

Elektrische Bauteile für den digitalen Zwilling aus der E3.ComponentCloud

Joachim Frank / Bernd Schlenk



- Wer ist Zuken
- Was ist E3.series
- Warum Bauteile für die Elektrokonstruktion
 - Intelligente Bauteile #poweredbyCADENAS
 - Effizienzsteigerung im Schaltschrankbau
 - Nutzung der E3.ComponentCloud
- Smart Cabinet Building – Effizienzsteigerung im Schaltschrankbau
- Was ist die Component Cloud
- Bauteilerstellung mit E3.ComponentCloud



Wer ist Zuken



Founded	1976
Revenue Year ended March 2024	38.466 Mio. JPY (~238 Mio. EUR)
Corporate Headquarters	Yokohama, Japan
European Headquarters	Munich, Germany
North American Headquarters	Westford, Massachusetts
Stock Listing	Tokyo Stock Exchange Prime Market
Employees	~ 1,200
Operational Excellence	Profitable, no debt



Zuken Inc.
Worldwide Headquarters
Yokohama, Japan



Zuken GmbH
European Headquarters
Munich, Germany



Zuken USA Inc.
North American
Headquarters
Westford, Massachusetts

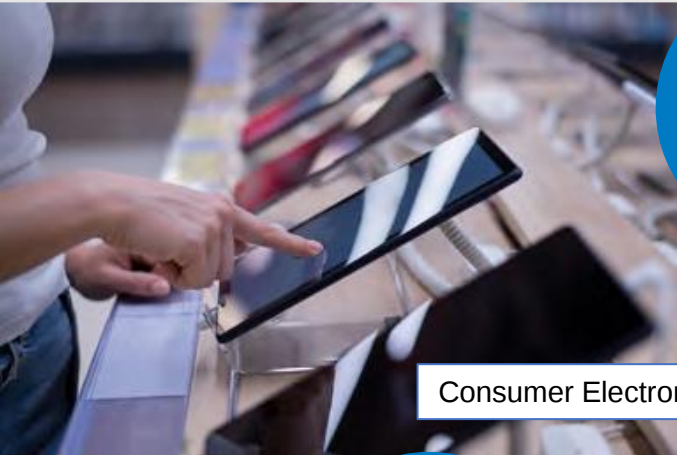






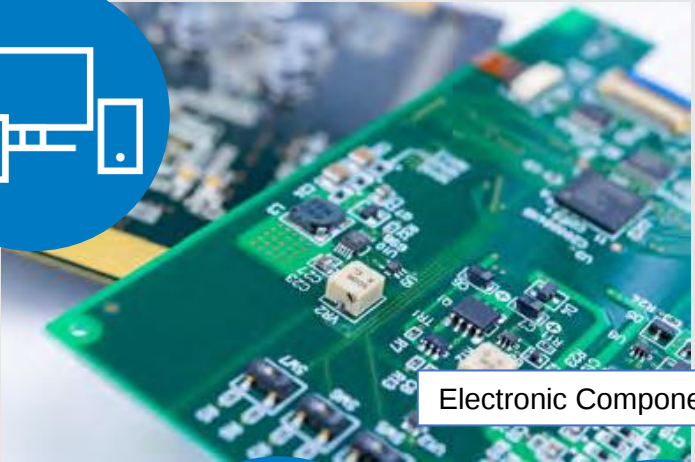
Industrial Machinery





Consumer Electronics





Electronic Components





Medical Devices



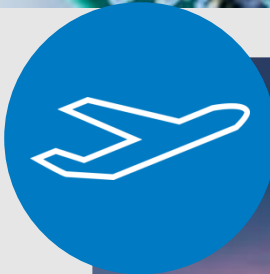


Automotive & Mobility





Rail Transport

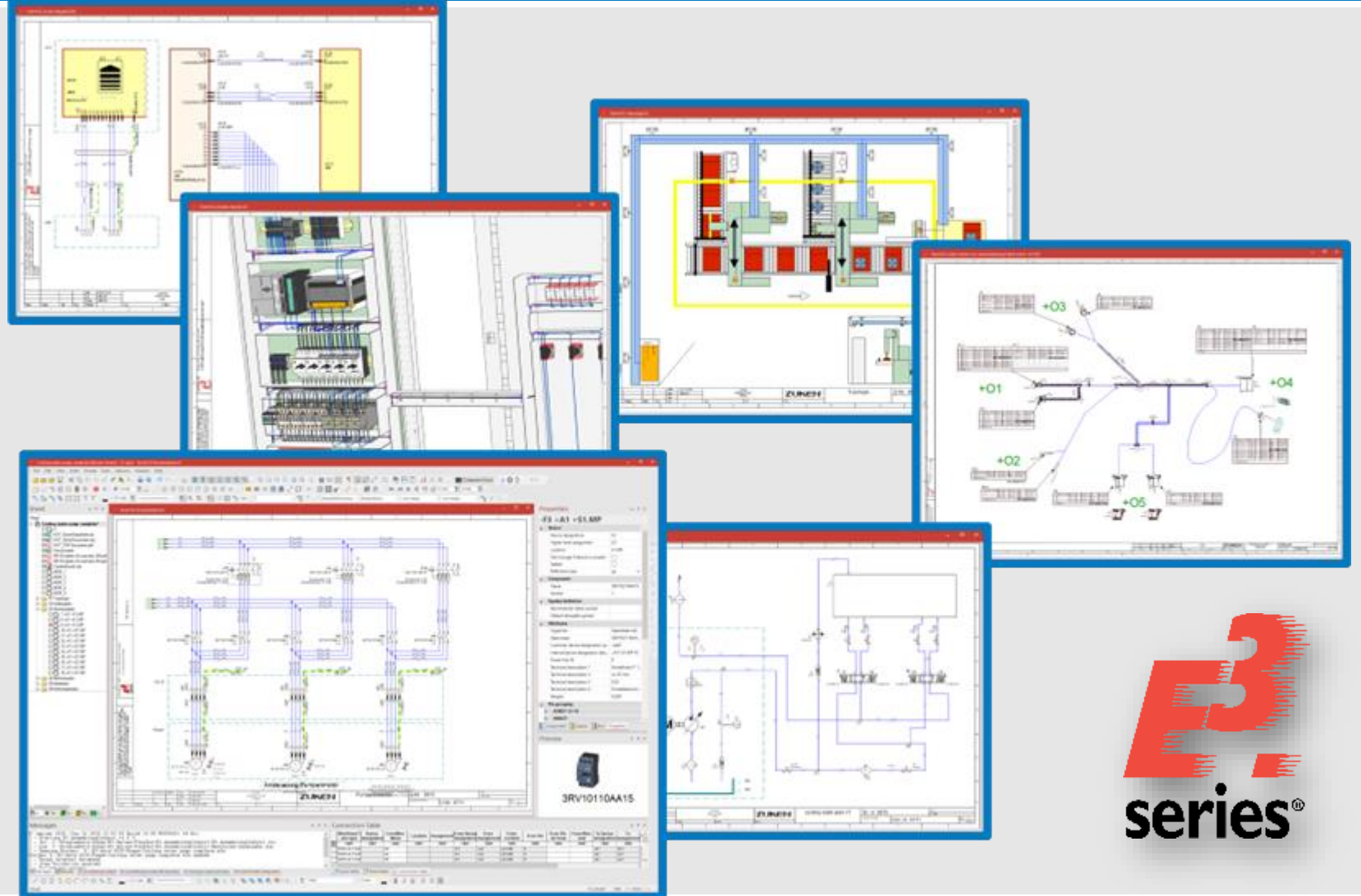




Life Sci
Aerospace & Defence

Elektrokonstruktion: Immer wenn Strom fließt

- Logische Beschreibung in Stromlaufplänen
- Physische Beschreibung in
 - Schaltschrank
 - Kabelbaum
- Steuerung der Fertigung
- Automatisierung in der Fertigung



Connecting Electrical Design to Manufacturing

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Circuit diagrams

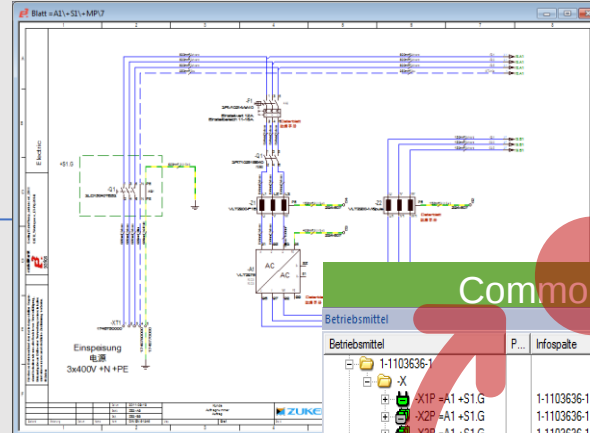
- Schematics and Terminal Plans
- User-defined lists
- Production documentation
- Customer documentation
- Installation and Service

Hydraulics, pneumatics, cooling and lubrication

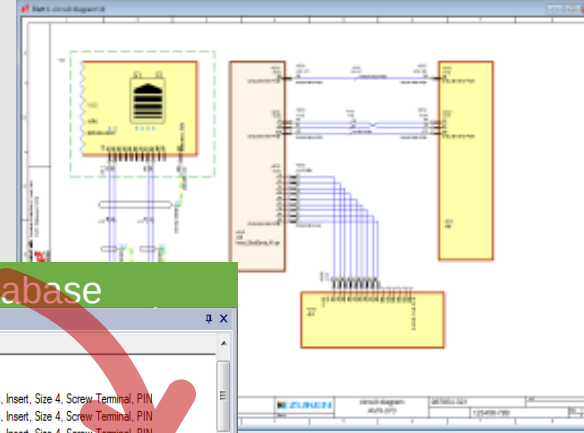
- Fluid plan
- User-defined lists
- Production documentation
- Customer documentation
- Installation and Service



Circuit Diagrams

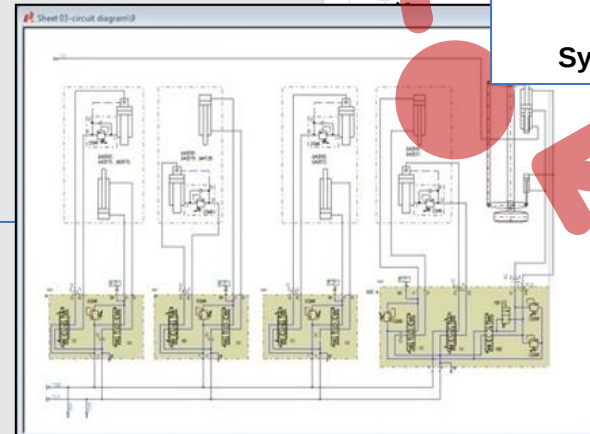


Wiring Diagrams



Common Database

Fluid Plans



Cabinet and Harness Manufacturing



Online-Synchronization

Additional views of schematics

- single line, bus overviews
- System documentation
- Block diagrams
- Detailed hierarchies
- Schematics and Terminal Plans
- Cable diagram
- shielded, twisted pairs, ...
- User-defined lists

