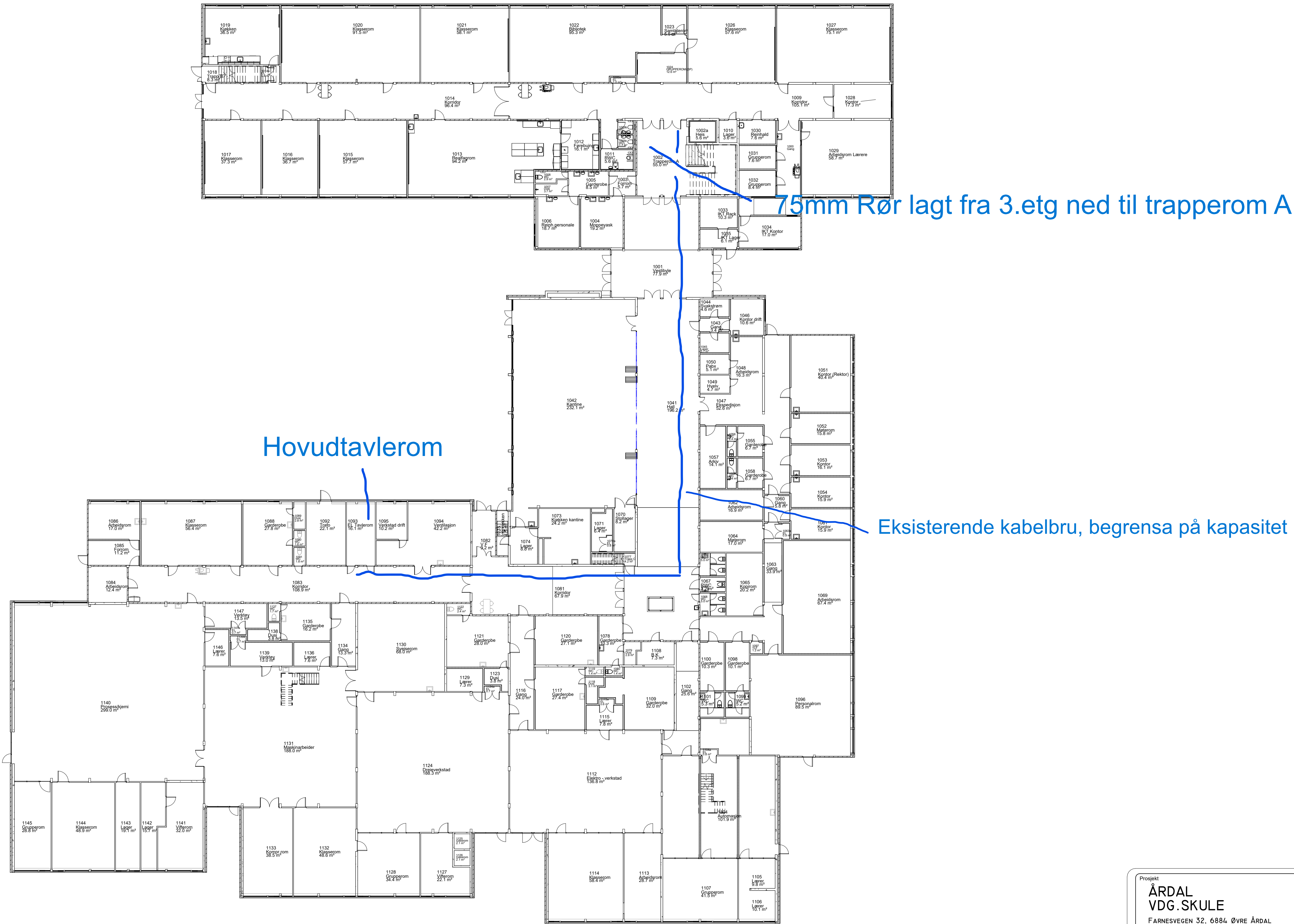


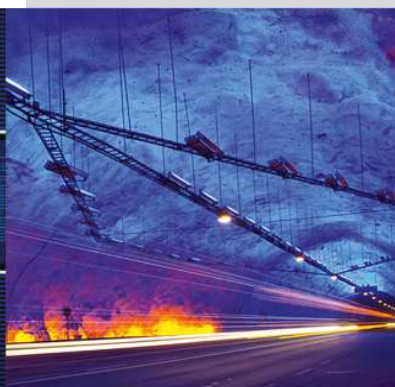
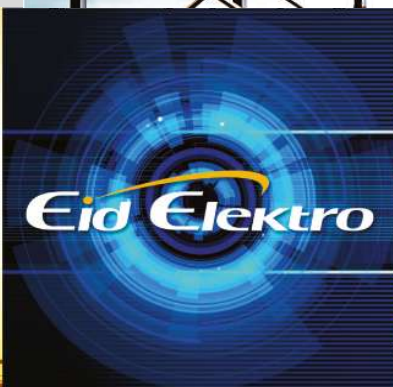
Årdal vgs, forslag til kabelføring for tilførsel til solcelleomformer.



Prosjekt ÅRDAL VDG.SKULE FARNESVEGEN 32, 6884 ØVRE ÅRDAL				
Tegn. HOVEDBYGG	Ark. I-200			
PLAN I.ETG.	Org.komm. AI			
Bygg.nr. 4301	Fag ARK	Løp.nr. 01	Tegn.nr. 01	Dat. 19.03.20
				Rev.

DOKUMENTASJON

Årdal VGS
HF



Tavle produsert for:

Caverion

Eid Elektro

Årdal VGS HF



Tavle produsert for:

Caverion



Eid Elektro Samsvarserklæring

Produsent:

Eid Elektro

ØYANE 12

6770 Nordfjordeid / 5224 Nesttun

Kunde, prosjekt og tavleinformasjon

Installatør / Kunde: Caverion

Prosjekt: Årdal VGS

Fordeling: HF

Eid Elektro AS erklærer at tavla oppfyller gjeldende krav i
Forskrift for elektrisk utstyr (FEU).

Teknisk dokumentasjon som viser at utstyret er i samsvar med FEU
kan skaffast ved førespurnad.

Følgende foreskrifter gjelder for tavla:

LDV - Lavspenningsdirektivet

FEU

FEL

Følgende normer ligg til grunn:

NEK439, sjå datablad for tilleggsnorm

NEK400: 2022

Eid Elektro AS

30.06.2025

Erleiv Kalvatseth

For Tore Hjelle,
Teknisk Leiar

Rev.dato	Navn på dokument, revisjon nr	Utført av
08.05.2023	Dokumentasjonsmal EE tavleproduksjon, R16	Tore Hjelle, QA

Eid Elektro AS
6770 Nordfjordeid



Eid Elektro

Datablad

FOR TAVLE IHT NEK400-8-810 OG NEK 439

Prosjekt:	Årdal VGS	Kunde	Caverion
Fordeling:	HF	Ordrenummer	107478
Lev.Dato	30.06.2025	Prosjektleder	Erlend Kalvatsvik
		Tavlebyggjar:	Torstein Engeland

Konstruksjonsnorm	NEK 439-2 (sakkyndig)	X	NEK 439-3 (usakkyndig)		NEK EN 60204-1	
Tavletype, kapsling:		Tabula		Seperasjon/form		Form 2B
Ytre Kapslingsgrad:		IP54		Berøringsbeskyttelse		IP20
Dimensjon, HxBxD mm		1995x5670x680mm		Merkestrøm In		2x1250A
Merkespenning Un		230V		Nettsystem		IT
Merkedriftspenning Ue			Hovedkrets	230V	Hjelpekrets	24VDC
Isolasjonsmerkespenning Ui			Hovedkrets	253V	Hjelpekrets	28VDC
Merkestøtspenningsholdfasthet Uimp			230V	4kV	400V	6kV
Merkesamtidighetsfaktor RDF			0,8			

Hovedkortslutningsvern montert i tavla:		NZMH4-PX 1250A TAZ			
Maks forventa kortslutningsstrøm Ikmax:		44kA			
Følgande ruter under fyllast ut av den som stiller inn hovedvern		Eid Elektro AS		Kunde	X
Merkestrøm In		Innstilling kortslutningsvern uforsinka li			
Innst. Overbelast.vern Ir		Innstilling kortslutningsvern forsinka lsd			
Forsinka overbelast.vern tr		Innstilling forsinkelse kortslutningsvern tsd			
Bryteevne Ics / Icu		Gjennomsluppet energi I²t			
Øvrige vern innstilt av:		Eid Elektro AS		Kunde	X

Ansvaret for programmering/oppsett av styringskomponentar	Andre, oppgje firmanavn		
	Ikkje aktuelt	X	Eid Elektro

Merkestøtstraum Ipk	121kA	Merkekortslnutningsstraum Icc	50kA
Merkekorttidsstraum Icw	55kA	Bruk av backup tabell for å oppnå Icc	ja

Eventuelle andre egenskapar iht NEK 439-1 kap. 5.5	
Eventuelle avvik frå standard	

Eventuell tilleggsinfo	Maks backupverdi mot 2p jordfeilautomat er 40kA, 3p jordfeilaut 50kA.
------------------------	---

Erlend Kalvatsvik

For Tore Hjellev,

Rev.dato	Navn på dokument, revisjon nr	Utført av
08.05.2023	Dokumentasjonsmal EE tavleproduksjon, R16	Tore Hjellev, QA

Eid Elektro AS
6770 Nordfjordeid



Innholdsfortegnelse Hovedfordeling

Forside	
Innholdsfortegnelse.....	I1
04.09.2025 10:53:54	
Kursliste hovedstrøm.....	K1
30.06.2025 19:33:14	
Kursliste småkurser.....	K2
04.09.2025 10:53:52	
Kursliste vendere.....	K4
04.09.2025 10:53:52	
Fargekoder.....	F1
09.06.2025 12:10:28	
Layout.....	
Layout.....	L1
30.06.2025 19:43:28	
Skjema.....	
Inntak KWH-Måling trafo 1.....	1
30.06.2025 19:42:48	
Arms funksjon trafo 1.....	2
30.06.2025 19:41:52	
Inntak KWH-Måling trafo 2.....	3
30.06.2025 19:41:52	
ARMS funksjon trafo 2.....	4
30.06.2025 19:41:52	
Effektbryter avganger.....	5
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Effektbryter avganger.....	6
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Effektbryter avganger.....	7
30.06.2025 19:41:52	
Effektbryter avganger.....	8
30.06.2025 19:41:52	
Jordfeilskanner.....	9
30.06.2025 19:41:52	
Jordfeilskanner.....	10
30.06.2025 19:41:52	

Innholdsfortegnelse Hovedfordeling

Småkurser felt 11.....	11
30.06.2025 19:41:52	
Småkurser felt 11.....	12
30.06.2025 19:41:52	
Småkurser felt 11.....	13
30.06.2025 19:41:52	
Småkurser felt 11.....	14
04.09.2025 10:36:18	
Småkurser felt 11.....	15
30.06.2025 19:41:52	
Småkurser felt 11.....	16
04.09.2025 10:38:56	
Småkurser felt 11.....	17
04.09.2025 10:39:06	
Utelysstyring.....	18
04.09.2025 10:53:32	
Varmestyring.....	19
30.06.2025 19:41:52	
Varmestyring.....	20
30.06.2025 19:41:52	
Komponentliste.....	
Komponentliste.....	21
30.06.2025 19:37:16	
Parts list.....	28
04.09.2025 10:53:52	

Kursliste hovedstrøm Hovedfordeling																					
Navn		Type			Går til																
+2.XQ74		EE NZMN1-A100			Til fordeling IV/VVS/3																
+2.XQ75		EE NZMN1-A100			Til fordeling III/VVS/4																
+2.XQ76		EE NZMN1-A80			Til fordeling III/VVS/5																
+2.XQ77		EE NZMN1-A100			Til fordeling IV/VVS/6																
+2.XQ78		EE NZMH3-VX400			Til fordeling I/TVSS																
+2.XQ80		EE NZMN1-A100			Til fordeling I/THE																
+2.XQ81		EE NZMH3-VX400			Til fordeling V/1A																
+4.XQ70		EE NZMH2-PX250			Til fordeling IV/J																
+4.XQ71		EE NZMH3-VX630			Til fordeling IV/J																
+4.XQ72		EE NZMH3-VX630			Til fordeling IV/VVS/1																
+4.XQ73		EE NZMH2-PX160			Til fordeling IV/VVS/2																
+4.XQ79		EE NZMH2-PX160			Til fordeling vasstank																
+5.XF1		EE CH223DU 22x58 125A gG			Kortslutningsvern for overspenningsvern																
+5.XF1.2		EE FAZ-C4/3			Instrumentsikring																
+5.XF1.3		EE FAZ-C4/2			Instrumentsikring ARMS Funksjon hovedbryter																
+5.XQ1		EE NZM4-XBSM-TAZ-N			ARMS-Module																
+5.XS1		EE M22-T-D			Maintenance ARC Switch																
+6.XF2.2		EE FAZ-C4/3			Instrumentsikring																
+6.XF2.3		EE FAZ-C4/2			Instrumentsikring ARMS Funksjon hovedbryter																
+6.XQ2		EE NZM4-XBSM-TAZ-N			ARMS-Module																
+6.XS2		EE M22-T-D			Maintenance ARC Switch																
+7.XQ61		EE NZMH2-PX160			Til fordeling I/1A																
+7.XQ62		EE NZMH3-VX400			Til fordeling I/1B																
+7.XQ65		EE NZMH3-VX400			Til fordeling II/C																
+7.XQ66		EE NZMH2-PX250			Til fordeling II/D1																
+7.XQ68		EE NZMH3-VX630			Til fordeling III/F																
+7.XQ69		EE NZMH3-VX630			Til fordeling IV/G																
+9.XQ63		EE NZMH3-VX400			Til fordeling I/2A																
+9.XQ64		EE NZMH3-VX400			Til fordeling I/2B																
+9.XQ67		EE NZMH2-PX250			Til fordeling III/E																
+9.XQ200		EE NZMH2-PX250			Gruppesikring Småkurser																
Elektroentreprenør Caverion Caverion					Tavleprodusent Eid Elektro Øyane 12 6770 Nordfjordeid Tlf 57 86 47 60 post@eidelektro.no					Ordrenummer 107478 Ansvarlig EK			Sideinformasjon Kursliste hovedstrøm			Prosjektinformasjon Ardal VGS			Identifikasjon Hovedfordeling Rev. r2Dato 30.06.2025Side K1 av 28		

Kursliste småkurser Hovedfordeling							
Navn	Type	Går til					
+11.XF1	EE PKPM2-10/2/C/003-A	Lys korridor					
+11.XF2	EE PKPM2-10/2/C/003-A	Lys korridor					
+11.XF5	EE PKPM2-16/2/C/003-A	Lys+ stikk hovedlærer 209 forrom 210+ lys helsesøster/lege 211					
+11.XF6	EE PKPM2-10/2/C/003-A	Lys + stikk gr.rom 212					
+11.XF7	EE PKPM2-10/2/C/003-A	Lys + stikk gr.rom 223					
+11.XF8	EE PKPM2-10/2/C/003-A	Lys + stikk gr.rom 213+ Lys dusj 214 toalett 215+216					
+11.XF9	EE PKPM2-10/2/C/003-A	Lys vifterom					
+11.XF10	EE PKPM2-16/2/C/003-A	Lys + stikk vaktm. verksted 219 + lys hovedtavler 218 v.f.221-222					
+11.XF11	EE PKPM2-10/2/C/003-A	Lys utvendig akse N-0/34					
+11.XF22	EE PKPM2-16/2/C/003-A	Stikk helsesøster-lege 211 + hovedlærer 209					
+11.XF23	EE PKPM2-16/2/C/003-A	Stikk korr akse 26-29/D=K					
+11.XF24	EE PKPM2-16/2/C/003-A	Stikk korr akse 26-29/K=N					
+11.XF25	EE PKPM3-25/3/C/003-A	Stikk 3/25+j vaktm.verksted 219					
+11.XF26	EE PKPM2-16/2/C/003-A	Vifterom stikkontakt					
+11.XF27	EE PKPM3-25/3/C/003-A	Stikk 3/25+j vifterom					
+11.XF31	EE PKPM2-10/2/C/003-A	Varme hovedlærer 209 og helsesøster-lege 211					
+11.XF32	EE PKPM2-20/2/C/003-A-OL	Ledig					
+11.XF33	EE PKPM2-16/2/C/003-A	Varme grupperom 212					
+11.XF34	EE PKPM2-16/2/C/003-A	Varme grupperom 223					
+11.XF35	EE PKPM2-16/2/C/003-A	Varme grupperom 213					
+11.XF36	EE PKPM2-10/2/C/003-A	Varme korridor akse 26-29/D-N					
+11.XF37	EE PKPM2-10/2/C/003-A	Varme korridor akse 26-29/D-N					
+11.XF38	EE PKPM2-10/2/C/003-A	Varme korridor akse 26-29/D-N					
+11.XF39	EE PKPM2-10/2/C/003-A	Varme hovedtavlerom					
+11.XF40	EE PKPM2-10/2/C/003-A	Varme vaktm verksted 219					
+11.XF41	EE PKPM2-16/2/C/003-A	Varme vindfang 221					
+11.XF42	EE PKPM2-10/2/C/003-A	Varmekabel i dusj 214					
+11.XF52	EE PKPM3-32/3/C/003-A	til 7 master 8A					
+11.XF53	EE PKPM3-25/3/C/003-A	til 12 " 13A					
+11.XF54	EE PKPM3-25/3/C/003-A	til 5" 6A					
+11.XF102	EE PKPM2-16/2/C/003-A	Stikk i kanal 223/212 Øst					
Elektroentreprenør Caverion			Tavleprodusent 		Øyane 12 6770 Nordfjordeid Tlf 57 86 47 60 post@eidelektro.no		
			Ordrenummer 107478		Sideinformasjon Kursliste småkurser		
			Ansvarlig EK				
					Prosjektinformasjon Årdal VGS		
					Identifikasjon Hovedfordeling		
					Rev. r2	Dato 04.09.2025	Side K2 av 28

Kursliste hovedstrøm Hovedfordeling									
Navn		Type		Går til					
+11.XF103		EE PKPM2-16/2/C/003-A		Stikk i kanal 223/212 Vest					
+11.XF104		EE PKPM2-10/2/C/003-A		Styrestrøm utelys					
+11.XF105		EE PKPM2-10/2/C/003-A		Styrestrøm varme					
+11.XF106		EE PKPM2-16/2/C/003-A		Styrestraum Digidim og M-bus 900 strømmåling					
+11.XF107		EE PKPM2-16/2/C/003-A		Res					
+11.XF108		EE PKPM2-16/2/C/003-A		Res					
+11.XF109		EE PKPM2-16/2/C/003-A		Res					
+11.XF110		EE PKPM3-16/3/C/003-A		Varme 209 og 211					

Kursliste vendere Hovedfordeling									
Navn	Type	Går til							
+11.XS31	ABB E211-16-20	Bryter av/på Varme hovedlærer 209 og helsesøster-lege 211							
+11.XS32	ABB E211-16-20	Bryter av/på Varme hovedlærer 209 og helsesøster-lege 211							
+11.XS33	ABB E211-16-20	Bryter av/på Varme grupperom 212							
+11.XS34	ABB E211-16-20	Bryter av/på Varme grupperom 223							
+11.XS35	ABB E211-16-20	Bryter av/på Varme grupperom 213							
+11.XS36	ABB E211-16-20	Bryter av/på Varme korridor akse 26-29/D-N							
+11.XS37	ABB E211-16-20	Bryter av/på Varme korridor akse 26-29/D-N							
+11.XS38	ABB E211-16-20	Bryter av/på Varme korridor akse 26-29/D-N							
+11.XS39	ABB E211-16-20	Bryter av/på Varme hovedtavlerom							
+11.XS40	ABB E211-16-20	Bryter av/på Varme vaktm verksted 219							
+11.XS41	ABB E211-16-20	Bryter av/på Varme vindfang 221							
+11.XS200	EE M22-WRK3/K20	Vender man/0/auto for kurs 11-52-53-54							
+11.XS201	EE M22-WRK3/K20	Vender man/0/auto 4J og 4K							
+11.XS202	EE M22-WRK3/K20	Vender man/0/auto for UF 4G							
+11.XS203	EE M22-WRK3/K20	Vender man/0/auto for UF 3F							
+11.XS204	EE M22-WRK3/K20	Vender man/0/auto For UF 3E							
+11.XS205	EE M22-WRK3/K20	Vender man/0/auto UF 201-2C-1/1B-1/1A							
		</							

Fargemerking i henhold til NEK EN 60204-1
(Maskindirektivet)

Hovedstrøm TN/TT/IT 230-690V 25-240mm ²	
L1,L2,L3	Svart
Nøytral	Lysblå

Hovedstrøm TN/TT/IT 230-690V 1,5-16mm ²	
L1	Svart
L2	Brun
L3	Grå
Nøytral	Lysblå

230VAC Styrestrøm	
Fase (ved IT og TT er begge rød)	Rød
Nøytral	Lysblå
Mellom komponenta i styrestrøm	Grå
Fremmedspenning / eksternt komp	Oransj

