HUASU

Hangzhou Huasu Technology Co., Ltd

H3G-TH WL

Wireless Battery Monitoring Module

Specification

https://huasu-tech.com/

Hangzhou Huasu Technology Co., Ltd

Your Best Battery Adviser

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BMS Technology Servicing Customer Globally

About HUASU

Hangzhou Huasu Technology Co., Ltd is an innovative high-tech company that specializes in battery monitoring and management. Our products provide a state of the art battery management platform for various industries and use cases while ensuring safety and reliability. Our design are informed by more than a decade of research and development. We are a leader in the battery monitoring industry at both the national and global level.

Real-time & Online Management

Monitor online data of cell voltage, cell internal resistance and cell negative pole temperature in real time

Core Technology

ZigBee wireless communication technology, reducing on-site wiring by half and avoiding hidden safety dangers of too many cables. strong stability and anti-interferences.

Consumption consistency: Working current of modules with the same voltage fluctuates ≤1mA

Low power consumption design: Working current is as low as 11mA

Easy Installation

1 TH WL module/1 battery

Easy installation and maintenance, with hot-swappable connection and battery surfaces or a battery rack installation

High Accuracy

Cell voltage: ±0.1% accuracy; Internal resistance: ±2% (repetitive accuracy);

Negative pole temperature: ±1℃ accuracy

Overview

Introduction

H3G-TH WL wireless battery monitoring module (hereinafter referred to as TH WL module) is the industry's leading high-end product. 1 TH WL module is needed for 1 battery, which can be added to the existing monitoring system. It adopts a new generation of ZigBee wireless communication technology, which reduces on-site wiring by half and avoids hidden safety dangers of too many cables. It can monitor cell voltage, cell internal resistance and cell negative pole temperature.

Powered by one battery, its working current is as low as 11mA. It owns consumption consistency that working current of modules with the same voltage fluctuates less than 1mA.

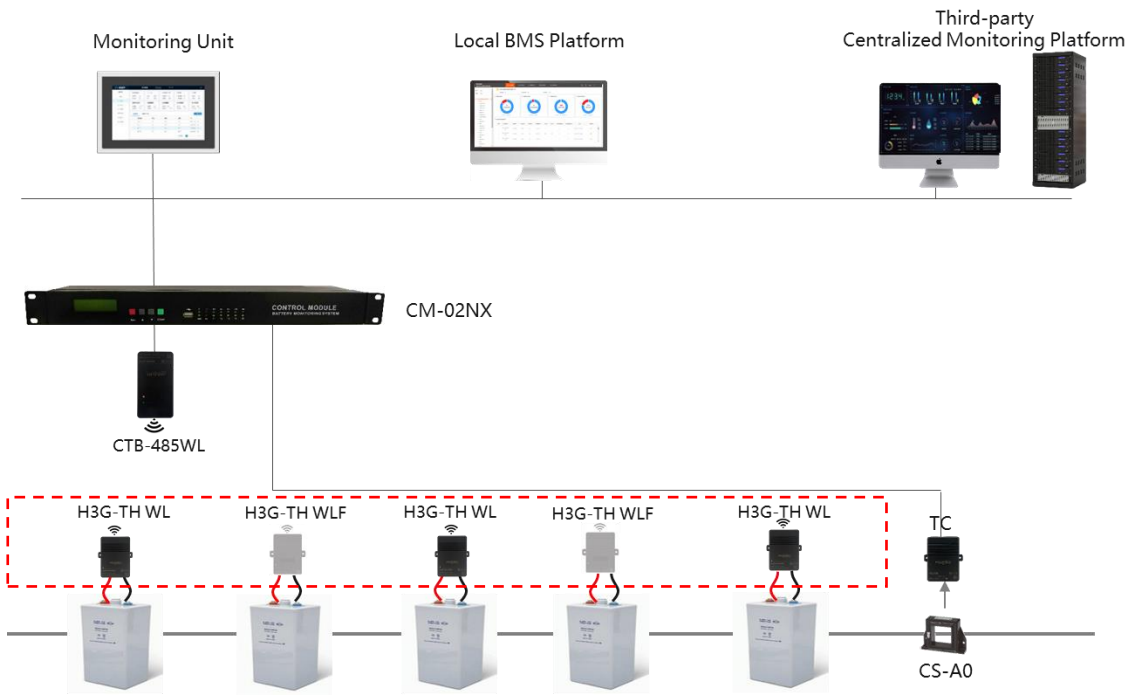
TSX module is easy for installation and online maintenance. With 3M sticker and installing holes, it can be installed on battery surfaces or a battery rack.

Application scenarios:

Standard TH WL module can be applied to H3G-TH WL system or a customized system.

