

## I. Fault Analysis and Troubleshooting for Wireless Energy Monitor

### 1. To identify the host and the extension is in normal working condition

A normal working status will be:

- A. LCD display, corresponding keypad operation on receiver.
- B. LED flashes (up to 64 seconds to blink once) on transmitter. Short press CHECK button, wait less than 64 seconds, LED blinks again.

Problem determine:

Problem A: No display, or display garbled characters (the value of abnormally large, digital missing segment, multi-segment, etc.), or the keys no reaction.

Problem B: No LED flashes (blink once 64 seconds at least) on transmitter.

Problem solution:

Solution for A: Check the battery is installed properly? - Remove the battery, wait 10 seconds, re-load a new battery according polarity.

Solution for B: Whether the work environment in line with product requirements? - Avoid products in harsh environments, such as low temperature, high temperatures, strong electromagnetic interference.

### 2. Transmitting and receiving is not normal A. The power has never been the host extension receives data, power and electricity as well as cost show "----"

Problem Analysis:

Problem A: With battery loaded, if the receiver works properly and whether it is on receiving state.

Problem B: Whether the transmitter works after the power-on.

Problem C: Whether or not a set of products include a receiver and a transmitter (The ID cost of receiver and transmitter has been set one to one correspondingly. All storage, transportation, sales are subject to trial the process to maintain such a strict one correspondence. If you accidentally confuse the correlation, leading to Receiver A receives data of Transmitter B (can not receive data), please refer to the following troubleshooting method B.

#### **Problem solution:**

Solution for A: Re-load batteries on receiver and transmitter.

Solution for B: Reset ID code strictly

Step1: Take off the batteries from transmitter. 2 minutes later reload the batteries to transmitter.

Step 2: Take off the batteries from receiver.

Step 3: Push and hold buttons "MODE" and "SEARCH". At same time to load the batteries to receiver.

Step 4: Release the two buttons after hear "Bi Bi" sounds. The receiver will search the signal from transmitter continued.

**3. Transmitting and receiving are abnormal B. Receiver had ever received signal from transmitter, but often losing data (for example, high-power electricity consumption on the state, the data on receiver has not updated a long time, and sometimes appeared lost the antenna symbol, power and electricity as well as cost are shown as "-- - ")**

#### **Problem Analysis:**

A. The receiver and transmitter are far from each other and beyond the effective reception range.

B. Whether there is interference with the band signals (such as doorbell, wireless alarm system, etc.) or other strong electromagnetic interference signal.

C. If the receiver and transmitter are working under low power level ( low battery icon shows on receiver LCD).

#### **Problem Solution:**

Solution for A: Move the receiver location close to transmitter as possible as you can. Avoid presenting too many obstacles between them.

Solution for B: Short or reduce the electromagnetic signal interference as much as possible. Or away from the interference signal source as possible.

Solution for C: Replace batteries if power is low.

**4. Transmitting and receiving are abnormal C. -Receiver has ever got data, but obviously different from the current data supporting by transmitter. Or a receiver can get data from two transmitters.**

**Problem Analysis:**

A. Make receiver close to the transmitter, and then pull out the sensor plug from transmitter for some time to view the receiver power data. If the power data is not "0", it means the receiver gets data from other transmitter.

**Troubleshooting Method:**

A. In order to receive correct data from transmitter, the receiver should have same ID codes of corresponding transmitter. The possibility of two transmitters have same ID codes is very low,  $1/65536$ . If there are two transmitters have same ID code in one occasion unfortunately, we can reset the ID code on transmitter and receiver by manual to solve this problem.

**The operation will be**

Firstly to change ID Code on transmitter:

Step 1: Take the batteries from transmitter.

Step 2: Push and hold CHECK button at same time to reload batteries on transmitter. LED is on.

Step 3: When LED is off and re-on again, release CHECK button. (This process takes about 30 seconds).

Step 4: LED blinks 10 times it means the ID code is updated on transmitter.

Step 5: Two seconds later, push CHECK button again no need hold this time. Wait for the LED blinks at least once.

Secondly to change the ID Code on receiver:

Step 1: Take batteries out from receiver.

Step 2: Push and hold SEARCH and MODE button together while reload batteries.

Step 3: Release the two buttons while hear "Bi Bi" sounds. It means the ID code on receiver is updated. The receiver is searching signal from transmitter.

**5. Be able to properly update the data. But the electric power consumption on receiver is shown “0” or has big difference of real consumption.**

**Problem Analysis:**

- A. Check whether the sensor plug is fall off (pull out) from transmitter.
- B. If the sensor is normal to clamped on alive line (single sensor stuck in a single-phase line and mouth is completely locked);
- C. If the voltage setting is correct on receiver.

