

SmartPlant® Electrical Product Overview

Electrical Motor Properties

General | Load Data | Electrical Data | Control & Signals | Feeder Data

Rated power:* 10 hp	Rated voltage: 460 V	Operating mode: Intermittent	Synchronous speed (RPM):
Brake power:* 8 hp	Particular power: 0.0 hp	Operating factor: .8	Asynchronous speed: 3000.0 rpm
Minimum required power: 		Demand factor: 0.8	Ie stall time: 0
Supply: AC	Phases: 3	LRC power factor: 0.57	Run-up time: 0
Poles: 	Frequency (Hz): 60 Hz	Wires: 	

Coincidence factors		Power factor and efficiency	
X - continuous: 	Y - intermittent: 0.67	100 %	0.89 0.87
Z - stand by: 	ZZ - spare: 	75 %	0.83 0.84
		50 %	0.8 0.7
		At demand:	0.842 0.846

OK Cancel Apply Help



SmartPlant® Electrical addresses the specific requirements of electrical engineering to automate your work processes, comply with your corporate or project standards, and keep your electrical data current though the lifetime of your plant.



SmartPlant[®] Electrical

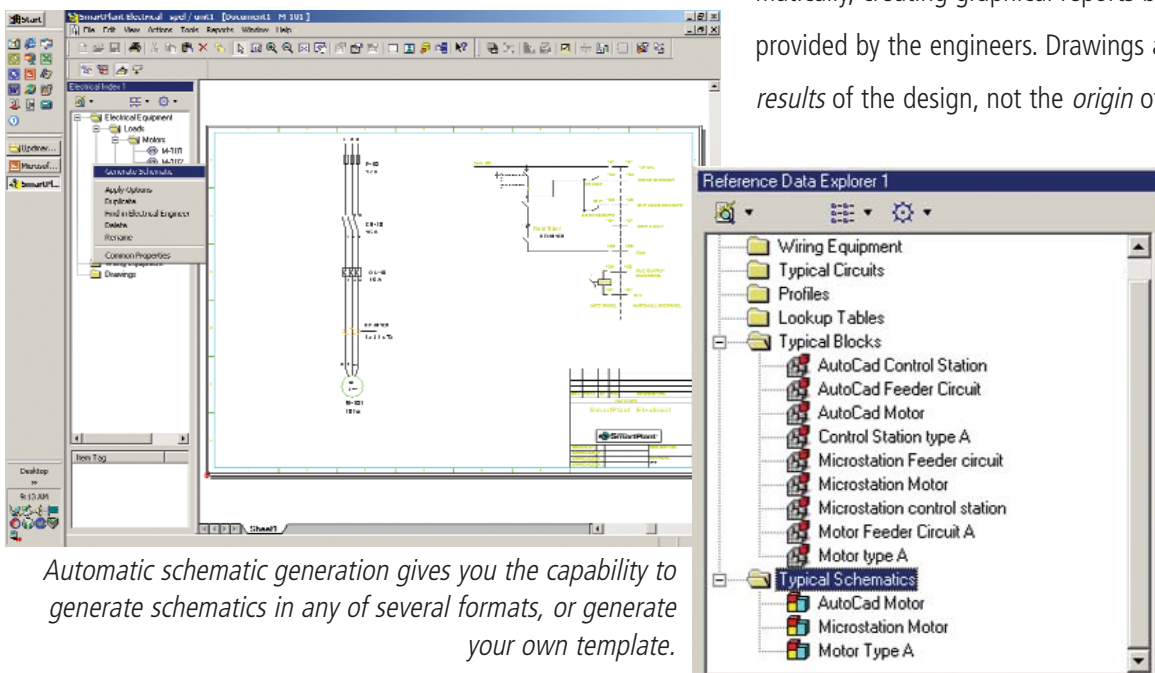
SmartPlant Electrical helps you increase efficiency in electrical system design, construction, operation, and maintenance. SmartPlant Electrical stands up to today's rigorous demands of compressed schedules and operating budgets, fixed price contracts, and concurrent engineering. SmartPlant Electrical delivers clear benefits by:

- Offering a life cycle solution – from conceptualization to detailed design to operations, maintenance, and decommissioning
- Saving time and cost through automation, such as bulk loading, automatic drawings and diagrams, and report generation
- Maintaining and enforcing standards, such as corporate rules and plant-specific dictates

Smart solution

The data generated from the combined knowledge foundation of your engineers is one of your company's greatest assets. SmartPlant Electrical helps define, maintain, and preserve the value of your corporate knowledge and data assets throughout the life cycle of a project and plant. Industry, government regulatory, corporate, client, or plant-specific standards can be applied to your design to ensure compliance, consistency, accuracy, and efficiency, reducing the chance of mistakes and costly overruns.

Mainstay electrical deliverables such as single-line diagrams and schematics are labor-intensive tasks, but SmartPlant Electrical generates these deliverables automatically, creating graphical reports based on the data provided by the engineers. Drawings and diagrams are *results* of the design, not the *origin* of the design.

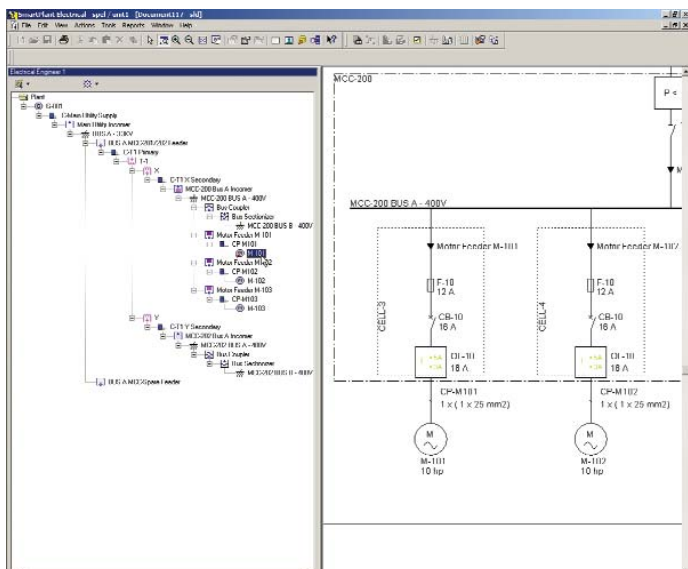


Automatic schematic generation gives you the capability to generate schematics in any of several formats, or generate your own template.

SmartPlant Electrical is an intelligent tool that provides electrical engineering functionality without dictating a particular workflow. By working directly with the engineering data, SmartPlant Electrical creates and maintains relationships among the electrical components.

Automated schematic and single-line diagram generation

Automatic generation of diagrams and schematics provides engineers with a new freedom to expand and optimize the electrical system using “what-if” scenarios without worrying about the high cost of drawing generation or which CAD package the project uses. Expensive last-minute redraws due to equipment changes or vendor updates are things of the past. Simply update the data; the drawings will take care of themselves.



From the hierarchal view of the electrical distribution network, you can automatically create a single-line diagram that relates to that point in your hierarchy.

Life cycle solution

The backbone of plant design, operations, and maintenance is an easily maintainable electrical distribution system with up-to-date information. SmartPlant Electrical addresses the electrical needs of the entire life cycle of the plant, from concept to detailed design through operations and maintenance, including start-up, continuous operation, emergencies, and shutdowns.

Early in the life cycle, SmartPlant Electrical helps you develop fast and accurate conceptual data for the bid process. Conceptual data is used to continue the design and engineering process. Nothing is discarded; there is no need to start over. Then, the same tool is used to maintain system data during operations, maintenance, and upgrades.

In the tradition of the SmartPlant family of products, SmartPlant Electrical is positioned to integrate with upstream tasks, such as analysis applications, and downstream tasks, such as data warehousing.



“Using SmartPlant Electrical allows Foster Wheeler to continue delivering quality products to our clients while reducing our cost and improving our schedules. After a few projects we will have a large library of data and graphics to draw from; this will increase our consistency and accuracy and we will have better quality deliverables. We will also be able to adjust this data to meet our clients’ specifications in a timelier manner.”

Dan Zubrick and Christopher Brallier
CAD Systems Supervisor and Electrical Engineer
Foster Wheeler Corp.

