

Transformer Sizing

**Plan
Design
Operate**

ETAP Transformer MVA Sizing program follows recommended procedures to determine the required transformer size based on the use of factors including altitude, temperature, insulation, number of phases, cooling stage, etc. ETAP enables you to use the operating values from load flow calculations or use total connected load as represented in the one-line diagrams. Tap Optimization enables you to plot the MVAR delivery curve versus generator voltage.

transformer
sizing

Transformer Sizing & Tap Optimization

Key Features

- MVA Sizing Including Unit Transformers
- Optimize Unit Transformer Turns Ratio
- Considers System Voltage Variation
- Considers Generation Station Auxiliary Load
- Plot Generator Reactive Capacity vs. Voltage

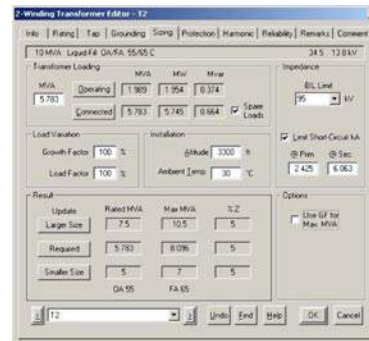


Features

- Operating load or connected load
- Required size
- One size larger & one size smaller
- Rated & maximum MVA
- Typical impedance values

Optimization

- Primary & secondary lines/cables
- Auxiliary connected loads
- Local generation
- Calculated Mvar delivery curve



Capabilities

- Elevation & temperature factors
- Limit short circuit current
- Growth & load factors
- Include optional load projection
- Include optional spare loads

Plotting

- Generator Mvar output vs. system voltage

Reporting

- Voltage varying generator power flows
- Voltage varying transformer power flows

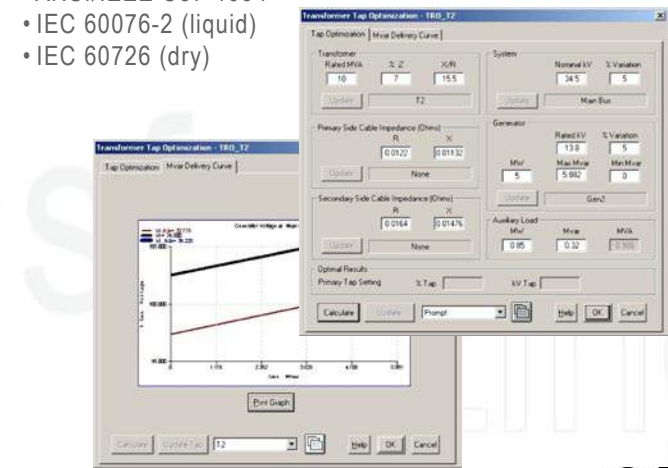
Standards

- ANSI/IEEE C57-1994
- IEC 60076-2 (liquid)
- IEC 60726 (dry)

**Compliant, Capable
Calculated**

- Unlimited Buses* & Elements
- No Voltage Limitations
- Looped & Radial Systems
- Integrated 1-Phase, 3-Phase, & DC Systems
- Multiple Generators & Grid Connections
- Multiple Isolated Sub-Systems
- Customizable Libraries
- Display of Results on One-Line Diagrams
- Customizable Font Types, Sizes, Styles, & Colors
- Customizable Display of Ratings & Results
- Display of Equipment Impedance & Grounding
- Automatic Error Checking
- Graphical Display of Overstressed Devices
- Graphical Display of Over/Under Voltage Buses
- Dynamically Adjust Display of Results

*Maximum number of energized buses during calculations is license dependent.



10 CFR 50 Appendix B • 10 CFR 21 • ANSI/ASME N45.2-1977 • ASME NQA-1
ISO 9001 A3147 • ANSI/IEEE Std 730.1-1989 • CAN/CSA-Q396.1.2-89

