HUG ENGINEERING
Im Geren 14
8352 Elsau
Schweiz

Tel.: +41 (0)52 368 20 20
Fax: +41 (0)52 368 20 10

hugengineering.

# Electrical Diagram

Equipment : NOx Controller SNQ

El. Diagram Number : SNQ_122

Responsible : DOFR

Last Modification : 30. Jan. 2015

Last Modified by : DOF

Last Page : 88

Number of Pages : 38

Power Supply : 230VAC / total FLA chart

Power Supply Line : L + N + PE / 1.5mm2 / AWG16

Control Voltage : 24VDC
Not UL 100W Power Supply
UL 95W Power Supply NEC CLASS 2

Location : A-11436 / 200932 / 31285 CPL Politecnico di Milano

Installation : external safety device
10A



| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Urspr. | 04. Mai. 2006 | NOx Controller SNQ | | Cover Sheet | SNQ_122 | = | |
| | | | Bearb. | 30. Jan. 2015 | | | | | + | |
| | | | Name | DOFR | | | | hugengineering. | Bl. | 1 |
| Änderung | Datum | Name | Norm | | Urspr. | Ers. f. | Ers. d. | | | 88 Bl. |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | Urspr. | 04. Mai. 2006 | NOx Controller SNQ | | Page Index | SNQ_122 | = |
| | | | Bearb. | 30. Jan. 2015 | | | | | + |
| | | | Name | DOFR | | | | hugengineering. | Bl. 2 |
| Änderung | Datum | Name | Norm | | Urspr. | Ers. f. | Ers. d. | | 88 Bl. |

| Page | Page Title | Date | Drawn |
|---|---|---|---|
| 81 | 230VAC Connections Cable Plan | 30. Jan. 2015 | DOFR |
| 82 | 24V Inputs Connections Cable Plan | 30. Jan. 2015 | DOFR |
| 83 | 24V Inputs Connections Cable Plan | 30. Jan. 2015 | DOFR |
| 84 | 24V Outputs Connections Cable Plan | 30. Jan. 2015 | DOFR |
| 85 | Analogue Inputs Signals Cable Plan | 30. Jan. 2015 | DOFR |
| 86 | Analogue Outputs Signals Cable Plan | 30. Jan. 2015 | DOFR |
| 87 | Communication Cable Plan | 30. Jan. 2015 | DOFR |
| 88 | Communication Cable Plan | 30. Jan. 2015 | DOFR |



| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | Urspr. | 04. Mai. 2006 | NOx Controller SNQ | | Page Index | SNQ_122 | = |
| | | | Bearb. | 30. Jan. 2015 | | | | | + |
| | | | Name | DOFR | | | | hugengineering. | Bl. 3 |
| Änderung | Datum | Name | Norm | | Urspr. | Ers. f. | Ers. d. | | 88 Bl. |

System: SNQ.20.01.mg2.ops

Project Nr. A-11436

Editor: SEES

Date: 16.03.2015

## System-Components / System-Komponenten

### Air supply / Luftversorgung

| | | |
|---|---|---|
| [X] | CA20..CA115 | compressor<br>Kompressor |
| [ ] | DRV | external air supply<br>externe Druckluft |

### Reactant supply / Reaktionsmittelversorgung

| | | |
|---|---|---|
| [X] | VPN20...115 | reactant booster pump (20..115 l/h)<br>Reaktionsmittel-Vorlaufpumpe (20..115 l/h) |
| [ ] | VPE | reactant booster pump (350..1000 l/h)<br>Reaktionsmittel-Vorlaufpumpe (350..1000 l/h) |
| [ ] | DPCU | pump control unit (350..10000 l/h)<br>Pumpensteuerung (350..10000 l/h) |

### Dosage / Dosierung

| | | |
|---|---|---|
| [X] | SEN3..SEN20 | reactant dosing box (3..20 l/h)<br>Reaktionsmittel Dosierbox (3..20 l/h) |
| [ ] | SEN3..SEN20.wt | dosing box outdoor installation<br>Dosierbox Aussenaufstellung |
| [ ] | SEN60..SEN115 | reactant dosing box (60..115 l/h)<br>Reaktionsmittel Dosierbox (60..115 l/h) |
| [ ] | SEN60..SEN115.wt | dosing box outdoor installation<br>Dosierbox Aussenaufstellung |
| [ ] | SEH | reactant dosing unit (200..600 l/h)<br>Reaktionsmittel Dosiersystem (200..600 l/h) |

### Components / Komponenten

| | | | |
|---|---|---|---|
| [ ] | DBC24 | dust blow controller | Staubbläser |
| [ ] | GW1 | gaswasher for 1 sample gas path | Gaswäscher für 1 Messgasleitung |
| [ ] | 2x GW1 | gaswasher for 2 sample gas paths | Gaswäscher für 2 Messgasleitungen |
| [ ] | PEA100 | press. sensor converter (PRA+ 001) | Drucksensor Reaktor (PIRA+ 001) |
| [ ] | TEA330 | extra thermocouple (TIRA+ 002) | zusätzliches Thermoelement (TIRA+ 002) |
| [ ] | TEB600 | extra fast thermocouple (TIRA+ 002) | zus. schnelles Thermoel. (TIRA+ 002) |
| [X] | UT/UTWT | temperature monitoring box | Temperaturwächter |
| [ ] | FWD | feed forward | Störgrössenaufschaltung |

## SNQ-Options / SNQ-Optionen

| | | | |
|---|---|---|---|
| [ ] | .gw | gaswasher | Gaswäscher |
| [ ] | .vpe | booster pump VPE | Vorlaufpumpe VPE |
| [X] | .ops | operator panel | Bedienpanel |
| [ ] | .gat1 | router (UC7110) | Router (UC7110) |
| [ ] | .gat2 | router (UC7112 plus [VPN]) | Router (UC7112 plus [VPN]) |
| [ ] | .mod | modem and router for remote access | Modem und Router für Fernzugriff |
| [ ] | .an4 | 4 configurable analogue outputs | 4 konfigurierbare Analogausgänge |
| [ ] | .acu | air cooling unit control cabinet | Klimagerät für Schaltschrank |
| [ ] | .co | CO measuring | CO-Messung |
| [ ] | .no2 | NO2 measuring | NO2-Messung |
| [ ] | .log | sustainable data logging | Dauerhafte Datenaufzeichnung |
| [ ] | .ul | UL 508A | |
| | | marking of individual wires | Bezeichnung aller Kabel im Schrank |
| | | NEMA 4X cable gland | NEMA 4X Kabelverschraubung |
| | | AWG cable / lace | Dauerhafte Datenaufzeichnung |



| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | Urspr. | 04. Mai. 2006 | NOx Controller SNQ | | Options and Variants | SNQ_122 | = |
| | | | Bearb. | 30. Jan. 2015 | | | | | + |
| | | | Name | DOFR | | | | hugengineering. | Bl. 4 |
| Änderung | Datum | Name | Norm | | Urspr. | Ers. f. | Ers. d. | | 88 Bl. |

## Wire colour definition main circuit

| | | |
|---|---|---|
| green-yellow | : | protective earth / ground |
| black | : | load circuit AC |
| light blue | : | neutral AC |

## Wire colour definition control circuit

| | | |
|---|---|---|
| violet | : | control voltage 24VDC |
| dark blue | : | control voltage 0VDC |
| white | : | analogue signal |
| orange | : | external voltage |

## Wire size of main circuit

| | | |
|---|---|---|
| Minimum size <=13A | : | 1.5mm$^2$ (AWG16) |
| <=16A | : | 2.5mm$^2$ (AWG14) |
| <=20A | : | 4mm$^2$ (AWG12) |
| <=25A | : | 6mm$^2$ (AWG10) |
| <=40A | : | 10mm$^2$ (AWG8) |
| <=63A | : | 16mm$^2$ (AWG6) |

## Wire size of control circuits

| | | |
|---|---|---|
| Minimum size | : | 0.5mm$^2$ (AWG20) |
| Analogue +/- 0..10V/0..20mA | : | 0.5mm$^2$ (AWG20) |

## Definierte Litzenfarbe Hauptstromkreis

| | | |
|---|---|---|
| grün-gelb | : | Schutzleiter / Erde |
| schwarz | : | Laststromkreis AC |
| hellblau | : | Neutralleiter AC |

## Definierte Litzenfarbe Steuerstromkreis

| | | |
|---|---|---|
| violett | : | Steuerspannung 24VDC |
| dunkelblau | : | Steuerspannung 0VDC |
| weiss | : | Analogsignal |
| orange | : | Fremdspannung |

## Leiterquerschnitt Hauptstromkreis

| | | |
|---|---|---|
| Minimum Querschnitt <=13A | : | 1.5mm$^2$ (AWG16) |
| <=16A | : | 2.5mm$^2$ (AWG14) |
| <=20A | : | 4mm$^2$ (AWG12) |
| <=25A | : | 6mm$^2$ (AWG10) |
| <=40A | : | 10mm$^2$ (AWG8) |
| <=63A | : | 16mm$^2$ (AWG6) |

## Leiterquerschnitt Steuerstromkreis

| | | |
|---|---|---|
| Minimum Querschnitt | : | 0.5mm$^2$ (AWG20) |
| Analog +/- 0..10V/ 4..20mA | : | 0.5mm$^2$ (AWG20) |



| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | Urspr. | 04. Mai. 2006 | NOx Controller SNQ | | Information Wire | SNQ_122 | = + |
| | | | Bearb. | 12. Jan. 2015 | | | | | |
| | | | Name | DOFR | | | | hugengineering. | Bl. 5 |
| Änderung | Datum | Name | Norm | | Urspr. | Ers. f. | Ers. d. | | 88 Bl. |

## Item designation PI-diagram

| PI-Diagram | electrical diagram |
|---|---|
| PIRA+ 001 | B603 |
| TIRA+ 002 | B604 |
| TIRA+/- 001 | B605 |

## Identification first alphabetic character

| | |
|---|---|
| P | : pressure |
| T | : temperature |

## Identification following alphabetic character

| | |
|---|---|
| I | : indicate |
| R | : record |
| A | : alarm |
| + | : high boundary value |
| - | : low boundary value |

## Betriebsmittelkennzeichnung PI-Diagramm

| PI-Diagramm | Elektroschema |
|---|---|
| PIRA+ 001 | B603 |
| TIRA+ 002 | B604 |
| TIRA+/- 001 | B605 |

## Identifikation Erstbuchstabe

| | |
|---|---|
| P | : Druck |
| T | : Temperatur |

## Identifikation Folgebuchstabe

| | |
|---|---|
| I | : Anzeige |
| R | : Registrierung (Aufzeichnung) |
| A | : Alarm, Grenzwertmeldung |
| + | : oberer Grenzwert |
| - | : unterer Grenzwert |



| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | Urspr. | 04. Mai. 2006 | NOx Controller SNQ | | Information PI-diagram | SNQ_122 | = + |
| | | | Bearb. | 12. Jan. 2015 | | | | | |
| | | | Name | DOFR | | | | hugengineering. | Bl. 5. 1 |
| Änderung | Datum | Name | Norm | | Urspr. | Ers. f. | Ers. d. | | 88 Bl. |

# Terminalblocks

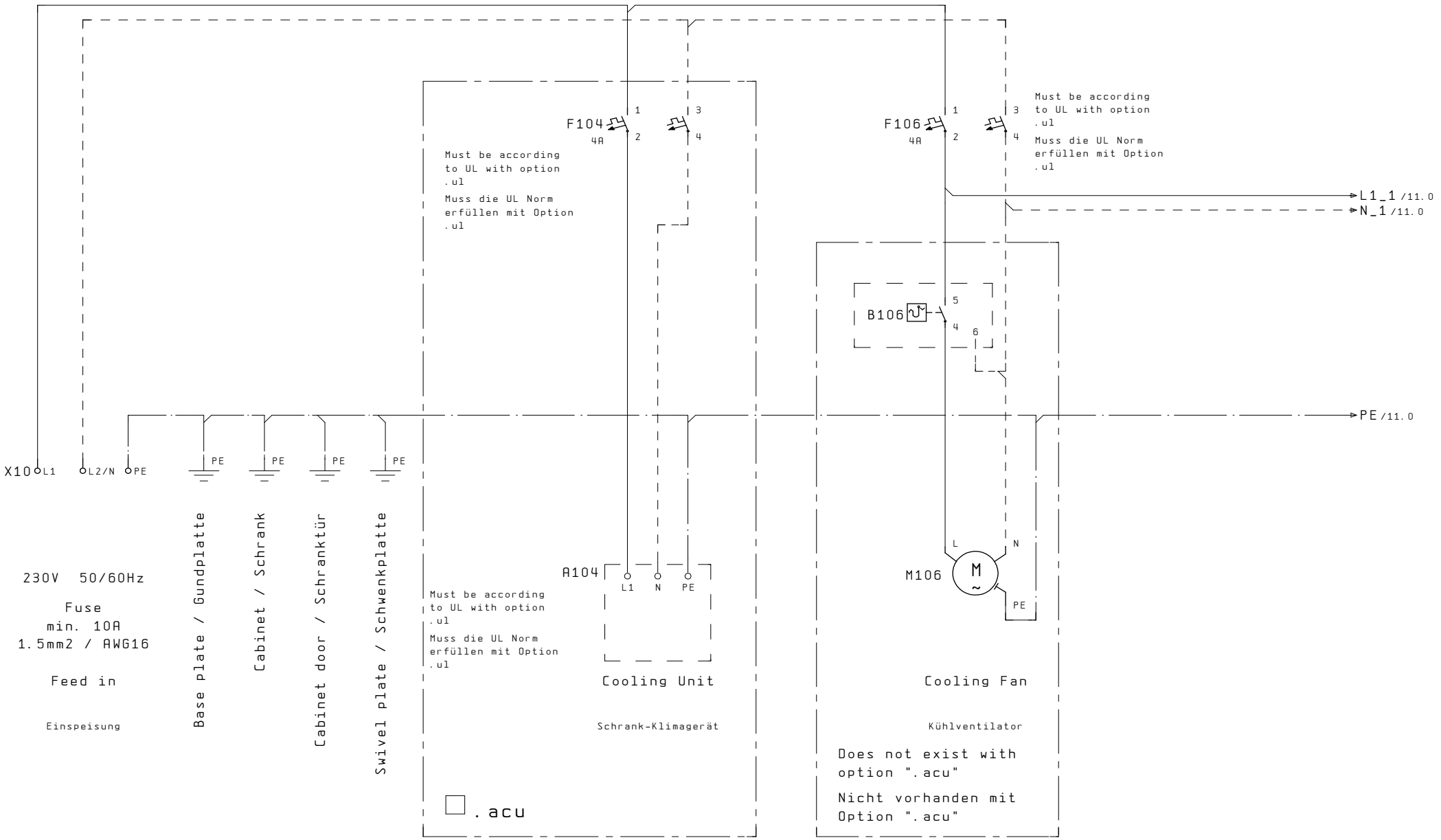
| | |
|---|---|
| X10 | Feed in |
| X12 | 230V remote |
| X13 | 230V swivel plate bottom |
| X14 | 230V swivel plate top |
| X15 | 230V Terminal |
| X20 | 0V distribution |
| X21 | 24V distribution |
| X22 | 24V digital input signals |
| X23 | 24V digital output signals |
| X24 | 24V dig. outputs swivel plate |
| X25 | 24V distribution swivel plate |
| X26 | peltier cooler with fan |
| X30 | analogue input signals |
| X31 | analogue output signals |

# Klemmenleisten

| | |
|---|---|
| X10 | Einspeisung |
| X12 | 230V entfernt |
| X13 | 230V Schwenkplatte unten |
| X14 | 230V Schwenkplatte oben |
| X15 | 230V Klemmen |
| X20 | 0V-Verteilung |
| X21 | 24V-Verteilung |
| X22 | 24V Digitaleingänge |
| X23 | 24V Digitalausgänge |
| X24 | 24V Digitalausgänge Schwenkplatte |
| X25 | 24V-Verteilung Schwenkplatte |
| X26 | Peltier-Kühler mit Ventilator |
| X30 | Analogeingänge |
| X31 | Analogausgänge |

