



Design Nailboards (Formboards) for Producing Cable Harnesses E³.formboard

D A T A S H E E T

Introduction

E³.formboard provides a complete solution for creating cable harness drawings for manufacturing. On any size sheet, one or more 2D nailboard drawings can be created. Automatic functionality makes the placement, arrangement and dimensioning of the harness and its segments easier.

The formboard drawing provides a view of the cables and harnesses as defined in the schematic diagram. It comprises both electrical and non-electrical components including connector placement, wire segments, protective coverings, clips, labels etc. You can manually or automatically place configurable connector tables in the drawing which display pin, wire, cable, signal, gauge, color, and target information; making the manufacturing process much more streamlined and error free. These tables are dynamic, meaning that a wire can be added to a pin displayed in the table and connected to a pin in another table and Formboard will automatically route the wire from pin to pin through the harness segments.

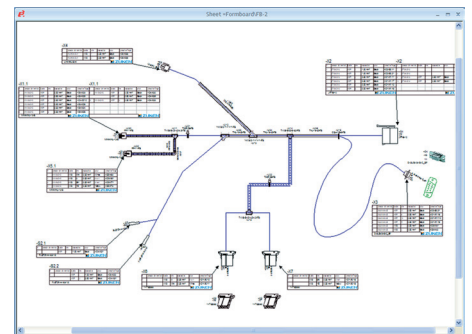
Nodes can be added to individual harness segments. New branches can be added at the node point and rotated around the node to optimize the layout on the page. Harness segments can be highlighted when the length displayed on the sheet does not correspond to the manufacturing length defined for each segment. These “out-of-scale” segments can be automatically adjusted to display the correct manufacturing length assigned to the segments of the harness.

Although most harness segments are shown as straight lines, segments may also be created and displayed as B-splines.

Dimensioning features include the ability to show either the displayed or manufacturing length data, including tolerance information, display or suppress leader lines, etc. Additional dimension data may be displayed, for example to show cut length data that includes the length added for wire termination within a connector.

Formboard includes the ability to calculate and display the bundle diameter of the harness. This can also be displayed on each of the harness segments.

E³.formboard is fully integrated with E³.cable. The logical interconnection data defined in E³.cable is used directly in E³.formboard and any changes made in either module are automatically reflected in the other.



Schematic and 1:1 scaled drawing for cable harness production

Special Functionality in E³.formboard

- Place single or multiple pin connector views
- Automatically place configurable assignment tables
- Connect single segments with individual line types
- Supports arced connection segments (B-Splines)
- Insert, delete and fix nodes
- Automatically stretch and compress segments
- Automatically calculate wire lengths over routing segments
- Rotate branches
- Place and check non electrical parts (mounting, tubes, hoses, ...)

The E³.series Standard

- Completely integrated in Windows® environment
- User-interface in numerous languages; easy to switch
- Supports all Windows® fonts using UNICODE
- Configurable user interface and toolbars
- Object-oriented user interface with possibility to directly integrate in other applications
- Display drawings using different norms (DIN, ANSI, JIC)
- Supports any sheet format, e.g. DIN, Ladder, special formats
- Translate texts into any language
- Search mechanisms for symbols, devices, connections, texts and attributes...
- Context-sensitive Online Help
- 256 object-related display levels
- Print and plot using all Windows® standard drivers
- Supports standard formats like STEP, DXF/DWG, SVG, PDF, pixel graphics
- Bidirectional API (COM/DCOM Standard)
- Integrated database editor
- Compatible with all previous E³.series versions

The E³.series Base Functionality

- Automatic and parallel connections
- Save, load, copy, rotate and mirror drawings and areas
- Extensive functionality for exchanging symbols and components
- Continuous verification of adherence to manufacturing specifications, such as multiple assignment of symbols and overcrowding of components
- Supports variants and options, Boolean operators and alias names
- Online cross-references for connections and devices
- Object and text hyperlinks also within E³.series projects
- User-defined connection attributes
- User-defined grid sizes, fonts and line types
- Drag and Drop
- Dynamic zooming and panning

Additional E³.series Modules

E³.schematic

E³.schematic is the E³.series base module. Easy to use and operate. Provides complete functionality for electrical design, including inline terminals and connection plans.

E³.fluid

E³.fluid is the integrated design system for hydraulics, pneumatics, cooling and lubrication. Special functionality supports the development of fluidics in connection with electrical design.

E³.cable

E³.cable offers enhanced functionality for designing cables and cable harnesses. Different views of the design enable specific documents to be created for production, start up and service.

E³.panel

E³.panel is the module for panel layout and wiring. Optionally design the panel in 2D or 3D, place all devices and automatically connection wire pathways as specified.

E³.view

E³.view is the free-of-charge viewer for all E³.series projects (.e3s) and special viewer files (.e3v). It can be used by anyone within a company or passed on to suppliers and customers.