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GELO TECHNOLOGIES GTG010 Mesh Network Thermostat and Gateway

GELO TECHNOLOGIES GTG010 Mesh Network Thermostat and Gateway Instruction Manual

Contents

GELO TECHNOLOGIES GTG010 Mesh Network Thermostat and Gateway

Specifications

- Model: GTG-010 (Gateway)
- Version: 0.3
- Date: 2024/05/17

Product Information

The Mesh Network Thermostat and Gateway system consists of two modules: Gateway and Thermostat. The Gateway is typically installed beside or inside the main control panel room, while the Thermostat is installed in individual apartments or rooms based on customer setup.

Product Usage Instructions

Gateway Installation

1. Choose a suitable location for the Gateway near the main control panel.
2. Connect the Gateway to a power source using the provided adapter.
3. Follow the specific instructions in the user manual for pairing the Gateway with other devices in the network.

Thermostat Installation

1. Select an appropriate spot in each room for installing the Thermostat.
2. Ensure proper wiring connections according to the provided guidelines.
3. Set up the Thermostat by following the configuration steps outlined in the user manual.

FAQ

- **Q: What should I do if the Gateway is not connecting to other devices in the network?**
  A: Check the power source, ensure proper placement, and attempt to re-pair the Gateway with the devices following the pairing instructions in the manual.
- **Q: How can I adjust the temperature settings on the Thermostat?**
  A: Use the controls on the Thermostat to increase or decrease the temperature as needed. Refer to the user manual for detailed instructions on programming and setting temperature schedules.

Mesh Network Thermostat and Gateway
Operations & Maintenance Manual

- Models GTG-010 (Gateway) Version 0.3
- 2024/05/17

Revision history

Table 1 – Manual Revision History

Version Number	Date	Author/Owner	Description of Change

Table 2 – Record of Changes

Version Number	Date	Author/Owner	Description of Change
0.2	2024/02/22	O.Bukin, Gelo Technologies Inc	FCC addition
0.3	2024/05/17	O. Bukin, Gelo Technologies Inc	Split Thermostat and Gateway

Introduction

- Heating Management System (HMS) system consists of two independent modules. The first one is Gateway, and the second one is Thermostat.
- Gateway is installed beside the main control panel or inside the main control panel room. Thermostat is installed inside each apartment or room depending on customer configuration.

System Manual Identification

Component	Title/Name	Number
	Gateway	1

Notes

ESD protection

- Electrostatic discharge (ESD) can damage electronic circuits. GELO products are adequately protected against ESD for their intended use. However, it is possible to damage the product by delivering electrostatic discharges when touching, removing, or inserting any objects in the equipment housing.
- To avoid delivering high static voltages to the product:
- Handle ESD-sensitive components on a properly grounded and protected ESD workbench or by grounding yourself to the equipment chassis with a wrist strap and a resistive connection cord.
- If you are unable to take either precaution, touch a conductive part of the equipment chassis with your other hand before touching
- ESD-sensitive components.
- Hold component boards by the edges and avoid touching component contacts.

FCC Regulatory Statements

This device complies with Part 15 of the FCC Rules.
Operation is subject to the following two conditions:

1. This device may not cause harmful interference.
2. This device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the Federal Communication Commission (FCC) rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

- If this equipment causes harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by doing one or more of the following measures:
    - Reorient or relocate the receiving antenna.
    - Increase the separation between the equipment and receiver.
    - Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
    - Consult the dealer or an experienced radio/TV technician for help.

NOTE: THE GRANTEE IS NOT RESPONSIBLE FOR ANY CHANGES OR MODIFICATIONS NOT EXPRESSLY APPROVED BY THE PARTY RESPONSIBLE FOR COMPLIANCE. SUCH MODIFICATIONS COULD VOID THE USER'S AUTHORITY TO OPERATE THE EQUIPMENT.

RF Exposure Warning

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. In order to avoid the possibility of exceeding the FCC radio frequency exposure limits, human proximity to the antenna shall not be less than 20 cm during normal operation and must not be co-located or operating in conjunction with any other antenna or transmitter.

ISED Regulatory Statements

This device complies with ISED Canada license-exempt RSS standard(s).
Operation is subject to the following two conditions:

1. This device may not cause interference, and

2. This device must accept any interference, including interference that may cause undesired operation of the device.

CAN ICES-003 (B)/NMB-003(B)

RF Exposure Information

- This equipment complies with ISED RSS-102 radiation exposure limits set forth for an uncontrolled environment. This transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter.

System Overview

Functional System Overview Application/System Dependency
Table 3 – Application/System Dependency

Dependent Application/System	Function	Impact (If Application is Down)

- **Physical System Overview**
  - The Gateway works from the power source provided by attached Raspberry Pi board. Raspberry Pi supply is external 110-240VAC module.
  - Gateway board is mounted inside 220x170x110mm plastic enclosure with transparent cover.
- **The air temperature measurement**
  - The Gateway takes the air temperature measurement at least 5 times per minute and uses at least 10 last measurements for temperature averaging, i.e., every 12 seconds a new averaged temperature is calculated. The average temperature saves as the "current temperature".
  - The accuracy of the temperature measurement is 0.25 °C. Air temperature measurement is used to monitor Gateway enclosure inner temperature.
- **The air humidity measurement**
  - The thermostat makes the air humidity measurement at least 5 times per minute and use at least 10 last measurements for humidity averaging, i.e., every 12 seconds a new averaged humidity should be calculated. The average humidity should be saved as the "current humidity".
  - The accuracy of the humidity measurement is 5%. Air humidity measurement is used to monitor Gateway

enclosure humidity.

Operation Procedures

Gateway Overview

- **User Control**

Gateway is controlled by PLC or Web interface only.

- **Restart/Recovery Procedures**

  PLC controls and monitors communication with Gateway. If PLC detects lost of communication for > 2min (adjustable) than it triggers power cycle on the Gateway.

- **Maintenance Procedures**

  Keep Gateway enclosure closed all the time. Avoid any water/moisture/dust contamination for the Gateway.

Approvals

The undersigned acknowledge that they have reviewed the Manual and agree with the information presented within this document. Changes to this Manual will be coordinated with, and approved by, the undersigned, or their designated representatives.
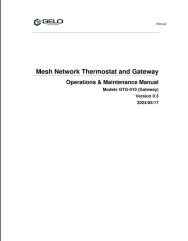
Table 4 – Approvals

Document Approved By	Date Approved
Name: <Name>, <Job Title> – <Company>	Date 20240517
Name: <Name>, <Job Title> – <Company>	Date
Name: <Name>, <Job Title> – <Company>	Date
Name: <Name>, <Job Title> – <Company>	Date

Manual Version 0.2
Mesh Network Thermostat and Gateway

Documents / Resources

GELO Mesh Network Thermostat and Gateway Operations & Maintenance Manual Models GTG-010 (Gateway) Version 0.2 20240517	**GELO TECHNOLOGIES GTG010 Mesh Network Thermostat and Gateway** [pdf] Instruction Manual GTG010 Mesh Network Thermostat and Gateway, GTG010, Mesh Network Thermostat and Gateway, Network Thermostat and Gateway, Thermostat and Gateway, Gateway

References

- **User Manual**