WP.16A, WiFi (MQTT) smart plug

The WP.16A is a 'smart energy plug'. The plug measures the energy consumption of the connected load and can also switch it on/off. Switching can be done from the connected ReMI or MEMo3 web server or with the on/off button on the module itself.

The communication for the energy measurement and switching is done wirelessly via WiFi 2.4gHz and then over the internet to the configured MQTT account. You can then link this same MQTT account to one or more 2-Wire web servers (LoWi3, ReMI and/or MEMo3), or to your own app or cloud application and in this way read and/or switch the plug from anywhere in the world.
Please note, with the LoWi3 you can only read consumption, not switch.

Although you can set up your own MQTT server, we recommend that you choose 2-WIRE.
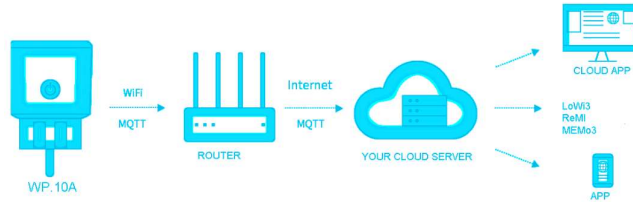
NA. The WP.16A is available with both PEN ground and EDGE ground. The male connection side is universal and compatible with both RAND and PEN ground outlets.
Note: In the LoWi or ReMI DETAIL page you can read signal strength or RSSI. The smaller the value the better signal, --55dBM is OK, >80dBM is not OK.

1. Pairing with WiFi and with MQTT:

The plug **MUST be in the reception range of** the 2.4gHz stable WiFi network **and that WiFi network** MUST **be connected to the internet.** Check WiFi receiver strength with your smartphone, WiFi reaches max.5 to 10m.. No metal objects nearby. You also need an MQTT account (subscription) to make the plug work.

The plug may only be plugged indoors in a 230V/50Hz socket. Then make the necessary connection to your Wi-Fi network and the mqtt account, and then plug in the household appliance with max. 3500 Watt resistive load

2. Pair with WiFi network

The first time the plug is connected, it will light up in orange color after a few seconds and start walking around in orange after a few seconds. The Plug is now a "WiFi access point".
NB Change existing WiFi link: Restart and then press the button within 3 seconds (approx. 5 seconds) until the LED remains solid orange. The plug now remains "access point" for about 1 minute and shows an orange running light.
Note: Manual upgrade: With a paired plug LED Long press (approx. 5 sec. until the LED lights up solid blue), results in a firmware upgrade.
Note: WiFi range: IMPORTANT: Make sure that the distance between plug and router is as short as possible during WiFi pairing and also during firmware upgrade!!
PLUG ACCESS POINT:

Select 'networking' on your laptop, smartphone or tablet and if it works properly, the list should now read: '2-WIRE-PLUG'. **Select this network**. If you are asked for a key: '**adminPLUG**'.
Automatically your web browser will open and after a maximum of 1-2 minutes you will be redirected to a **REDIRECT** page where you can enter the IP settings.
Note: If this does not work automatically, go to 192.168.4.1 (type in the browser toolbar). If it doesn't work immediately, try to pair via smartphone or tablet and be sure to check the WiFi signal. Also check if the PLUG still

has an orange running light and if necessary watch the PLUG video tutorial on the 2-Wire website.

REDIRECT PAGE

Once on the redirect page, click on **'Configure WiFi'**
A list of networks in your area will appear. You can now select your WiFi network from the list (SSID), and also enter the password of your network.

MQTT BROKER
You can order an MQTT Token via the 2-WIRE website, then you will get a url and a token which you can enter here.

Make sure that there is no space at the end of the token.

With a 2-Wire account, you don't need a password, just add the DNS 8.8.8.8 and press save.

You will receive the confirmation and also the MAC address of the plug.
NB copy this MAC address (also printed on the sticker of your plug) because this is important if you are going to configure the plug in your LoWi3, ReMI or MEMo3 web server.

If the plug flashes red, you have entered an incorrect SSID or WiFi password and you need to re-enter the configuration.
If the Plug lights up solid green or solid red, it is off or on. Test yourself with the on/off button.

Once all network data and MQTT account have been entered, the laptop has to go back to the existing WiFi network and there you surf to the configuration page of your LoWi3, ReMI or MEMo3 web server to enter the MAC address of your PLUG.

2. Operation and configuration via tablet or PC:

LoWi3 & ReMI
In **LoWi** you need to be connected to the same MQTT account (same Token) as the plug to be connected.
Then you choose a free channel, select "channel Type" = MQTT,
Enter the mac address of your plug, at "para1" enter the number "1" and you give a recognizable name for the user. Press "SAVE" with password "adminLOWI".
With LoWi3 you can only monitor and not switch.

