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Company / customer Project description 4-Unit HotPlate Table Job number PB1027 Drawing number 400091		Power supply #Einspeisung Control voltage 24 VDC min. supply line 5G4 max. prefuse 3x16A Control cabinet color RAL 7035 Protection class IP44 Language documentation DE/EN Language signage EN Location EU Manufacturing date 2022 Special customer regulations -	
Project name 22001 Robotechnik OPTIhot HT24 PB1027 Responsible for project D.Wilde Project manager (Eplan) Last EPLAN version used 2022.0.3 / 17756			
<i>For manual changes; enter name and date here. Details on the circuit diagram page.</i>			
Created on 12.04.2022 Edit date 21.07.2022 by (short name) KIE		Number of pages 53	

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	HS1	10	Control cabinet overview		07.07.2022	KIE
BA01	HS1	1	Power supply		07.07.2022	KIE
CA01	HS1	1	Control voltage generation		07.07.2022	KIE
	HS1	2	Load circuit monitoring		07.07.2022	KIE
CK01	HS1	1	Control cabinet fan		07.07.2022	KIE
CM01	HS1	1	Service socket		07.07.2022	KIE
DA01	HS1	1	Structure PLC Beckhoff		07.07.2022	KIE
	HS1	2	Structure PLC Beckhoff		07.07.2022	KIE
	HS1	3	Structure PLC Beckhoff		07.07.2022	KIE
	HS1	4	Structure PLC Beckhoff		07.07.2022	KIE
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	HS1	1	Supply PLC		07.07.2022	KIE
DA10	HS1	1	IPC		07.07.2022	KIE
DB01	HS1	1	HMI		07.07.2022	KIE
DC01	HS1	1	Acoustic signal		07.07.2022	KIE
FE01	HS1	1	Exhaust air monitoring		07.07.2022	KIE
	HS1	2	Exhaust air monitoring		07.07.2022	KIE
NB01	HS1	1	Hotplate 1 supply		07.07.2022	KIE
	HS1	2	Hotplate 1 Wiring		07.07.2022	KIE
NB02	HS1	1	Hotblade 2 Supply		07.07.2022	KIE
	HS1	2	Hotplate 2 Wiring		07.07.2022	KIE
NB03	HS1	1	Hotplate 3 supply		07.07.2022	KIE
	HS1	2	Hotplate 3 Wiring		07.07.2022	KIE
NB04	HS1	1	Hotplate 4 supply		07.07.2022	KIE
	HS1	2	Hotplate 4 Wiring		07.07.2022	KIE

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4-Unit HotPlate Table



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Table of functions

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Assignment	Assignment	Assignment	Assignment
Power supply	BA01	30	EFS1
Control voltage generation	CA01	31, 32	EFS1
Control cabinet air conditioning	CK01	33	EFS1
Service socket	CM01	34	EFS1
PLC	DA01	35 ... 40	EFA1, EFS1
IPC Process	DA10	41	EFS1
Operation (and visualization)	DB01	42	EFS1
Visualization / Signaling	DC01	43	EFS1
Exhaust air monitoring	FE01	44, 45	EFS1, MFS1
Tempering	NB01	46, 47	EFS1
Tempering	NB02	48, 49	EFS1
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4-Unit HotPlate Table



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Parts list

[Rteu] F01_001

Device tag	Quantity	Designation	Type number	Manufacturer	Part number
+HS1-U1	1	Compact enclosure AX	AX.1350000	RIT	100741
+HS1-U2	1	TS Cable duct for mounting plate, WHD: 2000x60x%2 mm	TS.8800752	RIT	100743
+HS1-U3	1	TS Cable duct for mounting plate, WHD: 2000x30x%2 mm	TS.8800750	RIT	100742
+HS1-U4	1	TS Cable duct for mounting plate, WHD: 2000x30x%2 mm	TS.8800750	RIT	100742
+HS1-U5	1	TS Cable duct for mounting plate, WHD: 2000x30x%2 mm	TS.8800750	RIT	100742
+HS1-U6	1	TS Cable duct for mounting plate, WHD: 2000x30x%2 mm	TS.8800750	RIT	100742
+HS1-U7	1	TS Cable duct for mounting plate, WHD: 2000x30x%2 mm	TS.8800750	RIT	100742
+HS1-U11	1	Support rail EN 50 022 (35x7,5)	TS 35_7,5		
+HS1-U12	1	Support rail EN 50 022 (35x7,5)	TS 35_7,5		
+HS1-U13	1	Support rail EN 50 022 (35x7,5)	TS 35_7,5		
+HS1-U14	1	KEL-ER 168 V2A / Cable entry frame, split, double row, IP65, V2A screws	KEL-ER 16 8 V2A	ICO	100696
+HS1-U15	1	KEL-ER 168 V2A / Cable entry frame, split, double row, IP65, V2A screws	KEL-ER 16 8 V2A	ICO	100696
+HS1-U16	1	Cable Gland, HSK-K, M 25 x 1,5, PA 6, grey	1219250050	HUM	863041
=BA01+HS1-QA1	1	EM. STOP SWITCH 16A/690V 400V/7.5KW	3LD2003-0TK53	SIE	100621
=BA01+HS1-WD1	1	ÖLFLEX CLASSIC 110 5G4	ÖLFLEX® CLASSIC 110	LAPP	845367
=BA01+HS1-XD1	2	End bracket, CLIPFIX 35-5	CLIPFIX 35-5	PXC	885607
=BA01+HS1-XD1	1	Terminal block label holder for adhesive label / pin	KLM 3	PXC	877616
=BA01+HS1-XD1	3	Feed-through terminal block	ST 4	PXC	883887
=BA01+HS1-XD1	1	Feed-through terminal block	ST 4 BU	PXC	883894
=BA01+HS1-XD1	1	Spring cage ground terminal block	ST 4-PE	PXC	883895
=BA01+HS1-XD1	1	End cover	D-ST 4	PXC	83893
=BA01+EXT-XS0	1	CEE plug 16A 5pin 6h with screw connection	13A	MENN	880191
=BB01+HS1-XN	2	End bracket, CLIPFIX 35-5	CLIPFIX 35-5	PXC	885607
=BB01+HS1-XN	1	Terminal block label holder for adhesive label / pin	KLM 3	PXC	877616
=BB01+HS1-XN	2	Feed-through terminal block	ST 4-QUATTRO BU	PXC	100631
=BB01+HS1-XN	1	End cover	D-ST 4-QUATTRO	PXC	100632
=BB01+HS1-XPE	1	End bracket, CLIPFIX 35-5	CLIPFIX 35-5	PXC	885607
=BB01+HS1-XPE	1	Terminal block label holder for adhesive label / pin	KLM 3	PXC	877616

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& EPC1	Parts list
Parts list : RIT.1350000 - PXC.0811969	

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Parts list

[Rteu] F01_001

Device tag	Quantity	Designation	Type number	Manufacturer	Part number
=BB01+HS1-XPE	5	Ground modular terminal block	ST 4-QUATTRO-PE	PXC	100646
=BB01+HS1-XPE	1	End cover	D-ST 4-QUATTRO	PXC	100632
=BB01+M-WE02	8	Connection terminal block	AKG 4 GNYE	PXC	851067
=CA01+HS1-FC1	1	CIRCUIT BREAKER 10KA 1POL C4	5SY4104-7	SIE	100617
=CA01+HS1-FC2	1	Overcurrent protection terminal 24 V DC, 2-channel, max. Σ 10 A, adjustable, extended functionalities	EL9227-5500	Beckhoff Automation GmbH & Co.	100566
=CA01+HS1-GD1	1	Power supply unit	QUINT-PS/ 1AC/24DC/10	PXC	877489
=CA01+HS1-XD30	1	End bracket, CLIPFIX 35-5	CLIPFIX 35-5	PXC	885607
=CA01+HS1-XD30	1	Terminal block label holder for adhesive label / pin	KLM 3	PXC	877616
=CA01+HS1-XD30	2	Feed-through terminal gray	ST 2,5-QUATTRO	PXC	877786
=CA01+HS1-XD30	1	End cover	D-ST 2,5-QUATTRO	PXC	877596
=CA01+HS1-XD35	1	End bracket, CLIPFIX 35-5	CLIPFIX 35-5	PXC	885607
=CA01+HS1-XD35	1	Terminal block label holder for adhesive label / pin	KLM 3	PXC	877616
=CA01+HS1-XD35	5	Feed-through terminal gray	ST 2,5-QUATTRO	PXC	877786
=CA01+HS1-XD35	1	End cover	D-ST 2,5-QUATTRO	PXC	877596
=CA01+HS1-XD60	2	End bracket, CLIPFIX 35-5	CLIPFIX 35-5	PXC	885607
=CA01+HS1-XD60	1	Terminal block label holder for adhesive label / pin	KLM 3	PXC	877616
=CA01+HS1-XD60	4	Feed-through terminal gray	ST 2,5-QUATTRO	PXC	877786
=CA01+HS1-XD60	1	End cover	D-ST 2,5-QUATTRO	PXC	877596
=CA01+HS1-XE1	1	Disconnect terminal block	GTF 76/ 48	PXC	100629
=CK01+HS1-BT1	1	Thermostat KTS 011, NO, 0-60°C	Siemens 8MR2170-2BB	SIEM	100239
=CK01+HS1-EC1	1	Filter fan	SK.3237124	RIT	100237
=CK01+HS1-EC1	1	Outlet filter	SK.3237200	RIT	100238
=CM01+HS1-FC1	1	RCBO elm	5SU1356-6KK10	SIE	100685
=CM01+HS1-XS1	1	Socket	EO-CF/PT/LED	PXC	838244
=DA01+HS1-KF1	1	EtherCAT-Koppler ID-Switch	EK1100	BEC	885593
=DA01+HS1-KF2	1	1-RTD PT100 (RTD) for 2, 3 and 4 conductors	EL3201	BEC	889027
=DA01+HS1-KF3	1	1-RTD PT100 (RTD) for 2, 3 and 4 conductors	EL3201	BEC	889027
=DA01+HS1-KF4	1	1-RTD PT100 (RTD) for 2, 3 and 4 conductors	EL3201	BEC	889027

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[Rteu] F01_001

Device tag	Quantity	Designation	Type number	Manufacturer	Part number
=DA01+HS1-KF5	1	1-RTD PT100 (RTD) for 2, 3 and 4 conductors	EL3201	BEC	889027
=DA01+HS1-KF6	1	8-channel digital input terminal 24 V DC, filter 3.0 ms, 1-wire system	EL1008	BEC	100510
=DA01+HS1-KF7	1	8-channel digital output terminal 24 V DC, 0.5 A, 1-wire system	EL2008	BEC	100511
=DA01+HS1-KF8	1	Bus end cap	EL9011	BEC	100625
=DA10+HS1-AF1	1	Economy control cabinet Industrial PC C6015-0010	C6015-0010	BEC	100599
=DA10+HS1-WF1	1	DisplayPort cable male, 5m	K5561HQSW.5	EFB	100648
=DA10+HS1-WF2	1	Ethernet patch cable Cat.6A, green 1,0m	MK6001.1GR	EFB	885451
=DA10+HS1-WF4	1	USB2.0 Connecting cable A-A, St.-St., 5,0m, black Classic	K5253SW.5	EFB	100659
=DA10+HS1-WG1	1	Ethernet patch cable Cat.6A26 gray 1,0m	MK6001.1G	EFB	885438
=DA10+HS1-XF1	1	Front element, +bulkhead interface RJ45	M22-RJ45-SA	ETN	100684
=DB01+HS1-FC2	1	CIRCUIT BREAKER 10KA 1POL C4	5SY4104-7	SIE	100617
=DB01+HS1-GD2	1	Power supply unit	QUINT4-PS/1AC/12DC/2.5/PT	PXC	100616
=DB01+HS1-WD1	1	ÖLFLEX CLASSIC 110 2X0,5	ÖLFLEX® CLASSIC 110	LAPP	100626
=DB01+E-PH1	1	Open Frame PCAP 10 Point Touch Monitor	PROLITE	IYY	100598
=DB01+E-PH1	1	Hollow plug with kink protection	HS 21-14	REI	100647
=DB01+E-WF1	1	DisplayPort cable male, 5m	K5561HQSW.5	EFB	100648
=DC01+E-PJ1	1	Electr. buzzer EM continuous tone 24VDC BK	114.068.15	WER	100736
=DC01+E-WG1	1	UNITRONIC LIYY 2x0,5	UNITRONIC LIYY	LAPP	835965
=FE01+HS1-48P1	1	Tube PE 6/8 black		EBA	837675
=FE01+HS1-48P2	1	Exhaust hose ID38-AD41,2 TPE	Flexflyte-EP2	MAER	862004
=FE01+HS1-48P2	2	Double hose clamp 37-43mm		MAER	862005
=FE01+HS1-48P3	1	Exhaust hose ID38-AD41,2 TPE	Flexflyte-EP2	MAER	862004
=FE01+HS1-48P3	2	Double hose clamp 37-43mm		MAER	862005
=FE01+HS1-48P4	1	Exhaust hose ID38-AD41,2 TPE	Flexflyte-EP2	MAER	862004
=FE01+HS1-48P4	2	Double hose clamp 37-43mm		MAER	862005
=FE01+HS1-48P5	1	Exhaust hose ID38-AD41,2 TPE	Flexflyte-EP2	MAER	862004
=FE01+HS1-48P5	2	Double hose clamp 37-43mm		MAER	862005
=FE01+HS1-48P6	1	Tube PE 4/6 black		EBA	833272

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& EPC1 Parts list
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[Rteu] F01_001

Device tag	Quantity	Designation	Type number	Manufacturer	Part number
=FE01+HS1-48VT1	1	Push-in fitting	QSM-M5-6-I	FES	862033
=FE01+HS1-48VT2	1	G-connector reduced ID8-ID6 PBT	QS-8-6	FES	867365
=FE01+E-BP1	1	Pressure differential switch QBM81-3	QBM81-3	SIEM	865084
=FE01+E-WG1	1	UNITRONIC LIYY 2x0,5	UNITRONIC LIYY	LAPP	835965
=NB00+HS1-XD10	1	End bracket, CLIPFIX 35-5	CLIPFIX 35-5	PXC	885607
=NB00+HS1-XD10	1	Terminal block label holder for adhesive label / pin	KLM 3	PXC	877616
=NB00+HS1-XD10	4	Feed-through terminal gray	ST 2,5	PXC	878726
=NB00+HS1-XD10	1	End cover	D-ST 2,5	PXC	877582
=NB00+HS1-XD35	2	End bracket, CLIPFIX 35-5	CLIPFIX 35-5	PXC	885607
=NB00+HS1-XD35	1	Terminal block label holder for adhesive label / pin	KLM 3	PXC	877616
=NB00+HS1-XD35	4	Feed-through terminal gray	ST 2,5	PXC	878726
=NB00+HS1-XD35	1	End cover	D-ST 2,5	PXC	877582
=NB01+HS1-FC1	1	RCBO elm	5SU1356-6KK10	SIE	100685
=NB01+HS1-WD1	1	Power and control cables	ÖLFLEX® CLASSIC 110	LAPP	884181
=NB01+HS1-XS1	1	Receptacle SCHUKO, 16A2p+E, 230V, IP54	11031	MEK	100686
=NB01+HS1-XS2	1	D-Sub 25 socket, solder version	D25 SUB/B	RSON	100703
=NB01+HS1-XS2	2	Screw locking D-Sub connector		RSON	100702
=NB01+HS1-XS3	1	Mounting plug, 16A, black	910.100	Bachmann	100695
=NB01+HP1-B1	1	High temperature switch TB 97	TB97-330-5-65-3-500-9HA	Limitor	100689
=NB01+HP1-K1	1	Halbleiterrelais 3-32VDC/40-280VAC/10A	TD2410	CRY	834963
=NB01+HP1-KF1	1	Extension module	PSR-SCF- 24UC/URM/2X21	PXC	100688
=NB01+HP1-WG1	1	Cable	CABLE-D25SUB/B/S/200/KONFEK/S	PXC	100683
=NB01+HP1-X1	1	Hot device plug	K1649027	Kalthoff	835389
=NB01+HP1-XS1	1	Interface module	DFLK-D25 SUB/S	PXC	863015
=NB01+HP1-XZ1	1	Angle device socket	K1591024	Kalthoff	844462
=NB02+HS1-FC1	1	RCBO elm	5SU1356-6KK10	SIE	100685
=NB02+HS1-WD1	1	Power and control cables	ÖLFLEX® CLASSIC 110	LAPP	884181
=NB02+HS1-XS1	1	Receptacle SCHUKO, 16A2p+E, 230V, IP54	11031	MEK	100686

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[Rteu] F01_001

Device tag	Quantity	Designation	Type number	Manufacturer	Part number
=NB02+HS1-XS2	1	D-Sub 25 socket, solder version	D25 SUB/B	RSON	100703
=NB02+HS1-XS2	2	Screw locking D-Sub connector		RSON	100702
=NB02+HS1-XS3	1	Mounting plug, 16A, black	910.100	Bachmann	100695
=NB02+HP2-B1	1	High temperature switch TB 97	TB97-330-5-65-3-500-9HA	Limitor	100689
=NB02+HP2-K1	1	Halbleiterrelais 3-32VDC/40-280VAC/10A	TD2410	CRY	834963
=NB02+HP2-KF1	1	Extension module	PSR-SCF- 24UC/URM/2X21	PXC	100688
=NB02+HP2-WG1	1	Cable	CABLE-D25SUB/B/S/200/KONFEK/S	PXC	100683
=NB02+HP2-X1	1	Hot device plug	K1649027	Kalthoff	835389
=NB02+HP2-XS1	1	Interface module	DFLK-D25 SUB/S	PXC	863015
=NB02+HP2-XZ1	1	Angle device socket	K1591024	Kalthoff	844462
=NB03+HS1-FC1	1	RCBO elm	5SU1356-6KK10	SIE	100685
=NB03+HS1-WD1	1	Power and control cables	ÖLFLEX® CLASSIC 110	LAPP	884181
=NB03+HS1-XS1	1	Receptacle SCHUKO, 16A2p+E, 230V, IP54	11031	MEK	100686
=NB03+HS1-XS2	1	D-Sub 25 socket, solder version	D25 SUB/B	RSON	100703
=NB03+HS1-XS2	2	Screw locking D-Sub connector		RSON	100702
=NB03+HS1-XS3	1	Mounting plug, 16A, black	910.100	Bachmann	100695
=NB03+HP3-B1	1	High temperature switch TB 97	TB97-330-5-65-3-500-9HA	Limitor	100689
=NB03+HP3-K1	1	Halbleiterrelais 3-32VDC/40-280VAC/10A	TD2410	CRY	834963
=NB03+HP3-KF1	1	Extension module	PSR-SCF- 24UC/URM/2X21	PXC	100688
=NB03+HP3-WG1	1	Cable	CABLE-D25SUB/B/S/200/KONFEK/S	PXC	100683
=NB03+HP3-X1	1	Hot device plug	K1649027	Kalthoff	835389
=NB03+HP3-XS1	1	Interface module	DFLK-D25 SUB/S	PXC	863015
=NB03+HP3-XZ1	1	Angle device socket	K1591024	Kalthoff	844462
=NB04+HS1-FC1	1	RCBO elm	5SU1356-6KK10	SIE	100685
=NB04+HS1-WD1	1	Power and control cables	ÖLFLEX® CLASSIC 110	LAPP	884181
=NB04+HS1-XS1	1	Receptacle SCHUKO, 16A2p+E, 230V, IP54	11031	MEK	100686
=NB04+HS1-XS2	1	D-Sub 25 socket, solder version	D25 SUB/B	RSON	100703
=NB04+HS1-XS2	2	Screw locking D-Sub connector		RSON	100702

