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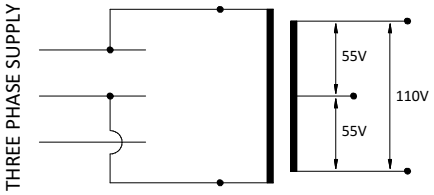
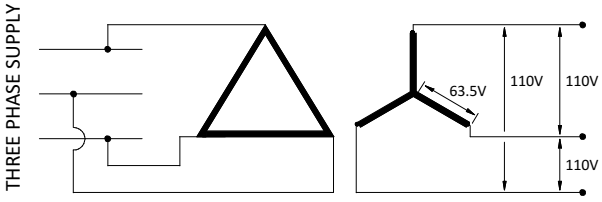
SUPPLYING SINGLE PHASE LOADS FROM A THREE PHASE SUPPLY – TRANSFORMER OPTIONS

OPTION 1



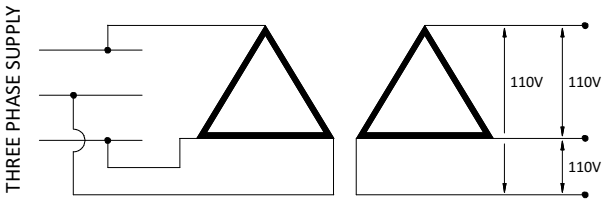
Option 1: Single phase transformer connected across two lines of a three phase supply. Most economical option but causes imbalanced loading on three phase supply. Output winding can be centre tapped and taken to earth to give 55-0-55V (55V to earth).

OPTION 2



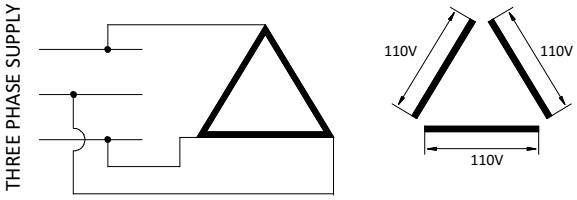
Option 2: Three phase transformer with 110V L-L star connected secondary. Capable of supplying 110V 1-ph loads between lines or three phase 110V loads.
No centre tap to earth is available but the star point can be earthed giving a maximum of 63.5V to earth.
A variation of this connection would be a 110V L-N star connected secondary capable of supplying single phase 110V loads between line and neutral or 190.5V three phase loads. As before no centre tap is available but the star point could be earthed giving a maximum of 110V to earth.

OPTION 3



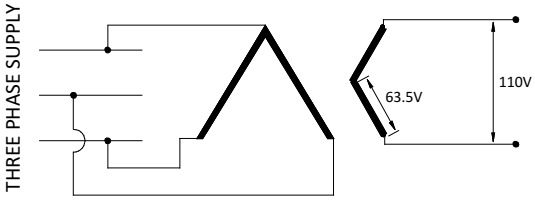
Option 3: Three phase transformer with 110V L-L delta connected secondary. Capable of supplying 110V 1-ph loads between lines or three phase 110V loads. No centre tap to earth is available and there is no star point.

OPTION 4



Option 4: Three phase transformer with three separate 110V output windings. Capable of supplying three separate 110V 1-ph loads but not three phase loads. Each winding may be centre tapped and taken to earth if required.

OPTION 5



Option 5: Three to one phase transformer. No centre tap to earth is available but there is a neutral available which can be earthed to give a maximum of 63.5V to earth. The loading on the three phase supply is imbalanced but not as badly as on option 1.

Note: Options 2, 3, and 4 are only suitable when the single phase loads can be spread over the three phases. In applications where there is only one large single phase load then options 1 or 5 must be used.

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