

Electrical components for the digital twin from the E3.ComponentCloud

Joachim „Joe“ Frank / Bernd Schlenk



- Who is Zuken
- What is E3.series
- Why components for electrical design
 - Intelligent components #poweredbyCADENAS
 - Increased efficiency in control panel design
 - Use of the E3.ComponentCloud
- Smart Cabinet Building - increasing efficiency in enclosure construction
- What is the Component Cloud?
- Component creation with 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

Industries we serve



Industrial Machinery

Consumer Electronics

Electronic Components

Medical Devices

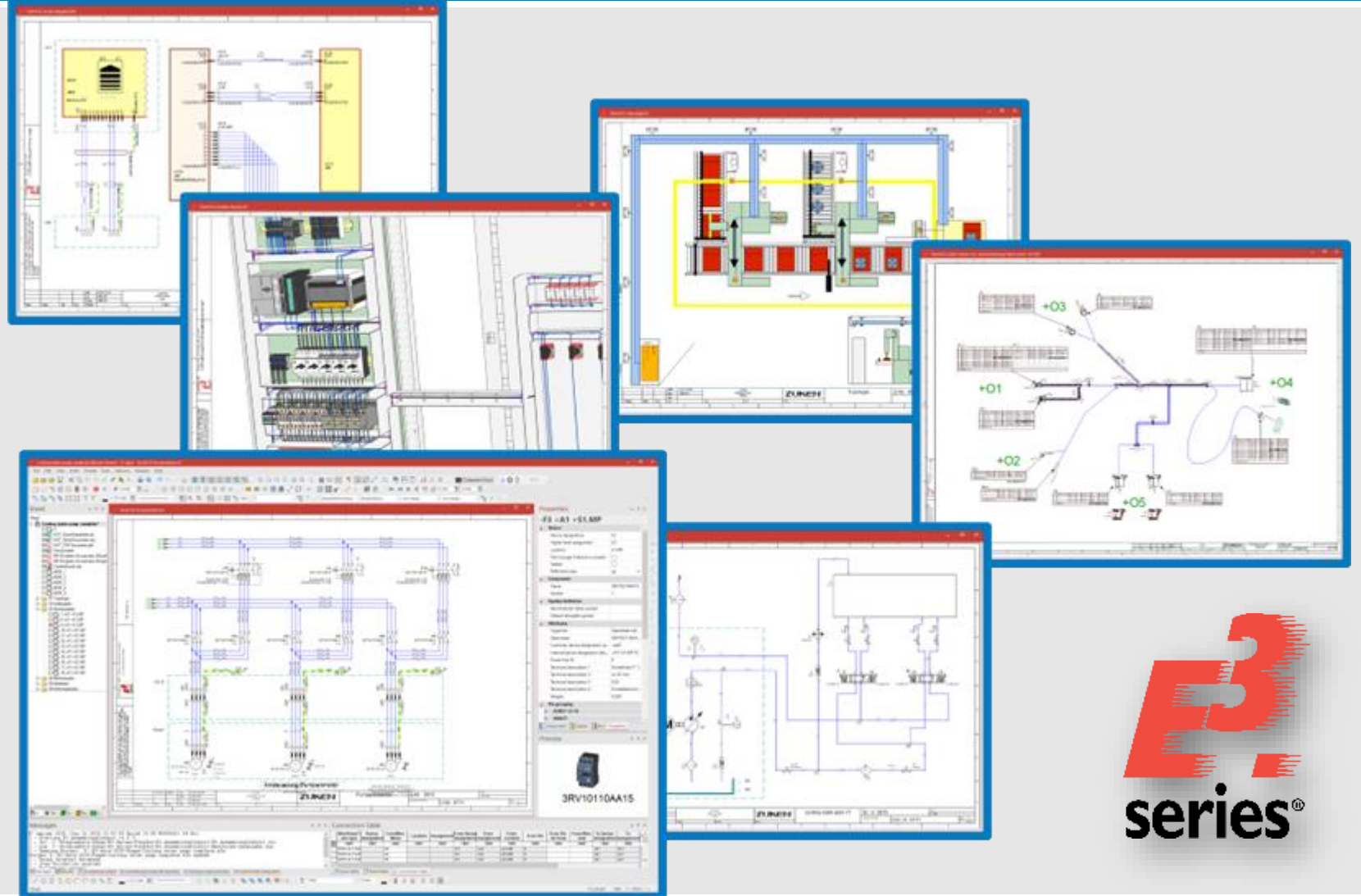
Automotive & Mobility

Rail Transport

Aerospace & Defence

Electrical Design: Wherever current flows

- Logical description in circuit diagrams
- Physical description in
 - switch cabinets
 - Cable harness
- Control of production
- Automation in production



