Safety Warning

Wi-Meter installation involves working inside a circuit breaker panel, therefore it should be done by a qualified professional in accordance with the local electrical code. Use protective equipment and take extreme caution if you are unable to cut the power to the panel.

Do not expose Wi-Meter to water, direct sunlight, or temperatures above 50°C / 120°F.

Installation Instructions

Package Contents

1. Wi-Meter device
2. 12 Split-core current transformers (CTs)
3. Wi-Fi Antenna
4. Mounting screws
5. Double-sided adhesive tape
6. AC/DC power adapter
7. Micro USB cable (1.5m)

Installation Requirements

Wi-Meter installs on any circuit breaker panel or a splitter box, including 1-phase, 1-phase 3-wire (split phase), 2-phase and 3-phase ones. It also reads up to 4 wired temperature sensors, which are sold separately. Maximum panel voltage: 600V. It's a safety limitation. If you need to measure current in systems over 600V, please contact us for special quote.

Wi-Meter is powered with 5VDC using the included AC/DC adapter and a micro-USB cable. **An AC power outlet** is required near the installation spot, so that the USB cable would reach to the Wi-Meter.

If you are going to install it on a bus bar panel, you will need to order different CTs. Measure the width of the bus bars and the space between them, and contact us.

Because the Wi-Meter installs outside of the breaker panel / splitter box, you will need to locate a ¾" or 1" knock-out near the place where the device will be mounted. You'll need a flat screwdriver and pliers to open the knock-out. If there is none, you will have to drill it with a **step drill**.

If you are planning to attach the Wi-Meter device to a wooden panel, you'll need a **phillips screwdriver**. Use the included double-sided adhesive tape to attach the Wi-Meter to smooth surfaces, such as metal.

Wi-Meter is designed **for indoor use only**. If your panel is outside, you can place it in a weather-proof box.

Wi-Fi Configuration

You will need an iOS device: iPhone, iPod touch or iPad to connect the Wi-Meter to your Wi-Fi network. Our Android app is currently under development. Our web app doesn't allow setting up the Wi-Fi, but it can show almost everything that the iOS app can.

Download the Wi-Meter app from the Apple AppStore and run it.

Create an account in it and confirm your email address.

Once you're logged in, you will see the Account view.

You will need to create a location (with a physical address) to associate with your account.

After that, tap on the menu button in the upper right corner and choose Wi-Fi Setup.

Power up the Wi-Meter device. You will see its serial number in the form "wm-123456" in the Available Devices list. Tap on it. The app will ask you for a Device Key (password), which can be found on the back of the Wi-Meter.

After you've entered the Key, the device will be assigned to your account and you will be presented the view with available Wi-Fi networks. The first one in that list is the one which your iOS device is currently connected to. If you don't see the network name there, just tap on the "+" button to enter the SSID (network name) manually. Otherwise tap on the network and enter the password.

As you save the password, the device will restart and try to connect to your Wi-Fi network. When device is online, the white LED on it will blink slowly, once every 2 seconds. At this point you can simply tap "Back" in the app and exit to the main view, where you will find the new Wi-Meter.

If the LED keeps blinking quickly, tap on Back, restart the Wi-Meter by powering it off/on, then retry setting up Wi-Fi.

Note that the app will remember the Wi-Fi password you entered, so it will be easy to set up other Wi-Meter devices.

Installation Steps

Power off the electrical panel, if you can. If there is a main breaker in the panel, turn it off, but be aware that the supply mains are always live.

Open or remove the panel cover.

Locate a ¾" or 1" knock-out near the place in the panel where the space allows running the wires through it and suitable for mounting the Wi-Meter device outside of the panel. **Remove the knock-out** with a flat screwdriver and pliers.

Insert the plastic split grommet into the hole to protect from its sharp edges.

Mount the Wi-Meter device near the knock-out, within 25cm / 10" from it. Use the self-tapping screws for attaching to a wooden panel, or a two-way tape for smooth surfaces.

Plug the AC-DC adapter into the AC outlet, connect the USB cable to it and connect the other end to the Wi-Meter. At this point the white LED should start blinking on the device.