The configuration in **ReMI** is done in almost the same way, only here you choose 'MQTT PLUG' as "Channel Type". With ReMI, however, you can switch both manually from the web server and automatically via logic (on time, on injection, on peak consumption, temperature,...).

Channel Type		Device Id		Para1	Para2	Units		Name
CH01	P1 port	Import-Export		0	0	kWh		IMPORT - EXPORT
CH02	P1 port	Import H+L		0	0	kWh		IMPORT H + L
CH03	P1 port	Export H+L		0	0	kWh		EXPORT H + L
CH04	MQTT	98f4ab275424		4	0	kWh		MEMO SOLAR Nr12
CH05	MQTT	f008d1d98b20		1	0	kWh		WiFi PLUG heater

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On the detail page you can read the signal strength of the plug. The smaller the RSSI number, the better the reception. In any case, the value must be less than -80dBm.

So -77dBm is smaller than -80dBm (as below) is just right:

MEMo3

Also in MEMo3 you need to be linked to the same MQTT account (=Token) as the plug to be connected. Next, you create a new channel in Level3.

Select the module "MQTT" and the mode "Bistable", the Modbus address and sub-address to "0", MAC address (12 characters without space or without decimal character), CHnr "1", a recognizable name for the user and press "SAVE".

With MEMo3 you can switch both manually from the web server and automatically via logic (on time, on injection, on peak consumption, temperature,...).

3. General remark:

- The most recent datasheet can be found on the 2-WIRE website at the product page.
  WP.16A/E is the version with pin earthing (type E)WP.16A/F is the version with edge grounding (type F)
- The WP.16A plug can be read and controlled simultaneously via MQTT via multiple web servers (or external applications) from anywhere in the world.
- The WP.16A plug only works via an **MQTT (optional token required!!)**
- Manual operation can be done via the switch button on the plug.
- Upgrading the firmware can be done by long pressing (about 5 seconds to blue color) on an internet-connected plug
- Symbols: ⌂Use indoors only, CE complies with applicable EU directives

4. Technical data:

General:

WiFi network 802.11 b/g/n/e/i (2.4 GHz), which needs access to the Internet. Built-in antenna.
Tx pwr:802.11b:+20dBm, 802.11g:+17dBm, 802.11n:+14 dBm
Rx Sensitivity:802.11b: -91 dbm (11 Mbps) 802.11g: -75 dbm (54 Mbps), 802.11n: -72 dbm (MCS7)
Security: WPA/WPA2, Encryption: WEP/TKIP/AES
Network Protocol: IPv4, TCP/UDP/HTTP/FTP
Power supply: 230V/50 Hz
Mono-stable relay-10A/230V, max.3500Watt resistive load.

Operating conditions:

Operating temperature range: 5 °C to 40 °C, indoor mounting
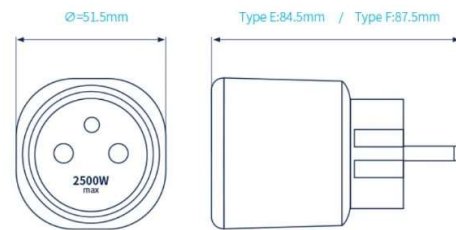Maximum humidity: 80 %, no condensation, Max.: 2000m

Physical Properties:

Housing: Plastic, self-extinguishing UL94-V0
Degree of protection: IP20, EN 60529
Dimensions:

- Type E:51.5*87.5mm;
- Type F:51.5*84.5mm

Labels:

CE : In accordance with EMC and low voltage directive:
EMC: ETSI EN 301 489-17 V3.2.4; RE: ETSI EN 300 328 V2.2.2:, Safety: EN IEC 61058-1:20; RoHS.

9. Installation instructions

The installation is preferably carried out by someone with at least a basic knowledge of PC/networking.

10. Support

Would you like to have the product repaired in case of a possible defect? Please contact your supplier or order "inspection module" online.

11. Warranty provisions

The warranty period is two years from the date of delivery. The delivery date is the invoice date of purchase of the product by the consumer. If no invoice is available, the production date applies. The consumer is obliged to inform Qonnex bvba in writing of the lack of conformity, and this at the latest within two months after discovery. In the event of a lack of conformity, the consumer is only entitled to a free repair or replacement of the product, which is determined by Qonnex.

Qonnex is not responsible for a defect or damage resulting from incorrect installation, improper or negligent use, incorrect operation, transformation of the product, maintenance in violation of the maintenance instructions or an external cause such as moisture damage or damage due to overvoltage. The mandatory provisions in national legislation on the sale of consumer goods and the protection of consumers in countries where Qonnex sells directly or through distributors, agents or permanent representatives take precedence over the above provisions.

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