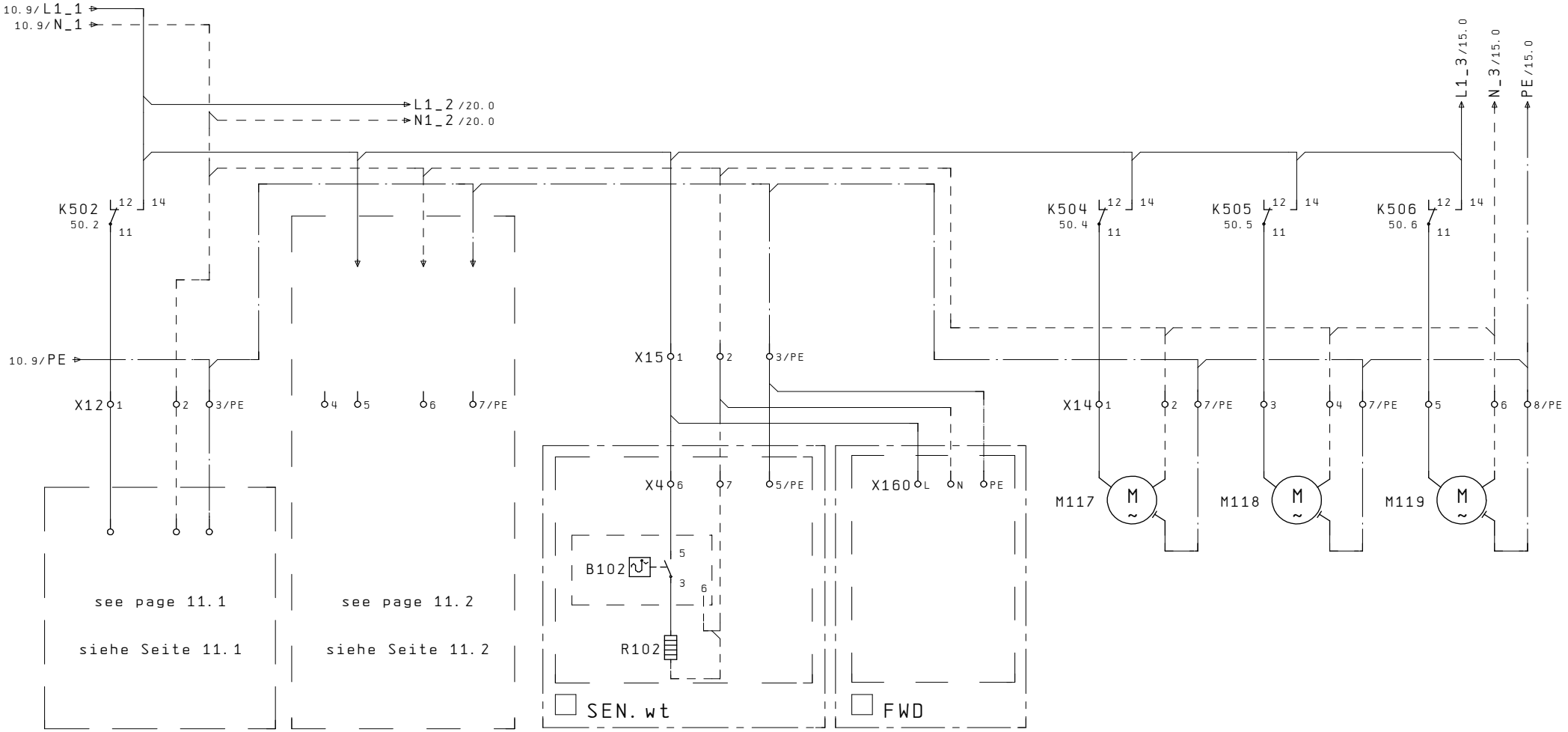


| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | Urspr. | 04. Mai. 2006 | NOx Controller SNQ | | Terminalblocks | SNQ_122 | = |
| | | | Bearb. | 30. Jan. 2015 | | | | | + |
| | | | Name | DOFR | | | | hugengineering. | Bl. 6 |
| Änderung | Datum | Name | Norm | | Urspr. | Ers. f. | Ers. d. | | 88 Bl. |




6 11

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | Urspr. | 04. Mai. 2006 | NOx Controller SNQ | | Main Power Supply<br>Air Supply, Air Conditioner | SNQ_122 | = |
| | | | Bearb. | 30. Jan. 2015 | | | | | + |
| | | | Name | MIG | | | | | Bl. 10 |
| Änderung | Datum | Name | Norm | | Urspr. | Ers. f. | Ers. d. | hugengineering. | 88 Bl. |




| Reactant Supply | Injector Drive | 230 V Terminal SEN Heater | 230 V Terminal FWD | Sampling Gas Pump Control | Sampling Gas Pump Emission | Purge Gas Pump |
|---|---|---|---|---|---|---|
| Reaktionsmittel-versorgung | Düsenantrieb | 230V Klemme SEN Heizung | 230V Klemme FWD | Messgaspumpe Regelung | Messgaspumpe Emissionsmessung | Spülgaspumpe |

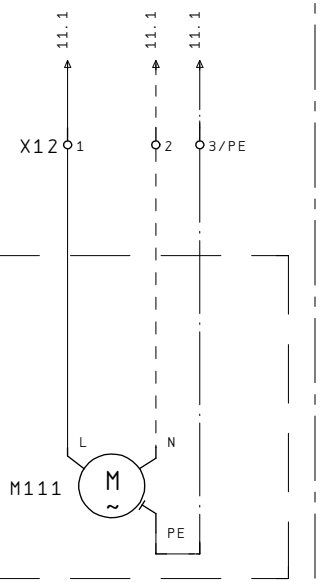


| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | Urspr. | 04. Mai. 2006 | NOx Controller SNQ | | 230V Drives | SNQ_122 |
| | | | Bearb. | 30. Jan. 2015 | | | | |
| | | | Name | MIG | | | | |
| Änderung | Datum | Name | Norm | | Urspr. | Ers. f. | Ers. d. | |

hugengineering.

Bl. 11
88 Bl.

## VPN20...VPN115

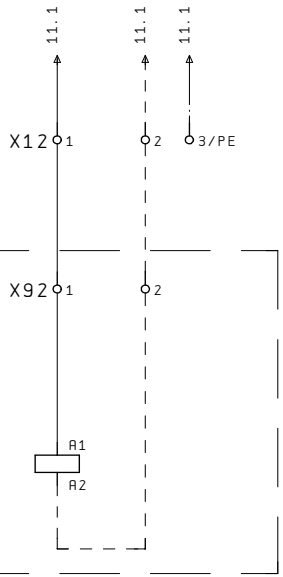



Reactant Booster Pump

Reaktionsmittel-Vorlaufpumpe

☒ VPN20...115

## VPE350...VPE1000

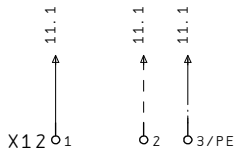



Reactant Booster Pump Start

Reaktionsmittel-Vorlaufpumpe Start

☐ VPE

## DPCU




In combination with Pumpcontrol DPCU, this terminals are not used

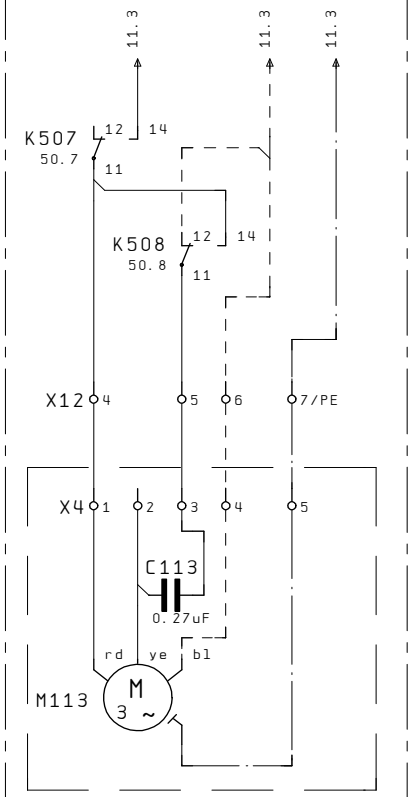
In Kombination mit einer Pumpensteuerung DPCU werden diese Klemmen nicht gebraucht

☐ DPCU



| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | Urspr. | 04. Mai. 2006 | NOx Controller SNQ | | Reactant Supply Variants | SNQ_122 | = |
| | | | Bearb. | 30. Jan. 2015 | | | | | + |
| | | | Name | BEN | | | | hugengineering. | Bl. 11.1 |
| Änderung | Datum | Name | Norm | | Urspr. | Ers. f. | Ers. d. | | 88 Bl. |

## SEN3...SEN20

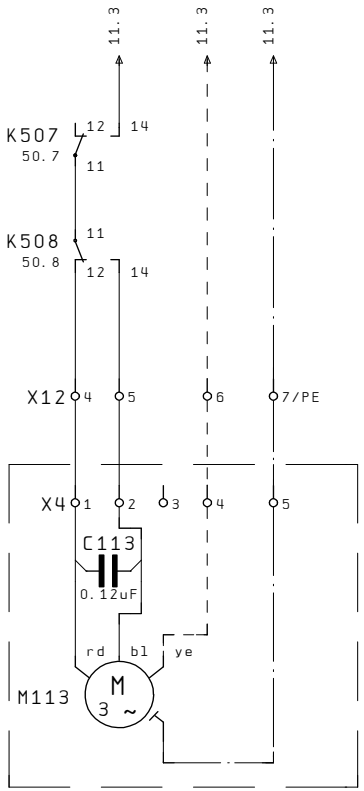



Injector Drive

Düsenantrieb

☒ SEN3...SEN20

## SEN60...SEN115




Injector Drive

Düsenantrieb

☐ SEN60...SEN115

## SEH

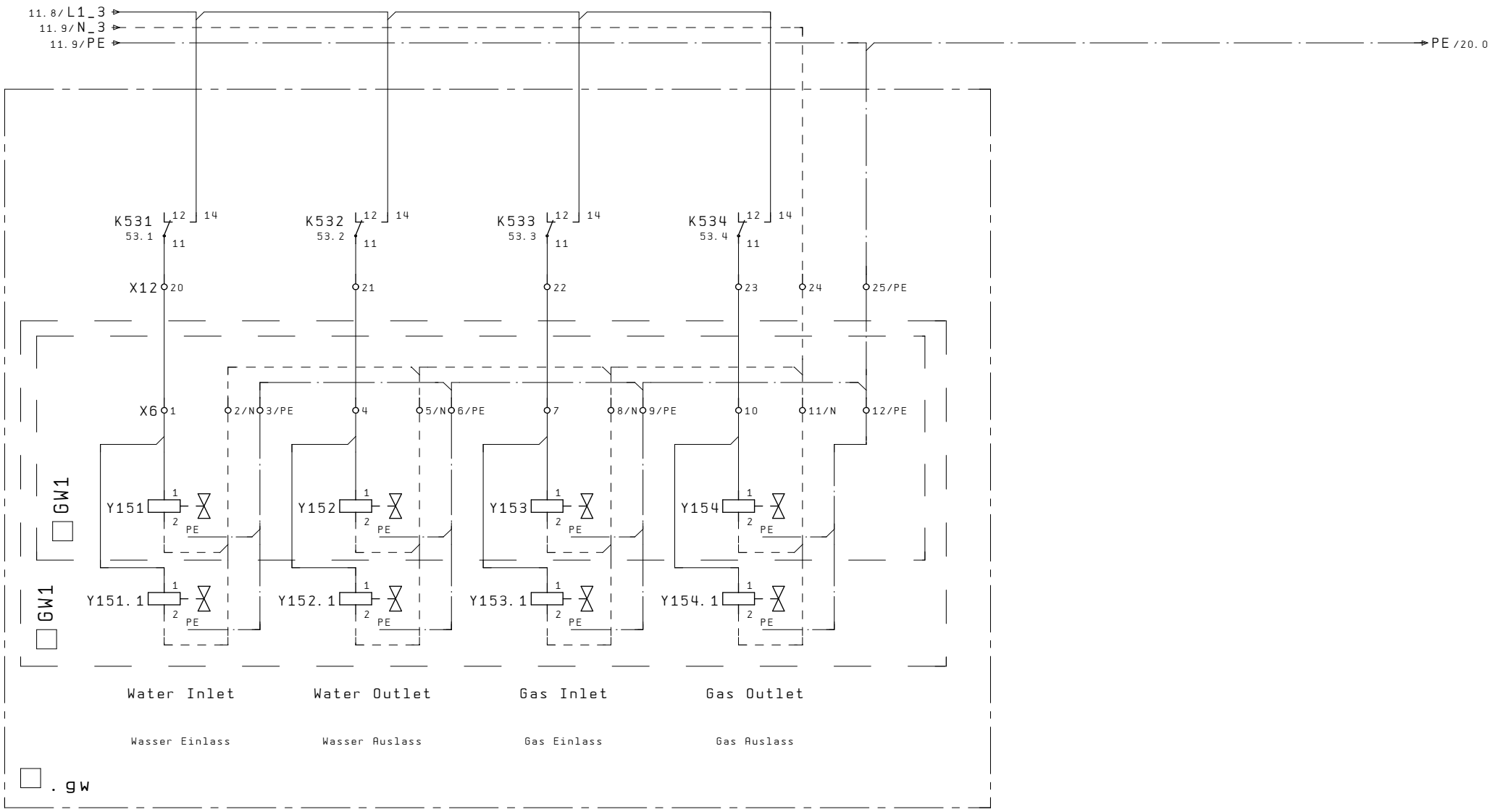

In combination with
dosing unit SEH,
no injector drive is used

In Kombination mit einer
Dosiereinheit SEH,
wird kein Düsenantrieb
gebraucht

☐ SEH

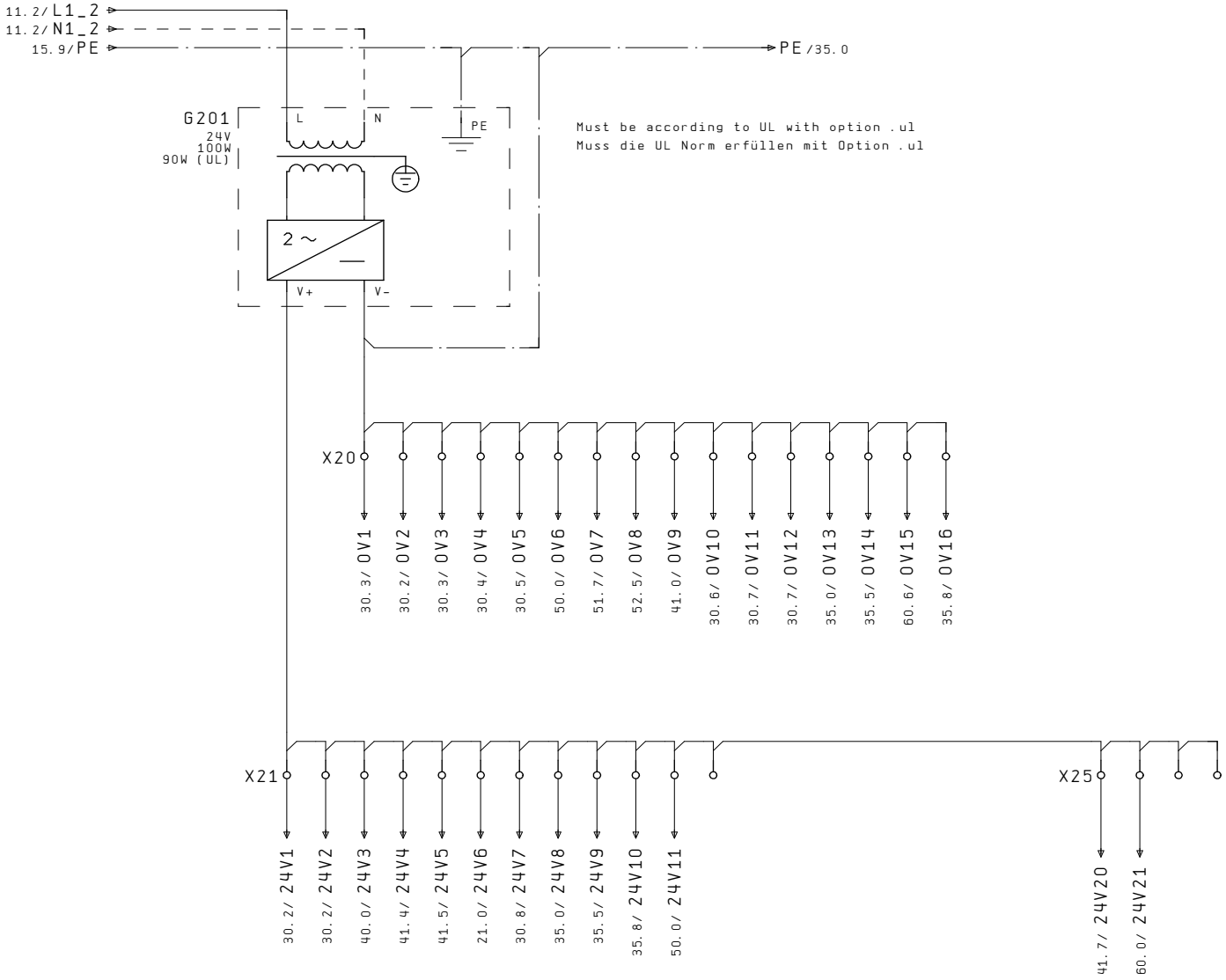


| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | Urspr. | 04. Mai. 2006 | NOx Controller SNQ | | Injector Drive Variants | SNQ_122 | = |
| | | | Bearb. | 30. Jan. 2015 | | | | | + |
| | | | Name | BEN | | | | | |
| Änderung | Datum | Name | Norm | | Urspr. | Ers. f. | Ers. d. | hugengineering. | Bl. 11.2 / 88 Bl. |






| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | Urspr. | 04. Mai. 2006 | NOx Controller SNQ | | Option Gaswasher | SNQ_122 | = |
| | | | Bearb. | 30. Jan. 2015 | | | | | + |
| | | | Name | BEN | | | | | |
| Änderung | Datum | Name | Norm | | Urspr. | Ers. f. | Ers. d. | hugengineering. | Bl. 15 / 88 Bl. |