Panel layout and wiring

- 3D panel module
- Automatic routing
- Manufacturing information

Scaled harness drawings

- Special sheet templates
- Automatic functionality
- Online integration to E3.cable

E³.cable

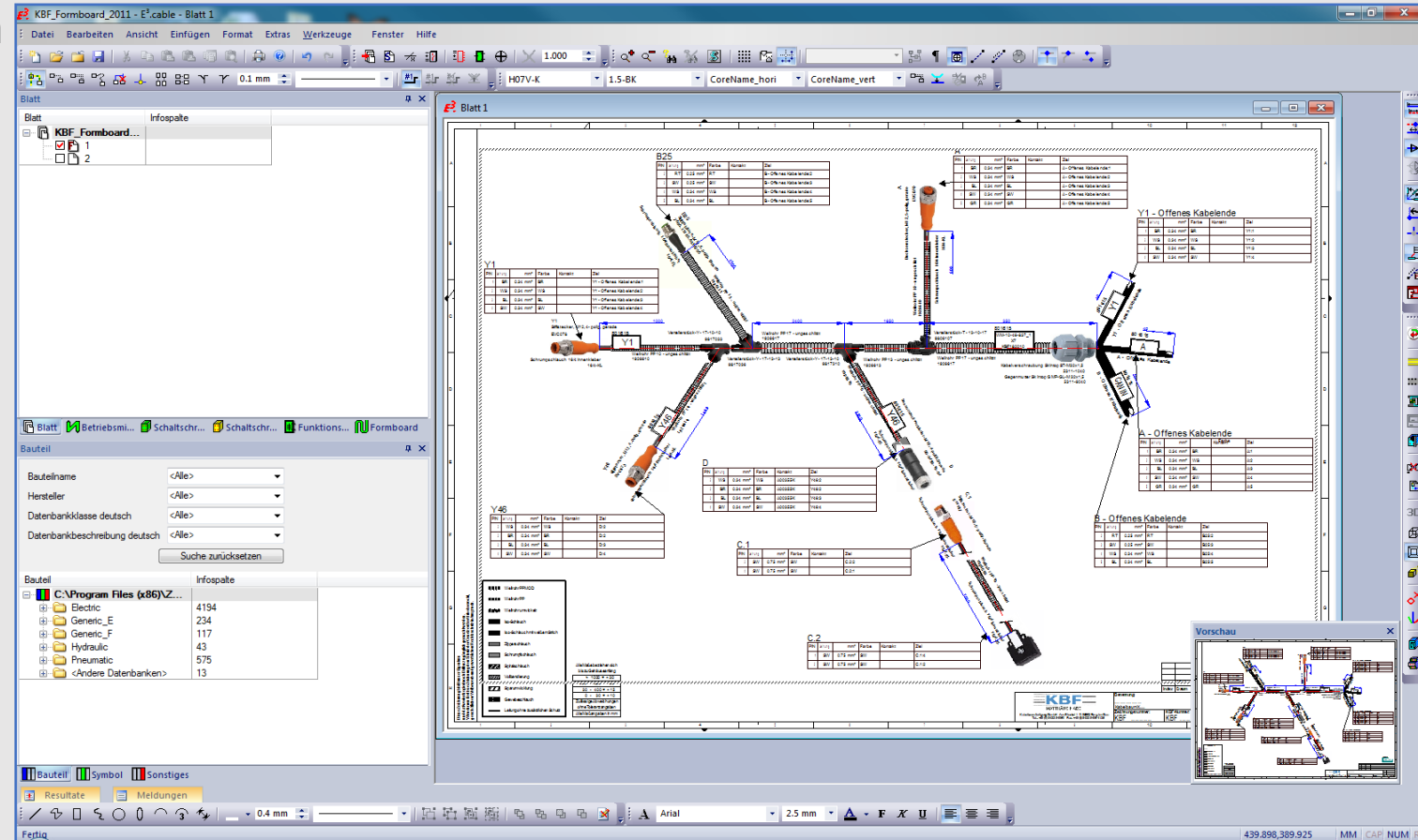
- Definition von Kabeln und Leitungsbündeln
- Steckerbelegung
- Abschirmmaterialien und Verdrillung

E³.formboard

- Für 1:1 Nagelbrettzeichnungen
- Komplette, leicht zu bedienende Lösung

Das Layoutmodul für E³.cable

- Spezielle Blattformate
- Automatische Funktionen
- Integration in die Fertigung
 - Beschriftung
 - Kabelkonfektion

