

EPLAN
EFFICIENCY DAYS 2023

USER TRACK

Overzicht creëren door middel van structureren

PROCESS CONSULTING

ENGINEERING SOFTWARE

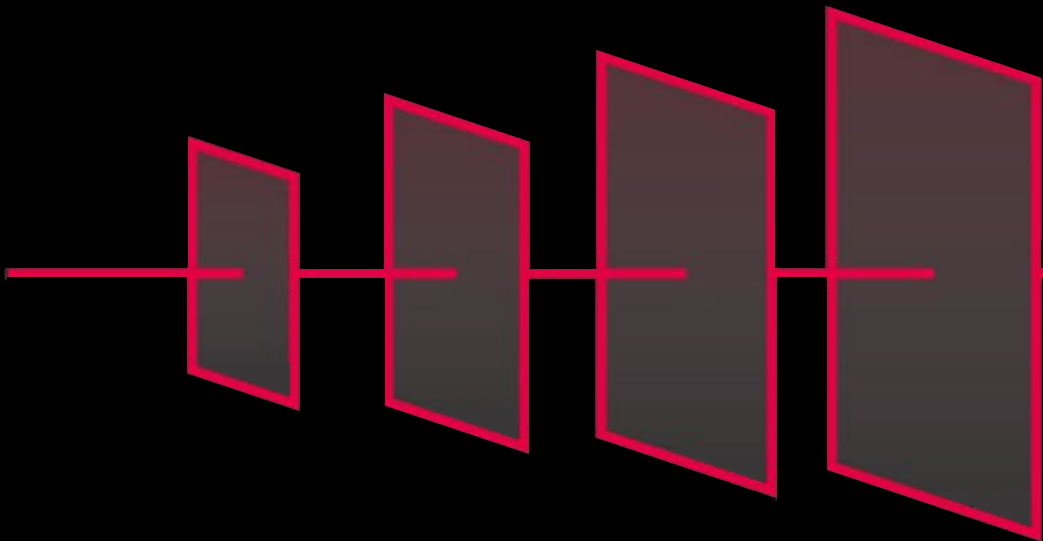
IMPLEMENTATION

GLOBAL SUPPORT



EPLAN
EFFICIENCY DAYS 2023

Sam Coppens
Trainer



EFFICIENCY DAYS 2023

breakthrough 4 tomorrow



▼ USER-LEVEL

LEVEL 1
BASIC

LEVEL 2
ADVANCED

PRODUCT LEADERSHIP
FUNCTIONAL EFFICIENCY



4 LEVELS OF Digital Transformation Strategy

CUSTOMER INTIMACY
FULLY INTEGRATED



LEVEL 3 EXPERT **LEVEL 4 EXECUTIVE**

▲ **MANAGEMENT-LEVEL**

▼ **USER-LEVEL**

LEVEL 1 BASIC **LEVEL 2 ADVANCED**



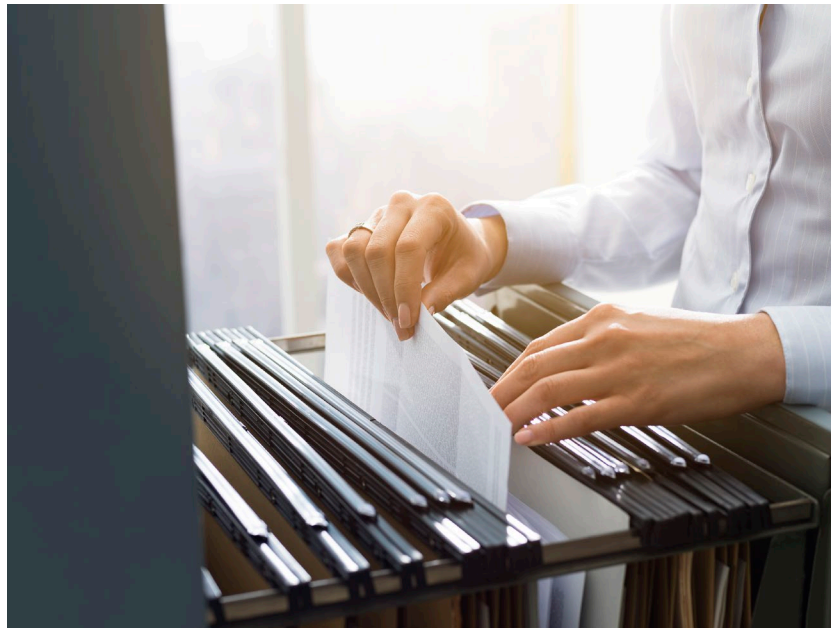
PRODUCT LEADERSHIP
FUNCTIONAL EFFICIENCY

Technische schema's



Zoeken naar informatie

Loopt dit zo?



Of eerder zo?



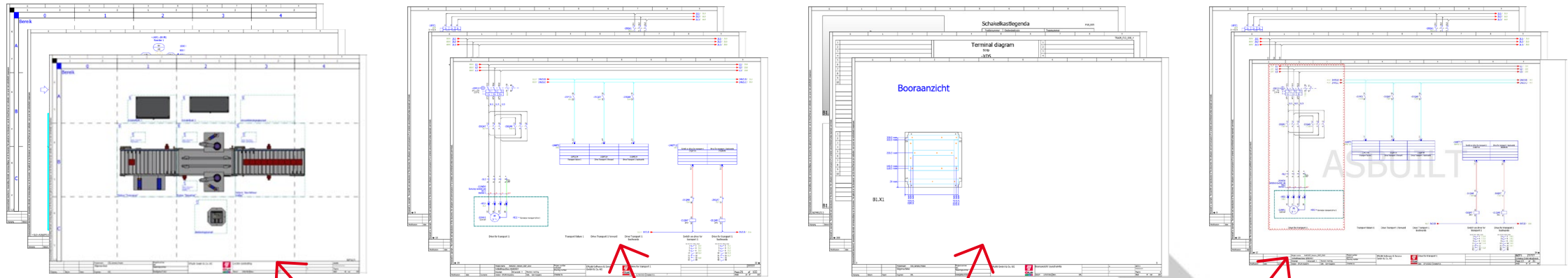
Mogelijke problemen



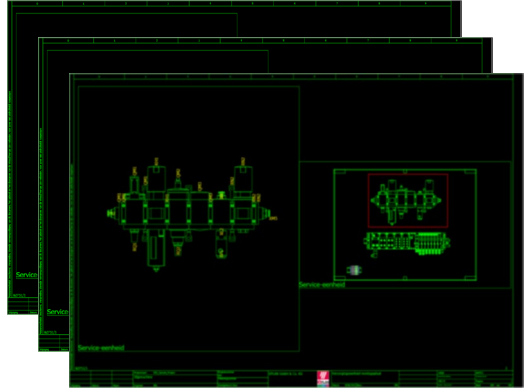
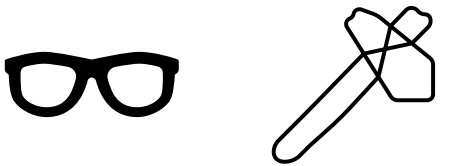
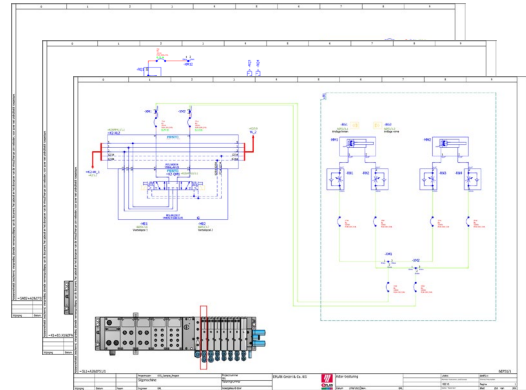
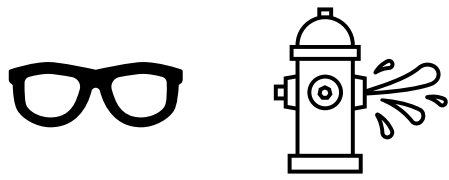
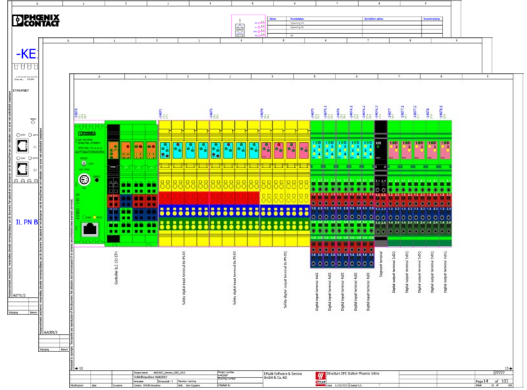
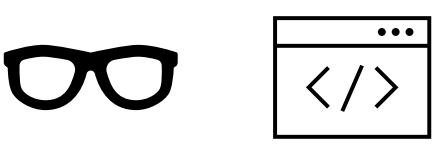
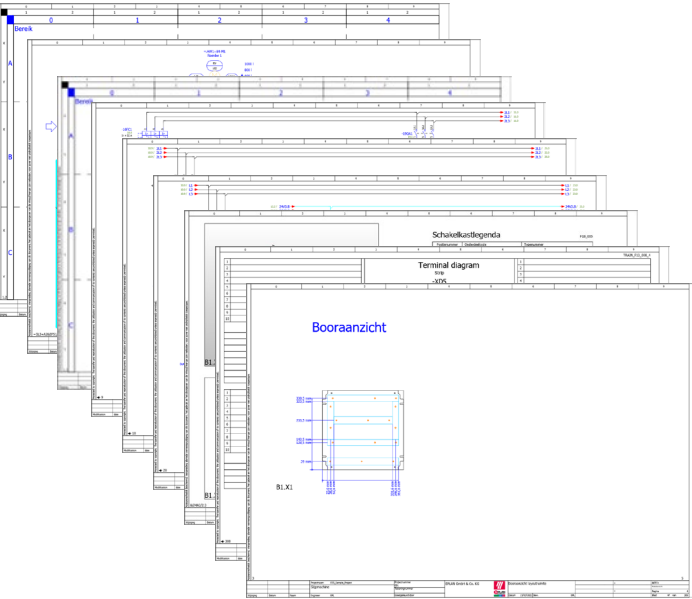
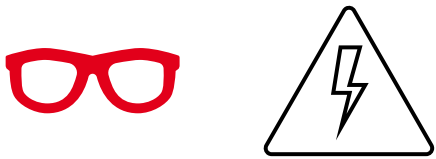
- Teveel aan informatie
- Niet de correcte informatie
- Terugvinden van informatie



Hoe komt het?



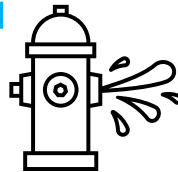
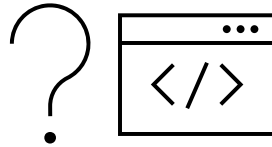
Hoe komt het?



Opbouw van een technische documentatie



- HAR2K07_Version_2007_2010
 - 1 Title page / cover sheet
 - 2 Table of contents : 1 - 29
 - 2.1 Table of contents : 30 - 150
 - 2.2 Table of contents : 151 - 206
 - 2.3 Table of contents : 210 - 268
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 - 102 Parts list : FES.195742 - SIE.3RH2122-1HB40
 - 103 Parts list : SIE.3RH2122-1HB40 - FES.174370



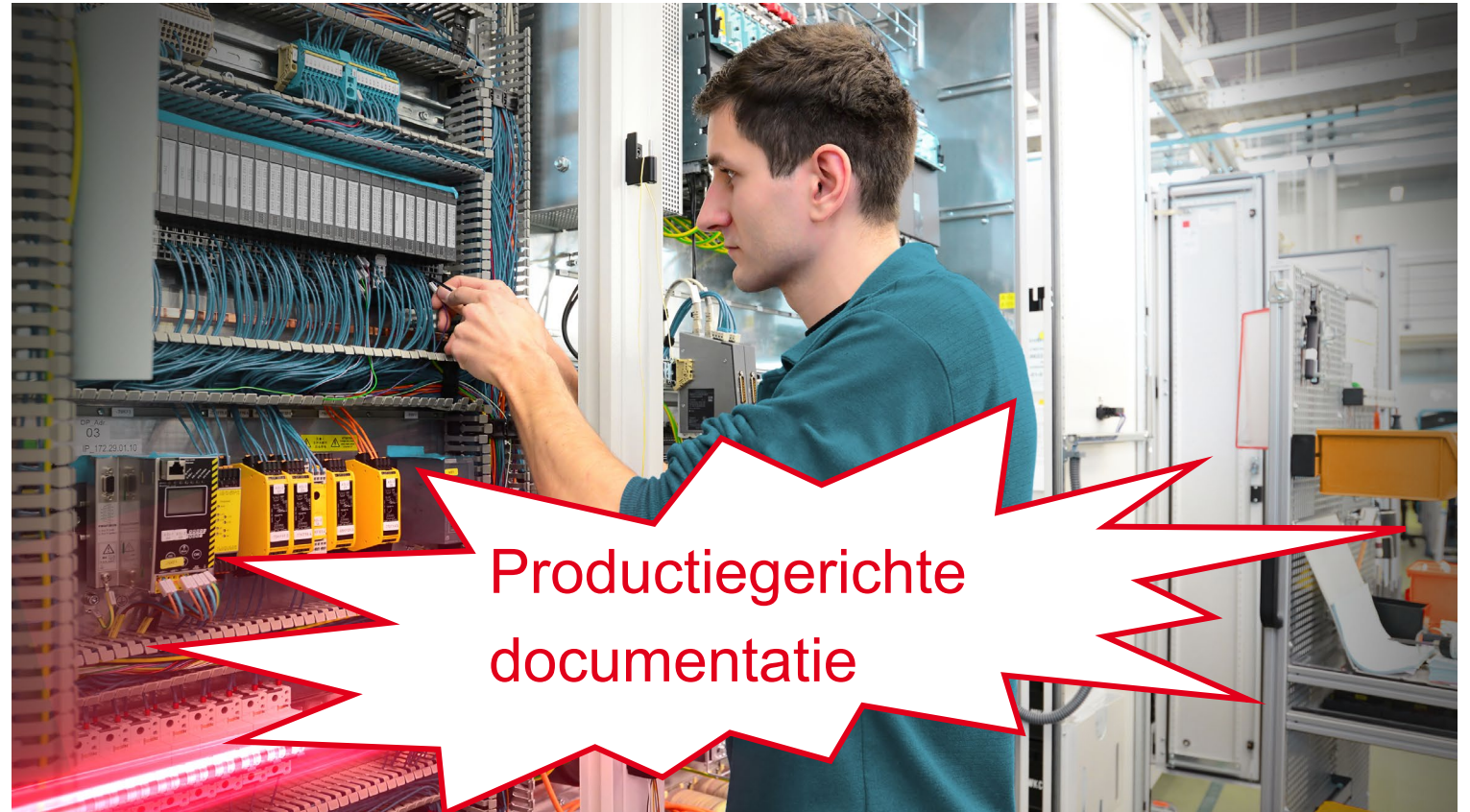
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- 110 Parts list : 3TE - DIN EN 854 - RIT.2506100
- 111 Parts list : HAR.10.20.003.0001 - PXC.3031212
- 112 Parts list : PXC.3031238 - PXC.3209015
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- 153 Device connection diagram -65KEC2
- 154 Device connection diagram -65KEC2.1
- 155 Device connection diagram -65KEC3
- 156 Device connection diagram -14KF0
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- 158 Device connection diagram -14KF3
- 159 Device connection diagram -14KF4
- 160 Device connection diagram -14KF5
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- 162 Device connection diagram -14KF6
- 163 Device connection diagram -14KF6.1
- 164 Device connection diagram -14KF6.2
- 165 Device connection diagram -14KF6.3
- 166 Device connection diagram -14KF7
- 167 Device connection diagram -14KF7.1
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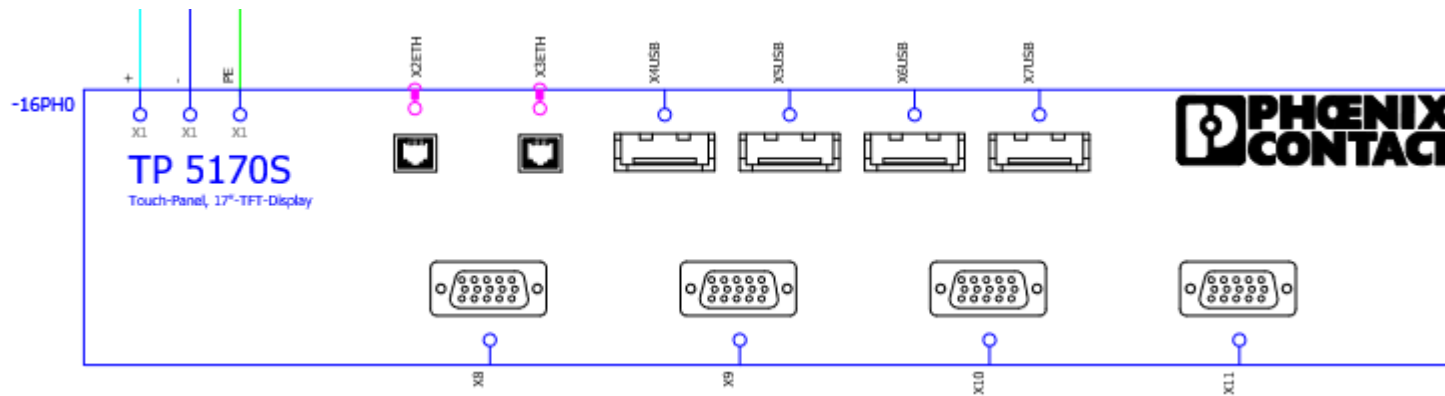
Productiegerichte documentatie



Productiegerichte documentatie



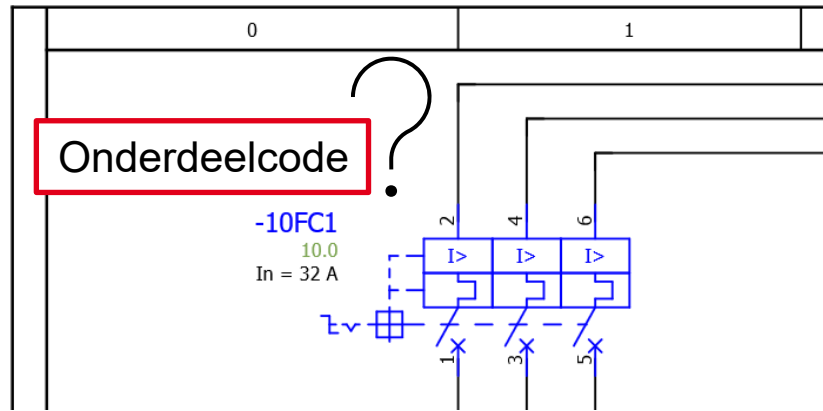
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Productiegerichte documentatie

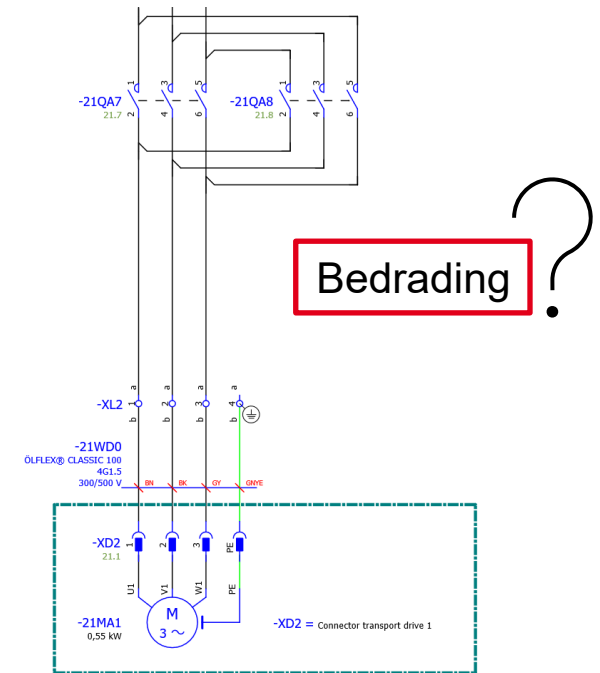


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- 200 Cable overview : -WD1 - -WG8
- 201 Cable overview : -WG9 - -WG12

Verwerkingen ?



Productiegerichte documentatie



Voordelen:

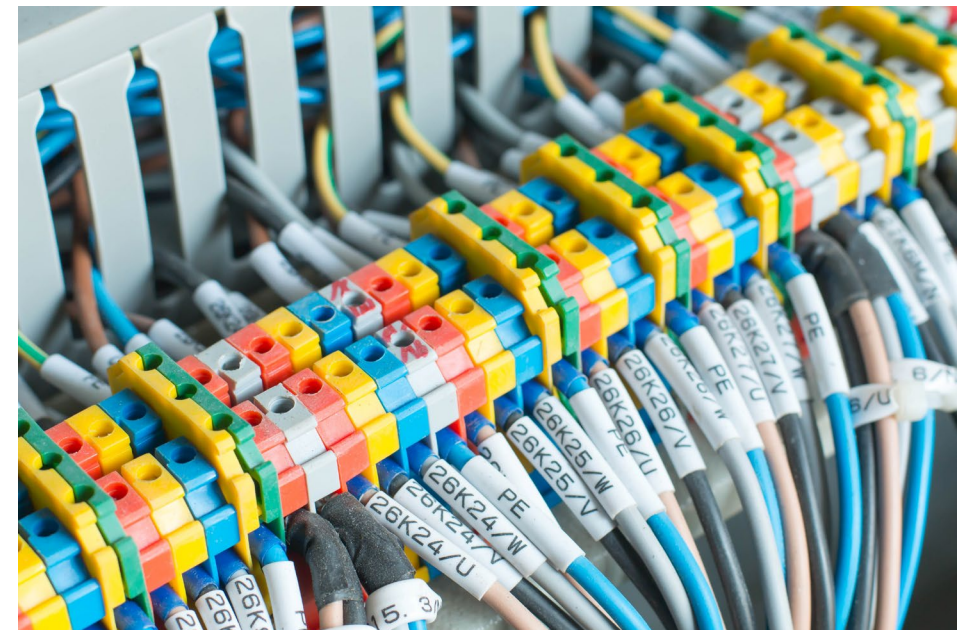
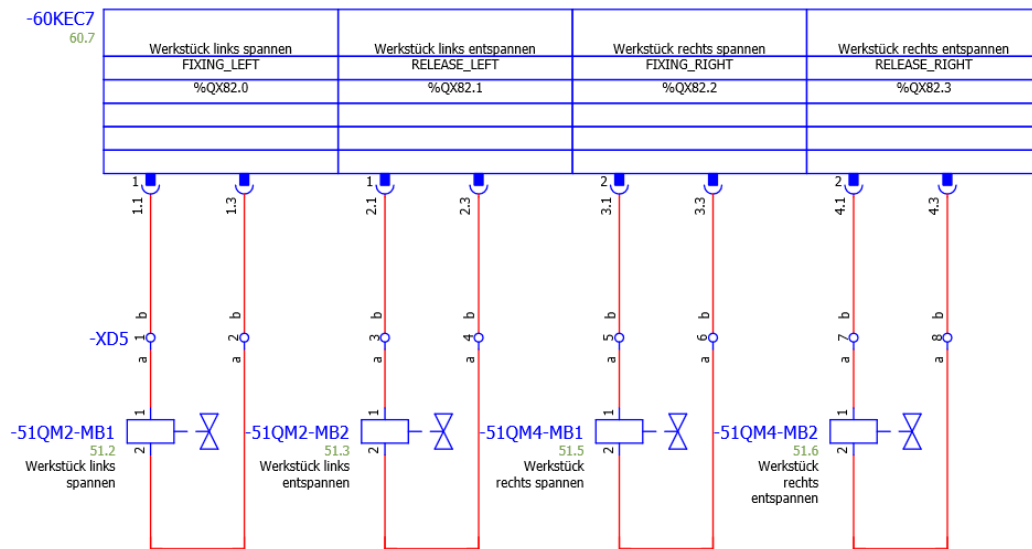
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Productiegerichte documentatie