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4-Unit HotPlate Table	
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& EPC1 Parts list
Parts list : Rteu.100703 - Rteu.100702

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Verlustleistungsberechnung

[RKA] F02_006_VL_berechnung

number	Part number	Designation	Type number	Verlustleistung in W	Pos.
1	RIT.1350000	Compact enclosure AX	AX.1350000	0	1
1	RIT.8800752	TS Cable duct for mounting plate, WHD: 2000x60x%2 mm	TS.8800752	0	2
5	RIT.8800750	TS Cable duct for mounting plate, WHD: 2000x30x%2 mm	TS.8800750	0	3
3	TS 35_7,5	Support rail EN 50 022 (35x7,5)	TS 35_7,5	0	4
2	ICO.48168200	KEL-ER 168 V2A / Cable entry frame, split, double row, IP65, V2A screws	KEL-ER 16 8 V2A	0	5
1	HUM.1219250050	Cable Gland, HSK-K, M 25 x 1,5, PA 6, grey	1219250050	0	6
1	SIE.3LD2003-OTK53	EM. STOP SWITCH 16A/690V 400V/7.5KW	3LD2003-OTK53	0	7
1	LAPP.1119505	ÖLFLEX CLASSIC 110 5G4	ÖLFLEX® CLASSIC 110	0	8
12	PXC.3022276	End bracket, CLIPFIX 35-5	CLIPFIX 35-5	0	9
8	PXC.0811969	Terminal block label holder for adhesive label / pin	KLM 3	0	10
3	PXC.3031364	Feed-through terminal block	ST 4	3,06	11
1	PXC.3031377	Feed-through terminal block	ST 4 BU	1,02	12
1	PXC.3031380	Spring cage ground terminal block	ST 4-PE	0	13
1	PXC.3030420	End cover	D-ST 4	0	14
2	PXC.3031458	Feed-through terminal block	ST 4-QUATTRO BU	2,04	15
2	PXC.3030527	End cover	D-ST 4-QUATTRO	0	16
5	PXC.3031461	Ground modular terminal block	ST 4-QUATTRO-PE	0	17
2	SIE.5SY4104-7	CIRCUIT BREAKER 10KA 1POL C4	5SY4104-7	2,6	18
1	BEC.EL9227-5500	Overcurrent protection terminal 24 V DC, 2-channel, max. Σ 10 A, adjustable, extended functionalities	EL9227-5500	0	19
1	PXC.2866763	Power supply unit	QUINT-PS/ 1AC/24DC/10	22	20
11	PXC.3031306	Feed-through terminal gray	ST 2,5-QUATTRO	0	21
3	PXC.3030514	End cover	D-ST 2,5-QUATTRO	0	22
1	PXC.3121025	Disconnect terminal block	GTF 76/ 48	1,31	23
1	SIE.8MR2170-2BB	Thermostat KTS 011, NO, 0-60°C	Siemens 8MR2170-2BB	0	24
1	RIT.3237124	Filter fan	SK.3237124	0	25
1	RIT.3237200	Outlet filter	SK.3237200	0	26
5	SIE.5SU1356-6KK10	RCBO elm	5SU1356-6KK10	18	27
1	PXC.0804040	Socket	EO-CF/PT/LED	0	28

Date	07.07.2022	4-Unit HotPlate Table		& EED1 Power dissipation calculation Verlustleistungsberechnung	==	Seite 17 of 53 Pg
Ed.	KIE				=	
Appr					+ HS1 Main cabinett	
Modification	Date	Name	Original			

Verlustleistungsberechnung

[RKA] F02_006_VL_berechnung

number	Part number	Designation	Type number	Verlustleistung in W	Pos.
1	BEC.EK1100	EtherCAT-Koppler ID-Switch	EK1100	14	29
4	BEC.EL3201	1-RTD PT100 (RTD) for 2, 3 and 4 conductors	EL3201	4	30
1	BEC.EL1008	8-channel digital input terminal 24 V DC, filter 3.0 ms, 1-wire system	EL1008	4	31
1	BEC.EL2008	8-channel digital output terminal 24 V DC, 0.5 A, 1-wire system	EL2008	4	32
1	BEC.EL9011	Bus end cap	EL9011	0,01	33
1	BEC.C6015-0010	Economy control cabinet Industrial PC C6015-0010	C6015-0010	14	34
1	EFB.K5561HQSW.5	DisplayPort cable male, 5m	K5561HQSW.5	0	35
1	EFB.MK6001.1GR	Ethernet patch cable Cat.6A, green 1,0m	MK6001.1GR	0	36
1	EFB.K5253SW.5	USB2.0 Connecting cable A-A, St.-St., 5,0m, black Classic	K5253SW.5	0	37
1	EFB.MK6001.1G	Ethernet patch cable Cat.6A26 gray 1,0m	MK6001.1G	0	38
1	ETN.M22-RJ45-SA	Front element, +bulkhead interface RJ45	M22-RJ45-SA	0	39
1	PXC.2904605	Power supply unit	QUINT4-PS/1AC/12DC/2.5/PT	3,5	40
1	LAPP.1119752	ÖLFLEX CLASSIC 110 2X0,5	ÖLFLEX® CLASSIC 110	0	41
1	837675	Tube PE 6/8 black		0	42
4	862004	Exhaust hose ID38-AD41,2 TPE	Flexflyte-EP2	0	43
8	862005	Double hose clamp 37-43mm		0	44
1	833272	Tube PE 4/6 black		0	45
1	FES.153317	Push-in fitting	QSM-M5-6-I	0	46
1	FES.153038	G-connector reduced ID8-ID6 PBT	QS-8-6	0	47
8	PXC.3031212	Feed-through terminal gray	ST 2,5	0	48
2	PXC.3030417	End cover	D-ST 2,5	0	49
4	LAPP.1119303	Power and control cables	ÖLFLEX® CLASSIC 110	0	50
4	MEK.11031	Receptacle SCHUKO, 16A2p+E, 230V, IP54	11031	0	51
4	Rteu.100703	D-Sub 25 socket, solder version	D25 SUB/B	0	52
8	Rteu.100702	Screw locking D-Sub connector		0	53
4	BAC.910.100	Mounting plug, 16A, black	910.100	0	54

total: **0,06 kW**

1
previous page

&EMA1/1
following page

Date	07.07.2022
Ed.	KIE
Appr	
Modification	Date
Name	Original

4-Unit HotPlate Table



& EED1 Power dissipation calculation
Verlustleistungsberechnung

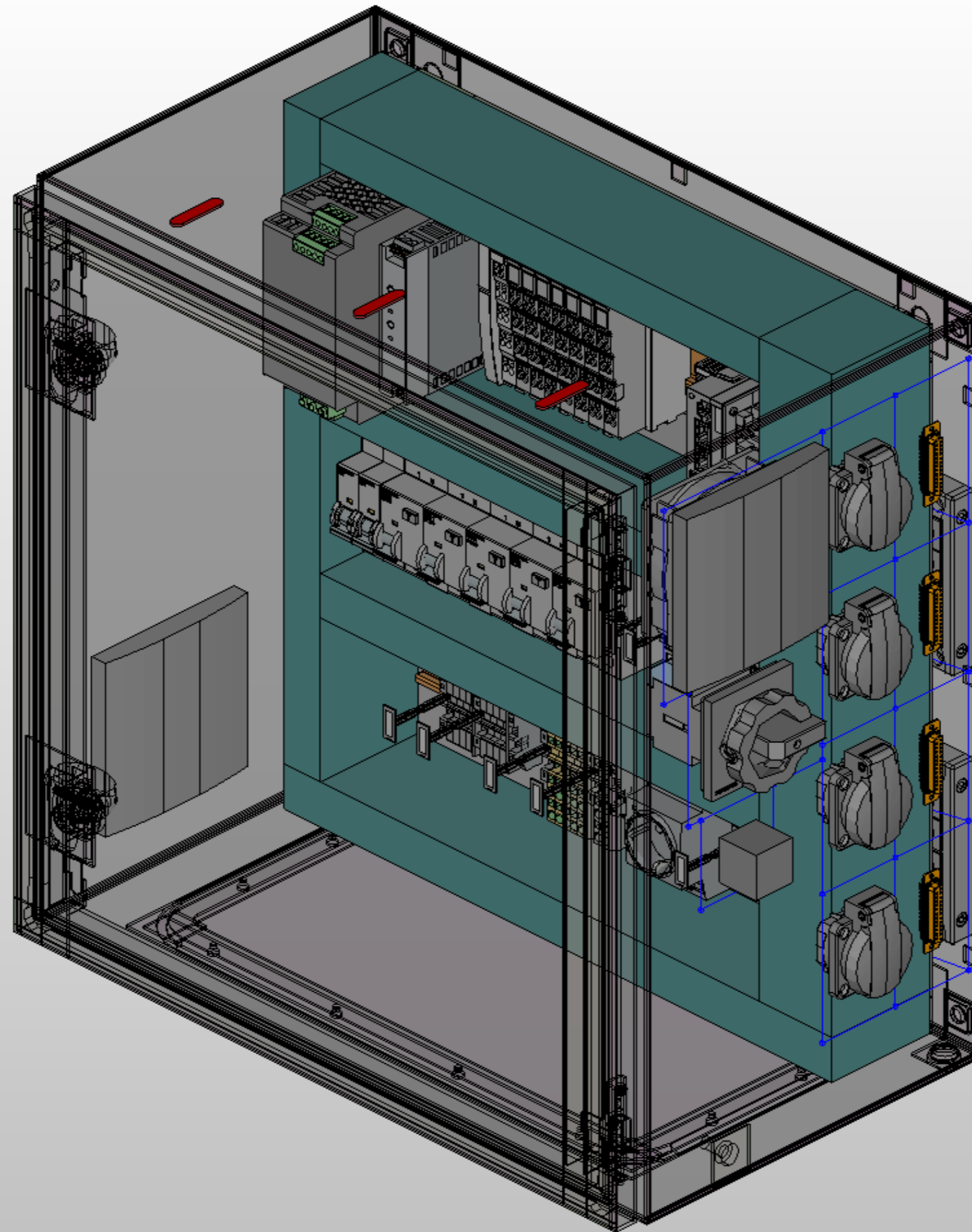
==

=

+ HS1

Main cabinett

Seite 18
of 53
Pg 1.



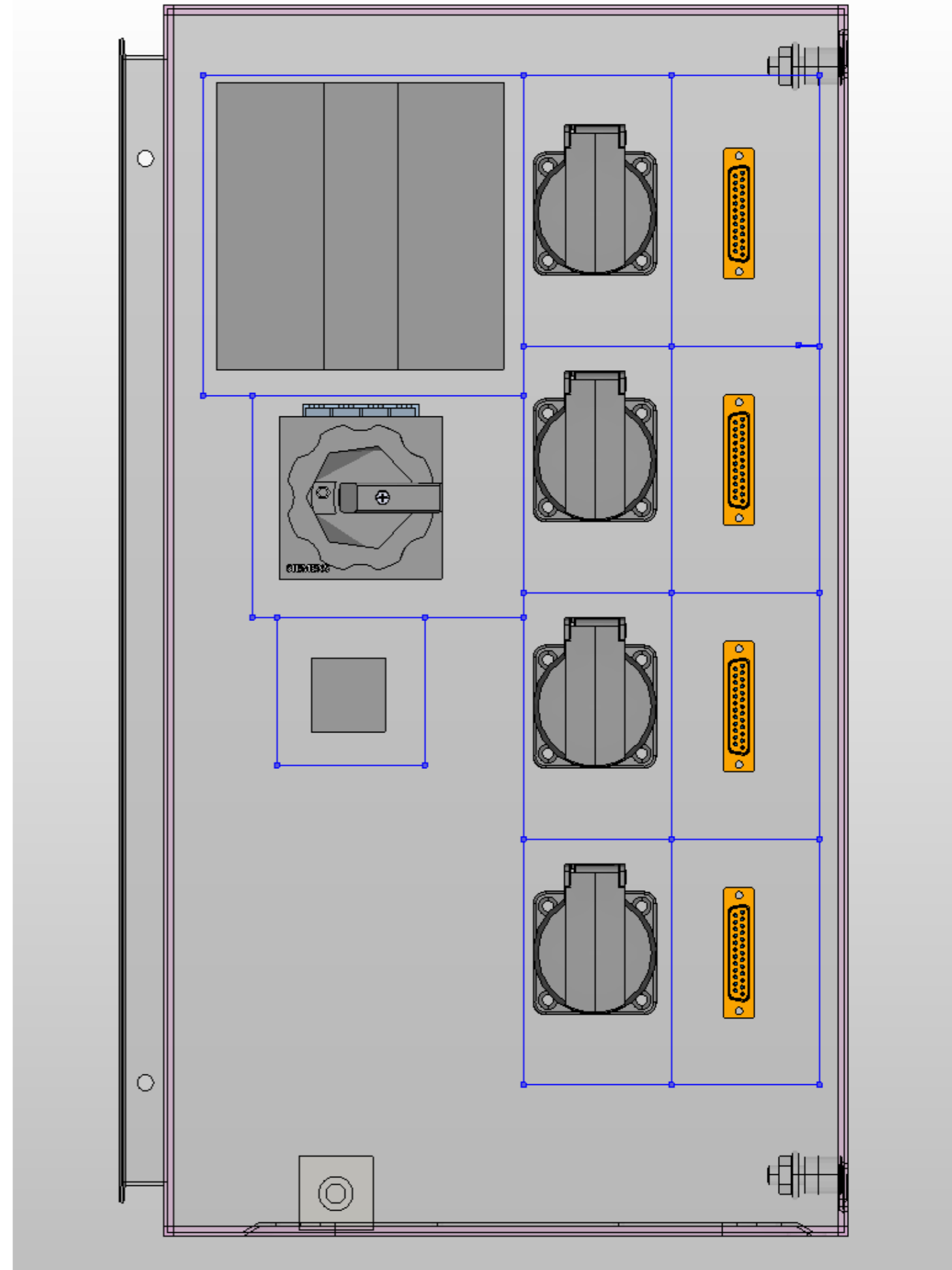
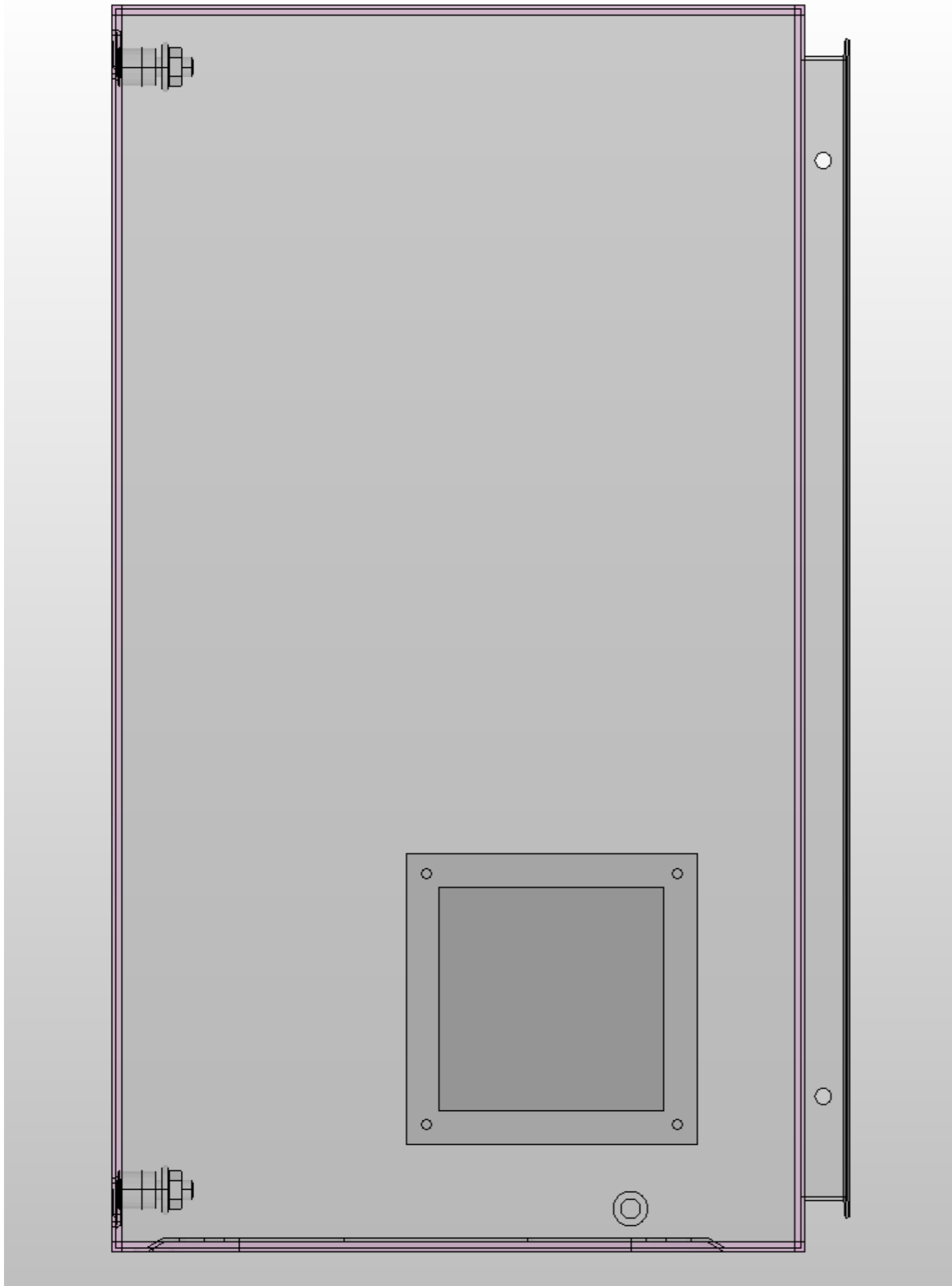
Date	07.07.2022		
Ed.	KIE		
Appr			
Modification	Date	Name	Original

