

SG3010/SG3015 Series

Compact ZigBee Power Meter

User Manual

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Chapter 1: Product

Introduction

Thank you for purchasing Billion SG3010/SG3015 T1/ T2/ T3/ T4 Compact Smart Power Meter. This compact smart power meter has a number of functions for electricity estimation and wireless transmission. The meter is able to indicate various information for electrical appliance in use including Total Cumulative Kilowatt Hours, Interval Cumulative Kilowatt Hours, Electricity cost, Elapsed Time and others. It is suitable for electricity data collection or use as a standalone power meter.

- **Measurement function**

The measurement functions for this power meter are including Active Power (W), Total Accumulated Electricity Consumption (kWh), Interval Electricity Consumption (kWh), Voltage (V), Current (A), Apparent Power (VA), Power Factor (PF) and others, which provides to people that require more electricity data.

- **High Resolution**

Capable of measuring very small electricity power to 0.01W as well as very small electricity energy to 0.001kWh.

- **Great Accuracy**

Electricity Energy (kWh) measure accuracy $\pm 0.5\%$ (At PF=1.0, at Rated Current). Electricity Power (W) measure accuracy $\pm 1\%$ (At PF=1.0, at Rated Current).

- **Power Surge Protection (For SG3010/SG3015-T1 and SG3010/SG3015-T2 Only)**

Built in real zero-crossing switch and soft start power surge protection device.

- **Small in Size**

Includes electricity measure and wireless transmission module, the dimension is 10.06cm(W) \times 3.8cm(H) \times 3.4cm(D).

- **Electricity Cost Calculation**

Input the electricity rate into the Power Management System will automatically calculate Total Cumulative Electricity Cost or Interval Electricity Cost, as well as estimating 24hr electricity cost assuming current electricity usage and other information.

Chapter 2: Installing the Adapter

Package Content

Power measurement pack:

- Billion SG3010/SG3015 Compact Smart Power Meter
- CD (containing User Manual)

Important note for using this device



Warning

- The maximum current of the device is 10A for SG3010-T1/T2 and 15A for SG3015-T1/T2
- Do not use the device in high humidity or high temperatures
- Do not open the case yourself. If the device requires repair or maintenance, please turn off the power and have it repaired at a qualified service center

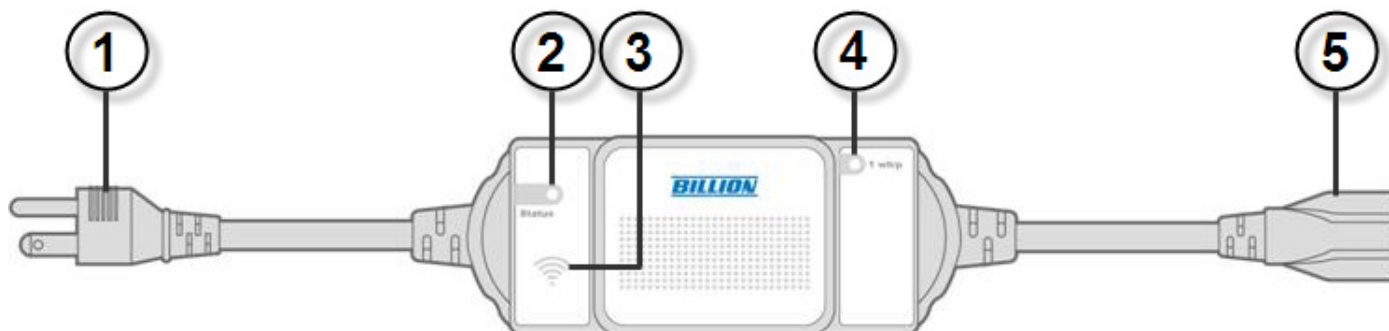


Attention

The communication distance will be shortened if there is a wall or shelter between the power meter and ZigBee coordinator.