Install the bigger CTs on the mains input. Two of your CTs in the home kit or three in the business kit are bigger than the others. They are called type 50 and can measure up to 400A. Clamp them over the supply mains. If those wires are thicker than 16mm, you will need bigger CTs, for example, Type 100.

When closing the Current Transformers, always make sure to "click" the latch!

Do not clamp the neutral wire. Clamp only the phases.

You will need only 2 CTs for split-phase (a.k.a. 3-wire 1-phase) 120/240V systems to measure the total supply power.

For 3-phase systems with or without neutral, clamp the CTs only over the 3 phase wires. This will give you the best measurement accuracy. It's also possible to use only two CTs, if you are worried about saving an extra channel on the Wi-Meter, at the expense of the measurement precision.

Run the CT wires along the panel walls and through the break-out to the Wi-Meter.

Write "M" on the connectors of these CTs with a marker, to identify them as the Mains / Main Power.

Connect the "M" connectors to the first ports on the Wi-Meter. The first port is the top one when the logo is upright.

In the iOS app, find the Wi-Meter in the main view. Tap on it and select Settings. Then tap on the device's serial number under DEVICE SETTINGS.

Next view will show you the device password and Port Setup button.

Tap on **Port Setup**. The app will show you a Connecting pop-up window and will establish a Bluetooth connection to the Wi-Meter.

Once the connection is established, the next view will show you 12 red bars representing the 12 input channels, and the current readings in them for each channel. Note that a disconnected port may show some random number - just ignore it.

Tap on the top 2 or 3 red bars (depending on how many CTs you connected for the main power measurement). They will create a group with a blue bar. Tap on it and enter the following information:

- **Consumer name**. For example, Total Power.
- **Consumer – Producer** switch. Currently Producers are not supported, but we're working on them.
- **Main Power** switch. Turn it ON. There can be only one Main Power in the Wi-Meter.
- **Sensor type**. Select the type of CTs (sensors) you used for the Main Power. Please note that all CTs of the group must be of the same type. A group can have 2 or 3 ports and it measures one electric device or producer.
- **Electrical Service Type**: select the service type.
- **Voltage**: select the voltage between the phase and neutral. If you don't have a neutral on a 3-phase system, enter the voltage between the phases divided by 1.73. If it's a 600V service, select voltage 347V. If it's a 400V one, select 230V. For 380V, select 220V.

- Choose an **icon**.
- Tap on **Save** in the upper right corner.
- This is not yet saved to device or to our server. This information stays in the app until you tap on **Save** in the **Port Setup** view.

Let's continue with the Current Transformers.

If you're about to measure a 40A or less circuit, and the wire diameter coming out of the circuit breaker is no more than 6mm, you can use our small CT called **Type 5s**.

Clamp the transformer over the wire that comes out of the circuit breaker. Run the CT wire along the panel wall, through the hole. Write the abbreviated consumer name on the connector.

In the app, tap on the next red bar in the Port Setup. One port will light up on the device (if you still have a Bluetooth connection). Connect the CT connector to the lit port.

Tap on the bar with the consumer name in the app and enter the information there. For single-pole (single-phase) consumers, enter the voltage between the phase and neutral. If you are measuring the dual-pole consumer on a split-phase system, enter the double voltage, which will be the voltage between the poles.

Please note that if your device is powered by 2 poles or phases without using the neutral wire, for example, your stove, A/C or dryer, it's sufficient to use only 1 CT for measurement, clamped over any of the two wires. You would enter 240V for voltage on a 120/240V system used in North America.

If you have a 3-phase system and your consumer is connected to a dual-pole circuit breaker, depending on whether the consumer is using a neutral wire the voltage setting should be as follows:

- Consumers without the neutral wire: use only one CT and enter the voltage between the 2 phases. For example, 208V for a 208/120V 3-phase panel.
- Consumers with the neutral wire: use two CTs, one for each wire, and enter the voltage between the phase and neutral. For example, 120V for a 208/120V 3-phase panel.

When measuring 3-phase consumers with only 2 CTs, enter the Voltage as voltage between the phases divided by 1.15. For a 600V consumer, enter 520V.