E3
series®

Connecting Electrical Design to Manufacturing

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Circuit diagrams

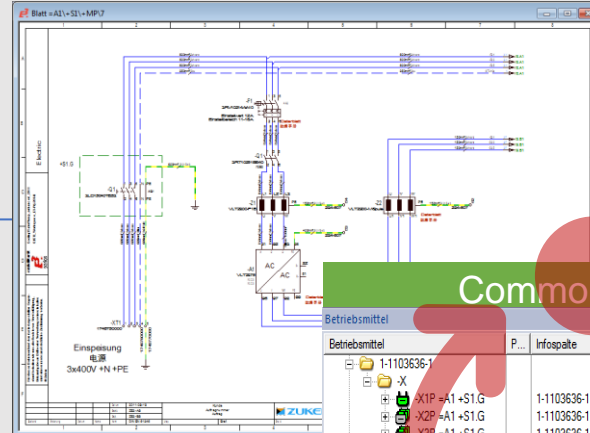
- Schematics and Terminal Plans
- User-defined lists
- Production documentation
- Customer documentation
- Installation and Service

Hydraulics, pneumatics, cooling and lubrication

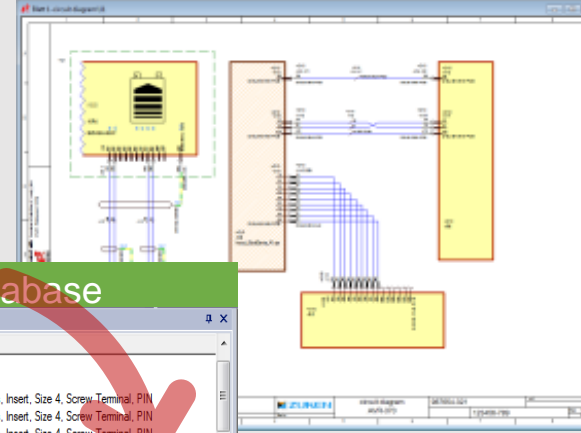
- Fluid plan
- User-defined lists
- Production documentation
- Customer documentation
- Installation and Service



