

SolaHD Technical Support: "Question of the Week"

Hello, I'm Lin and here is my first contribution to the "Question of the Week".



Question:

What is the capacity of the center tap on a 240 volt delta transformer connection with one phase tapped?

Answer:

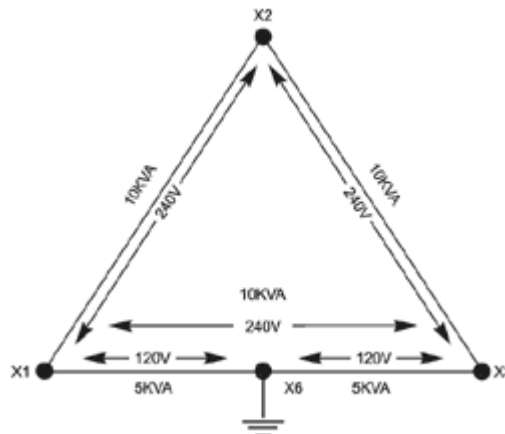
To determine the available capacity of the 120 volt center tap, you must know the three phase 240 volt load applied to the transformer. A three phase delta transformer built by SolaHD has a per phase capacity equal to 1/3 of the nameplate rating. Each phase will supply 1/3 of the kVA to the three phase load.

FORMULA: Transformer kVA – 3 phase Load kVA / 6 = kVA of each Center Tap Circuit

Example #1: (With no 3 phase load)

Our three phase transformer, catalog number ET5H30S, has a 30kVA nameplate rating. Therefore each phase provides 10kVA total capacity. The 120 volt tap is at the center of a 240 volt winding, therefore the capacity is 5 kVA on either side of the tap (X1 to X6 and X3 to X6).

Using the formula: $30\text{kVA} - 0\text{kVA} / 6 = 5\text{kVA}$



Example # 2: (With 21kVA 3 phase loading)

Let's say transformer ET5H30S has a 21kVA, 3 phase load connected to it. Applying 1/3 of the kVA of the three phase load, the resultant load per phase is 7kVA. Therefore, the tapped phase has 3kVA available (10kVA - 7kVA = 3kVA). The center tap can be loaded to 3kVA without over loading the transformer, but the load must be split so that no more than 1.5kVA (1/2 the available capacity) is connected to either side of the tap (X1 to X6 and X3 to X6).

Using the formula: $30\text{kVA} - 21\text{kVA} / 6 = 1.5\text{kVA}$

Please feel free to contact me at 800-377-4384 (option 2) if you have any questions or comments regarding this message or any SolaHD products. I look forward to hearing from you.

[Lin Valencia](#)