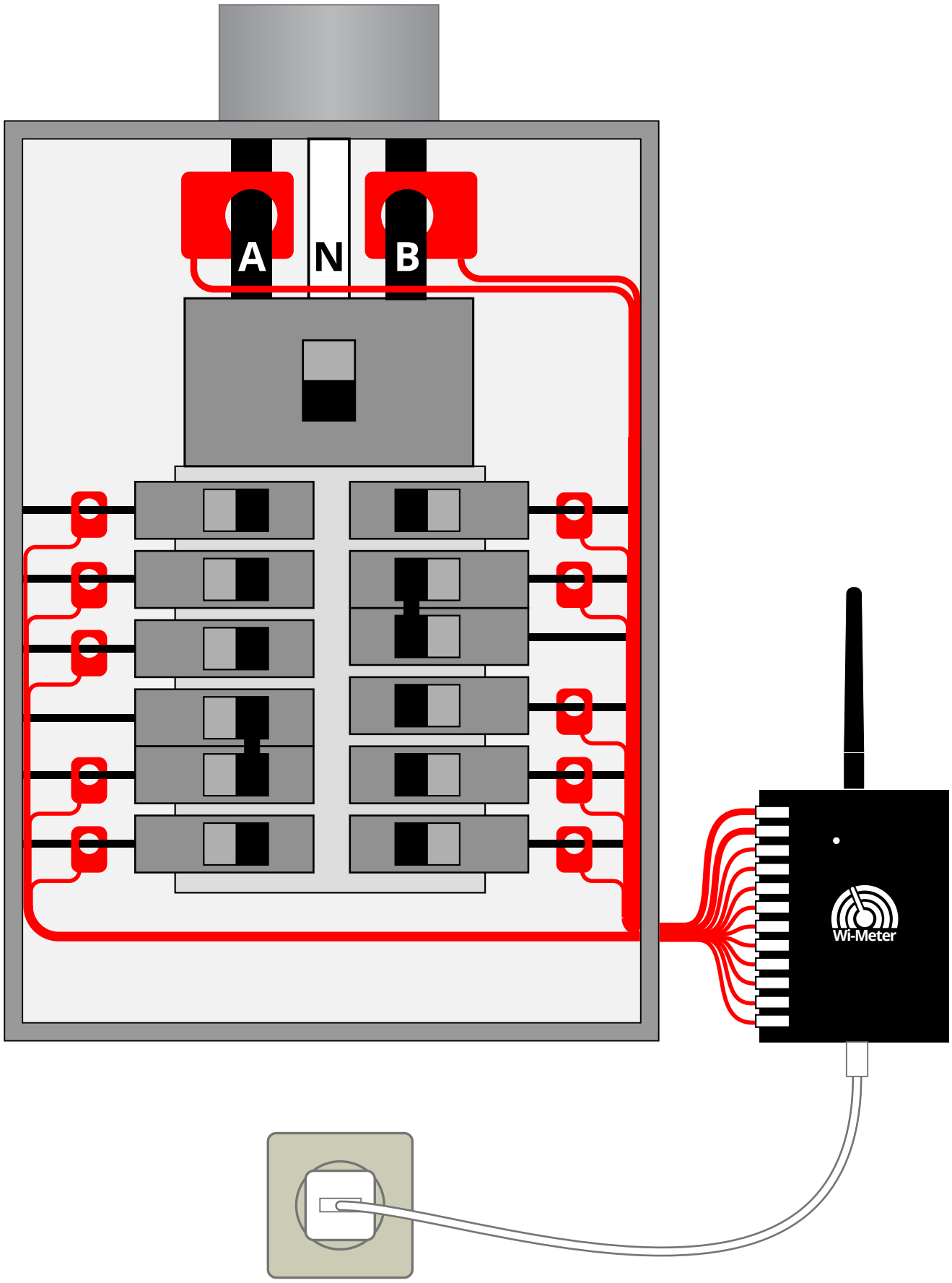
It is also possible to measure the 3-phase consumer with only 1 CT. In this case, enter the voltage as the voltage between phases multiplied by 1.73. For a 600V consumer, enter voltage 1040V. Please note that the measurements won't be accurate if your load is not symmetric, which means it draws different currents from the 3 phases. An example of a symmetric load would be a 3-phase motor in a good working condition.