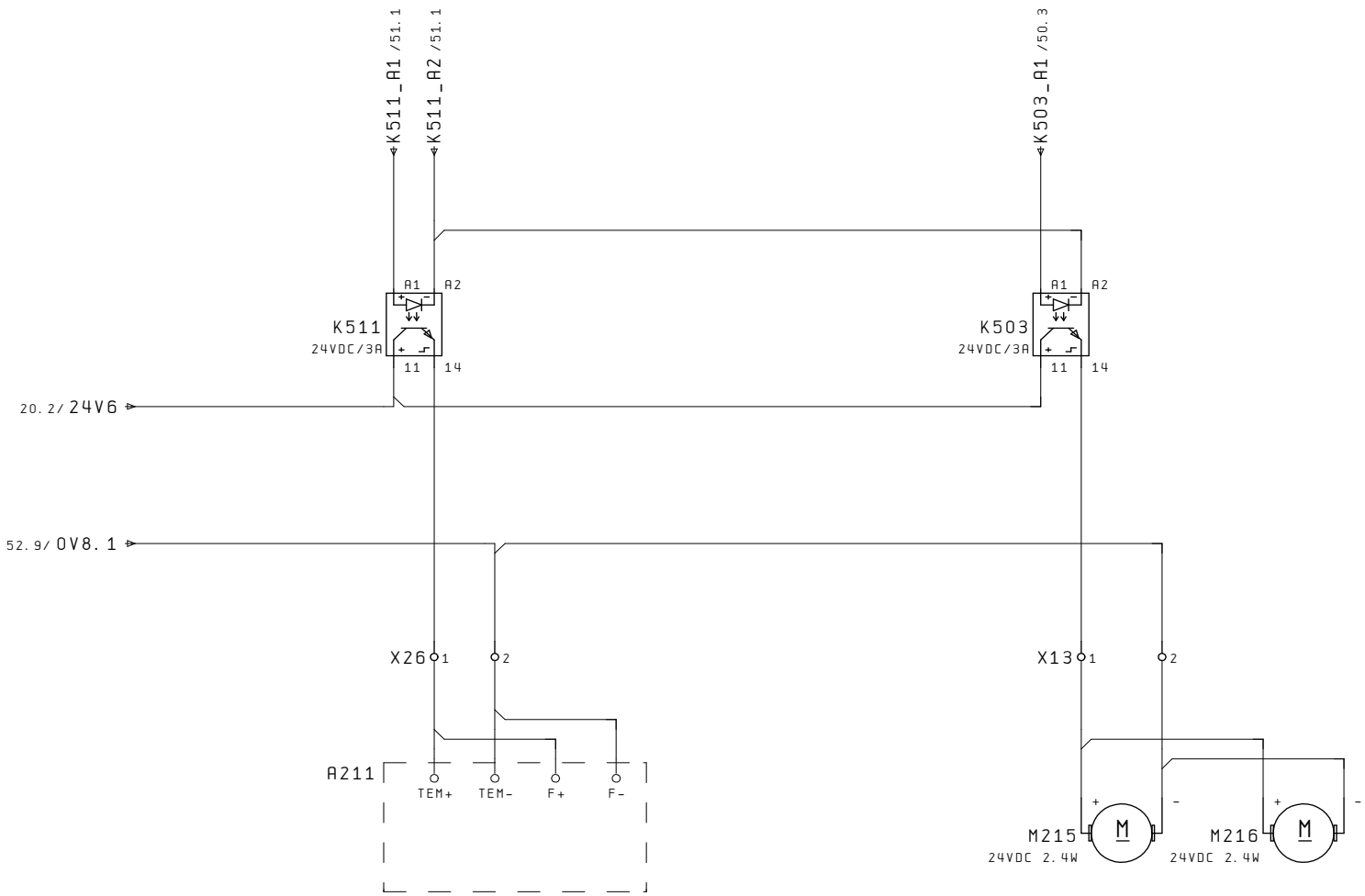

24VDC Power Supply
Not UL 100W
UL 95W NEC CLASS 2

24VDC Speisung
Nicht UL 100W
UL 90W NEC CLASS 2

15

21

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | Urspr. | 04. Mai. 2006 | NOx Controller SNQ | | 24VDC Power Supply | SNQ_122 | = |
| | | | Bearb. | 30. Jan. 2015 | | | | | + |
| | | | Name | MIG | | | | hugengineering. | Bl. 20 |
| Änderung | Datum | Name | Norm | | Urspr. | Ers. f. | Ers. d. | | 88 Bl. |




Peltier Cooler
with Fan

Peltier-Kühler
mit Ventilator

Condensate
Pump 1

Kondensatpumpe 1

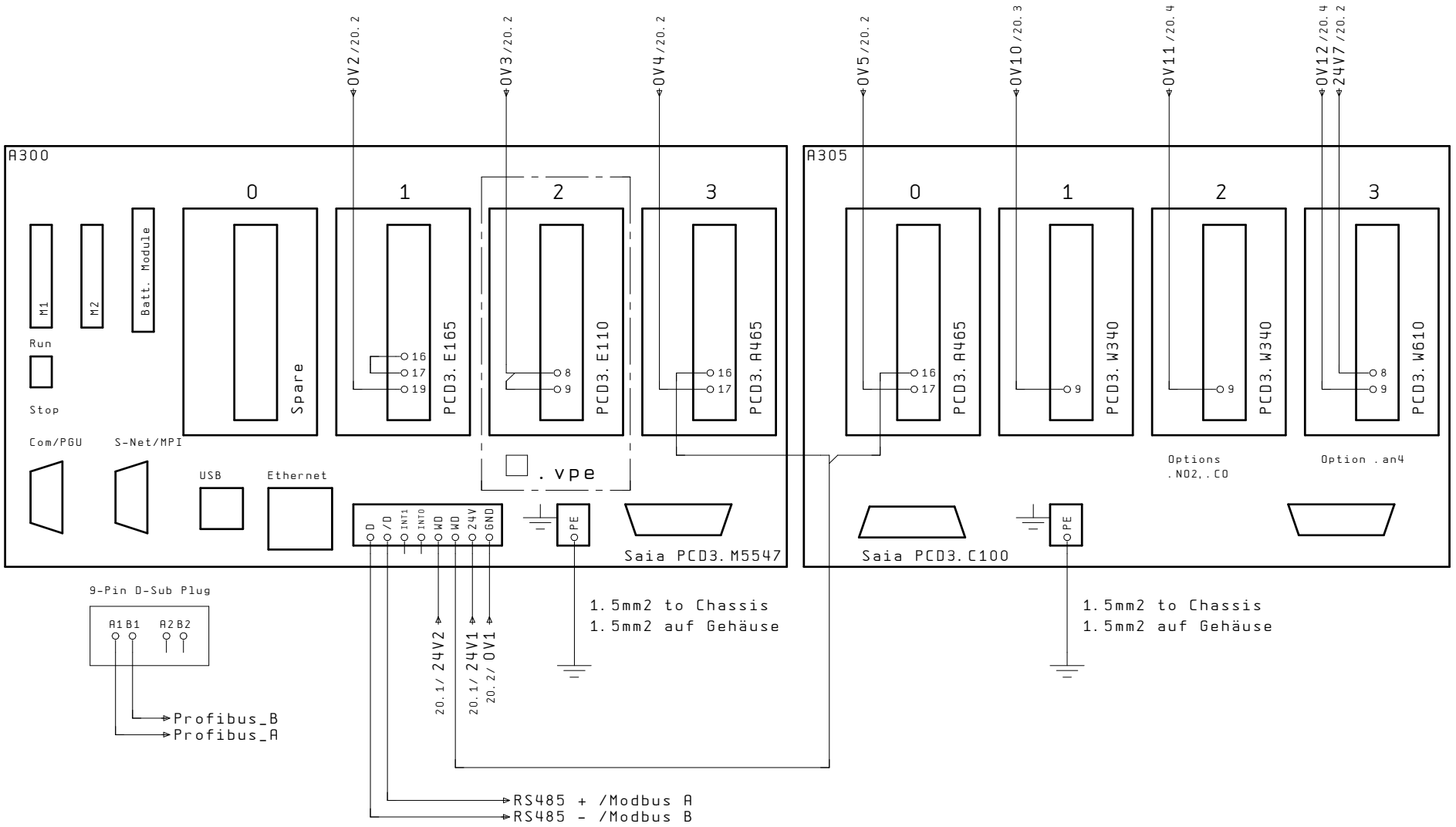
Condensate
Pump 2

Kondensatpumpe 2

20

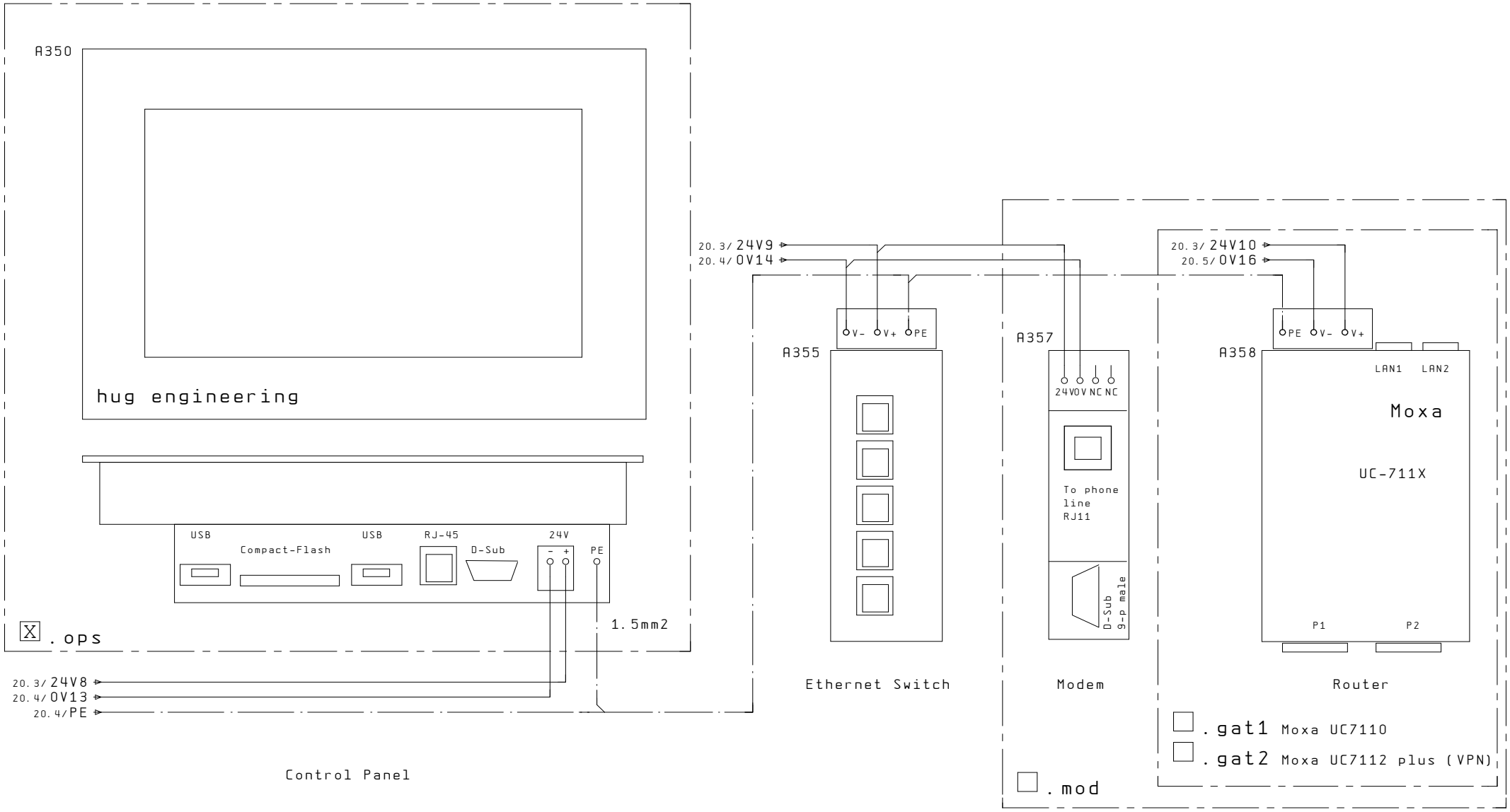
30

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | Urspr. | 04. Mai. 2006 | NOx Controller SNQ | | Peltier Cooler / Condensate Pump | SNQ_122 | = |
| | | | Bearb. | 30. Jan. 2015 | | | | | + |
| | | | Name | MIG | | | | hugengineering. | Bl. 21 |
| Änderung | Datum | Name | Norm | | Urspr. | Ers. f. | Ers. d. | | 88 Bl. |



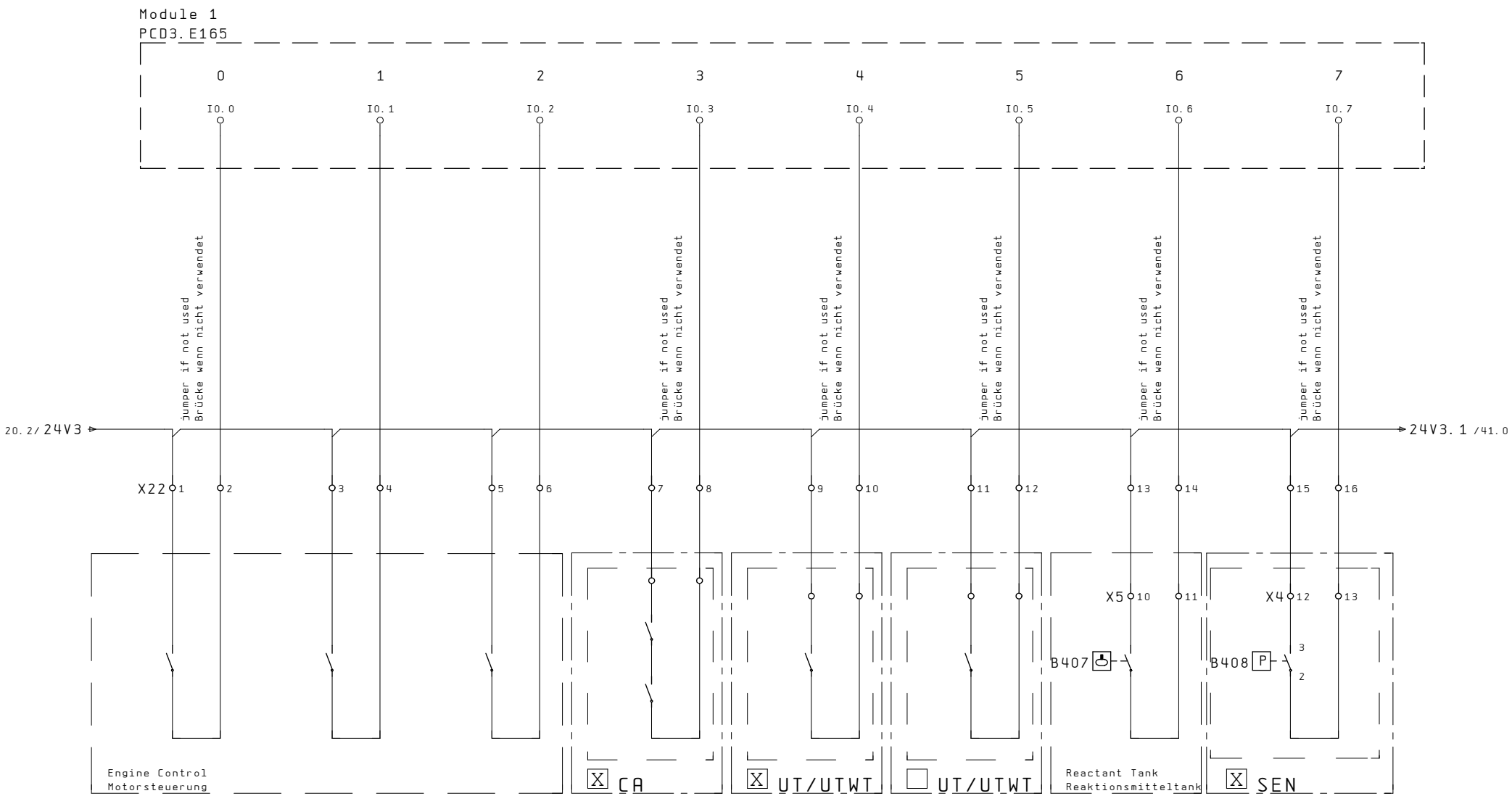



| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Urspr. | 04. Mai. 2006 | NOx Controller SNQ | | PLC Power Supply | SNQ_122 | = | |
| | | | Bearb. | 30. Jan. 2015 | | | | | + | |
| | | | Name | MIG | | | | | | Bl. 30 |
| Änderung | Datum | Name | Norm | | Urspr. | Ers. f. | Ers. d. | | hugengineering. | 88 Bl. |