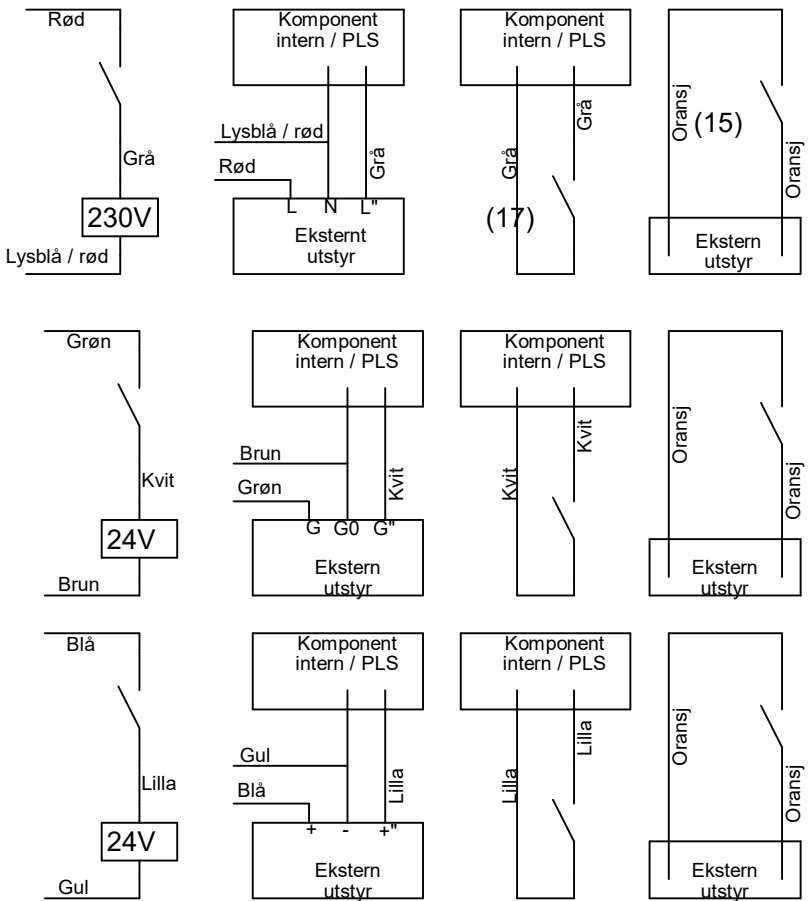
12,24VAC Styrestrøm	
G	Grøn
G0	Brun
Mellom komponenta i styrestrøm	Kvit/Hvit
Fremmedspenning / eksternt komp	Oransj

12,24,48VDC Styrestrøm	
+ (pluss)	Blå
- (minus)	Gul
Mellom komponenta i styrestrøm	Lilla
Fremmedspenning / eksternt komp	Oransj

Jord / PE	Gul/Grøn
-----------	----------

Fargekoder tillegg internt, Eid Elektro AS

I tavler med både 24V DC og andre DC spenninger	
12/48VDC styrestrøm er	
+ (pluss)	Brun
- (Minus)	Kvit / Hvit

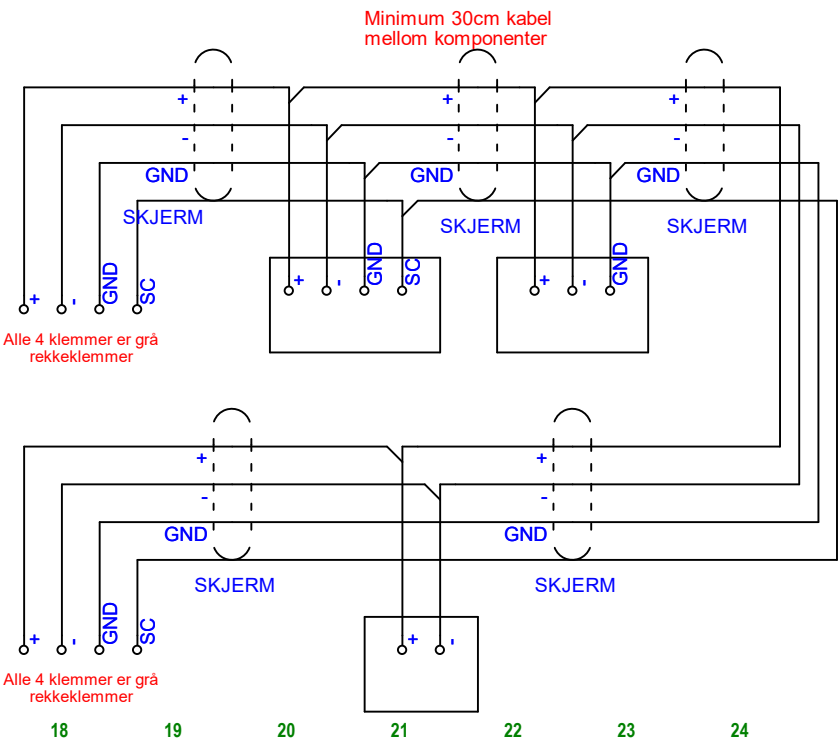


Dali BUS
RQ90 0,75mm ²
Rød + Svart -

KNX
LAPP EIB/KNX 2x2x0,8 El.nr 1010659
KNX bus: Rød, svart
KNX power: Hvit, Gul

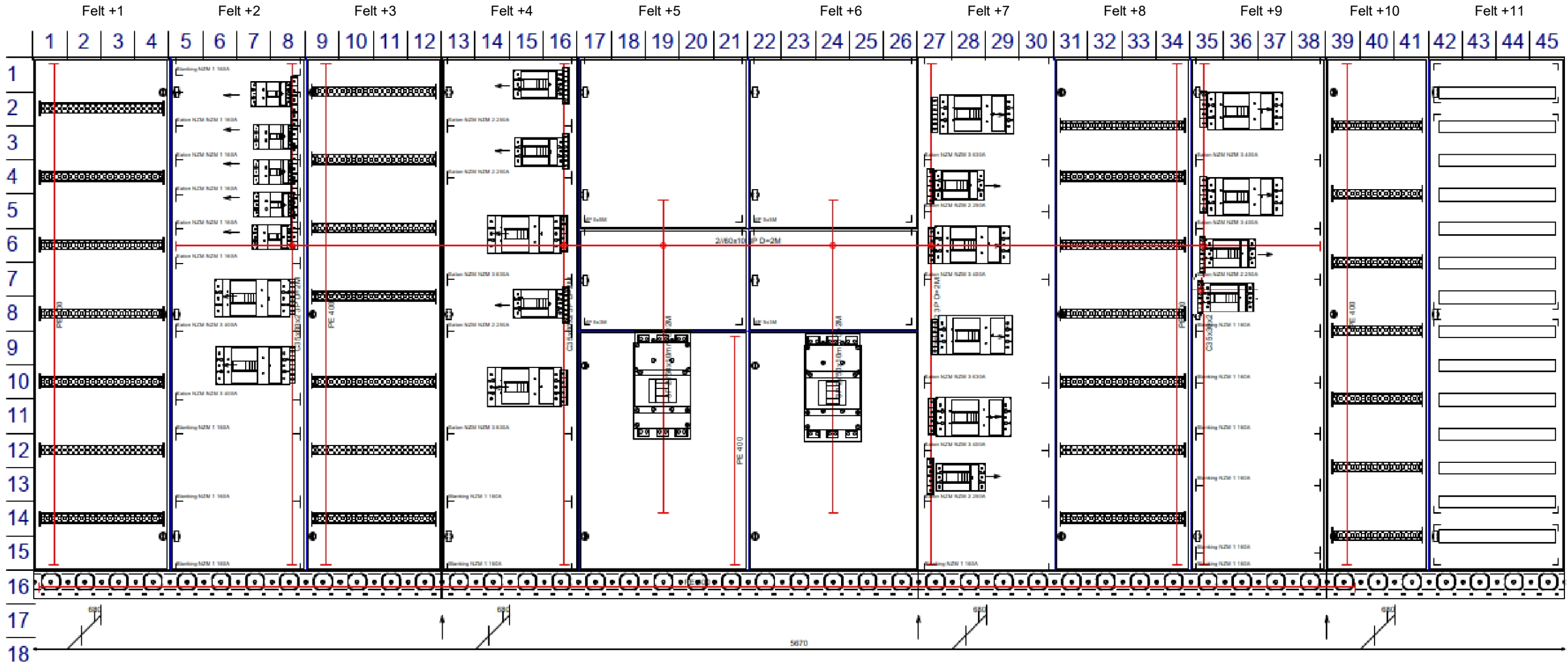
Sumtrafo jordfeilvarsling
LIYCY 2x0,75 El.nr 1001643
Brun: S1 Kvit: S2
Skjerm til klemme ved sentral, klippast ved sumtrafo

RS485 Modbus
UNITRONIC® LD 2X2X0,22 El.nr 1053086
Brun: + Kvit - Gul: GND , Skjerm: SC
Skøyteklemme wago rett for skjerm/Gnd: 1221911