When you're done entering the port configuration, tap on **Save** in the Port Setup view to save this to server.

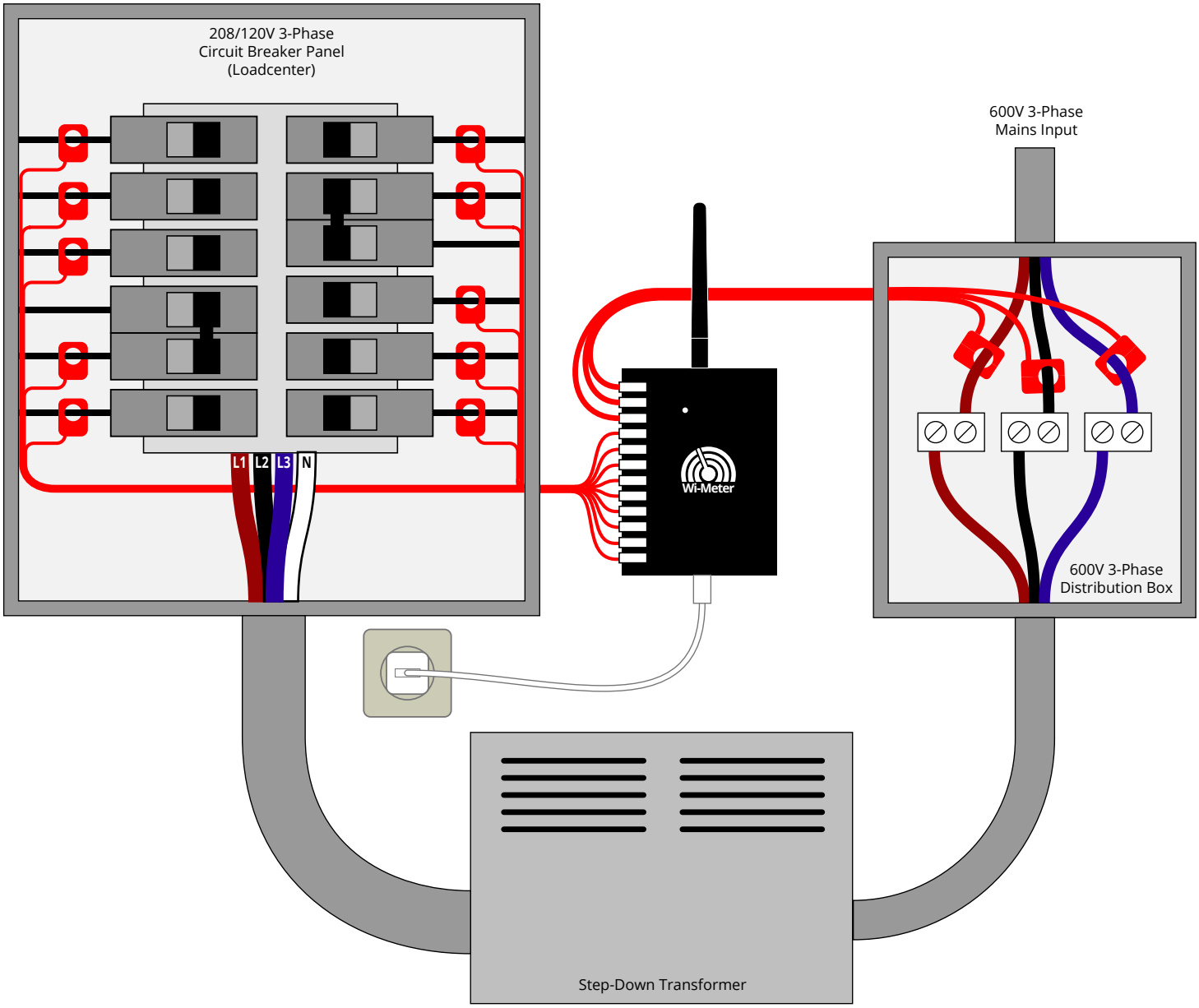
There is a feature allowing you to **save and retrieve port configurations**. In the Port Setup view, tap on the menu button in the upper right corner. Port configurations are stored on your iOS device, they are not synchronized to server.

