an electrical outlet.

- The installation time is usually under 60 minutes.

Unboxing Your Heat Meter

When you receive your Landlord-Tools Heat Meter, the package will include the following items:

- Meter Hardware comes securely wrapped and has a serial number QR code located along the top edge.

- A small transformer that plugs into the left side of the meter to supply power.

- Two cables that facilitate proper communication between your zone relay controller and the new meter.

- Double-sided tape to mount the meter on a smooth surface easily.

- (Optional) Mounting bracket for securing the meter on rough wooden surfaces, this bracket provides extra stability.

- A rubber gromet to prevent wire chafing at the zone relay controller.

- Warranty Card.

Installation Tips for Mounting

The Landlord-Tools Heat Meter is designed for durability, capable of operating in damp and dirty environments. To ensure optimal performance and years of continuous use, please follow these recommendations:

Check Your Wi-Fi Signal Strength

Before installation, use a smartphone or another device to verify the strength of your Wi-Fi signal near the intended mounting area. A reliable internet connection is essential for the meter to communicate with our data center.

Select an Ideal Mounting Location

Install the meter near your furnace relay control box. This ensures that the included wires can easily connect the meter to the control box.

Smooth Surfaces:

- Use the included double-sided tape to adhere to the meter. The meter can even be installed onto the front cover of the zone relay box.

Rough Surfaces:

- If mounting on a rough wooden surface, ensure the meter is within a few feet of the zone relay control box so the wires can reach comfortably.

By carefully choosing the installation location and securing a strong internet connection, you'll enhance the meter's performance and longevity.

Connecting Your Heat

Once your heat meter is securely mounted, the next step is to connect it to your relay equipment. Follow these instructions carefully to ensure a proper and safe installation.

Safety First

Before you begin, make sure to turn off the power to your zone relay controller and furnace to prevent any electrical hazards. Some oil furnaces have a separate power source—turn it off.

Understanding the Heat Meter Ports:

Left Port: Connects to **Zones 1-4**
Right Port: Connects to **Zones 5-8**

LEFT PORT: ZONES 1-4   RIGHT PORT: ZONES 5-8

Accessing the Zone Relay Controller

Carefully remove the cover of your zone relay controller to access the internal components.

Inside, you'll find existing thermostat wires connected to the control board. These are typically small wires, around **24 AWG** in size.

Routing the Included Wires

You will use the two included cables to connect the heat meter to the zone relay control board. Each cable contains colored wires for easy identification.

• Left Port Wiring (Zones 1-4):

- **Orange Wire:** Zone 1

- **Green Wire:** Zone 2

- **Blue Wire:** Zone 3

- **Brown Wire:** Zone 4

- # Right Port Wiring (Zones 5-8):

  - **Orange Wire:** Zone 5

  - **Green Wire:** Zone 6

  - **Blue Wire:** Zone 7

  - **Brown Wire:** Zone 8

Note: Each colored wire has a corresponding white wire with the same color stripe. These pairs need to be kept together.

Connecting the Wires

Route Wires into Zone Relay Control Box:

Gently route the included wires into the zone relay control box, ensuring they do not interfere with any existing components.

Connect to Zones:

Starting with **Zone 1**, connect each pair of wires (colored wire and its corresponding, white-striped wire) to the appropriate zone terminals on the zone control board.

Zone Connections:

- **Zone 1:** Orange pair
- **Zone 2:** Green pair
- **Zone 3:** Blue pair
- **Zone 4:** Brown pair

Repeat for Zones 5-8 if applicable.

Zone Connections:

- **Zone 5:** Orange pair
- **Zone 6:** Green pair
- **Zone 7:** Blue pair
- Zone **8:** Brown pair

Secure Connections:

Make sure all wire connections are secure and that there are no loose strands that could cause a short circuit.

Important Installation Guidelines

Follow Regulations:

Always adhere to all local, state, and federal electrical codes during installation.

Connect Only to Thermostat Terminals:

Do not connect the heat meter wires to any part of the system other than the thermostat connection points on the control board.

Warning: Connecting wires to incorrect terminals can cause damage to the system or create safety hazards.

Finalizing the Installation

Double-Check Connections:

Review all connections to ensure they are correct and secure.

Replace the Cover:

Put the furnace zone relay controller cover back on.

Connect the Cables to the Heat Meter:

After replacing the cover, connect the two cables to the corresponding ports on the heat meter.

- **Left Port:** Plug in the cable for Zones 1-4.
- **Right Port:** Plug in the cable for Zones 5-8 (if applicable).

Connect the Power Adapter:

Plug the 5V AC transformer into the left side of the heat meter.

Then, plug the transformer into a nearby electrical outlet.

Restore Power:

Turn the power back on to the furnace controller.

Test the System:

Verify that all zones are functioning correctly.

Connecting to the Internet

The Landlord-Tools Heat Meter requires an internet connection to function properly. Follow these steps to connect your heat meter to your Wi-Fi network.

