

Editing Element Properties

The purpose of this tutorial is to show the fundamentals of editing the properties of four elements: Motor, Cable, Transformer, and Lumped Load. For this tutorial you should select "Example Project (ANSI)" option when starting ETAP Demo.

Motor Properties

Open the editor for Mtr2 by double-clicking on the element or right-clicking on the element and selecting Properties. Doing so will open the property editor for Mtr2 as shown below.

	Н 🔺	Induction Machine Editor - Mtr2	
_	⊥ /	Protection Cable/Vd Cable Amp Reliability Remarks Common Mark Info Nameplate Model Inertia Load Start Dev Start	ment Cat
	÷ /	1 2500 HP 13.2 kV 1-3/C 2 AWG/kcmil 15 kV	
	ې ۲	ID Mtt2 Out of Service	
	Ő.	Bus Sub2B I 3.8 kV Configuration	
	Mtr2 2500 HP	Equipment Normal Tag # Status Continuous	
O Halpful Tip	n	Name Connection	
You can navigate to other motor editors by using the navigation		Description 01 Phase	
		App. Type Motor	
bottom of the edi	the tor.	Data Type Typical Continuous Intermittent Spar	
		Priority Other]%
			ancel

When the editor opens, you are taken to the Info page. In this page you can place the motor in service or out of service, edit the ID of the motor (must be unique), change the bus it is connected to, and enter the equipment information. You can also specify the connection type and quantity of motors under the connection section of the page.



Click on the Nameplate tab to go to the Nameplate page. On this page you can enter the motor rating in horsepower (HP) or kilowatts (kW). As shown below the units are in horsepower. To change the units to kilowatts, click on the HP button.

	Induction Machine Editor - Mtr2				
	Start Cat Cable/Vd Cable Amp Reliability Remarks Comment Info Nameplate Model Inertia Protection Load Model Start Dev				
 ☺ Helpful Tips You can change the name of the loading categories by going to Project → Settings → Loading Categories. 	1 2500 HP 13.2 kV 1-3/C 2 AW/G/kcmil 15 kV Ratings 100 % 75 % 50 % Rated HP 2500 kV 13.2 % PF 92.83 92.46 89.83 % Slip 0.91 Poles 4 kVA 2049 FLA 89.65 % Eff 97.99 98.58 99.02 RPM 1784 RPM 1800 Library None SF 1				
	Motor Load Feeder Loss				
	Loading Category % Loading kW kvar kW kvar				
	1 Design 100 1902 762 5.39 1.39				
	2 Brake 90 1708 692.1 4.36 1.13				
	3 Full Load 80 1515 620.6 3.44 0.89				
	4 Summer Load 0 0 0 0 0 0				
	D Winter Load 50 341.4 460.4 1.41 0.35 C Start Up 0 0 0 0 0 0				
	8 Shutdown 0 0 0 0 0 0				
	Operating Load: 0 kW + i 0 kvar Image: Concelerererererererererererererererererere				

As shown above in the Nameplate page there is a section called "Loading". In this area you can define the % Loading for different loading categories which you can run a study on. For example, if you want to run a Load Flow Analysis under Full Load you would open the study case editor and select Full Load under Loading Category. As a result Load Flow Analysis will run with the motor having 80% Loading as defined in the motor editor.

Load Flow Study Case 🛛 🛛 🔀					
Info Loading Adjustment Alert					
Loading Category	Generation Category				
Full Load 🗸	Design				
Operating P,Q	Operating P,Q,V				
Load Diversity Factor	Charger Loading				
 None 	 Loading Category 				
O Bus Minimum	Operating Load				
O Bus Maximum					
🔘 Global					

Once you are finished making changes in the Mtr2 editor, click OK to exit the editor and save the changes.



Cable Properties

- Open the editor for Cable22, which is located in Sub2A-N. As shown below you will be taken to the Info page. Here you can edit the ID of the cable (must be unique), the buses it is connected to, the equipment information, and length. You can also place the cable in service or out of service from this page.
- Instead of entering the properties of the cable in the editor manually, you can select a cable from our library to automatically fill in the required information. To select a cable from the library, click on the Library button located on the Info page. A new editor will open called Library Quick Pick Cable where you can select the cable you want to use. Once you select the cable, click OK to close the library editor and transfer the cable properties to the editor.

	Cable Editor - Cable2
	Reliability Remarks Comment Info Impedance Physical Loading Protection Ampacity Sizing Routing
Sub 3	NEC Mag. Size EPR 133 % 5.0 kV 3/C CU 750 V AWG/kcmil
222 ft 1-3/C 750 Cable2	ID Cable2
Sub3 Swgr 4.16 kV	To Sub3 Swgr
₩CC 3A 500 HP	Equipment Tag #Library Library Library
☺ Helpful Tips	Library Quick Pick - Cable
Load Flow and Short Circuit require the cable impedance to be	Description Unit System Conductor Type KV % Class Source Insulation #/Cable English CU % 5.0 133 % KERITE EPR 1/C Frequency Insulation 15 100 % 133 % KERITE EPR 3/C 60 Mag. 15 133 15 133 %
specified under the Impedance page.	U/G Ampacity A/G Ampacity Unit Base Size 100 100 1000
Transformer Propert	ies Cancel

Open the editor for T2 and go to the Rating page. On the rating page you can enter the value of the primary kV, secondary kV, primary winding rating in kVA or MVA, and the maximum transformer rating. Additionally, you can enter the impedance or substitute typical values for the transformer.



_	2-Winding Transformer Editor - XFMR 3	×
	Info Rating Tap Grounding Sizing Protection H 1000 kVA Liquid-Fill Other 55/65 C	armonic Reliability Remarks Comment
XFMR 3 ΔY, 4.16/0.48 kV 1000 kVA MCC1		O In Service
0.48 kV	Prim. Sub3 Swgr 4.16 kV Sec. MCC1 0.48 kV	 3-Phase 1-Phase Secondary CenterTap
	Standard O IEC	Type / Class Type Liquid-Fill
3Ph-4W	Tag #	Sub Type Mineral Oil 💌 Class Other 🗸
Pnl3 3Ph-4W	Name	Temp. 55/65
	E C XFMR 3	

Lumped Load Properties

A Open the editor for LUMP2, which is located in Sub2A-N, and go to the Nameplate page. The available fields in the rating section depend on the Model Type selected. When the Model Type is set to Conventional, the Nameplate page is as shown on the right. In the Ratings section enter the lumped load rating in MVA or MW. Furthermore, the % loading for various loading categories can be specified here.

> © Helpful Tips... You can adjust the amount of static and motor load by using the slider under Load Type.

