

neurio

1-Phase Installation Guide



It is highly recommended that this product be installed by an electrician or other qualified professional. Please read and review the safety warnings provided at the end of this guide.



Got Everything?

Neurio Sensor Box

- | | |
|---|---|
| ☐ Neurio Sensor W1 | ☐ 2 Current Transformers (CTs) |
| ☐ Voltage Cable | ☐ 2 Wire Taps |
| ☐ Antenna | ☐ 2 Self-Drilling Screws |
| ☐ Antenna Cable | ☐ 2 Antenna Mounts |

Tools

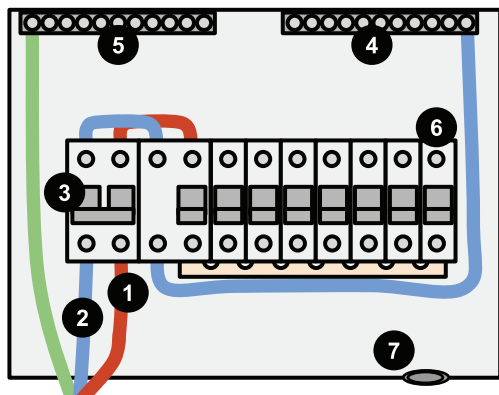
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|---|
| ☐ Screwdriver |
| ☐ Flashlight |
| ☐ Multimeter (Optional) |
| ☐ Phillips #2 Bit and Cordless Drill |

1 Turn Off the Main Breaker

Neurio should only be installed when the main breaker in the panel is turned off.

2 Check the Consumer Unit

Take the cover off the Consumer Unit (CU). It should look something like this:



- 1 Mains Service Wire
- 2 Neutral Wire
- 3 Main Breaker
- 4 Neutral Bus Bar
- 5 Earth Bus Bar
- 6 15A or 20A Single-pole Breaker
- 7 Wiring Knock-Out

Take special note of where the mains wire enters and connects to the main breaker. High voltage will remain on these terminals even when the main breaker is turned off, so caution must be taken to avoid them.

3 Mount Neurio

The leads on the CTs are 4ft long, and the voltage cables are 2ft long. Try to find a location that's within 4ft of the mains service wire and 2ft of the breakers and the neutral bus bar. Make sure there's enough room on either side of Neurio to connect the CTs, voltage cable, and antenna cable.

Once you've found your location, drill the two self-drilling mounting screws into the panel to mount Neurio.

4 Connect the Voltage Cable

Plug the voltage cable to the matching connector port on Neurio.

Take the white wire and connect it to the neutral bus bar.

If an empty breaker is available, connect Neurio's black wire to it. If no breakers are available, disconnect the wire from an occupied 15A or 20A breaker, and replace it with a jumper wire of equivalent or lower gauge. Use the included wire tap to connect the jumper wire, Neurio's black wire, and the original wire back to this breaker.

The red and blue wires on the voltage cable are unnecessary for a single-phase home, so use the marette included in the Neurio package to cap them together, and leave them unused.

5 Connect the Current Transformer

When performing this step, remember that high voltage may still be present on the terminals of the main breaker, so caution must be taken to avoid them.

Your Neurio Sensor will come with two CTs, but only one is necessary for a single-phase home. Keep the other one in case you need it at a later date.

Clip the CT around the mains wire. In Europe, this wire is typically brown or black. Do not clip it around the blue or green wires.

Plug this CT into Port #1 on the Neurio Sensor.

6 Connect the Antenna

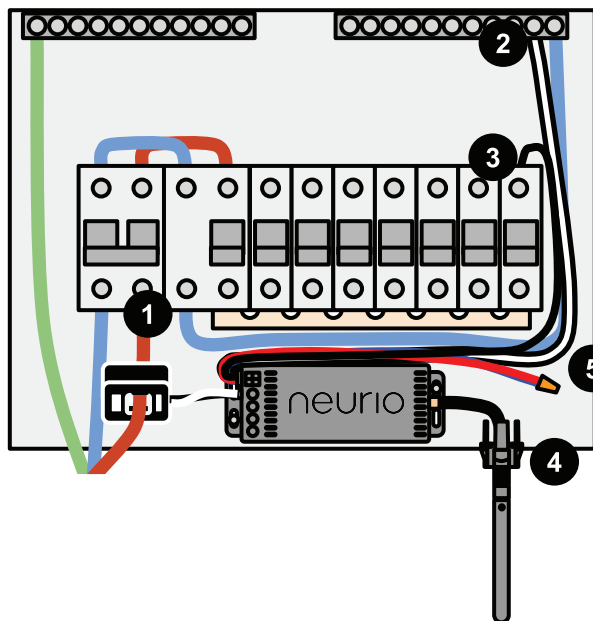
In smaller homes, you may choose to simply connect the antenna directly to the Neurio Sensor and leave the antenna inside the CU. If greater range is necessary, then the cable and antenna mount should be used to mount the antenna outside the panel.