From *Insight Magazine*, Vol. 4, Issue 3, 2003

Automatic single-line diagram generation keeps your diagrams up to date. The schematics generation provides you with not only the automatic creation of schematic diagrams, but also printing and a save-to-disk capability for the schematics in a selected set of loads. Completely configurable, you can customize symbols to suit your standards or your customers' standards. And with document association, any document or file with a selected set of tags can be associated and you will be able to view the documents.

Load associations for a single load or a selected set of loads to a power distribution board (panel) and feeder bus are easily created and maintained. This functionality is extended to associating control stations to loads, and cables to electrical equipment.

Standards and data reuse

SmartPlant Electrical actually helps your company make the best use of assets the company already possesses. Features within SmartPlant Electrical provide defaults that you can use to increase quality and efficiency during plant design, operations, and maintenance. Default data and values can be entered to maintain design integrity.

Along with standardized equipment type specifications, other knowledge base capabilities are provided, such as Look-Up Tables (reference data matrix) and equipment profiles. Not only do these features provide default data, but they supply typical graphical symbology and schematics as well. Speed your current work practices and improve your competitiveness in the market with increased consistency in:

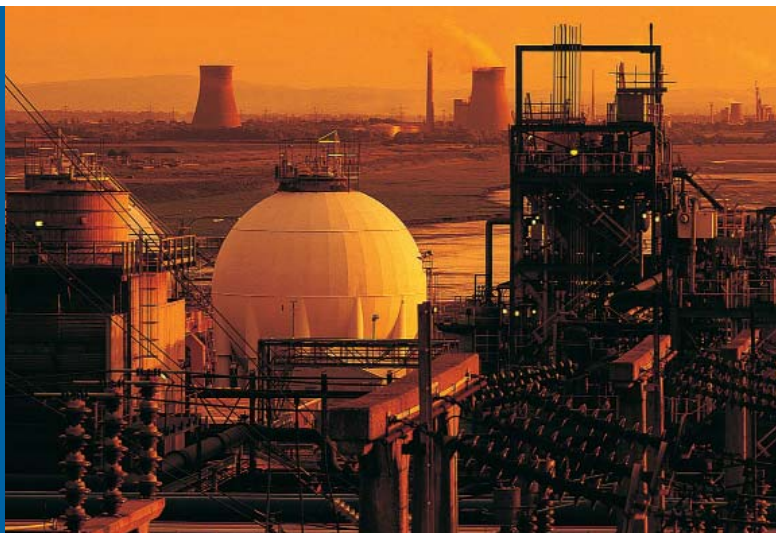
- Creating and populating data
- Standardizing across the organization
- Reusing and sharing in-house expertise across the organization and across projects
- Saving and reusing reference data sets for different projects and other customers

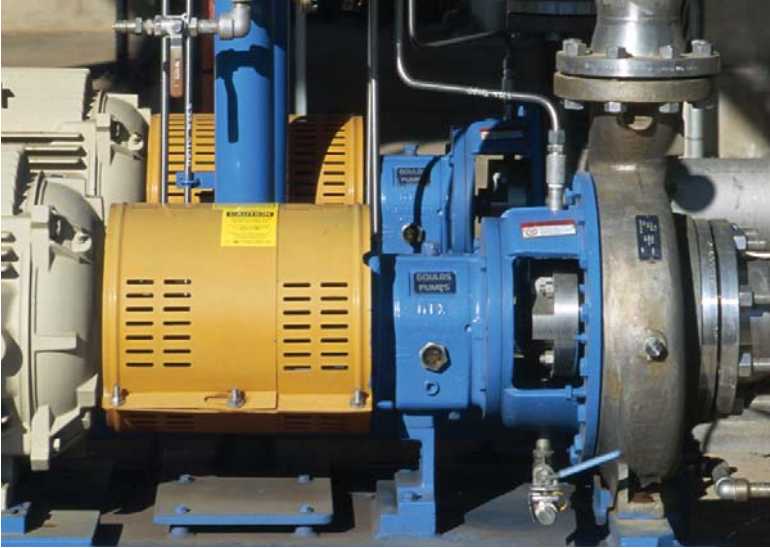
SmartPlant Electrical can help you prevent the costs associated with mismatched or nonstandard designs.

