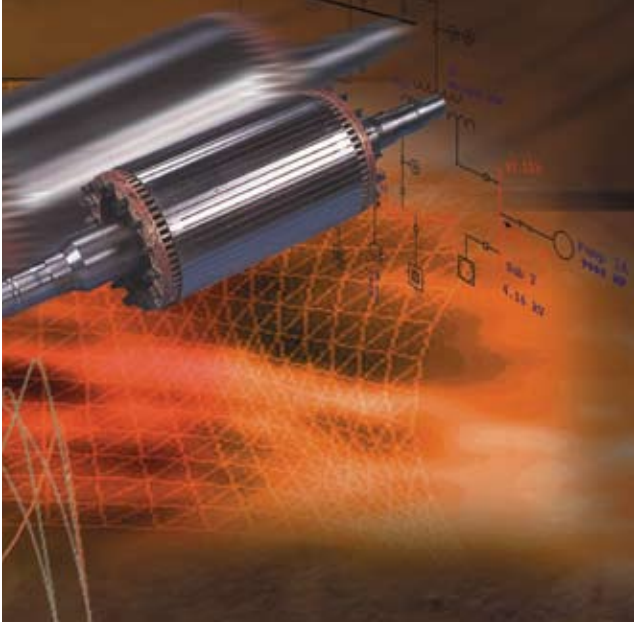


Motor Acceleration

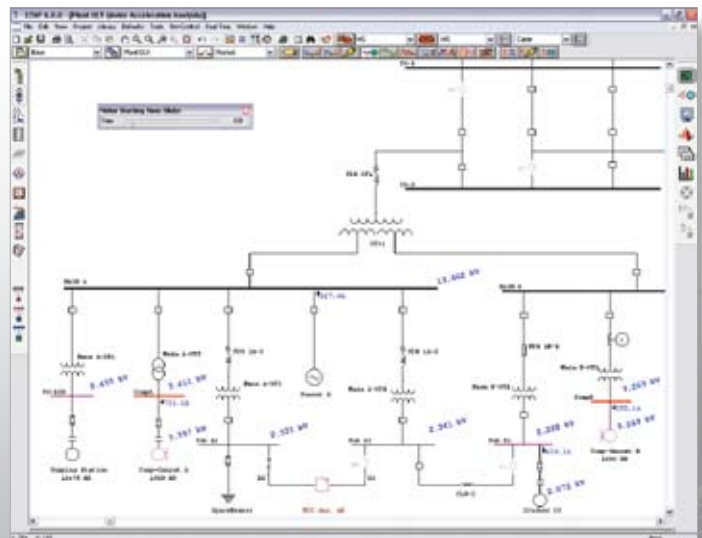
Intuitive, Intelligent, Incomparable



Advanced Technology in Motor Evaluation & Simulation

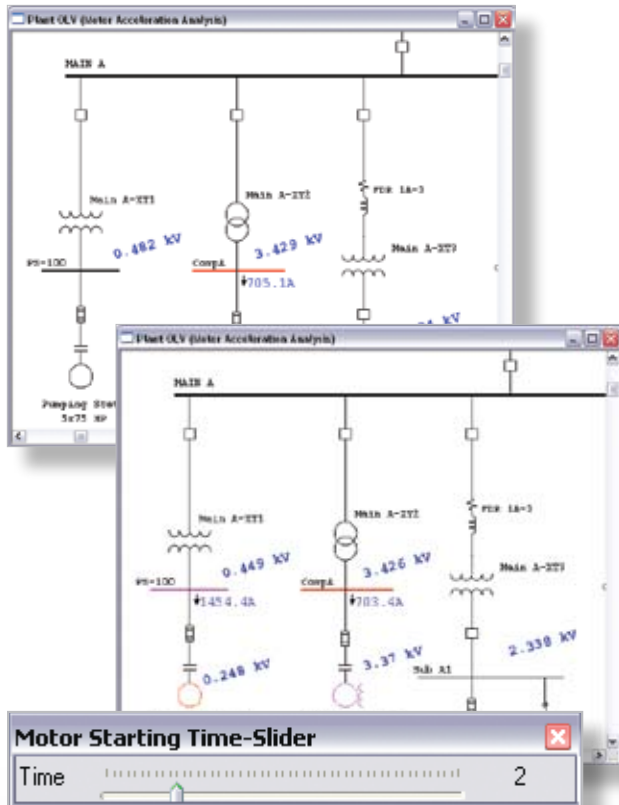
The Motor Acceleration module enables engineers to thoroughly evaluate the impact of load changes to electric power systems. Motor Acceleration is fully capable of starting one motor or transitioning an entire power system to another state. Sequence-start a series of machines using static or dynamic models, operate Motor Operated Valves (MOVs), and simulate the switching actions of Load Tap Changers. Advanced plotting and time varying graphical display enable engineers to quickly evaluate results and make decisions.