4-Unit HotPlate Table



& ETL1 Panel layout
Control cabinet overview

==	Seite	20
=	of	53
+ HS1	Pg	
Main cabinett		



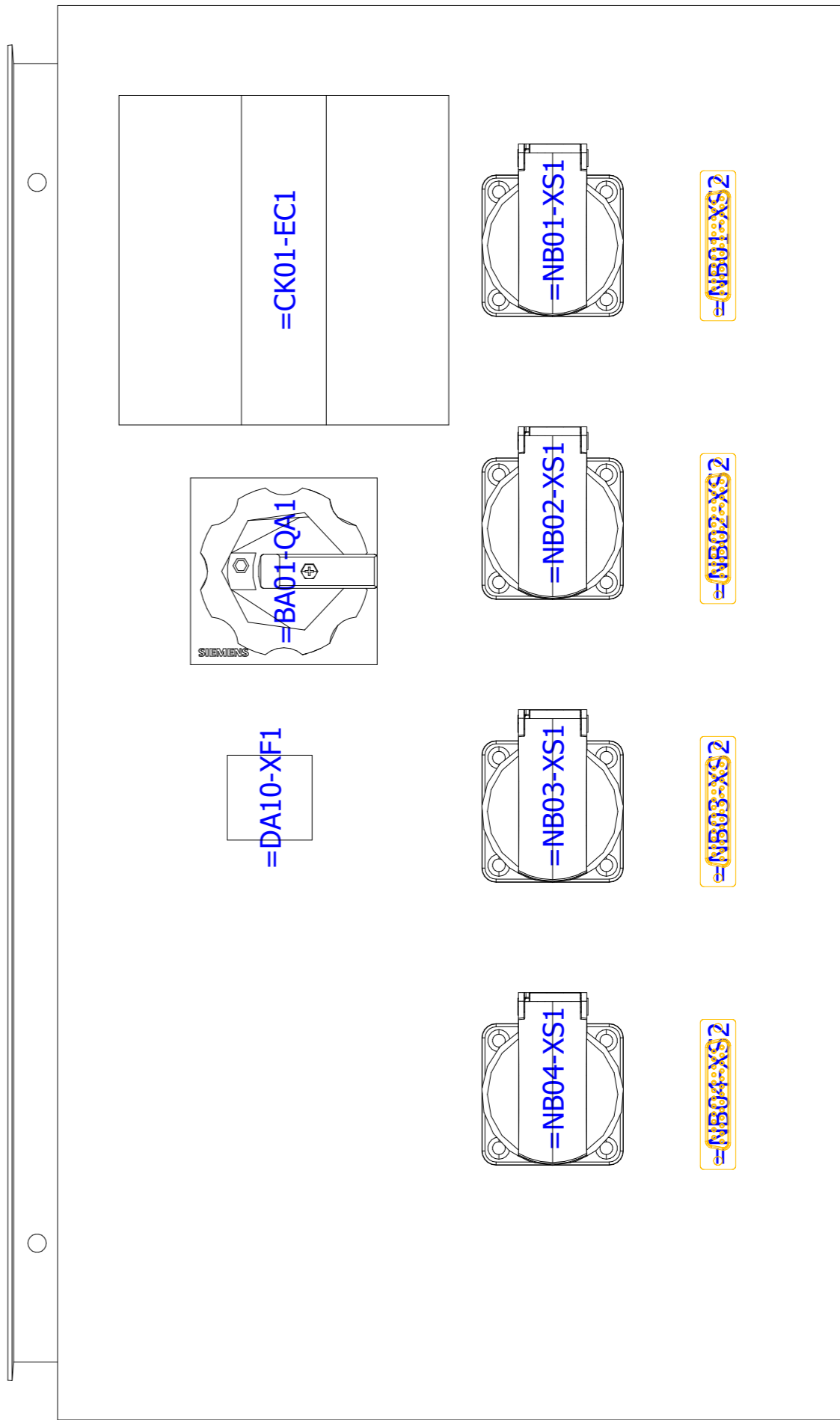
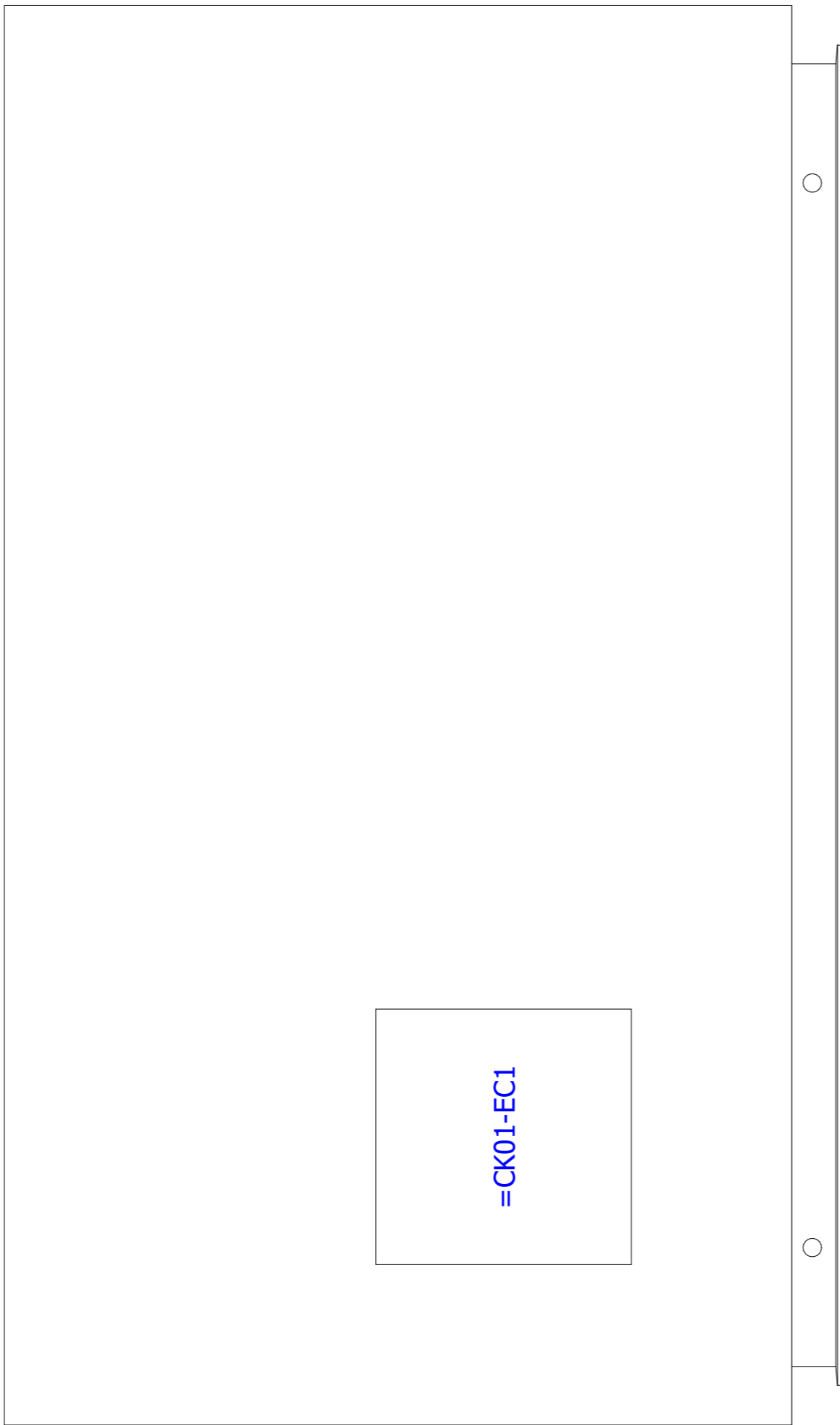
Modification	Date	Name	Original

Date	07.07.2022
Ed.	KIE
Appr	
4-Unit HotPlate Table	



& ETL1 Panel layout
Control cabinet overview

==		Seite	21
=		of	53
+ HS1	Main cabinett	Pg	2



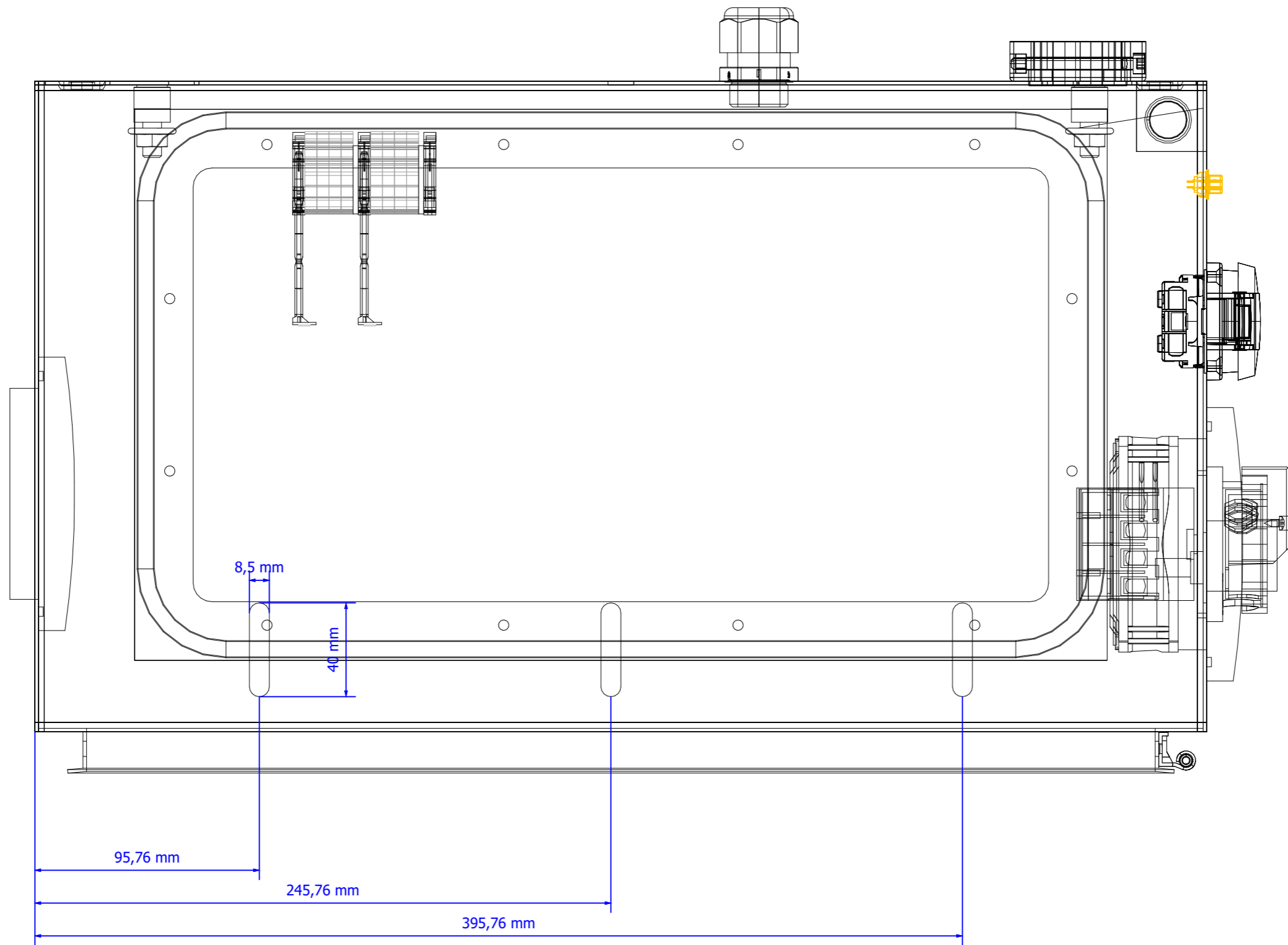
Modification	Date	Name	Original	Date	07.07.2022
				Ed.	KIE
				Appr	

4-Unit HotPlate Table



& ETL1 Panel layout
Control cabinet overview

==		Seite	22
=		of	53
+ HS1	Main cabinett	Pg	



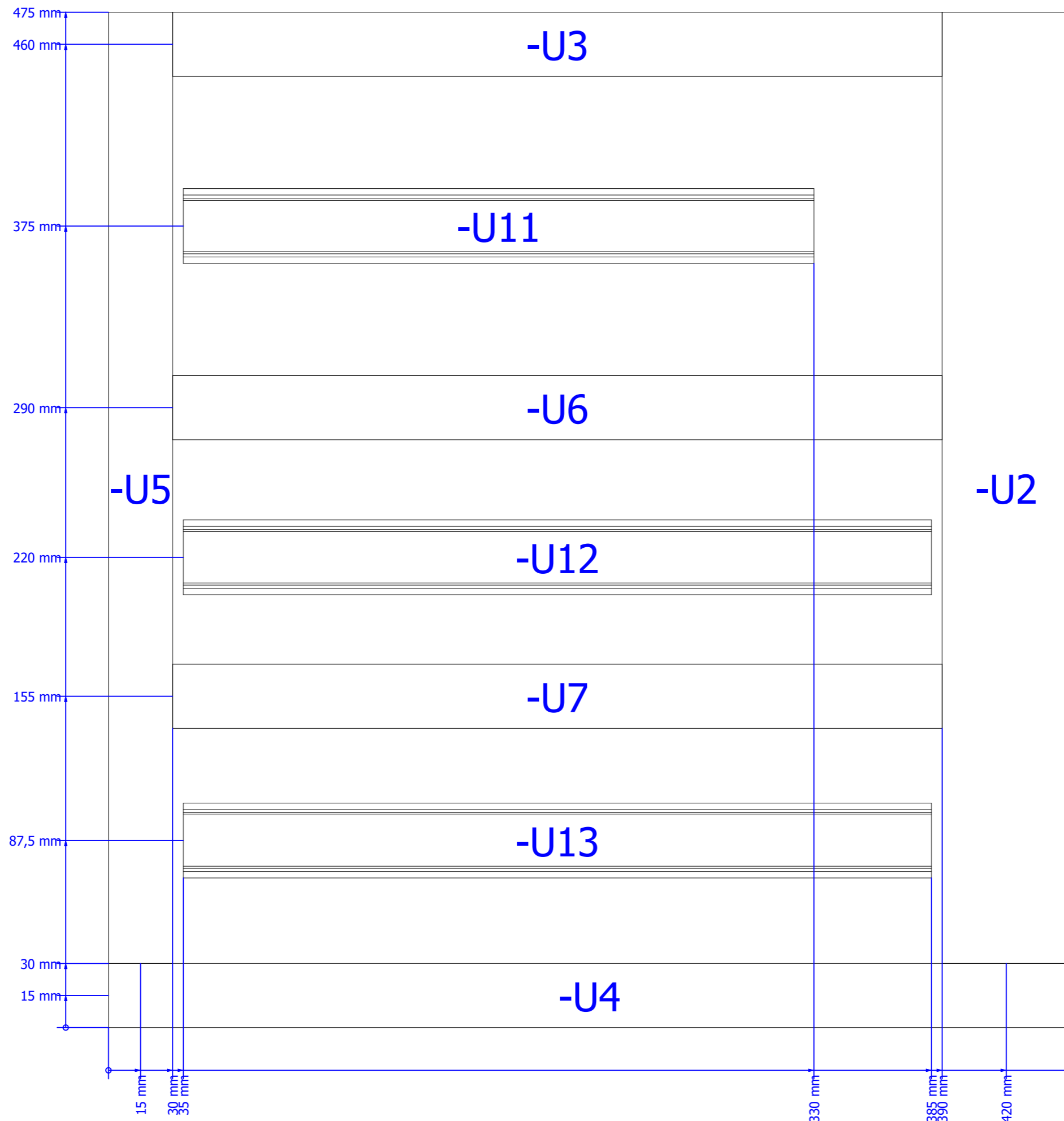
Date	07.07.2022
Ed.	KIE
Appr	
Modification	Date
Name	Original

4-Unit HotPlate Table



& ETL1 Panel layout
Control cabinet overview

==	
=	
+ HS1	Main cabinett
Seite	23
of	53
Pg	



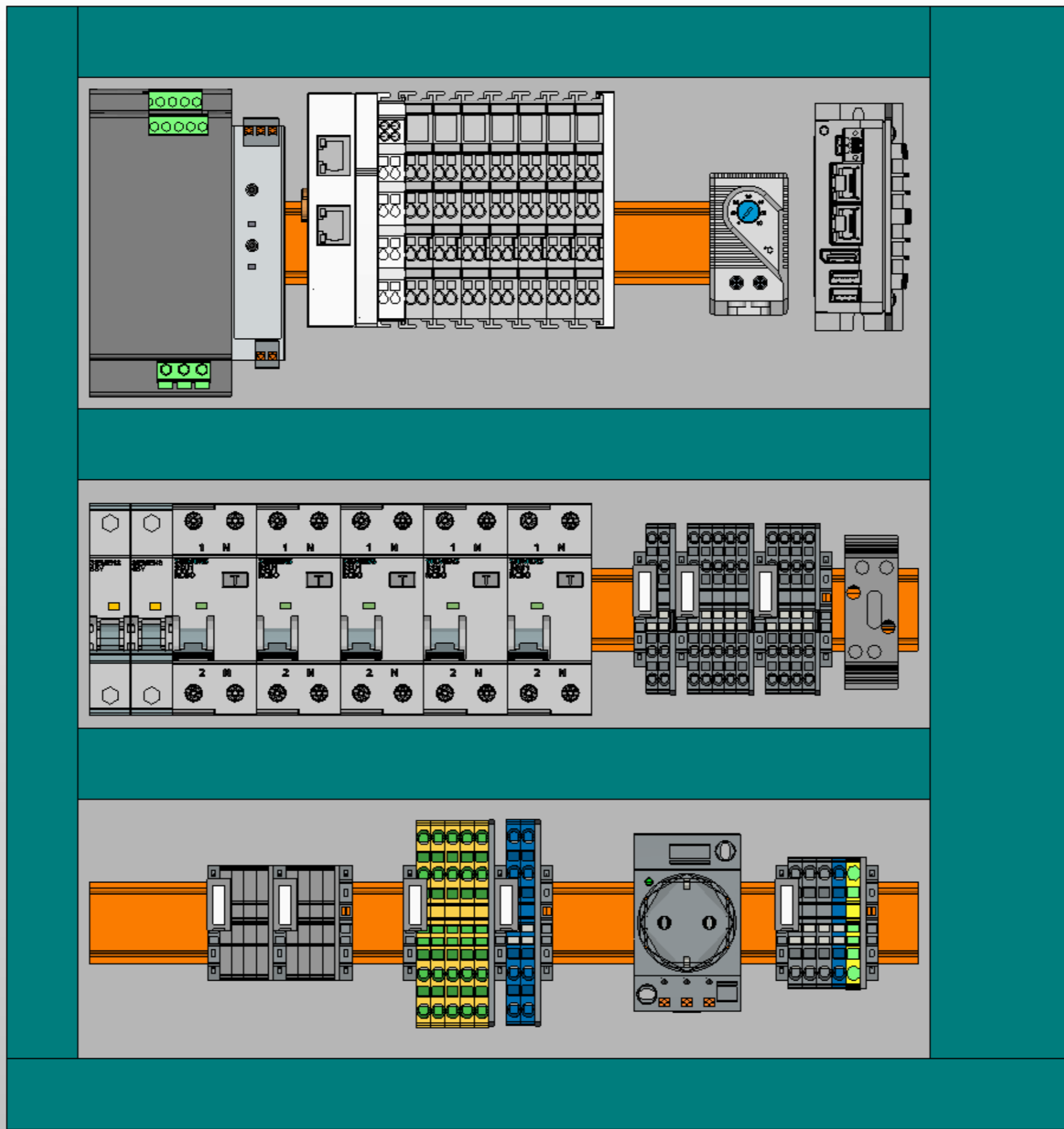
Date	07.07.2022
Ed.	KIE
Appr	
Modification	Date
Name	Original