SmartPlant Electrical protects your investment in existing electrical engineering solutions. There is no need to abandon all of your typical circuits and termination details. Using the tools provided for automatic schematics generation, you can use your existing diagrams to create typical schematics, regardless of their origin. These typical schematics are used by SmartPlant Electrical to automate the creation of graphical reports or drawings that represent the engineering data. Once again, these newly generated schematics can be saved as deliverables to any of the major commercial CAD formats.

SmartPlant Electrical is a smart, life cycle solution that offers:

- Automated schematic and single-line diagram generation
- Standards and data reuse
- Flexible operations
- Report generation





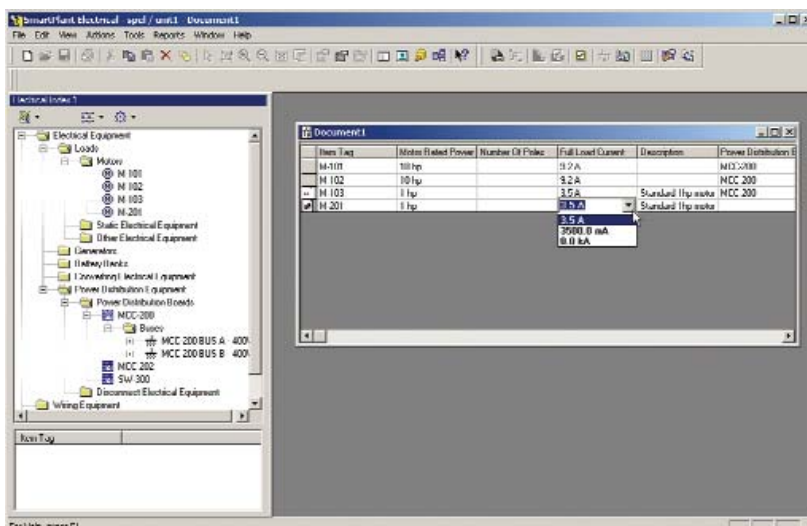
The data generated from the combined knowledge foundation of your engineers is one of your company's greatest assets. SmartPlant Electrical helps define, maintain, and preserve the value of your corporate knowledge and data assets throughout the life cycle of a project and plant.

With the user-friendly, Microsoft Windows®-standard interface, the electrical professionals in your company, with the right access control, can easily create, duplicate, edit, and/or delete electrical project items or power distribution boards or panels. The software also supports global editing and replacement of data for a selected set of tags. You can search and navigate to specific item types and tags, and create “short-cut” buttons to your most frequently used tags. To reuse successful designs, SmartPlant Electrical permits you to open and regenerate saved schematics and single-line diagrams.

Flexible operations

SmartPlant Electrical supports quantity operations for a timesaving workflow process. SmartPlant Electrical can create, organize, and maintain large quantities of data or entities, or manipulate data on a “one-by-one” basis. The Apply Options feature adds tremendous flexibility, such as dynamically associating and creating power cables and control stations and their control cables (implied components) along with their default data for selected electrical equipment. Additionally, you can accommodate project changes by replacing any equipment, including implied components, with new sets.

SmartPlant Electrical provides a vertical tree view of your electrical power flow diagram that enables you to navigate to and explore any project tag through your power path. This is an easy and friendly environment for making any changes in your load-to-feeder association. SmartPlant Electrical offers drag-and-drop functionality for moving any branch of electrical equipment from one feeding source to another.



The Tabular Editor acts much like a Microsoft Excel spreadsheet, helping you easily define properties to automatically generate electrical equipment lists, consumer lists, and load summaries, as well as cable lists and wiring.

You can also handle groups of cables. Perform the sizing procedure on a selected set of cables to reduce engineering costs associated with individual cable sizing, especially when there is an unforeseen project change. This powerful operation allows you to replace any set of cables with any selected cable type available in your Standard Reference cable set, while keeping your existing cable associations to their electrical equipment intact. Electrical load data is automatically copied to the power cable connected to this particular load; changes in this data are reflected and identified as cable properties are edited. This feature accommodates the frequent project changes that would otherwise require intensive manual engineering work.