Power On the Heat Meter

After powering up the system, you'll notice that the indicator light is **red**. This means the system cannot communicate with our data center yet.
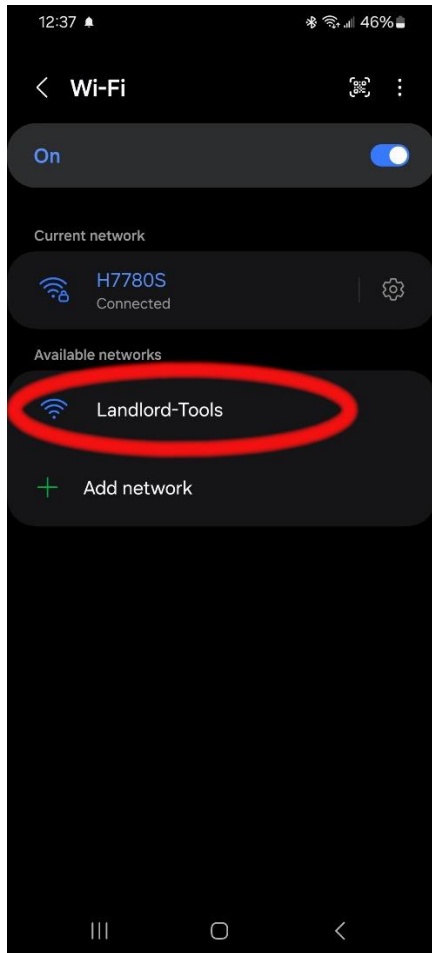
Connect to the Heat Meter's Wi-Fi Access Point

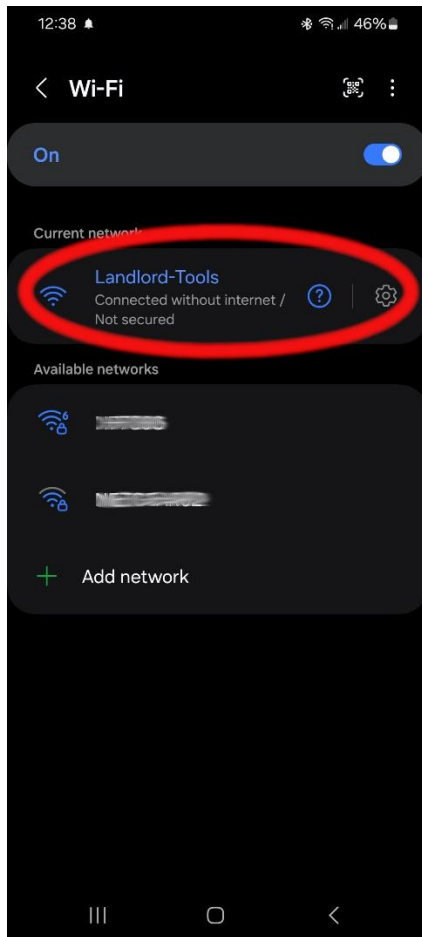### On Your Device (Smartphone, Tablet, or Laptop):

Go to your **Wi-Fi settings**.

Scan for available Wi-Fi networks.

Look for a network named **"Landlord-Tools"** and select it to connect.

Select "Landlord-Tools" from the list of available Wi-Fi networks.

Note About Connection Alerts During Setup.

Once connected to the **Landlord-Tools** network, you may receive alerts on your device indicating that there is **no internet access** or that the connection is **not secure**. These messages are normal during the setup process. Simply **acknowledge** or **dismiss** these prompts to proceed and complete the connection.

Note: Depending on your device and operating system, you might receive a message stating there's no internet access on the "Landlord-Tools" network. This is normal.

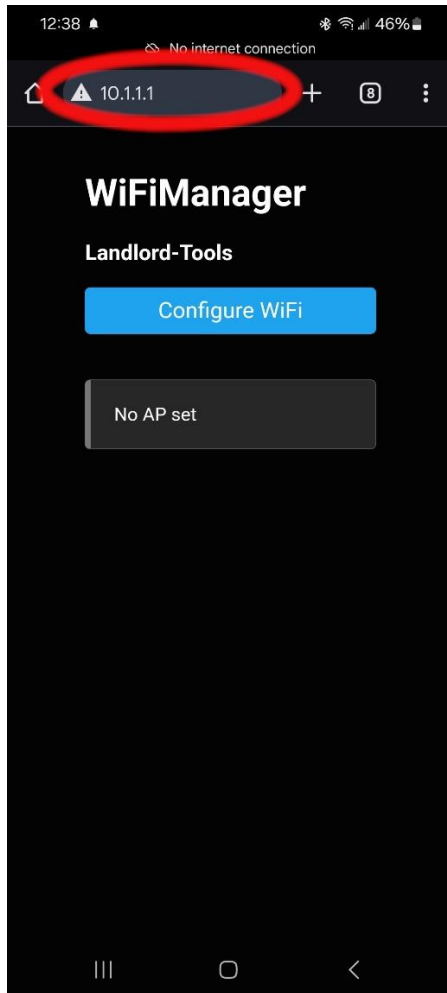If prompted, **acknowledge** or **accept** the message to proceed.

