Version 1.0

LoRa Field Devices

Smart Temp

Installer Manual



The Smart Temp range of wireless LoRa devices, purpose-built for Smart Temp thermostats such as the SMT-850 Halo and SMT-775 Inspire, eliminates the headaches associated with missing or damaged field wiring or those "oops - I forgot" issues.

Using highly reliable LoRa long-range wireless technology, these relays, sensors, and analogue output modules clone thermostat inputs and outputs wirelessly at distances of up to 100 metres (Typical indoors range).

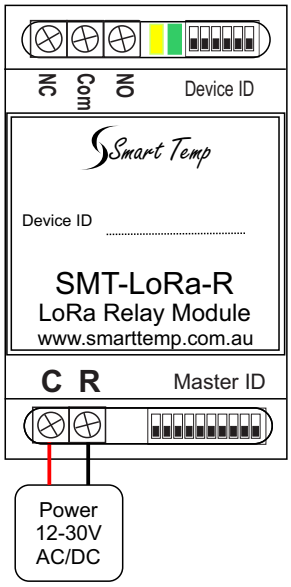
You can use up to a maximum of 10 Relays, 10 sensors and 5 Analogue outputs on each Thermostat (Inspire or Halo) for a maximum of 25 LoRa devices per thermostat. Further you can use up to 3 separate devices for each Inspire or Halo input or output. For example, in hydronic heating applications you may want to use 3 LoRa relays to all turn on when zone 3 is on. These three relays can be used to control a circulating water pump and 2 heating manifolds for example. If you use three LoRa temperature sensors as "remote" sensors, the Inspire or Halo will display and control to the average of these three sensor values.

LoRa Field devices will report when a battery powered LoRa device is low on battery power (Such as the LoRa Temperature Sensor). Additionally, the Inspire and Halo will display an alert if a LoRa device goes offline.

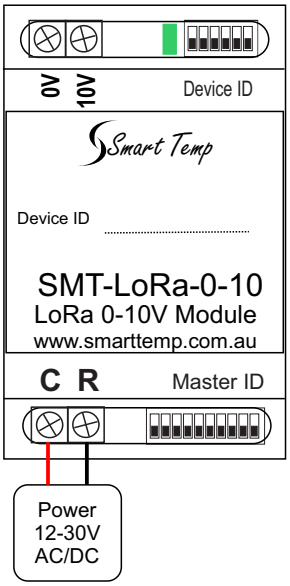
Using a LoRa field device does NOT disable the onboard Inspire or Halo function. For example, using a remote LoRa relay to control the fan does not disable the fan relay in the thermostat. Both the onboard relay and the LoRa relay will function in unison.

Note - you will need purchase and install the optional LoRa radio to enable the LoRa function in the thermostat. (SMT-LoRa-RM).

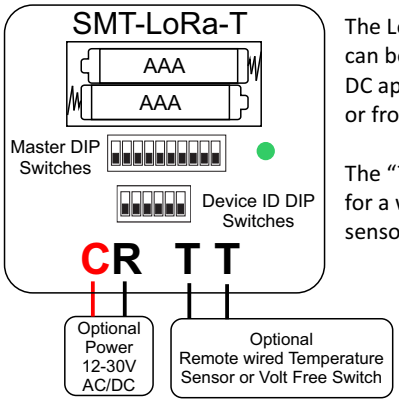
Remote Relay Module



0-10V Output Module



Temp sensor / Switch



The LoRa Temperature sensor can be powered by 12-30VAC / DC applied to the C R terminals or from 2 x AAA batteries.

The "TT" terminals can be used for a wired remote temperature sensor or a digital switch input

Specifications - All Versions

Power Supply	12 - 30V VAC or DC (+ to R)
Power Consumption	< 0.15mA (No Relays)
LoRa Radio approvals	FCC Part 15.247
	ANSI C63.10.2013
	ETSI EN 300 220-1 V3.1.1
	ETSI EN 300 220-1 V3.2.1
Maximum Range	100 Metres indoors
	250 Meters open air
Transmission Lag	Up to 10 Seconds
Operating Temperature	50°C (65°C Storage)
RH	95% (Non Condensing)
Warranty	3 Years RTB

Specifications - SMT-LoRa-R Relay

Amber LED	Relay ON
Green Led	Intermittent Blink - Data Received
	Consistent blink - Error
Size	86 x 53 x 54mm
Relays Switching Current	5A / 240V max

Specifications - SMT-LoRa-0-10 Output

Green Led	Intermittent Blink - Data Received
	Consistent blink - Error
Size	86 x 53 x 54mm
Impedance	120mA

Specifications - SMT-LoRa-TH Temp/RH sensor

Green Led	Intermittent Blink - Data Received
	Consistent blink - Error
Size	90 x 60 x 21mm
Batteries (Optional)	2 x AAA 24month life
Temp Measurement Range	5 - 50c
RH	5- 95%

Pairing

All Smart Temp LoRa devices include two sets of DIP switches:

Master DIP switches – Used to pair the LoRa device with a thermostat.

