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# Technical Specification

iMeter-WiFi

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## 1 Product Introduction

iMeter-WiFi (Model: WM3162) is a cost-effective, highly-integrated, single-phased power meter with Wi-Fi module embedded and 1 RS-485 port, which can measure and transmit the data of specific electricity wire, such as single-phase AC voltage, current, power etc. It supports MODBUS-RTU protocol.

iMeter-WiFi is applied widely in the field of Energy-saving, home electricity monitoring, solar system, electricity industry, telecommunication, railway construction, transportation, environment protection, petrochemical industry, steel industry, etc. It is used for remote real-time monitoring of AC equipment by few steps of simple settings. The terminal users can easily monitor your AC equipment anytime from anywhere by using this product.

## 2 Technical Specification

### 2.1 Key Features

- Measure multiple parameters of single-phase AC equipment, such as voltage, current, power, energy, power factor, frequency, etc.
- Apply the dedicated measuring chip with high precision
- Support wireless 802.11 b/g/n protocol
- 1 RS-485 port
- Support standard MODBUS-RTU, good compatibility and easy programming
- ESD Protection
- Wide operating voltage AC80 ~ 265V,
- Reverse connection protection
- High isolation voltage, DC2000V withstand voltage

### 2.2 Technical parameters

#### 2.2.1 Single-phase AC input

- AC input: 80-265V
- Current Range: 60A maximum (to support larger current by selecting current transformer with larger current capacity)

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- Signal Processing: applies dedicated measuring chip, 24bit AD sample
  - Overload Capacity: Not damaged under 5 times current, 1.2 times voltage within 20mS
  - Input Impedance: Voltage channel  $> 1 \text{ k}\Omega / \text{V}$  ; Current Channel  $\leq 100 \text{ m}\Omega$

### **2.2.2 Communication interface**

- Interface : RS-485
- Protocol : MODBUS-RTU ;
- Data format : “n,8,1” ;
- Baud rate : 1200、2400、4800、9600Bps ; 9600Bps by default ;

### **2.2.3 Measurement**

Voltage, Current, Power, Energy, Power Factor, Frequency

### **2.2.4 Precision**

Voltage、Current、Energy :  $\pm 1.0\%$  ; Active Power: Class 1

### **2.2.5 Isolation**

Isolation Voltage: 2000VDC ;

Communication port is isolated with power input port

### **2.2.6 Power Input**

- AC input: 80-265V
- Peak voltage: not exceeds 265V (220V power input) ;
- Typical power consumption :  $\leq 2\text{W}$  ; (220VAC input)

### **2.2.7 Work Environment**

- Working Temperature:  $-20 \sim +70^\circ\text{C}$  ;
- Storage Temperature :  $-40 \sim +85^\circ\text{C}$  ;
- Absolute Humidity : 5 ~ 95% ;
- Altitude : 0 ~ 3000m ;

### **2.2.8 Temperature Drift**

- Temperature Drift  $\leq 100\text{ppm}/^\circ\text{C}$  ;

### **2.2.9 Product Size**

- Product Size: 90×36.5×58 mm (for meter case)

### **2.2.10 W-Fi Parameters**

- UART baud rate : 9600/8/n/1
- Support WiFi 802.11b/g/n, Wi-Fi frequency 1-13
- Wi-Fi transmit power: 18.5dBm@11b, 15.5dBm@11g, 14.5dBm@11n ;
- Wi-Fi frequency: 2.400~2.472GHZ
- Highest transmit speed: 3686400bps
- Support WiFi-DuSL Mode ;
- Maximum connections : 8 ↑
- Support WEB ;
- Embedded PCB Antenna, support IPEX external antenna

### 3 Certification and Standard

- Certification: Rohs, CE
- CE Standard:

Essential Requirements	Applied Standard
1. Health and Safety	ETSI EN 301 489-1 V2.1.1 (2017-02)
2. Electromagnetic Compatibility	ETSI EN 301 489-1 V3.1.1 (2017-02)
3. Effective Use of the Radio Spectrum	ETSI EN 300 328 V2.1.1 (2016-11)
	EN62311:2008
	EN60950-1:2006+A11;
	2009+A1;2010+A12;2011+A2;2013

- Fully compliance with IEC62052-11 for protective class I meter, indoor meter.
- Accuracy requirement is complied with IEC62053-21 for accuracy index class 1 meter.
- Mechanical requirement is complied with IEC62052-11 for protective class I meter, indoor meter (This mechanical requirement apply for IEC62053-21)

### 4 Product Appearance and Dimension

See below picture for product image。



Figure 1 Product Image

The dimension of meter case is 90x36.5x58mm

See below picture for current transformer(CT)。



Figure 2 Current Transformer

The dimension of CT is shown as figure3 (Unit: mm)。

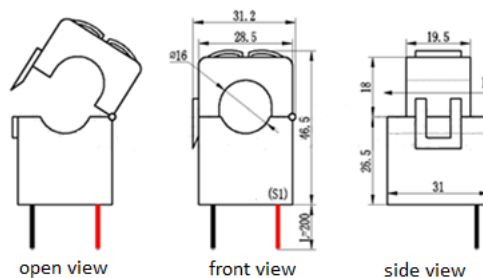


Figure 3 Dimension of CT

## 5 Connecting Terminals

- Terminal L (Live) and N (Neutral) : connect live electricity wire to terminal L, connect Neutral electricity wire to terminal N.

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- The live electricity wire to be measured must go through the hole of CT (according to the current direction marked at the bottom of CT ) for current measurement

- Two RS-485 interface terminals, terminal A is positive, B is negative ;

## 6 Indicator

There are three indicators in the front panel, "RUN", "REV" and "WiFi" ;

- RUN : Always on after powering on, flashing while the WiFi module is communicating with the power meter ;
- REV : Always on when the current is reversed
- WIFI : Always on after the Wi-Fi module is connected to the router

## 7 Revision History

Table 1 Revision History

Version	Type	Date
1.00	Draft Version	2017-09-22

## 8 Technical Support

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