



ThermaReach-240 User Guide



Technical Specifications

The **ThermaReach-240** is a high-capacity control unit housed securely within an **IP67 enclosure**, offering LoRaWAN® compatible switching of voltage supplies. Commonly, this device is used to power heating actuators for PAYG, pumps, and similar HVAC or building management applications where the load requires the same voltage as the supply.

This device operates in **LoRaWAN® compatible Class C**, features **FUOTA** (Firmware Upgrades Over the Air), and includes built-in overheating protection. To conform to safety requirements, the device is wired using **0.75mm² 3-core flex cable** for both power input and output, and the entire circuit must be safeguarded by a **5A fuse**.

The **ThermaReach-240** should be installed in a suitable position adjacent to, or above, the HIU, pump, actuator or associated building services equipment it is operating. For optimum LoRaWAN® compatible signal performance, a **minimum separation of 30cm** from the HIU and other electrical or metal equipment is recommended.

Where possible, install the ThermaReach in a **clear, unobstructed** location and avoid positioning it directly behind or within metal enclosures, as this may reduce wireless signal strength and communication reliability.



Technical Data

Feature	Specification
Device Type	LoRaWAN® compatible Voltage Switching Device
LoRaWAN® Device Class	Class C End-device
Frequency Range	868 MHz (UK/EU Standard)
Power Supply (IN)	100-240VAC 50/60Hz / 24-30VDC
Switching Capacity	Mains/Voltage Output (Matches Input Source)
Internal Relay Rating	16(8)A AC / 10A DC
Maximum System Load	5A (Limited by mandatory 5A protective fuse)
Cabling (Input)	0.75mm ² 3-Core Flex (Power Supply)
Cabling (Output)	0.75mm ² 3-Core Flex (Switched Voltage Output)
Protection Rating	IP67
Dimensions	118mm × 82mm × 66mm
Compliance	CE (LVD, RED, EMC), RoHS, WEEE

Safety Instructions & Legal Notices

Critical Safety Requirement:

This device **MUST** be protected with a 5A Fused Connection Unit (FCU)

Voltage Output Warning:

Output terminals provide Hazardous Voltage when active. This is **NOT** a volt-free contact.

Professional Installation:

This device must be installed by a qualified professional in accordance with **BS 7671**.

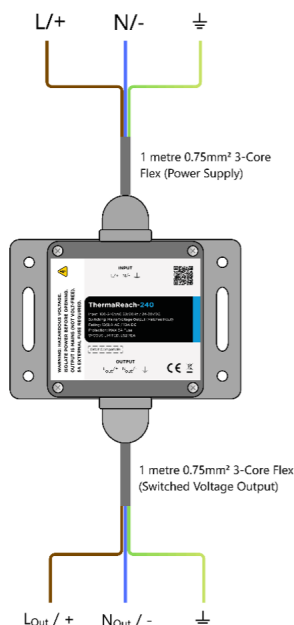
Isolation:

Isolate all power sources before opening the enclosure or handling wiring.

Installation & Wiring

Wiring Configuration

The ThermaReach-240 uses 0.75mm² 3-core flex cable for both the power input and the switched output.



Enclosure Sealing

To maintain the IP67 protection rating of the housing, you must ensure the IP68 glands are tightened securely around the cable jackets. This ensures the watertight integrity of the enclosure for industrial or outdoor applications.

Input (Power Supply)

Connect your supply cable to the terminals marked INPUT at the top of your device:

- L / + : Live (AC) or Positive (DC).
- N / - : Neutral (AC) or Negative (DC).
- ⚡ : Earth.
- Supply Range: 100-240VAC 50/60Hz or 24-30VDC.

Output (Switched Load)

Connect your load cable to the terminals marked OUTPUT at the bottom of the device:

- L_{Out} / + : Switched Live or Positive.
- N_{Out} / - : Switched Neutral or Negative.
- ⚡ : Earth.
- Behaviour: **The output voltage will match the input source voltage.**

Commissioning & LoRaWAN[®] Behaviour

Network Provisioning

Open your LoRaWAN[®] Network provider access panel and add the device using the supplied **Serial Number**, **DevEUI**, **AppEUI (JoinEUI)**, and **AppKey**. These details are provided on your delivery note from Sycous Limited.

Start-up Behaviour

Once powered, the device will attempt to Join the LoRaWAN network for up to 10 minutes.

- **Deep Retry Mode:** After 20 failed join attempts, the device enters a 'deep retry' mode to comply with LoRaWAN duty-cycle regulations.
- **Intervals:** In this mode, the interval between join attempts may increase significantly (e.g., to ~3 hours and 15 minutes) to avoid flooding the radio spectrum.
- **FUOTA:** This device features Firmware Upgrades Over the Air (FUOTA) for future-proofing and security.

Regulatory Compliance & Disposal

Compliance

- **CE:** Low Voltage Directive (2014/35/EU); Radio Equipment Directive (2014/53/EU); EMC Directive (2014/30/EU).

Disposal (WEEE)

The symbol below indicates that this product must not be disposed of with household waste. It must be disposed of at an authorized collection point for the recycling of waste electrical and electronic equipment (WEEE).

Manufacturer

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Notes

Want to know more?

Contact our team on **+44 (0) 113 3604 776** or
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Visit **sycous.com** to learn more about our
innovative metering, remote data collection and
billing solutions.



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