4-Unit HotPlate Table



& ETL1 Panel layout
Control cabinet overview

==	Seite	24
=	of	53
+ HS1	Pg	
Main cabinett		



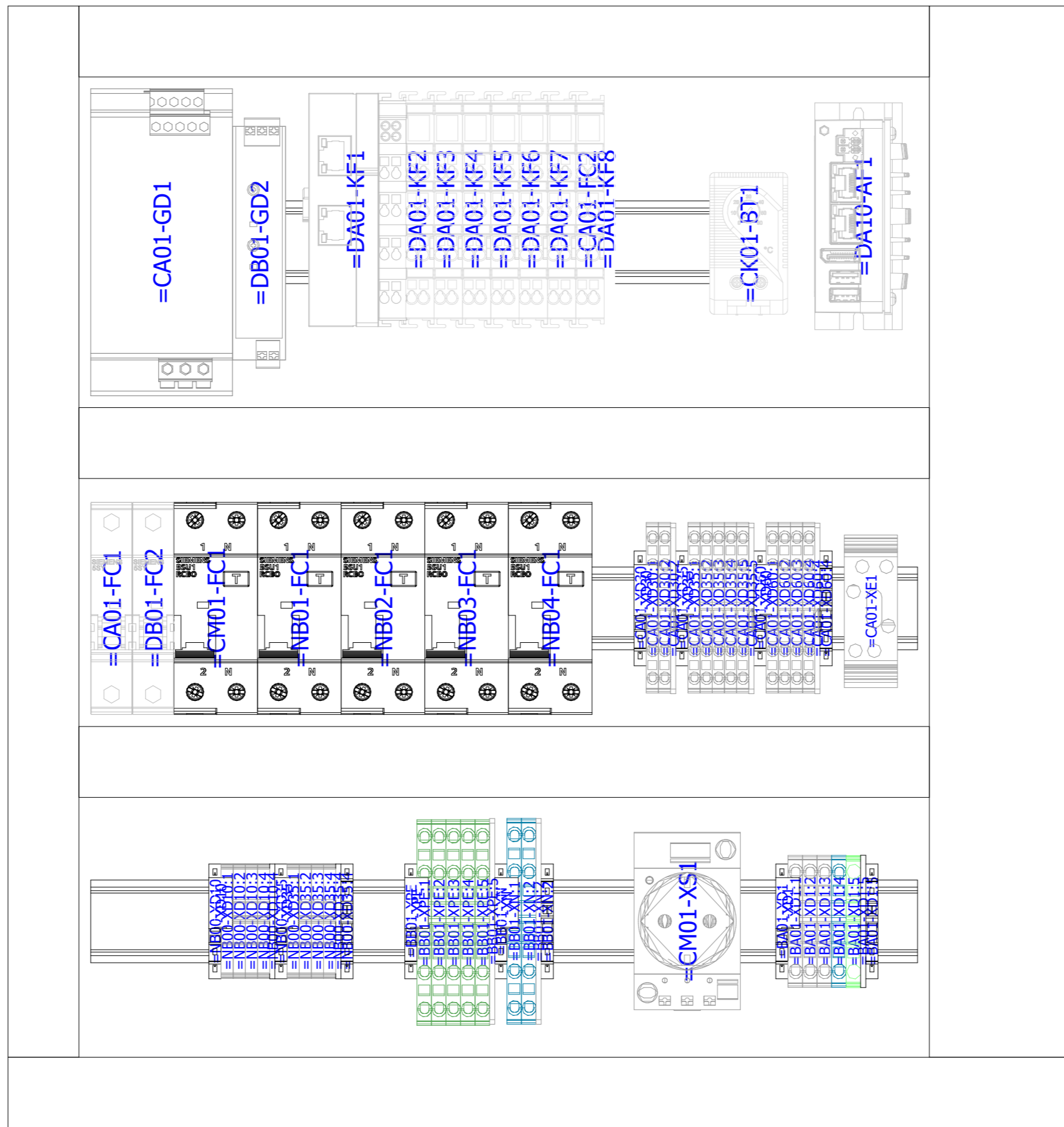
Date	07.07.2022		
Ed.	KIE		
Appr			
Modification	Date	Name	Original

4-Unit HotPlate Table



& ETL1 Panel layout
Control cabinet overview

==	
=	
+ HS1	Main cabinett
Seite	25
of	53
Pg	



Modification	Date	Name	Original

Date	07.07.2022
Ed.	KIE
Appr	
4-Unit HotPlate Table	

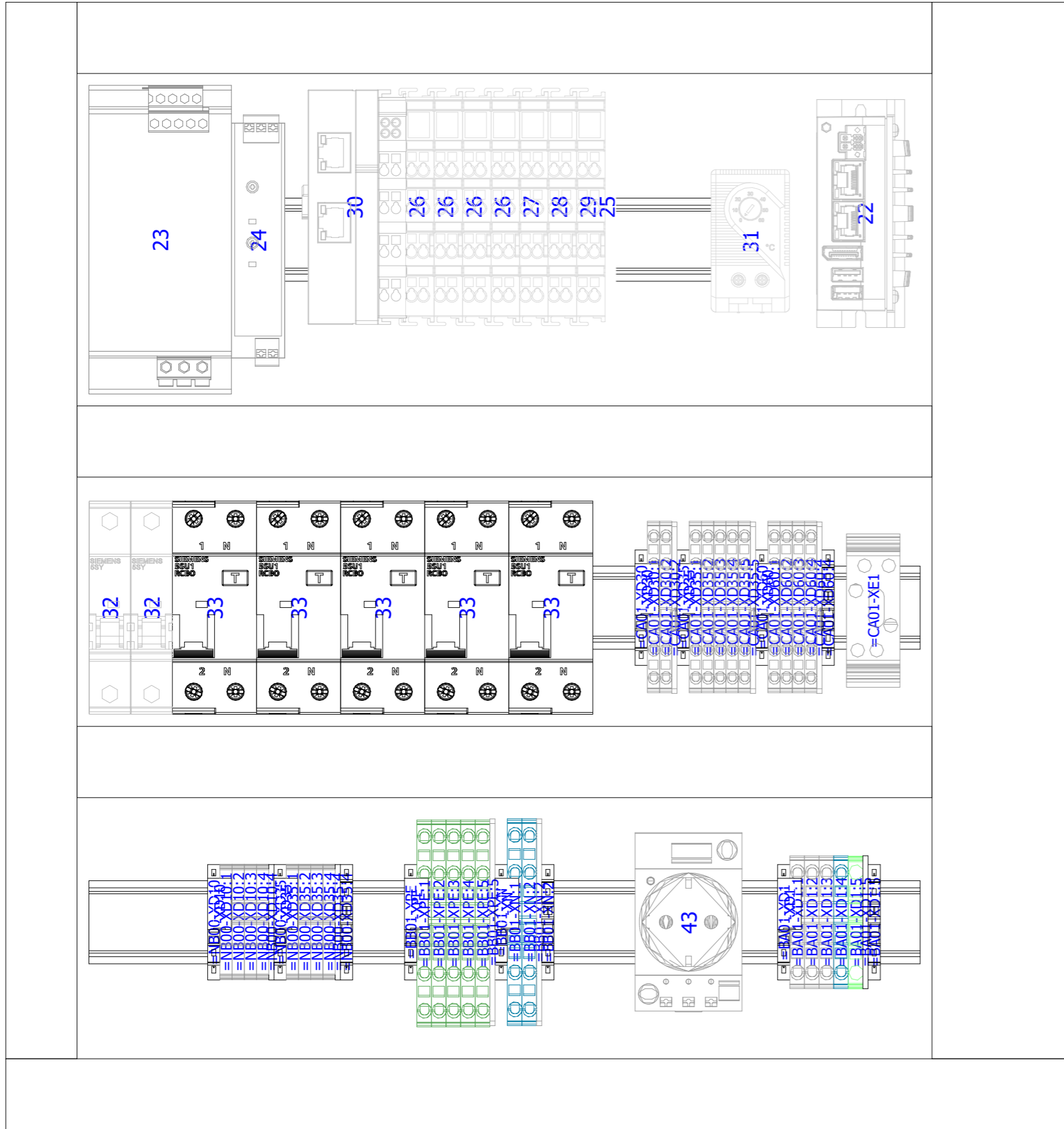


& ETL1 Panel layout
Control cabinet overview

==	
=	
+ HS1	Main cabinett
Seite	26
of	53
Pg	

[RKA]_F18

Enclosure legend



item number	Type number	Quantity
1	AX.1350000	1
9	SK.3237200	1
10	SK.3237124	1
11	3LD2003-0TK53	1
12	11031	4
13	M22-RJ45-SA	1
14	D25 SUB/B	4
15	KEL-ER 16 8 V2A	2
16	1219250050	1
19	TS.8800752	1
20	TS.8800750	5
21	TS 35_7,5	3
22	C6015-0010	1
23	QUINT-PS/ 1AC/24DC/10	1
24	QUINT4-PS/1AC/12DC/2.5/PT	1
25	EL9011	1
26	EL3201	4
27	EL1008	1
28	EL2008	1
29	EL9227-5500	1
30	EK1100	1
31	Siemens 8MR2170-2BB	1
32	5SY4104-7	2
33	5SU1356-6KK10	5
34	GTF 76/ 48	1
35	CLIPFIX 35-5	12
36	ST 2,5-QUATTRO	11
37	D-ST 2,5-QUATTRO	3
38	ST 4	3
39	ST 4 BU	1
40	ST 4-QUATTRO-PE	5
41	D-ST 4-QUATTRO	2
42	ST 4-QUATTRO BU	2
43	EO-CF/PT/LED	1
44	ST 4-PE	1
45	D-ST 4	1
46	ST 2,5	8
47	D-ST 2,5	2
51	KLM 3	8

Date	07.07.2022
Ed.	KIE
Appr	
Original	

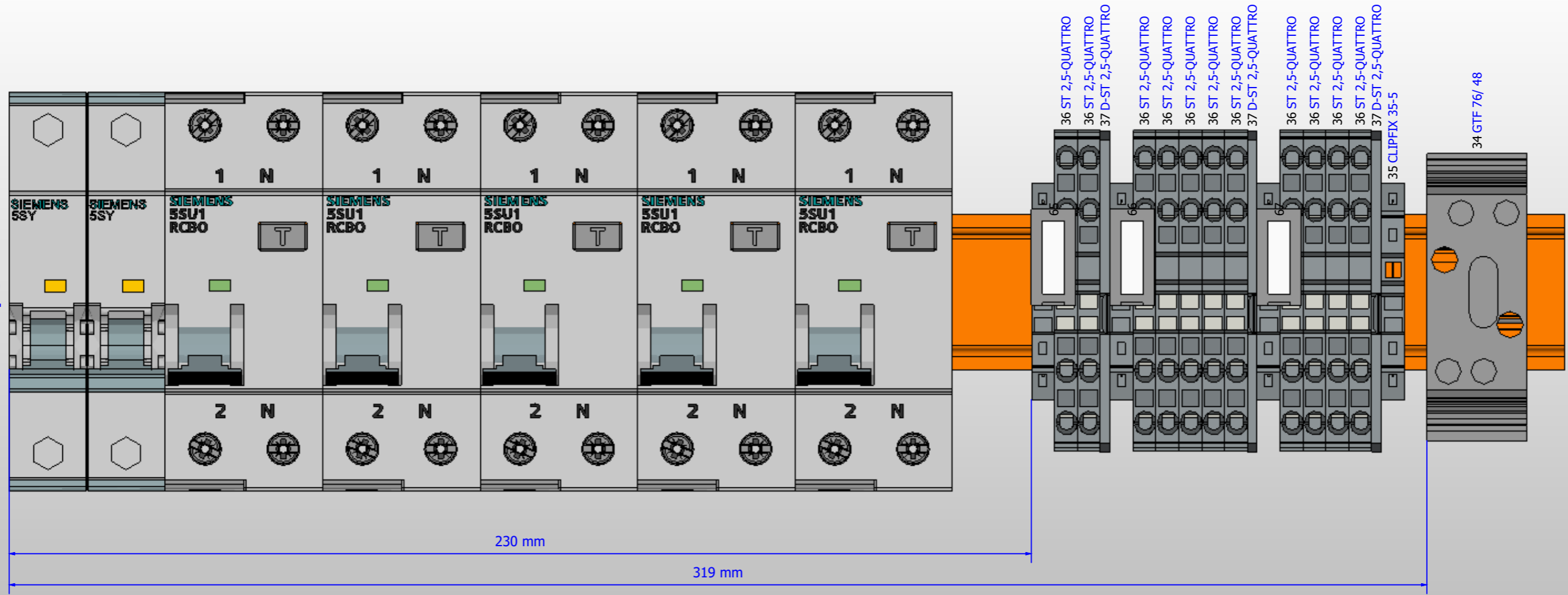
4-Unit HotPlate Table



& ETL1 Panel layout
Control cabinet overview

==		Seite	27
=		of	53
+ HS1	Main cabinett	Pg	

-U12



Date	07.07.2022
Ed.	KIE
Appr	
Modification	Date
Name	Original

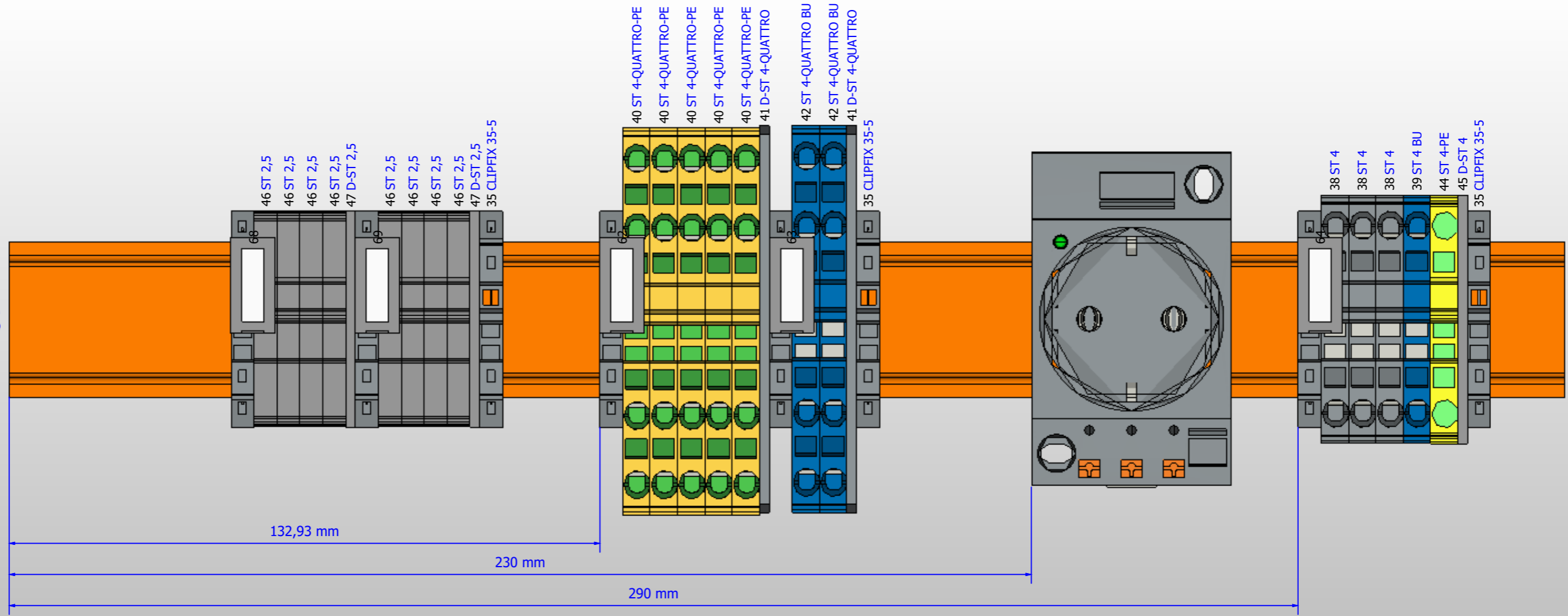
4-Unit HotPlate Table



& ETL1 Panel layout
Control cabinet overview

==	
=	
+ HS1	Main cabinett
Seite	28
of	53
Pg	

-U13



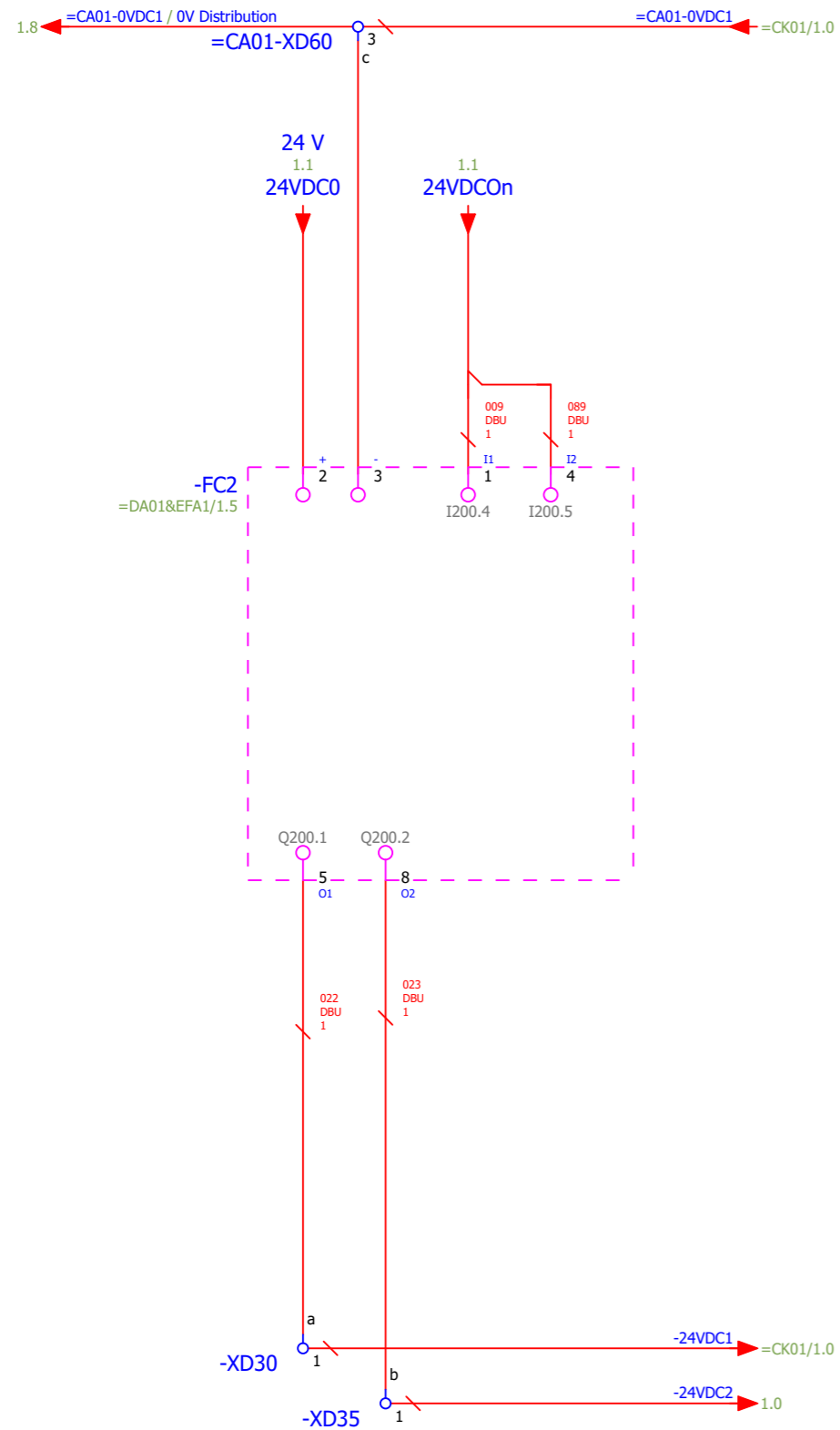
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Ed.	KIE
Appr	
Modification	Date
	Name
	Original

