Wireless Smart Thermostat

Featuring LoRaWAN®

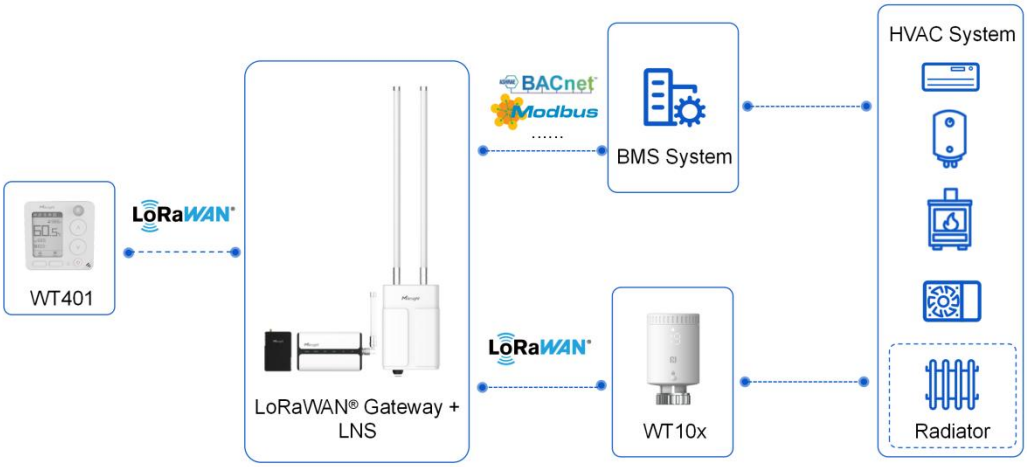
WT401

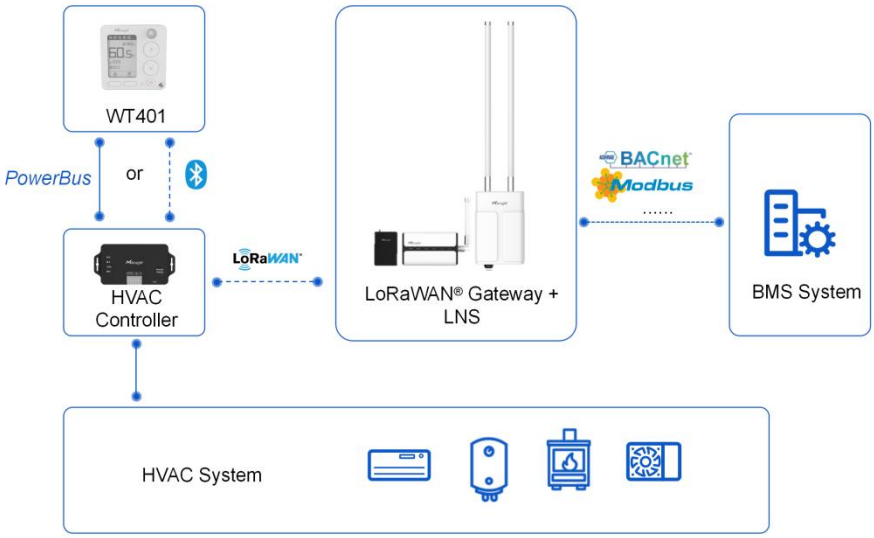
WT401 is a LoRaWAN® wireless smart thermostat that supports a wide range of different heating and cooling systems via BMS systems or paired Milesight HVAC controllers. WT401 offers multiple temperature modes and fan modes, enabling precise temperature adjustments in buildings.

With a 2.7" e-ink screen and an embedded temperature and humidity sensor, WT401 continuously displays the room status while monitoring the ambient temperature and humidity. Compliant with Milesight LoRaWAN® gateways, users can control the room temperature via HVAC systems easily.

With battery powered (wireless) and various wired power supply options, WT401 can widely used in building offices, hotels, stores, etc.

