

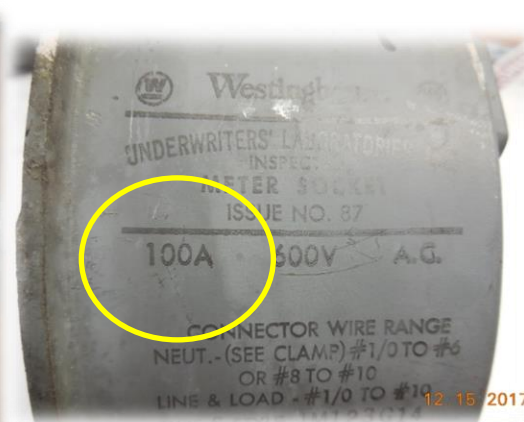
**Why Trust Anyone Else?**

## Round meter socket 60 amp or not?



This question has plagued home inspectors and Realtors for a while now. I hope to help answer this question. The problem comes when a 60 amp meter socket is in place and someone has upgraded the panel to 100 amp service. The round meter socket may be an indication of an electrical upgrade without permits. Typically if there is an upgrade from 60 amp service to 100 amp the local municipality wants the meter socket changed out to a square meter socket

(see photo to the right) as it gives the larger wires more room to bend inside. But there are times when there really is a round meter socket that is truly rated for 100 amp service, these are far and few in between yet I have seen quite a few. Telling the difference can be difficult as it turns out that the only physical difference when looking at a meter socket in place is that the 100 amp meter socket is about  $\frac{3}{4}$ " thicker than the 60 amp meter socket. See photos below, the red meter socket is 60 amp and the grey meter socket is actually a 100 amp round meter socket. Grey socket measures 2- $\frac{3}{4}$ " and the red one measures 2".



The real answer to amperage is wire size. A 60 amp service will typically use 6 gauge copper wire and a 100 amp service will use minimum 4/0 copper wire (some use aluminum which must be larger). Also keep in mind wire sizes grow as the numbers decrease (#18 wire is tiny and #6 is much larger). So one of the keys to telling these apart is the pipe coming from the bottom of the meter socket. Per our photos below note the red 60 amp service meter socket has a pipe coming out of the bottom of 1-3/16" where the 100 amp meter socket has a pipe (often called a raceway in electrical terms) that is 1-1/2".



Electrical code dictates what size wire (and how many) you can run in a raceway. This is all based on heat as we don't want too many wires jammed in to one pipe and they are all hot (temperature hot not electrical hot). Some air is required to cool the wires thus the reason the raceway is oversized to the wires contained.

The problem we run into during a real-estate transaction is when there truly is a 60 amp meter socket and someone has upgraded to a 100 amp service panel you will still only get 60 amps out of a #6 wire. The other real concern is that the upgrade may not have been done by a licensed electrician and now we start to wonder what else was not done properly. Additionally there were likely no permits pulled which could add a fine to the new buyers and then they would have to make sure all is up to current code. Which could require more electrical work.

With electrical our biggest concern is heat and of course fire. According to the National Fire Protection Association (NFPA) electrical issues were the fifth among the top leading causes of residential fires in the US. Others are mostly human carelessness.

While writing this paper a Wisconsin Energies Employee showed up at my home to upgrade the meter. During our conversation he mentioned that many of the older round meter sockets break during upgrades and then the homeowner is without power and must pay to upgrade the meter socket as the meter belongs to WE but the meter socket belongs to the homeowner. Remember most of these round meter sockets are over 50 years old.

My findings on this subject are based on only experience and some internet research. There appears to be no absolute proof to be able to tell the difference between the two meter sockets but I feel there is enough evidence to write this paper and tell you that this is likely the typical scenario we are going to run into when dealing with round meter sockets.