# Smart Power Monitor Hub

## Featuring LoRaWAN®

# CTH01

## ◆ Introduction

The CTH01 Smart Power Monitor Hub is a high-performance, multi-channel device designed for the collection and analysis of electrical parameters. Supporting simultaneous acquisition of 12 current channels and 3 voltage channels, coupled with high-precision computation, the CTH01 delivers a comprehensive set of electrical parameters including power, energy, power factor, harmonic distortion, and voltage three-phase unbalance.

Featuring LoRaWAN® wireless communication and Bluetooth for local configuration, CTH01 integrates seamlessly into energy management systems, providing reliable data to support energy savings, preventative maintenance, and cost allocation.

CTH01 is engineered for commercial buildings, industrial plants, data centers, and multi-tenant apartments to enable precise energy consumption measurement, power quality monitoring, and equipment operational analysis for critical circuits within electrical distribution systems.

14 rue Edouard Petit
42000 St-Etienne

Tel : +33 477 92 03 56
Email : contact@rg2i.com

www.rg2i.com

# ◆ Features

### Comprehensive & Accurate Monitoring

- Provides high-precision measurement of active, reactive, and apparent power and energy, integrated with power quality analysis functions such as Voltage/Current THD and voltage three-phase unbalance.
- Compliant with IEC 62053-21/23 standards to ensure professional measurement.
- Support external wire temperature sensor for cable temperature measurement.

### Flexible Configuration & Deployment

- 12 current channels can be independently configured for single-phase use, grouped into 4 three-phase circuits or mixed usage.
- Supports mixed use of split-core Current Transformers (100A/300A/500A/1000A) and Rogowski coils (coils must be consistent within a group).
- Provides convenient voltage measurement through direct connection via voltage measurement terminals or an optional non-invasive magnetic attachment, enabling flexible installation.
- Complete parameter setup, data reading, and current direction calibration can be performed remotely via the Bluetooth-connected Toolbox APP, eliminating the need for physical access.

### Industrial-Grade Reliability & Storage

- 6-8kHz sampling frequency ensures data measuring accuracy.
- Stores periodic data records, event logs, and up to 12 months of monthly maximum/minimum values and energy totals.
- Supports user-defined threshold alarms and device-initiated overload/out-of-range alarms.

### Powerful Expansion & Integration

- Built-in LoRaWAN® protocol for seamless integration with Milesight Development Platform and third-party platforms.
- Supports Firmware-Update-Over-The-Air (FUOTA) updates for feature enhancements.

# ◆ Specifications

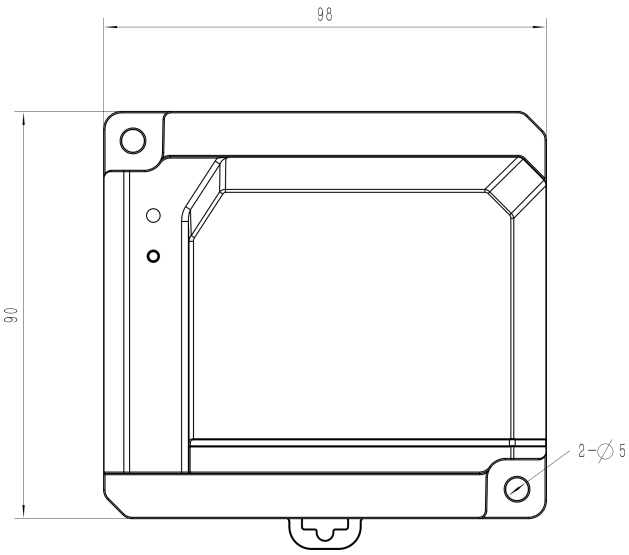
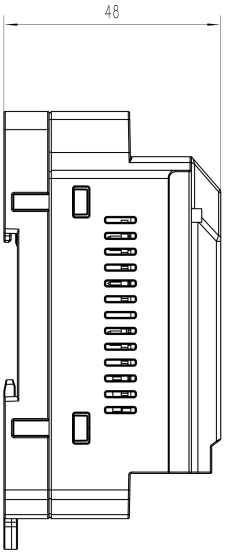
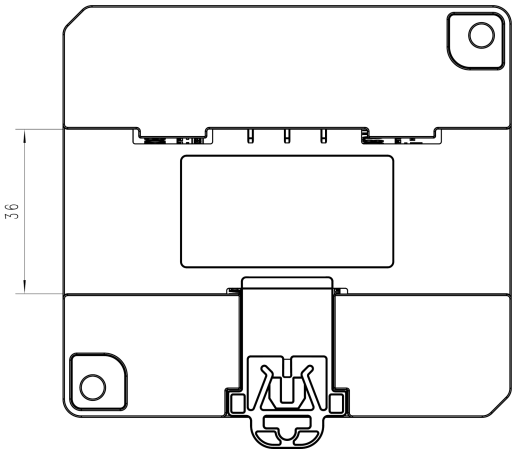
| **Measurement** | |
|---|---|
| Detection Parameter | RMS Voltage and Current<br>Power Factor<br>Active, Reactive, Apparent Power<br>Active (Imported or Exported), Reactive (Imported or Exported), Apparent Energy |