◆ Application Examples





◆ Features

- Supports most HVAC systems with HVAC controllers, including furnaces and air conditioners, heat pumps, boilers, PTAC, etc.
- Features an intuitive 2.7-inch display, allowing for showing environment and control status of the room clearly
- Equipped with a PIR sensor to detect human presence to achieve energy-saving temperature control
- Equipped with 5 external buttons for friendly and easily control, and support button feature flexible switch
- Supports battery power for wire-free installation, and provide various power supply options
- Allows manual or automatic temperature adjustment with 8 kinds of working plans
- Equipped with NFC and Bluetooth for one touch configuration
- Function well with standard LoRaWAN® gateways and network servers
- Compatible with BMS systems via Milesight LoRaWAN® gateways
- Compatible with Milesight Development Platform
- Supports multicast for control in bulk
- Supports Firmware Update Over-the-Air (FUOTA)
- Includes child lock function and anti-theft installation for safety reasons
- Highly adaptable to different scenarios with walls or 60mm/86mm/118mm/120mm boxes

◆ Specifications

Wireless Transmission	
Technology	LoRaWAN®
Antenna	Internal Antenna
Frequency	IN865/RU864/EU868/US915/AU915/KR920/AS923-1&2&3&4

Tx Power	16dBm (868MHz)/22 dBm (915 MHz)
Sensitivity	-137dBm
Mode	OTAA/ABP Class A/Class C
Thermostat Feature	
Compatibility	Work with most HVAC systems via LoRaWAN® Work with PTAC (2H/1C), Boilers, Furnaces or Heat Pumps (2H/1C) via Milesight UC711[1] HVAC controllers Work with radiators via Milesight WT101/WT102 thermostat
Temperature Control Mode[2]	Heat, EM (Emergency) Heat, Cool, Auto
Fan Mode[2]	Low, Medium, High, Auto, On, Circulate
Advanced Feature	Local Control Schedule
Sensor	
Temperature	
Operating Principle	Digital CMOSens® technology (MEMS)
Range	-20°C ~ 60°C
Accuracy	Typical ± 0.2°C, Maximum ± 0.5°C
Resolution	0.1°C
Humidity	
Operating Principle	Digital CMOSens® technology (MEMS)
Range	0% - 100% RH
Accuracy	Typical ± 2% RH, Maximum ± 5% RH
Resolution	0.5% RH
PIR	
Detection Area	120 ° Horizontal, 90 ° Vertical
Detection Distance	Maximum 6 m
Others	
Display	2.7-inch Black&White E-ink Screen
Buttons	5 Buttons for Power On/Off, Reset, System On/Off, Temperature Up/Down, Temperature Control Mode, Fan Mode, etc.
LED Indicator	1 x Power/Reset Indicator
USB	1 × Type-C for Power Supply or Console
Power Connector	1 × 2-pin Power Terminal Connector (PowerBus)
Software	
Power On/Off	Button, Mobile App via NFC
Configuration	Mobile App via NFC or Bluetooth® 5.0, Downlink

Advanced Feature	Occupied Detection, Smart Display, Child Lock, Button Customization, External Sensor Mode, Multicast, FUOTA
Physical Characteristics	
Power Supply[3]	1. 2 × 2700 mAh ER14505 Li-SOCl$_2$ Replaceable Batteries 2. AC/DC 24V by Power Connector 3. DC 5V by Type-C Port 4. Powerbus (DC 24V) by Milesight HAVC Controller
Battery Life[4] (10 min report interval)	Class A: 5.2 years (SF7, EU868), 3.3 years (SF10, EU868) 4.8 years (SF7, US915), 2.7 years (SF10, US915) Class C: Around 25 days
Operating Temperature	-20°C ~ 60°C (E-ink Screen: 0°C ~ 40°C)
Relative Humidity	0% to 95% (non-condensing)
Ingress Protection	IP30
Material & Color	PC + ABS (UL94 V0), White
Dimension	86 × 86 × 24 mm
Installation	Wall Screw Mounting, 86mm Square or European 60mm Round Box Mounting, 118 or 120 Wall Box Mounting via Wall Plate Accessories

[1]: Milesight UC711 HVAC controller is under development.