Important: You are temporarily connecting to the Landlord-Tools access point to configure your heat meter.

Access the Configuration Page

Open a **web browser** on your device.

In the address bar, type **10.1.1.1** and press **Enter**.

This will take you to the system's **Wi-Fi Manager configuration page**.

In your web browser, type 10.1.1.1 into the address bar to open the Wi-Fi Manager.

Once the Wi-Fi Manager loads, click on the "Configure WiFi" button.

Configure Wi-Fi Settings

Click on the blue button labeled **"Configure WiFi"**.

The system will scan for nearby Wi-Fi networks.

Wait a few seconds for the list of available networks to appear.

Select and Connect to Your Wi-Fi Network

After a brief pause while the system scans for local networks, a list of available Wi-Fi networks will appear.

Select your network from the list; its name will automatically populate the SSID field near the bottom of the screen.

Confirm that this is the correct network you want to connect the Heat Meter to, then enter your Wi-Fi password.

Note: The password is case-sensitive.

From the list, **select your Wi-Fi network**—the one you want the heat meter to use.

Enter your Wi-Fi **password** in the designated field.

Click **"Save"** or **"Connect"** to proceed.

The system will save your settings and automatically **reboot**.

Verify the Connection

After the heat meter restarts, check the indicator light:

If the **red light** changed to **green**, the connection was successful.

A green light means the heat meter is now connected to your Wi-Fi network and communicating with our data center.

Resetting the Heat Meter (If Necessary)

In Case of Incorrect Password or Network Changes:

If you entered the password incorrectly, or if you change your router or Wi-Fi password in the future, you'll need to reset the heat meter to reconfigure it.

How to Reset:

While the heat meter is powered on, use a paperclip or similar object to press the small button located through the tiny hole on the side of the heat meter, just below the power input.

Press and hold the button for **5 seconds**.

After Resetting:

The heat meter will reactivate its Wi-Fi access point (**"Landlord-Tools"**).

You can then repeat the Wi-Fi setup procedure by following **Steps 2 through 6** above.

Hardware Frequently Asked Questions

How will I know if my Zone Relay Control will work with the meter?

The Landlord-Tools Heat Metering System passively monitors heat usage by "listening" to your thermostat cycles. Our system only requires a connection to the low voltage, **24VAC** thermostat inputs. Most systems operate at 24VAC; however, you can **only install this meter on a 24VAC system**. If you're unsure about your system's voltage, please consult the installation manual or contact a heating contractor for assistance.

I don't have internet at my building. Can I still use the Landlord-Tools Heat Metering System?

The Landlord-Tools Heat Metering System requires an internet Wi-Fi connection to operate. Many landlords already have internet access at their properties for systems like alarms and security cameras. If you don't currently have internet service at your building, consider the following options:

- **Minimal Data Usage:**
  - The metering system uses very little data, so a basic internet plan should suffice.
- **Cellular Access Points:**
  - Many cellular providers offer affordable cell-based Wi-Fi hotspots or access points. These devices can provide the

necessary internet connection without the need for traditional wired internet service.

We recommend exploring these options to ensure your heat meter can communicate properly and provide accurate monitoring.

Do I need a meter for every building, and what if I have more than 8 apartments in one building?

Yes, each building requires a Landlord-Tools Heat Meter to communicate with our Data Center. If you have more than 8 zones or apartments in a single building, you can purchase additional meters. Multiple meters can be installed in the same building to extend our capabilities to all apartments. Please note that **each meter requires its own subscription**.

How accurate is the Landlord-Tools Heat Metering System?

The Landlord-Tools Heat Metering System is highly accurate, measuring heat usage down to the **millisecond**. Our servers synchronize with the same time servers used by the U.S. government, utilizing **Coordinated Universal Time (UTC)** with appropriate offsets. This ensures precise and consistent end-of-day reports across all time zones, providing you with reliable and accurate monitoring of heat usage.

Is there anything else I need to know about my meter?

Absolutely! The Landlord-Tools Heat Meter is designed for simplicity and reliability—install it, configure the Wi-Fi, and you're all set. However, understanding the Status LED indicators can help you monitor the unit's operation:

- **Green Light:**
  - **What it means:** Everything is running properly.
  - **Action needed:** None. This is the normal operating state.
- **Red Light:**
  - **What it means:** Error connecting to the internet.
  - **Possible causes:** Router misconfiguration or an internet outage.
  - **Action needed:** Check your internet connection and router settings to resolve the issue.
- **Blue Light:**
  - **What it means:** Confirmation that a data record has been received by our data center.
  - **How it works:** When data leaves the unit, the data center logs the state change and sends a response back to the meter. This entire process happens in milliseconds.
  - **Action needed:** None. This is a normal part of data transmission.

In Summary:

- **Ease of Use:** Once installed and connected to Wi-Fi, the system operates automatically.
- **Minimal Maintenance:** There's nothing more you need to do after setup.
- **Monitoring:** The LED indicators provide at-a-glance assurance that your meter is functioning correctly.