

K-Base FAQ's

Product Questions

What is K-Base metering?

K-Base metering is the metering of continuous electrical loads above 320 amperes using self-contained watt-hour meters and no external current transformers. This includes class 400 ampere continuous duty and 480 ampere continuous/600 ampere maximum duty meters.

Why would I want to use K-Base?

K-Base metering is a safe alternative to CT metering. Installations require less space and have a cleaner look. Installation costs are considerably less. K-Base meters are self-contained and require in-service testing much less frequent than CT rated meters. The accuracy of K-Base meters is better over the entire load range than CT meters.

How can you remove a meter that is in service, under load?

K-4, K-5 and K-7 meter mounting devices can be bypassed by use of specially designed jumpers. These jumpers are bolted in place, shorting across bars specifically used for bypassing the meter. Once the bypasses are bolted in place (2 for singlephase, 3 for polyphase) the meter can be removed without interruption to the customer's service.

Why are meter multipliers not needed with K-Base?

K-Base meters are self contained, meaning that they do not use external current transformers. With no external transformers to reduce the amperage seen by the meter, no calculations need to be made. K-Base self contained meters can handle the full amperage of the installation, be it 400A or 480A continuous/600A maximum.

Are K-Base meter mounting devices UL listed?

K-Base mounting devices are UL listed. This gives electrical contractors the ability to install the devices in most areas, rather than requiring utility personnel.

How can a self contained meter accept the high currents of 400-600 amperes?

K-Base meters are built with heavy current connectors that are bolted into place using nut/belleville washer assemblies that ensure a solid, non-loosening connection. The meter can withstand a high level of fault current.

Can a K-Base meter be installed upside down?

No. K-Base meters are designed asymmetrically so that they can only be mounted in one direction, eliminating any reverse energy flow on the meter register.

Utility Questions

In case of customer complaints, how do utilities test the meters on-site?

This is done in several ways. Some utilities bypass the meter, remove it and test it on a test board with a Landis+Gyr K-Base test board adapter. Sometimes this is done in a company van. Some utilities have made their own field test adaptors and yet others use a field test unit made by Fisher-Pierce. There are other test adaptors available too.

Do utilities perform acceptance testing of the meters? If so, how do they do that?

K-Base meters are acceptance tested by the respective utility just like they do other self-contained poly-phase meters.

What points do they test the meters at? 30Amps FL, PF, & LL only or at 50Amps as well?

Most utilities test series FL (Full Load), PF (Power Factor) and LL (Light Load). Some also test individual elements too. Normally FL is tested at 50 amps and LL is tested at 5 amps.

Do these utilities, who use the K-base meters, still maintain CT-rated customers such as those with 200:5 or maybe 400:5 or do they use K-base on certain customer segments only and if so, what is their policy on these?

In most cases all 200:5 and 400:5 CT rated customers are metered with K-base meters and in some cases 600:5 clients as well. They may still stock a few transformers and meters for legacy transformer rated locations, but most prefer to meter all pertinent customers with The K-base option. Keep in mind that K-base metering offers lower overall equipment costs, lower installation costs

(quicker, simpler, fewer connections and related equipment, less chance of wiring errors), better accuracy – flat load curve of meter is the accuracy of installation (no CT load curve and related low end accuracy issues) and the installation actually has a higher fault current rating.

What happens if my load exceeds the capacity of the K-Base installation?

If the load gets large enough that the K-Base meter and mounting device can no longer service it, the K-Base mounting device can be converted to a CT enclosure.

How does K-Base compare in cost to CT rated metering?

Many cost analyses have been done and have proven that K-Base installations can save a utility as much as 30% in installation costs. Additional savings are also claimed on periodical testing where K-Base meters only require in-service testing one-third to one-tenth as often as CT rated meters.

How do K-Base meters compare with CT meters in accuracy?

K-Base meters provide a much higher degree of system accuracy. Since the current transformer and meter are tested and calibrated at the same time, as one unit, inaccuracies in the current transformers, housed inside the K-Base meter, are calibrated out. Accuracies at the low end of the load curve are better with K-Base meters since they are calibrated at light load at 5 amperes compared to CT meters effectively calibrated at 20 amperes.

Why would I use a class 400 bolt-in meter rather than a 320/400A plug-in type?

*It is typical for meter personnel to refer to both class 320 plug-in and class 400 bolt-in meters and meter mounting devices as 400 ampere units. The truth is, however, there **is** a difference in the capacity of these installations. Meter sockets have two ampacity ratings: the maximum rating and the continuous rating. The continuous rating is the rating at which the meter socket is tested for heat rise performance. 320A meter sockets are heat rise tested at 320A continuous. They are labeled at 320A continuous/400A maximum. The 320A socket **will not** withstand continuous loads above 320A. A 320A meter socket is designed to work at the 80% level that a 400A circuit breaker trips (320A). A K-Base 400A device **will** withstand 400A continuously.*