Layout

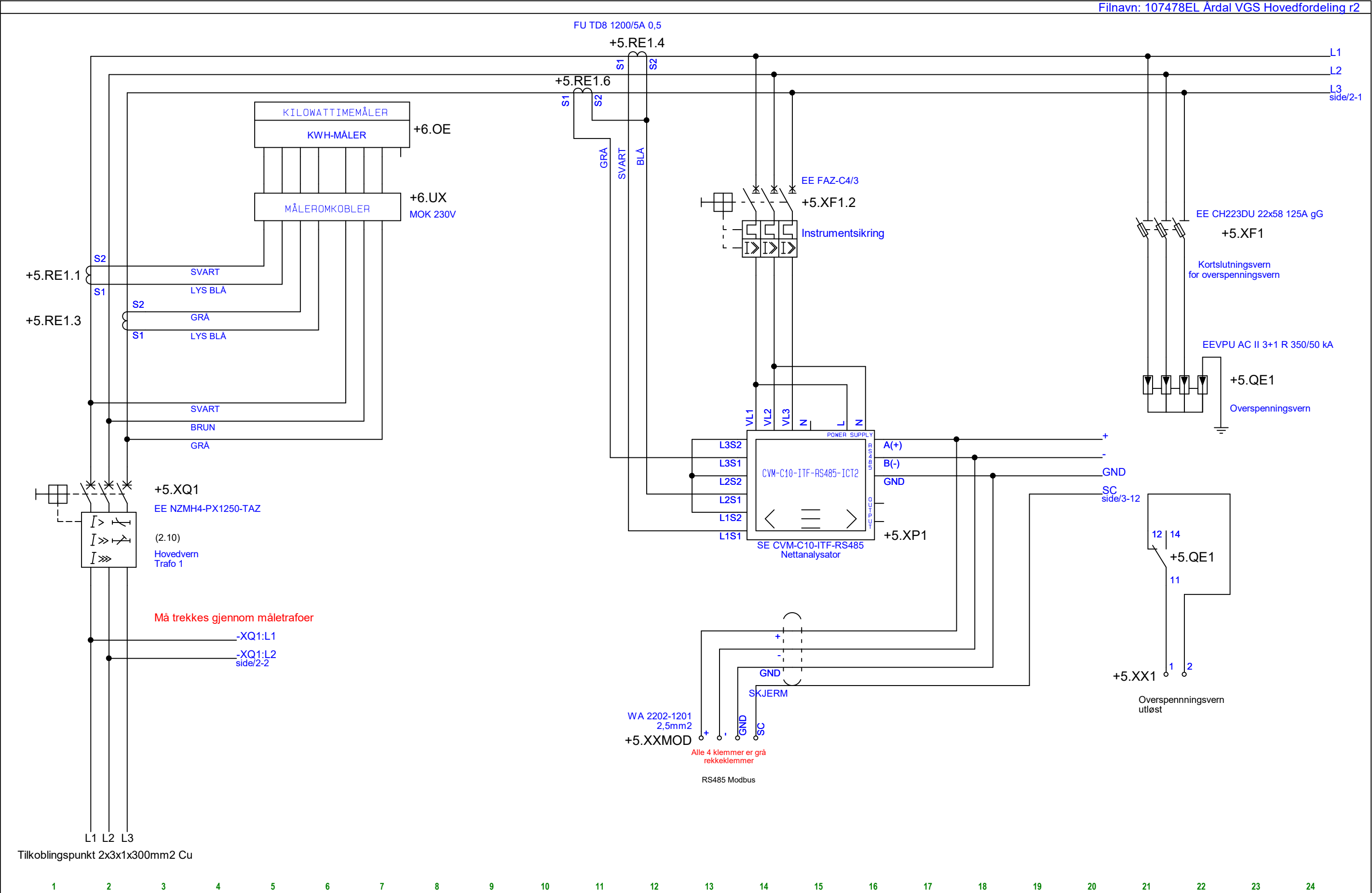
Årdal VGS

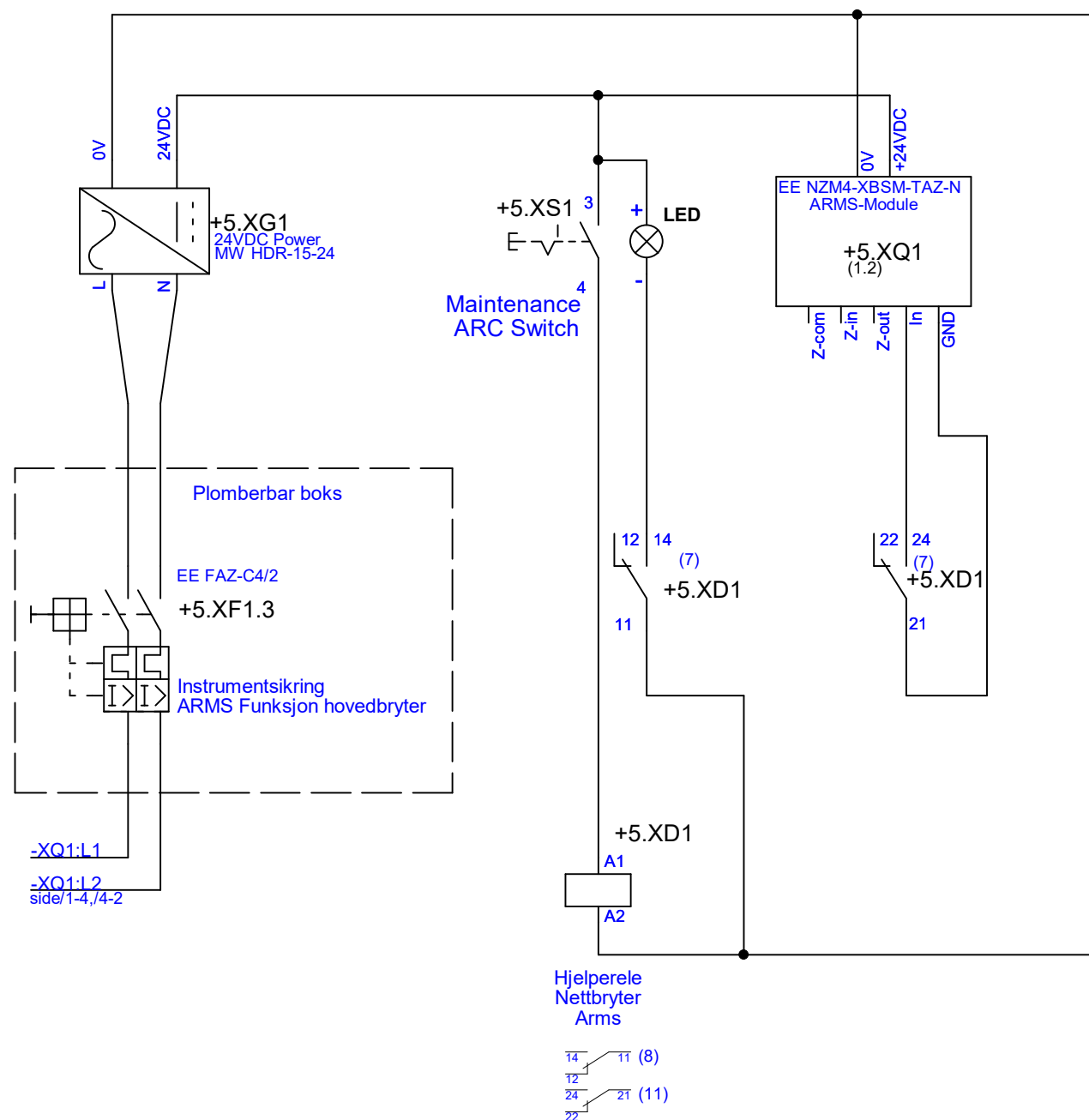


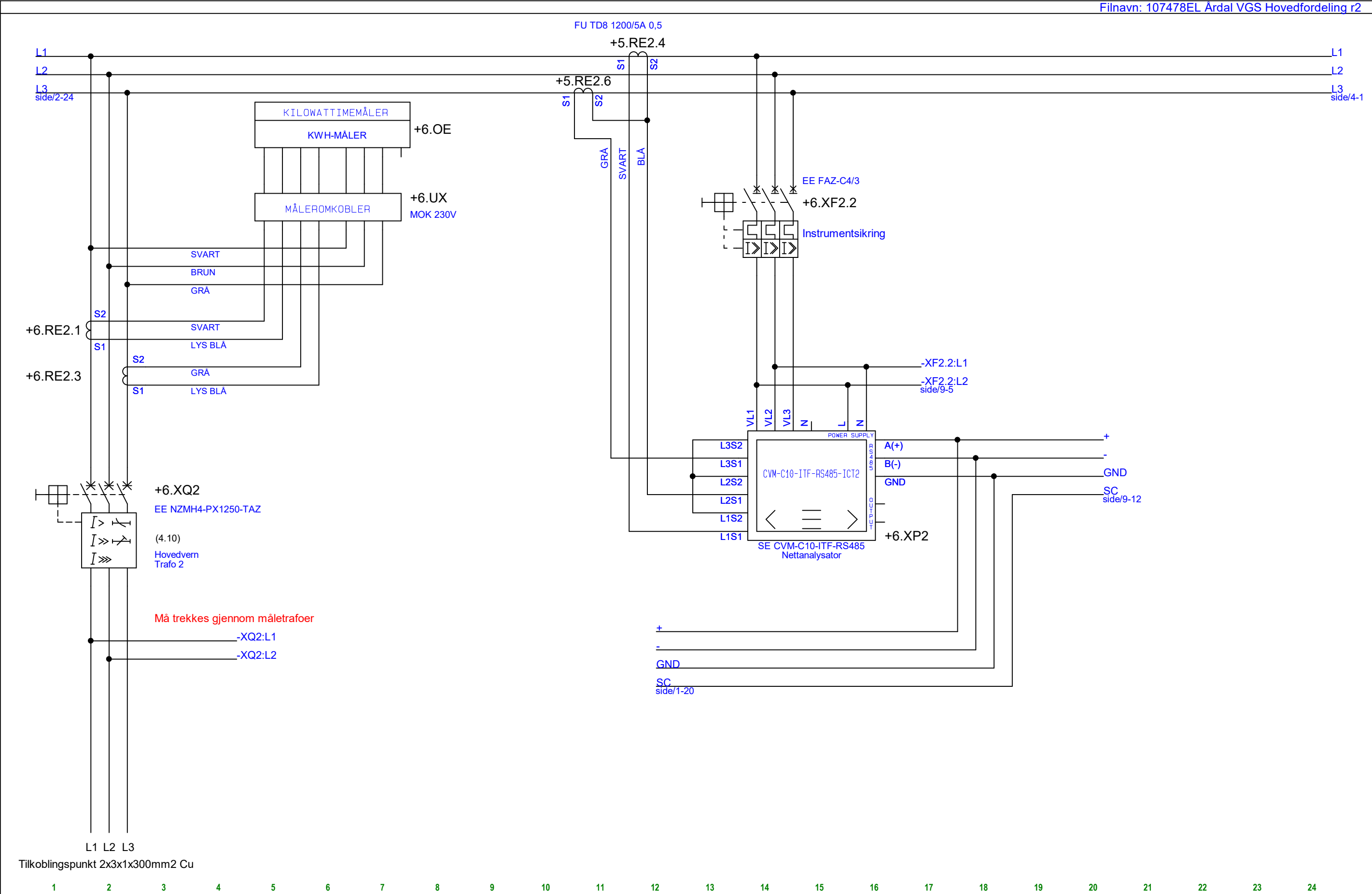
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24

