

WiSen® 10.8V Output Battery Unit

User Manual

Wuxi Wisen Innovation Co., Ltd.

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Revision History and Clarification

Rev.	Issue Date	Revisions	Written By	Revised By
V1.0	07/12/2021	1 st Issue	Xiaoyan Huang	Dr. Yan Wu

Document Definition:

It defines the specifications (i.e., introduction, technical features, deployment and maintenance methods) of the WiSen® Battery Unit. It is responsible to:

- Supply extend DC power for Gateway or node;

Scope:

Customer Site Project Managers and Engineers, Wisen Service Engineers, etc.

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1. Product Introduction



WiSen® 10.8V Output Battery Unit is one of the key products in our patented WiSen® geotechnical safety monitoring system.

The WiSen® 10.8V Output Battery Unit supply extend DC power for Gateway or node

Our product has IP66 and is designed to work in a tough environment. It is small in size, reliable in performance, easy for maintenance.

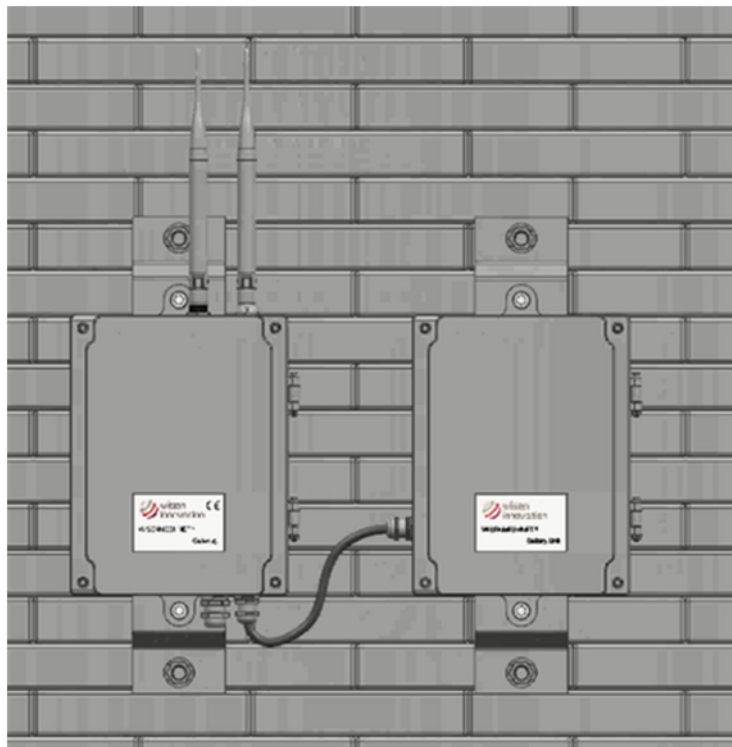


Figure 1. Battery unit – Overview.

