What will the line-to-ground voltage be of a transformer with a delta secondary or with a center-tapped delta secondary?

Can the delta secondary or center-tapped delta secondary have a neutral?

If the delta secondary has not been referenced to ground by the installer by corner grounding the unit, then it is impossible to guess what the phase to ground voltages may be. If the unit has been corner grounded, then two of the phase to ground voltages will be the same as the line-to-line voltage, and the third phase conductor, the grounded one, will have zero volts potential to ground.

If the transformer is a center-tapped delta secondary and the installer has bonded the center-tap (the X4 conductor on a step-down transformer, or an H4 on a step-up transformer), then the phase conductors on the end of the center-tapped winding will have half the voltage potential to ground of the line-to-line voltage, and the opposite phase conductor will have a potential to ground 1.732 times greater than the other two phase conductors. In a 240/120 3ph 4w center-tapped delta secondary, with the _4 terminal bonded to ground by the installer, the X1 and X2 potentials to ground will be 120V, and the X3 potential to ground will be 208V. It is imperitive to remember three points: 1) a delta-delta w/ center-tap transformer`s center tap only has 5% of the nameplate kVA capacity for single-phase, line-to-neutral loads, and 2) absolutely no line-to-neutral loads may be placed on the high leg, which 3) per the NEC (except where local codes differ), the B phase is connected to the X3 (in a step-down transformer) terminal, which is then the high leg on which no single-pole breakers may be used.

A delta secondary transformer cannot have a neutral (an grounded current carrying conductor that is not to be disconnected). A delta secondary may be corner grounded, but that conductor, though grounded, is not a ``neutral``.

As detailed above, a delta secondary transformer cannot have a neutral, while a center-tapped delta secondary transformer, once the center-tap is bonded to the nearest earth ground per the NEC by the installer, can have a limited amount of 1ph line-to-neutral loads.

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