Skjema

Årdal VGS







L1

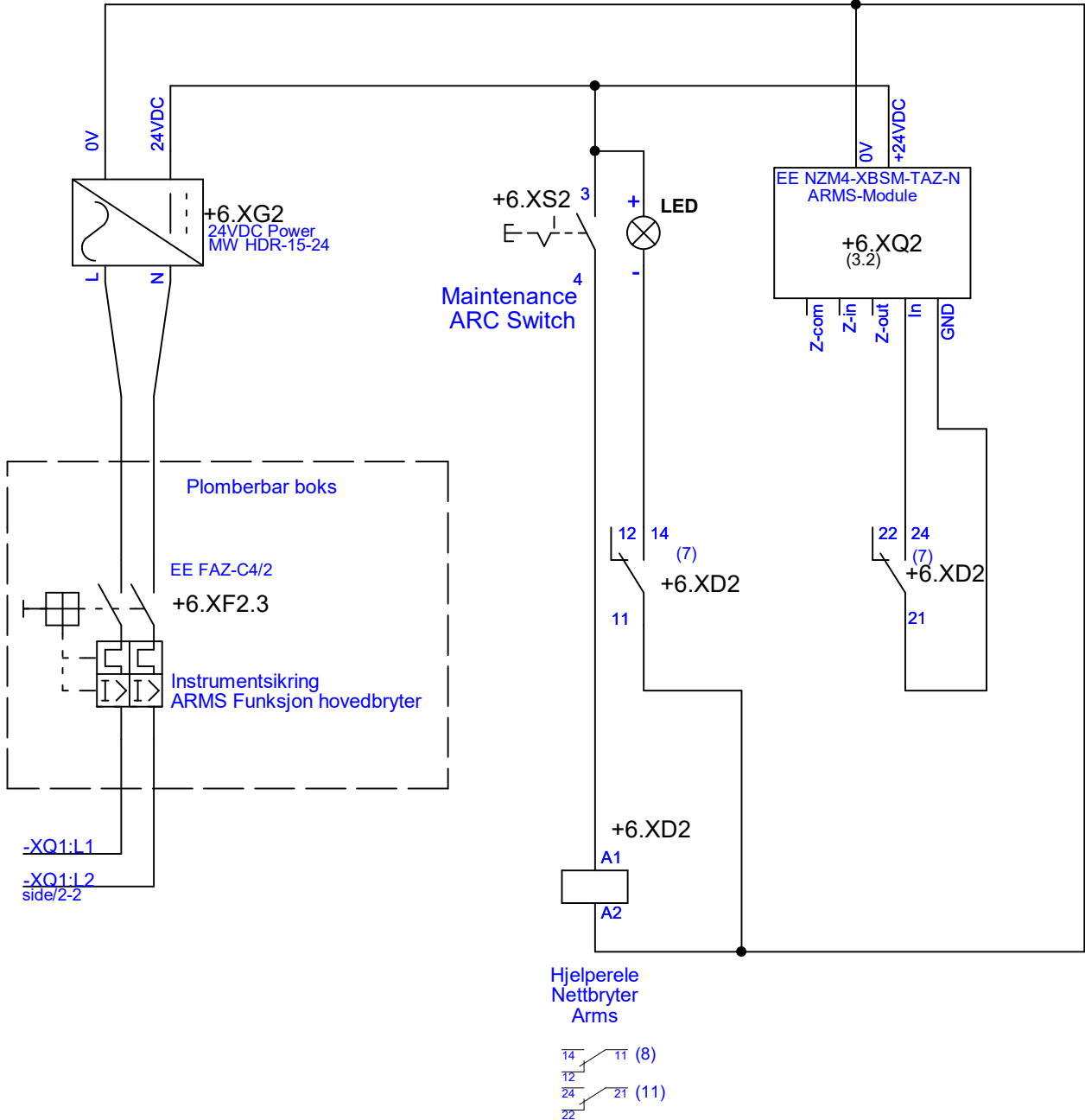
L2

L3
side/3-24

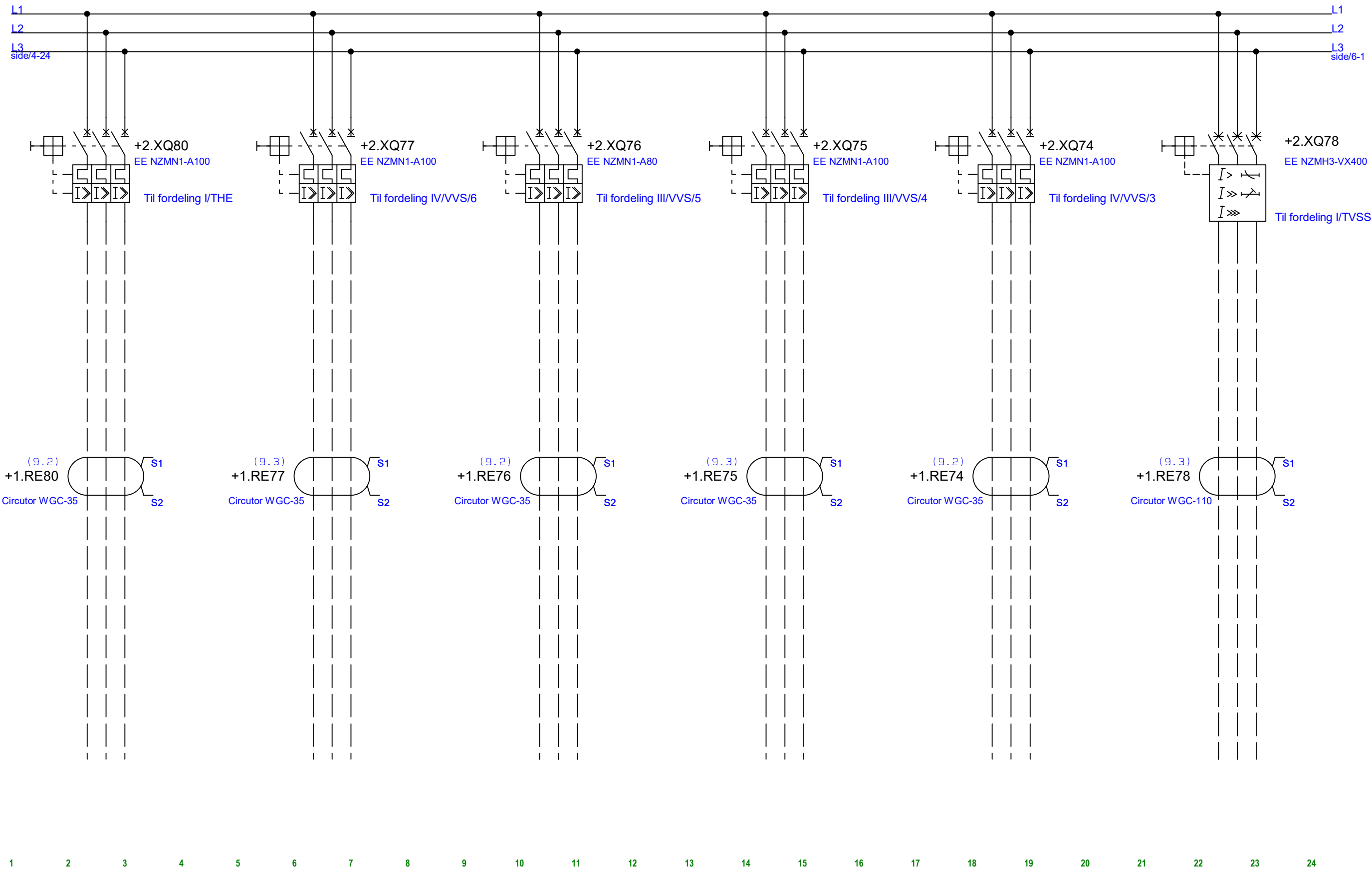
L1

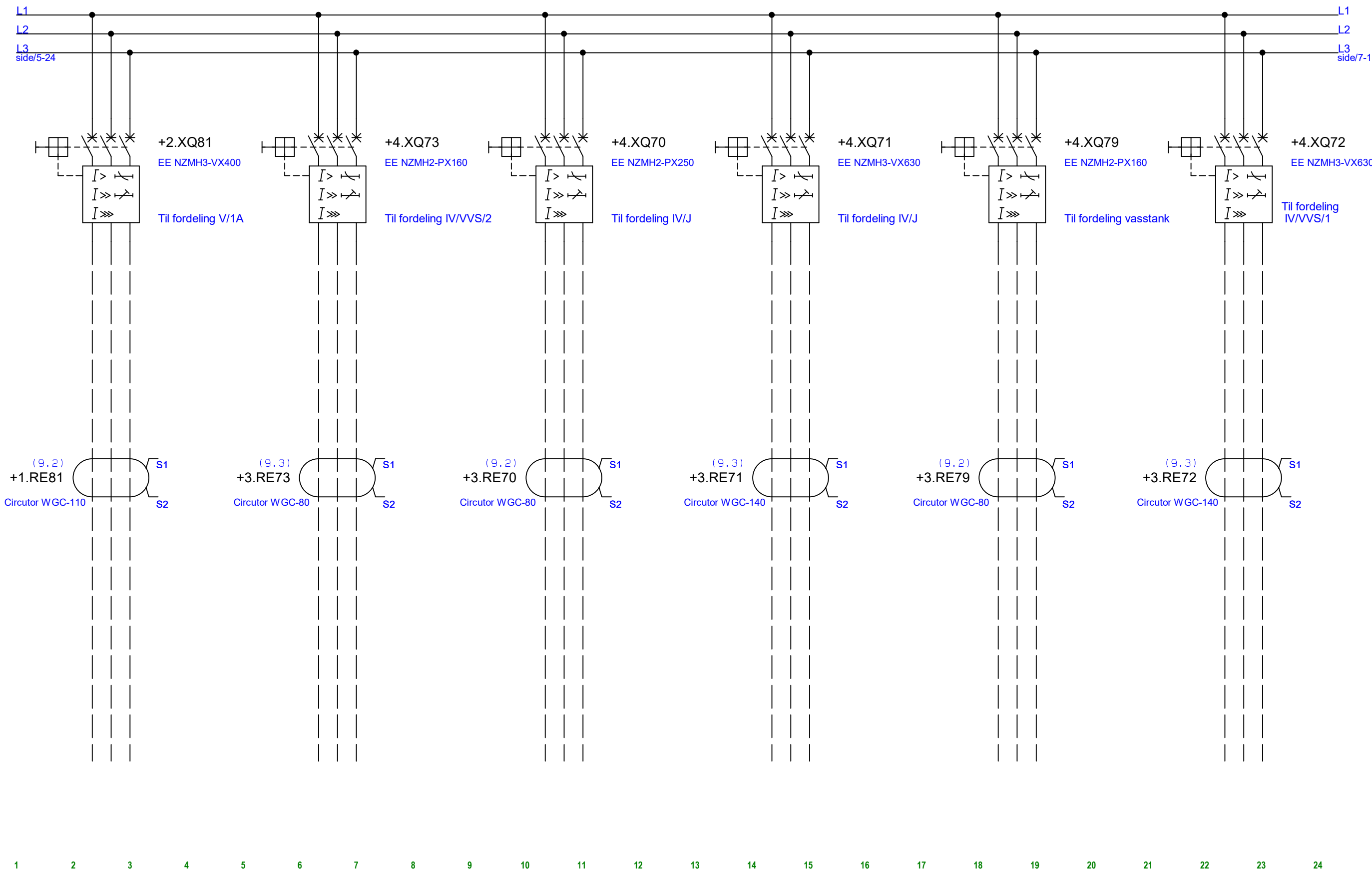
L2

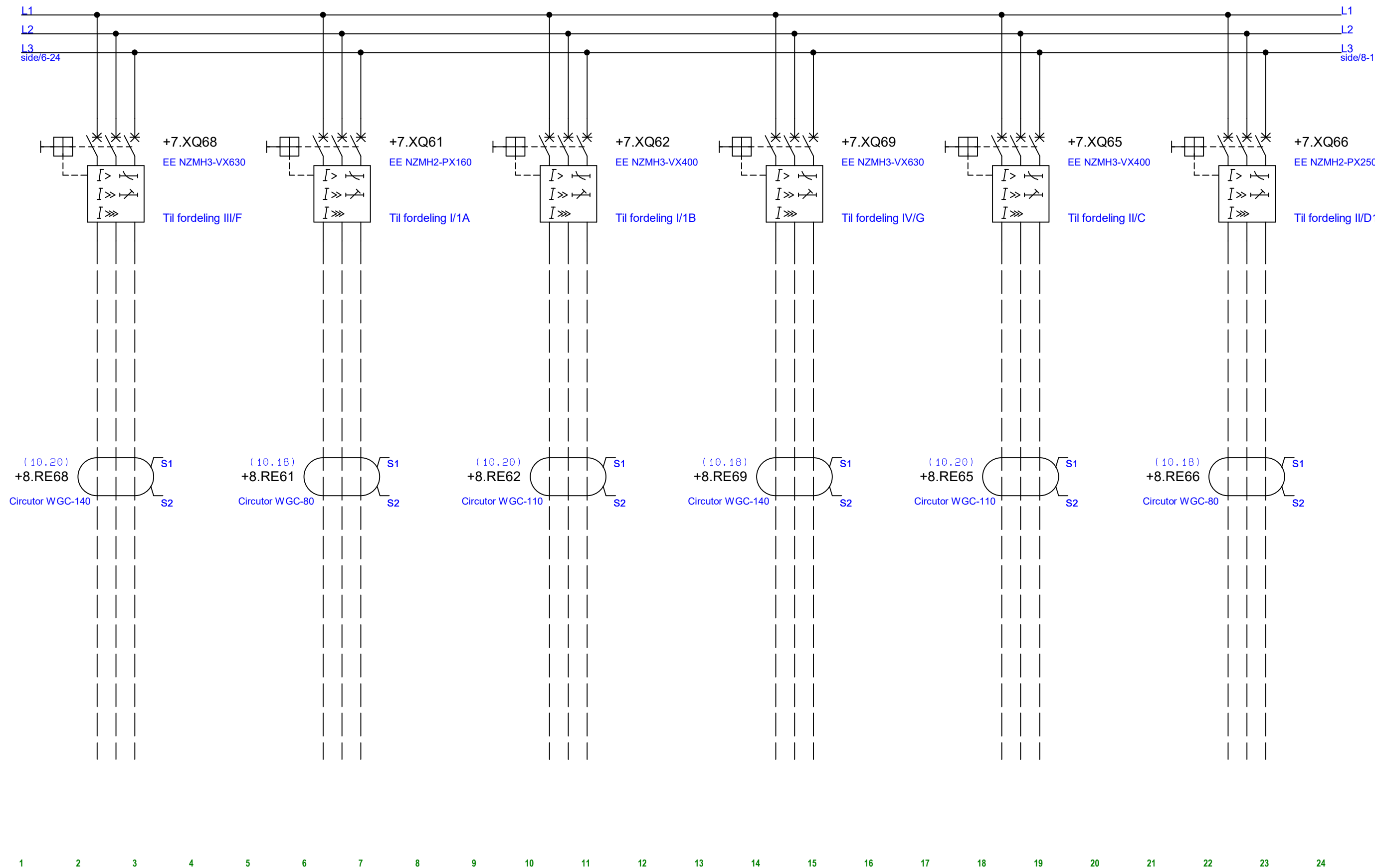
L3
side/5-1

