

# RFXPwr module

[www.rfxcom.com](http://www.rfxcom.com)

# 1. Table of Contents

- 1. Table of Contents.....2
- 2. RFXPwr module.....3
- 3. RFXPwr module installation in an RFXMeter.....3
- 4. Installation of the RFXPwr module in the power network.....4
- 5. How to calibrate the RFXPwr module.....5
- 6. Configure the RFXPwr module in the software.....5
  - 6.1. Configure an RFXPwr module in Homeseer – RFXCOM.....5
  - 6.2. Configure an RFXPwr module in Homeseer - ACRF.....5
  - 6.3. Configure an RFXPwr module in other software.....5
- 7. RFXPwr module PCB.....6
- 8. Warning:.....6
- 9. Copyright notice.....6
- 10. Revision history.....6

## 2. RFXPwr module.

The RFXPwr module measures the real electricity power used in watts per hour. The RFXPwr module calculates the real power used by measuring the line voltage and the current. The total measured value in Watts per hour is transmitted by the RFXMeter device at user defined intervals.

There are 2 types available.

For Europe: a 230 Volts 150 Ampere version with a 433.92MHz RF transmitter.

For the US: a 120 Volts 150 Ampere version with a 433.92MHz RF transmitter.

The RFXPwr module measures the power usage in Watts per hour. The RFXMeter transmits the counter values at predefined intervals. The interval can be set by the user to 30 seconds, 1 minute, 6, 12, 15, 30, 45 or 60 minutes.

The address of the RFXPwr can be set by the user so that theoretically up to 256 units can co-exist.

The preferred receiver for the RFXPwr data is the RFXCOM X10 receiver. This receiver can receive the full 48 bits data packets. The maximum power that can be measured before the counter rolls over to zero is 16777.215kWh. The 48 bits data packet contains also parity bits that enable a validity check on the received data.

The W800 receiver can receive 32 bits and is therefore able to receive the first 32 bits of the data packet. These 32 bits contain the RFXPwr unit address and the lower 2 bytes of the measured value. The maximum power that can be measured before the counter rolls over to zero is then 65.535kWh. A parity check is not possible and the configuration packets can not be received by this W800.

Note: The Homeseer ACRF plug-in version 1.2.0.3 and up supports the RFXMeter with the RFXCOM receiver only.

## 3. RFXPwr module installation in an RFXMeter.

Insert the RFXPwr module in a free slot of the RFXMeter starting at the location for module 0.

The modules in the RFXMeter will be detected automatically after they send a first pulse.

- Remove the power from the RFXMeter unit and open the enclosure.
- Insert the module. The 1<sup>st</sup> RFXPwr module must be installed at location Module 0.  
Note: the RFXMeter unit doesn't need a power adaptor when an RFXPwr module is installed at location Module 0.
- Close the enclosure.
- Connect the RFXMeter and the RFXPwr to the power.
- Configure the RFXPwr in the software.

## 4. Installation of the RFXPwr module in the power network.

### **WARNING:**

The installation must be done by a certified engineer if the power line wire is not freely accessible!

The RFXPwr module has a CT (Current Transformer) with split core that must be clamped around the “hot”-wire of the power line. The 9 Volt AC adaptor of the RFXPwr module needs to be plugged into a standard wall socket and **IMPORTANT** this wall socket must be connected to the same power line as where the Current Transformer is clamped around.

If the red LED on the module is ON this indicated that a large phase shift is detected and the RFXPwr module will not measure the correct values.