Circuit Diagrams

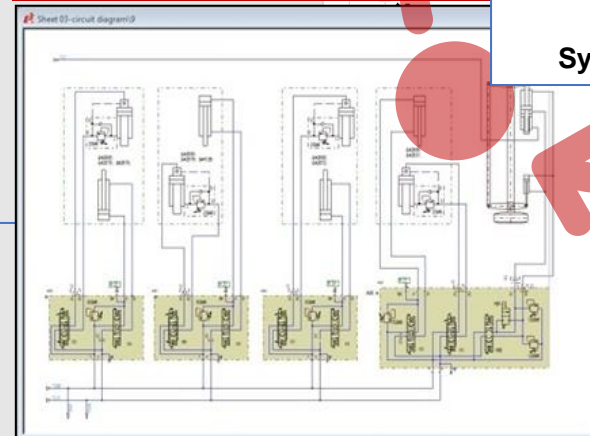


Wiring Diagrams



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

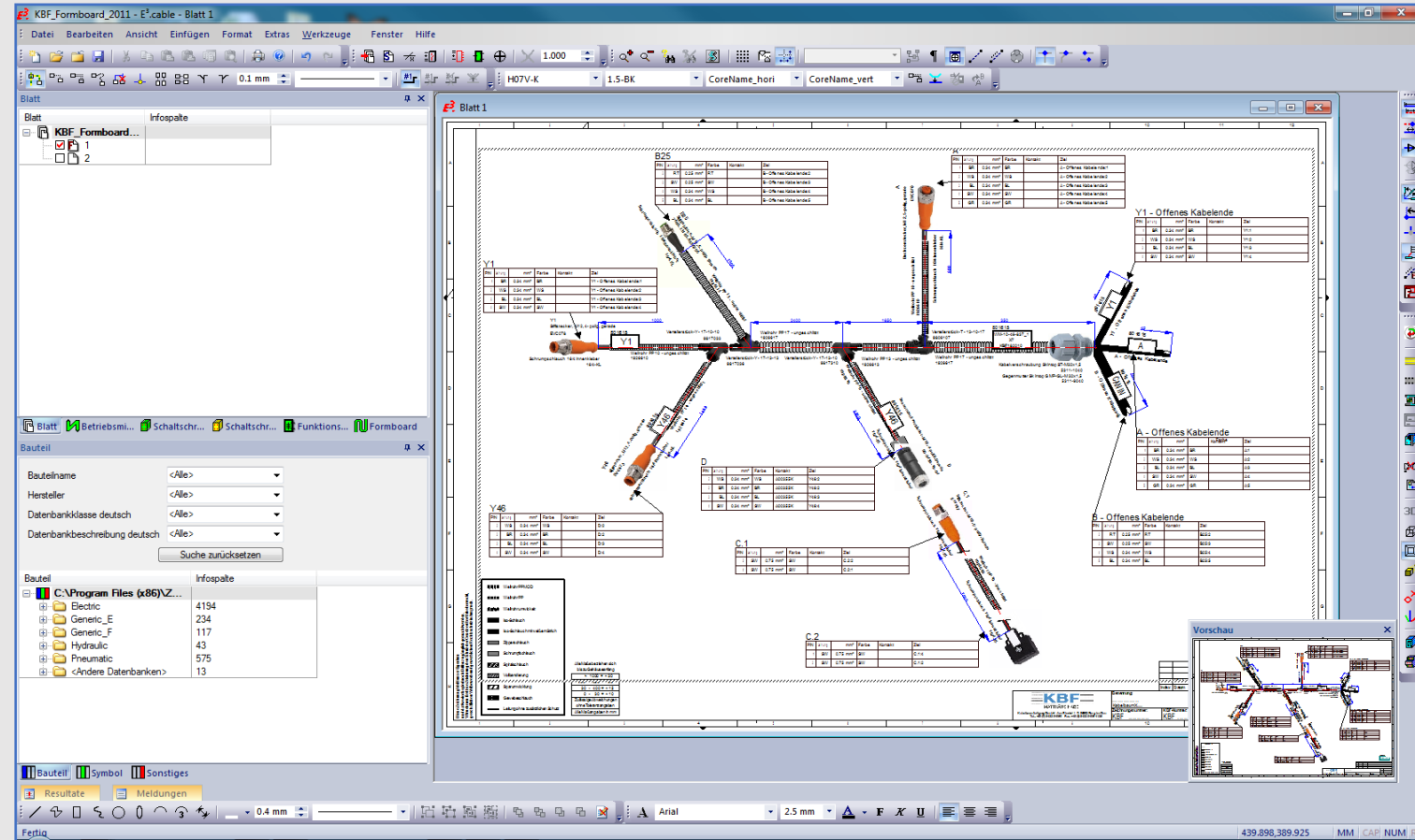
- Definition of cables and cable bundles
- Pin assignment
- Shielding materials and twisting

E³.formboard

- For 1:1 nail board drawings
- Complete, easy to use solution

The layout module for E³.cable

- special sheet formats
- Automatic functions
- Integration into production
 - Labeling
 - Cable assembly