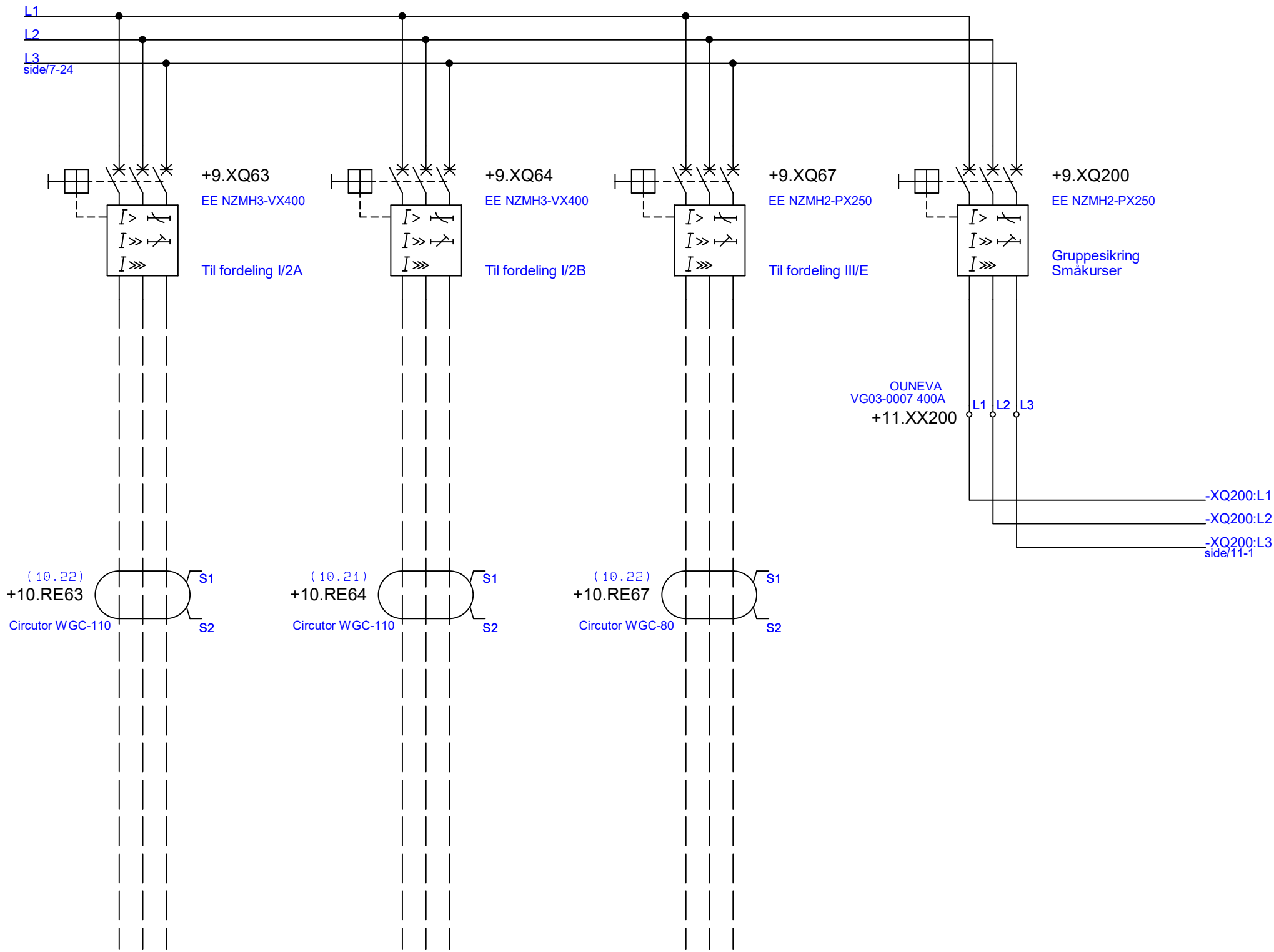


1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24







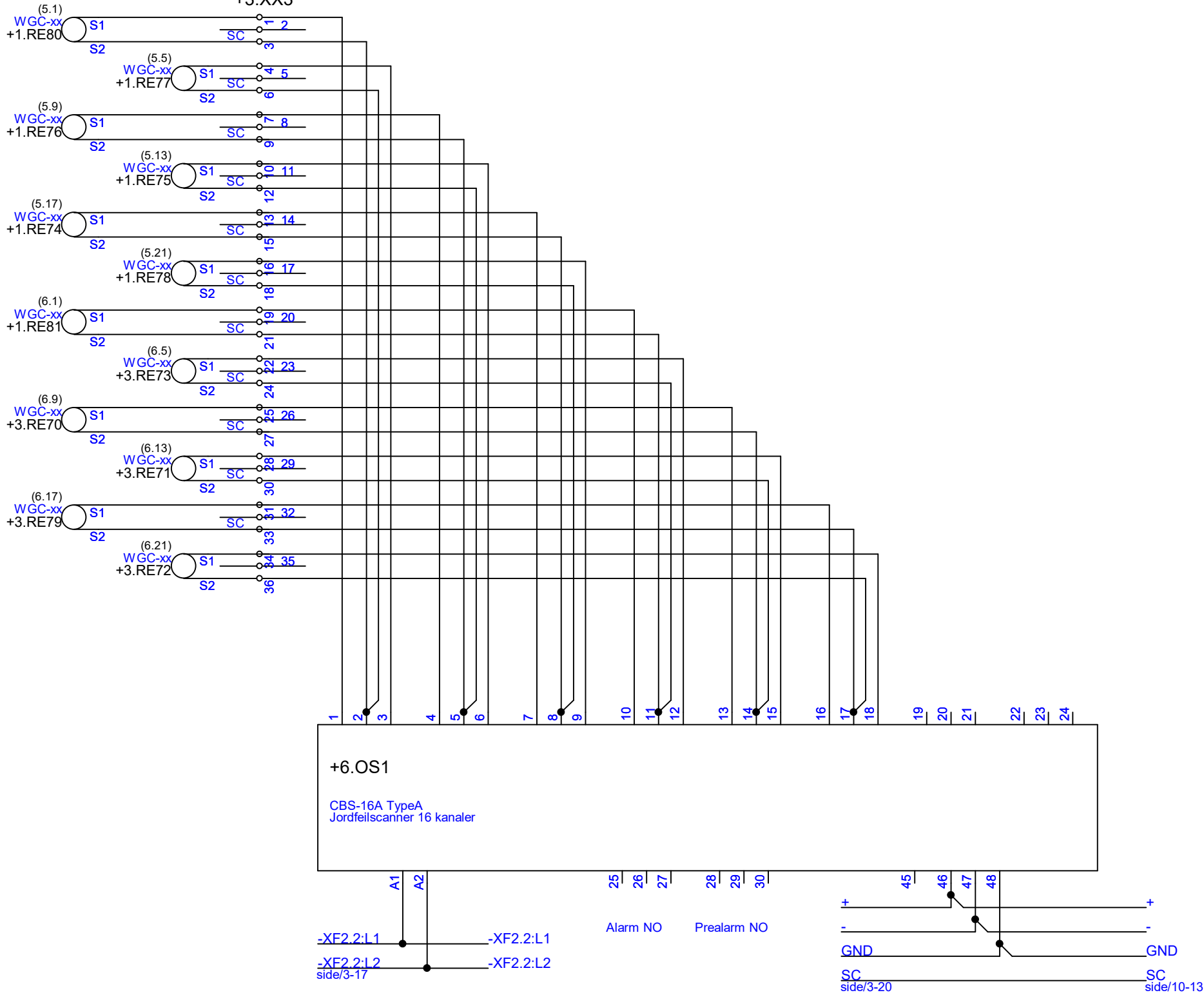


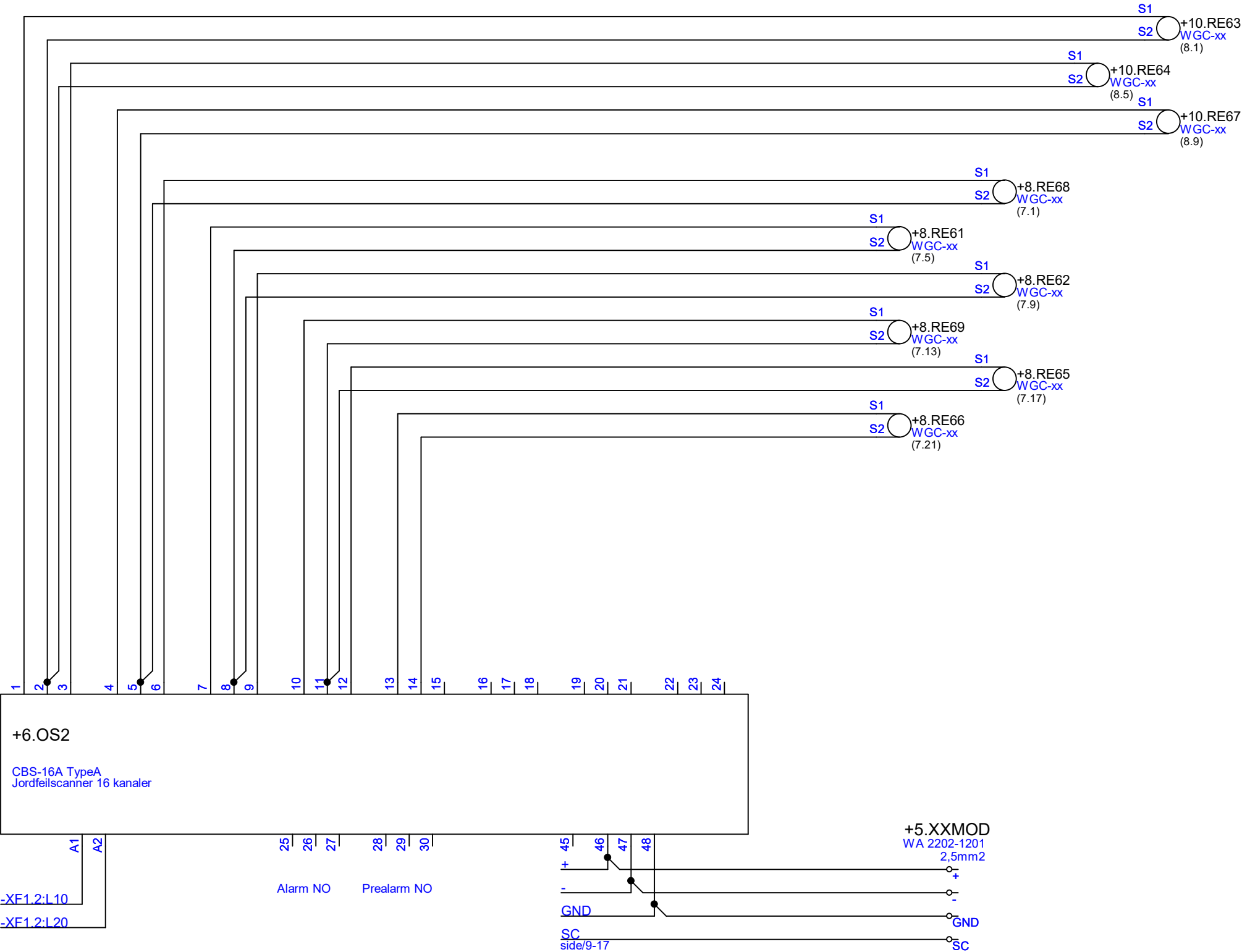
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24