**Problem Solution:**

Solution A and B: Open a household electrical appliances to ensure that the current electric power is not 0.----- Plug the sensor properly into the transmitter socket, and then clamp on alive power cable and lock mouth. -----Reload batteries on transmitter. ----Two seconds after, Push (no need hold) CHECK button one time to wait transmitter LED flashes continuously.----Immediately push & hold the SEARCH button on receiver for about 2 seconds. ----Release SEARCH button after hearing “Bi” sound. ---View the power value on receiver is normal.

Solution C: Check the voltage and other parameters are correct on receiver.

**6. The button operation on receiver is not working smoothly.**

Problem Analysis: Product with nighttime backlight auxiliary view feature is automatically enabled in the time period of 18:00PM-6:00AM. In this time period, the first time to press any key is for opening the backlight just. Does not perform other actions. At backlight open condition, re-operate buttons to perform the appropriate action.

**7. The energy consumption values reported by the Wireless Energy Monitor is different than that reported on my utility meter?**

A: Please try the following solutions

Solution 1: The sensors may not be correctly installed. Please re-install the sensors.

Solution 2: This may be attributed to the home electric power factor that typically ranges between 0.8-1.0. In the ideal case when it is 1.0, all electricity drawn from the utility is used completely by the home appliances. However, in most cases, some degree of electricity (and power) is wasted.

To account for the power factor, take two sets of electricity consumption values on consecutive days from the Wireless Energy Monitor and the utility meter. The energy used recorded by the Wireless Energy Monitor divided by what's reported from the utility meter provides an approximation for the power factor. Now divide the voltage value set ( 110 Volts or 220 Volts) by this calculated power factor and set it on the display (Press Mode signal to set voltage).

Below an example

Date	Wireless Energy Monitor (Kwh)	Utility meter (Kwh)
12/01/10	100	3250
12/02/10	135	3290

12/01- 12/02 consumption reported by Energy Monitor = (135 - 100) KWh = 35 Kwh

12/01- 12/02 consumption reported by Utility meter = (3290 - 3250) KWh = 40 KWh

Power factor estimate =  $35/40 = 0.875$

New Voltage =  $110/0.875 = 126$  (rounded) Volts

(Assumed voltage set to 110Volts)

New Voltage =  $220/0.875 = 251$  (rounded) Volts

(Assumed voltage set to 220Volts)

## II. Warm Suggestions:

1. For the first time use this product, you are suggested to obey the following steps:

Step 1: Load batteries on receiver and set the current time.

Step 2: Set the local voltage, electricity rates and other parameters.

Step 3: Load the batteries on transmitter. The receiver will be forced to open searching function to receive data from transmitter.

(Note: During this step, power data is existed already, please obey the following point #3 to clear the existed data)

Step 4: Make the sensor and transmitter connected.

Step 5: Clamp the sensor on electricity Live cable.

Step 6: Place the receiver can receive data from transmitter reliably.

Step 7: If necessary, set the alarm value of household consumption. Set on or off alarms.

2. Quick view electricity consumption data, testing the power of household electrical appliances;

Step 1: Press the SEARCH button for 2 seconds on receiver.

Step 2: Release the SEARCH button till hear a "BI" sound.

Step 3: Push CHECK button (no hold) one time. One minute later, the receiver data will be updated in 2 seconds.

Step 4: Open or close home appliances to view the power of change on receiver.

Note: 30 seconds later, automatically update the power data every 8 seconds. If you need more quickly view, press the CHECK button again.

3. When replace the measuring occasion, or need to re-start measurement of electricity consumption from 0.

Product has memory function. Just re-install batteries or electricity, it is impossible to clear the history data. Please refer to the following steps to clear history data.

Firstly remove the data preserved in transmitter:

Firstly to change history memory on transmitter

Step 1: Take the batteries from transmitter.

Step 2: Push and hold CHECK button at same time to reload batteries on transmitter. LED is on.

Step 3: When LED is off, release CHECK button. Memory is cleaning (This process takes about 8 seconds)

Step 4: LED blinks 5 times it is means the history data is deleted on transmitter. Start working from 0.

Secondly to change the history memory on receiver:

Step 1: Load batteries on receiver. LCD is displaying data.

Step 2: Push and hold HISTORY and MODE button together for 2 seconds. "CLR" is displaying on LCD means the memory is going to be deleting.

Step 3: Still hold the two buttons for 8 seconds to confirm the deleting. Memory is 0.

Step 4: Back to normal working status automatically. LCD display “----”.

Step 5: Release the two buttons.

Step 6: Push & hold SEARCH button for 2 seconds.

Step 7: Release the SEARCH button once hear “Bi” sound. Receiver is starting to receive new data from transmitter.