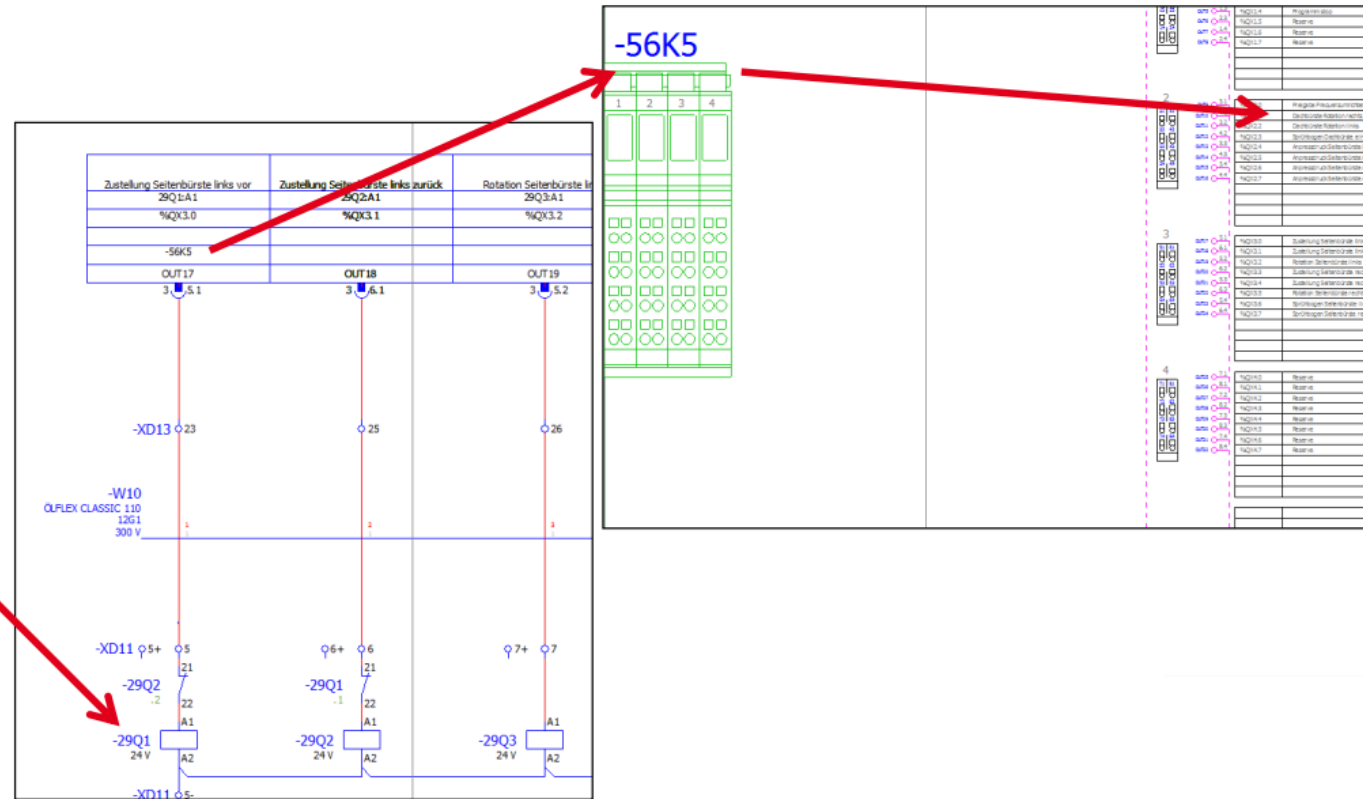
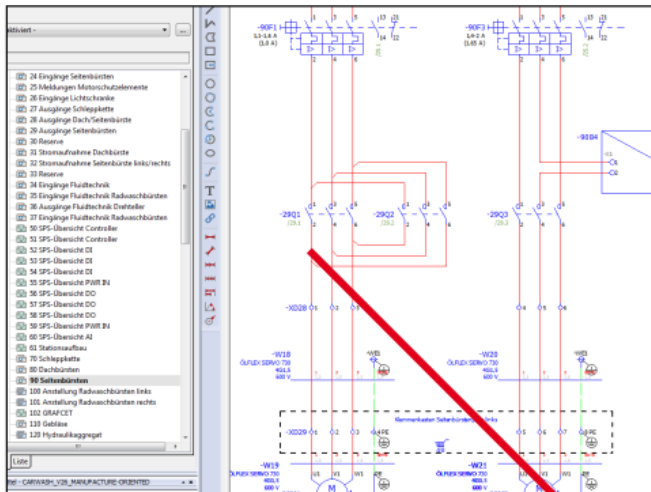
Voordelen:



Productiegerichte documentatie



Nadelen:



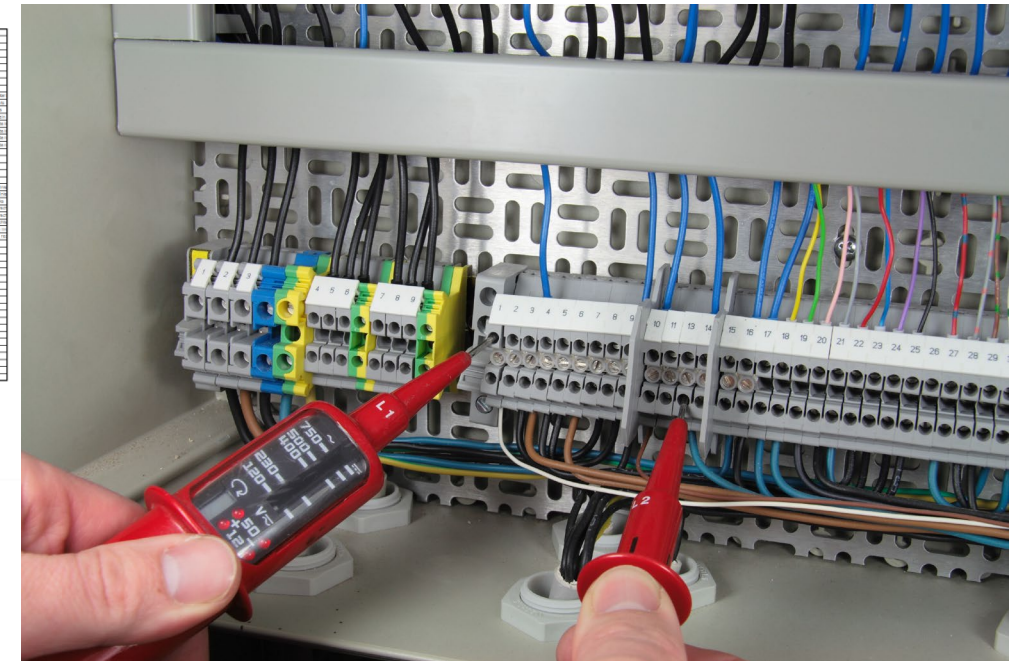
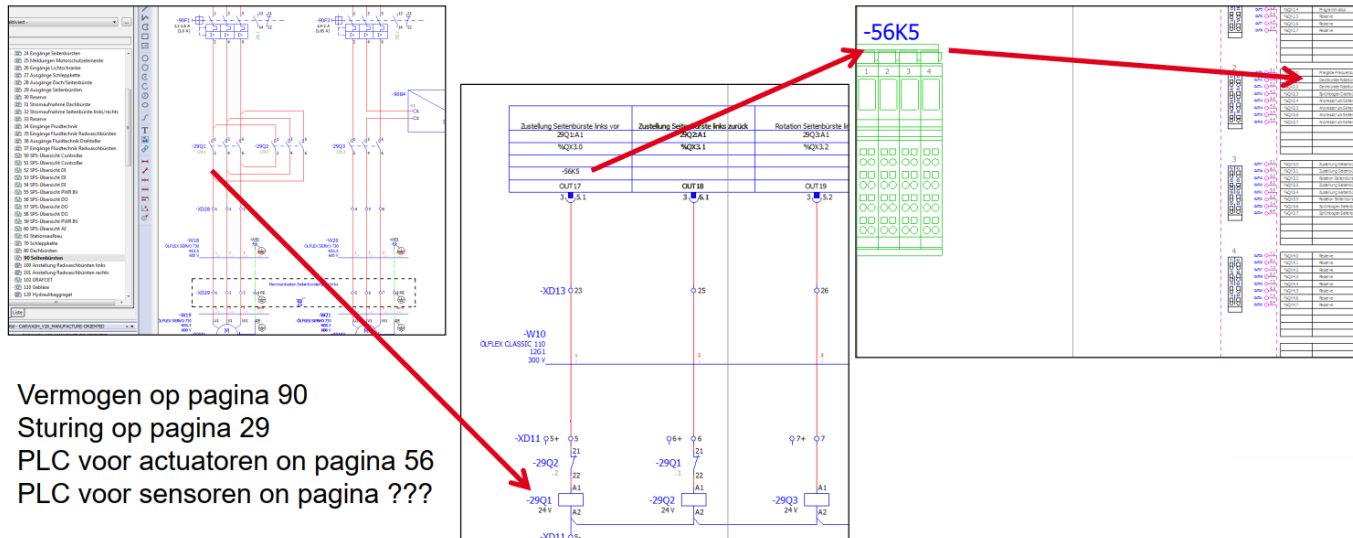
- Vermogen op pagina 90
- Sturing op pagina 29
- PLC voor actuatoren on pagina 56
- PLC voor sensoren on pagina ???

Productiegerichte documentatie

De schakelschema's zijn gestructureerd volgens productieprocessen



Nadelen:



Productiegerichte documentatie



Nadelen:

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23 Drive for transport 2
24 Workpiece position feedback
25 Drive for grinding 1
26 Workpiece position feedback
27 Drive for grinding 2
28 Workpiece position feedback
29 Drive for transport 3
30 Workpiece position feedback
50 Hydraulikaggregat
51 Einspannen

31 Drive for transport 4
32 Workpiece position feedback
33 Drive for transport 5
34 Workpiece position feedback
35 Drive for grinding 3
36 Workpiece position feedback
37 Drive for grinding 4
38 Workpiece position feedback
39 Drive for transport 6
40 Workpiece position feedback

50+ ?

Productiegerichte documentatie



Nadelen:

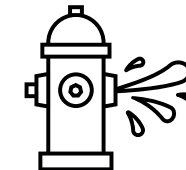
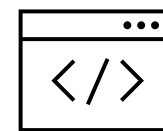
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→ Elektrisch:
Pagina 10 tot...

→ Pneumatisch:
Pagina 50 tot...

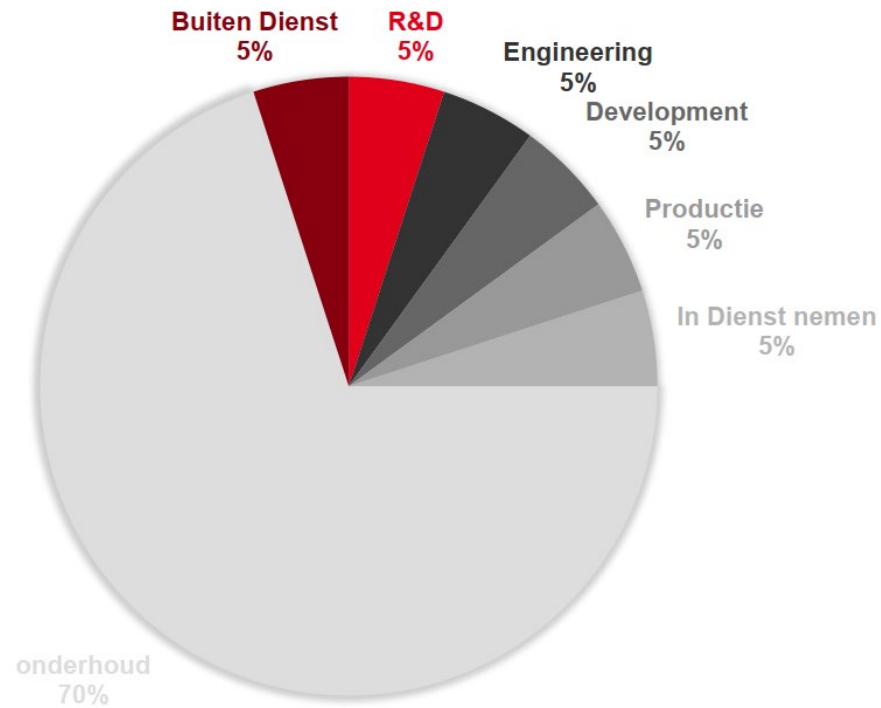
→ Programmeur?