Device ID DIP switches – Used to define the function the LoRa device will follow (e.g., fan speed, heat call, compressor etc).

A LoRa device will only communicate correctly when both codes match the settings configured in the thermostat.

Step 1 — Set the Master Code in the Thermostat

1. On the Smart Temp thermostat, open the Wireless Options menu(refer to the installer section of your thermostat's manual for navigation steps).
2. Locate the Master Code setting.
3. Enter the desired Master Code.

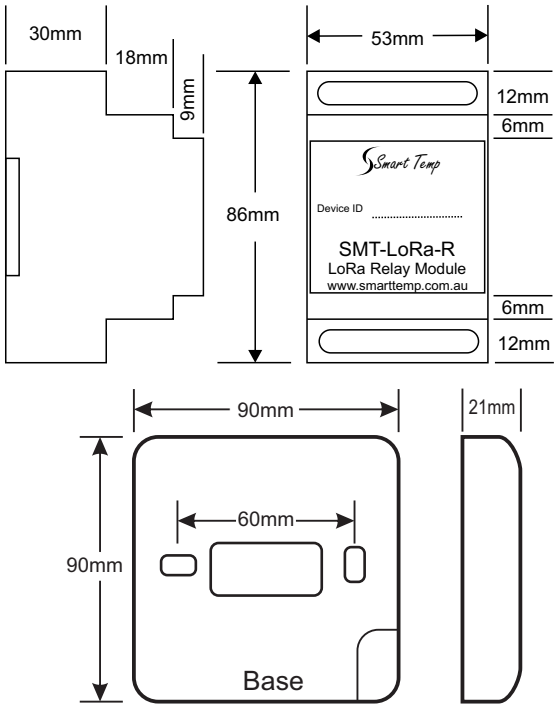
Note:
All LoRa field devices configured with this same Master Code will pair to this thermostat. This allows multiple LoRa devices to be linked to a single thermostat.

Step 2 — Assign the Device Function and Device ID
While still in the thermostat's Wireless Options menu, select the thermostat function that the LoRa device should duplicate.
Examples:

- High fan output
- 0-10V Heating Valve
- Heating relay
- Cooling compressor

Assign a unique Device ID for that function.

Important:
The Device ID must be unique for each function you want to control. For example, if you select High Fan Speed, the thermostat's high-speed fan relay will energize at the same time as the LoRa relay configured with that Device ID.



Understanding the Binary Codes

Binary coding provides a simple method to convert a series of ON/OFF switch positions into a decimal number. Smart Temp LoRa devices use this method to set both the Master Channel address and the Device ID.

Master Channel (10 DIP Switches)

- Uses 10 DIP switches
- Allows setting a value between 1 and 1023
- Each switch represents a binary value (power of 2)

Device ID (6 DIP Switches)

- Uses 6 DIP switches
- Allows 1 to 63 unique Device Ids

Each switch, from left to right, represents a value that doubles from the switch to the left — starting at 1, then 2, 4, 8, and so on, up to 512.

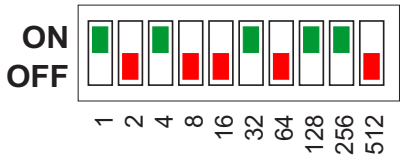
To find the decimal value, simply add the numbers together corresponding to the switches that are turned ON. This total becomes the address or ID that the device will use.

Hint. When setting codes on the DIP switch, start with the Dip switch that has the biggest number that is equal to or is smaller than the largest DIP switch value. Then the next largest number that will take as much of the remainder as possible and continue until you reach the code you desire.

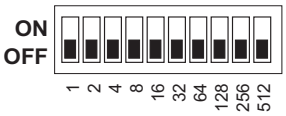
For Example, lets set a Master code of 421

1. Target number: 421
2. 512? Too large → skip to next smallest switch
3. 256? Yes → turn ON (Remaining: 421 − 256 = 165)
4. 128? Yes → turn ON (Remaining: 165 − 128 = 37)
5. 64? Too large → skip to next smallest switch
6. 32? Yes → turn ON (Remaining: 37 − 32 = 5)
7. 16? Too large → skip to next smallest switch
8. 8? Too large → skip to next smallest switch
9. 4? Yes → turn ON (Remaining: 5 − 4 = 1)
10. 1? Yes → turn ON (Remaining: 1 − 1 = 0)

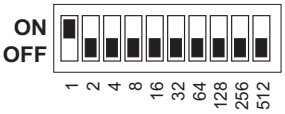
See example



DIP 1, 4, 32, 128 & 256 On = Address 421 (1+4+8+32+128+256 = 421)



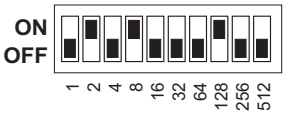
All OFF = Address 0



Dip 1 On = Address 1



Dip 4 & 32 On = Address 36
(4 + 32 = 36)



DIP 2, 8 & 128 On = Address 138
(2+8+128 = 138)

Hint - to avoid possible channel duplication in larger projects, suggest to use the apartment number for the Master ID.
Example For apartment 668 use master ID 668

Ver 1.0 1/1/26