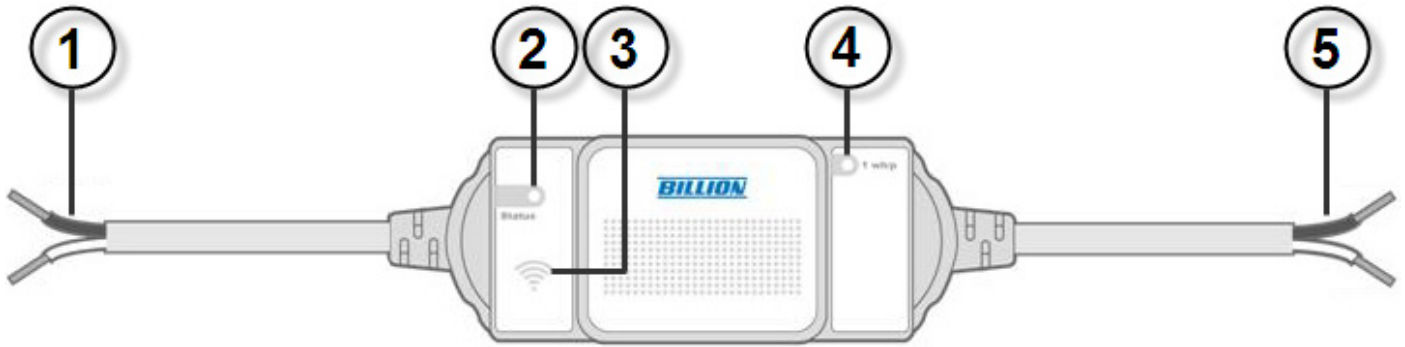
Device Overview

SG3010/SG3015-T1



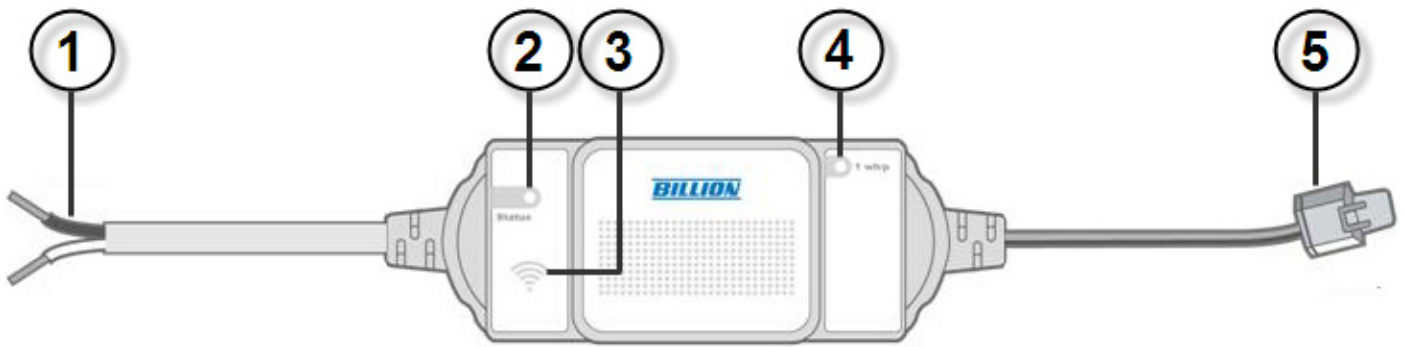
1	Power Plug (100-240V)	Put the plug in the socket.
2	Meter Status Indicator	Lit green when the device is not connected. Blinking when the device is connected.
3	Power Meter Setting Hidden Button	Press this button to detect signal strength. Blinking green 5 times when the signal achieves the highest level; Blinking orange once when the signal is in the lowest level.
4	Energy Indicator	<i>Note: It will flash once when electricity consumption has accumulated to 1wh (0.001kWh).</i>
5	Power Outlet	Insert the plug of an electrical appliance that you intended to monitor into the product's outlet.