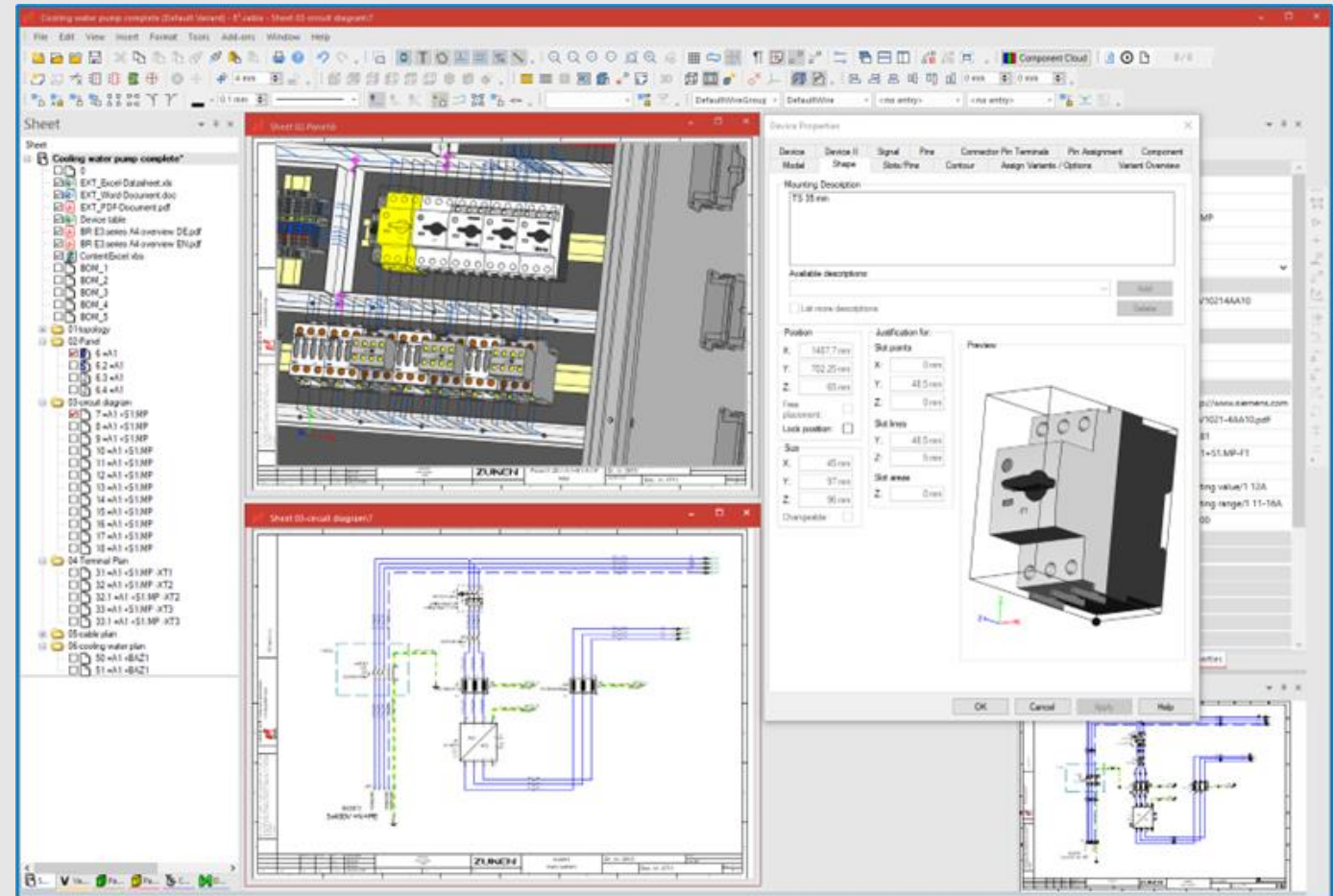


E³.panel

- Für Schaltschrankaufbau und -verdrahtung
- Komplette, leicht zu bedienende Lösung

Das Layoutmodul für E³.series

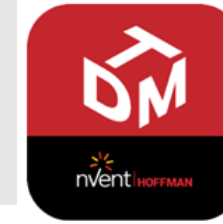
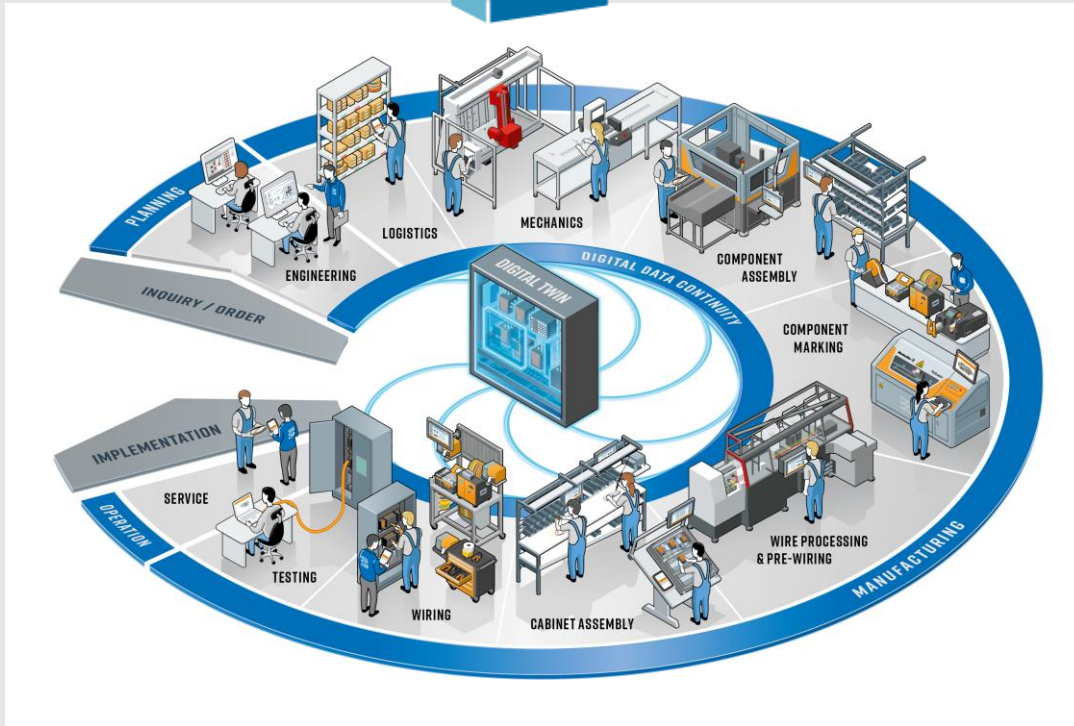
- 2D / 3D Schaltschrankaufbau
- Automatisches Routing
- Integration in die Fertigung
 - Beschriftung
 - Kabelkonfektion
 - Bohren und fräsen
 - Beliebige Auswertungen