30 40

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | Urspr. | 04. Mai. 2006 | NOx Controller SNQ | | Web Panel/Ethernet Switch | SNQ_122 | = |
| | | | Bearb. | 30. Jan. 2015 | | | | | + |
| | | | Name | BEN | | | | hugengineering. | Bl. 35 |
| Änderung | Datum | Name | Norm | | Urspr. | Ers. f. | Ers. d. | | 88 Bl. |

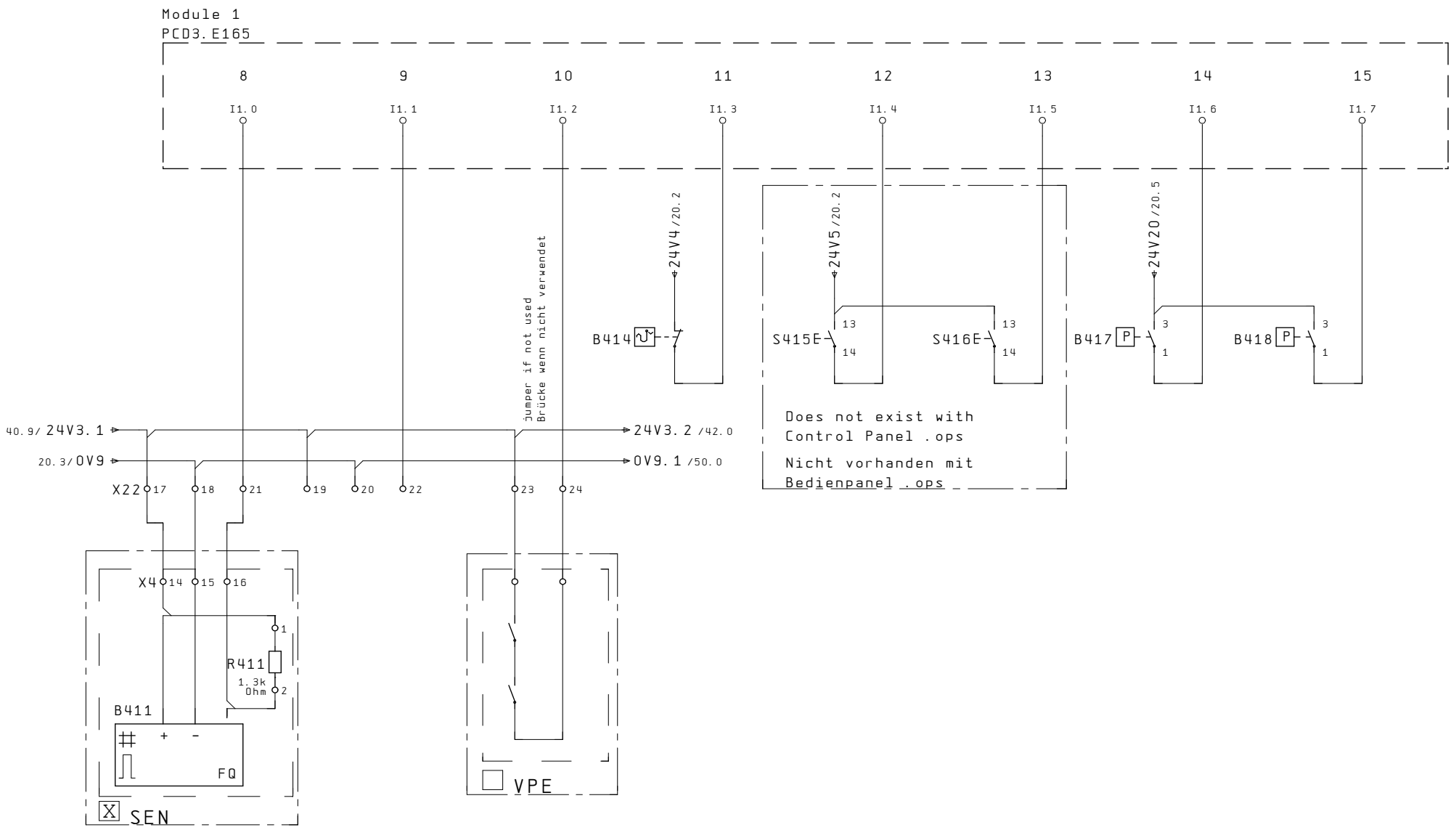



| Enable Signal | Engine Running | Load Curve 2 Selected | Compressor ok | Temperature SCR OK | Temperature Oxi-Box OK | Reactant Tank Level OK | Air Pressure Dosing Box OK |
|---|---|---|---|---|---|---|---|
| Freigabesignal | Motor läuft | Lastkurve 2 angewählt | Kompressor i.o. | Temperatur SCR i.o. | Temperatur Oxi-Box i.o. | Reaktionsmittel-tankniveau i.O. | Luftdruck Dosierbox i.O. |



| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | Urspr. | 04. Mai. 2006 | NOx Controller SNQ | | Module 1<br>Dig. Inputs 0.0..0.7 | SNQ_122 |
| | | | Bearb. | 30. Jan. 2015 | | | | |
| | | | Name | MIG | | | | |
| Änderung | Datum | Name | Norm | | Urspr. | Ers. f. | Ers. d. | |

hugengineering.

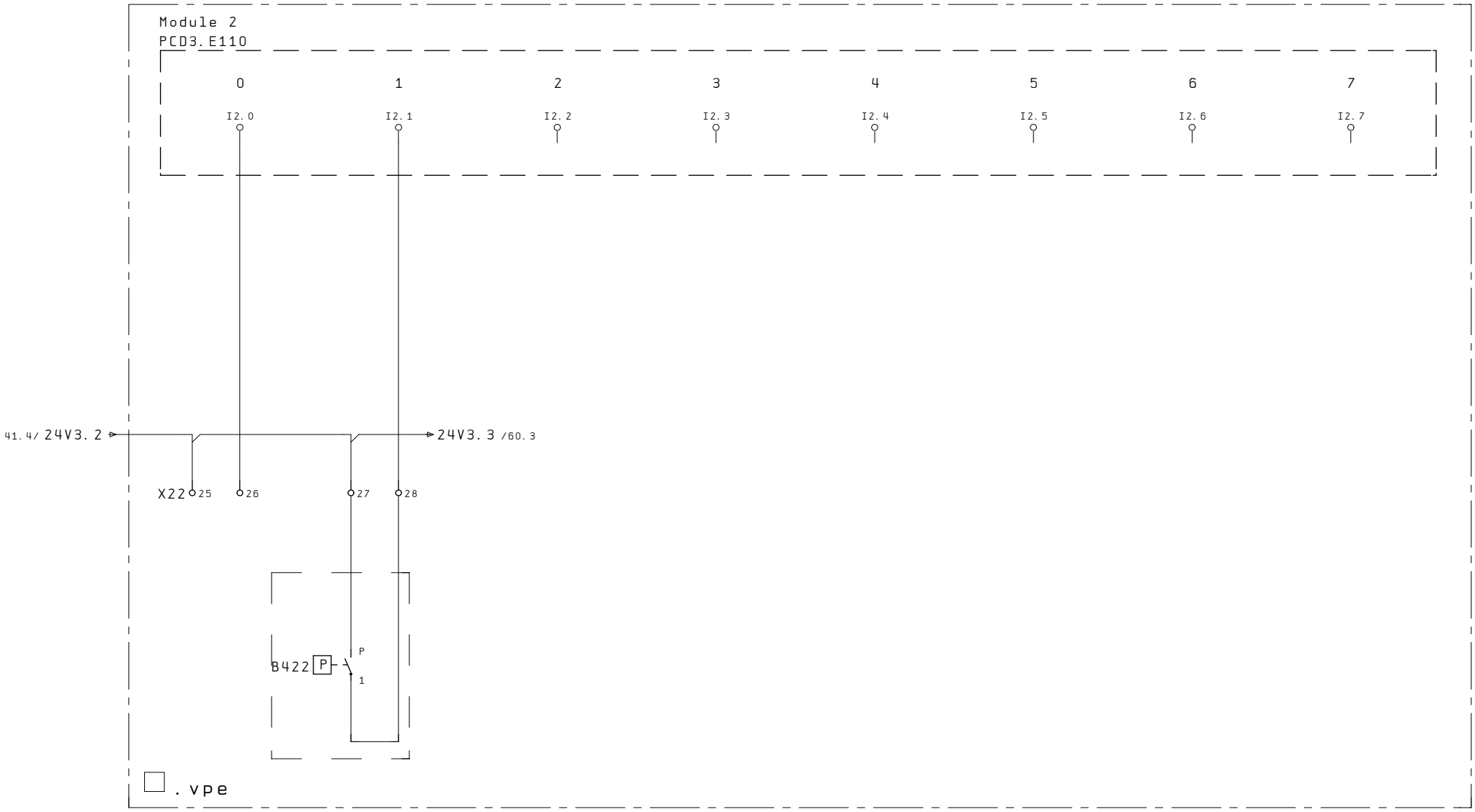



| Digmesa Flow Meter | Spare | Booster Pump ok | Temperature Control Cabinet OK | System On / Off | Alarm Acknowledge | Pressure Path 1 | Pressure Path 2 |
|---|---|---|---|---|---|---|---|
| Digmesa Durchflussmesser | Reserve | Vorlaufpumpe i.o. | Temperatur Steuerschrank i.O. | System Ein / Aus | Störung quittieren | Druck Pfad 1 | Druck Pfad 2 |

40

42

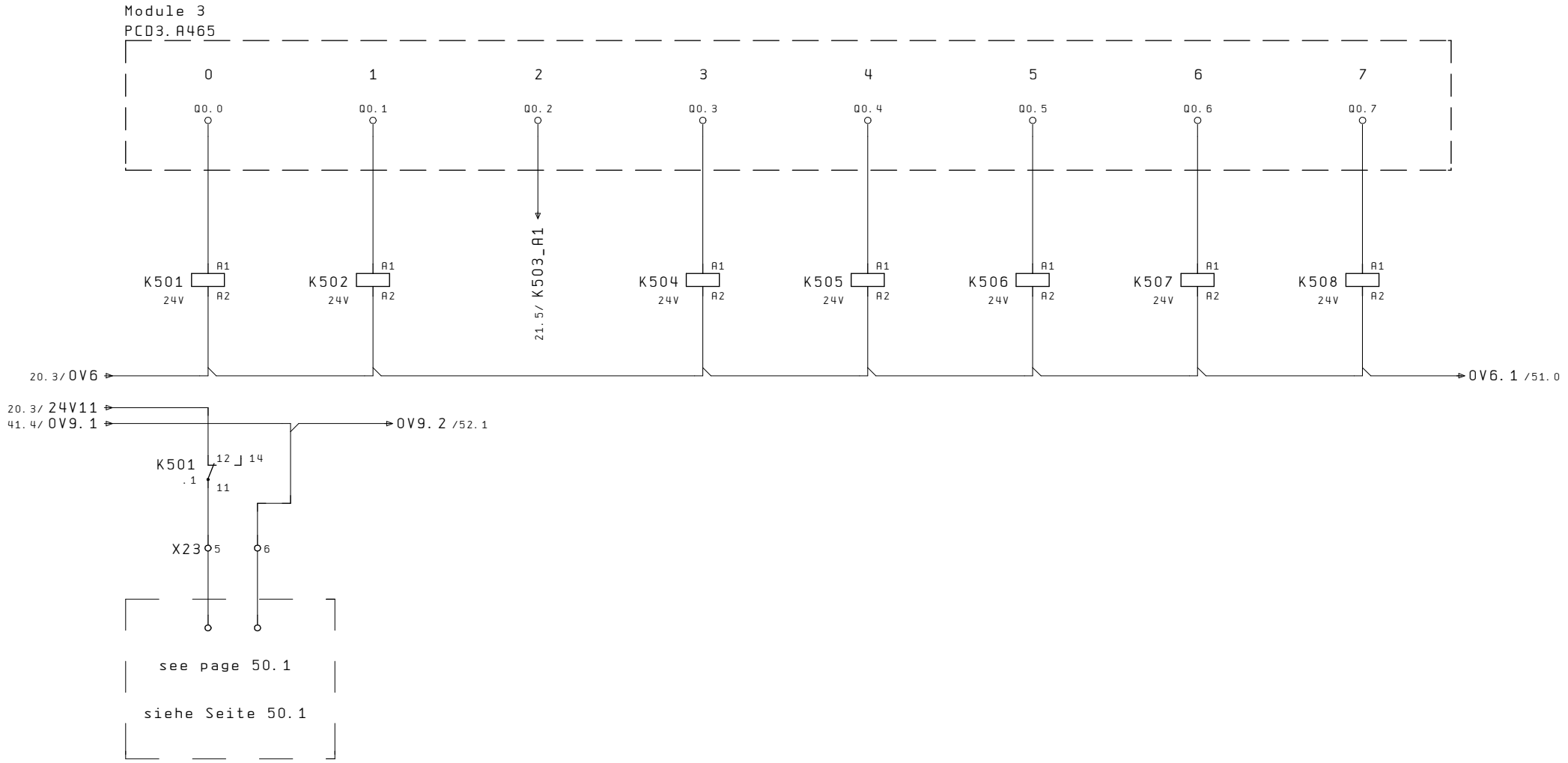
| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | Urspr. | 04. Mai. 2006 | NOx Controller SNQ | | Module 1<br>Dig. Inputs 1.0..1.7 | SNQ_122 | = |
| | | | Bearb. | 30. Jan. 2015 | | | | | + |
| | | | Name | MIG | | | | hugengineering. | Bl. 41 |
| Änderung | Datum | Name | Norm | | Urspr. | Ers. f. | Ers. d. | | 88 Bl. |




| Spare | Pressure Booster Pump ok | Spare | Spare | Spare | Spare | Spare | Spare |
|---|---|---|---|---|---|---|---|
| Reserve | Pumpendruck i.o. | Reserve | Reserve | Reserve | Reserve | Reserve | Reserve |



| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | Urspr. | 04. Mai. 2006 | NOx Controller SNQ | | Module 2<br>Dig. Inputs 2.0..2.7 | SNQ_122 | = |
| | | | Bearb. | 30. Jan. 2015 | | | | | + |
| | | | Name | BEN | | | | hugengineering. | Bl. 42 |
| Änderung | Datum | Name | Norm | | Urspr. | Ers. f. | Ers. d. | | 88 Bl. |

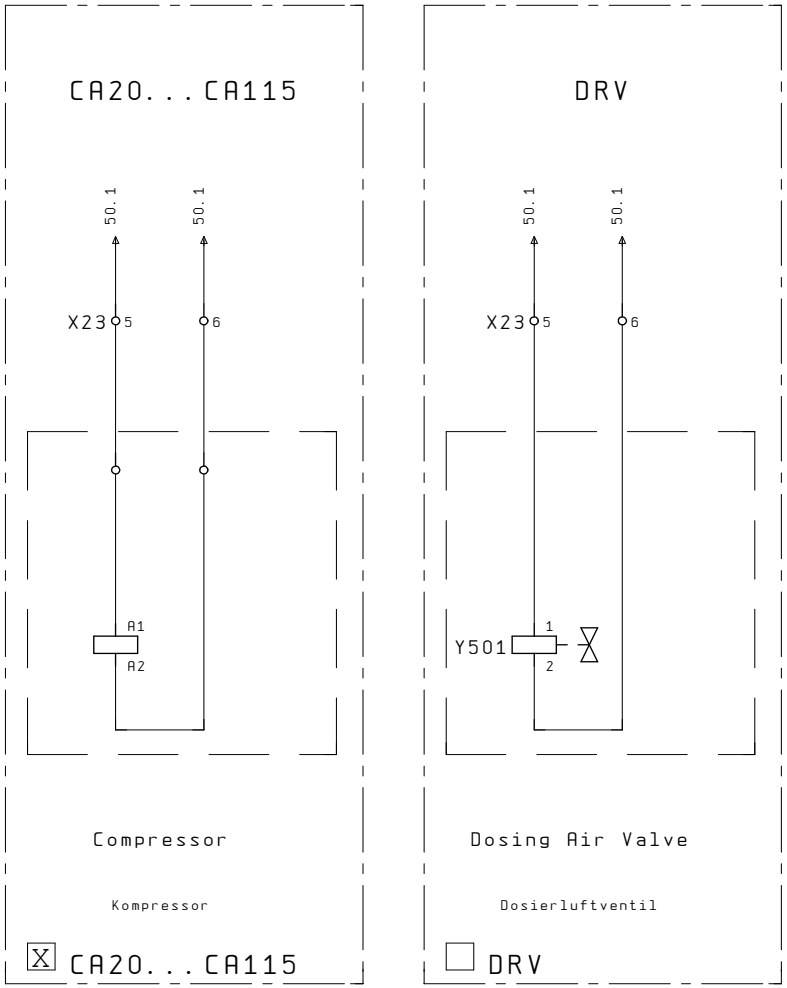



| Air Supply | Booster Pump | Condensate Pumps | Gas Pump Control Path | Gas Pump Emission Path | Purge Gas Pump | Injector Drive Turn | Injector Drive Turn to Inject |
|---|---|---|---|---|---|---|---|
| 14 12 11 .1 | 14 12 11 11.0 | | 14 12 11 11.6 | 14 12 11 11.7 | 14 12 11 11.8 | 14 12 11 11.2.0<br>14 12 11 11.2.3 | 11 12 11.2.3<br>12 11 11.2.1<br>14 14 |
| Luftversorgung | Vorlaufpumpe | Kondensatpumpen | Messgaspumpe Regelung | Messgaspumpe Emission | Spülgaspumpe | Drehantrieb Düse drehen | Drehantrieb Düse drehen nach Eindüsen |



| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | Urspr. | 04. Mai. 2006 | NOx Controller SNQ | | Module 3<br>Dig. Outputs 0.0..0.7 | SNQ_122 |
| | | | Bearb. | 30. Jan. 2015 | | | | |
| | | | Name | MIG | | | | |
| Änderung | Datum | Name | Norm | | Urspr. | Ers. f. | Ers. d. | hugengineering. |