4-Unit HotPlate Table



& ETL1 Panel layout
Control cabinet overview

==		Seite	29
=		of	53
+ HS1	Main cabinett	Pg	1



Load circuit monitoring

-XD30 = 24V Distribution Logic
 -XD35 = 24V Distribution Sensors / Actuators

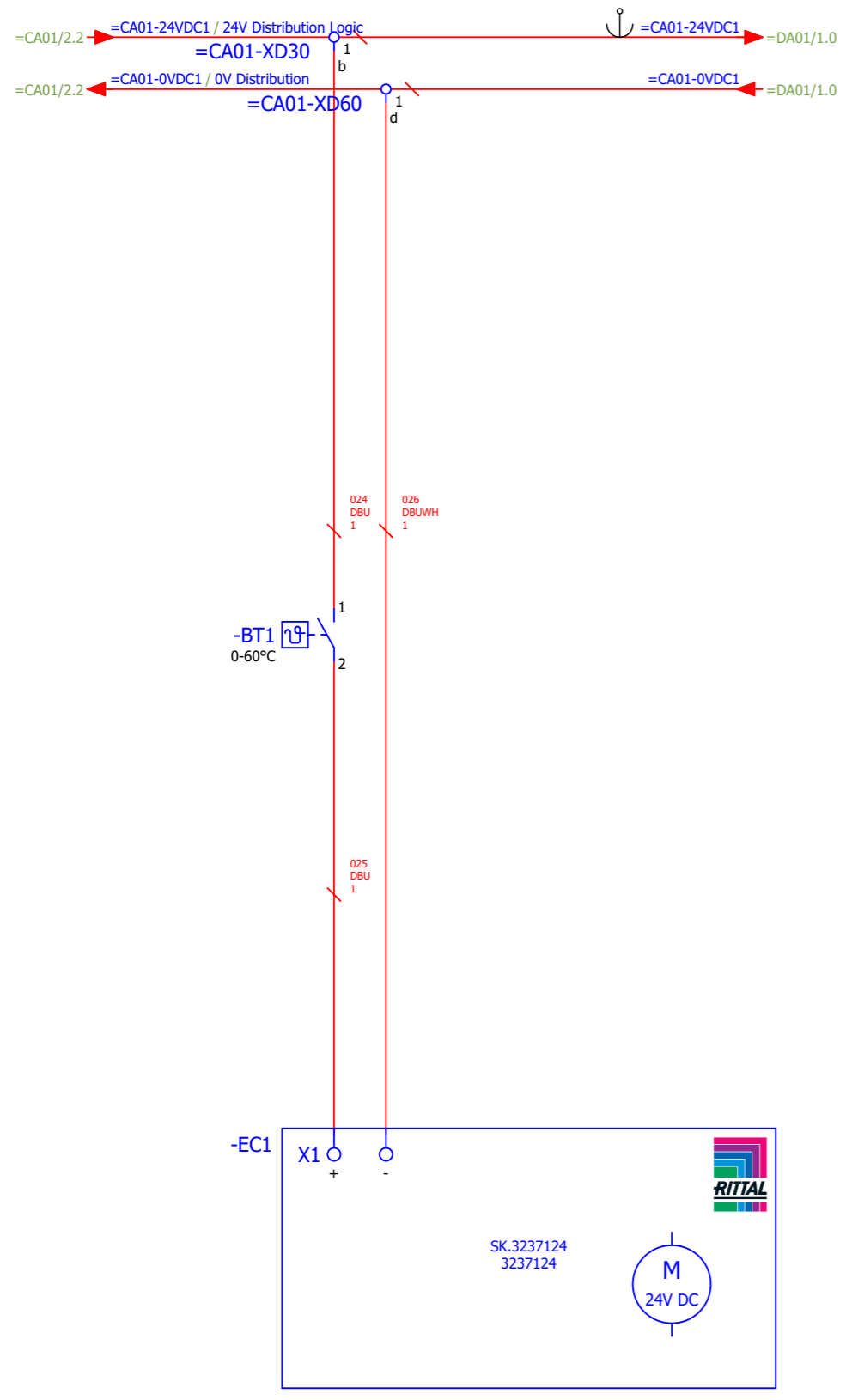
Date	07.07.2022
Ed.	KIE
Appr	
Modification	Date
	Name
	Original

4-Unit HotPlate Table	
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& EFS1 Electrical circuit diagram
 Load circuit monitoring

==		Seite	32
= CA01	Control voltage generation	of	53
+ HS1	Main cabinet	Pg	2



Control cabinet fan

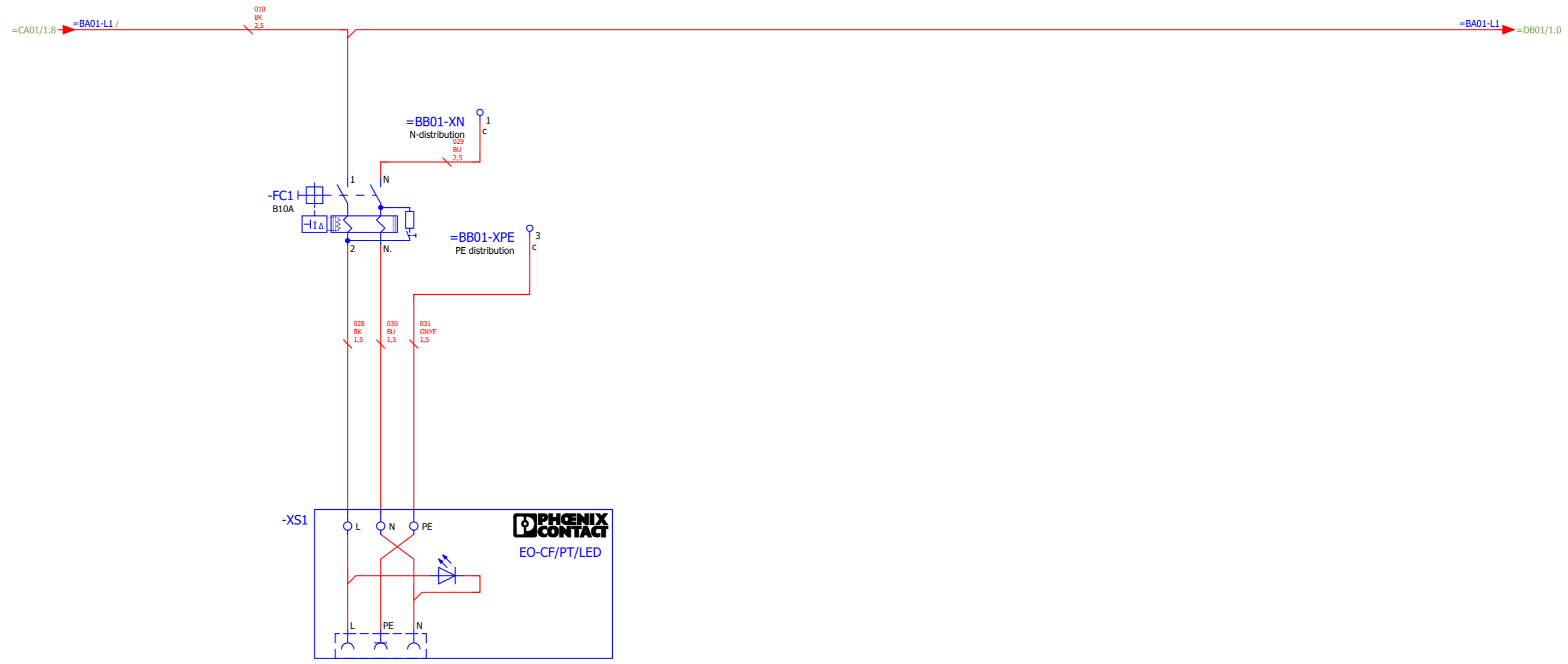
Date	07.07.2022
Ed.	KIE
Appr	
Modification	Date
Name	Original

4-Unit HotPlate Table



& EFS1 Electrical circuit diagram
Control cabinet fan

==		
= CK01	Control cabinet air conditioning	Seite 33
+ HS1	Main cabinett	of 53 Pg



Service socket 230VAC

Date	07.07.2022
Ed.	KIE
Appr	
Modification	Date
	Name
	Original

4-Unit HotPlate Table

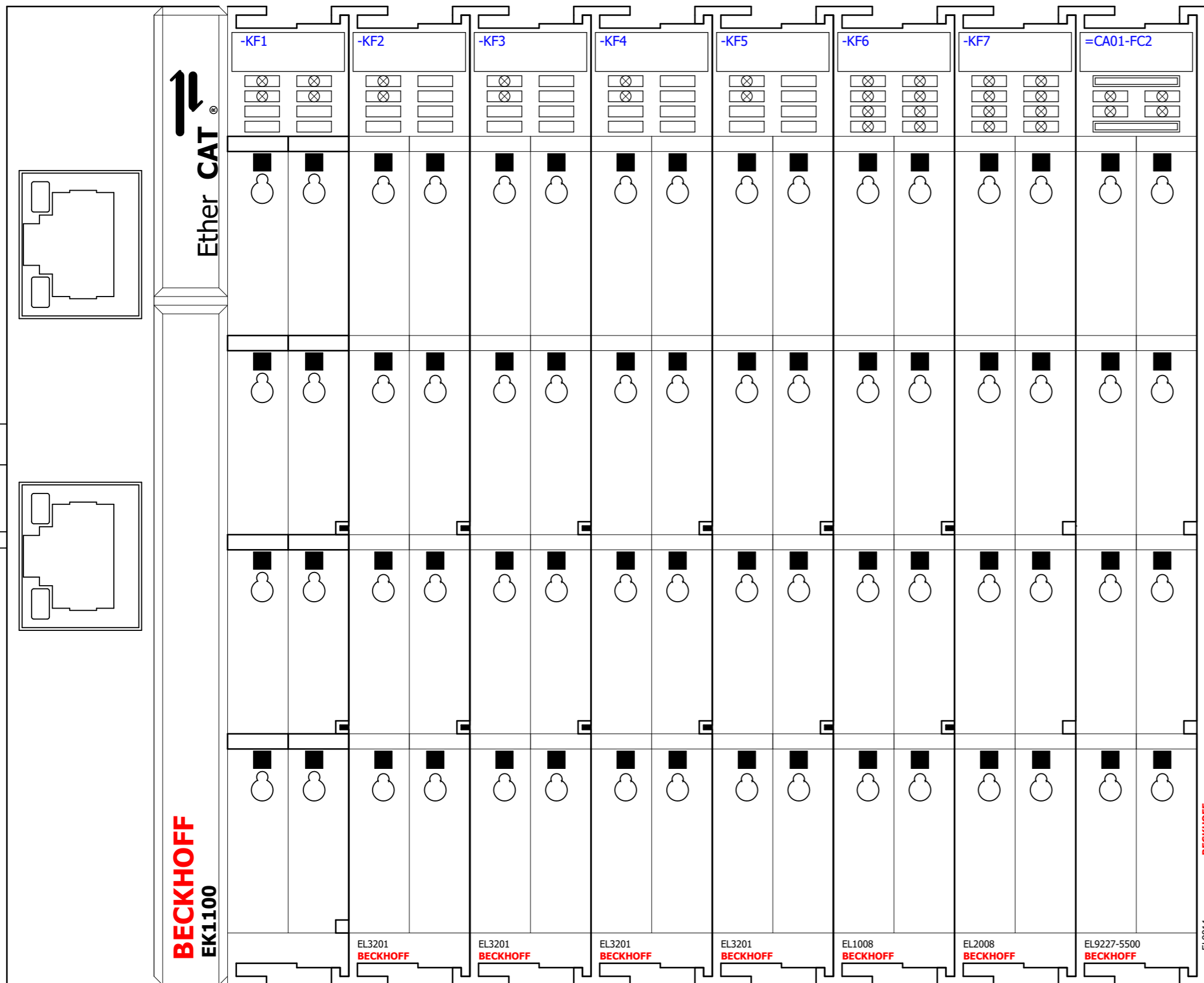


& EFS1 Electrical circuit diagram
Service socket

==

= CM01 Service socket

+ HS1 Main cabinet



=CM01&EFS1/1
previous page

2
following page

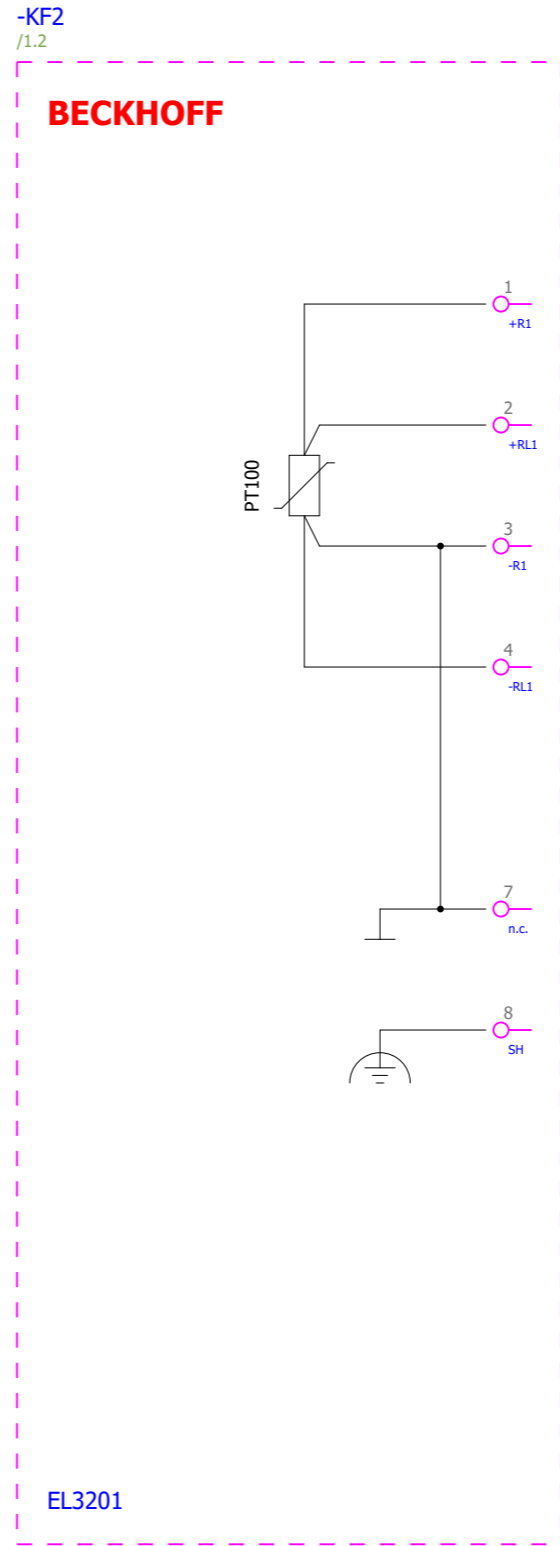
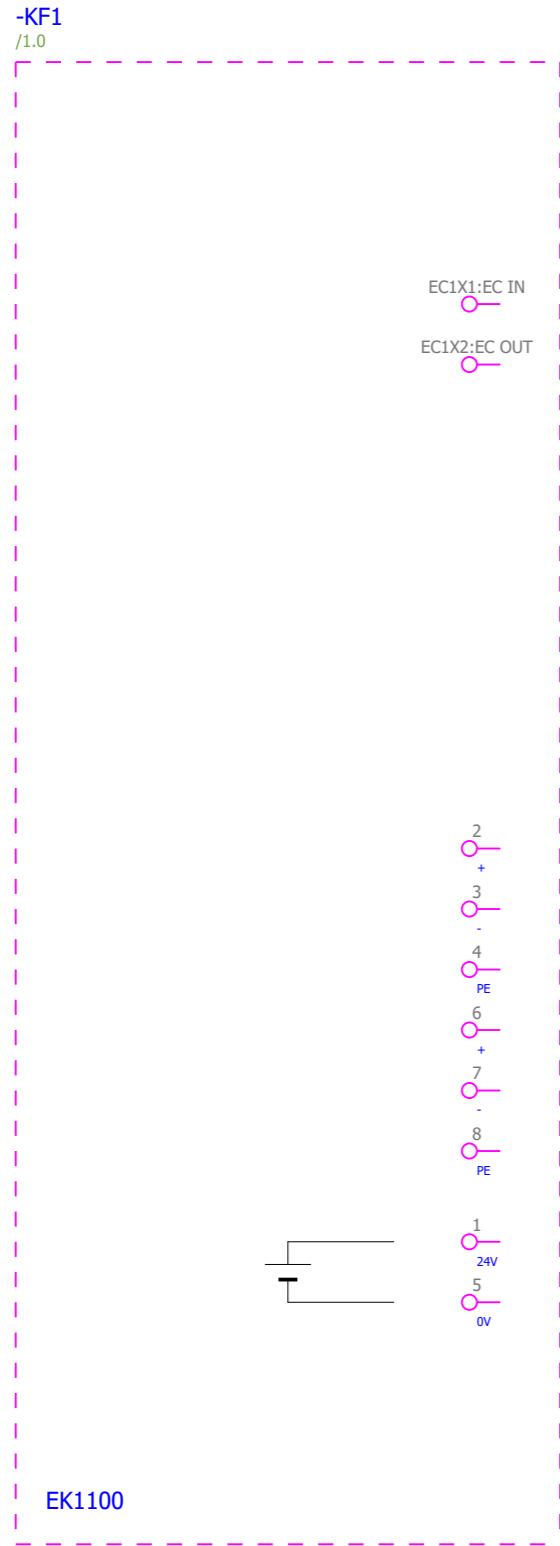
Date	07.07.2022
Ed.	KIE
Appr	
Modification	Date
Name	Original

4-Unit HotPlate Table



& EFA1 Overview PLC
Structure PLC Beckhoff

==			
= DA01	PLC	Seite	35
+ HS1	Main cabinett	of	53
		Pg	



Date	07.07.2022
Ed.	KIE
Appr	
Modification	Date
Name	Original

4-Unit HotPlate Table	
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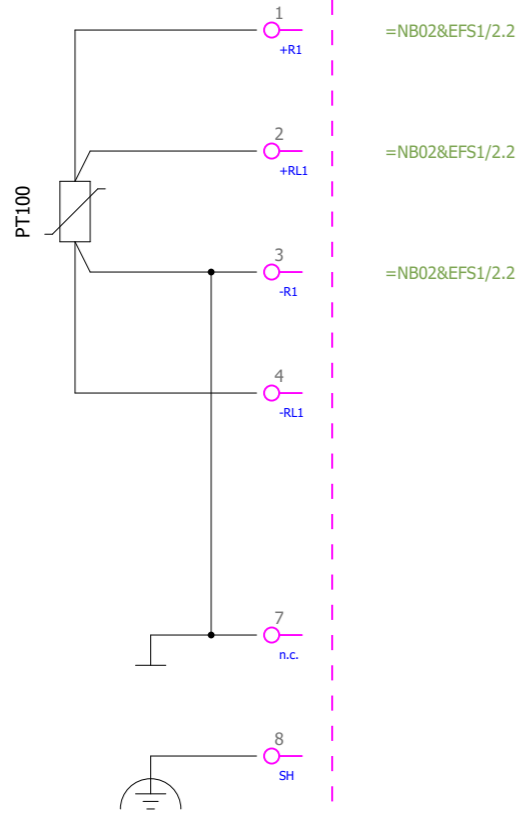


