

APPLICATION NOTES 900/600 SYSTEM

Applying Isolation Transformers

to

Series 900 - Power Commander

Line Voltage Regulators

OVERVIEW

Considerations that must be taken into account are Efficiency, Power Factor and Low Line Voltage when applying an isolation transformer for use with the Power Commander Electronic Line Voltage Regulators. On three phase systems the Isolation Transformer is placed ahead of the regulator to establish a neutral for the regulator.

The worse case line currents have to be determined prior to sizing the isolation transformer

I_e = Input Current - Worse case = Full load and Low Line (.8 x V_{in})

VA = VA rating of the regulator

V_{in} = Input voltage of unit (nominal)

EFF = Efficiency of unit = $\frac{\text{Watts Out}}{\text{Watts out} + \text{losses}} = .95$

PF = Power Factor = .8

The following are used for the calculations:

Low line at -20% = .8

EFF = .95

PF = .8