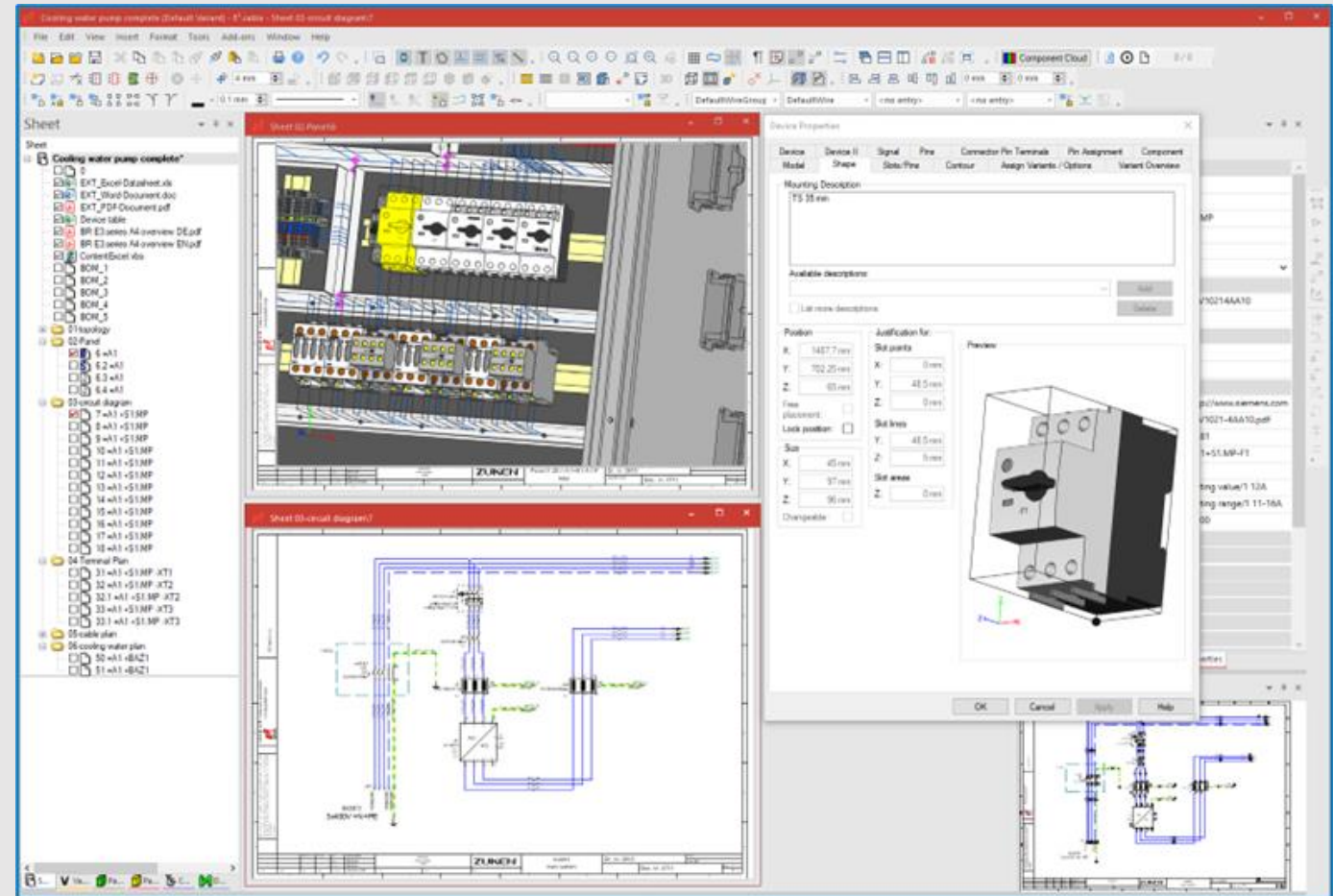


E³.panel

- For control cabinet installation and wiring
- Complete, easy-to-use solution

the Layout modul for E³.series

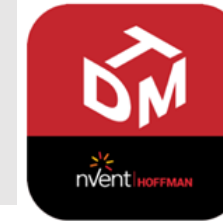
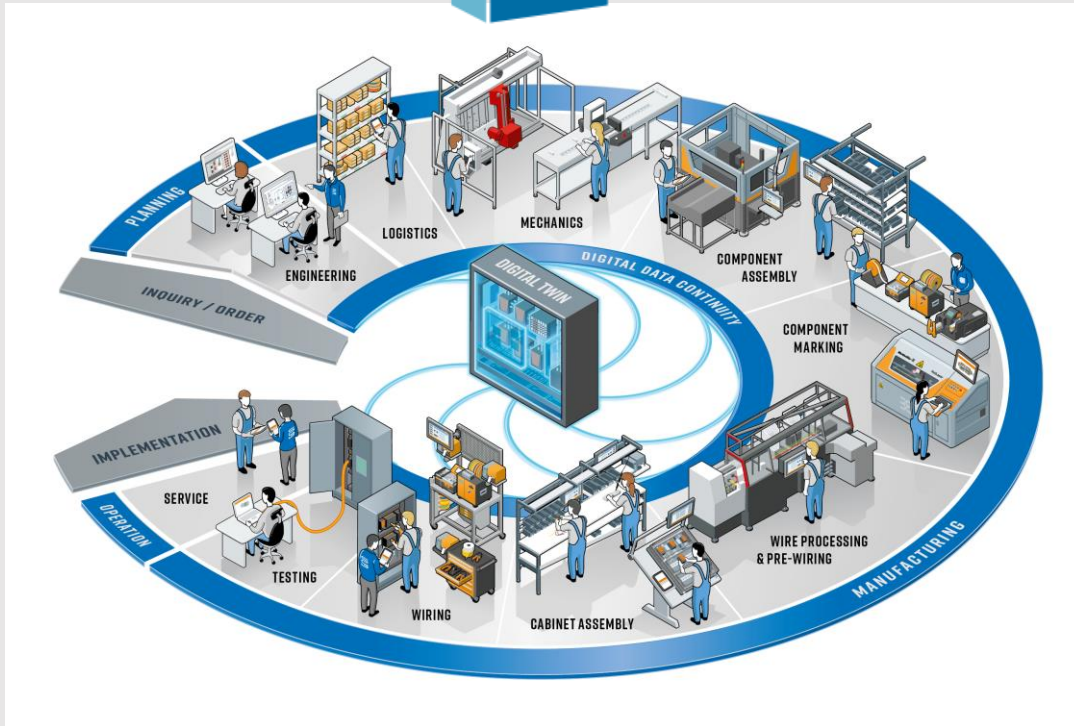
- 2D / 3D control cabinet design
- Automatic routing
- Integration into production
 - Labeling
 - Cable assembly
 - Drilling and milling
 - Any reports