& EFA1 Overview PLC
Structure PLC Beckhoff

==		
= DA01	PLC	Seite 36
+ HS1	Main cabinett	of 53 Pg

-KF3
/1.2

BECKHOFF



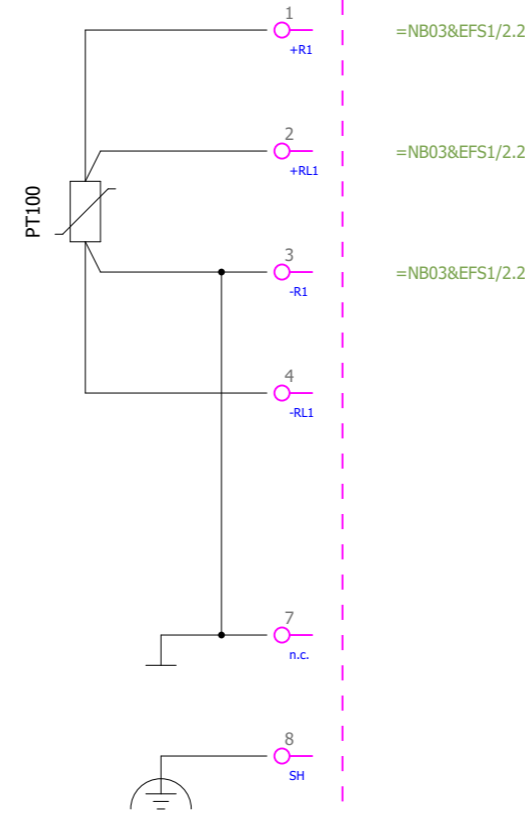
=NB02&EFS1/2.2
=NB02&EFS1/2.2
=NB02&EFS1/2.2

PT100 Hotplate 2
PT100 Hotplate 2
PT100 Hotplate 2

EL3201

-KF4
/1.3

BECKHOFF



=NB03&EFS1/2.2
=NB03&EFS1/2.2
=NB03&EFS1/2.2

PT100 Hotplate 3
PT100 Hotplate 3
PT100 Hotplate 3

EL3201

Date	07.07.2022
Ed.	KIE
Appr	
Modification	Date
Name	Original

4-Unit HotPlate Table	
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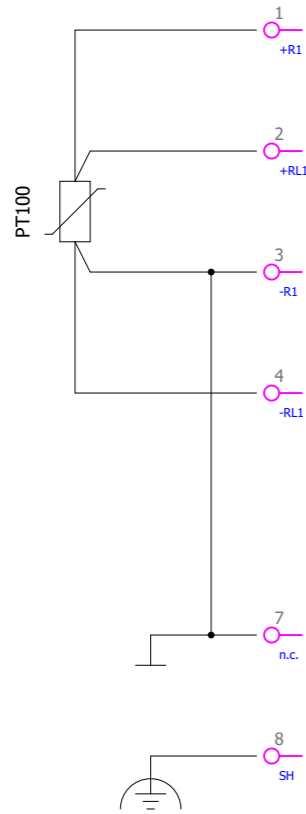


& EFA1 Overview PLC
Structure PLC Beckhoff

==		
= DA01	PLC	Seite 37
+ HS1	Main cabinett	of 53 Pg

-KF5
/1.3

BECKHOFF



=NB04&EFS1/2.2

PT100 Hotplate 4

=NB04&EFS1/2.2

PT100 Hotplate 4

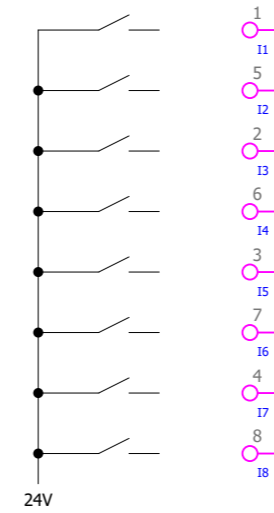
=NB04&EFS1/2.2

PT100 Hotplate 4

EL3201

-KF6
/1.4

BECKHOFF



=NB01&EFS1/2.5

Safety temperature switch HP1 is OK

=NB02&EFS1/2.5

Safety temperature switch HP2 is OK

=NB03&EFS1/2.5

Safety temperature switch HP 3 is OK

=NB04&EFS1/2.5

Safety temperature switch HP4 is OK

=FE01&EFS1/1.1

Exhaust air monitoring

=CA01&EFS1/1.3

Power supply OK

Load circuit monitoring OK (reserve)

EL1008

Date	07.07.2022
Ed.	KIE
Appr	
Modification	Date
Name	Original

4-Unit HotPlate Table	
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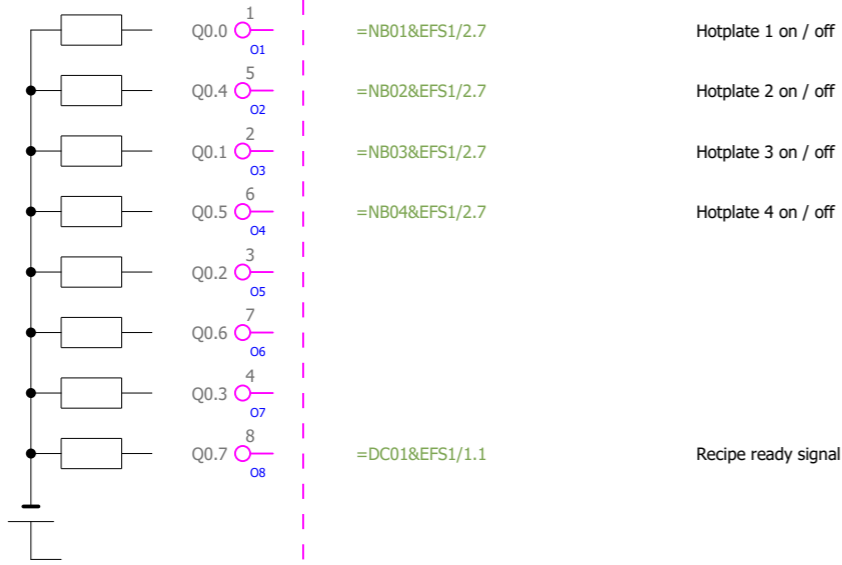


& EFA1 Overview PLC
Structure PLC Beckhoff

==		
= DA01	PLC	Seite 38
+ HS1	Main cabinett	of 53 Pg 4

-KF7
/1.5

BECKHOFF



EL2008

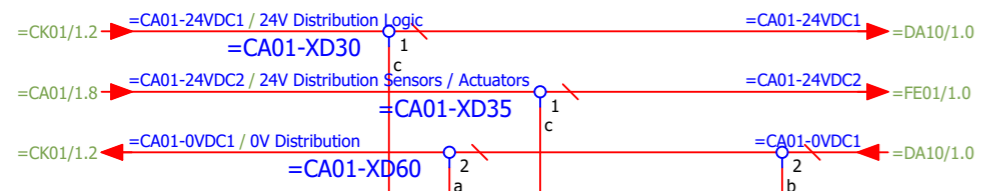
Date	07.07.2022
Ed.	KIE
Appr	
Modification	Date
Name	Original

4-Unit HotPlate Table	
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& EFA1 Overview PLC
Structure PLC Beckhoff

==		Seite	39
= DA01	PLC	of	53
+ HS1	Main cabinett	Pg	

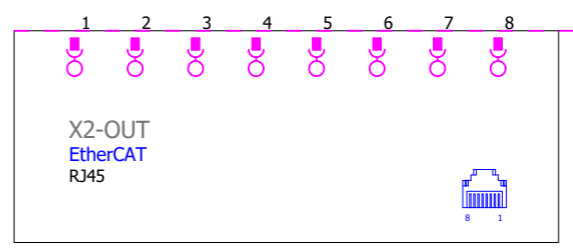
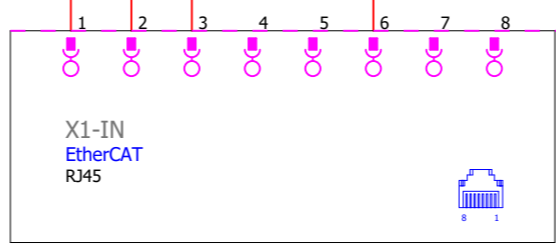
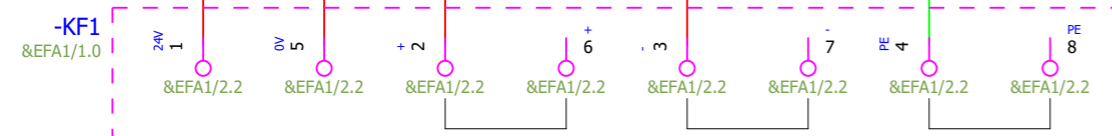
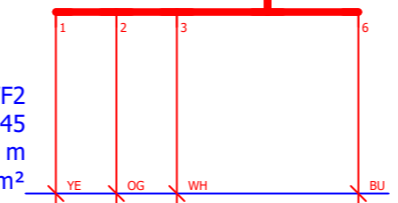


=BB01-XPE
PE distribution



=DA10/1.6
EC1

-WF2
PVC ye RJ45-RJ45
1 m
1x4x0,34 mm²



Beckhoff Automation EK1100 EtherCAT-Koppler ID-Switch

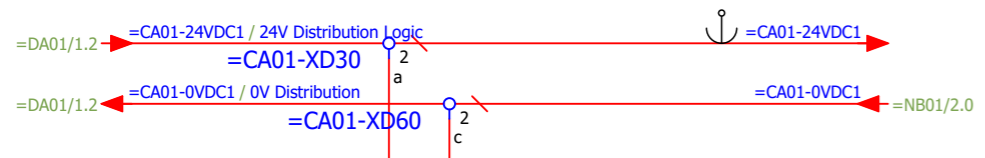
Date	07.07.2022
Ed.	KIE
Appr	
Modification	Date
	Name
	Original

4-Unit HotPlate Table

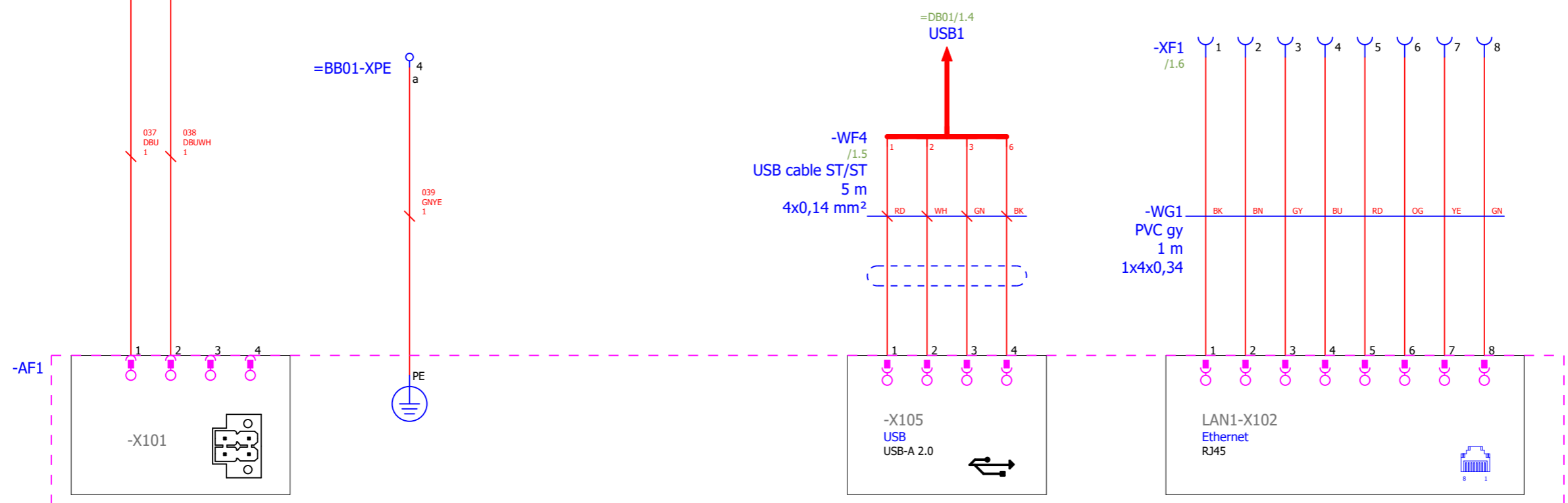


& EFS1 Electrical circuit diagram
Supply PLC

==		
= DA01	PLC	Seite 40
+ HS1	Main cabinett	of 53 Pg

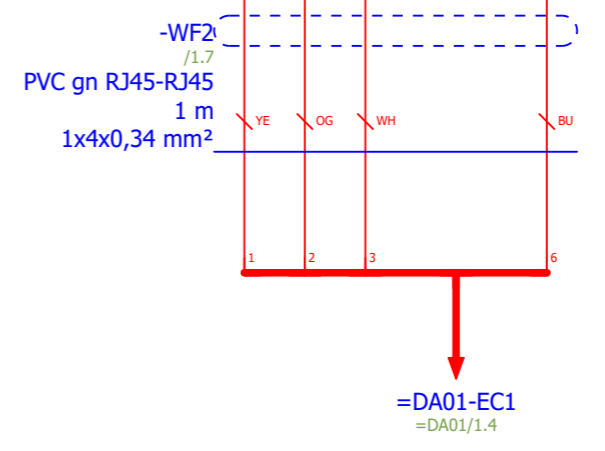
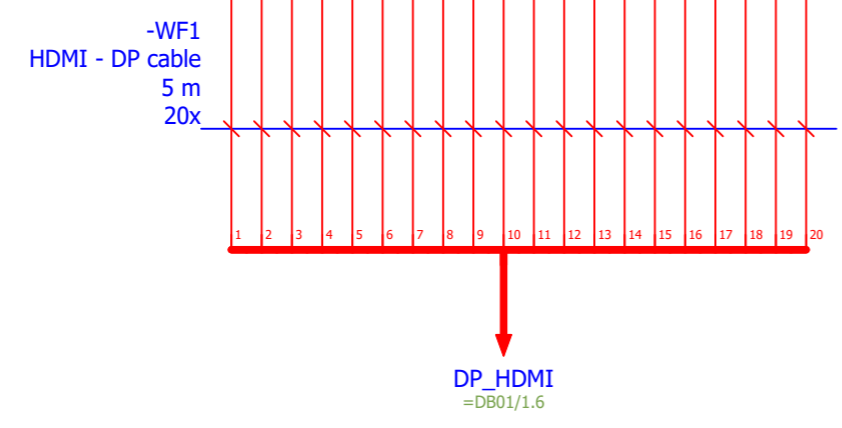
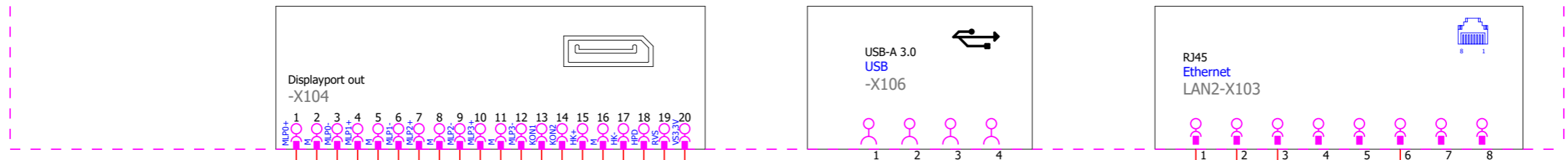


-XF1 = RJ45 Feedthrough



Beckhoff Automation
C6015-0010
BEC.C6015-0010

Economy control cabinet Industrial PC C6015-0010



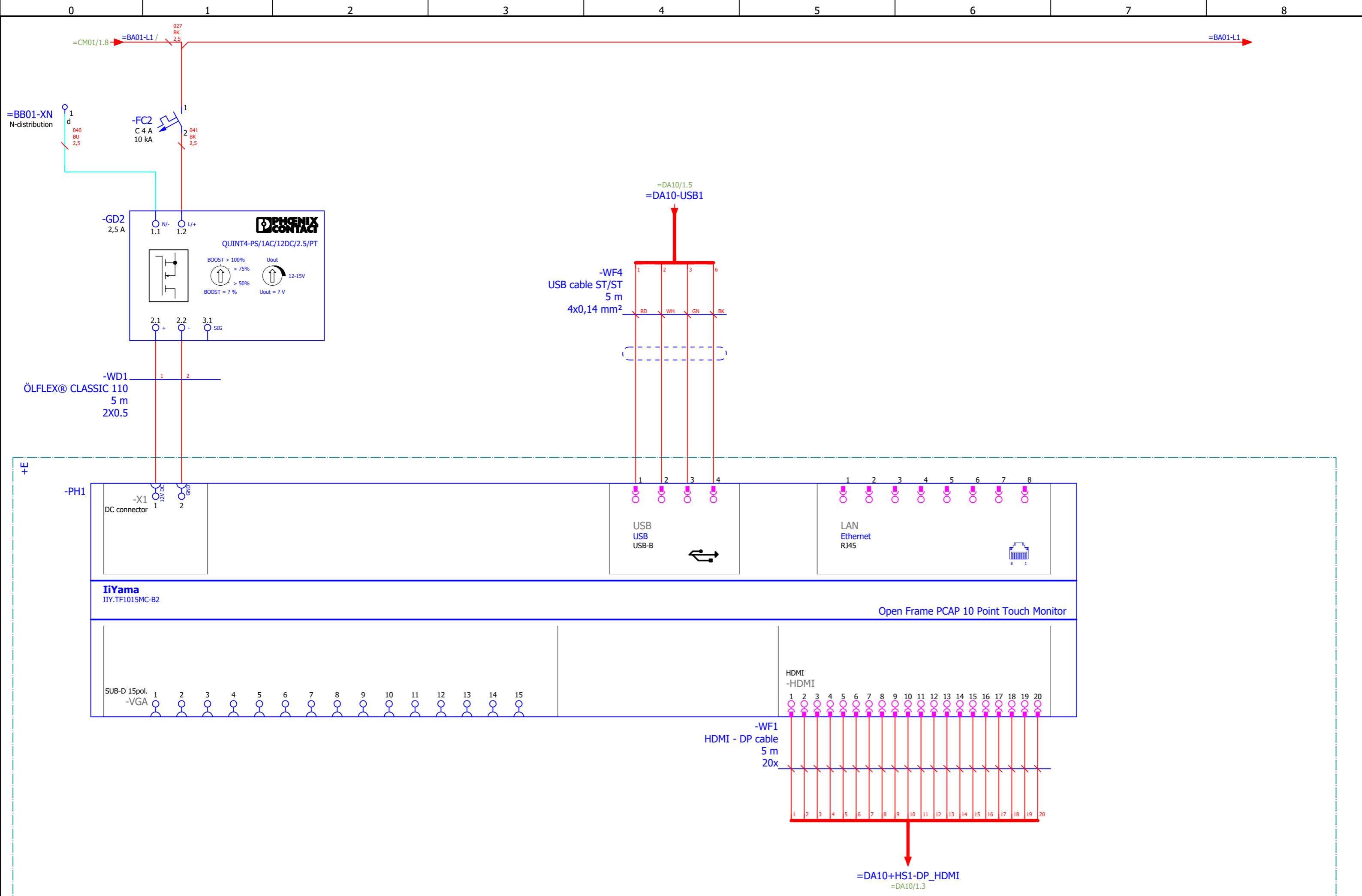
Date	07.07.2022
Ed.	KIE
Appr	
Original	

4-Unit HotPlate Table




& EFS1
IPC
Electrical circuit diagram

==			
= DA10	IPC Process	Seite	41
+ HS1	Main cabinett	of	53
		Pg	



=DA10/1
previous page

=DC01/1
following page

Modification		Date	Name	Original	4-Unit HotPlate Table		& EFS1 HMI	Electrical circuit diagram		== = DB01 Operation (and visualization) + HS1 Main cabinett	Seite	42
Date		Date	Name	Original				of	53			
Date		Date	Name	Original				Pg				

