

Dryer Receptacles

These are useful if you are out visiting far away friends or family and want to charge up at their house. There are two types: the older three prong NEMA 10-30, and the newer four prong NEMA 14-30. Both are 240V, 30A, for a de-rated power of 5.7KW, or a bit more than half of what a typical Tesla garage receptacle would give you (the NEMA 14-50). Not bad and will work fine for overnight charging when visiting.

NEMA 14-30

Tesla is no longer selling a NEMA 14-30 adapter. If you want to use a 14-30 receptacle with your UMC, your only choice is to build an adapter yourself, or buy one from here: <http://www.corddepot.com/shop/ev-products/>

The NEMA 14-30 is easy to make. First, get a NEMA 14-50 receptacle (I bought four of these to make the various adapters below). Here's an amazon link, select the 50A version when adding to cart:

Camco® PowerGrip™ Replacement Receptacle Female

http://www.amazon.com/gp/product/B00192QB9M/ref=oh_details_o04_s02_i00?ie=UTF8&psc=1

And then a NEMA 14-30 plug and cord:

PETRA 90-2028 10-Foot 4-Wire Dryer Cord

http://www.amazon.com/gp/product/B0014KO11O/ref=oh_details_o04_s01_i03?ie=UTF8&psc=1

Making the adapter is straightforward. If you look at the FACE of a NEMA 14-50 RECEPTACLE, the bottom round prong should be connected to ground. The two middle prongs are the two hot 120V connections, each connected to a different phase/leg (for a 240V supply, doesn't matter which hot is which), and the top blade is connected to neutral.

The NEMA 14-30 plug is similar. In this case the round prong is ground, the L shaped one is neutral and the two others are the hots. Use a voltohm meter to determine which wire is which and wire it up. Ground to ground, neutral to neutral and each hot to each hot. You'll have to cut the lugs off the wire if you used the dryer cord from Amazon above, and strip off insulation. For all my adapters, I wound electrical tape around the cord where the NEMA 14-50 receptacle gripped the cord to make sure the strain relief part of the receptacle grabbed the cord tightly. Of course, in actual usage, don't rely on the strain relief and treat these home made adapters with care – you never want a loose wire somewhere as it will heat up and maybe start a fire.

Once you've finished wiring and closed everything up, use the voltohm meter again to test that everything is connected correctly.

When complete, it'll look like this:

As you can see, I labeled all my adapters with a reminder to set the Tesla car's charging app to maximum 24 amps when using this adapter. If you have an RV you might also want to label the adapters as **TESLA CHARGING ONLY, NO RV USE.**



NEMA 10-30

This is the one that gives electricians fits because the NEMA 10-30 receptacle has no ground, while the Tesla requires a ground. The NEMA 10-30 has two out of phase 120V hots (for 240V) and a neutral. It turns out that in household wiring, the neutral and ground wires are connected together at the main breaker panel. So the solution is to connect the NEMA 10-30 neutral to the Tesla ground. This will work FOR THIS APPLICATION ONLY. As usual, **never use this adapter for anything else.**

So, as usual, buy a Camco® PowerGrip™ Replacement Receptacle Female
http://www.amazon.com/gp/product/B00192QB9M/ref=oh_details_o04_s02_i00?ie=UTF8&psc=1

And then a NEMA 10-30 plug and cord:

PETRA 90-1028 3-Wire Dryer Cord, 10-Foot, 30A
http://www.amazon.com/gp/product/B000R8UA2S/ref=oh_details_o04_s01_i02?ie=UTF8&psc=1

OR

30A 125/250V Dryer Cord [40105]
<http://www.cordtec.com/products.asp?id=439>

If you look at the FACE of a NEMA 14-50 RECEPTACLE, the bottom round prong should be connected to ground. The two middle prongs are the two hot 120V connections, each connected to a different phase/leg (for a 240V supply, doesn't matter which hot is which), and the top blade is connected to neutral.

The NEMA 10-30 plug has an L shaped neutral prong and two flat blade 120V hot blades. Connect the NEMA 10-30 L shaped neutral prong to the NEMA 14-50 round ground prong. Connect each NEMA 10-30 hot to a different NEMA 14-50 hot. Leave the NEMA 14-50 neutral UNCONNECTED.

You'll have to cut the lugs off the wire if you used the dryer cord from Amazon above, and strip off insulation. For all my adapters, I wound electrical tape around the cord where the NEMA 14-50 receptacle gripped the cord to make sure the strain relief part of the receptacle grabbed the cord tightly. Of course, in actual usage, don't rely on the strain relief and treat these home made adapters with care – you never want a loose wire somewhere as it will heat up and maybe start a fire.

Once you've finished wiring and closed everything up, use the voltohm meter again to test that everything is connected correctly.

When complete, it'll look like this:

