TRANSMISSION & INDUSTRIAL SYSTEM ANALYSIS

Motor Starting | Power Flow | Short-Circuit | Harmonics | Voltage Stability | And more...

CYM-Motor Start, Motor Starting Analysis

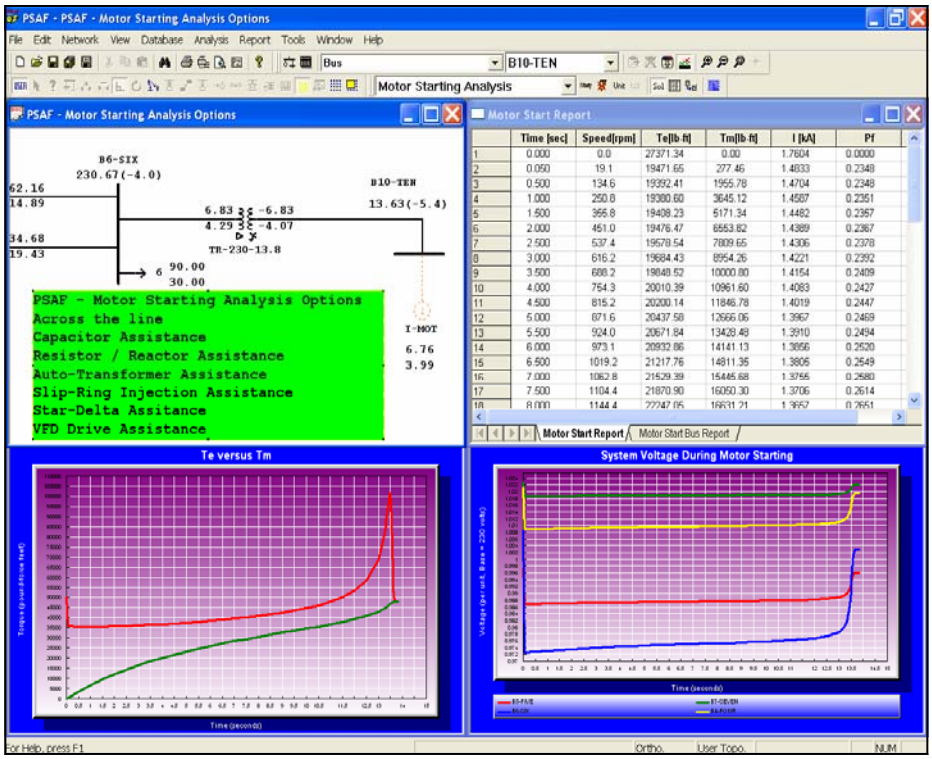
The CYM-Motor Start Analysis Module operates in conjunction with CYMFLOW and is dedicated to simulating the effects of induction and synchronous motor starting in three-phase electric power systems. This module is a reliable and easy to use tool for assessing system voltage dips and acceleration times of induction motors, using a variety of starting methods.

Induction Motor Starting

The Induction Motor Start analysis takes into account the inertial effects of the motor, user-defined load curves and supports several starting methods as listed below:

- Across the line starting.
- Shunt capacitor-assisted starting.
- Resistor and/or Inductor assisted starting.
- Open / Closed Auto-Transformer starting.
- Variable Frequency Drives.
- Slip ring resistor injection assisted starting.
- Star-Delta Assistance.
- Manufacturer Data Input files.
- Soft motor start.

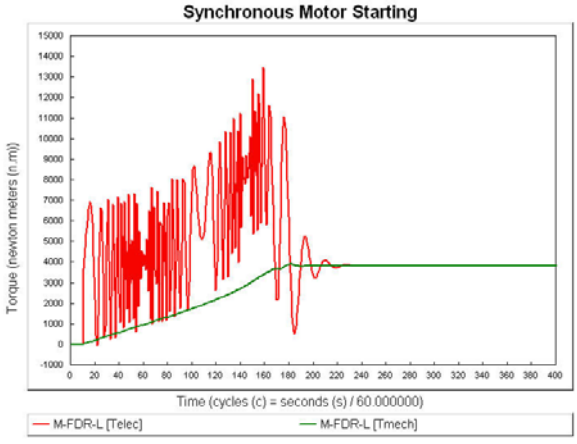
The above motor starting analysis methods are also supported in our CYMSTAB program.