Smart Cabinet Building / nVent

– Fertigungsautomatisierung im Schaltschrankbau

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ARMBRUSTER
ENGINEERING

komax

Weidmüller



ZUKEN®

nvent
HOFFMAN

ABB - 1SBL137001R1110 + AF09-30-10-11 24-60V50/60HZ 20-60VDC Contactor

Suchergebnis

Alle Filter löschen

Company	ABB Low Voltage & Systems
Description	AF09 - 3 or 4-pole Contactors - AC or DC Operated
Bill of material	ABB - 1SBL137001R1110 + AF09-30-10-11 24-60V50/60HZ 20-60VDC Contactor
PN Product ID	1SBL137001R1110
EXTTYPE Extended Product Type	AF09-30-10-11
INVD Invoice Description	AF09-30-10-11 24-60V50/60HZ 20-60VDC Contactor
DES Description	Screw Terminals 3 Poles AF Contactor - Top Mounted Coil Terminal
DESCLONG Long Description	The AF09-30-10-11 is a 3 pole - 690 V IEC or 600 UL contactor with auxiliary contact and screw terminals, controlling motors up to 400 V AC (AC-3) or 5 hp / 480 V UL and switching power circuits up to (AC-1) or 25 A UL general use. Thanks to the AF technology, the contactor has a wide control voltage range (24-60 V 50/60 Hz and 20-60 V DC) managing large control voltage variations, reducing panel energy consumptions and ensuring distinct operations in unstable network. Furthermore, surge protection is built-in, offering a compact solid contactors have a block type design, can be easily extended with auxiliary contact blocks and an additional wide range of accessories.
INTNO International product number	3471523110014
MANUID Product number of the Manufacturer	1SBL137001R1110
EF003978 Rated control supply voltage Us at AC 50/60Hz	24 - 60
EF003979 Rated control supply voltage Us at AC 60/60Hz	24 - 60
EF003980 Rated control supply voltage Us at DC	24 - 60
EF008242 Voltage type for actuating	AC/DC
EF001393	

Model Properties...

Model	Shape	Model Pins	Slots/Pins	X Offset	Y Offset	Z Offset
A1	screwed			0.0	0.0	0.0
A2	screwed			0.0	0.0	0.0
1	screwed			0.0	0.0	0.0
2	screwed			0.0	0.0	0.0
3	screwed			0.0	0.0	0.0
4	screwed			0.0	0.0	0.0

Connection type: screwed

Connection direction: top

Maximum wire count: 1

Z Position: 57.15 mm

Minimum/Maximum cross-sections Metric: 1.00 mm² - 6.00 mm²

AWG: (no entry) - (no entry)

Total maximum: 6.00 mm²

Diameter: (no entry)

Connection Target: ☒ Both ☐ External ☐ Internal

Destination cable duct: (no entry)

Routing Offset: X: 0 mm Y: 0 mm Z: 0 mm

☒ Show connection direction

Preview

Component Properties

Pin Assignment

Component	Pins	List of Values	Subcircuit
		Calculation	Functional Attributes
Component:	Bemd		
Subtype:	(no entry)		
Version:			☒ current ☐ old
Version text:	as GmbH		
code:			
date:			
bol:	Bemd		
mbol:	(no entry)		

Entry

File number	abb_1SBL137001R1110_AF09-30-10-11_24-60V50_60HZ_20-60VDC
Class	Power contactor, AC switching
Description	3 or 4-pole Contactors - AC or DC Operated
Manufacturer	ABB_Low_Voltage_Systems
File JPG (Thumbnail)	af09_asmtpl.png
Base Class E	Power contactor, AC switching
Base Class G	Leistungsschutz zum Schalten von Wechselstrom
Base Description	3 or 4-pole Contactors - AC or DC Operated
Base Description	24-60V50/60HZ 20-60VDC Contactor
Number	3471523110014
Height	0.27
Mass class	27371003