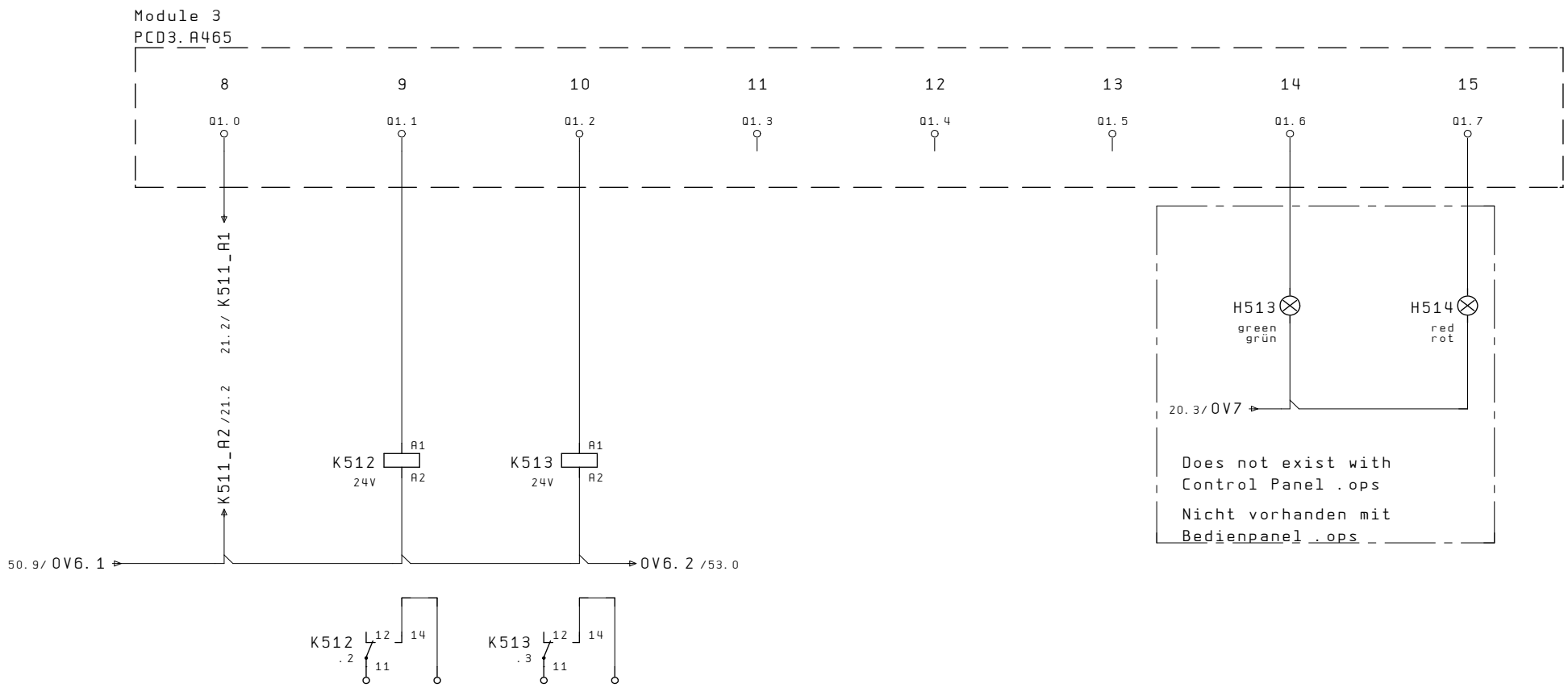
Bl. 50
88 Bl.




50

51

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | Urspr. | 04. Mai. 2006 | NOx Controller SNQ | | Air Supply Variants | SNQ_122 | = |
| | | | Bearb. | 30. Jan. 2015 | | | | | + |
| | | | Name | BEN | | | | hugengineering. | Bl. 50. 1 |
| Änderung | Datum | Name | Norm | | Urspr. | Ers. f. | Ers. d. | | 88 Bl. |




14
12 11 .2

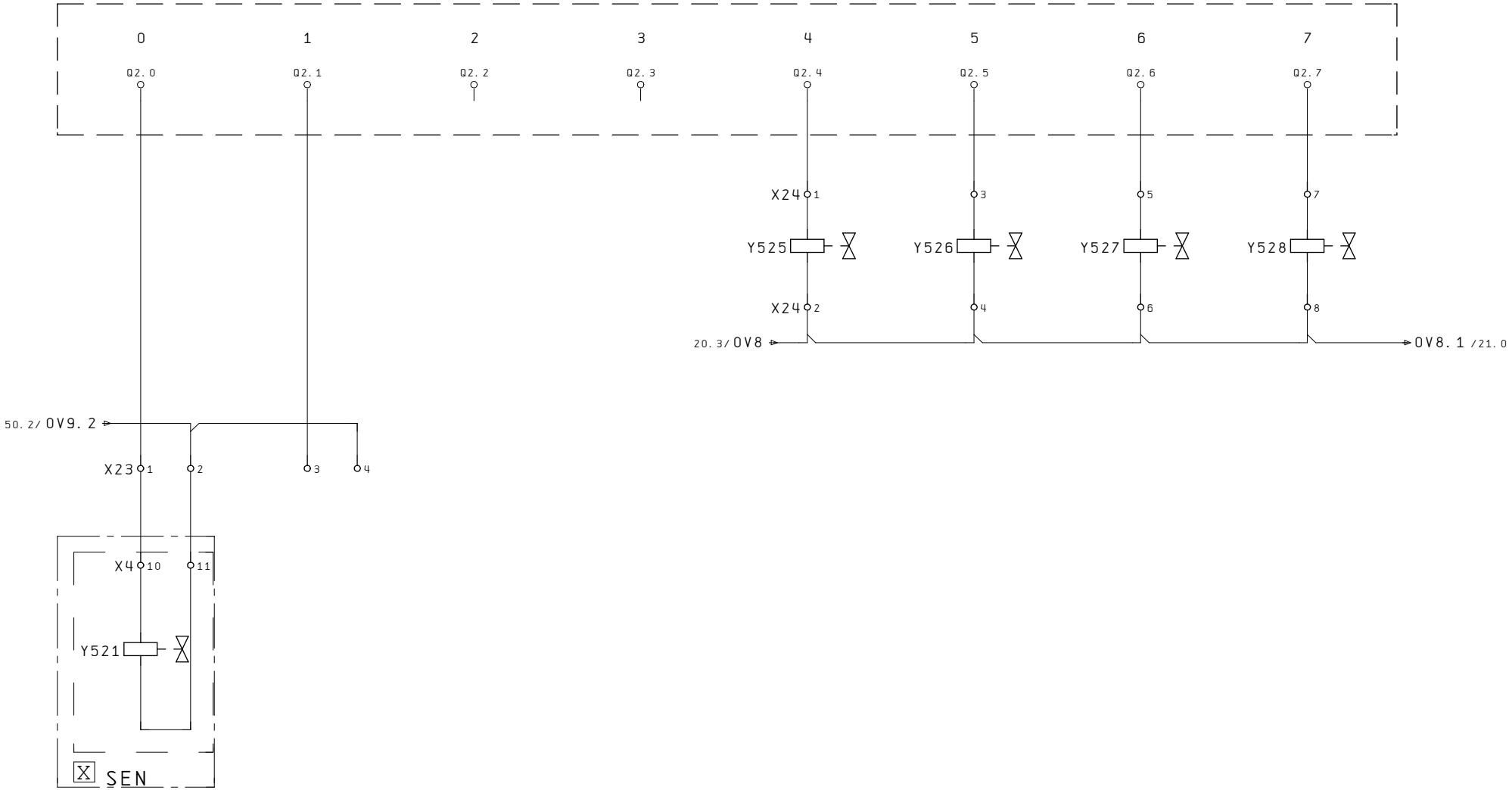
14
12 11 .3

| Peltier Cooler | System OK No Alarm | Converter Temperature OK | Spare | Spare | Spare | System on | Alarm |
|---|---|---|---|---|---|---|---|
| Peltier-Kühler | System i.O. keine Störung | Reaktor-temperatur i.O. | Reserve | Reserve | Reserve | System ein | Störung |



| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | Urspr. | 04. Mai. 2006 | NOx Controller SNQ | | Module 3<br>Dig. Outputs 1.0..1.7 | SNQ_122 | = |
| | | | Bearb. | 30. Jan. 2015 | | | | | + |
| | | | Name | MIG | | | | | Bl. 51 |
| Änderung | Datum | Name | Norm | | Urspr. | Ers. f. | Ers. d. | hugengineering. | 88 Bl. |

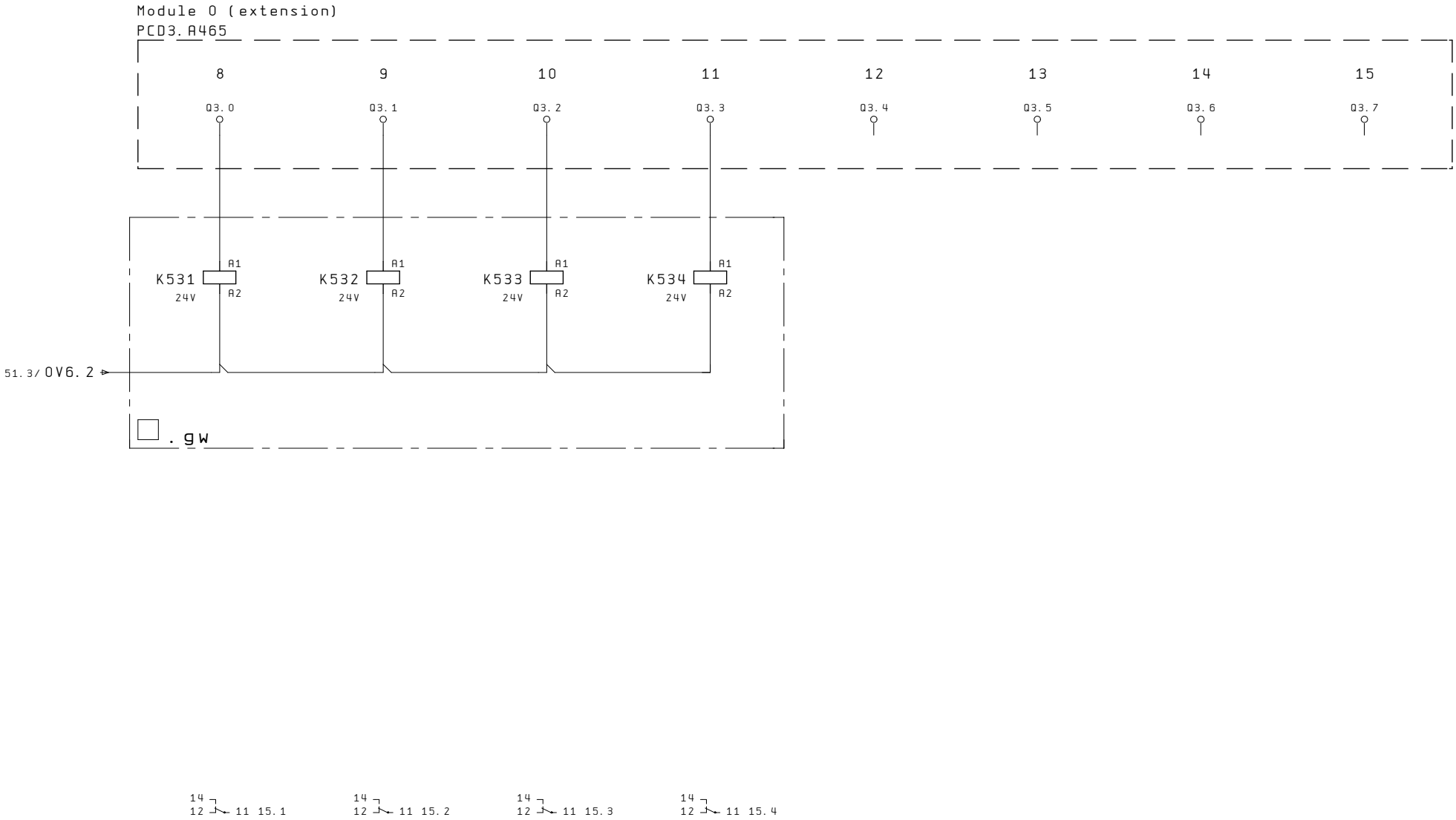
Module 0 (extension)
PCD3.A465




| Dosing Valve | Spare | Spare | Spare | Valve Path 1 | Valve Path 2 | Valve Emission Measuring | Valve Emission Path |
|---|---|---|---|---|---|---|---|
| Dosierventil | Reserve | Reserve | Reserve | Ventil Pfad 1 | Ventil Pfad 2 | Ventil Emissions-messung | Ventil Emissionspfad |

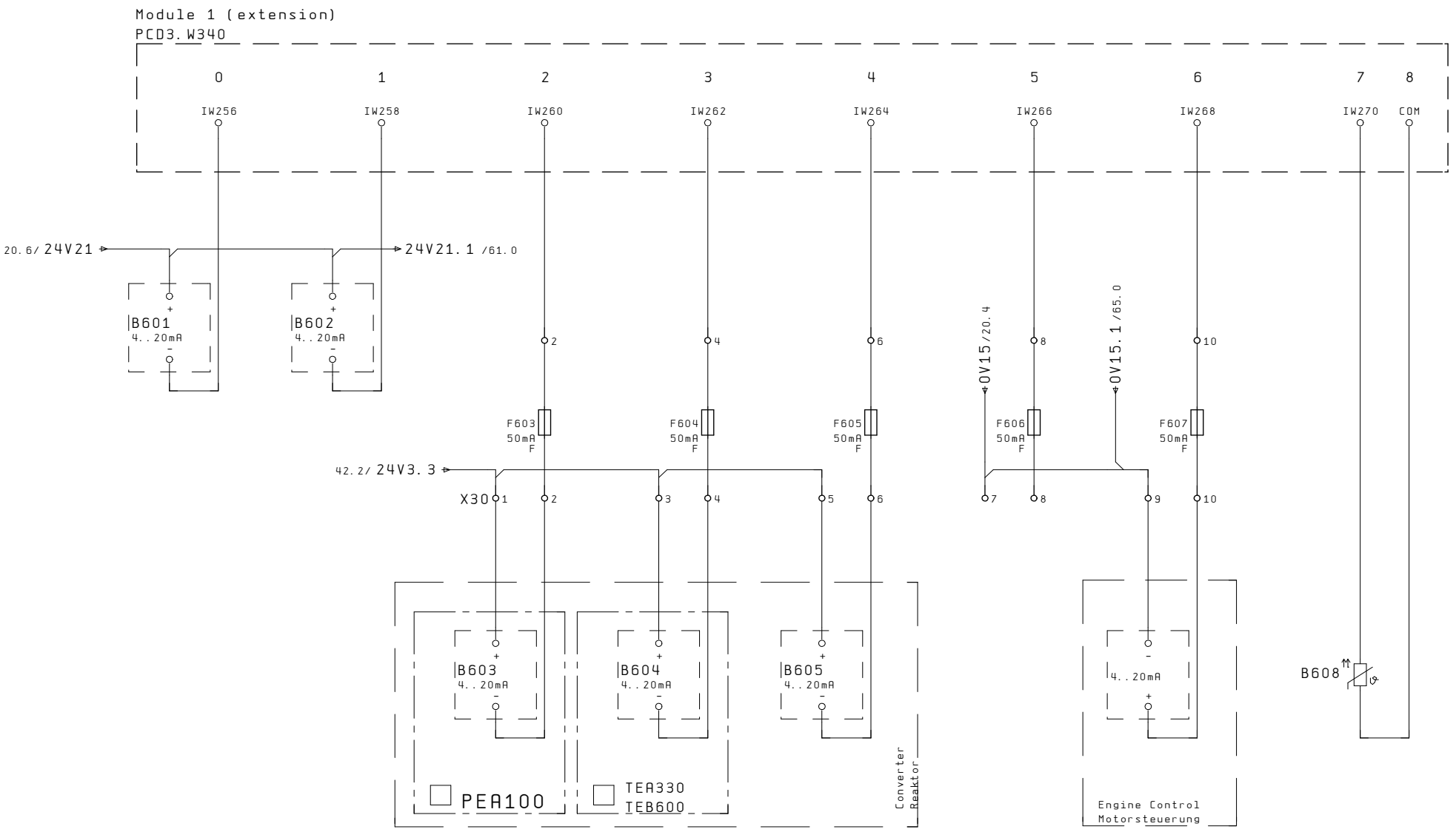
51 53

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | Urspr. | 04. Mai. 2006 | NOx Controller SNQ | | Module 0 (Extension) Dig. Outputs 2.0..2.7 | SNQ_122 | = + |
| | | | Bearb. | 30. Jan. 2015 | | | | | |
| | | | Name | MIG | | | | hugengineering. | Bl. 52 |
| Änderung | Datum | Name | Norm | | Urspr. | Ers. f. | Ers. d. | | 88 Bl. |