| | |
|---|---|
| | Voltage Three-Phase Unbalance<br>Voltage Total Harmonic Distortion (THDv)<br>Current Total Harmonic Distortion (THDi) |
| Sampling Frequency | 6 - 8 kHz |
| Working Frequency | 50 - 60 Hz |
| Accuracy | Active Energy: ±1% (according to IEC 62053-21)<br>Reactive Energy: ±2% (according to IEC 62053-23) |
| **Voltage Interface** | |
| Circuit Configuration | • Three-phase: phases L1 to L3 with or without Neutral<br>• Single-phase: phases L with Neutral<br>• Mixed Three-phase and Single-phase |
| Measuring Range | 100 - 500V AC |
| Measuring accuracy | ±1 % |
| Maximum Voltage (N-L) | 290 Vrms |
| Maximum Voltage (L-L) | 500 Vrms |
| Wire Connection | AWG 26 - 12 |
| **Current Interface** | |
| Range | 100 - 4000A |
| Interface Type | RJ11 |
| Port | 12 × Current Channels |
| **Temperature** | |
| Sensor Type | External NTC Sensor |
| Measuring range | -20°C ~ 100°C |
| Measuring accuracy | ±1 °C |
| **Wireless Transmission** | |
| Protocol | LoRaWAN® |
| Antenna Connector | 1 × 50 Ω SMB - Female External Connector |
| Frequency | CN470/IN865/RU864/EU868/US915/AU915/KR920/AS923-1&2&3&4 |
| Tx Power | 16 dBm (868 MHz)/20 dBm (915 MHz)/19 dBm (470 MHz) |
| Sensitivity | -137dBm |

| | |
|---|---|
| Mode | OTAA/ABP Class C |
| **Others** | |
| LED Indicator | 1 × Status/Alarm Indicator |
| Button | 1 × Reset Button |
| USB | 1 × USB Type-C for Cable Temperature Sensor Connection |
| **Software** | |
| Configuration | Mobile App via Bluetooth |
| Advanced Feature | Data Storage (20, 000 entries, 2,000 alarms), Data Analysis (12 months of energy statistics), Threshold Alarm, Out-of-Range alarm, Power Failure Alarm |
| **Physical Characteristics** | |
| Power Supply | 12 V DC (±10 %) |
| Power Connector | 1 × 2-pin 5 mm Terminal Block, with Reverse Polarity Protection |
| Insulation Voltage | $4kV_{ac}$(r.m.s)(1mA/1min) |
| Intrinsic Consumption | Max. 5.8W |
| Pollution Degree | 2 |
| Overvoltage Category | Ⅲ |
| Maximum Altitude | 2000 m |
| Operating Temperature | -20°C~70°C (-4°F~158°F) |
| Relative Humidity | ≤ 95% (Non-condensing) |
| Ingress Protection | IP30 |
| Housing&Color | ABS+PC (UL94 V0), Starlight Grey |
| Dimensions | 49.3 × 98 × 90 mm (1.94 × 3.86 × 3.54 in) |
| Weight | 163g |
| Installation | DIN 35 Rail Mounting, Magnetic Mounting (Optional) |
| **Approvals** | |
| Regulatory | ETL Listed (UL/CSA 61010-1, UL/CSA 61010-2-030), CE (RED&LVD), FCC, SRRC |
| Environmental | RoHS |

## ◆ Current Transformer Options

| Type | Split-core Current Transformer* | | | |
|---|---|---|---|---|
| Range | 0 - 100 A | 0 - 300 A | 0 - 500 A | 0 - 1000 A |
| Accuracy Class | 0.5 | | | |
| Operating Temperature | -40°C~55°C (-40°F~131°F) | | | |
| Insulation Voltage | $3kV_{ac}$(r.m.s)(1mA/1min) | | | |
| Flame Retardant | UL94 V0 | | | |
| Dimensions | 35.5 × 30.8 × 45.6mm | 56.5 × 36.5 × 68.5 mm | 69 × 42.1 × 86mm | 9631 × 595 × 119 mm |
| Wire Hole | Φ 20 mm (Φ 0.79 in) | Φ 24 mm (Φ 0.94 in) | Φ 36.6 mm (Φ 1.44 in) | Φ 51 mm (Φ 2.01 in) |
| Weight | 100g | 195g | 287g | 835g |
| Installation | Suspended on the Testing Conductor | | | |

***Note:** Contact us for customization if you need a Rogowski coil for larger range.

## Dimensions (mm)