Note: in the Port Setup view the bars with the consumer names are color-coded according to the sensor (CT) type: Green for Type 5/5s, Blue for Type 50, Red for Type 100.

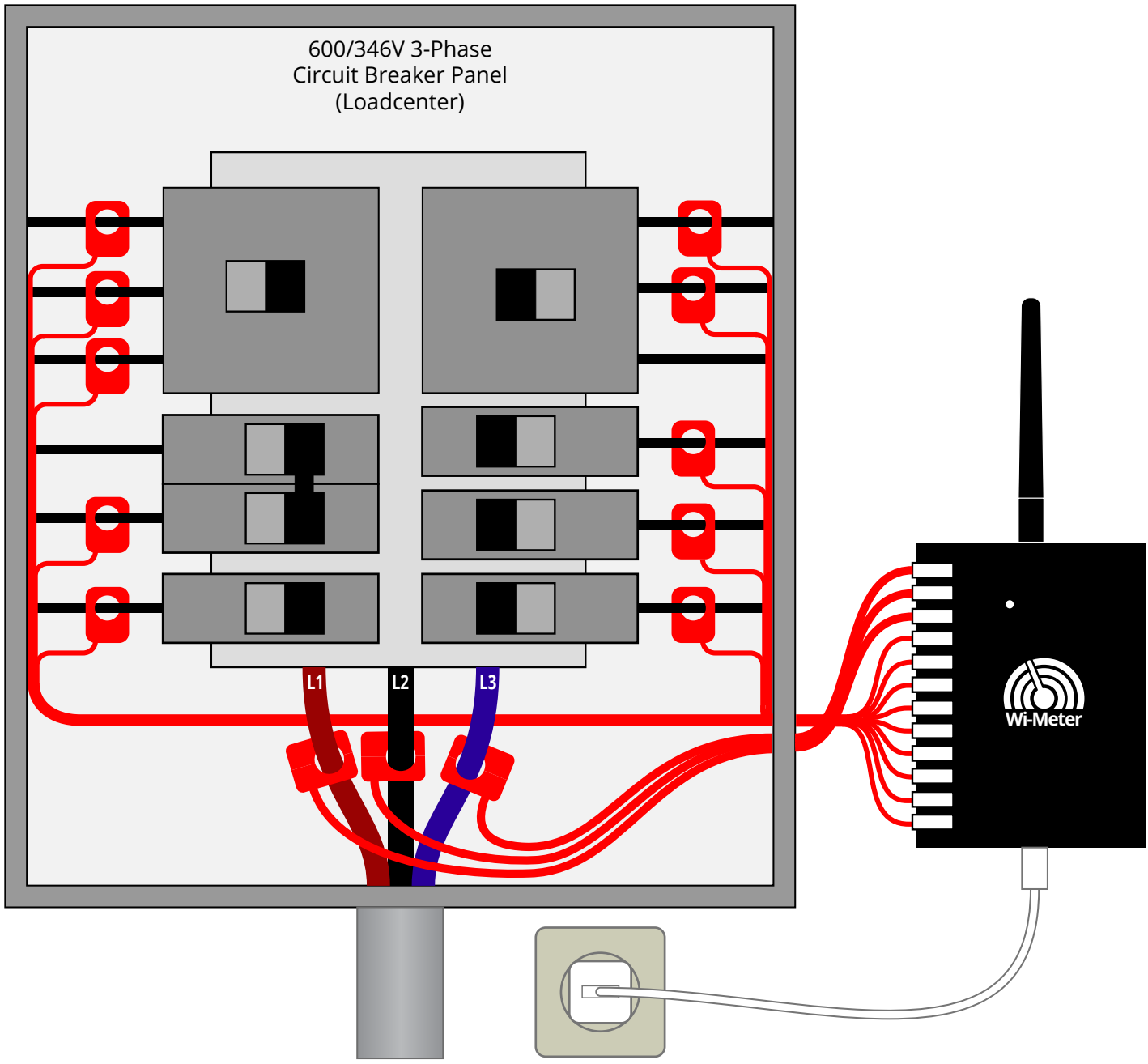
Wi-Meter installation on a home circuit breaker panel (1-phase, 3-wire, 120/240V)