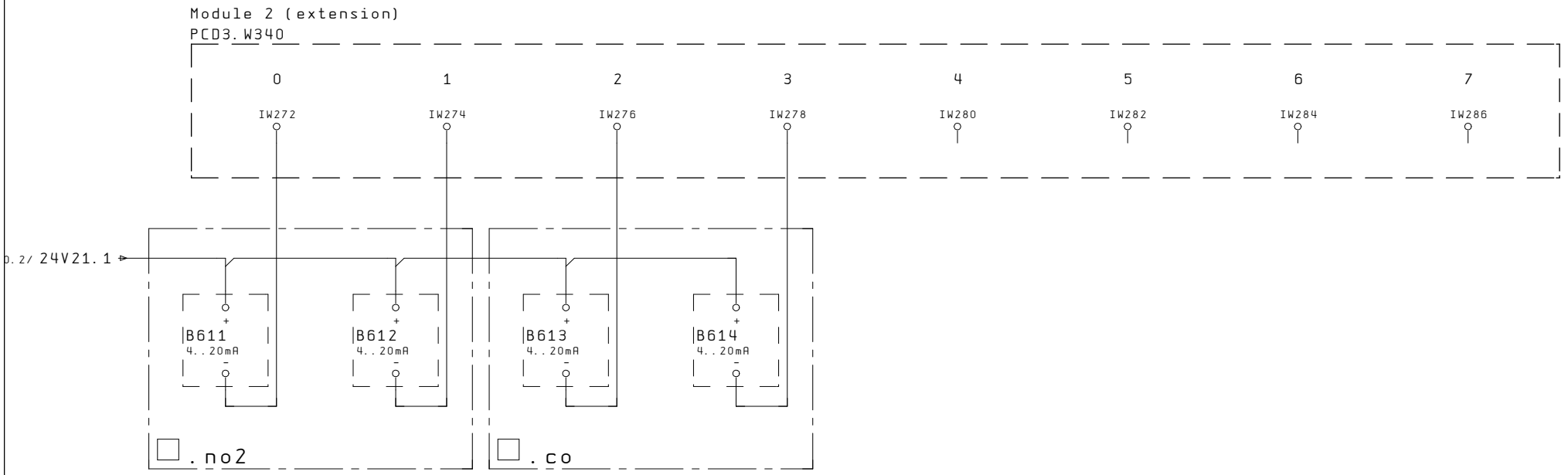



| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | Urspr. | 04. Mai. 2006 | NOx Controller SNQ | | Module 0 (Extension) Dig. Outputs 3.0..3.7 | SNQ_122 | = + |
| | | | Bearb. | 30. Jan. 2015 | | | | | |
| | | | Name | BEN | | | | hugengineering. | Bl. 53 |
| Änderung | Datum | Name | Norm | | Urspr. | Ers. f. | Ers. d. | | 88 Bl. |





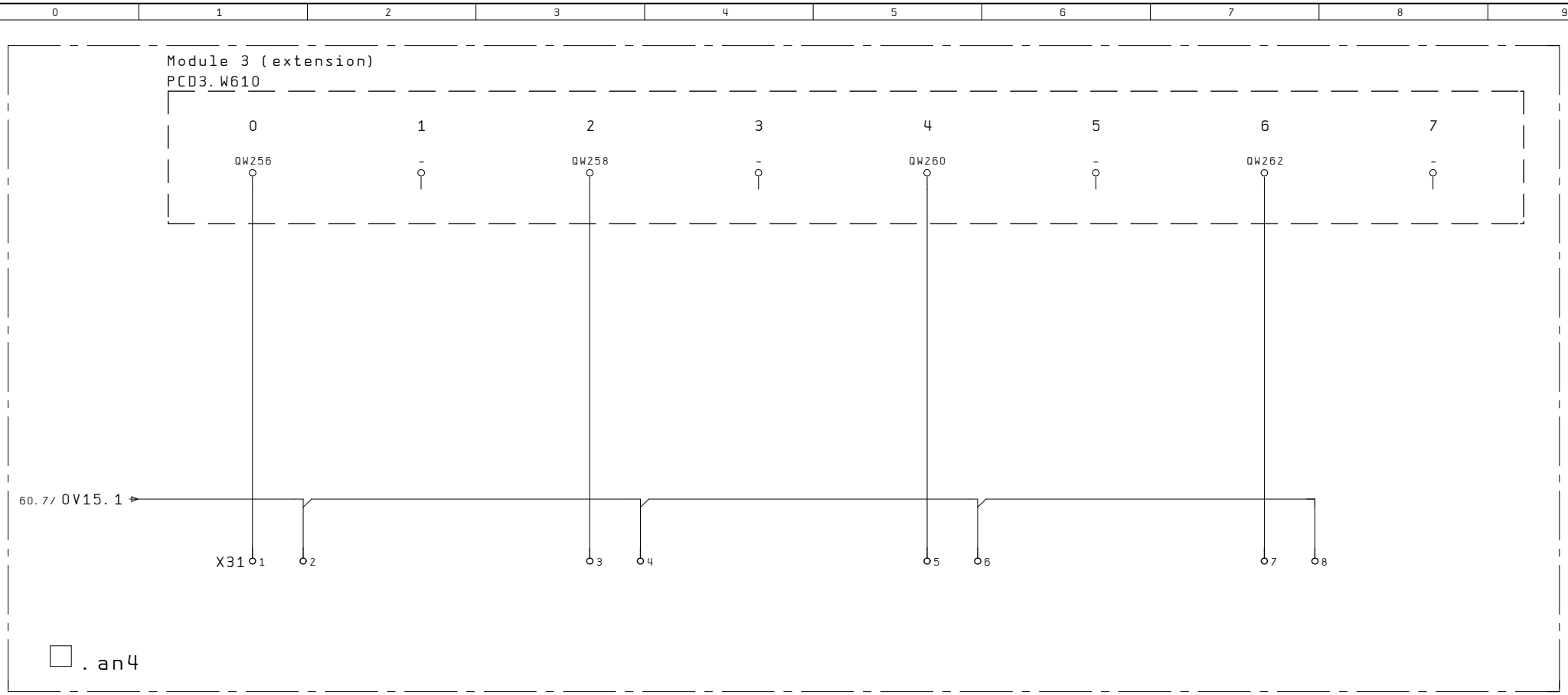

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | Urspr. | 04. Mai. 2006 | NOx Controller SNQ | | Module 1 (Extension) Analogue Inputs | SNQ_122 | = + |
| | | | Bearb. | 30. Jan. 2015 | | | | | |
| | | | Name | MIG | | | | hugengineering. | Bl. 60 |
| Änderung | Datum | Name | Norm | | Urspr. | Ers. f. | Ers. d. | | 88 Bl. |




| NO2 Cell 1 | NO2 Cell 2 | CO Cell 1 | CO Cell 2 | Spare | Spare | Spare | Spare |
|---|---|---|---|---|---|---|---|
| NO2-Zelle 1 | NO2-Zelle 2 | CO-Zelle 1 | CO-Zelle 2 | Reserve | Reserve | Reserve | Reserve |

60 65

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | Urspr. | 04. Mai. 2006 | NOx Controller SNQ | | Module 2 (Extension) Analogue Inputs | SNQ_122 | = + |
| | | | Bearb. | 30. Jan. 2015 | | | | | |
| | | | Name | MIG | | | | hugengineering. | Bl. 61 |
| Änderung | Datum | Name | Norm | | Urspr. | Ers. f. | Ers. d. | | 88 Bl. |




61

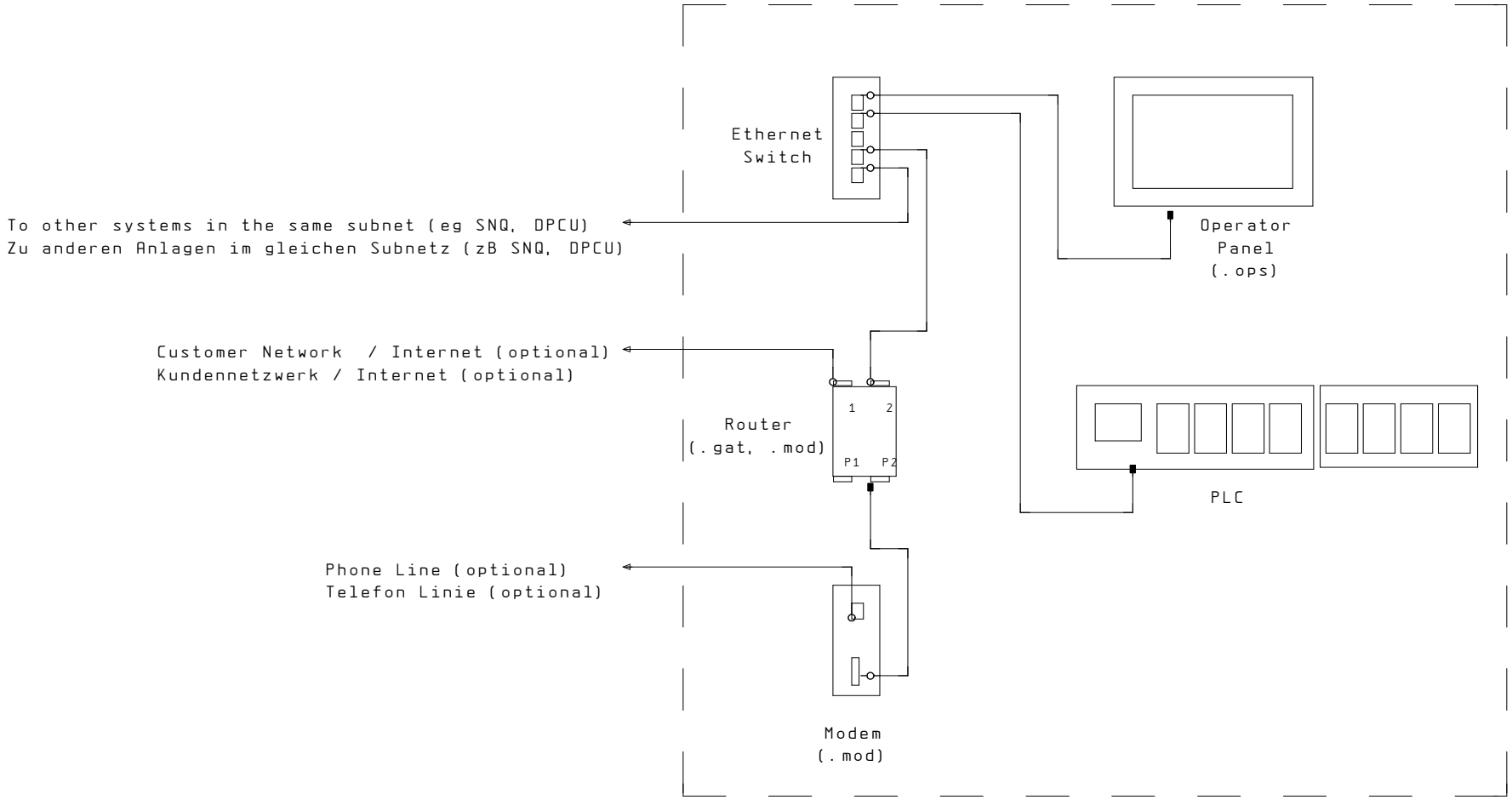
70

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | Urspr. | 04. Mai. 2006 | NOx Controller SNQ | | Module 3 (Extension) Analogue Outputs | SNQ_122 |
| | | | Bearb. | 30. Jan. 2015 | | | | |
| | | | Name | BEN | | | | |
| Änderung | Datum | Name | Norm | | Urspr. | Ers. f. | Ers. d. | |

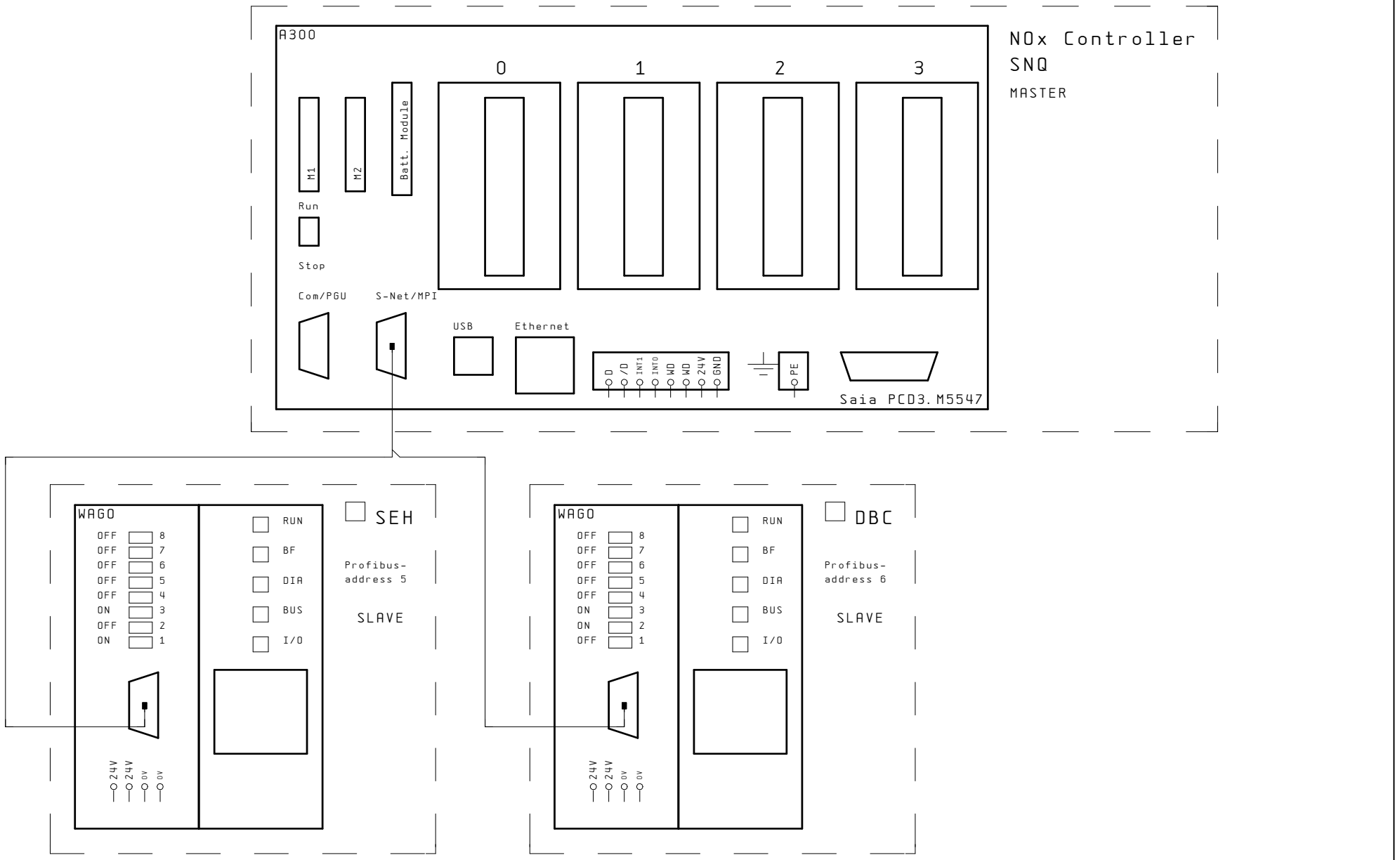
hugengineering.

