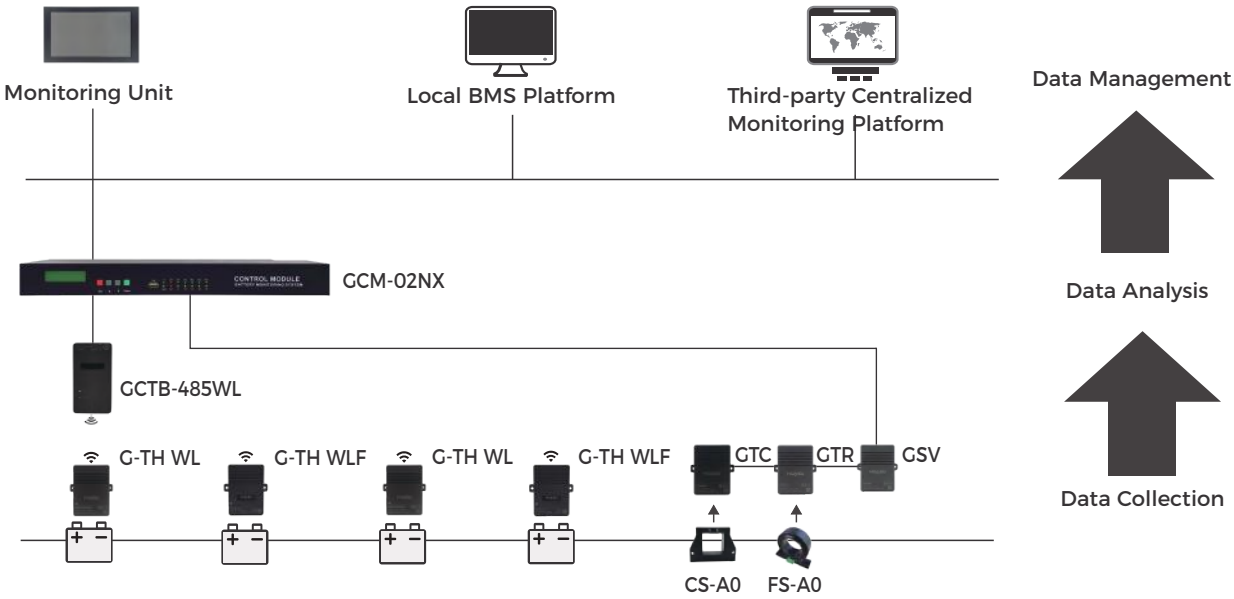
G-TH WL

WIRELESS BATTERY MANAGEMENT SYSTEM

REAL-TIME & ONLINE MANAGEMENT | OVERALL FUNCTION | DISTRIBUTED ARCHITECTURE | WIRELESS COMMUNICATION

TOPOLOGY



FEATURES & BENEFITS

ZigBee Wireless Communication	Adopt exclusive ZigBee wireless communication technology, featuring good timeliness and high stability. Own Innovative wireless relay function that effectively reduces the wireless communication packet loss rate between the sub-module and the control module. Each control module up to manage 600 cells. Own intelligent communication port and frequency choice, with strong anti-interference.
Real-time Data Monitoring and Alarming	Manage cells by providing real-time, online and accurate data and detecting weak batteries in a safe manner. Monitor cell voltage, cell internal resistance and cell negative pole temperature. When the parameters are abnormal, the devices will promptly alarm, which can eliminate the hidden safety problems caused by the periodic detection of the former manual inspection.
Advanced Low Power Consumption Design	Adopt advanced power consumption management method and improved circuit to render the G-TH WL module working current no more than 11 mA, which is far below the industry average.
AI Data Analysis	Apply AI intelligent data analyses to detect low effective battery, monitor the safe operating environment, help cell selection, and export analysis report clear and easy to understand. Adopt new collection mechanism to realize the fast data updates, ensure the data accuracy and reduce delay, which makes the data collection more precise and reliable.
High-accuracy SOC/SOH	Own online parameter identification, self-correction of charging, no jump, which renders SOC error of all working conditions no more than 5%, and hence improves battery utilization ratio and operational safety. Refer to the advantages of various algorithms such as Kalman filter, multi-dimensional, fuzzy network neural, and open circuit voltage method. Provide high accuracy SOC estimation, improving the SOC accuracy of traditional BMS from ±20% to ±5%.

MONITORED PARAMETERS

01 Ambient Temperature
02 Charge/Discharge Current
03 String Voltage
04 Cell voltage
05 Cell Internal Resistance
06 Cell Temperature
07 Intelligent Balance

SPECIFICATIONS

Item	Name	Parameter
Environment	Operating temperature	-20~+60°C (0~2000mASL)
	Relative humidity	5~95%
	Atmospheric pressure	80~110kPa
Reliability	Automatic restarttrigger	Built-in WDT
	MTBF	100,000 hours
Certification	EMC	EN 55032:2015+A11:2020 EN55035:2017+A11:2020 EN 61000-3-3:2013+A1:2019 ENIEC 61000-3-2:2019
	RED	EN 301489-1V2.2.3 EN301489-17 V3.2.4
	Safety	EN61010-1:2010
	CE and TTL certification	
Performance	Up to manage6 strings, a total of 600 cells	
Uplink Communictations Interfaces	RS485, LAN, dry contact SupportMODBUS/RTU, TCP and SNMP protocols	
Downlink Communictations Interfaces	Radio frequency communication ZigBeeprotocols	

Item	Name	Parameter		
Power Requirements & Consumption	Model	Powered By	Current	Consumption
	G-TH-02WL	Battery	⩽20mA	<50mW
	G-TH-12WL	Battery	⩽11mA	<200mW
	GTC	CM module or external power 10.8~13.8VDC	⩽210mA	<2W
	GCTB-485WL	CM module or external power 10.8~13.8VDC	⩽20mA	<0.3W
	GCM-02NX	100~240VAC(rated) 90~264VAC(max)	⩽0.4A	<15W
Measuring Range & Accuracy	Measuring Content	Range	Accuracy	Resolution
	String Voltage	20~800V	±0.5%	0.1V
	Cell Voltage	2V, 12V	±0.1%	0.001V
	Cell Internal Resistance	50~65535 μΩ	±2% (repetitive accuracy)	1μΩ
	Temperature	-5~+99.9°C	±1°C	0.1°C
	Charge/Discharge Current	±1500A	±1%	0.1A
	SOC/SOH	—	±5%	1%

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