Smart Cabinet Building / nVent

– Production automation in control panel manufacturing

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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 |
| INVDIS 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 in 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: | | | <input checked="" type="radio"/> current <input type="radio"/> old |
| Version text: | as GmbH | | |
| code: | | | |
| late: | (no entry) | | |
| 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 |
| Class | Electric |
| Supplier | 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

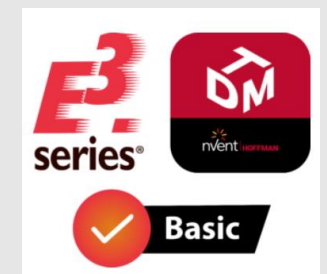
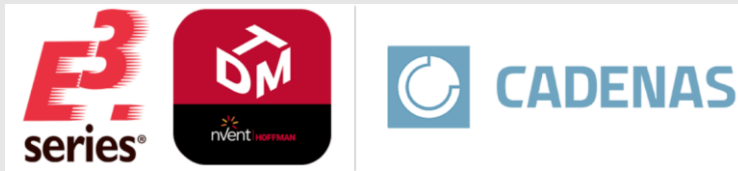
3Dfindit

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E3 series®

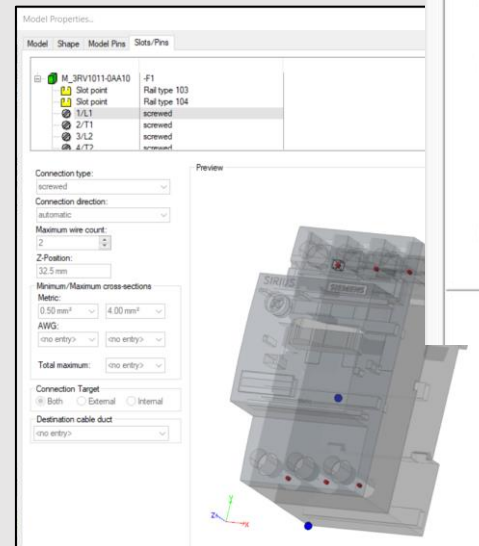
More and more manufacturers are joining: Electrified components

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In order to create not only circuit diagrams but also production information in electrical design, complete, complete and verified data is required

- Component requires the master data
- Component requires the logical data (symbols and connection points) for circuit diagram
- Component requires the following data: for the control cabinet and the wiring harness
 - Permitted cross-section at the pin
 - Permitted number of connected wires
 - Valid positions in the cabinet / cable harness
 - Drilling information for fastening
 - ...



| Functional Attributes | | Model | |
|-------------------------|-----------|--------|--------|
| Device | Device II | Signal | Pins |
| Connector Pin Te | | | |
| Selected devices | | | |
| -Q31 | | | |
| ZUK07-50-21 | | | |
| S00305 | | | |
| A1+ | | | |
| A2- | | | |
| ZUK07-13-31 | | | |
| 1L1 | | | /10.D3 |
| 2T1 | | | 1T1 |
| 3L2 | | | 1L2 |
| 4T2 | | | 1T2 |
| 5L3 | | | 1L3 |
| 6T3 | | | 1T3 |
| S00227 | | | |
| 13NO | | | |
| 14NO | | | |

| | |
|---------------------|----------------------------------|
| 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 eCI@ss class | 27370401 |

Search for component in Cadenas (via E3.ComponentCloud) and transfer it to the E3.series component database