Bl. 65

88 Bl.




| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Urspr. | 04. Mai. 2006 | NOx Controller SNQ | | | Ethernet Connections | SNQ_122 | = | |
| | | | Bearb. | 30. Jan. 2015 | | | | | | + | |
| | | | Name | BEN | | | | | | | Bl. 70 |
| Änderung | Datum | Name | Norm | | Urspr. | Ers. f. | Ers. d. | | hugengineering. | | 88 Bl. |

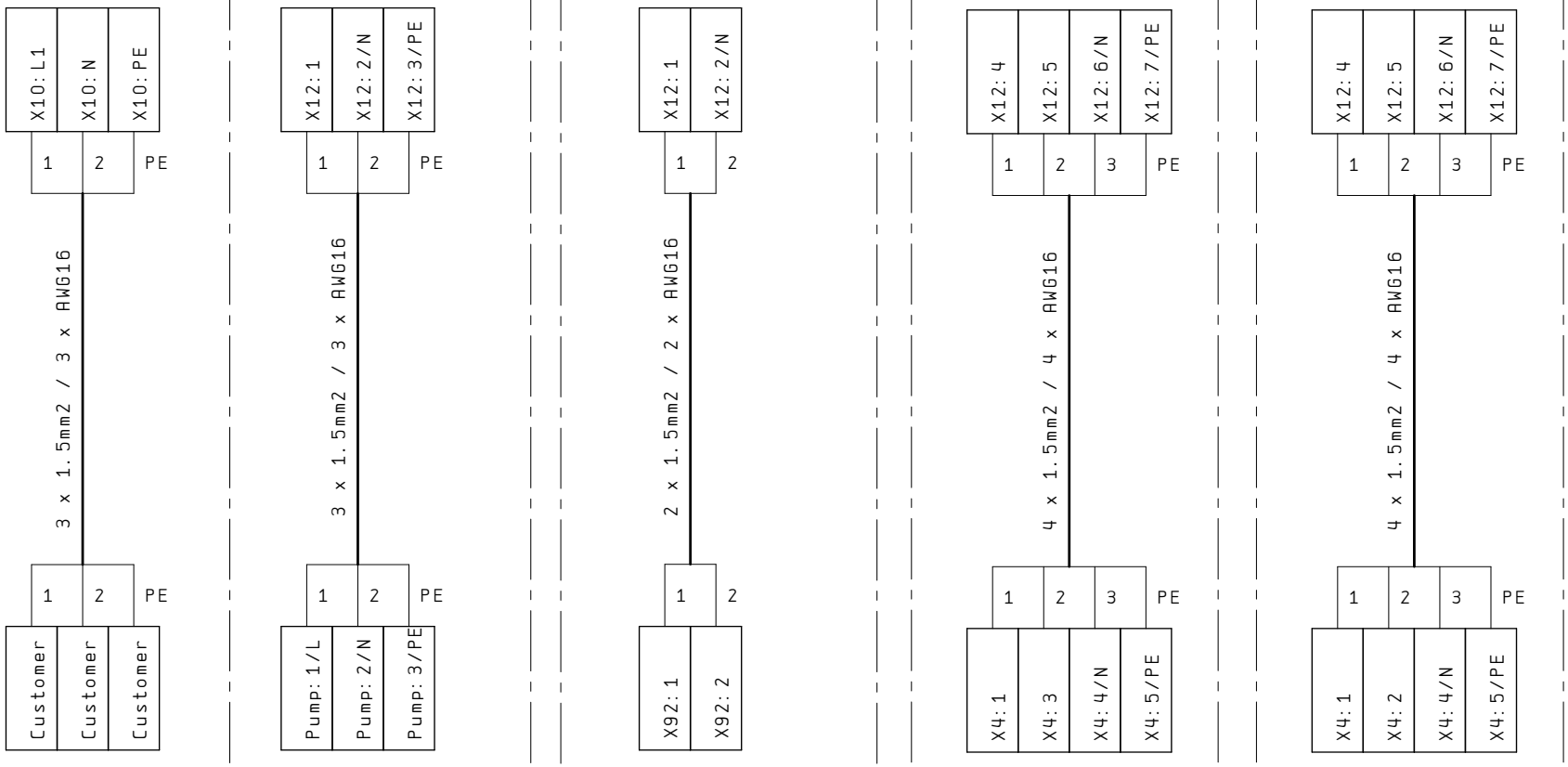



70

80

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | Urspr. | 04. Mai. 2006 | NOx Controller SNQ | | Profibus Connections | SNQ_122 | = |
| | | | Bearb. | 30. Jan. 2015 | | | | | + |
| | | | Name | DOFR | | | | hugengineering. | Bl. 75 |
| Änderung | Datum | Name | Norm | | Urspr. | Ers. f. | Ers. d. | | 88 Bl. |

## Terminals Control Cabinet / Klemmen Schaltschrank

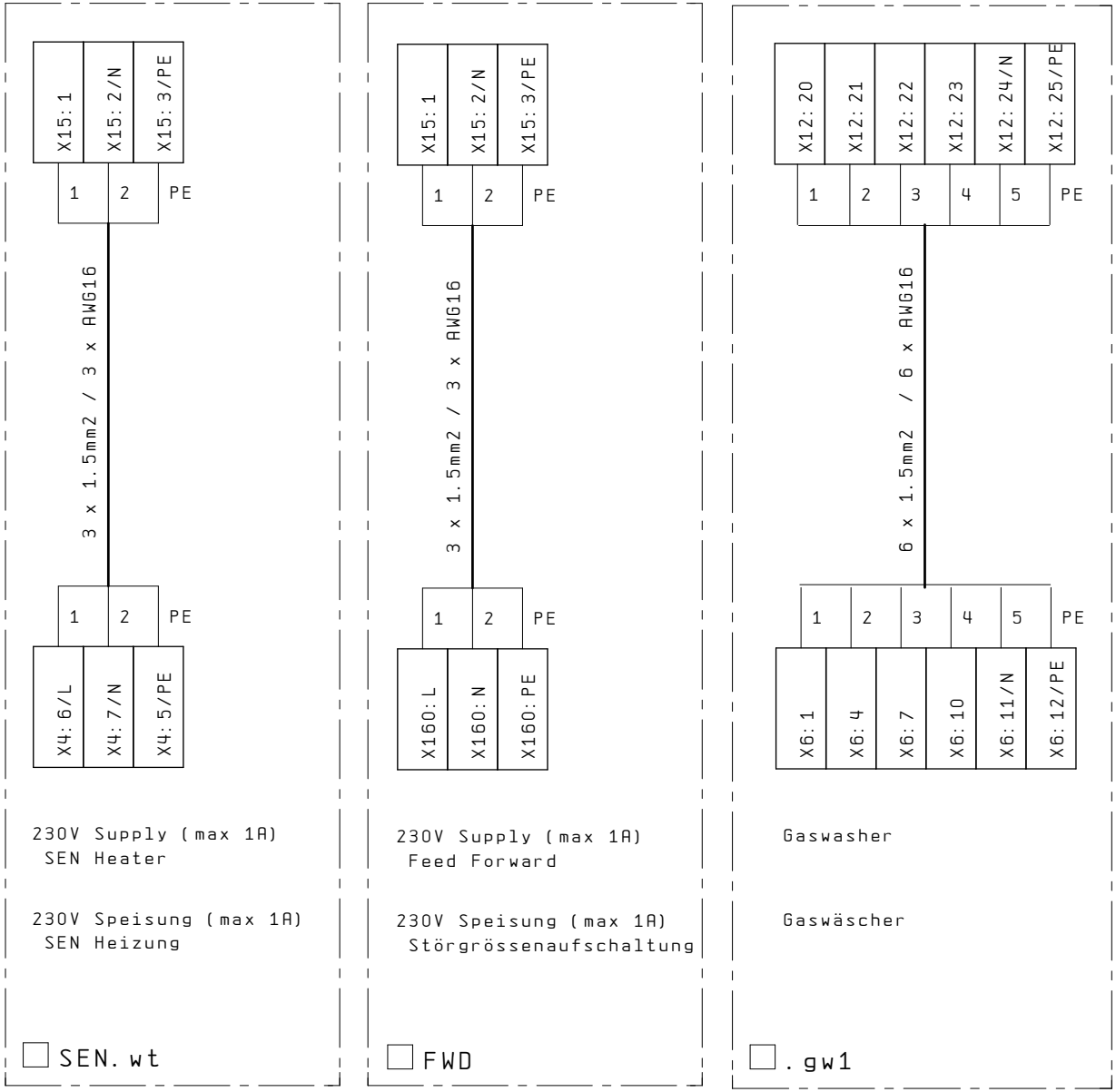



75

81

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | Urspr. | 04. Mai. 2006 | NOx Controller SNQ | | 230VAC Connections Cable Plan | SNQ_122 |
| | | | Bearb. | 30. Jan. 2015 | | | | |
| | | | Name | DOFR | | | | hugengineering. |
| Änderung | Datum | Name | Norm | | Urspr. | Ers. f. | Ers. d. | Bl. 80 / 88 Bl. |

## Terminals Control Cabinet / Klemmen Schaltschrank

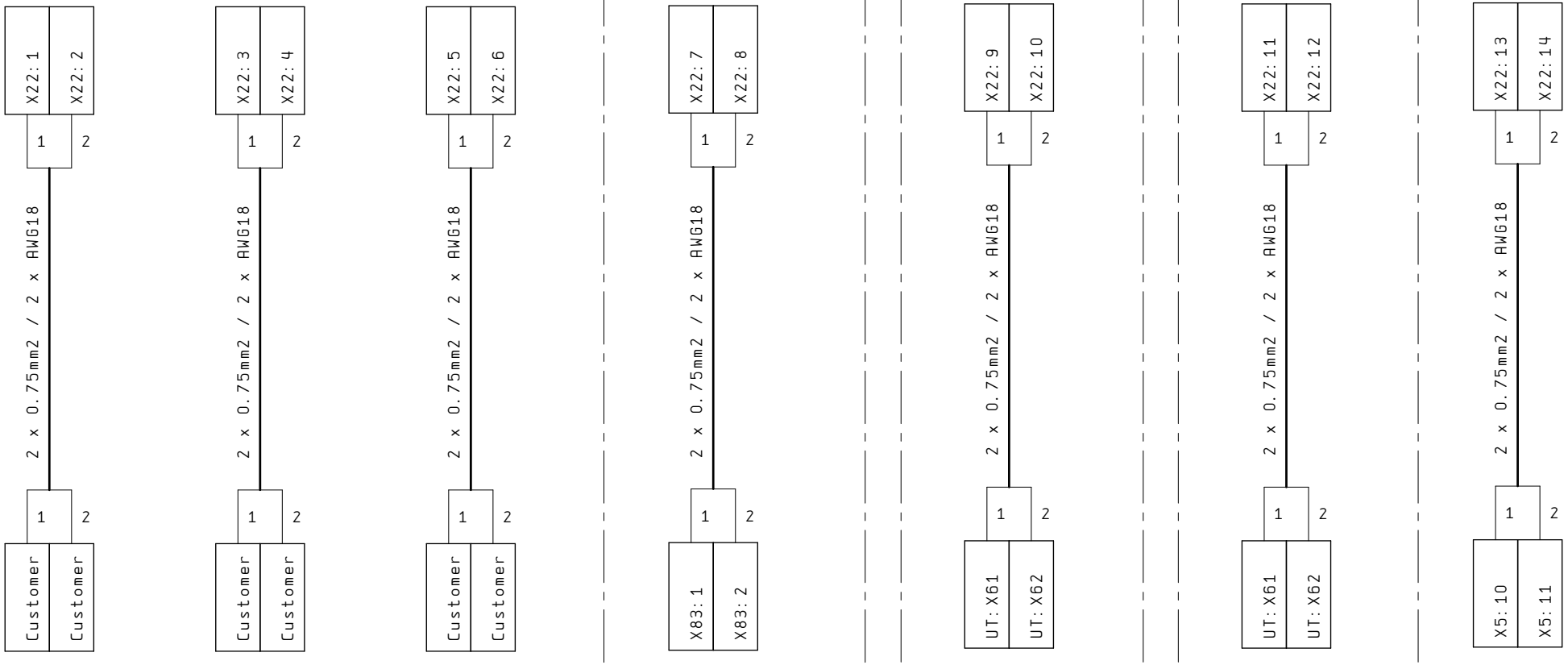



80

82

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | Urspr. | 04. Mai. 2006 | NOx Controller SNQ | | 230VAC Connections Cable Plan | SNQ_122 | = |
| | | | Bearb. | 30. Jan. 2015 | | | | | + |
| | | | Name | DOFR | | | | hugengineering. | Bl. 81 |
| Änderung | Datum | Name | Norm | | Urspr. | Ers. f. | Ers. d. | | 88 Bl. |

# Terminals Control Cabinet / Klemmen Schaltschrank




Engine Control
Enable Signal

Motorsteuerung
Freigabesignal

Bridge if
not used

Brücke wenn
nicht verwendet

Engine Control
Engine Running

Motorsteuerung
Motor läuft

Engine Control
Load Curve 2

Motorsteuerung
Lastkurve 2

Power-Supply Box
Compressor

Speisungsbox
Kompressor

Bridge if
not used

Brücke wenn
nicht verwendet

Temperature
Monitoring SCR

Temperatur-
überwachung SCR

Bridge if
not used

Brücke wenn
nicht verwendet

Temperature
Monitoring Oxi-Box

Temperatur-
überwachung Oxi-Box

Bridge if
not used

Brücke wenn
nicht verwendet

Reactant Tank
Level Switch

Reaktionsmittel-
niveauschalter

Bridge if
not used

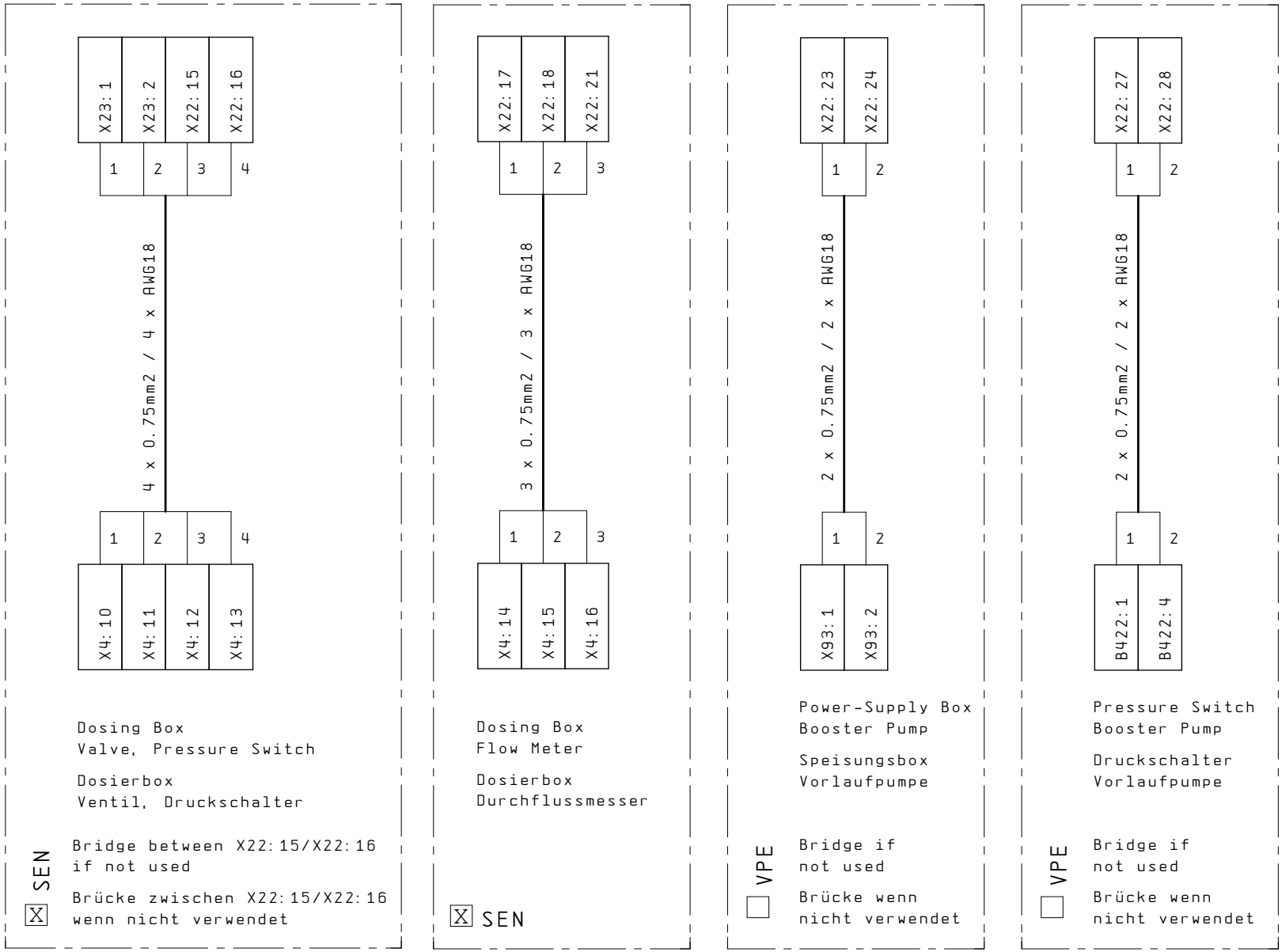
Brücke wenn
nicht verwendet

81

83

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | Urspr. | 04. Mai. 2006 | NOx Controller SNQ | | 24V Inputs Connections Cable Plan | SNQ_122 | = |
| | | | Bearb. | 30. Jan. 2015 | | | | | + |
| | | | Name | DOFR | | | | hugengineering. | Bl. 82 |
| Änderung | Datum | Name | Norm | | Urspr. | Ers. f. | Ers. d. | | 88 Bl. |