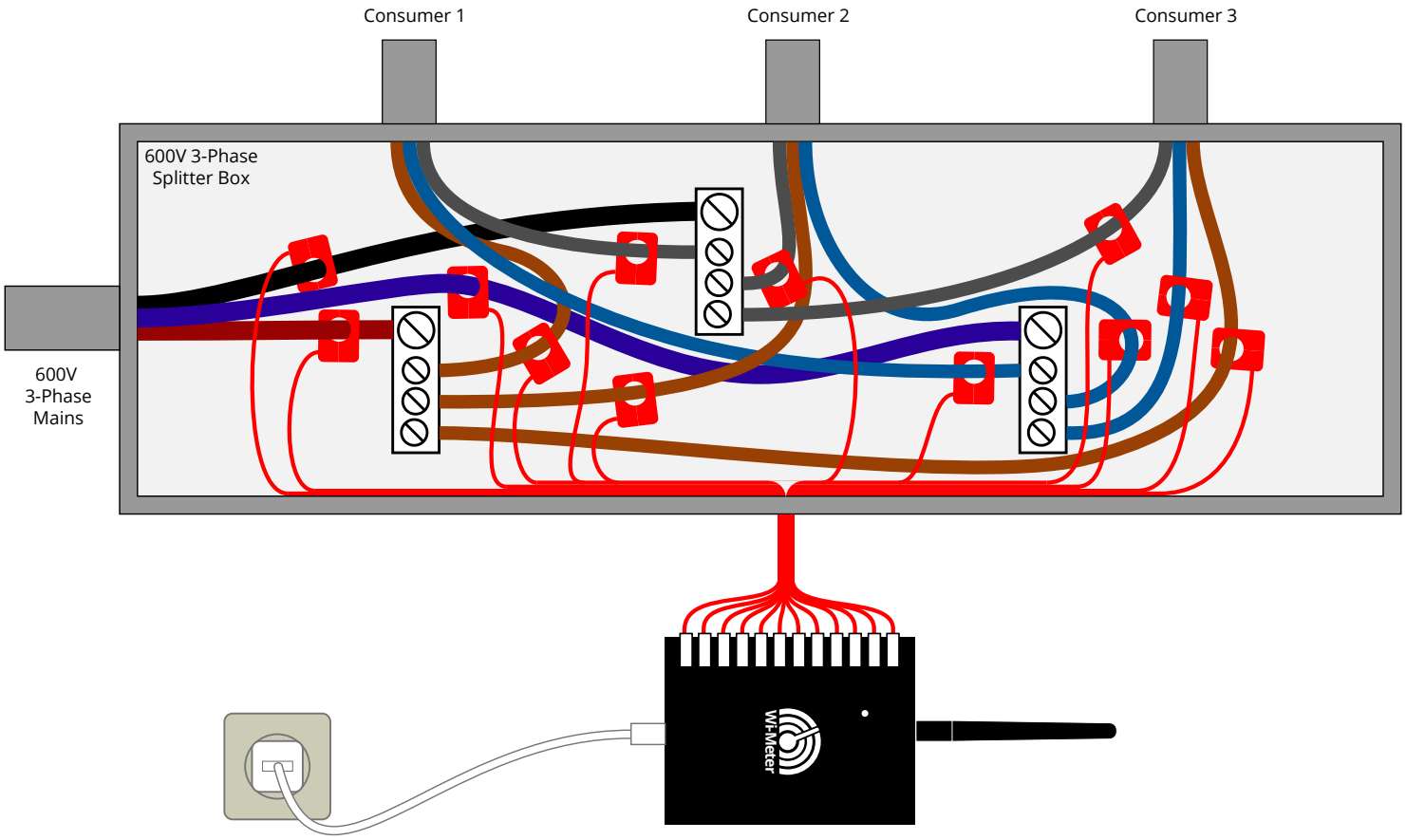
Wi-Meter installation on an industrial breaker panel (3-phase, 4-wire, 120/208V) with a step-down transformer



