

## ETAP FAQ # 2

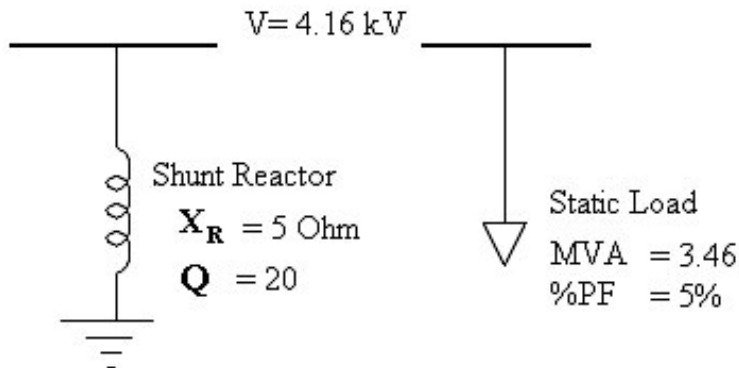
### Modeling Shunt Reactors in ETAP

**Description:** How to model a shunt reactor with the help of a static load in ETAP?

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To model a shunt reactor you can use a static load with a rated power factor determined from the reactor Quality factor (Q).



The Static Load Ratings are determined from the reactor parameters by the use of the following equations:

$$kV_{\text{Static\_Load}} = kV_{\text{Reactor}}$$

$$MVA_{\text{Static\_Load}} = \frac{(kV_{\text{Reactor}})^2}{X_R}$$

$$PF_{\text{Static\_Load}} = \cos(\arctan(Q))$$

#### Reactor Ratings

$kV_R$  = Reactor Rated Voltage in kV

$X_R$  = Reactor Reactance in Ohms

Q = Reactor Quality Factor (X/R)

The calculated parameters should be entered into the Static Load Editor Loading page.