Planning and marking software

Terminal strip configuration made even easier

Increasing complexity and greater cost pressure in control cabinet and systems manufacturing demand an ever more efficient process design. Comprehensive and consistent solutions are an important prerequisite for exploiting efficiency potential in the configuration of terminal strips. This requires intelligent software that supports the complex process, from planning through to installation (Figure 1 lead image).

Figure 1, Lead Image - For all phases of terminal strip configuration: PROJECT complete provides support from electrical plans to supplying the finished product

Identifying efficiency potential in the workflow

Twenty-five years ago, circuit and wiring diagrams were laboriously drawn by hand at drawing boards, the corresponding parts lists and order lists for the components used were created manually and then distributed accordingly. This way of working requires a great deal of time and resources, and is also prone to errors throughout the entire process chain. Nowadays high-performance tools, such as CAE (computer-aided engineering) systems, are commonly used to create electrical circuit diagrams.

Examining this topic in detail reveals significant potential for optimisation. Catalogues or databases are still widely used as a source of reference when selecting products, such as terminal blocks. The associated engineering costs are often several times higher than the actual material costs. The same is true when it comes to marking components in control cabinets and systems: lists of marking data are entered manually into the marking software – a time-consuming task that is prone to errors.

Employing consistent processes here not only reduces engineering and installation costs, but also helps prevent errors. Phoenix Contact offers consistent solutions here in the form of the "PROJECT complete" planning and marking software and the printing systems from the "MARKING system" product range: from the planning, configuration, and ordering of terminal strips through to the creation of custom markings for terminals, cables and lines, equipment, and plants. Integrators usually work with planning departments and create complete project plans and circuit diagrams that are mapped to CAE systems. To do this, the data for components, functions, connection cross sections, and marking information must be available in digital format right from the planning and configuration phase. This is where PROJECT complete comes in: as an integral element of the entire value added chain, the planning and marking software handles the digital data from almost all widely used CAE systems.

From the circuit diagram to the complete terminal strip

Using CAE systems, it is now possible to plan, implement, and manage complex projects in control cabinet and systems manufacturing. To avoid users having to search for suitable products manually, PROJECT complete has interfaces that support various CAE systems, such as Eplan Electric P8, Aucotec, Zuken, WSCAD, IGE XAO, and PCSchematic. This means that users can always work in their preferred CAE environment.

The interface to the CAE software is bidirectional. Electrical diagrams can be exported with just a few clicks of the mouse, as in the case of Eplan. The configuration of terminal strips is largely automated. For the Eplan Electric P8 CAE system, instead of selecting terminal

Figure 2 - Convenient interfaces to the CAE system: terminal strips and markings are created with a high degree of automation

blocks as an item from the material database, the user simply inserts symbols for terminal points in their CAE project and defines the function and cross sections of the connected conductors. The planning module in PROJECT complete (Figure 2) automatically generates the terminal strip, complete with suitable terminal blocks and accessories, based on this information. The software has an autocorrect function that checks for open housings and

suggests missing covers cover segments and end brackets to the user or positions the missing accessories automatically.

The user has complete control here and can decide which accessories to position and where they should go. Additional terminal blocks can also be added as substitutes. This information is then imported into Eplan Electric P8, for example, and the user generates a product including accessories from a terminal point in just a few seconds. PROJECT complete imports all important product data – including commercial data, technical data, and graphics. Additional bidirectional interfaces are planned for the future, so that those who use other CAE programs can transfer their data easily and efficiently. With a click of the mouse, PROJECT complete creates all the documentation for the terminal strips, including order lists, parts lists, structure lists, and mounting lists. This means that users no longer have to spend time searching in catalogues for the appropriate products. In addition, there are no delays during installation due to missing accessories.

Intelligent customer interface

Figure 3 - User-friendly: the integration of the PROJECT complete software supports efficient work activities during mounting

PROJECT complete has an intelligent, process-oriented user interface. Dynamic menu bars enable efficient operation, there are no pop-up screens, and icons and tabs are only shown for advanced handling options. Profiles are created for different user groups – from electrical engineers who configure the entire terminal strip to production personnel who then mount the products on DIN rails (Figure 3).

A user-specific product database simplifies day-to-day work, as only potentially necessary products appear here. Users can create, save, access, and edit custom templates of terminal strips. If users have internal order numbers, they can define them for products in the software database.

Real-time cost calculations are another interesting aspect. Control cabinet manufacturers are also often under tremendous time pressure to create quotes for terminal strips, as customers don't want to wait for days for a quote. With PROJECT complete, planned projects can be transferred directly to the Phoenix Contact E-Shop. Non-DIN-rail-mountable products can then be easily added to the shopping cart as required. The PROJECT complete database contains 12,000 products: terminal blocks, marking materials, control cabinet accessories,

relays, power supply units, circuit breakers, and hand tools can all be assigned to a project. The user is immediately presented with a quote based on their individual price terms and can place their order straight away.

Fast and error-free high-quality marking

The clear and durable marking of all components in control cabinet and systems manufacturing is absolutely essential for error-free installation and start-up, and for minimising downtimes during maintenance and in the event of failure. In the PROJECT complete marking module (Figure 4) all marking information provided by the CAE system can be imported with
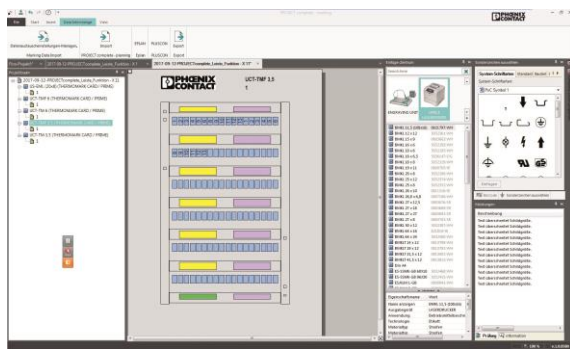
a click of the mouse. There is no need for time-consuming and error-prone manual input.

Figure 4 - For every application: create high-quality markings quickly and cost-effectively with the PROJECT complete marking module

Based on the stored assignment, the correct information is assigned to the suitable marking material. These assignments can be easily customised as required. The extensive marking material portfolio from Phoenix Contact offers solutions for practically all applications – from terminal, cable, and wire marking through equipment marking to plant marking. All printing systems can be controlled uniformly via the PROJECT complete software.

Further information www.phoenixcontact.net/webcode/#0575

If you are interested in publishing this article, please contact Becky Smith: marketing@phoenixcontact.co.uk or telephone 0845 881 2222.

In an environment populated by product selectors and configurators, the PROJECT complete engineering software provides a comprehensive digital interface. It enables users to import custom terminal strips with data from CAE systems or to design terminal strips from scratch, check them, and order them. The advantages at a glance:

❖ Intelligent user interface
  ➢ Dynamic menu bars
  ➢ Create user profiles
  ➢ Bookmark favourites
❖ Real-time calculation
  ➢ Transfer projects to the E-Shop
  ➢ Database containing 12,000 products
  ➢ Easily add products to an order list
  ➢ Cost calculation based on individual price terms
  ➢ Direct ordering available
❖ Connection to existing CAE systems
  ➢ Consistent process design, thanks to bidirectional interfaces
  ➢ Fast and error-free terminal strip configuration
❖ Autocorrect function
  ➢ Check for open housings
  ➢ Automatically add missing accessories
❖ Marking module
  ➢ Control all marking systems
  ➢ Error-free import of marking information by connecting to CAE systems
  ➢ High-quality markings for terminals, cables and lines, equipment, and plants
  ➢ Automated creation of custom markings