

# Smart Meter

MR1-D5-WR&MR1-D5-W

Smart meter is a compact-sized device with open-type CT access for easy installation. It is suitable for monitoring the energy consumption of the electrical system. It can also be used for real-time metering of power parameters such as voltage, current, active power, power factor, frequency, and active energy. Moreover, it can send the data to local or remote software platforms via WiFi to realize detailed monitoring and analysis of power usage.



## I Applicable Scenarios

Suitable for European household, small-scale C&I scenarios where requires bi-directional metering

- Remote 24 hours real-time monitoring of electricity consumption
- Realize local API equipment linkage control to enable efficient integration with HEMS
- Utilize LoRa technology (configurable) for long-distance data relay transmission to ensure data transmission stability

## I Product Characteristics

- LoRa technology (configurable) realizes low power consumption and long-distance data uploading
- Open-type CT, easy to install and maintain
- Compact size, with a form of 2P
- Measurement accuracy: active power level 1, reactive power level 2
- Bi-directional metering of electricity consumption or generation data
- Support real-time uploading of data and fault information in milliseconds
- Equipped with Bluetooth as standard, supporting local network distribution
- Provides local API interface to enable efficient integration with HEMS
- Comply with EN 18031 IoT network security standard

# I Parameters

## Communication Parameters

Communication Method	WiFi/LoRa(configurable)
WiFi Standard	IEEE 802.11 b/g/n
WiFi Frequency Range	2.412GHz-2.482GHz(CH1~CH13)
WiFi Output Power	11n mode HT40: 13 dBm $\pm$ 1.5 dBm 11n mode HT20: 13 dBm $\pm$ 1.5 dBm 11g mode: 14 dBm $\pm$ 1.5 dBm 11b mode: 19.5 dBm $\pm$ 1.5 dBm
WiFi Receiving Sensitivity	11b,1 Mbps:-97dBm 11b,11 Mbps:-88dBm 11g,6 Mbps:-93dBm 11g,54 Mbps:-75dBm 11n,HT20(MCS7):-72dBm 11n,HT40(MCS7):-69dBm
LoRa Operating Frequency	868MHz
LoRa Spreading Factor	SF5/SF6/SF7/SF8/SF9/SF10/SF11
BLE Wireless Standard	BLE 4.2
BLE Frequency Range	2402~2480MHz
BLE Transmit Power/Receiving Sensitivity	9dBm/-93dBm
Antenna Type	Embedded antenna

## Electrical Characteristics

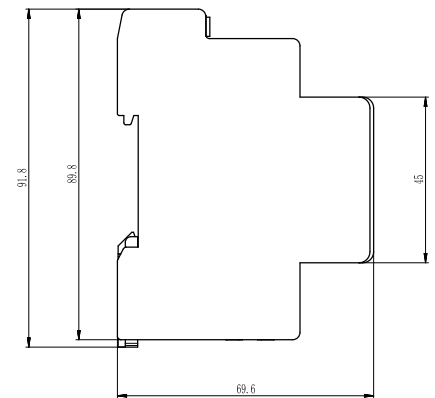
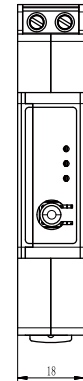
Wiring Method	Single-phase Two-way
CT	100A*1
Rated Voltage	230V $\pm$ 20%
Input Current	$\leq$ 100A
Rated Frequency	50/60Hz
Operating Power	<4W
Measurement Accuracy	Active power level 1.0, Reactive power level 2.0
Electrical Parameter Refresh Rate	Active power: 50ms Other parameters: 100ms

## Hardware Parameters

Mounting	DIN rail 35mm
Operating Temperature	-20 $^{\circ}$ C ~ +50 $^{\circ}$ C
Operating Humidity	10% ~ 70% RH, no condensation
Altitude	<2000 meters
Storage Temperature	-20 $^{\circ}$ C ~ 70 $^{\circ}$ C
Storage Humidity	$\leq$ 40% RH, no condensation
IP Grade	IP20
Flame Retardant Rating	UL 94 V0
Certifications	CE, REACH, RoHS

## Software Parameters

Number of Connected LoRa Sub-Devices (configurable)	Default: 1 unit (1~10 units configurable)
Data Uploading Frequency	Default 5 minutes
User Configuration	Local and remote configuration
Firmware Upgrade	Remote upgrade



Unit: mm

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