Synchronous Motor Starting

The Synchronous Motor Start analysis takes into account the inertial effects of the motor and user-defined load curves, and supports several starting methods, as follows:

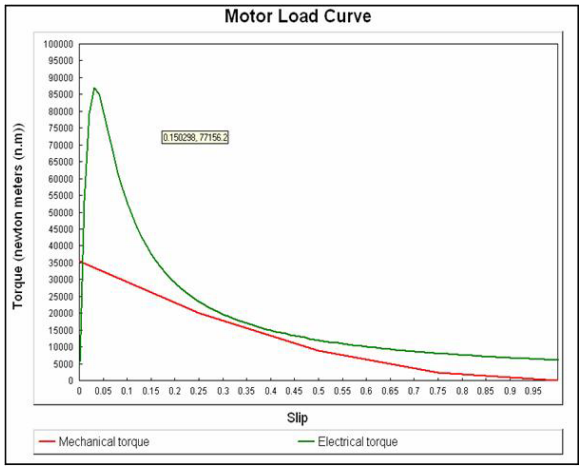
- Across the line starting.
- Shunt capacitor-assisted starting.
- Resistor and/or Inductor assisted starting.
- Open / Closed Auto-Transformer starting.



Detailed Mechanical Load Model

A detailed user-defined load torque representation is provided with the program along with the possibility to plot the nominal Electrical and Mechanical torque curves prior to starting the motor.

The load torque data can be entered from manufacturer data curves or with the equation of load torque versus speed.

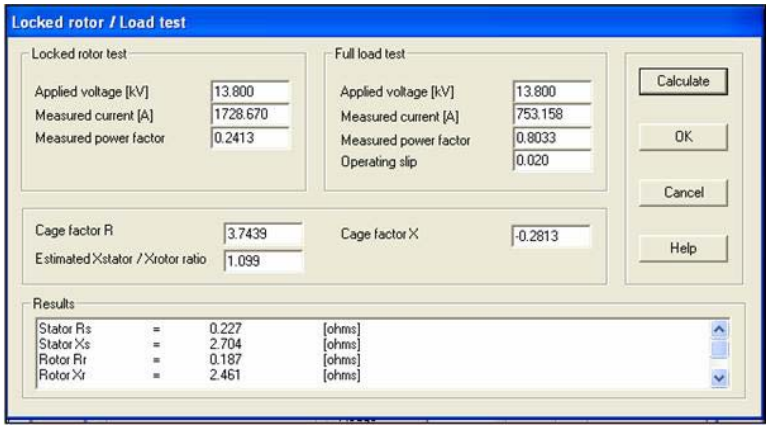


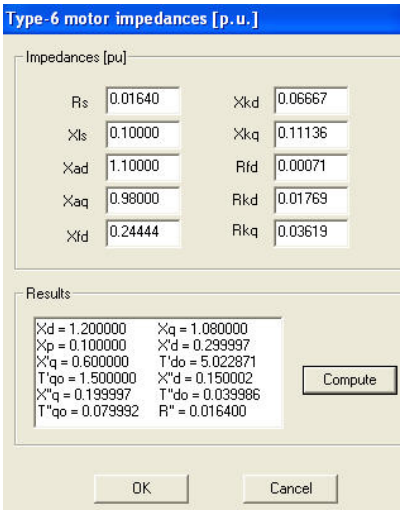
Motor Parameter Estimation

In the absence of detailed information, the module includes support functions for deducing the induction motor equivalent circuit for Single Rotor, Double Rotor or Deep Bar Rotor Induction Motors, utilizing either of the following information:

- Locked Rotor and No Load Test.
- Locked Rotor and Load Test.
- Nominal Conditions.
- Starting Conditions.
- Manufacturer Curve Data.
- IEEE Standard 112 TM-2004.

This module also supports this estimation of synchronous motor electrical parameters from physical quantities.





CYMVIEW, Simulation Results Management

CYMVIEW, is common to all simulation modules that generate any kind of charts. CYMVIEW is capable of managing the outputs of different modules including the CYM-Motor Start analysis module.

This includes charts and reports for motor bus voltage, starting current, power factor, electrical and mechanical torque versus time. In addition, the time/current curve is generated for protective device coordination purposes.

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