Industrial Power Network Analysis
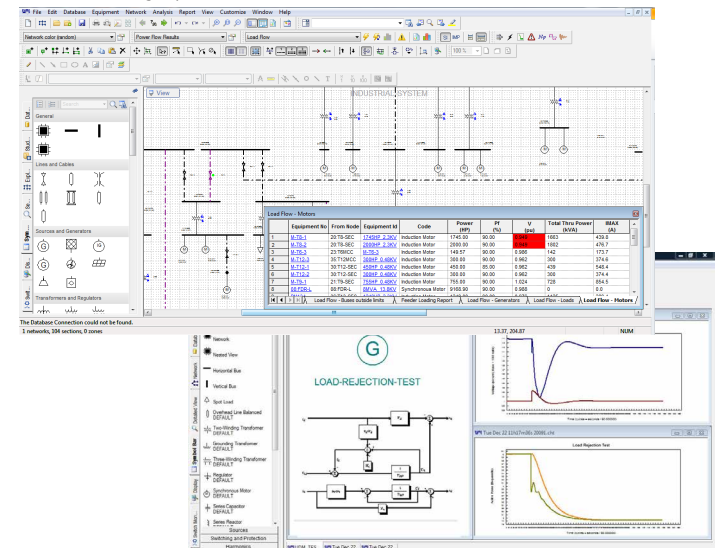
Solve problems and manage system performance

The CYME Power Engineering Software is designed to assist electrical engineers to perform key simulations necessary for the optimization and maintenance of industrial power networks. From steady-state to transient analysis, the CYME software is an indispensable tool for the study of what-if scenarios and for dealing with emerging issues in the industrial sector.

The CYME power engineering software features a powerful graphical user interface that is fully customizable to provide the one-line diagram representation, results and reports in a level of detail needed by each user. In addition, innovative engineering technologies and industry standards are at the core of the CYME algorithms. With its extensive built-in equipment libraries and advanced analyses, the CYME software can help you create the most accurate network representation to yield the needed results.

Major features

- Equipment sizing and identification of abnormal operating conditions

- Sizing and coordination of protective devices

- Detailed modeling of any on-site generation: photovoltaic, diesel, wind, gas, etc.

- DC backup (emergency) and safe supply systems

- Motor starting analysis and drive system specifications

- Power quality problems assessment and filter design

- Sizing of generation facilities for islanding operation

- Arc flash hazard, risk level assessment and employee safety

- Steady-state and transient stability analysis

- Optimization of system performance

E·T·N

Powering Business Worldwide

Industrial Power Network Analysis

Solve problems and manage system performance

Network Editor

The CYME graphical user interface provides great flexibility in the creation of the one-line diagram.

- Extensive equipment library of cables, conductors, generators, motors and protective devices
- Detailed modeling of motors, variable frequency drives, bus ways and DC systems
- Customized display and reporting functions

Power Flow

The Power Flow Analysis is the main analysis tool for the design, planning and operation of any electrical power system.

- Multiple solution algorithms
- Comprehensive results including voltage, current and losses
- Abnormal conditions for voltage limit and equipment rating violations

Fault Analysis

The Fault Analysis module calculates different types of short-circuits and evaluates fault contributions from machines.

- Supports conventional short-circuit studies and adheres to: IEC-60909©, ANSI® C37.5, ANSI® C37.010, ANSI® C37.13
- Shunt, series and simultaneous faults
- Identify possible fault locations from recorded measurement
- Equipment Rating Verification functionality to assess if equipment are properly rated

Load Flow Contingency

The Load Flow Contingency module allows the study of what-if scenarios and N-p contingencies to establish optimal network operation.

- Process sequential contingency studies in a single batch run
- Create a group of up to N-3 outages contingency
- Identify the most severe contingencies through voltage and overload indices

Protective Device Analysis

The Protective Device analysis module helps engineers design and validate the coordination scheme of their network.

- Extensive library of over 15000 protective devices from different manufacturers
- Device-to-device coordination
- Protective reach and device loading calculations
- Sequence of device operation

Arc Flash Hazard

The Arc Flash Hazard analysis module assesses the safety risk of the network to help ensure a safer work environment.

- AC and DC arc flash calculations
- Compliant with IEEE-1584TM 2002, NFPA-70E 2004© and CSA Z462-12© standards
- Calculate incident energy and risk level
- Generate warning labels

DC Analyses

The DC Load Flow and Short-Circuit analyses execute power flow and fault calculations on DC systems and safe supplies.

- Modeling of batteries, chargers, UPS and DC/DC converters and other DC equipment

- Embedded maximum output current limiters, reverse power flow detection and control

Transient Stability

The Transient Stability Analysis module is a time-series analysis to simulate electromechanical transients in electrical power systems.

- Dynamic models of equipment and controls
- Voltage, over-current and frequency operated relays
- Allows testing the step response of controllers during events such as faults, switching and load shedding

Harmonic Analysis

The Harmonic Analysis module evaluates the impact of non-linear loads on the network.

- Modeling of harmonic equipment and sources
- Frequency scan analysis
- Harmonic voltage and current distortion calculations (THD, IHD, TIF, ITIF)
- K-factor calculation
- Capacitor rating and filter sizing analysis

Additional Modules

Additional modules, such as the COM module and the Scripting Tool with Python module, offer capabilities that further assist in batch analysis and the automation of the simulation process. Please refer to our website for additional information on each of the following modules:

- Python Scripting
- Component Object Modeling
- Advanced Project Manager

F·T·N

Powering Business Worldwide

Follow us on social media to get the latest product and support information.