SG3010/SG3015-T2



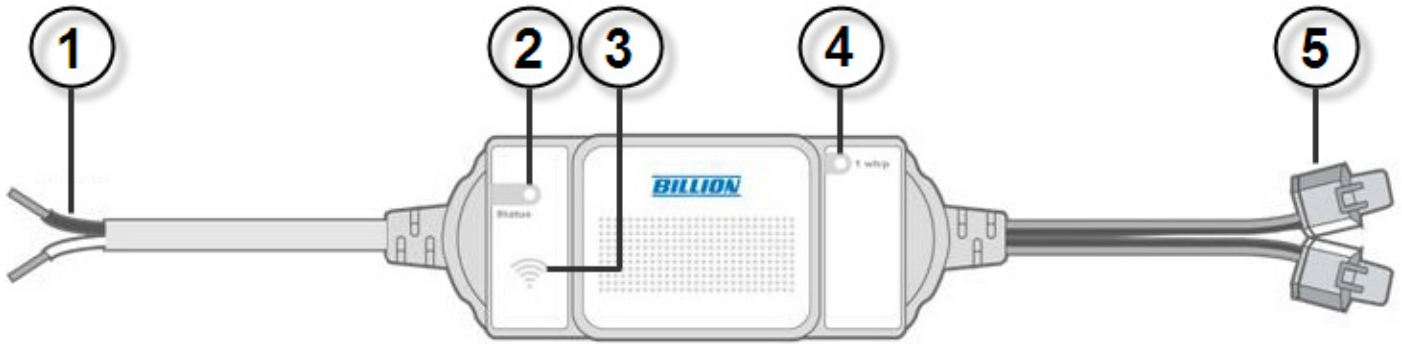
1	Input Power (100-240V)	Connect to the power supply terminal.
2	Meter Status Indicator	Lit green when the device is not connected. Blinking when the device is connected.
3	Power Meter Setting Hidden Button	Press this button to detect signal strength. Blinking green 5 times when the signal achieves the highest level; Blinking orange once when the signal is in the lowest level.
4	Energy Indicator	<i>Note: It will flash once when electricity consumption has accumulated to 1wh (0.001kWh).</i>
5	Output Power (100-240V)	Connect to the electrical appliance at the load output terminal that you intended to monitor.

SG3010/SG3015-T3



1	Input Power (100-240V)	Connect to the power supply terminal.
2	Meter Status Indicator	Lit green when the device is not connected. Blinking when the device is connected.
3	Power Meter Setting Hidden Button	Press this button to detect signal strength. Blinking green 5 times when the signal achieves the highest level; Blinking orange once when the signal is in the lowest level.
4	Energy Indicator	<i>Note: It will flash once when electricity consumption has accumulated to 1wh (0.001kWh).</i>
5	Split-core Current Transformer	Install to the electrical appliance that you intended to monitor.

SG3010/SG3015-T4



1	Input Power (100-240V)	Connect to the power supply terminal.
2	Meter Status Indicator	Lit green when the device is not connected. Blinking when the device is connected.
3	Power Meter Setting Hidden Button	Press this button to detect signal strength. Blinking green 5 times when the signal achieves the highest level; Blinking orange once when the signal is in the lowest level.
4	Energy Indicator	<i>Note: It will flash once when electricity consumption has accumulated to 1wh (0.001kWh).</i>
5	Split-core Current Transformer	Install to the electrical appliance that you intended to monitor.

Connecting the Power Meter

It is easy to connect SG3010/SG3015-T1/T2/T3/T4 simply by performing the following instructions.

Note: Ensure that the Power Meter is turned off or the power supply is cut off before beginning setup.