Mein Zugangbernd.schlenk@zuken.com

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

ABB - 15BL137001R1110 + AF09-30-10-11 24-60V50/60HZ 20-60VDC Contactor

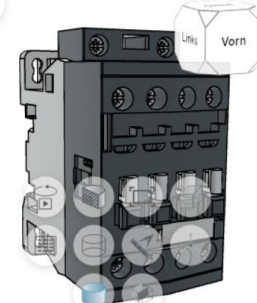
Suchergebnis

Alle Filter löschen

Download CAD MODELL

| | |
|------------------|---|
| Company | ABB Low Voltage & Systems |
| Description | AF09 - 3 or 4-pole Contactors - AC or DC Operated |
| Bill of material | ABB - 15BL137001R1110 + AF09-30-10-11 24-60V50/60HZ 20-60VDC Contactor |
| PN | 15BL137001R1110 |
| EXTTYPE | Extended Product Type |
| INVD | AF09-30-10-11 |
| INVD | AF09-30-10-11 24-60V50/60HZ 20-60VDC Contactor |
| DES | Screw Terminals 3 Poles AF Contactor - Top Mounted Coil Terminal |
| DESCLONG | The AF09-30-10-11 is a 3 pole - 690 V IEC or 600 UL contactor with 1 built-in auxiliary contact and screw terminals, controlling motors up to 4 kW / 400 V AC (AC-3) or 5 hp / 480 V UL and switching power circuits up to 25 A (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 networks. Furthermore, surge protection is built-in, offering a compact solution. AF contactors have a block type design, can be easily extended with add-on auxiliary contact blocks and an additional wide range of accessories. |

3D2D



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Component Cloud 25.1.0.0 for E3.series - Download Information

Component type: Device

Component nameABB1

Model nameM_ABB1

The following symbols/views will be created:

| 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 | abb_15BL137001R1110_AF09-30-10-11 24-60V50/60HZ 20-60VDC Contactor | en-US | <not defined> |
| NN | AF09 | en-US | <not defined> |
| NT | 3 or 4-pole Contactors - AC or DC Operated | en-US | <not defined> |
| NBSYN | abb_\$PN_\$INVD. | en-US | <not defined> |
| LINA | ABB - 15BL137001R1110 + AF09-30-10-11 24-60V50/60HZ 20-60VDC Contactor | en-US | <not defined> |
| CATALOG | ABB Low Voltage & Systems | en-US | <not defined> |
| PN | 15BL137001R1110 | en-US | <not defined> |
| Product ID | | | |

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

OKCancel

Model Properties...

| Model | Shape | Model Pins | Sets/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:

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>

Total maximum:

6.00 mm²

Diameter:

<no entry>

Connection Target:

Both External Internal

Destination cable duct:

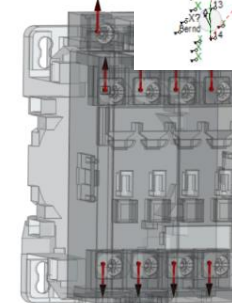
<no entry>

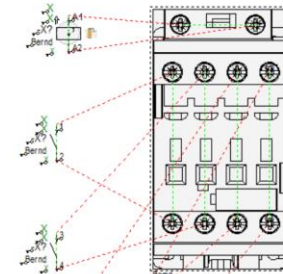
Routing Offset:

X: 0 mm Y: 0 mm Z: 0 mm

Show connection direction

Preview





OKCancelApplyHelp

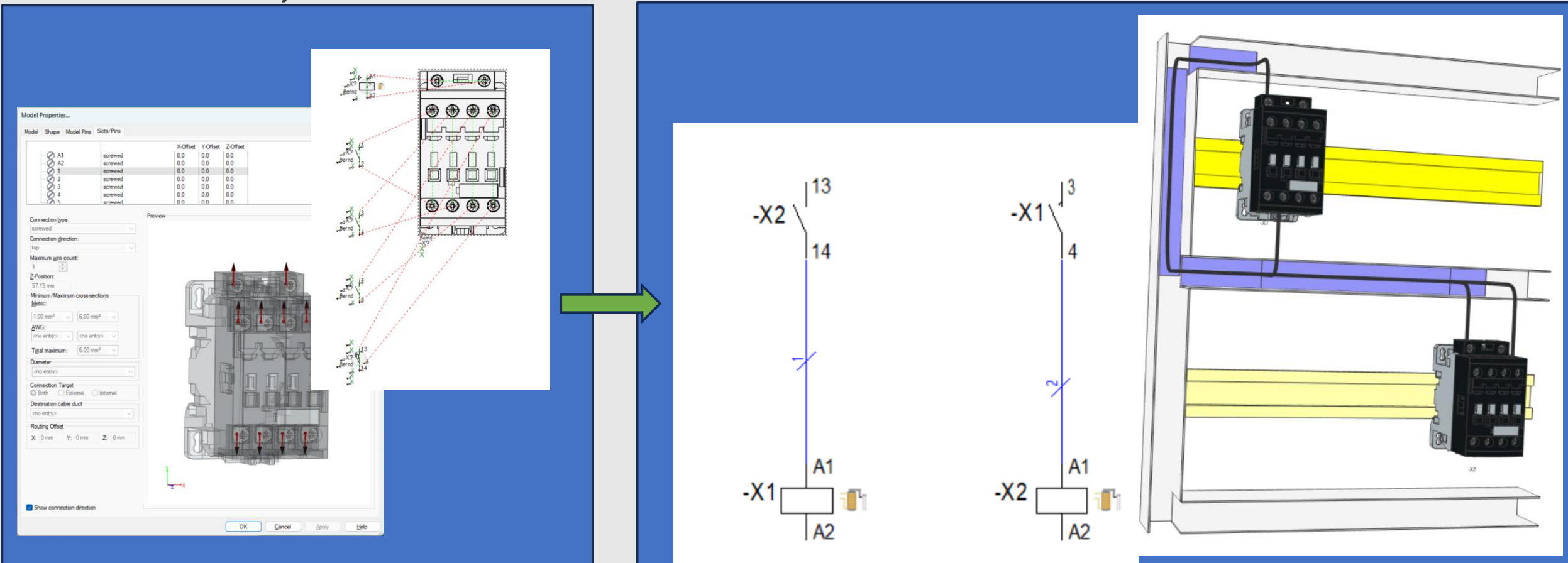
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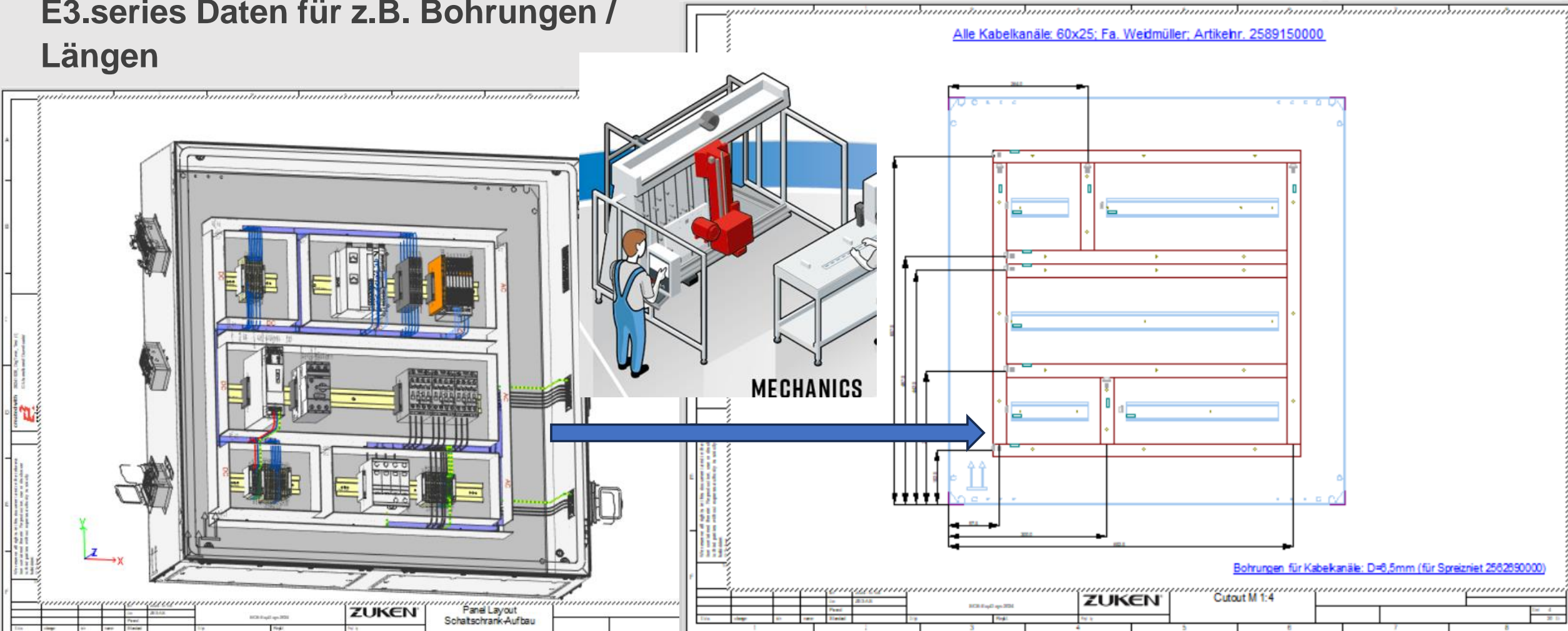
13