Lijsten?



Conclusie

In welke fase is wat de beste manier

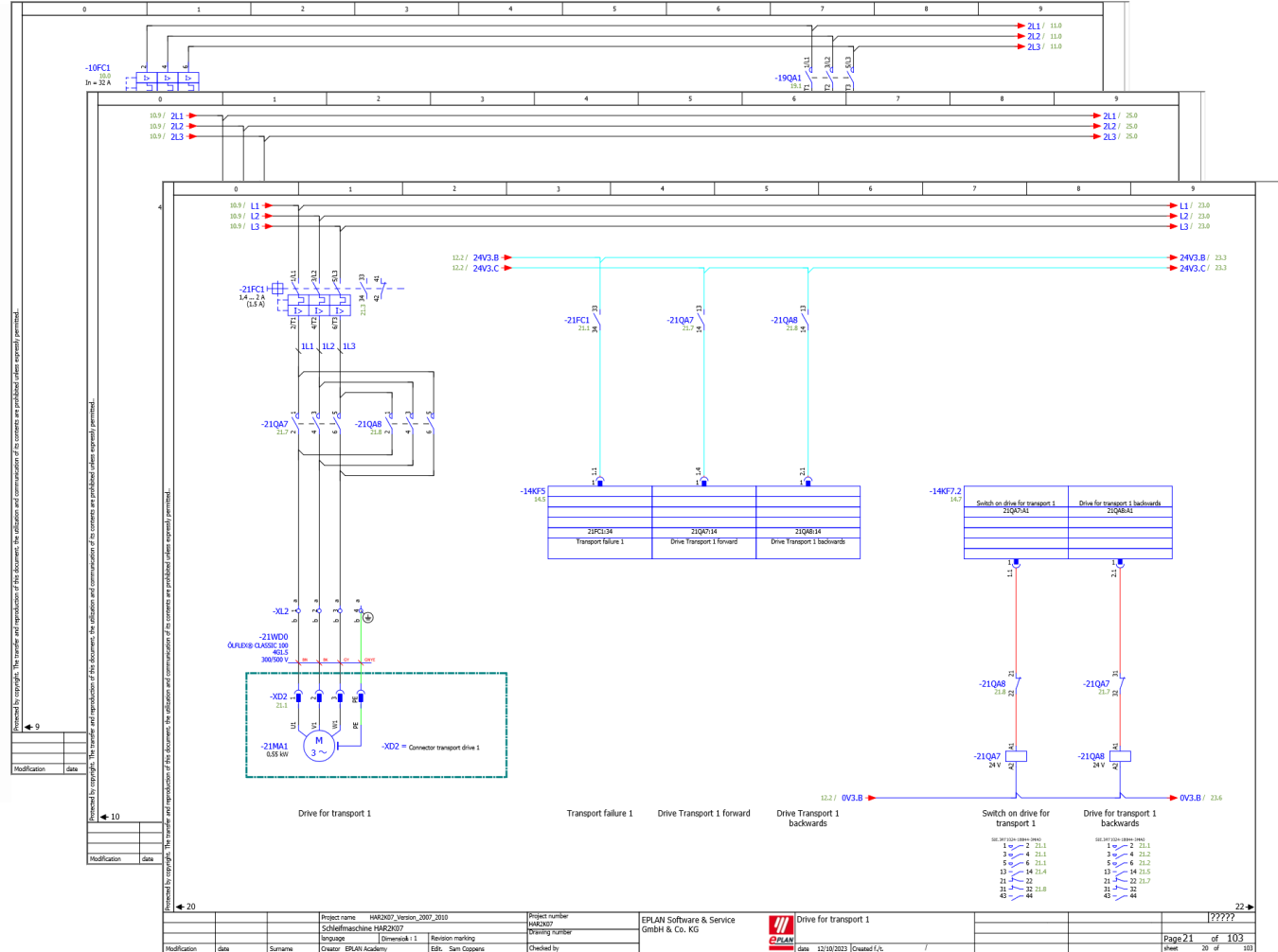


Voorbeeld HAR2K07



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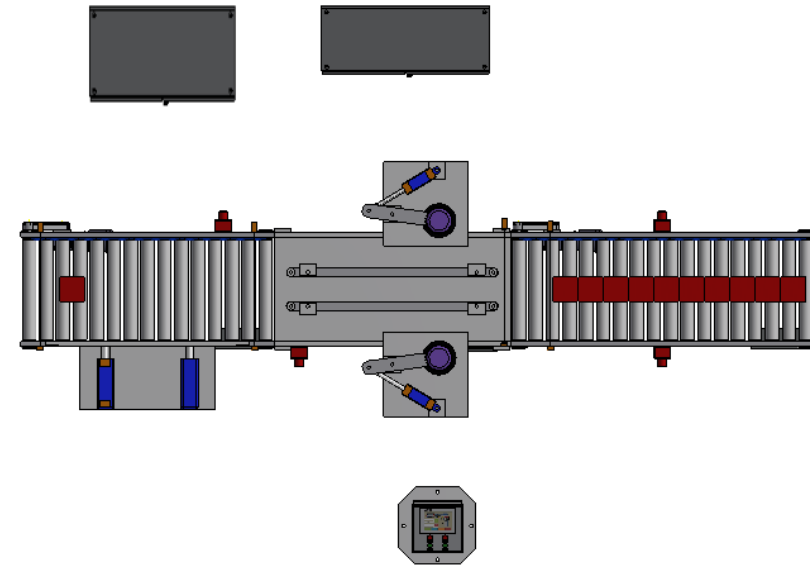
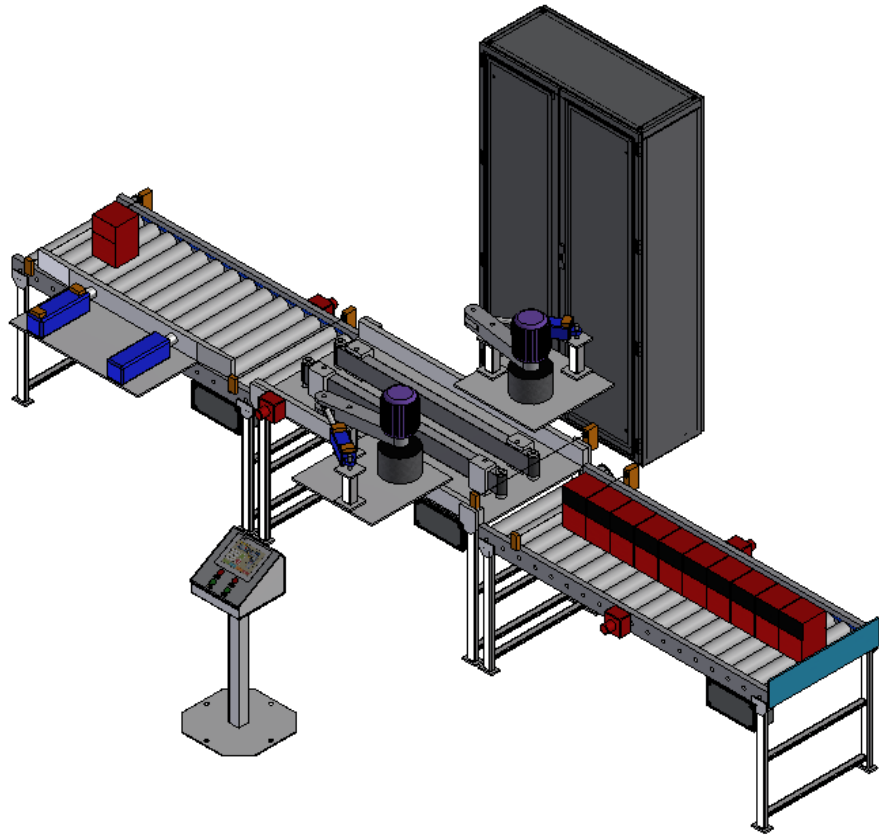
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 - 158 Device connection diagram -14KF3
 - 159 Device connection diagram -14KF4
 - 160 Device connection diagram -14KF5
 - 161 Device connection diagram -14KF5.1
 - 162 Device connection diagram -14KF6
 - 163 Device connection diagram -14KF6.1
 - 164 Device connection diagram -14KF6.2
 - 165 Device connection diagram -14KF6.3
 - 166 Device connection diagram -14KF7
 - 167 Device connection diagram -14KF7.1
 - 168 Device connection diagram -14KF7.2
 - 169 Device connection diagram -14KF8
 - 170 Device connection diagram -14KF8.1
 - 171 Device connection diagram -X1
 - 200 Cable overview : -13WD2 - -25WG2
 - 201 Cable overview : -26WG2 - -30WG2
 - 202 Connection list : -
 - 203 Connection list : -
 - 204 Connection list : -
 - 205 Connection list : -
 - 206 Connection list : -
 - 210 Cable diagram:13WD2:13WD6:16WD0:21WD0
 - 210.1 Cable diagram:23WD0:25WD0:27WD0:29WD0
 - 210.2 Cable diagram:61WD4:61WD5:61WD6:61WD7
 - 210.3 Cable diagram:63WD4:63WD5:63WD6:63WD7



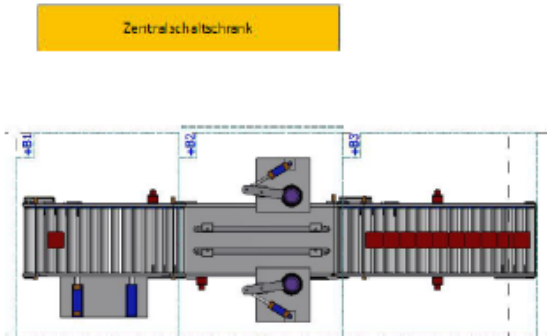
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Project description	Schleifmaschine HAR2K07	Project manager		GMDH & Co. KG		Page	21 of 103
Language	Dimensieuk 1	Revision marking				Sheet	20 of 103
Creator	EPLAN Academy	Edn.	Sam Coppens	Checked by			
Modification	date	Surname					



HAR2K07



HAR2K07

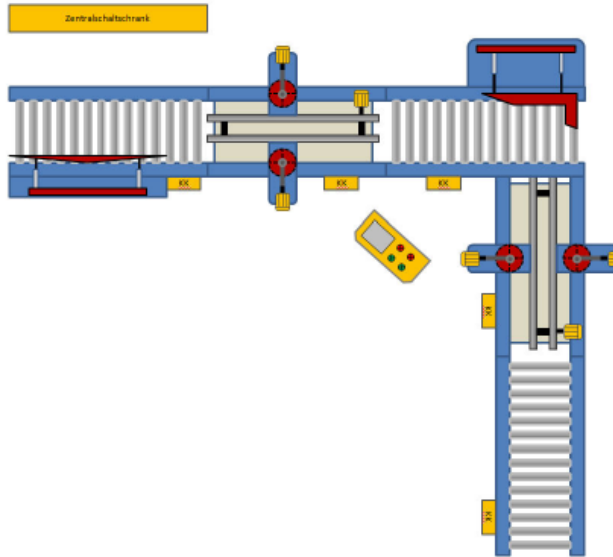


HAR2K07 - Basic Line

ESS_Sampleproject:
 - 0,55 kW drive power
 - 0,55 kW grinding power

(Internal) Note 1: Can also be ordered up to 1,5 kW drive power (heavy workpieces), but does not appear in the catalog because you want to get the customer to the next higher expansion stage. (Internal)

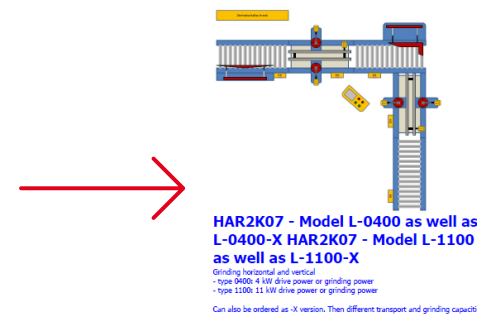
Note 2: This is more or less the sales joker. But then the grinding power with 1,5 kW is also to be purchased (0,55 kW grinding power is also wanted by the distributor now and then, but not by the product management).