OK Cancel Apply Help

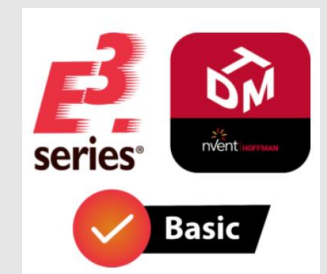
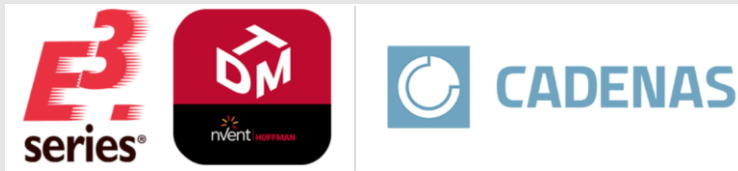
3Dfindit

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E3 series®

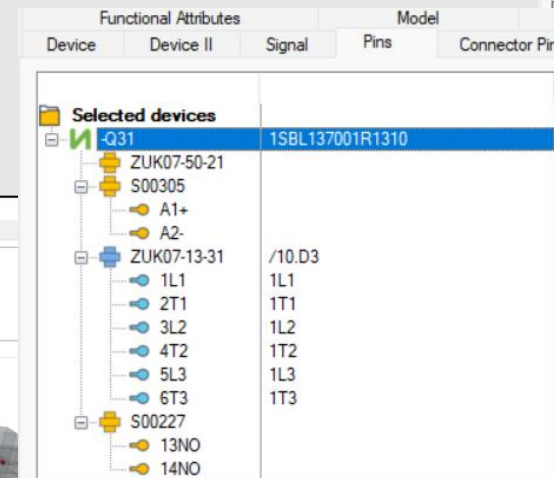
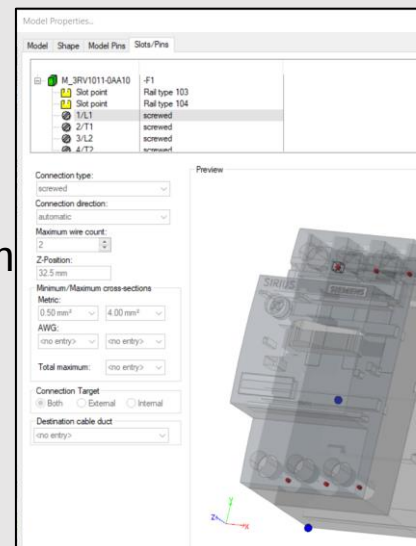
Immer mehr Hersteller machen mit: Elektrifizierte Bauteile

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Um in der Elektrotechnik nicht nur Stromlaufpläne sondern auch Fertigungsinformationen zu erstellen, werden komplette, vollständige und geprüfte Daten benötigt

- Bauteil benötigt die Stammdaten
- Bauteil benötigt die logischen Daten (Symbole und Anschlusspunkte) für den Stromlaufplan
- Bauteil benötigt für den Schaltschrank und den Kabelbaum folgende Daten
 - Erlaubter Querschnitt am Anschlußpunkt
 - Erlaubte Anzahl angeschlossener Drähte
 - Gültige Positionen im Schrank / Kabelbaum
 - Bohrinformationen für Befestigung
 - ...



Device letter code:	F
Table symbol:	<no entry>
Default template:	<no entry>
Preview symbol:	product_picture_G_NSA0_XX_93050I
Topology symbol:	<no entry>

Name	Entry
CM Supplier	Siemens AG
A Data sheet (1)	3RV20111CA10_de.pdf
A Data sheet (2)	3RV20111CA10_en.pdf
A Database Clas	Motor Starter Protectors SIRIUS 3RV2 up to 40 A
A Database Clas	Disjoncteurs SIRIUS 3RV2 jusqu'à 40 A
A Database Clas	Leistungsschalter SIRIUS 3RV2 bis 40 A
A Database Clas	Interrupctores automáticos SIRIUS 3RV2 hasta 40 A
A Database Desc	CIRCUIT-BREAKER SZ S00, FOR MOTOR PROTECTION, CLASS 10, A-
A Database Desc	DISJONCTEUR TAILLE S00, POUR PROTECT. MOTEUR, CLASS 10, DI
A Database Desc	LEISTUNGSSCHALTER BGR. S00, FÜR DEN MOTORSCHUTZ, CLASS
A Database Desc	CIRCUIT-BREAKER SZ S00, FOR MOTOR PROTECTION, CLASS 10, A-
A Database User	BB
A EAN Number	4011209712430
A Hyperlink	https://mall.industry.siemens.com/mall/en/WW/Catalog/Product/
A M-CAD mode	<no entry>
A Technical desc	<no entry>
A Technical desc	<no entry>
A Technical desc	<no entry>
A Technical desc	<no entry>
A Weight	0.320
A eCl@ss class	27370401

Bauteil in Cadenas (über E3.ComponentCloud) suchen und in die E3.series Bauteildatenbank übertragen

Geben Sie Schlüsselwort(e), eine Bestellnummer oder einen Typenname für die Volltextsuche

ABB - 1SBL137001R1110 + AF09-30-10-11 24-60V50/60HZ 20-60VDC Contactor

Suchergebnis

Alle Filter löschen

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PN Product ID	1SBL137001R1110
EXTTYPE Extended Product Type	AF09-30-10-11
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Download CAD MODELL

abb_1SBL137001R1110_AF09-30-10-11 24-60V50/60HZ 20-60VDC Contactor (CAD)