SG3010/SG3015-T1



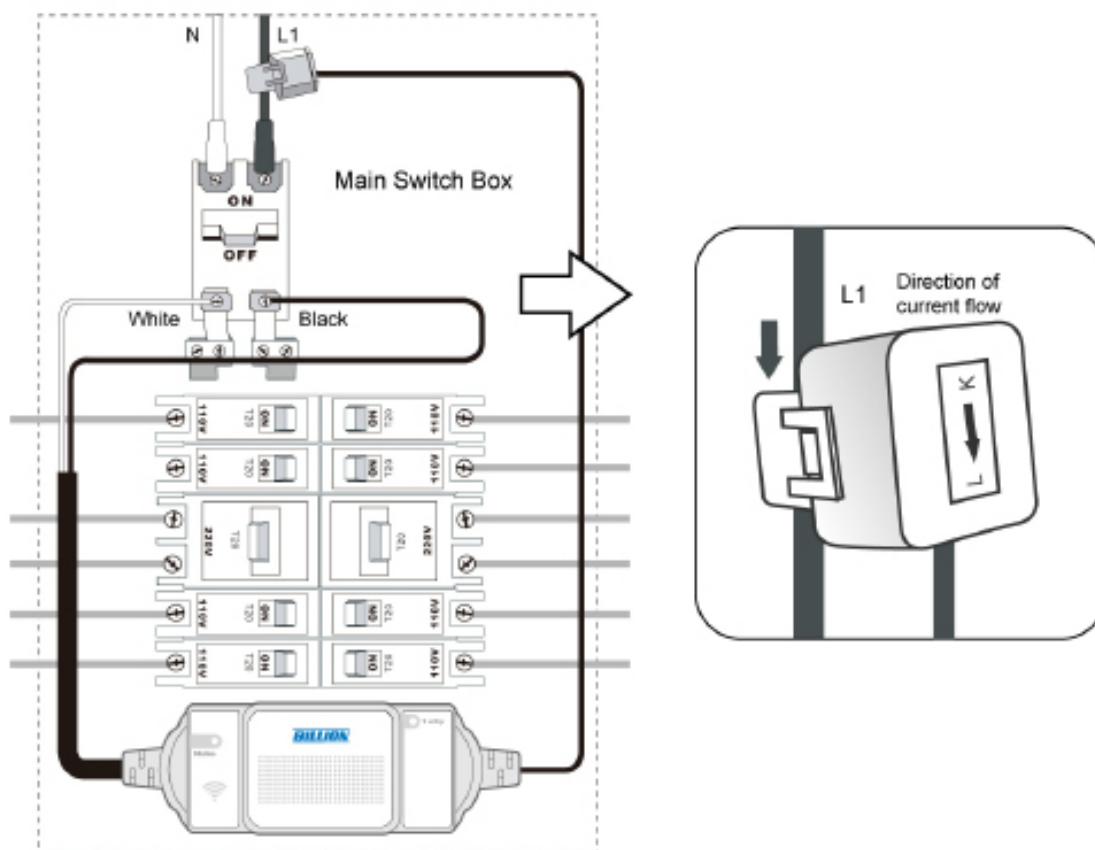
1. Plug in the electrical appliance that you intended to monitor to the Power Meter's outlet.
2. Plug the Power Meter directly into the wall outlet/socket.
3. Set up the connection between SG3010/SG3015 - T1 and ZigBee Coordinator (Please refer to Networking Setup section).
4. After use, extract the appliance's plug and then pull out the plug from the wall to complete the power-off procedure.

SG3010/SG3015-T2



1. Connect the Power Meter's output power end to the electrical appliance at the load output terminal that you intended to monitor.
2. Connect the input power end to the power supply terminal.
3. Set up the connection between SG3010/SG3015 – T2 and ZigBee Coordinator (Please refer to Networking Setup section).

