

## Continuous current ratings of UL 414 type Meter Extension sockets explained

Meter socket accessory ratings can often times be confusing. Independent testing laboratories that certify products to specific guidelines which deal with the allowable heat rises, insertion and removal forces, water ingress and product strength to mention a few. If a product has been properly tested, the independent lab provides explicit requirements as to product labeling. This labeling assures consumers that manufacturers have complied with the required standards. This is what you should look for in a compliant label.

**Meter-Treater®**  
**Meter Based Surge Suppressor**

**Split Phase Operating Voltage 120/240 Vac 200 AMP Service MCOV 126**  
**150 MCOV Components**

**190 Amp Continuous with 200 Amp Continuous rated Landis&Gyr**  
**UAT417XGDU**

**200 Amp Continuous with 200 Amp Continuous rated Murray BY120JK**  
Short Circuit Withstand Rating 10,000 RMS Symmetrical Amp, 600 V Maximum  
Wathour meter not included in short circuit withstand rating.

**CAUTION: Springing or Prying the jaws voids warranty, and lowers current capacity.**  
No user serviceable parts. Tampering with this device can be dangerous and may violate state,  
local or federal laws. Electric Company or Electrician is required for removal.  
Dropped or broken devices should not be installed.

**CAUTION: HIGH VOLTAGE INSIDE THIS UNIT. DO NOT TAMPER WITH.**

**Model: MD:**  
eter-Treater, Inc. Lake Park FL 800-638-3788



How do you know if the product you are using or considering has passed the tests? Here are a few pointers. Compliant labels specify the continuous current rating. This rating is very important because it tells you something about the ability of the fittings to handle the flow of current over many years of use. Different meter sockets will result in different ratings depending on the size of that socket and the efficiency (tightness) and mass of the internal design. How can a meter socket adapter attain a higher rating? Easy, by testing a 200 amp continuous rated socket adapter in a Class 320 socket with a manual bypass lever, the adapter will run to higher currents due to the mechanical clamp jaws and larger cooling ability of the heavy duty Class 320 socket. For instance, the Meter-Treater Model 400 (Tested and UL Listed at 200 Amps), in a 200 Amp residential meter socket, will attain a continuous rating of 265Amps in the heavy-duty class 320 socket. In this case we used an L&G / Siemens HQ5D rated at 320 Continuous, 400 Max Amps (Note the de-rating of 80% ( $0.80 * 400 \text{ Amps} = 320 \text{ Amps}$ )). It should be noted that by using a Socket Adapter in a 320 meter socket it has now been de-rated to 265 amps. This may lead to complications such as jaw blade overheat, meter damage, meter socket damage and loss of phase. Lost phase can in turn lead to significant appliance damage.

To make things worse, some manufacturers will attempt to confuse users by 'reverse applying' the allowable de-rating factor to imply that the continuous 265 amp is actually good for 320 amps ( $265\text{Amps}/0.80=331\text{Amps}$ ). The rating here might be presented as 331 Amps and in smaller print 265 Amps Continuous. UL allows maximum Amps based on 80% of Tested Amps i.e. Test Amps of 260 Continuous can claim a maximum rating of 320 Amps. Don't confuse Continuous Amps with Maximum Amps. The real key to a long-term reliable connection is a firm buss connection. The tighter the better and, again, test standards allow for a maximum insertion and removal force of 100 lbs (UL 414 Section 17). If any meter device goes in too easily, then the connection most likely will degrade more rapidly. Experienced meter technicians know this all too well!

Another obvious complication of a class 320 Amp meter socket is the inability to operate the bypass lever with the Meter Socket Adapter in place. The meter and then the cover must be removed first in order to operate the lever. This may actually violate utility policy regarding load breaking.

What about interior clearances and insulators? From experience we have learned that the greater the spacing, and insulation, the less likelihood of arcing. This also means that the more interior volume in a meter socket adapter the less likelihood of arcing.