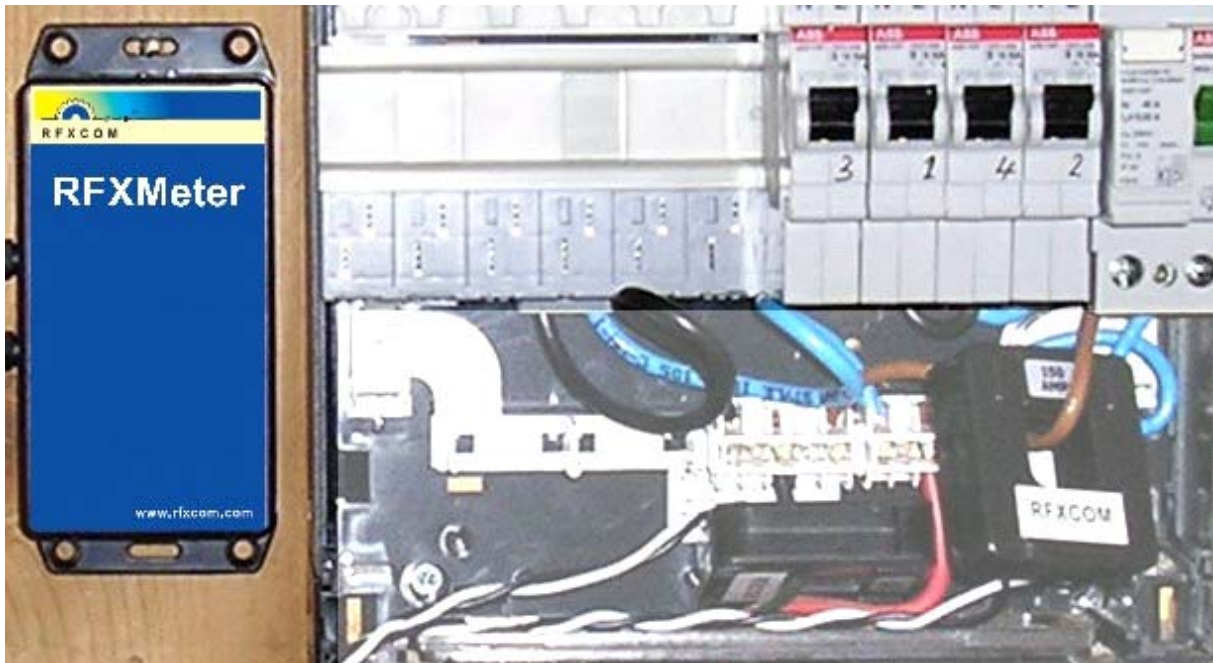
One of the next actions should solve this problem:

OR turn the AC adaptor in the wall socket

OR re-clamp the Current Transformer 180 degrees on the cable

OR the power adaptor is not on the same power phase as the Current Transformer.

Connect the AC adaptor to the right power line.



## 5. How to calibrate the RFXPwr module.

**Note:** The RFXPwr module is already calibrated in factory.

See chapter 9 in the RFXMeter document how to calibrate the RFXPwr module.

## 6. Configure the RFXPwr module in the software.

### 6.1. Configure an RFXPwr module in Homeseer – RFXCOM.

Use the RFreceiver program to find the ID of the RFXPwr module(s).

The Device ID is RFXMeter[?????M].

In this example the sensor Device ID is RFXMeter[2296]M.

```
RFXMeter[2296]M RFXMeter addr:08F8 ID:2296 RFXMeter: 3206492; RFXPower: 32064,92 kWh;  
RFXPower-Module: 3206,492 kWh bits=48
```

Configure an RFXPwr sensor in the RFXCOM plug-in as an input sensor.

Input Device	
Sensor ID:	RFXMeter[2296]M
Device Name:	RFXPwr01
Location:	House
Device Type:	RFXMeter
Suffix:	kWh
Calibration value:	98962000
Divide by:	1000
HS Code:	[ 50
Show Icon	<input type="checkbox"/>
Show on chart	1

Device Name RFXPwr<number>. Where <number> is a decimal number from 00 to 99.

Leave Device Type set to RFXMeter.

Suffix=kWh

If you like you can enter a calibration value (in Wh) to adjust the displayed value so that it indicates about the same value as the utility meter.

Set Divide by to 1000.

If the results have to be shown on the RFXUtility page set Show on chart to 1

### 6.2. Configure an RFXPwr module in Homeseer - ACRF.

Use the RFreceiver program to find the ACRF-ID of the RFXPwr module(s).