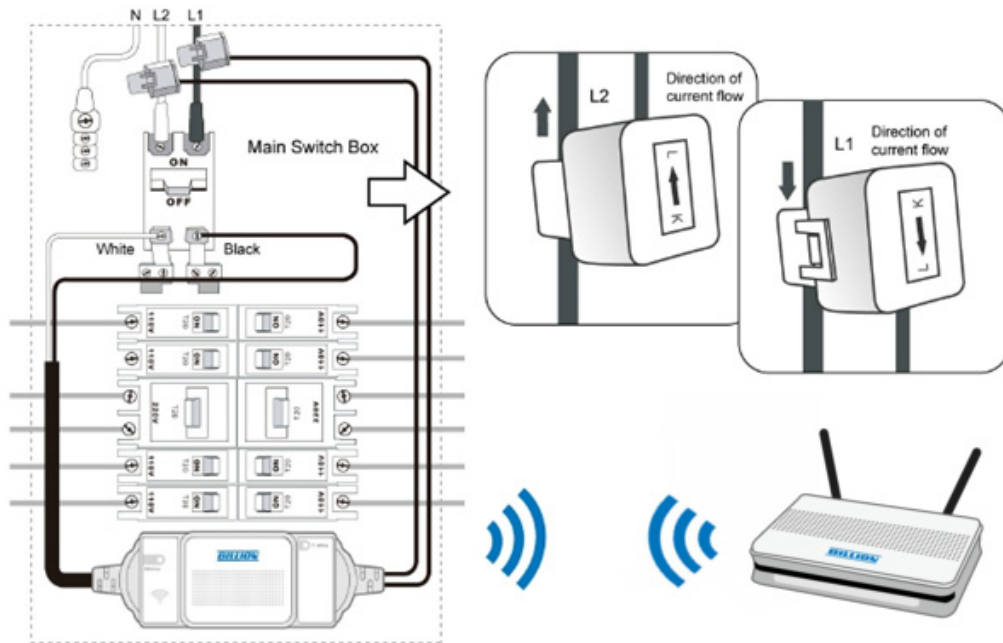
SG3010/SG3015-T3



Following the instructed electricity current direction at the bottom of the split-core CT to install the CT to L1.

1. Following the instructed electricity current direction at the bottom of the split-core CT to install the CT to L1.
2. Connect the 2 input power ends to the load output terminals of the main switch, the Black wire to "L1", and the White wire to "N". Please refer to **Installation** section for detail instruction information.
3. Set up the connection between SG3015 – T3 and ZigBee Coordinator (Please refer to Networking Setup section).

SG3010/SG3015-T4



Note: Ensure the power in the main switch box has been turned OFF while installing the product.

1. Following the instructed electricity current direction at the bottom of the split-core CT to install the 2 CTs to L1 and L2 respectively.
2. Connect the 2 input power ends to the load output terminals of the main switch, the Black wire to "L1", and the White wire to "L2".
3. Set up the connection between SG3015 – T4 and ZigBee Coordinator (Please refer to Networking Setup section).