Connect the antenna cable to the antenna connector on your Neurio. Feed the other end of the antenna cable through either the 0.5" or 0.75" antenna mount. Use whichever size matches the knockouts in your panel. Fasten the antenna cable onto the mount using the nut that is supplied on the cable. Then connect your antenna to the antenna cable.

Find a 0.5" or 0.75" knockout that is within reach of your Neurio using the included antenna cable. Most of the 0.5" and 0.75" knockouts will have an inner knockout and an outer ring. For either size, you only need to remove the inner knockout and should leave the outer ring in place. Use a screwdriver to remove the inner knockout. Feed the antenna mount through the knockout until it clips into position. For more detailed instructions and pictures, refer to Step 6 of the 2-Phase Installation Guide.

7 Check Your Work

Now the panel should look something like this:



- 1 Mains Service Wire with CT connected and label facing away from the main breaker
- 2 Neutral Bus Bar with Neurio's White Wire connected
- 3 15A or 20A Single-pole Breaker with Neurio's Black Wire connected
- 4 Antenna Cable, Mount and Antenna
- 5 Neurio's Red and Blue Wires capped with a marette

8 Close the Panel

Replace the cover on the panel and use the supplied Neurio breaker sticker to indicate which breaker Neurio's black wire is connected to. Once the panel is closed and labelled, you can turn the main breaker back on.

You're almost done! Refer to the next section, Installation Validation, to make sure that Neurio is installed correctly. After that, the homeowner just has to follow the Welcome Guide to connect their Neurio sensor to their Neurio account.

9 Installation Validation

After installing Neurio and before the homeowner has connected it to the WiFi network:

You should hear 1 short beep, followed by a short chime. If you don't hear these sounds, or if you hear a descending tone, check the installation to make sure everything is connected properly.

Neurio must only be powered on when the breaker panel is closed, so you can turn Neurio on and off by flipping the breaker that its black wire is connected to. This breaker should be labelled on the breaker panel.

When powered on, Neurio will play the following tones to indicate its status in sequential order:

Tone	Indication	Description
Short Beeps	Voltage Check	One beep for each voltage wire that is connected. <i>For 1-phase installations, there should be 1 beep to indicate that the black wire is connected, but the blue and red wires are not.</i>
Falling Tone	Voltage Warning (conditional)	Indicates that two or more of Neurio's voltage wires are connected to breakers on the same phase. <i>For 1-phase installations, this tone is a sign of an installation problem. Only the black wire should be connected.</i>
Short Chime	Neurio's WiFi Network Started	Neurio has started hosting its own WiFi network. The homeowner can join this network to configure Neurio and connect it to the homeowner's own WiFi network.
Long Chime	Neurio Join Network Succeeded	Neurio successfully joined the homeowner's WiFi network.
Falling Tone	Neurio Join Network Failed	Neurio was unable to join the homeowner's WiFi network. Neurio will now start hosting its own WiFi network again to allow the homeowner to re-connect to Neurio and re-enter the WiFi credentials.

If Neurio is already connected to the WiFi network when it is restarted, you should also hear a long chime one minute after the short chime.



Safety Warnings



Installing Neurio requires working with voltages that are hazardous to human health, and thus should only be done by an electrician or other qualified professional. Installations should be performed in accordance with the applicable electrical code for the region in which Neurio is being installed. Whenever possible, power should be disconnected upstream from the installation location before attempting installation of Neurio. If power cannot be disconnected, high voltages may still be present, and caution must be taken to avoid injury. If Neurio is not used as instructed, its protection mechanisms may be impaired.

Rules:

1. Installations should be performed by a qualified professional.
2. Do not use Neurio with voltages that exceed 240V.
3. Only install Neurio in approved breaker panels or enclosures.
4. Neurio must not be exposed to moisture, direct sunlight, extremely low or high temperatures, and conductive pollution. Consult the User Manual for Neurio's acceptable operating environment.