Report generation

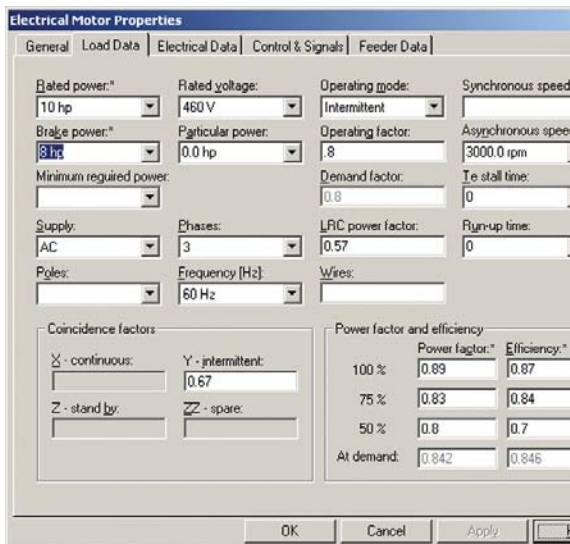
SmartPlant Electrical provides two different types of reports: graphical reports and tabular reports. Graphical reports include schematic drawings and single-line diagrams; once the design is complete, these graphical reports can be generated and saved to any of the major commercial CAD formats (SmartSketch®, AutoCAD, and MicroStation®). Tabular reports using the standard Microsoft Excel report mechanism link to the project database.

SmartPlant Electrical provides you with standard reports that can be customized or used as a baseline for

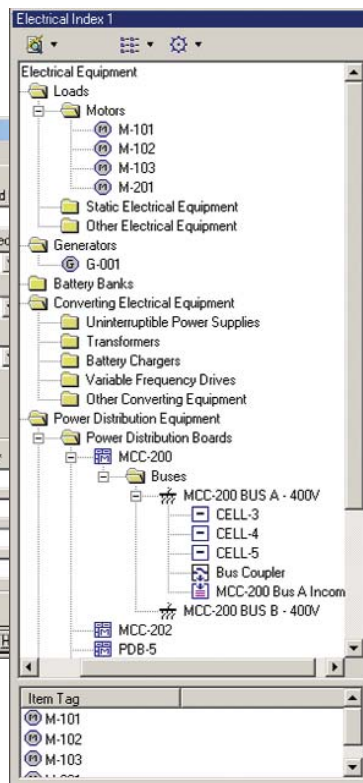
new custom reports, such as:

- Electrical equipment indices
- Cable schedules
- Cable take-offs (BOM)
- Electrical load lists
- Load per MCC
- Power Distribution Board (PDB) schedules

You can also save and share your reports as standard Excel files.



SmartPlant Electrical provides complete component information to make your electrical engineering workflow truly intelligent.



SmartPlant Electrical helps you increase efficiency in electrical system design, construction, operation, and maintenance.





Designed with the engineering, construction, and operation of a plant in mind, SmartPlant Electrical provides a strong common platform for both engineering, procurement, and construction (EPC) contractors and owner/operators (O/Os) to address their mutual but distinct electrical engineering and design needs. SmartPlant Electrical brings you accuracy and efficiency through automation and standardization, resulting in reduced rework and subsequently lower cost of doing business.

About us

Intergraph Process, Power & Marine is the undisputed leader in the process, power, and offshore plant creation market, with a revenue share of approximately one-third of the market worldwide. We offer integrated engineering enterprise solutions for the design, construction, and operation of process and power plants, offshore rigs, and ships. Our unique IT solutions enable our customers to find innovative ways to make better and faster operational decisions in an environment where knowledge retention is not a given – while at the same time ensuring a safer environment for everyone.

By implementing Intergraph engineering solutions across their enterprise, our customers extract full value from engineering information throughout a facility's life cycle, helping improve their operational excellence and safety, increase profitability, and protect intellectual assets. Uniquely combining the principles of data-centricity, integration, and automation of best practices, Intergraph solutions deliver high value with an economical, quickly returned start-up investment.

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