Part from the database into the project

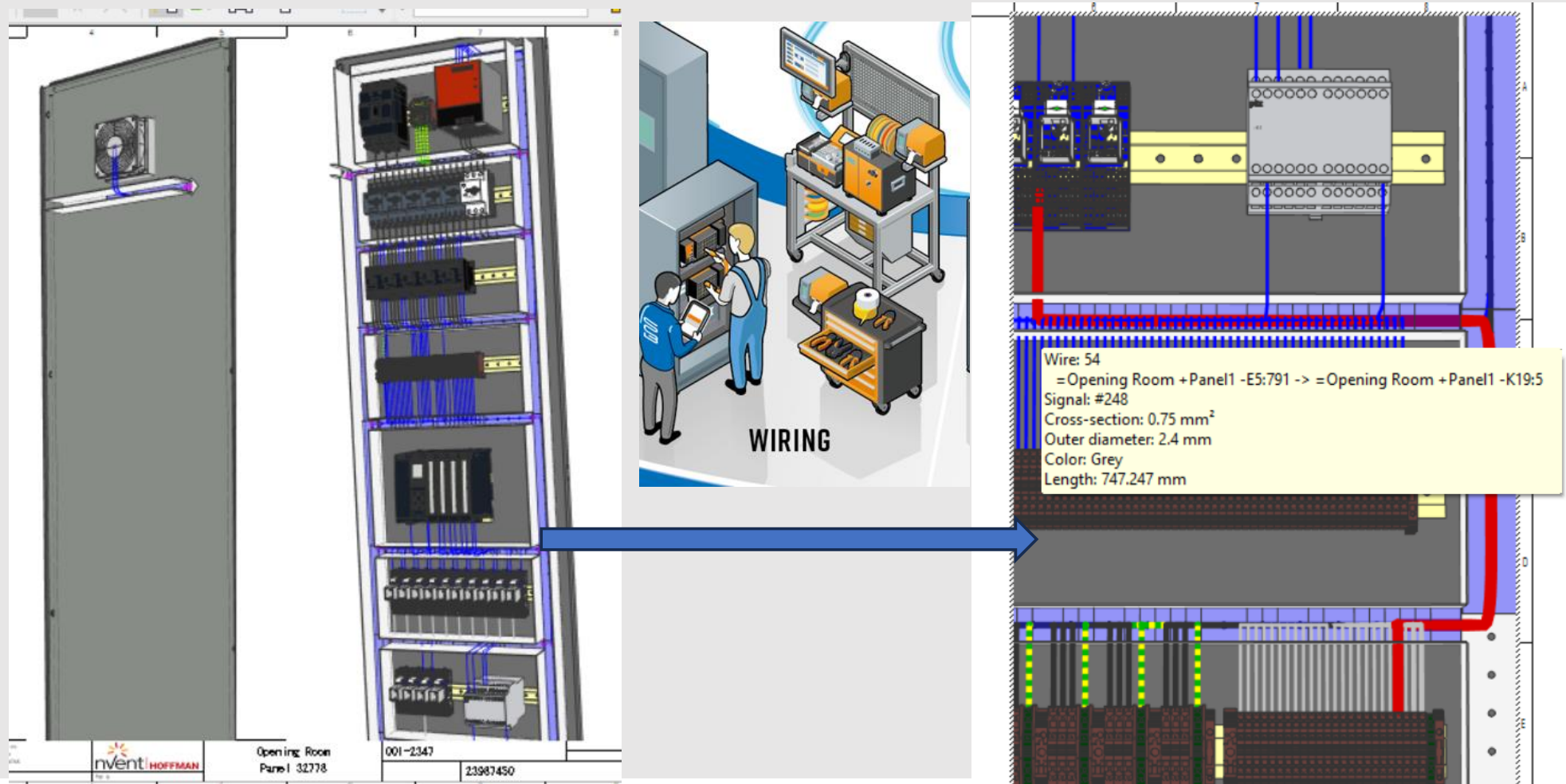
Use component from the E3.series component database in the project (circuit diagram and control cabinet)



E3.series Daten für z.B. Bohrungen / Längen



3.series Data for e.g. wire production and wiring





Find components quickly and easily and use them directly in E3.series.

Having the option of adapting the transferred components to individual specifications

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