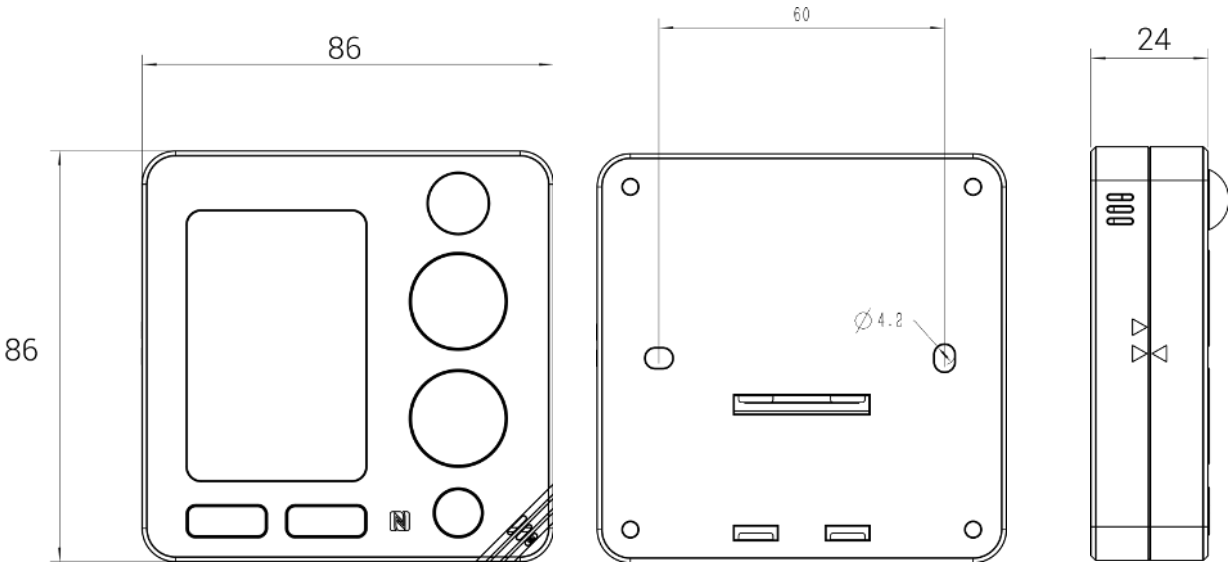
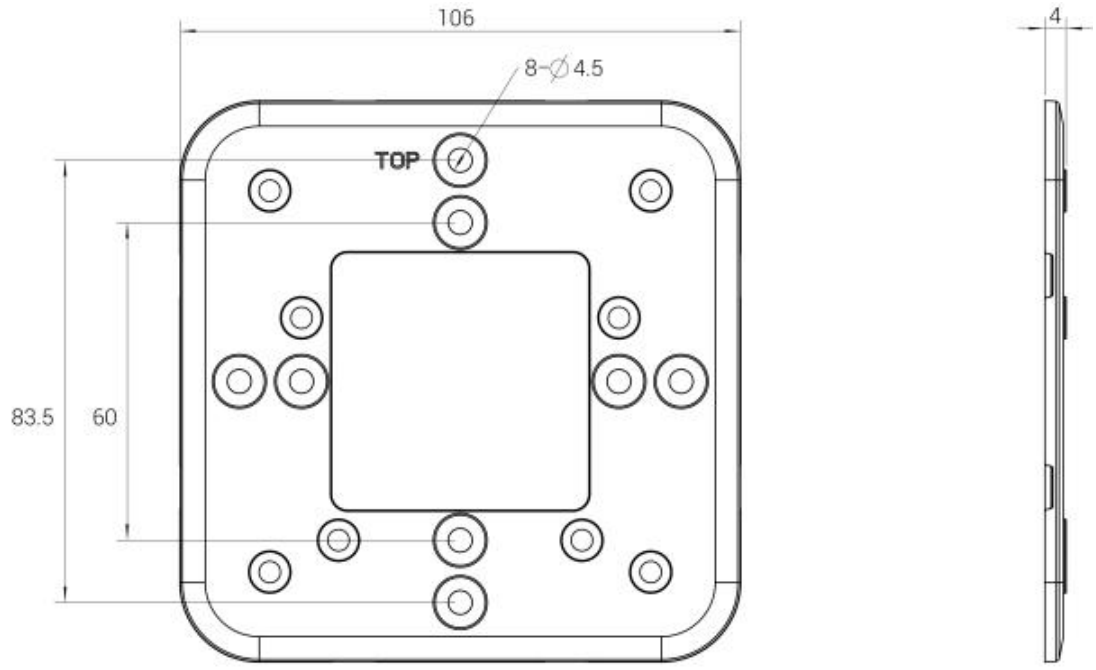
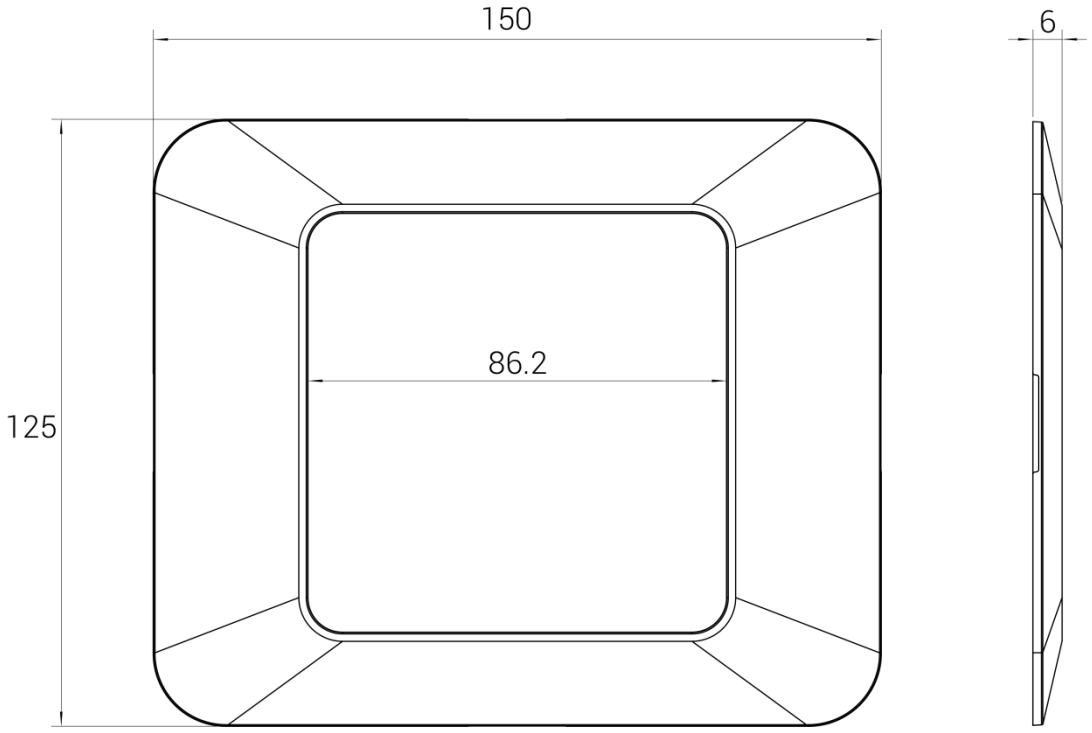
[2]: The temperature control mode and fan mode are decided by the Milesight HVAC controller when WT401 is pairing with it.

[3]: These power supply options can not be used at the same time.

[4]: The battery life is tested under laboratory conditions and for guideline purposes only.

◆ Dimensions (mm)

WT401



Wall Plate