Terminals Control Cabinet / Klemmen Schaltschrank

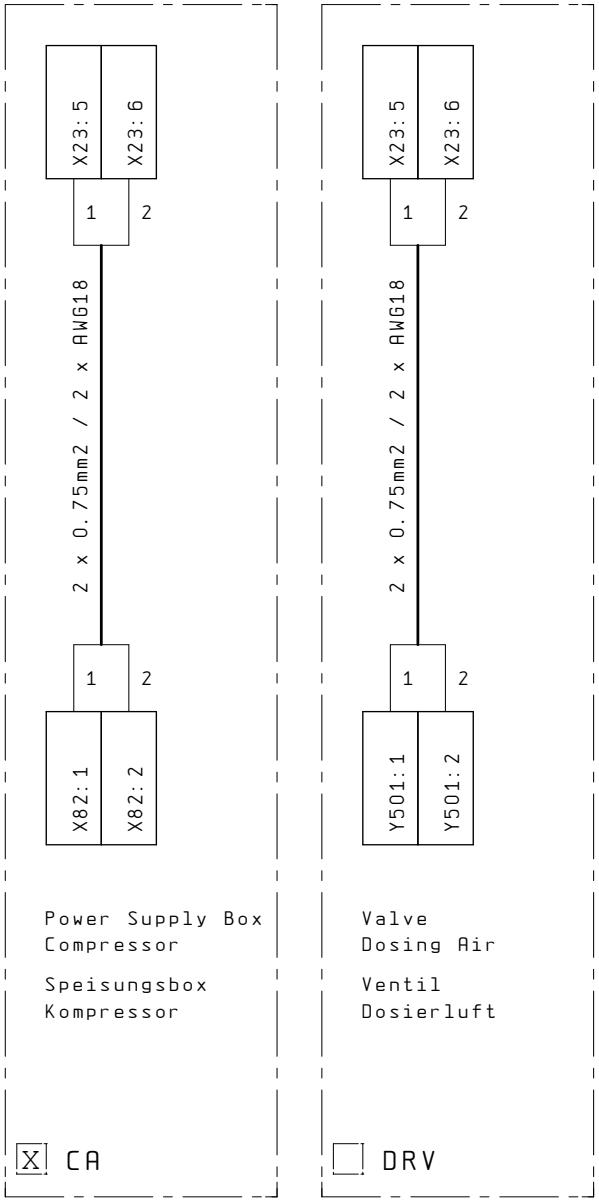



82

84

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | Urspr. | 04. Mai. 2006 | NOx Controller SNQ | | 24V Inputs Connections Cable Plan | SNQ_122 | = |
| | | | Bearb. | 30. Jan. 2015 | | | | | + |
| | | | Name | DOFR | | | | hugengineering. | Bl. 83 |
| Änderung | Datum | Name | Norm | | Urspr. | Ers. f. | Ers. d. | | 88 Bl. |

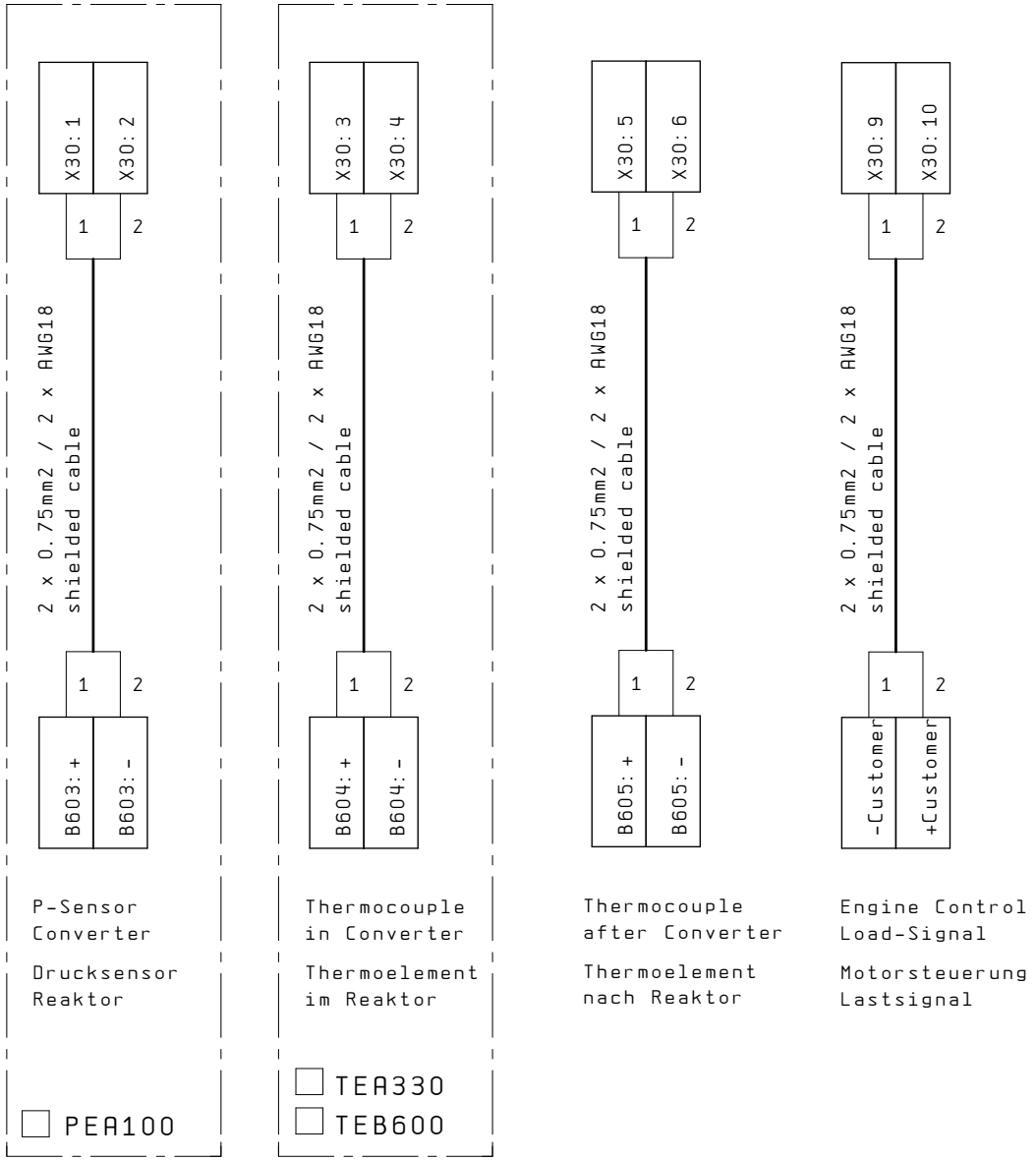
## Terminals Control Cabinet / Klemmen Schaltschrank






| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Urspr. | 04. Mai. 2006 | NOx Controller SNQ | | 24V Outputs Connections Cable Plan | SNQ_122 | = | |
| | | | Bearb. | 30. Jan. 2015 | | | | | + | |
| | | | Name | DOFR | | | | hugengineering. | Bl. | 84 |
| Änderung | Datum | Name | Norm | | Urspr. | Ers. f. | Ers. d. | | | 88 Bl. |

Terminals Control Cabinet / Klemmen Schaltschrank

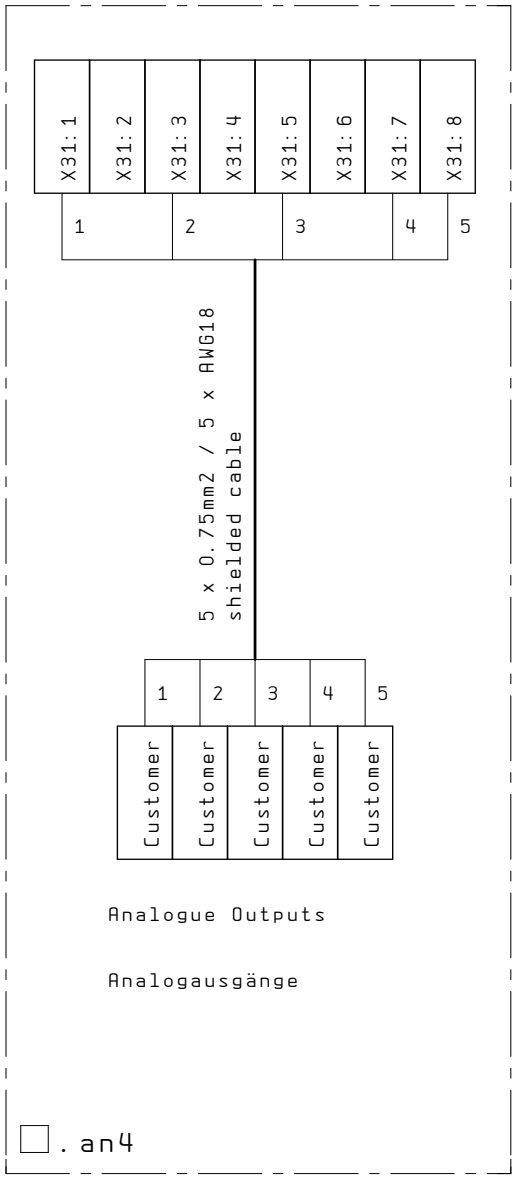



84

86

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | Urspr. | 04. Mai. 2006 | NOx Controller SNQ | | Analogue Inputs Signals Cable Plan | SNQ_122 | = |
| | | | Bearb. | 30. Jan. 2015 | | | | | + |
| | | | Name | DOFR | | | | hugengineering. | Bl. 85 |
| Änderung | Datum | Name | Norm | | Urspr. | Ers. f. | Ers. d. | | 88 Bl. |

Terminals Control Cabinet / Klemmen Schaltschrank

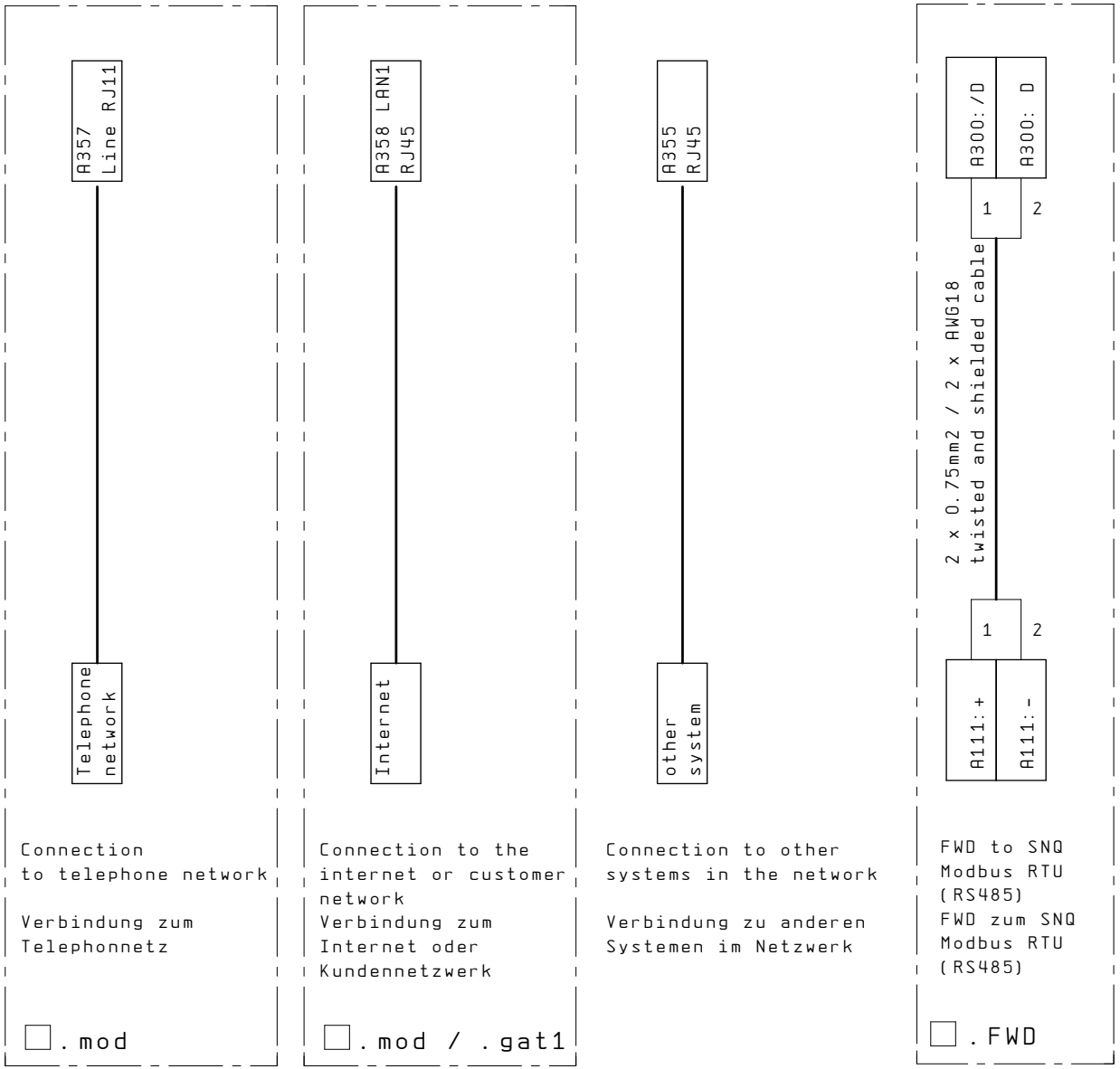



85

87

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Urspr. | 04. Mai. 2006 | NOx Controller SNQ | | | Analogue Outputs Signals Cable Plan | SNQ_122 | = |
| | | | Bearb. | 30. Jan. 2015 | | | | | | + |
| | | | Name | DOFR | | | | | | Bl. 86 |
| Änderung | Datum | Name | Norm | | Urspr. | Ers. f. | Ers. d. | | hugengineering. | 88 Bl. |

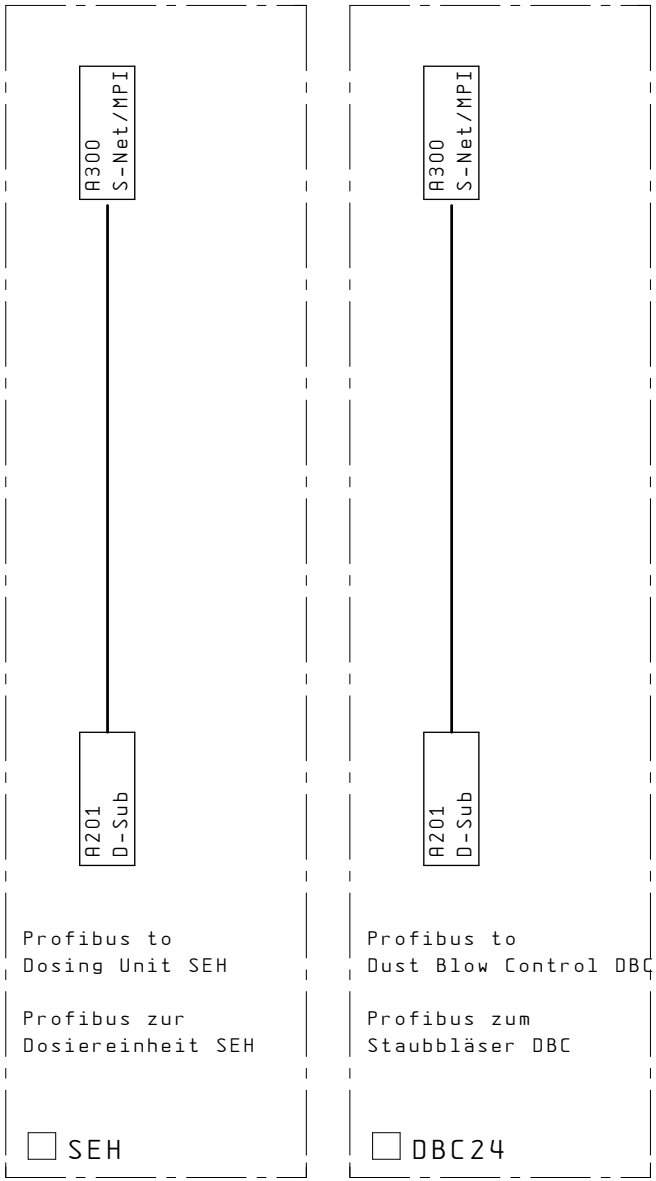
Terminals Control Cabinet / Klemmen Schaltschrank






| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Urspr. | 04. Mai. 2006 | NOx Controller SNQ | | Communication Cable Plan | SNQ_122 | = | |
| | | | Bearb. | 30. Jan. 2015 | | | | | + | |
| | | | Name | DOFR | | | | hugengineering. | Bl. | 87 |
| Änderung | Datum | Name | Norm | | Urspr. | Ers. f. | Ers. d. | | | 88 Bl. |

Terminals Control Cabinet / Klemmen Schaltschrank




## Minimum requirements profibus cable
## Minimale Anforderungen Profibus Kabel

Type / Typ:
Standard cable Profibus DP
Profibus DP Standardkabel

Maximum total Profibus DP cable length
Maximale gesamt Profibus Kabellänge 200m

87

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Urspr. | 04. Mai. 2006 | NOx Controller SNQ | | Communication Cable Plan | SNQ_122 | = | |
| | | | Bearb. | 30. Jan. 2015 | | | | | + | |
| | | | Name | DOFR | | | | hugengineering. | Bl. | 88 |
| Änderung | Datum | Name | Norm | | Urspr. | Ers. f. | Ers. d. | | | 88 Bl. |