1.2 ← =CA01-0VDC1 / =CA01-XD60 → 1.0

Recipe ready signal
Q0.7
=DA01&EFA1/5.2
=DA01-KF7
O8

8

4
b

-WG1
UNITRONIC LiYY
2x0,5

WH

BN

-PJ1

x1

x2

Recipe ready signal

Date	07.07.2022
Ed.	KIE
Appr	
Modification	Date
Name	Original

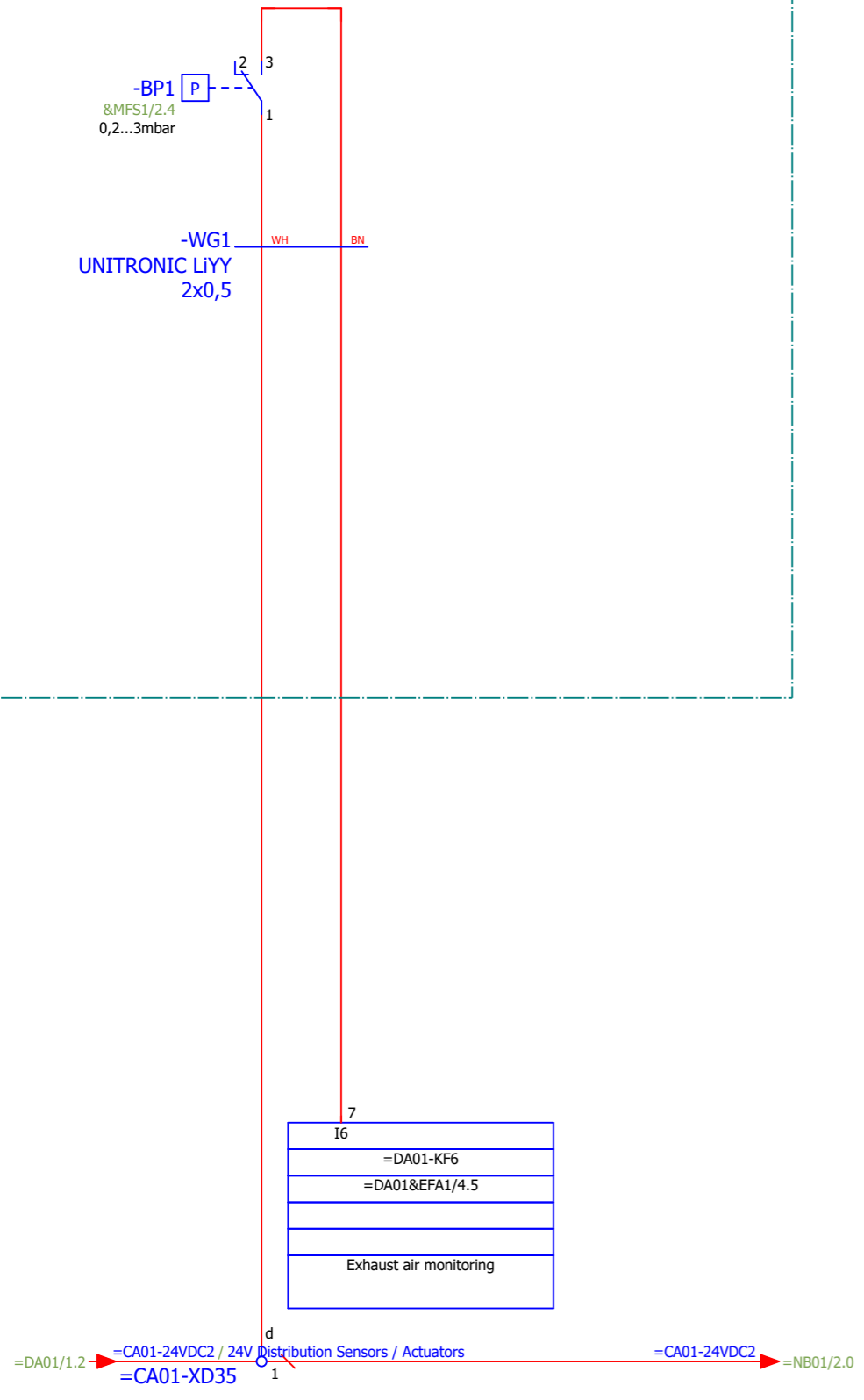
4-Unit HotPlate Table	
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& EFS1 Electrical circuit diagram
Acoustic signal

==		Seite	43
= DC01	Visualization / Signaling	of	53
+ HS1	Main cabinet	Pg	

+



Exhaust air monitoring

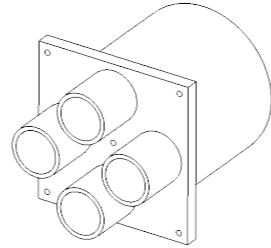
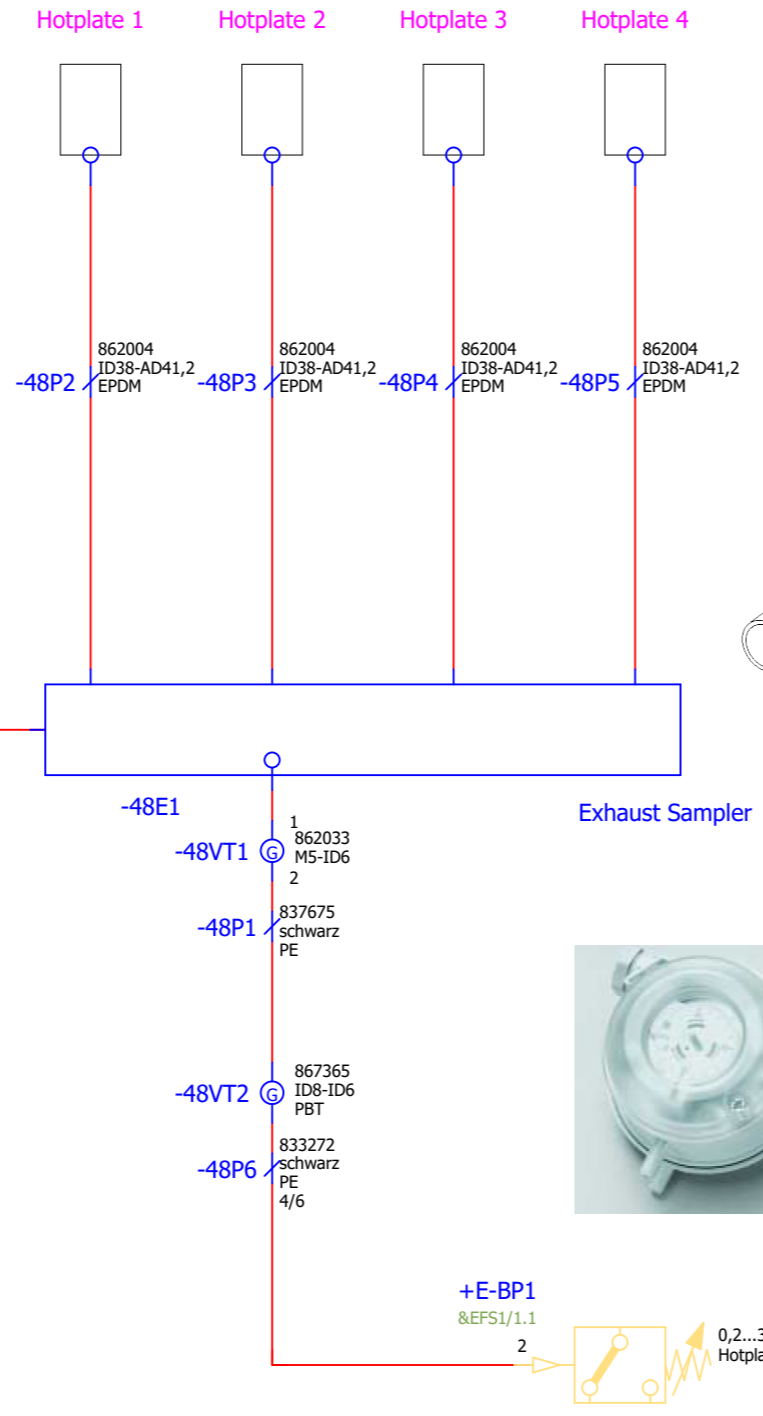
Date	07.07.2022
Ed.	KIE
Appr	
Modification	Date
Name	Original

4-Unit HotPlate Table



& EFS1 Electrical circuit diagram
Exhaust air monitoring

==		Seite	44
= FE01	Exhaust air monitoring	of	53
+ HS1	Main cabinet	Pg	



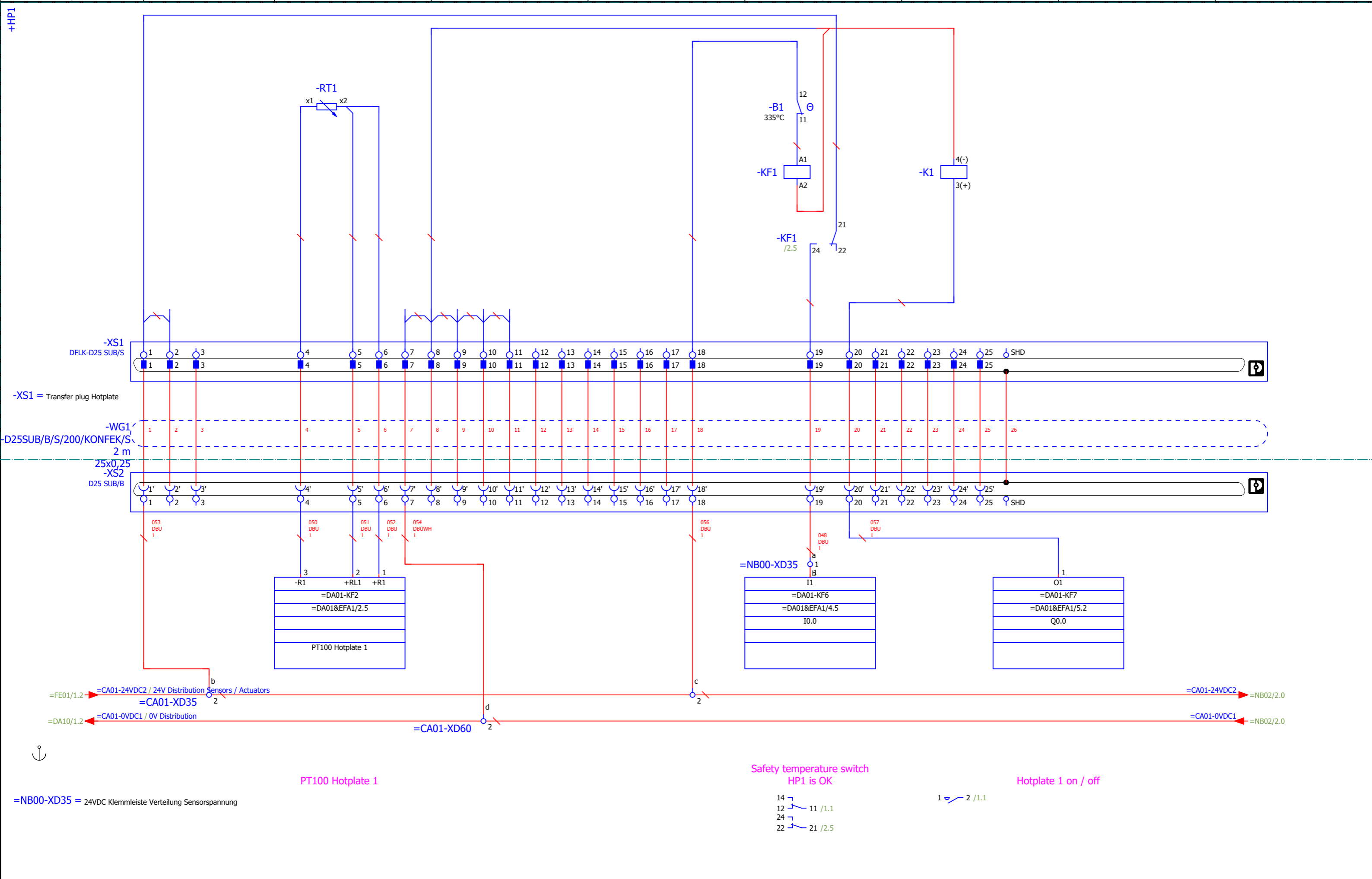
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Ed.	KIE
Appr	
Modification	Date
	Name
	Original

4-Unit HotPlate Table

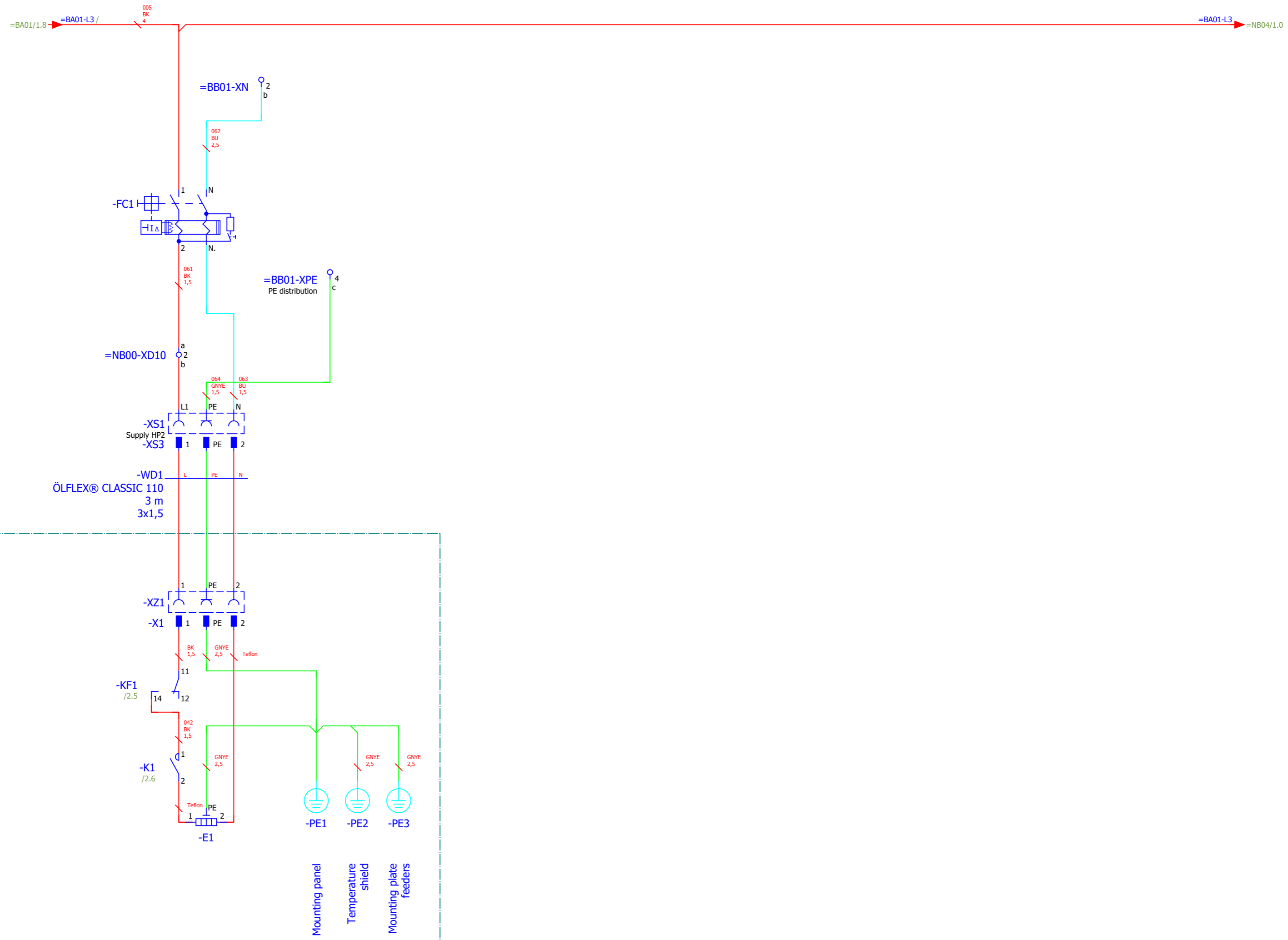


& MFS1
Exhaust air monitoring

==			
= FE01	Exhaust air monitoring	Seite	45
+ HS1	Main cabinett	of	53
		Pg	



Date	07.07.2022	4-Unit HotPlate Table		Electrical circuit diagram Hotplate 1 Wiring	==	= NB01 Tempering	+ HS1 Main cabinett	Seite	47
Ed.	KIE							of	53
Appr								Pg	
Modification	Date	Name	Original						



=NB01/2
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Date	21.07.2022
Ed.	KIE
Appr	
Modification	Date
	Name
	Original