The ACRF Device ID is the decimal number behind the slash.

In this example the sensor Device ID for the ACRF is 2296.

```
RFXMeter[2296]M RFXMeter addr:08F8 ID:2296 RFXMeter: 3206492; RFXPower: 32064,92 kWh;  
RFXPower-Module: 3206,492 kWh bits=48
```

Configure an RFXPwr sensor in the ACRF plug-in as an environmental sensor of type "RFX Custom Meter" with the Device Name RFXPwr<number>. Where <number> is a decimal number from 00 to 99.

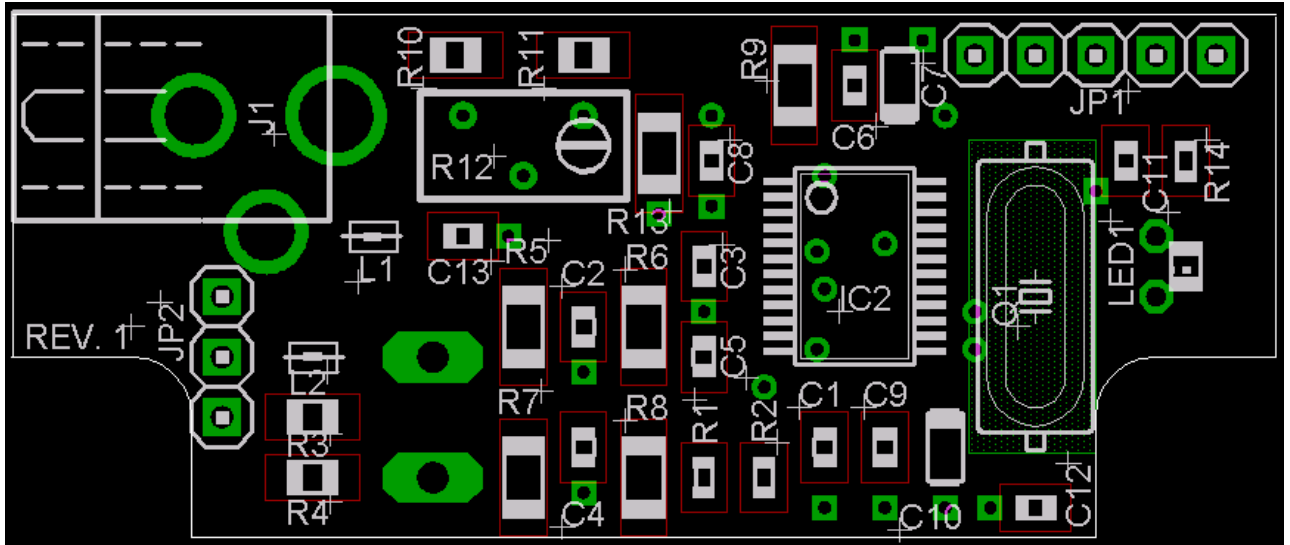
The counter value displayed for an RFXPwr installed is in watts/hour.

### 6.3. Configure an RFXPwr module in other software.

If the RFXMeter is supported by a software product then check the documentation of this software how to configure the RFXMeter module.

If you want to write your own software to support the RFXMeter modules then have a look in the RFreceiver source how to decode the RFXMeter packets. This source file can be of help and can be found at the download page of [www.rfxcom.com](http://www.rfxcom.com).

## 7. RFXPwr module PCB.



## 8. Warning:

If you are not sure how to install the RFXPwr always consult a qualified electrician. RF signals are possible disturbed and it has not been justified for this equipment at uses in circumstances where life-threatening or dangerous situations are possible.

## 9. Copyright notice

All materials contained in this document are protected by copyright laws, and may not be reproduced, republished, distributed, transmitted, displayed, broadcast or otherwise exploited in any manner without the express prior written permission of RFXCOM.

## 10. Revision history.

Version 1.0 - August 2, 2007  
First document.

Version 2.0 – February 21, 2008  
RFXCOM plugin added