HAR2K07 - Model M-0055 HAR2K07 - Model M-0155

Grinding horizontal and vertical
 - type 0055: 0,55 kW drive power resp. grinding power
 - type 0150: 1,5 kW drive power resp. grinding power

Can also be ordered up to 1,5 kW drive power (heavy workpieces) and 0,55 kW grinding power (note - often used as polishing machine). Surcharge due to special request



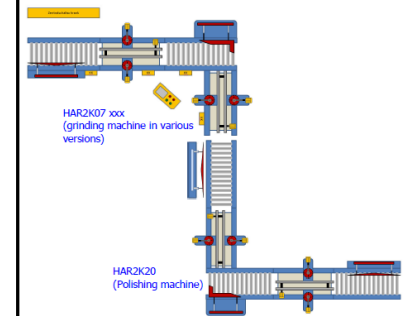
HAR2K07 - Model L-0400 as well as L-0400-X HAR2K07 - Model L-1100 as well as L-1100-X

Grinding horizontal and vertical
 - type 0400: 4 kW drive power or grinding power
 - type 1100: 11 kW drive power or grinding power
 Can also be ordered as 'X' version. Then different transport and grinding capacities

Sensors optional:
 #NAME?
 Controls optional:
 - Phoenix Contact Inline
 - PLC
 - Siemens 57-300
 - Siemens 57-1200
 - BuR
 - Wago I/O

[Request from sales department](#)

HAR2K07 - Model XL-1850
 with 18,5 kW transport and grinding power
*** for extra charge also as model XL-1850-X with comparable performance of model XL-1



HAR2K07 xxx
 (grinding machine in various versions)

HAR2K20
 (Polishing machine)

HAR2K0720 Systems Integration Suite
 *** further options on request

Innovations

Models as above, additional
 HAR2K20 (Polishing Machine)
 HAR2K0720-SI (Systems Integration Suite)

(Internal) Note: Polishing like grinding with smaller power and more sensitive transport

HAR2K07



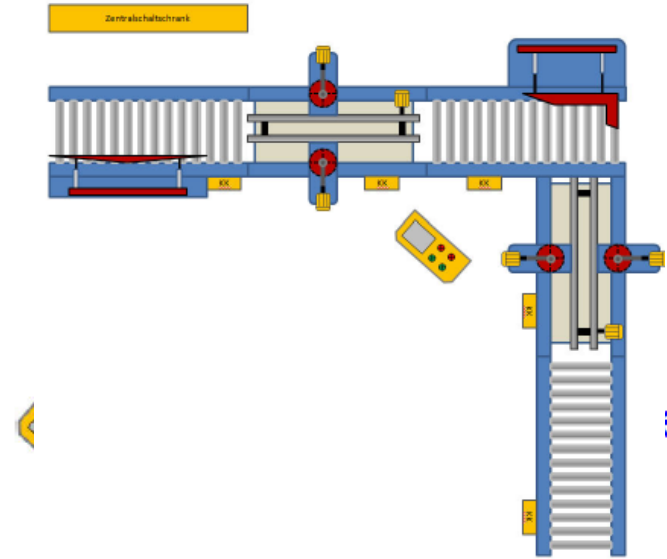
- HAR2K07_Version_2007_2010
 - 1 Title page / cover sheet
 - 2 Table of contents : 1 - 29
 - 2.1 Table of contents : 30 - 150
 - 2.2 Table of contents : 151 - 206
 - 2.3 Table of contents : 210 - 268
 - 2.4 Table of contents : 269 - 310.8
 - 3 Anlagenlayout
 - 9 Klemmenleistendefinitionen
 - 10 Power supply 3 AC 400 V
 - 11 Generation control voltage DC 24 V
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 - 13 Lighting and service
 - 14 Structure SPS Station Phoenix Inline
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 - 21 Drive for transport 1
 - 22 Workpiece position feedback
 - 23 Drive for transport 2
 - 24 Workpiece position feedback
 - 25 Drive for grinding 1
 - 26 Workpiece position feedback
 - 27 Drive for grinding 2
 - 28 Workpiece position feedback
 - 29 Drive for transport 3
 - 30 Workpiece position feedback
 - 50 Hydraulikaggregat
 - 51 Einspannen
 - 60 SPS Rackaufbau
 - 61 Aktor- / Sensor-Steuerung
 - 62 Sensoren und Aktoren, allgemein
 - 63 Aktor- / Sensor-Steuerung
 - 64 Aktor- / Sensor-Steuerung
 - 65 Festo CPX Terminal und Ventilinsel
 - 66 Service unit
 - 67 Positionsschieber
 - 68 Zustellung Schleifwelle links
 - 69 Zustellung Schleifwelle links
 - 70 Reserve Anschlussplatte
 - 100 Parts list : SICK.1023958 - SIE.3RV2901-1A
 - 101 Parts list : SIE.3RV2011-1JA10 - FES.195750
 - 102 Parts list : FES.195742 - SIE.3RH2122-1HB40
 - 103 Parts list : SIE.3RH2122-1HB40 - FES.174370

- 70 Reserve Anschlussplatte
- 100 Parts list : SICK.1023958 - SIE.3RV2901-1A
- 101 Parts list : SIE.3RV2011-1JA10 - FES.195750
- 102 Parts list : FES.195742 - SIE.3RH2122-1HB40
- 103 Parts list : SIE.3RH2122-1HB40 - FES.174370
- 104 Parts list : FES.543861 - SIE.3RT1024-1BB44-3MA0
- 105 Parts list : SIE.3RT1024-1BB44-3MA0 - FES.529817
- 106 Parts list : HAWE.NZP 16 Q.55 - FES.1205863
- 107 Parts list : FES.165004 - 3SU1400-2AA10-1CA
- 108 Parts list : SIE.3SU1801-0NB00-2AC2 - FES.543861
- 109 Parts list : FES.541349 - H_D
- 110 Parts list : 3TE - DIN EN 854 - RIT.2506100
- 111 Parts list : HAR.10 20 003 0001 - PXC.303121
- 112 Parts list : PXC.3031238 - PXC.3209015
- 150 Device connection diagram -60KEC5
- 151 Device connection diagram -60KEC7
- 152 Device connection diagram -65KEC1
- 153 Device connection diagram -65KEC2
- 154 Device connection diagram -65KEC2.1
- 155 Device connection diagram -65KEC3
- 156 Device connection diagram -14KF0
- 157 Device connection diagram -14KF1
- 158 Device connection diagram -14KF3
- 159 Device connection diagram -14KF4
- 160 Device connection diagram -14KF5
- 161 Device connection diagram -14KF5.1
- 162 Device connection diagram -14KF6
- 163 Device connection diagram -14KF6.1
- 164 Device connection diagram -14KF6.2
- 165 Device connection diagram -14KF6.3
- 166 Device connection diagram -14KF7
- 167 Device connection diagram -14KF7.1
- 168 Device connection diagram -14KF7.2
- 169 Device connection diagram -14KF8
- 170 Device connection diagram -14KF8.1
- 171 Device connection diagram -X1
- 200 Cable overview : -13WD2 - -25WG2
- 201 Cable overview : -26WG2 - -30WG2
- 202 Connection list : -
- 203 Connection list : -
- 204 Connection list : -
- 205 Connection list : -
- 206 Connection list : -
- 210 Cable diagram:13WD2 :13WD6 :16WD0 :21WD0
- 210.1 Cable diagram:23WD0 :25WD0 :27WD0 :29WD0
- 210.2 Cable diagram:61WD4 :61WD5 :61WD6 :61WD7
- 210.3 Cable diagram:63WD4 :63WD5 :63WD6 :63WD7

Elektrisch:
Pagina 10 tot...

Pneumatisch:
Pagina 100 tot...

Lijsten?
Pagina 1000?



HAR2K07 - Model M-0055 HAR2K07 - Model M-0155

Grinding horizontal and vertical
- type 0055: 0,55 kW drive power resp. grinding power
- type 0150: 1,5 kW drive power resp. grinding power

Can also be ordered up to 1,5 kW drive power (heavy workpieces) and 0,55 kW grinding power (note - often used as polishing machine). Surcharge due to special request



Structureren volgens documenttype

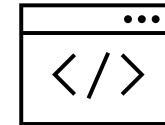
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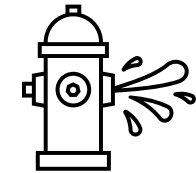
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 - 25 Drive for grinding 1
 - 26 Workpiece position feedback
 - 27 Drive for grinding 2
 - 28 Workpiece position feedback
 - 29 Drive for transport 3
 - 30 Workpiece position feedback
 - 50 Hydraulikaggregat
 - 51 Einspannen
 - 60 SPS Rackaufbau
 - 61 Aktor- / Sensor-Steuerung
 - 62 Sensoren und Aktoren, allgemein
 - 63 Aktor- / Sensor-Steuerung
 - 64 Aktor- / Sensor-Steuerung
 - 65 Festo CPX Terminal und Ventilinsel
 - 66 Service unit
 - 67 Positionsschieber
 - 68 Zustellung Schleifwelle links
 - 69 Zustellung Schleifwelle links
 - 70 Reserve Anschlussplatte
 - 100 Parts list : SICK.1023958 - SIE.3RV2901-1A
 - 101 Parts list : SIE.3RV2011-1JA10 - FES.195750
 - 102 Parts list : FES.195742 - SIE.3RH2122-1HB40
 - 103 Parts list : SIE.3RH2122-1HB40 - FES.174370



- 10 Power supply 3 AC 400 V
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- 102 Parts list : FES.195742 - SIE.3RH2122-1HB40
- 103 Parts list : SIE.3RH2122-1HB40 - FES.174370
- 104 Parts list : FES.543861 - SIE.3RT1024-1BB44-3MA0
- 105 Parts list : SIE.3RT1024-1BB44-3MA0 - FES.529817
- 200 Cable overview : -13WD2 - -25WG2
- 201 Cable overview : -26WG2 - -30WG2



- 14 Structure SPS Station Phoenix Inline
- 60 SPS Rackaufbau
- 61 Aktor- / Sensor-Steuerung
- 62 Sensoren und Aktoren, allgemein
- 63 Aktor- / Sensor-Steuerung
- 64 Aktor- / Sensor-Steuerung
- 250 -60KEC5 - -60KEC5
- 251 -60KEC7 - -60KEC7
- 251.1 -60KEC7 - -60KEC7
- 252 -65KEC1 - -65KEC1
- 253 -65KEC2 - -65KEC2
- 254 -65KEC2.1 - -65KEC2.1
- 255 -65KEC3 - -65KEC3
- 256 -14KF0 - -14KF0
- 257 -14KF1 - -14KF1
- 258 -14KF3 - -14KF3
- 259 -14KF4 - -14KF4
- 260 -14KF5 - -14KF5
- 261 -14KF5.1 - -14KF5.1
- 262 -14KF6 - -14KF6
- 263 -14KF6.1 - -14KF6.1
- 264 -14KF6.2 - -14KF6.2
- 265 -14KF6.3 - -14KF6.3
- 266 -14KF7 - -14KF7
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- 268 -14KF7.2 - -14KF7.2
- 269 -14KF8 - -14KF8