Wi-Meter installation on a 3-phase breaker panel
(3-phase, 3/4-wire, 600/346V, 400/230V, 380/220V, 208/120V)



Wi-Meter installation on a 3-phase splitter box

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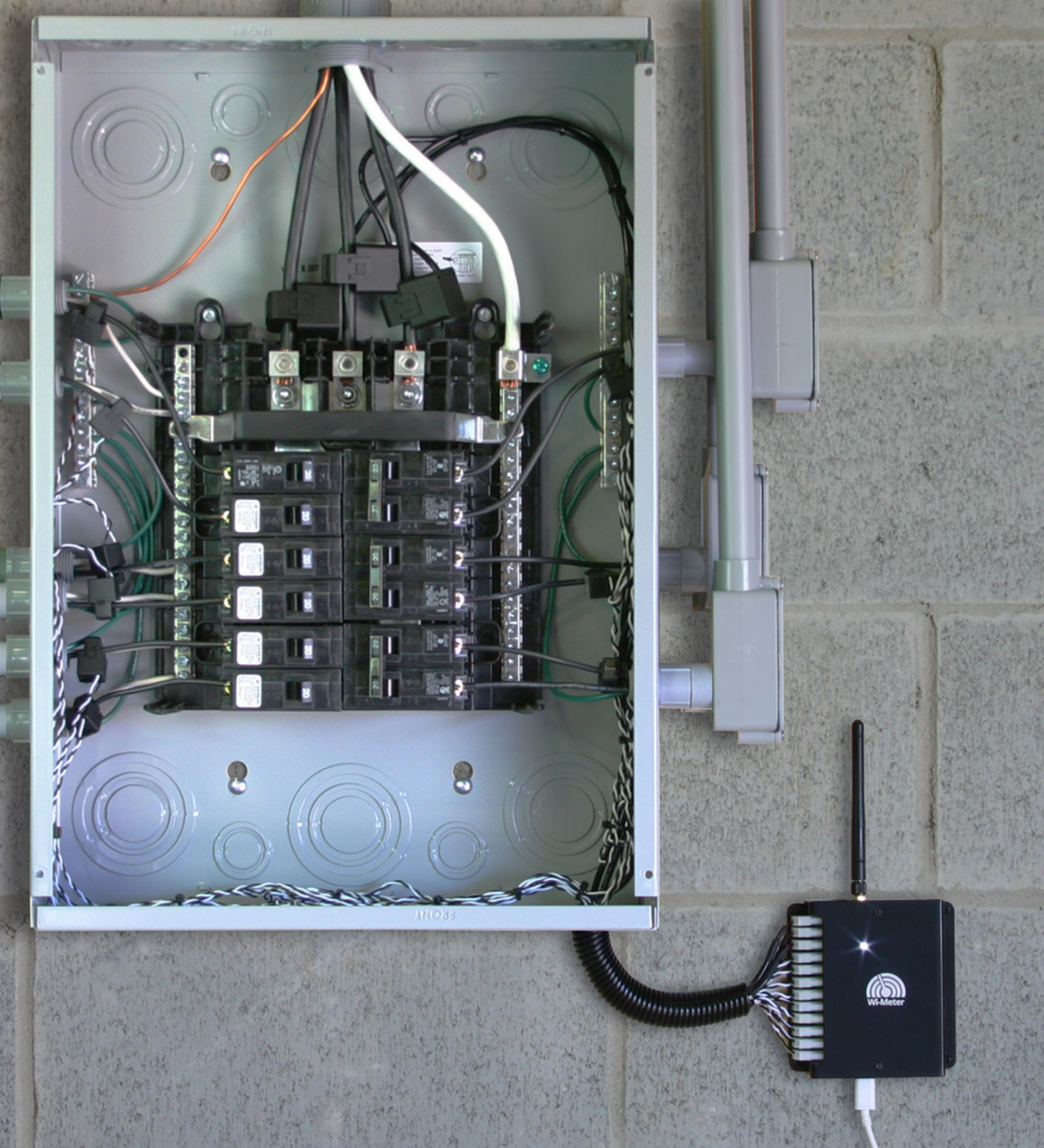
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