Potential Transformer Configuration

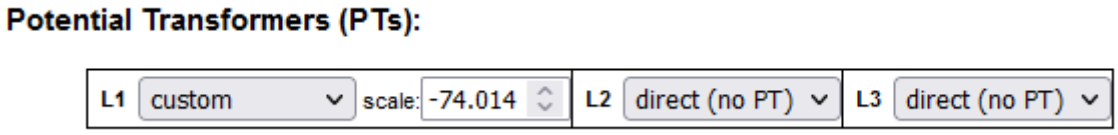
> eGauge Systems cannot guarantee meter accuracy when third party potential transformers are used. It is recommended to use the **EV1000 high voltage sensor** when measuring a high voltage system (480V no-neutral, 347V no-neutral or 600V system), or on a different side of a transformer from where the eGauge is connected.

The eGauge AC voltage inputs can handle up to 277Vrms between any line input (L1, L2, L3) and neutral terminal. If voltages exceed this range, potential transformers must be used to step-down the voltage from the system to the eGauge voltage input terminals.

When using a potential transformer, the eGauge must be configured appropriately in Settings -> Installation -> Potential Transformers. Generic options such as 277:120 and 480:120 are available, as well as specific supported transformer models, such as FDT-480-120.

A set of negated transformer values are also available. Choosing this negates the polarity of the voltage. This has the effect of negating all power calculations using this transformer setting.

The PT ratio is configured in Settings -> Installation under the PT section. To use a custom ratio, choose "custom" and enter the scale factor:



Custom potential transformer ratios

If a custom, unsupported step-down transformer ratio is used but not available in the drop-down menu, a custom scale factor will need to be used.

To calculate a custom potential transformer scale factor, use the following calculation:

secondary / primary * model_pt_value = SCALE_FACTOR

where:

secondary	is the secondary voltage
primary	is the primary voltage
model_pt_value	is a model-specific value (see below)
SCALE_FACTOR	is the custom scale factor you should use on the eGauge2 and EG30xx

The model_pt_value number will vary based on what model eGauge is in use, as described below (note values are negated):

EG4xxx (with LCD display)	-74.0140
EG30xx (no LCD, w/ Ethernet)	-4.003
eGauge2 (no Ethernet, no LCD)	-4.003

For example:

EG4xxx with a 277:240 transformer would have a custom scale of -64.128:

240 / 277 * -74.0140 = -64.128

Similarly, an eGauge2 or EG30xx with a 277:240 transformer would have a custom scale of -3.4683:

240 / 277 * -4.003 = -3.4683