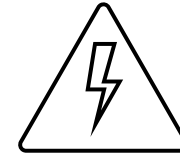
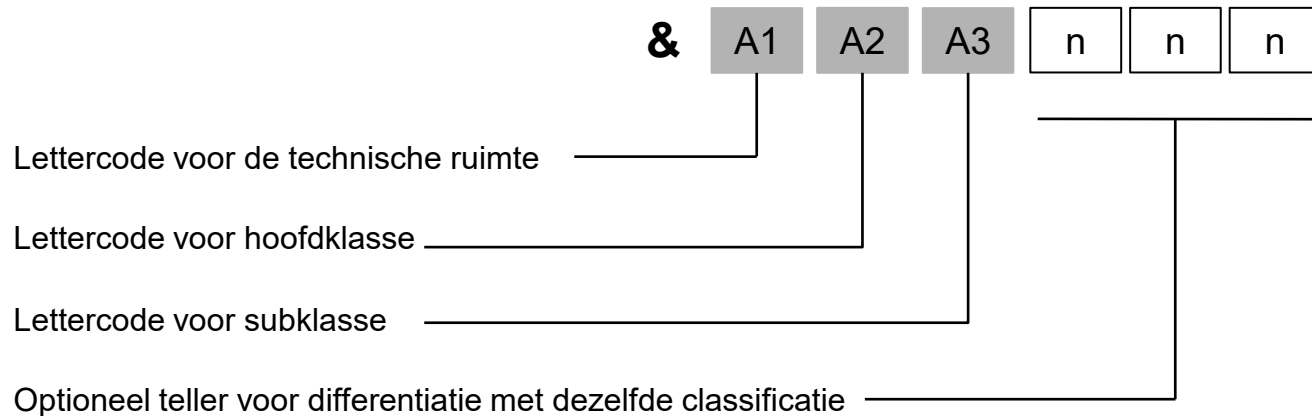
- 50 Hydraulikaggregat
- 51 Einspannen
- 65 Festo CPX Terminal und Ventilinsel
- 66 Service unit
- 67 Positionsschieber
- 68 Zustellung Schleifwelle links
- 69 Zustellung Schleifwelle links
- 70 Reserve Anschlussplatte
- 109 Parts list : FES.541349 - H_D
- 110 Parts list : 3TE - DIN EN 854 - RIT.2506100
- 111 Parts list : HAR.10 20 003 0001 - PXC.3031212
- 112 Parts list : PXC.3031238 - PXC.3209015

Documentenclassificatie DCC

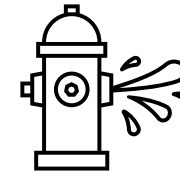
Weergave van informatie en archivering van de documentatie



EN IEC 61355-1: Classificatie en benaming van documenten



&E



&M

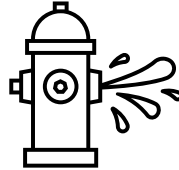
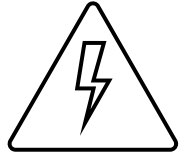
PID

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Documentclassificatie DCC



HAR2K07_Version_2007_2010

- B (Mechatrisch)
- E (Elektrisch)
 - 9 Klemmen
 - 10 Power su
 - 11 Generati
 - 12 Control
 - 13 Lighting and service
 - 14 Structure SPS Station Phoenix Inline
 - 15 Supply SPS controller and segment tern
 - 16 Power supply for control panel
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 - 25 Drive for grinding 1
 - 26 Workpiece position feedback
 - 27 Drive for grinding 2
 - 28 Workpiece position feedback
 - 29 Drive for transport 3
 - 30 Workpiece position feedback
 - 31 Drive for transport 4
 - 32 Workpiece position feedback
 - 33 Drive for transport 5
 - 34 Workpiece position feedback

**Elektrisch:
Pagina 1 tot...**

HAR2K07_Version_2007_2010

- B (Mechatrisch)
- E (Elektrisch)
- M (Hydraulisch)
 - 50 Hydraulikaggr
 - 51 Einspannen
 - 60 SPS Rackaufba
 - 61 Aktor- / Sensor-Steuerung
 - 62 Sensoren und Aktoren, allgemein
 - 63 Aktor- / Sensor-Steuerung
 - 64 Aktor- / Sensor-Steuerung
 - 65 Festo CPX Terminal und Ventilinsel
 - 66 Service unit
 - 67 Positionsschieber
 - 68 Zustellung Schleifwelle links
 - 69 Zustellung Schleifwelle links
 - 70 Reserve Anschlussplatte

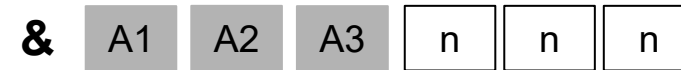
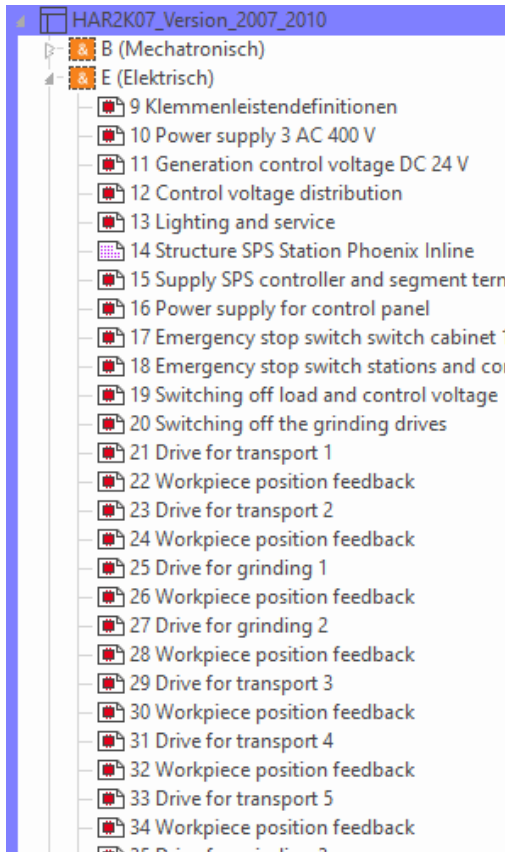
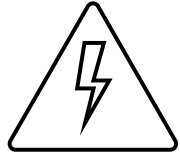
**Hydraulisch:
Pagina 1 tot...**

HAR2K07_Version_2007_2010

- B (Mechatrisch)
 - 1 Title page / cover sheet
 - 2 Table of contents : 1 - 29
 - 2.1 Table of contents : 30 - 150
 - 2.2 Table of contents : 151 - 206
 - 2.3 Table of contents : 210 - 268
 - 2.4 Table of contents : 269 - 1011
 - 3 Anlagenlayout
 - 100 Parts list : SICK.1023958 - SIE.3RV2901-
 - 101 Parts list : SIE.3RV2011-1JA10 - FES.195
 - 102 Parts list : FES.195742 - SIE.3RH2122-1H
 - 103 Parts list : SIE.3RH2122-1HB40 - FES.17
 - 104 Parts list : FES.543861 - SIE.3RT1024-1BI
 - 105 Parts list : SIE.3RT1024-1BB44-3MA0 - F
 - 106 Parts list : HAWE.NZP 16 Q 55 - FES.120
 - 107 Parts list : FES.165004 - 3SU1400-2AA10
 - 108 Parts list : SIE.3SU1801-0NB00-2AC2 - F
 - 109 Parts list : FES.541349 - H_D
 - 110 Parts list : 3TE - DIN EN 854 - RIT.25061
 - 111 Parts list : HAR.10 20 003 0001 - PXC.30
 - 112 Parts list : PXC.3031238 - PXC.3209015
 - 150 Device connection diagram -60KEC5
 - 151 Device connection diagram -60KEC7
 - 152 Device connection diagram -65KEC1
 - 153 Device connection diagram -65KEC2
 - 154 Device connection diagram -65KEC2.1
 - 155 Device connection diagram -65KEC3
 - 156 Device connection diagram -14KF0