2. System Structure Layout

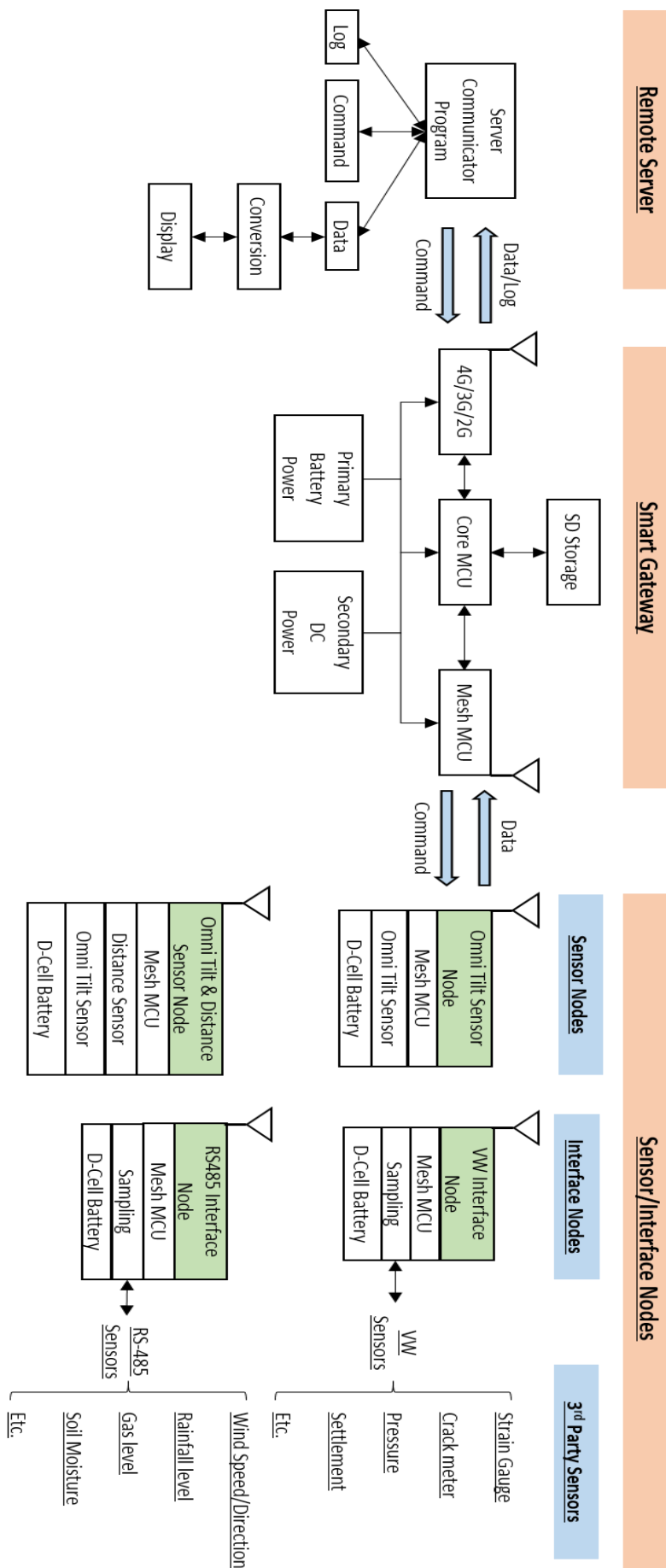


Figure 2. System Structure Layout.

3. Node & Radio Features

Node Features:

Basics	
Battery Power	Qty. x 6 (3.6V Lithium primary D-Cell ER3461)
Battery Connection	Standard Aluminium Battery Holder
DC Output Voltage	8V-10.8V
Capacity when fully charged	29Ahr
L x W x H	180 x 140 x 60mm
Local Storage	Min. 450 Messages during Meshing
Weight	2.2kg
Industrial Standard	
Casing and Painting Materials	Aluminium-Alloy Die Castings 12 (Epoxy Polyester Powder Coating)
IP Rating	>= IP66
Operating Temperature	-40 to 85°C

4. Terminologies

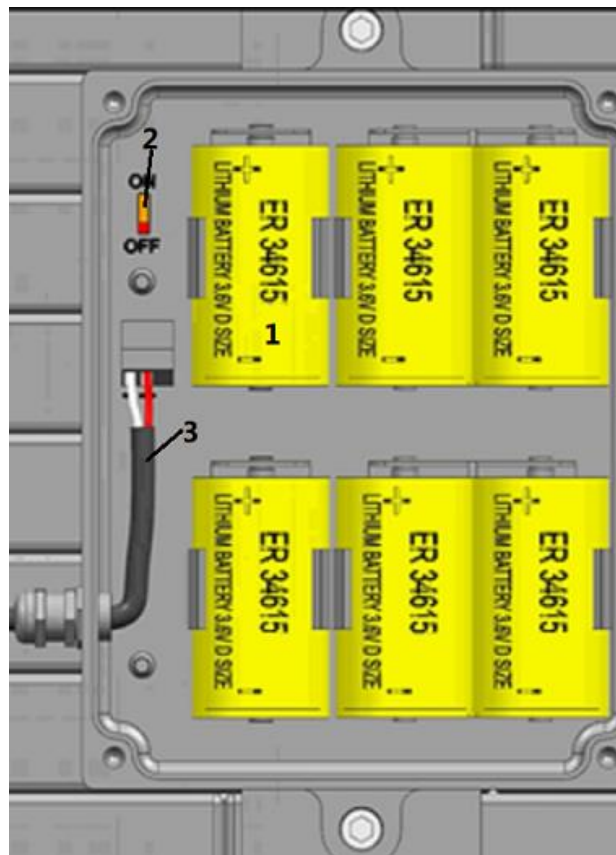


Figure 3. Internal Configuration Terminologies, where:

No.	Terminology
1	ER34615 3.6V Lithium primary D Cell Battery
2	On/Off Switch
3	DC Power Cable

5. Operation Procedures



Notice: Take special attention when handling the high capacity battery package;

Installation Procedure:

1. Ensure that the output switch on a solar unit is in “OFF” status before any operation of wiring.
2. Ensure the “+” and “-” wires are connected absolutely correct to the “+” and “-” terminals in the unit;
3. When the wirings are checked, ensure the unit is switched “ON”, so the power output is activated.

6. General Maintenance and Notification



- 1) Due to the discharge characteristics of the recommended battery, a battery replacement should be carried out when a node reported voltage reaches 6.3V;
- 2) Our product will use all the possible capacity in a battery down to a stop (minimum) voltage, which has been specified in the Features table. When this occurs, our WiSen protocol will send you a warning then it will enter a deep sleep mode until a new battery is installed;
- 3) If the data from gateway/nodes are shown unexpected results or are not being sent back to the Wisen gateway, then please carry out investigation using the following two stage procedure:
 - A. Remote Inspection of historical data, to identify the following:
 - a) Whether the battery voltage is too low, if yes, please change the battery unit;
 - B. On-site Inspection: If all the above are good, please arrange an on-site inspection to check:
 - a) Whether the unit has visible external damage;
 - b) Check the box lid to see if it is firmly tightened;
 - c) Open the lid, to see whether the battery is firmly attached to its holder;
 - d) Use a multi-meter to measure the battery voltage. If it is below the stop (minimum) voltage, replace the battery.

Notices :

- i. Case One: If any change has been made from the list above, please inspect the data from the remote server;
- ii. Case Two: If all the actions from the list above have not cured the problem, please contact Wisen. We will be happy to help.

7. Package and Accessories



Standard:

No.	Items	Dimension (mm)	Qty.
1	WiSen® 10.8V Output Battery Unit	180x140x60	1
2	Cable	1000	1

3	Cap-Hex-Head Screw	M6x14	4
4	User Manual*	Downloadable from WiSen® Visualisation Platform.	
5	Inspection Report*		

8. Safety and Warning



Warning: Please read the following instructions carefully.

1) Operation Safety

- Before taking any action, please read all the information provided carefully, and keep the guidance documents safe;
- Ensure that any procedures and installations are correctly carried out. The case and any mountings should be grounded where practicable.
- This product has been designed to meet a certain water-proof level. However, it becomes vulnerable to water ingress when the lid is open or if the cable gland has not been sealed properly.

2) Electrical Safety

- To install the battery into a holder, please follow the “+” (positive) and “-” (negative) signs in any Wisen product. Wrong orientation of a battery could potential cause unit damage. Notice: ⚠ The orientation of battery can vary among products.
- When disconnecting the battery, please take special care not to apply excessive force, otherwise the battery holder and the nearby circuitry may be damaged.

3) Warning

- The battery in the product has a relatively high capacity, so please take special care during storage and usage.
- This product must not be disassembled under any circumstances, to do so will void the warranty and may leave the product in a dangerous state;
- If all the above are not followed, the manufacturer cannot be held responsible for any damage and injury caused to the users.

4) Caution

- Danger of explosion if battery is incorrectly replaced. Replace only with the type recommended by the

manufacturer. Observe any warnings specified by the battery manufacturer.

- When disposing of the batteries, please contact your local authorities or dealer and ask for the correct method of disposal.

9. Contact

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