Download Information Entfernen

3D 2D

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Component Cloud 25.1.0.0 for E3.series - Download Information

Component type: Device

Component name

The following symbols/views will be created:

Model name

Symbolname	Symboltype
ABB1	PreviewSymbol

The following symbols are referenced in the CLX file and mapped to E3 symbols:

CLX Symbol	E3 Symbol
S00305	S00305
S00284	S00284
S00227	S00227

The following symbols/models will be loaded by CLX from MDB to the database:

Symbolname	Model name

The following attributes are defined for the component in the CLX file:

CLX Attribute	Value	Language	E3 Attribute
NB <not defined>	abb_1SBL137001R1110_AF09-30-10-11 24-60V50/60HZ 20-60VDC Contactor	en-US	<not defined>
NN <not defined>	AF09	en-US	<not defined>
NT <not defined>	3 or 4-pole Contactors - AC or DC Operated	en-US	<not defined>
NBSYN <not defined>	abb_SPN_SINVDES.	en-US	<not defined>
LINA <not defined>	ABB - 1SBL137001R1110 + AF09-30-10-11 24-60V50/60HZ 20-60VDC Contactor	en-US	<not defined>
CATALOG <not defined>	ABB Low Voltage & Systems	en-US	<not defined>
PN Product ID	1SBL137001R1110	en-US	<not defined>

C:\ProgramData\Zuken\E3.series\Plugins\E3.ComponentCloud\Configuration\E3_CLX_ZUKEN.ir

OK Cancel

The screenshot displays the 'Model Properties...' dialog box for a cable management system. The dialog is divided into several sections:

- Model Properties:** A table listing connection types and their properties.

Model	Shape	Model Pins	Slots/Pins	X-Offset	Y-Offset	Z-Offset
☒ A1		screwed		0.0	0.0	0.0
☒ A2		screwed		0.0	0.0	0.0
☒ 1		screwed		0.0	0.0	0.0
☒ 2		screwed		0.0	0.0	0.0
☒ 3		screwed		0.0	0.0	0.0
☒ 4		screwed		0.0	0.0	0.0
☒ 5		screwed		0.0	0.0	0.0
- Connection type:** A dropdown menu set to 'screwed'.
- Connection direction:** A dropdown menu set to 'top'.
- Maximum size count:** A dropdown menu set to '1'.
- Z-Position:** A text field showing '57.15 mm'.
- Minimum/Maximum cross sections:** A section with a 'Metric' label and three dropdown menus for '1.00 mm²', '6.00 mm²', and 'ΔWG: (no entry)'.
- Total maximum:** A dropdown menu set to '6.00 mm²'.
- Diameter:** A dropdown menu set to '(no entry)'.
- Connection Target:** Radio buttons for 'Both' (selected), 'External', and 'Internal'.
- Destination cable duct:** A dropdown menu set to '(no entry)'.
- Routing Offset:** Text fields for 'X: 0 mm', 'Y: 0 mm', and 'Z: 0 mm'.
- Preview:** A 3D rendering of the cable management system showing the installation of the selected connection types. Red arrows indicate the connection direction.

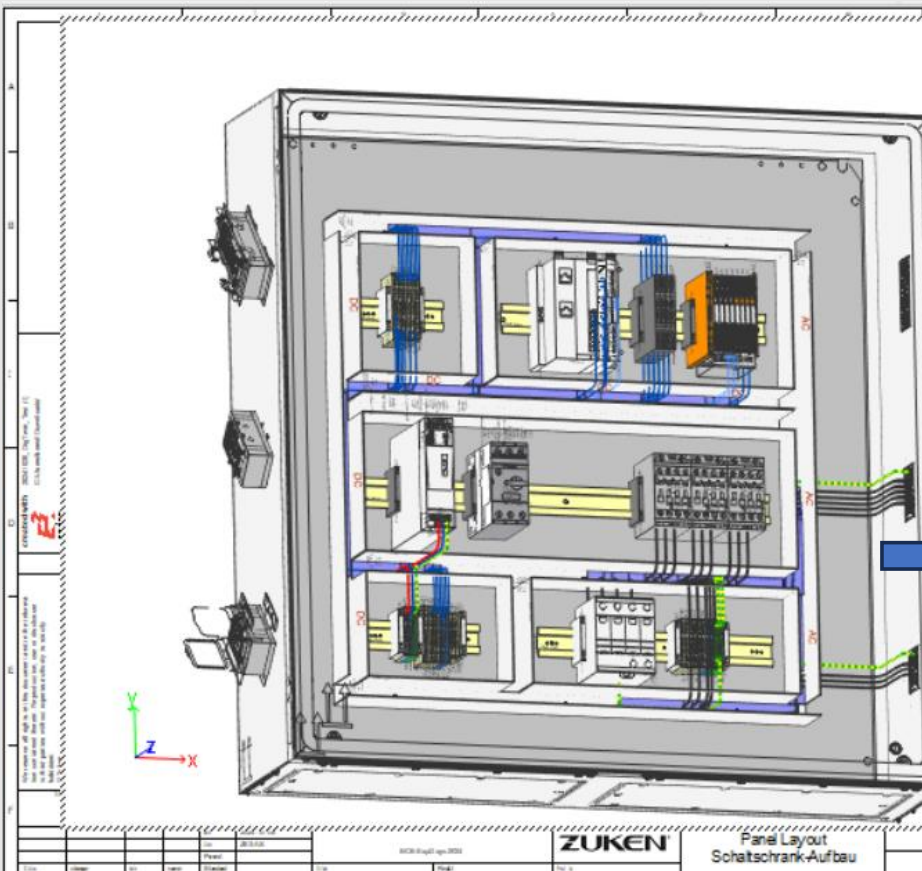
A green arrow points to the 'Connection direction' dropdown menu.