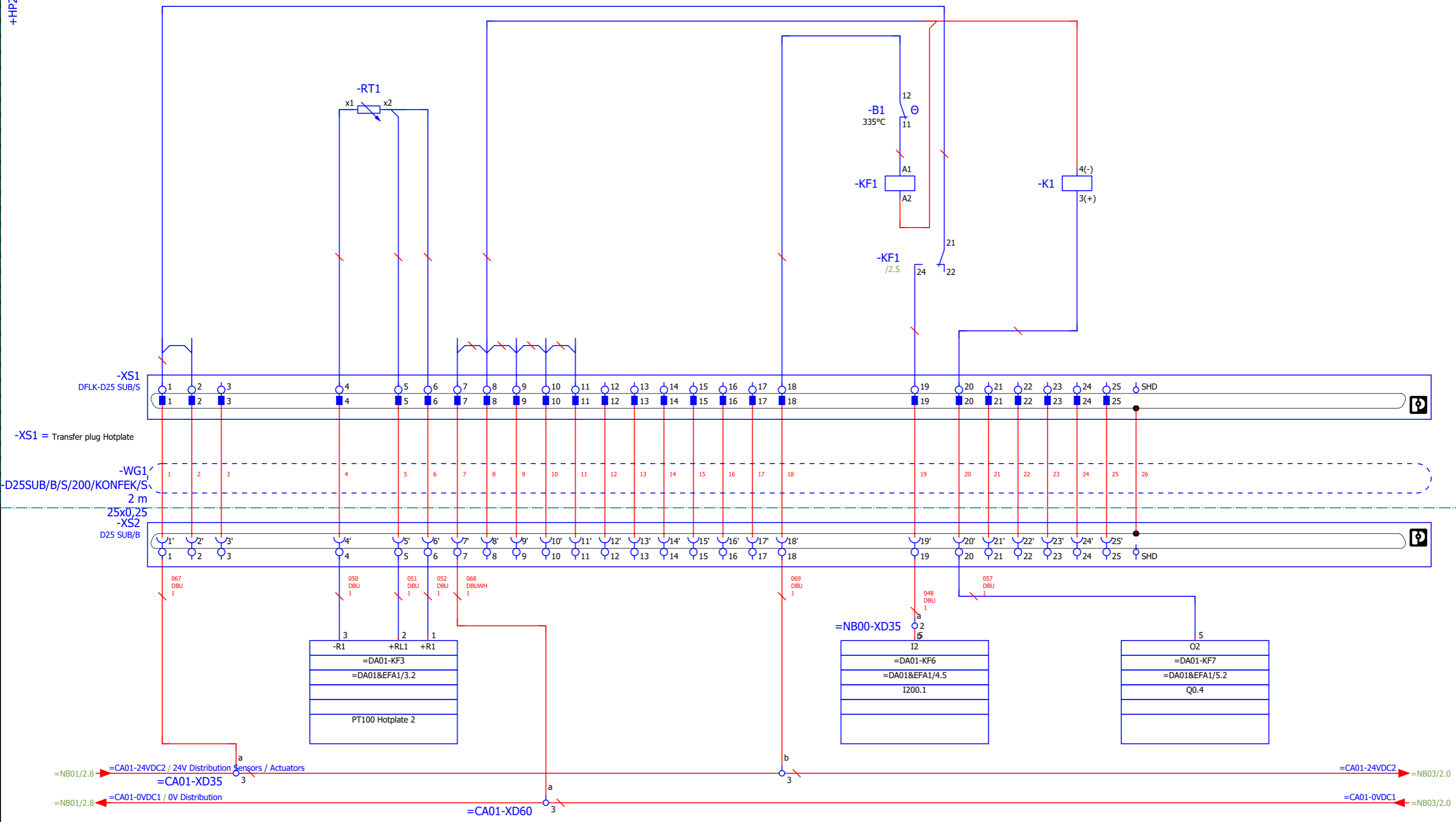
4-Unit HotPlate Table



& EFS1 Electrical circuit diagram
Hotblade 2 Supply

==			
= NB02	Tempering	Seite	48
+ HS1	Main cabinett	of	53
		Pg	

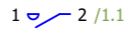
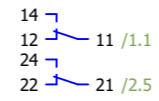
+HP2



PT100 Hotplate 2

Safety temperature switch
HP2 is OK

Hotplate 2 on / off



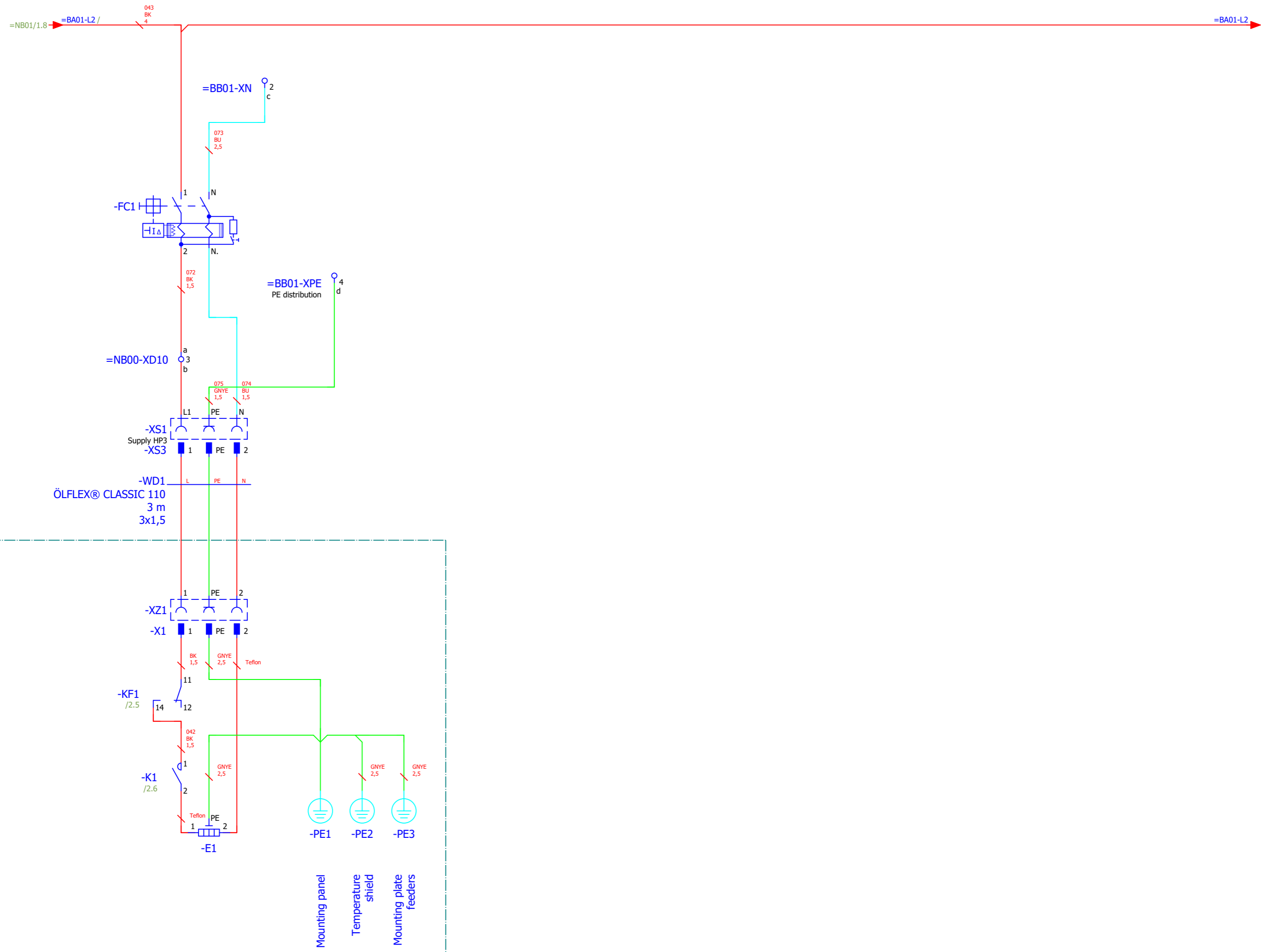
Date	21.07.2022
Ed.	KIE
Appr	
Modification	Date
	Name
	Original

4-Unit HotPlate Table



& EFS1 Electrical circuit diagram
Hotplate 2 Wiring

==			
= NB02	Tempering	Seite	49
+ HS1	Main cabinett	of Pg	53



=NB02/2
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Date	21.07.2022
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Original	

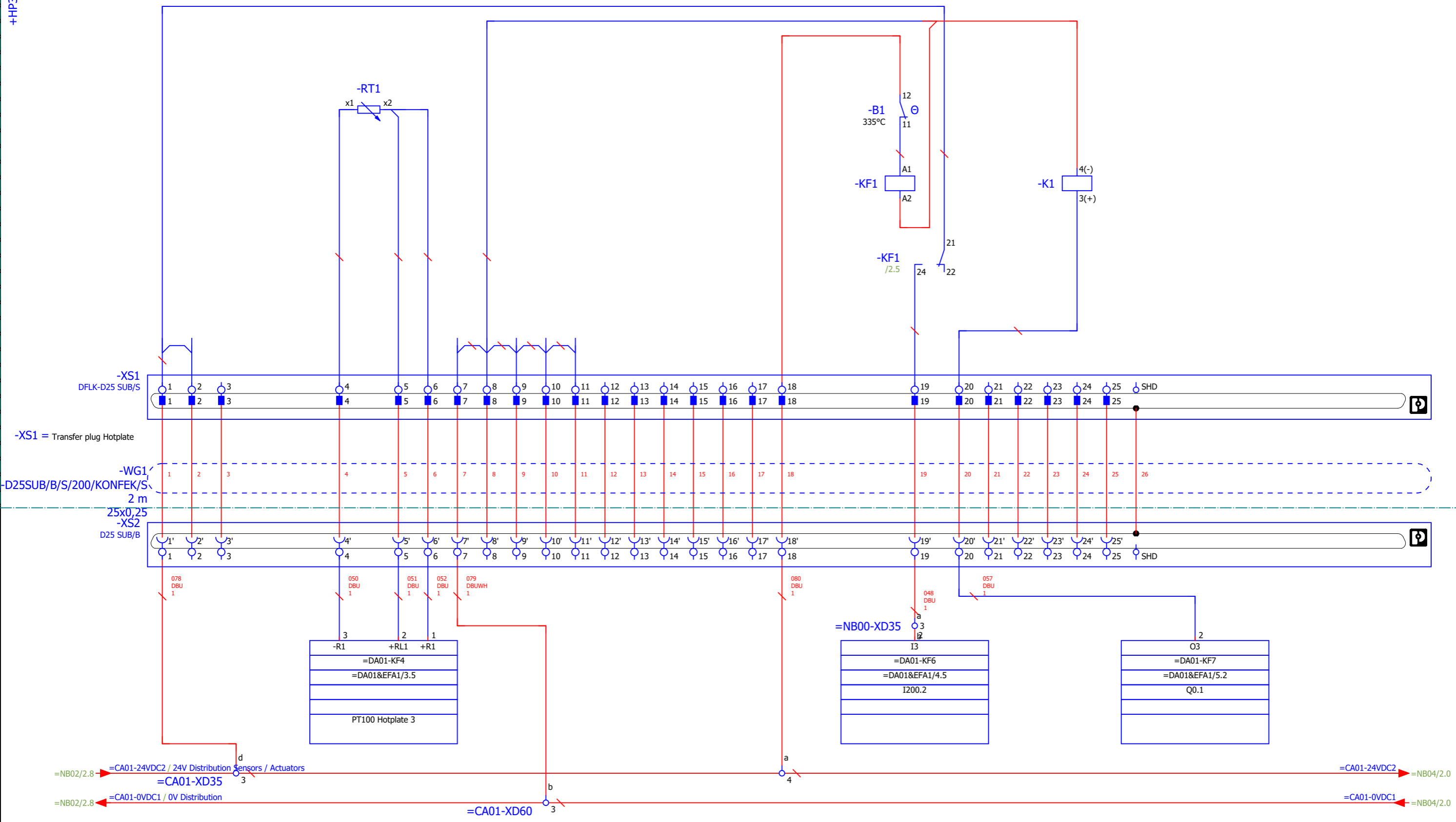
4-Unit HotPlate Table



& EFS1 Electrical circuit diagram
Hotplate 3 supply

==			
= NB03	Tempering	Seite	50
+ HS1	Main cabinett	of	53
		Pg	

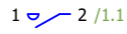
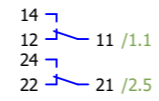
+HP3



PT100 Hotplate 3

Safety temperature switch
HP 3 is OK

Hotplate 3 on / off



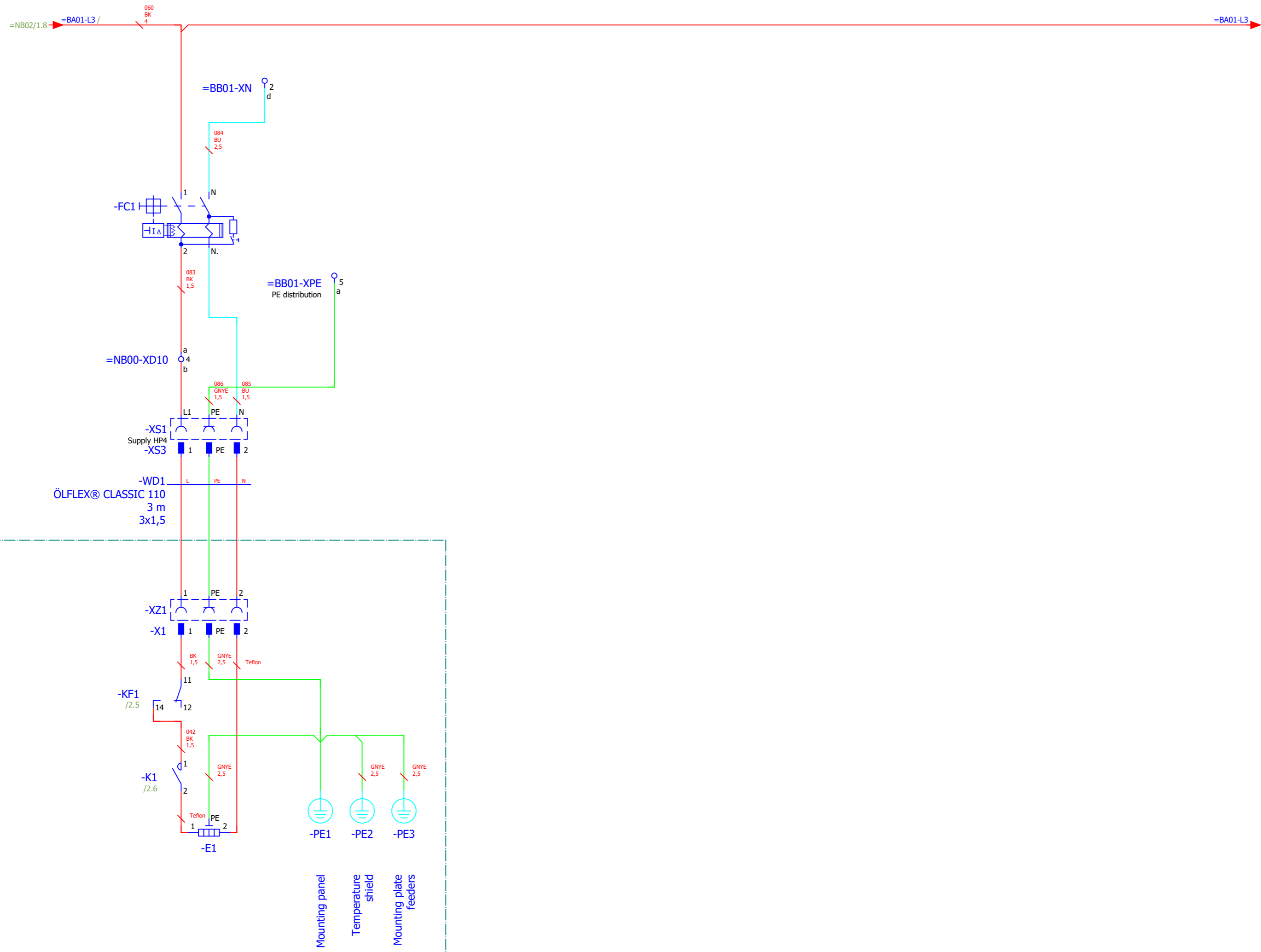
Date	21.07.2022
Ed.	KIE
Appr	
Original	

4-Unit HotPlate Table



& EFS1 Electrical circuit diagram
Hotplate 3 Wiring

==			
= NB03	Tempering	Seite	51
+ HS1	Main cabinett	of	53
		Pg	



=NB03/2
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Modification	Date
	Name
	Original

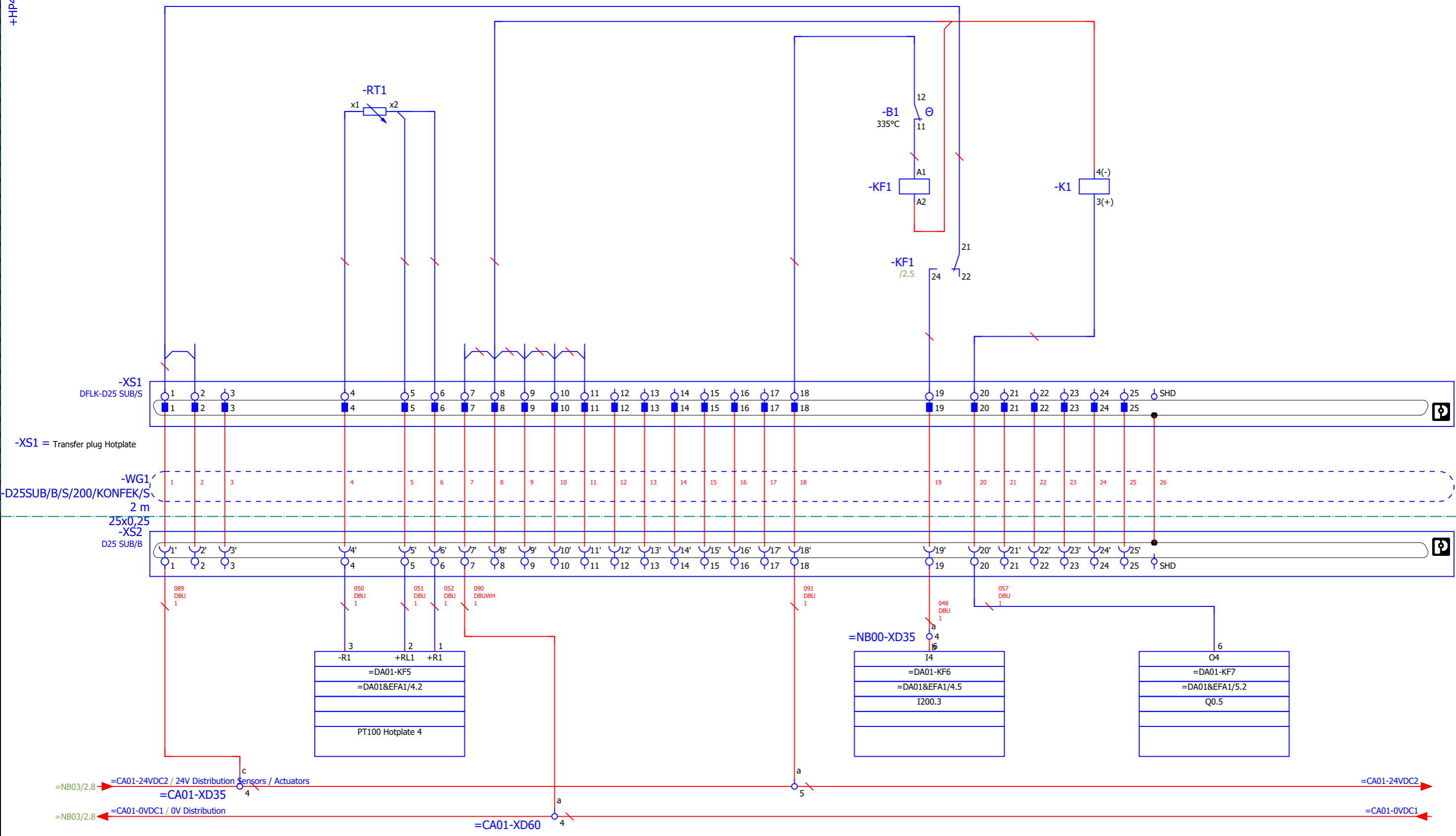
4-Unit HotPlate Table



& EFS1 Electrical circuit diagram
Hotplate 4 supply

==			
= NB04	Tempering	Seite	52
+ HS1	Main cabinett	of	53
		Pg	

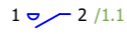
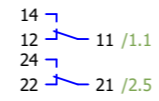
+HP4



PT100 Hotplate 4

Safety temperature switch
HP4 is OK

Hotplate 4 on / off



Date	21.07.2022
Ed.	KIE
Appr	
Original	

4-Unit HotPlate Table



& EFS1 Electrical circuit diagram
Hotplate 4 Wiring

==		
= NB04	Tempering	Seite 53
+ HS1	Main cabinett	of 53
		Pg