**Lijsten:
Pagina 1 tot...**

Documentenclassificatie DCC

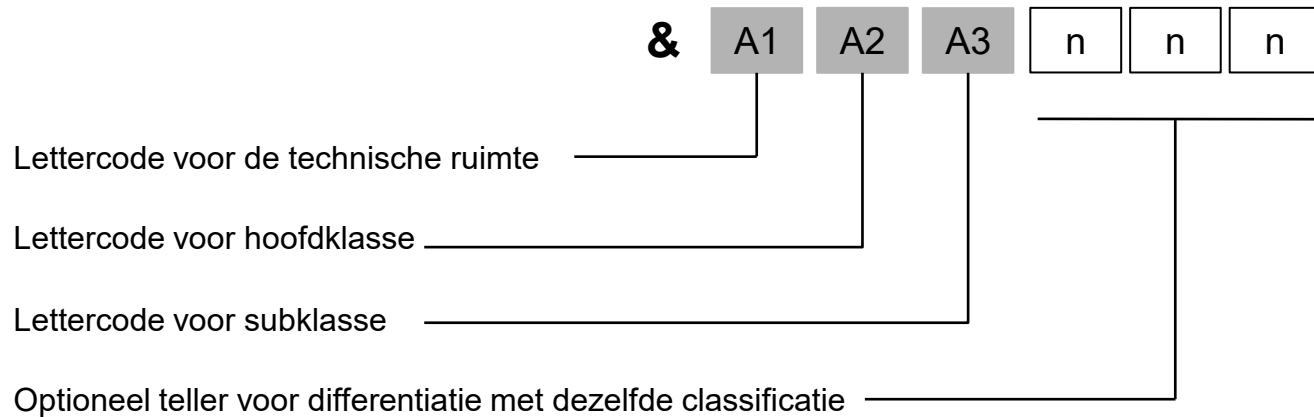


Lettercode voor de technische ruimte

Lettercode voor hoofdklasse

Lettercode voor subklasse

Optioneel teller voor differentiatie met dezelfde classificatie

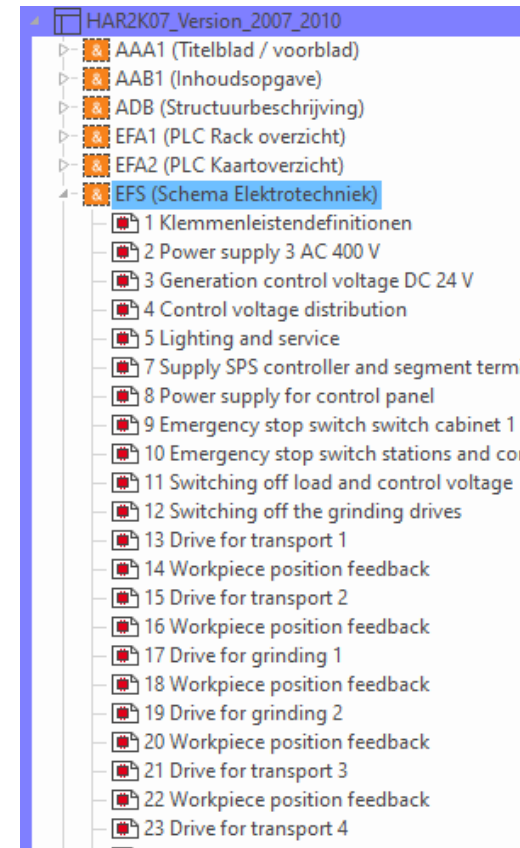
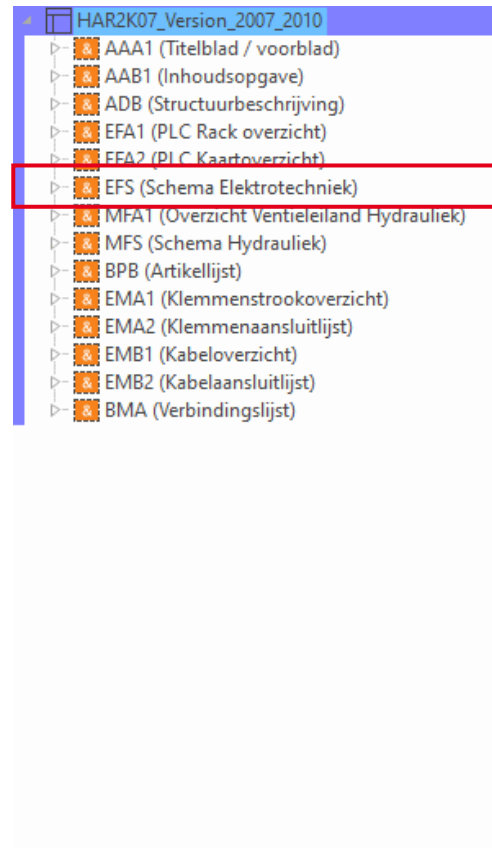
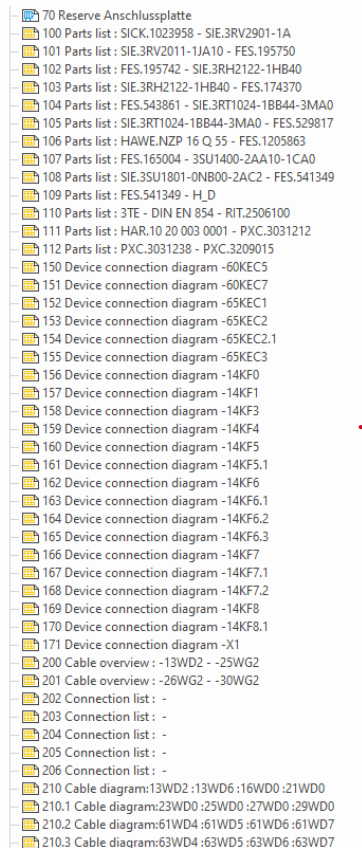
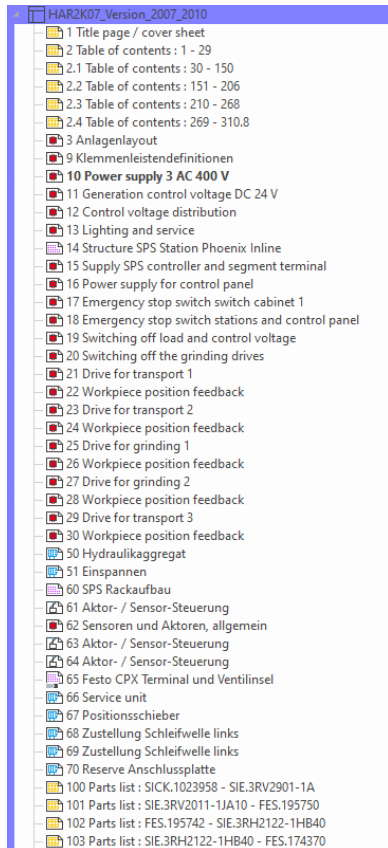


FS: Schakelschema

FA: Overzicht

- Rackoverzicht
- Kaartoverzicht
- Busoverzicht
- ...

Structureren volgens documenttype



Structureren volgens documenttype



Structuurcodebeheer

Structuurcodebeheer - HAR2K07_Version_2007_2010

Documenttype
Product

Volledige st...	Structuurbeschrijving	Oorspronkelijke code	Gebruik	Status
1	<Lege code>	<Lege code>	?	✓
2	AAA1 Titelblad / voorblad	AAA1	?	✓
3	AAB1 Inhoudsopgave	AAB1	?	✓
4	ADB Structuurbeschrijving	ADB	?	✓
5	EFA1 PLC Rack overzicht	EFA1	?	✓
6	EFA2 PLC Kaartoverzicht	EFA2	?	✓
7	EFS Schema Elektrotechniek	EFS	?	✓
8	MFA1 Overzicht Ventieleilan...	MFA1	?	✓
9	MFS Schema Hydrauliek	MFS	?	✓
10	BPB Artikellijst	BPB	?	✓
11	EMA1 Klemmenstrookoverzi...	EMA1	?	✓
12	EMA2 Klemmenaansluitlijst	EMA2	?	✓
13	EMB1 Kabeloverzicht	EMB1	?	✓
14	EMB2 Kabelaansluitlijst	EMB2	?	✓
15	BMA Verbindingslijst	BMA	?	✓

Meldingsbeschrijving:
Geen meldingen beschikbaar

Boom Lijst

Extra OK Annuleren Toepassen



HAR2K07_Version_2007_2010

- AAA1 (Titelblad / voorblad)
- AAB1 (Inhoudsopgave)
- ADB (Structuurbeschrijving)
- EFA1 (PLC Rack overzicht)
- EFA2 (PLC Kaartoverzicht)
- EFS (Schema Elektrotechniek)
- MFA1 (Overzicht Ventieleiland Hydrauliek)
- MFS (Schema Hydrauliek)
- BPB (Artikellijst)
- EMA1 (Klemmenstrookoverzicht)
- EMA2 (Klemmenaansluitlijst)
- EMB1 (Kabeloverzicht)
- EMB2 (Kabelaansluitlijst)
- BMA (Verbindingslijst)

Structureren volgens documenttype



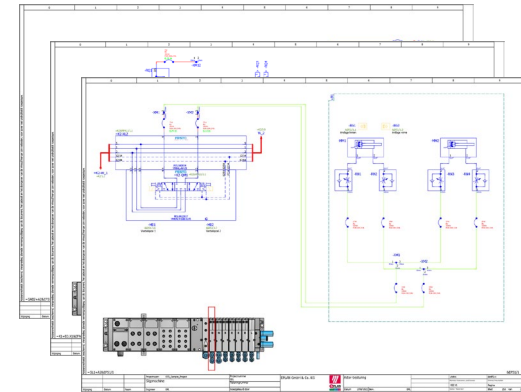
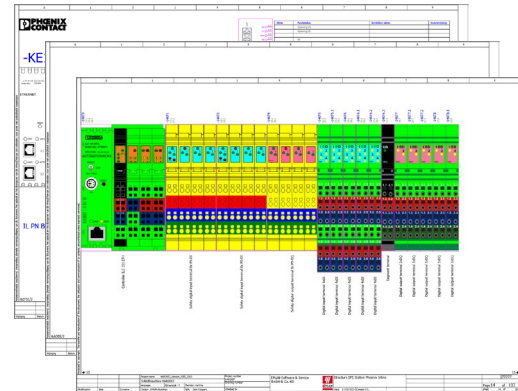
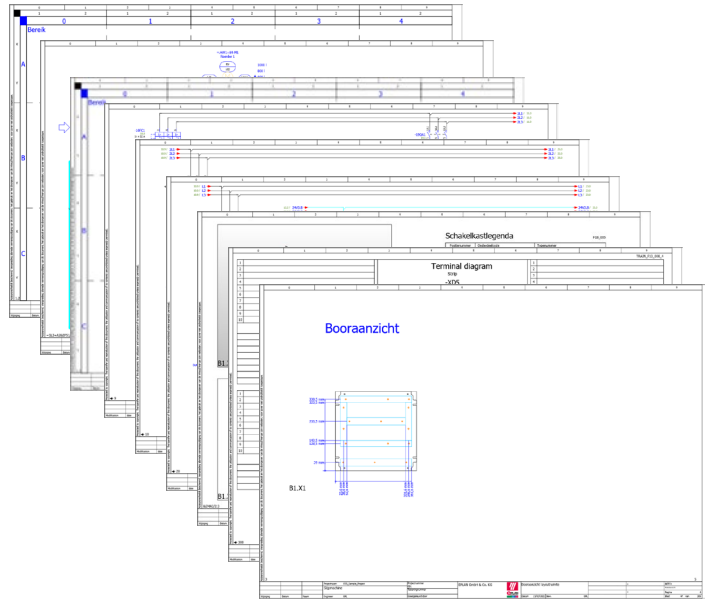
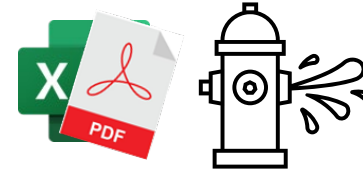
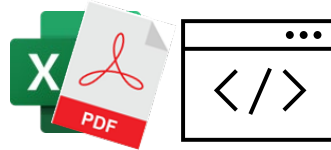
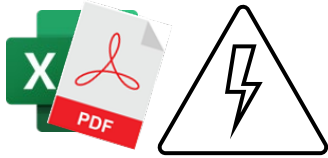
Verwerkingen

Eigenschap	Waarde
Naam	1
Startpagina van het verwerkingsblok	=+&EMB1/1
Extra veld bladnummer	
Bronproject	
Filterinstelling	
Sorteerinstelling	
Nieuwe pagina bij wijziging van de eigenschap	
Functies: Filterinstelling	
Functies: Sorteerinstelling	
Functies: Nieuwe pagina bij wijziging van de ei...	
Bereik	Algemeen
Handmatige paginabeschrijving	
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Paginasortering	Totaal
Formulier	F10_002
Deeluitvoer	
Bouwgroepen ontbinden	
Modulen ontbinden	
Onderdeel zonder artikelnummer	
Klemmenstrookartikel	
Klemmenartikel	
Kabelartikel	
Kabelverbindingsartikel	
Kabelprojectartikel	
Verbindingsartikel	
Stekerartikel	
Stekercontactartikel	
Verzamelrailartikel	
Verzamelrailsluiting-artikel	
Kabelboom-bouwgroepartikel	
Kabelboomcomponenten-artikel	



- HAR2K07_Version_2007_2010
 - AAA1 (Titelblad / voorblad)
 - AAB1 (Inhoudsopgave)
 - ADB (Structuurbeschrijving)
 - EFA1 (PLC Rack overzicht)
 - EFA2 (PLC Kaartoverzicht)
 - EFS (Schema Elektrotechniek)
 - MFA1 (Overzicht Ventieleiland Hydrauliek)
 - MFS (Schema Hydrauliek)
 - BPB (Artikellijst)
 - EMA1 (Klemmenstrookoverzicht)
 - EMA2 (Klemmenaansluitlijst)
 - EMB1 (Kabeloverzicht)**
 - 1 Cable overview : -WD1 - -WG3
 - 2 Cable overview : -WG4 - -30WG2
 - EMB2 (Kabelaansluitlijst)
 - BMA (Verbindingslijst)