Bauteil aus der E3.series Bauteildatenbank im Projekt (Stromlaufplan und Schaltschrank) verwenden

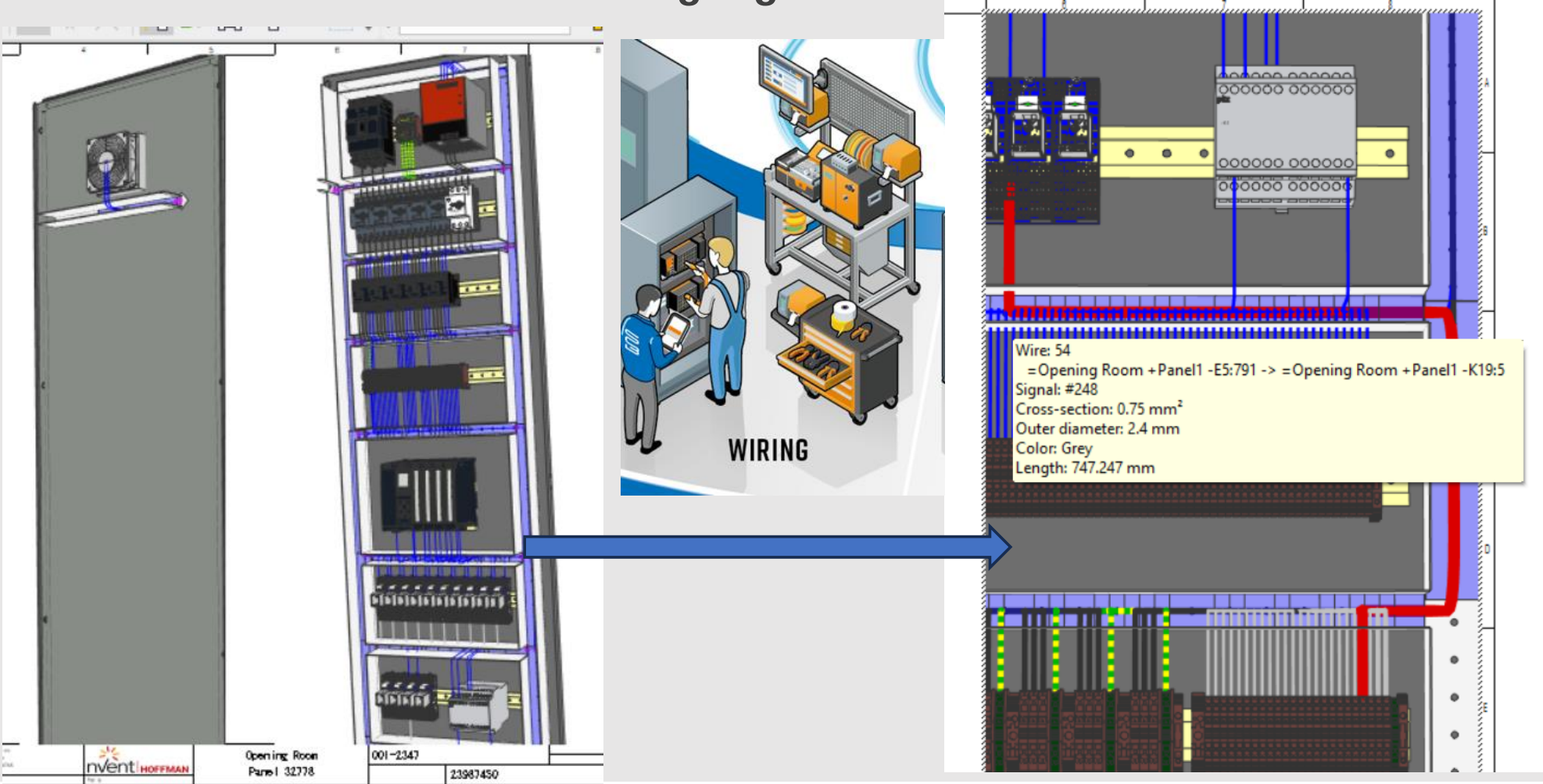
The diagram illustrates the workflow for using a component from the E3.series database in a project. It consists of four main stages:

- Model Properties...**: A dialog box for configuring the component. It includes a table for pin properties, connection type settings, and a preview of the 3D model.
- 3D Model**: A detailed 3D rendering of the terminal block component, showing its internal structure and connection points.
- 2D Schematic**: A schematic diagram showing the component's electrical connections. It includes labels for pins (A1, A2, -X1, -X2) and a break symbol indicating a long connection line.
- 3D Perspective View**: A 3D perspective view of the component installed in a rack, showing its connection to a power supply and other components.

MECHANICS



E3.series Daten für z.B. Drahtfertigung und Verdrahtung





**Bauteile schnell und einfach zu finden und
in E3.series direkt zu verwenden.**

**Die Möglichkeit zu haben, die übertragenen
Bauteile den individuellen Vorgaben
anzupassen**

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