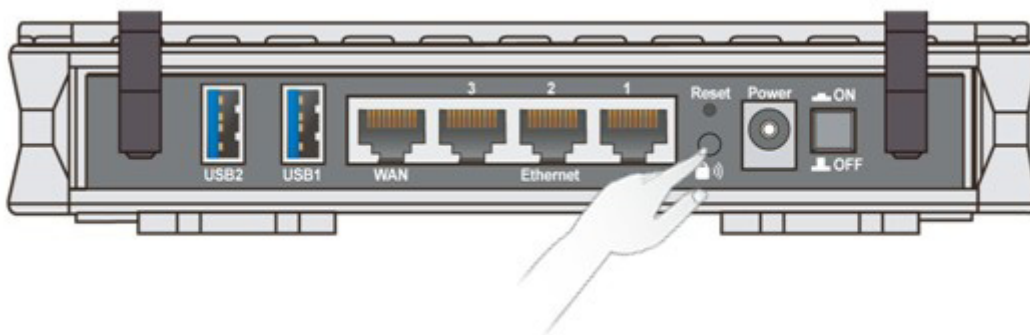
Networking Setup

Pairing the smart meter

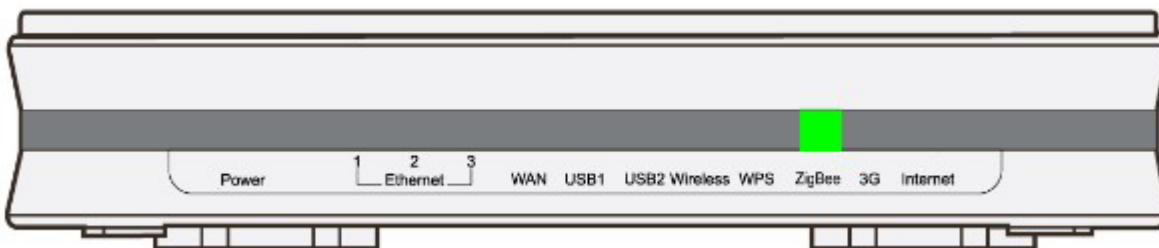
Step 1: After setting up the power connections, you can start to pair the meter. First, please check if the status LED lights green, which means that the smart meter has not been paired with other meters. If your smart meter is used for the first time, then continue the setup. If LED blinks, please refer to “un-pairing the smart meter” section to unpair your smart meter.



Step 2: Push ZigBee button on the rear panel of ZigBee Coordinator to make a connection.



Step 3: Then, ZigBee/WPS LED in the front panel will blink quickly around 60 seconds.



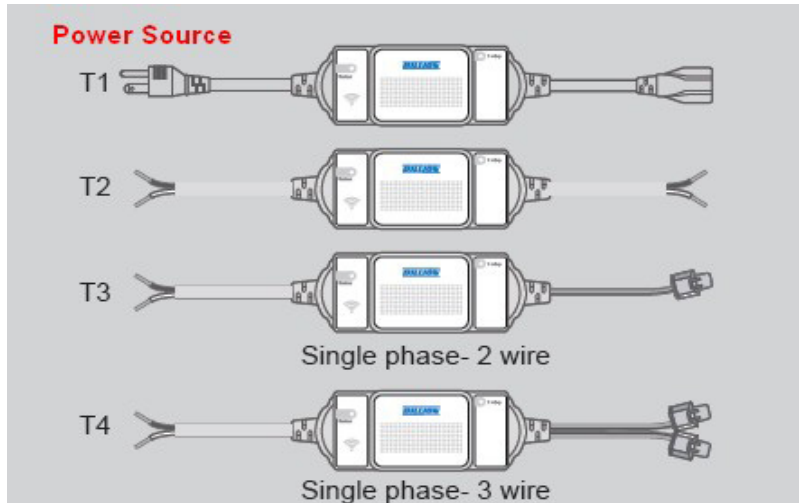
Step 4: The smart meter will be automatically paired and join to the network. The LED light would blink slowly and steadily, indicating that the power meter is successfully connected.



Un-pairing the smart meter

If you attempt to disconnect the smart meter and leave the current network group, do the following un-pair setup steps. Please note that before pairing the ZigBee coordinator with smart power meters, check if the status LED of the smart meter lights green. If the status LED blinks green, it means that the meter has been paired. Please un-pair the smart meter first.

Step 1: Cut off the power source of your smart meter and then turn on the power meter again.



Step 2: Press and hold the hidden button within 5~35 seconds after power on and then the LED will blink around 6 seconds.



Step 3: Cut off the power source during the blinking and then turn on the smart meter again. Then you can see the LED lights green steady. You have successfully un-paired the smart meter.



NOTE: Please note that before the smart meter is power on, remember to shut down the ZigBee coordinator in case the meter is paired to the device again.

Appendix: Product Support & Contact

If you come across any problems please contact the dealer from where you purchased your product.

Contact Billion

Worldwide:

<http://www.billion.com>