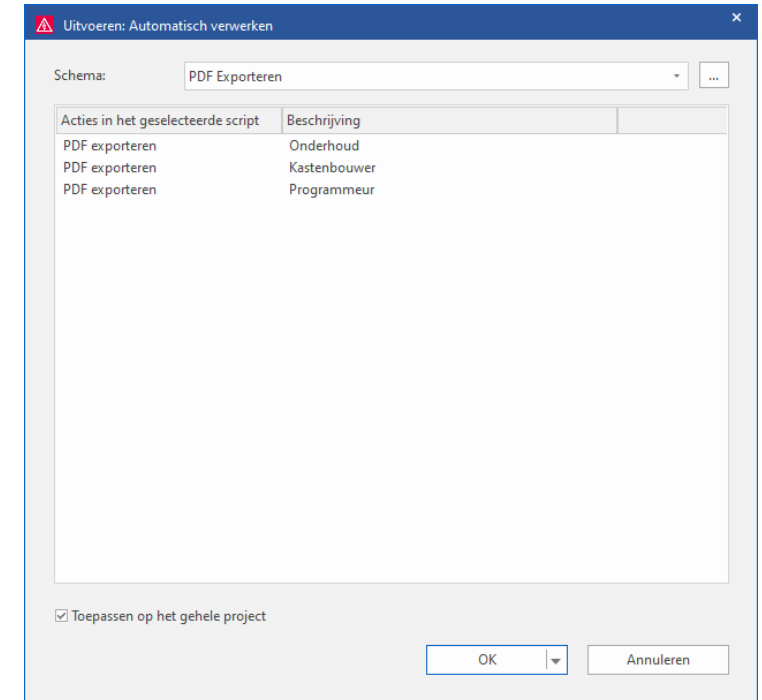
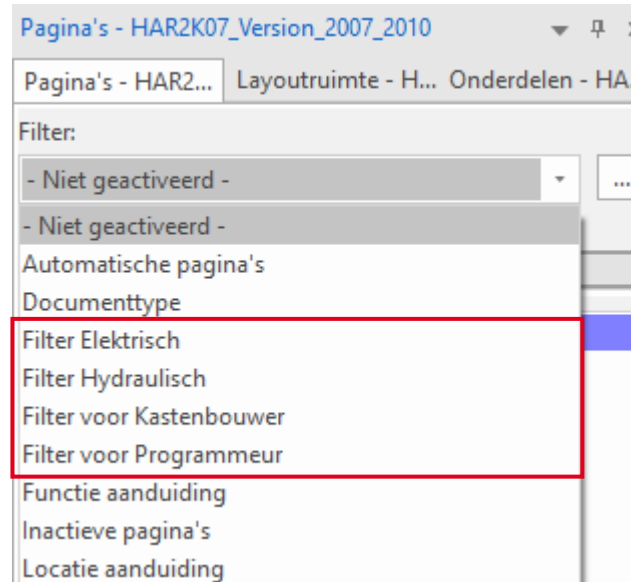
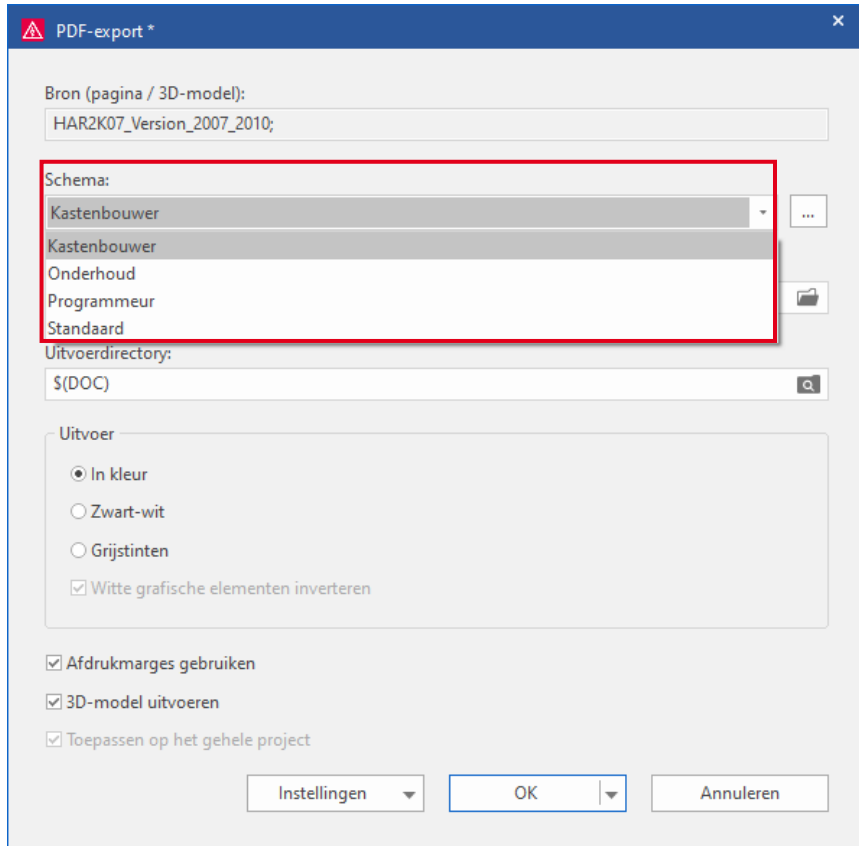
Opleveren van documentatie



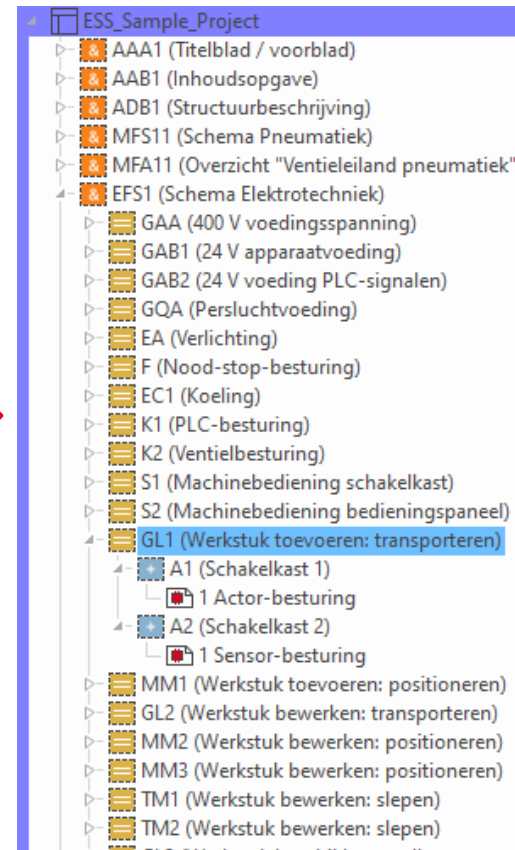
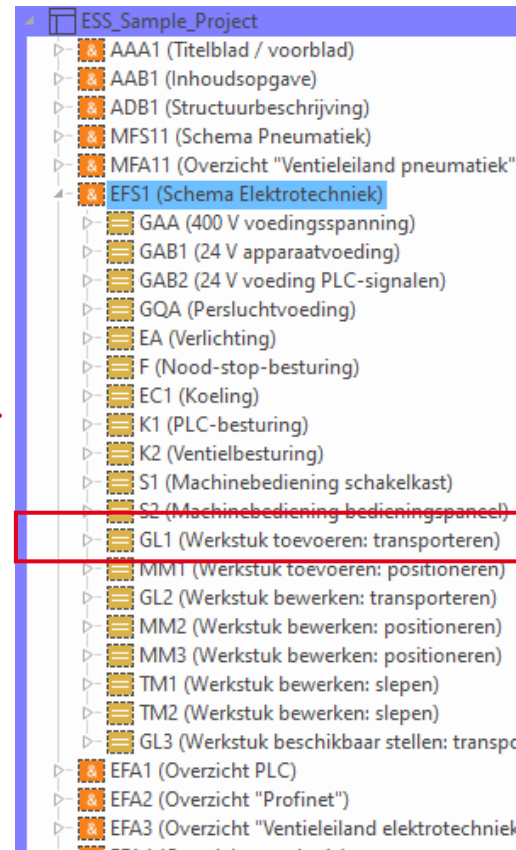
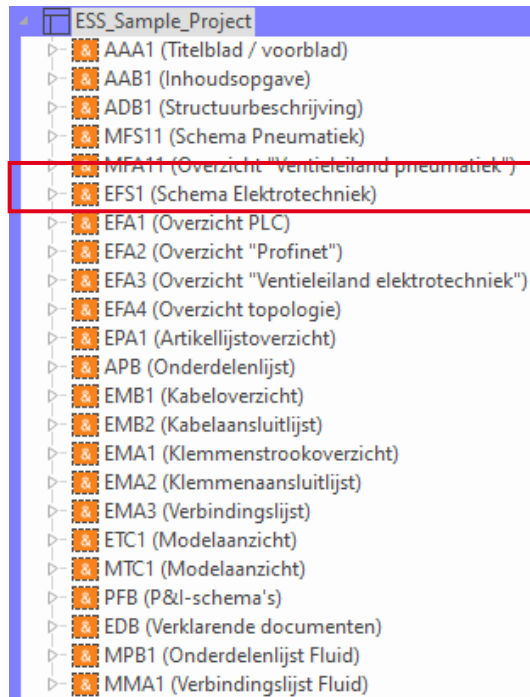
Opleveren van documentatie



PDF exporteren



Voorbeeld ESS_Sample_Project

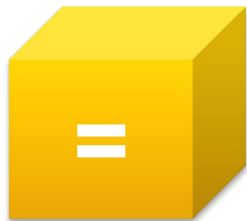


Structurering van een technisch systeem

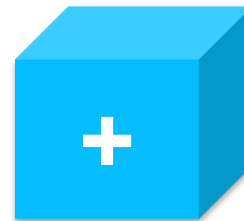


Aspecten volgens IEC of DIN EN 81346-1:

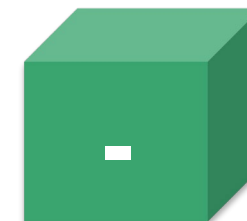
- Productaspect (-): Met welke componenten is het zo uitgevoerd dat de machine of het systeem doet wat het moet doen?
- Functioneel aspect (=): Wat moeten de vereiste/bestelde elementen of componenten van de machine of het systeem doen?
- Locatie-aspect (+): Waar bevinden zich de componenten of elementen of elementgroepen?



Functioneel aspect
(Functie aanduiding)

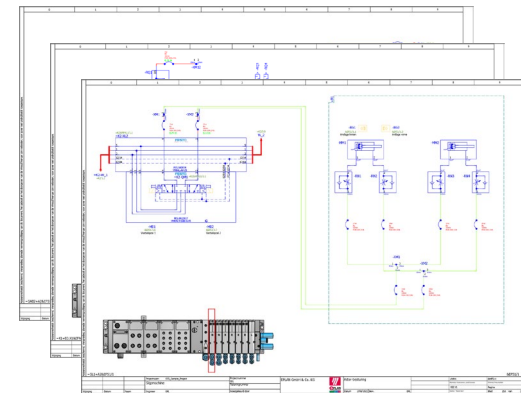
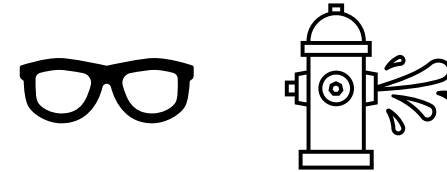
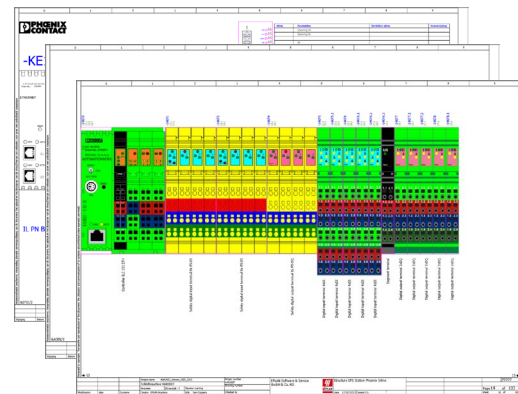
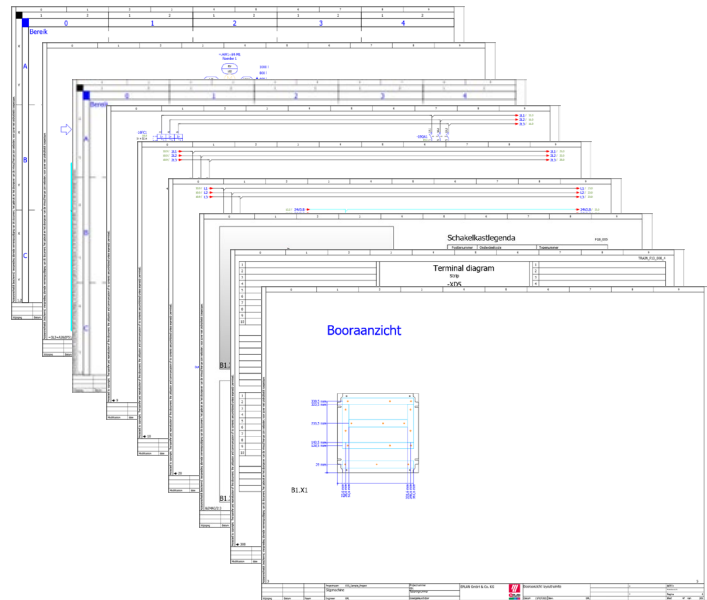
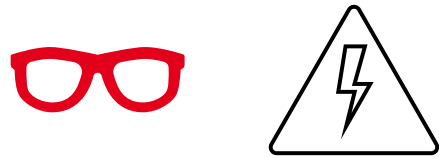


Locatie aspect
(Locatie aanduiding)



Product aspect
(ODC)

Conclusie



EPLAN

efficient engineering.

4 LEVELS OF Digital Transformation Strategy

▲ MANAGEMENT-LEVEL

▼ USER-LEVEL