- Dynamic Motor Acceleration
- Static Motor Starting
- Voltage Flicker
- Motor & Load Dynamic Models
- Conventional & Soft Starting Devices
- Multi-Sequence Starting
- Load & Generation Transitioning
- Comprehensive Alarm & Warning
- Motor Operated Valve (MOV) Simulation



Accelerate Multiple Motors: Start multiple motors using unlimited sequence of events

Quickly Evaluate Results & Make Decisions



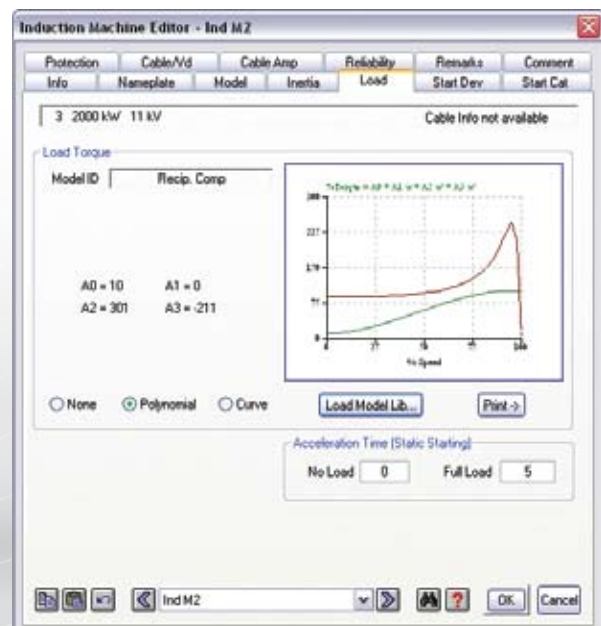
Motor Starting Time Slider: View time domain results graphically

Capabilities

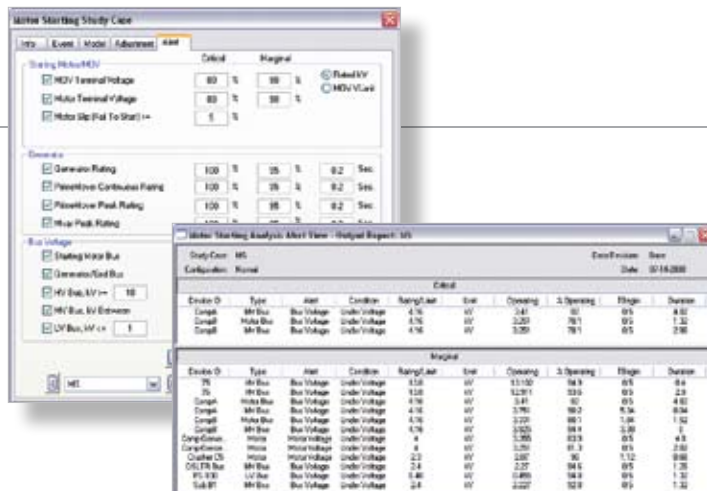
- Accelerate / stop multiple motors
- Dynamically model motors & loads
- Create unlimited sequence of events
- Compare the response from various motor starters
- Simulate load ramping of starting motor
- Transition loading of entire system
- Vary generator / grid operating parameters
- Visualize results with extensive alerts & warnings
- Simulate transformer LTCs / voltage regulators
- Simulate MOVs with five operating stages

Comprehensive Modeling

- No voltage or system connection limitations
- Induction / synchronous motor dynamic models
- Typical & user-defined load models
- Global or individual LTC time delays
- Transformer phase shift
- Starting devices: auto-transformer, capacitor, rotor / stator R or X, Y/ Δ , partial winding, etc.
- Voltage, current, or torque controlled soft starters
- Five levels of automatic error checking



Dynamic Modeling: Complete modeling of machines and connected load



User-Defined Alerts: Automatically flag marginal and overstressed devices

Reporting

- Graphical display of time-varying results
- Auto-alert abnormal conditions with marginal or critical levels
- Graphically display buses with marginal or critical voltage levels
- Comprehensive plots with operation details
- Export one-line diagrams including results to third party CAD systems
- Export to your favorite word processing program

Critical		Marginal	
MOV Terminal Voltage	80.00	98.00	(Over. rate)
Motor Terminal Voltage	80.00	98.00	(Over. rate)
Failure Bus Trip Delay	0.200		