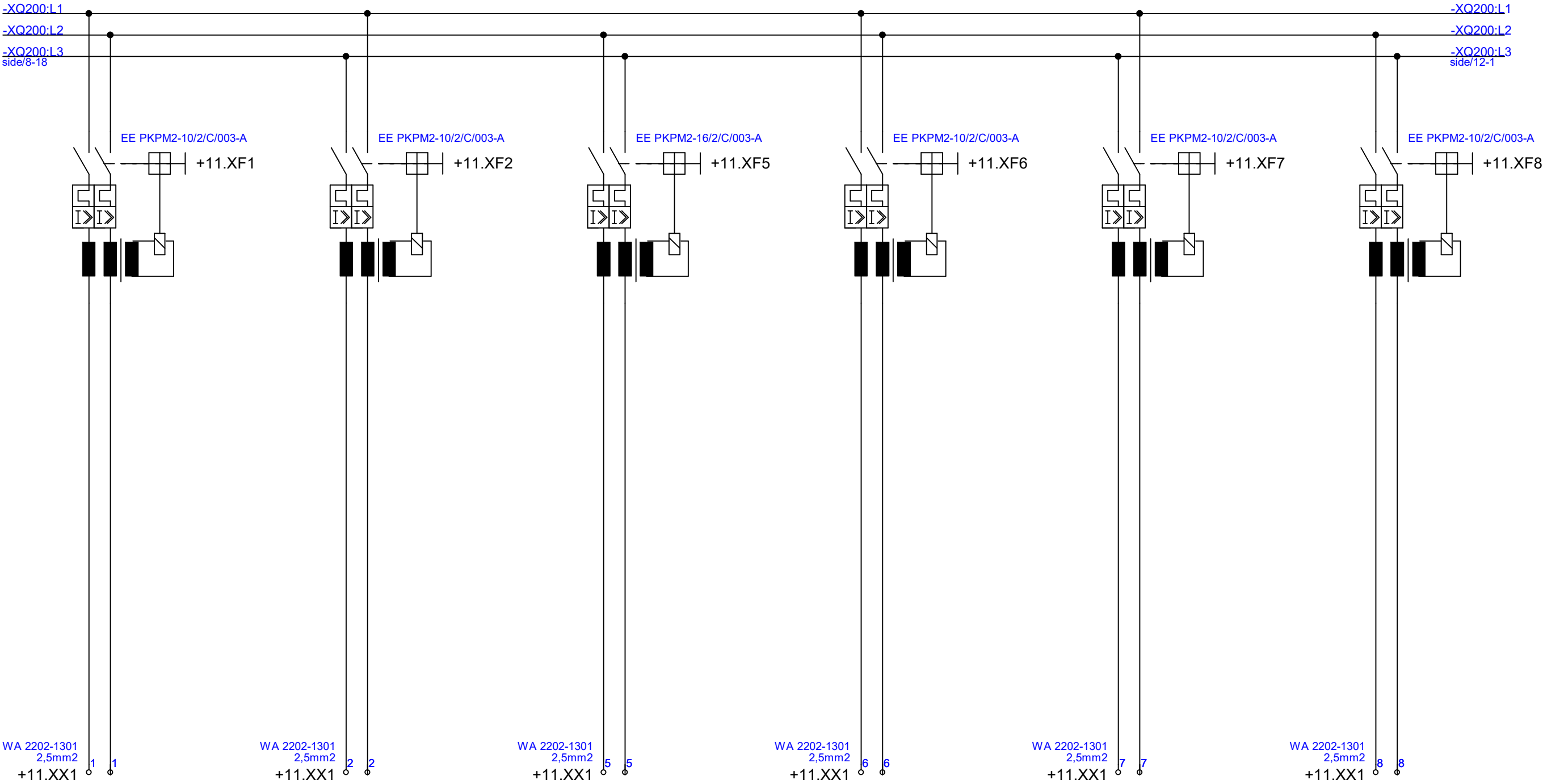
Skjøteklemme

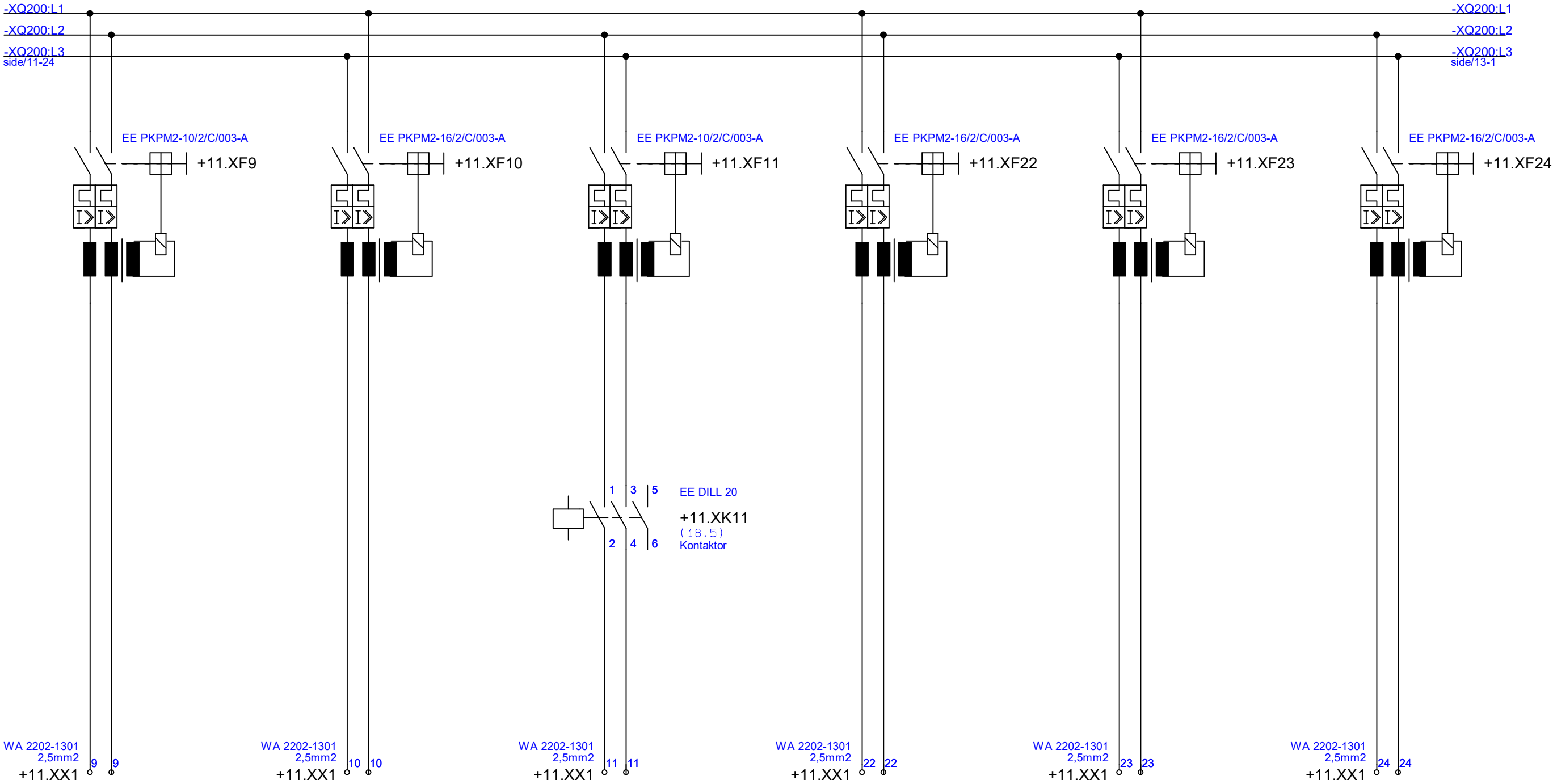
WA 2202-1201
2,5mm²

+3.XX3



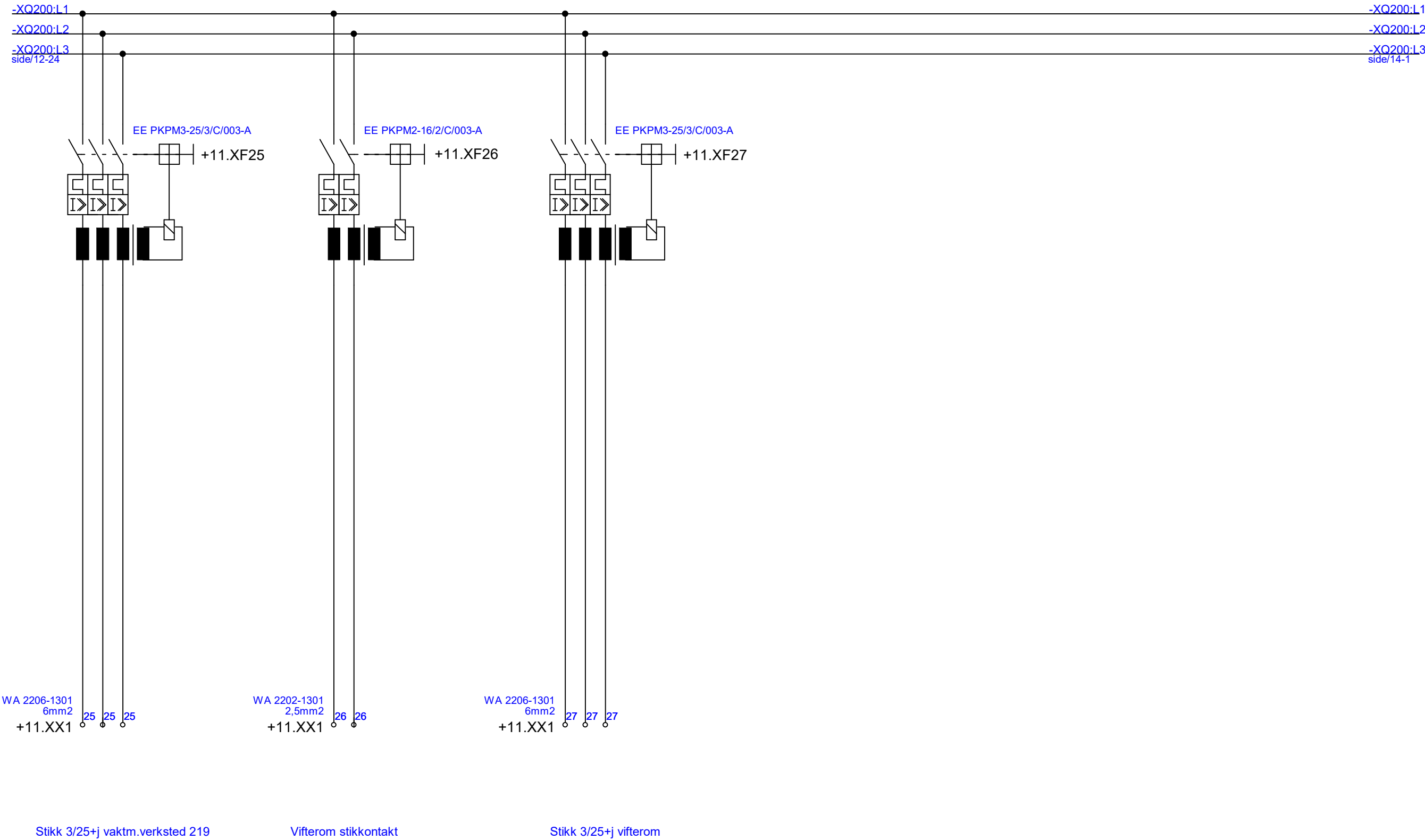




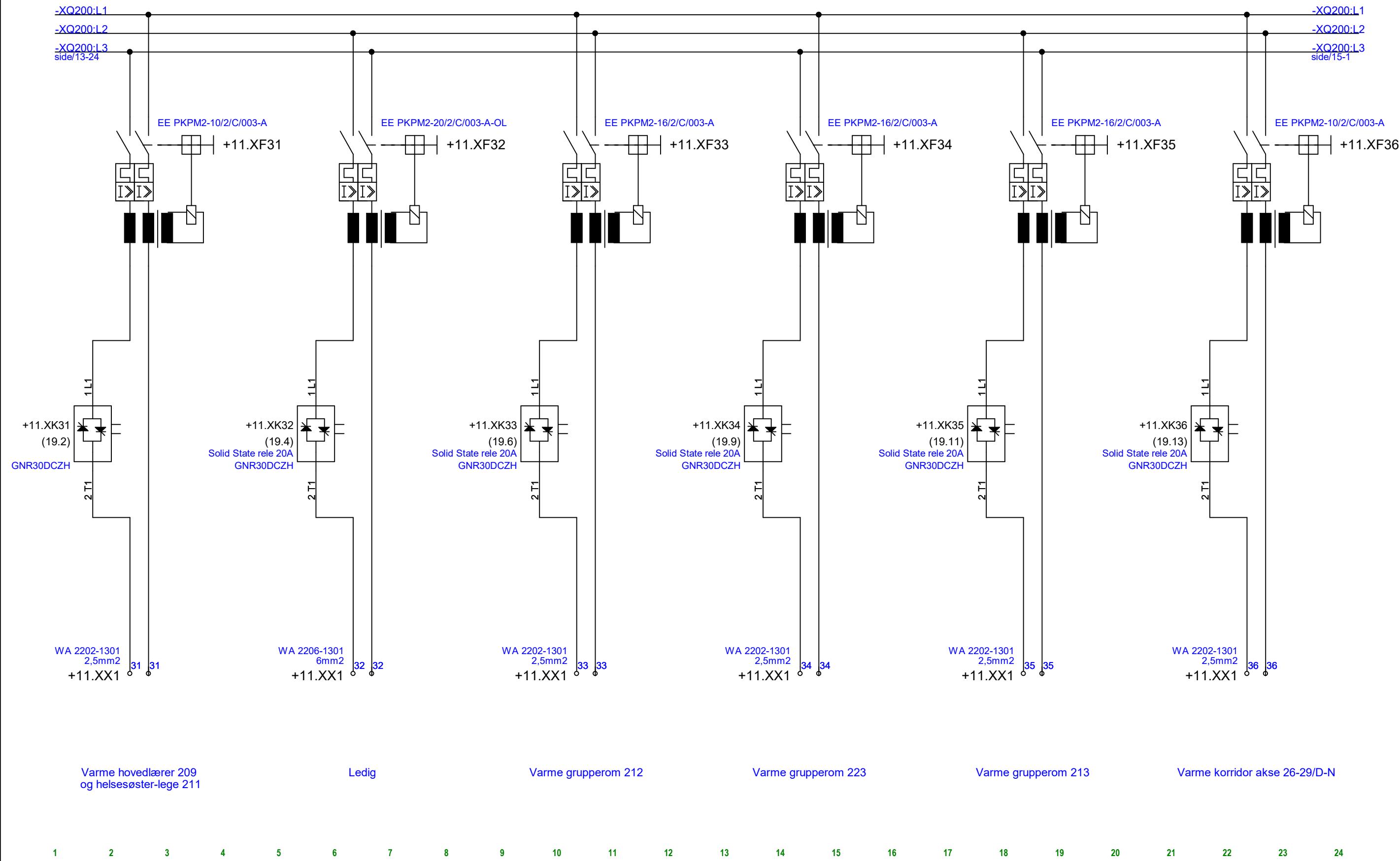