Topology

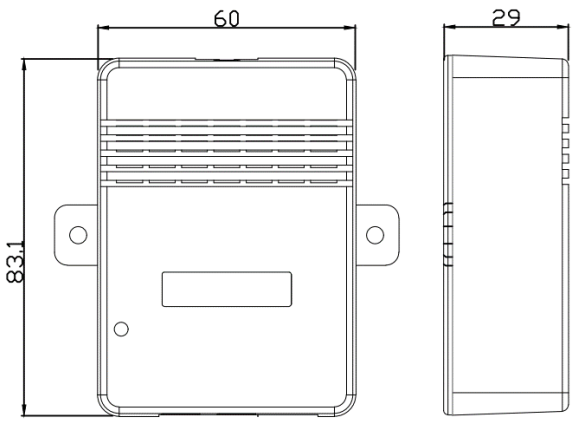
***Typical application topology**



*** For enhancing the stability of wireless communication, each string is equipped with 2 H3G-TH WLF modules. H3G-TH WLF module has the function of H3G-TH WL module and an additional wireless communication relay function.**

Introduction

Appearance

Appearance	Size(mm)
	

Port/Indicator Light

Name	Description
Indicator Light	Red and green two-color indicator light. The green light is on: The module is powered on. The green light flashes slowly at intervals of 1 second: There is a module hardware fault/an abnormal internal resistance test. The red light is on: The internal resistance is normal. The red light flashes once: The communication is normal.
Battery Port	Connect to the positive and negative poles of the battery. Red test cable connects to the positive pole and the black connects to the negative pole.

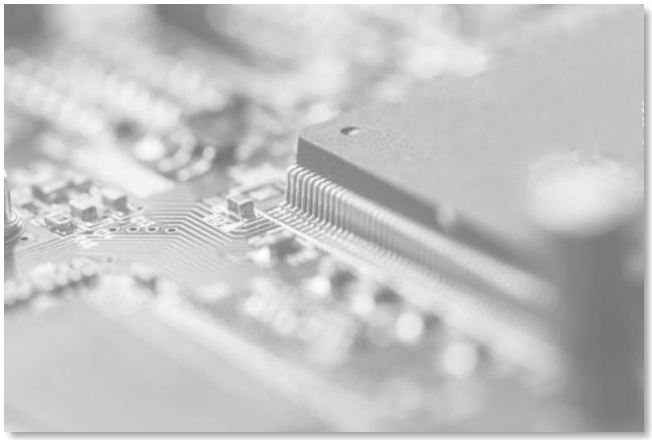
Configuration & Core Tech.

Configuration

Appearance	Model	Configuration
	H3G-TH-02WL H3G-TH-12WL H3G-TH-02WLF H3G-TH-12WLF	**Standard** **Choose according to battery voltage** **Wireless monitoring module** 1 TH WL module/ 1 battery 02/12 means the applicable battery voltage level **2 H3G-TH WLF modules should be respectively placed at the geographic center and the end of the battery string.** n batteries/1 battery string n < 150, 2 TH WLF and (n-2) TH WL modules 150≤n≤300, 4 TH WLF and (n-4) TH WL modules
	5020138 5020139	**Standard** **Choose according to length** **TH WL test cable** 1 pc/1 TH WL module 5020138：L=250mm 5020139：L=400mm Other length optional Note: Increase 1 pc test cable for every 100 cells (cells less than 100 is treated the same way as 100 cells)
	4010048 4010046 4010050 4010051	**Standard** **Terminal** Choose according to battery 2 pcs/1 battery Configure 4010048 by default Note: Increase 2 pcs terminals for every 100 cells (cells less than 100 is treated the same way as 100 cells)

ZigBee Wireless Communication

- Exclusive wireless communication technology: Good timeliness and high stability.
- Innovative wireless relay function: Effectively reduces the wireless communication packet loss rate between the sub-module and the control module.
- Each control module up to manage 600 cells.
- Intelligent communication port and frequency choice, with strong anti-interference.



Tech. Specification

Specification

Environment

Operating Temperature: -20~+60℃ (0~2000m ASL)

Relative Humidity: 5~95%

Atmospheric Pressure: 80~110kPa

Performance

1 TH WL module/1 battery

Monitor cell voltage, cell internal resistance and cell negative pole temperature

Power Requirements

TH WL module: Powered by battery

2V module: Current ≤20mA and consumption <50mW

12V module: Current ≤11mA and consumption <200mW

Power Consumption Consistency

Working current of modules with the same voltage fluctuates ≤1mA

Protection

Two-level protection, reverse connection protection, overvoltage, photoelectric isolation, and power-on self-test (POST)

Flame Retardant Rating

Shell and wire harness flame retardant rating meet UL94-V0 standard

Insulation

2000VAC

Protection Grade

IP30

Overvoltage Category

II

Anti-interference & High-voltage Shock Resistance

High-level industrial-grade hardware design, suitable for various complex electromagnetic environments

Measuring Range & Accuracy

Measuring Content	Range	Accuracy	Resolution
Cell Voltage	2V, 12V Capacity< 3000mA	±0.1%	0.001V
Cell Internal Resistance	50 ~ 65535μΩ	±2% (repetitive accuracy)	1μΩ
Negative Pole Temperature	-5 ~ +99.9℃	±1℃	0.1℃

Port & Protocols

ZigBee

Support MODBUS/RTU

Installation

3M sticker, battery surfaces or a battery rack installation

Weight

70g

Low Power Consumption Design

The H3G-TH WL module working current is as low as 11mA, which is far below the industry average.

Reliability

Automatic restart trigger: Built-in WDT

MTBF: 100,000 hours

Certification

EMC:

EN 55032:2015+A11:2020 EN 55035:2017+A11:2020

EN 61000-3-3:2013+A1:2019 EN IEC 61000-3-2:2019

RED: EN 301489-1 V2.2.3 EN 301489-17 V3.2.4

Safety：EN61010-1:2010

CE and TTL certification

Application

All kinds of cell voltage, cell internal resistance, cell negative pole temperature monitoring and ZigBee telecom projects

FCC Statement

Statement

Please take attention that changes or modification not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

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, and
(2) This device must accept any interference received, including interference that may cause undesired operation.