BusID	Type	Alert	Condition	Rating/Crit	Dist	Opening	% Opening	T-Ratio	Duration
Comp1	MT Bus	Bus Voltage	Under Voltage	4.00	01	2.00	100	0.00	4.00
Comp2	MT Bus	Bus Voltage	Under Voltage	4.00	01	2.00	100	0.00	4.00

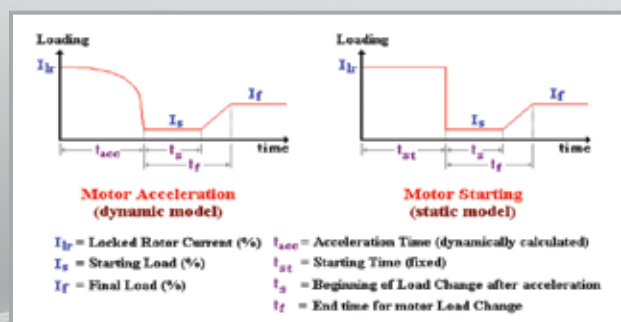
Comprehensive Reporting: Customizable output reports using Crystal Reports®

Automatic Result Validation / Alert

- Motor start failure
- Under-voltage for starting motor / MOV
- Under-voltage buses per bus type & voltage level
- Overloaded generator & prime mover
- User-defined marginal & critical alert limits

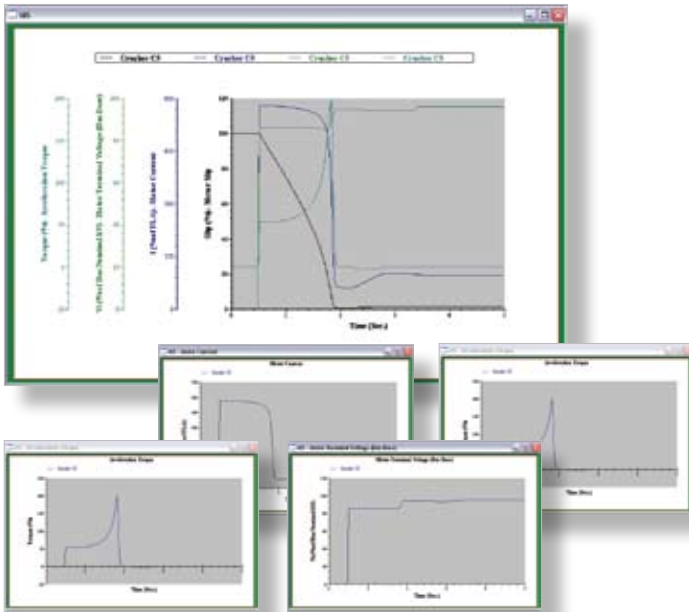
Libraries & Models

- Double-cage (dependent circuit)
- Double-cage (independent circuit)
- Single-cage (without deep-bar)
- Single-cage (deep-bar)
- Characteristic motor model
- Polynomial & characteristic load models



Realistic Operation: Simulate load and generation transitioning

Comprehensive & Reliable Tools for System Analysis



Flexible Plots: View results as individual or combined plots

Plots

- Motor
- MOV
- Static Load
- Capacitor
- Generator
- Bus
- Slip (speed)
- Terminal / bus voltage
- Torque
- Electrical power
- Mechanical power
- Current
- Generator / grid current, power, & power factor

Customized Results

- Include multiple axes
- Display multiple motors simultaneously
- Zoom to any detail
- Export data to Microsoft® Excel
- Change text & axes
- Line, bar, 3-D, & scatter plots

Features

- Multiple motor / load acceleration / stop & sequencing
- Switch on / off static loads & capacitors
- Open / close MOVs with five operating stages
- Include transformer LTC / voltage regulator action
- Generator / grid operating parameters & load profiles
- Multiple loading conditions & generation levels
- Different loading categories for pre-start conditions
- Motor load ramping
- Group actions
- Individual actions
- Start / stop by group
- Group start globally or by individual bus
- Start, stop, & restart in a single run
- Fast bus transfer using load transitioning
- Unlimited actions in each event
- Unlimited events in one simulation
- Unlimited simulations stored in study cases
- Change & rerun studies instantly
- Motor nameplate library
- Motor circuit model library
- Motor characteristic model library
- Polynomial based load model library
- Curve based load model library
- Integrated with motor parameter estimation
- Automatic alert & warnings
- Simulate motor starters including soft-starters
- Comprehensive & flexible plots & reporting
- Execute multiple preset simulations at one-click with Study Wizard