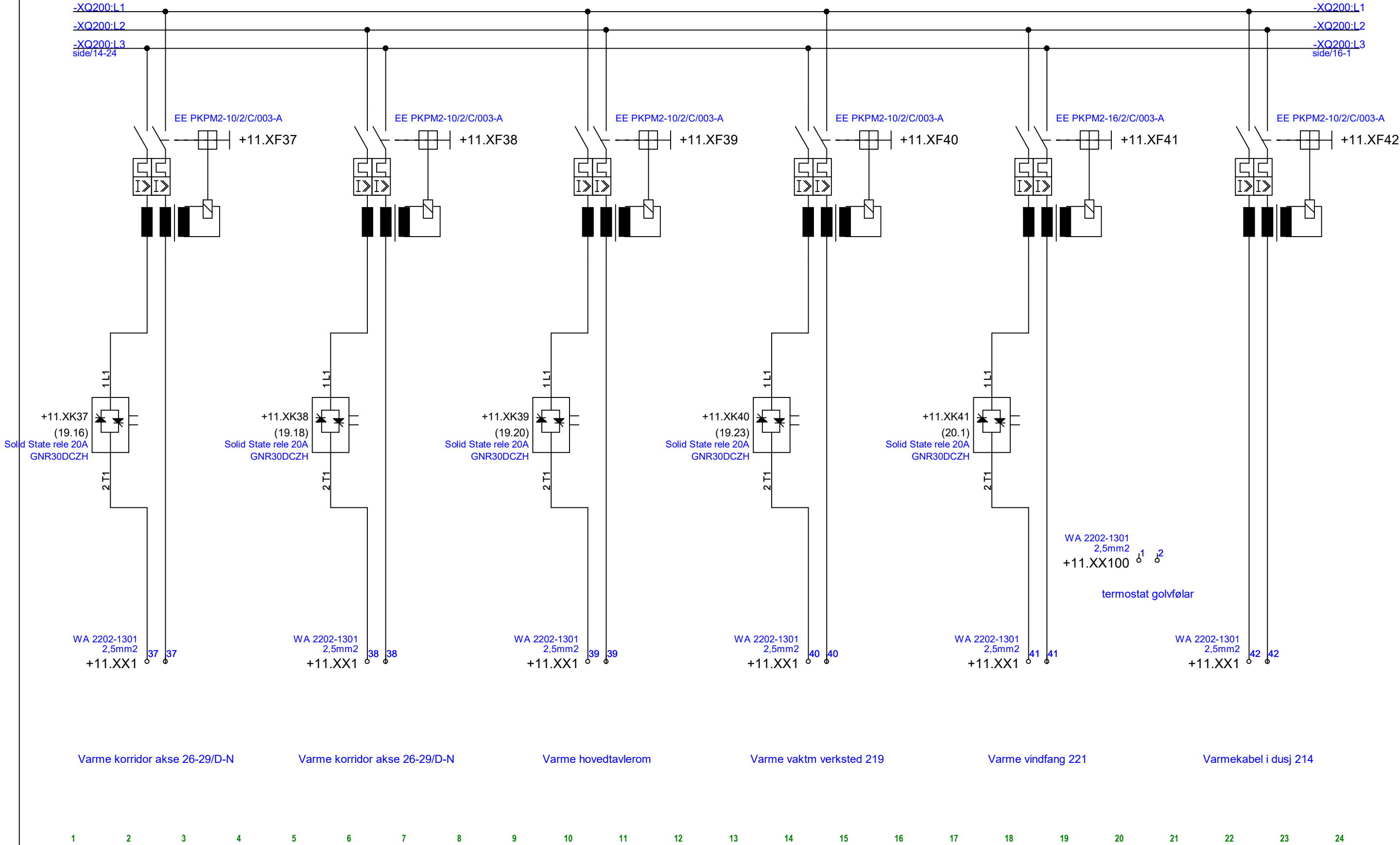
Lys vifterom Lys + stikk vaktm. verksted 219
+ lys hovedtavler 218 v.f.221-222 Lys utvendig akse N-0/34 Stikk helsesøster-lege 211
+ hovedlærer 209 Stikk korr akse 26-29/D=K Stikk korr akse 26-29/K=N

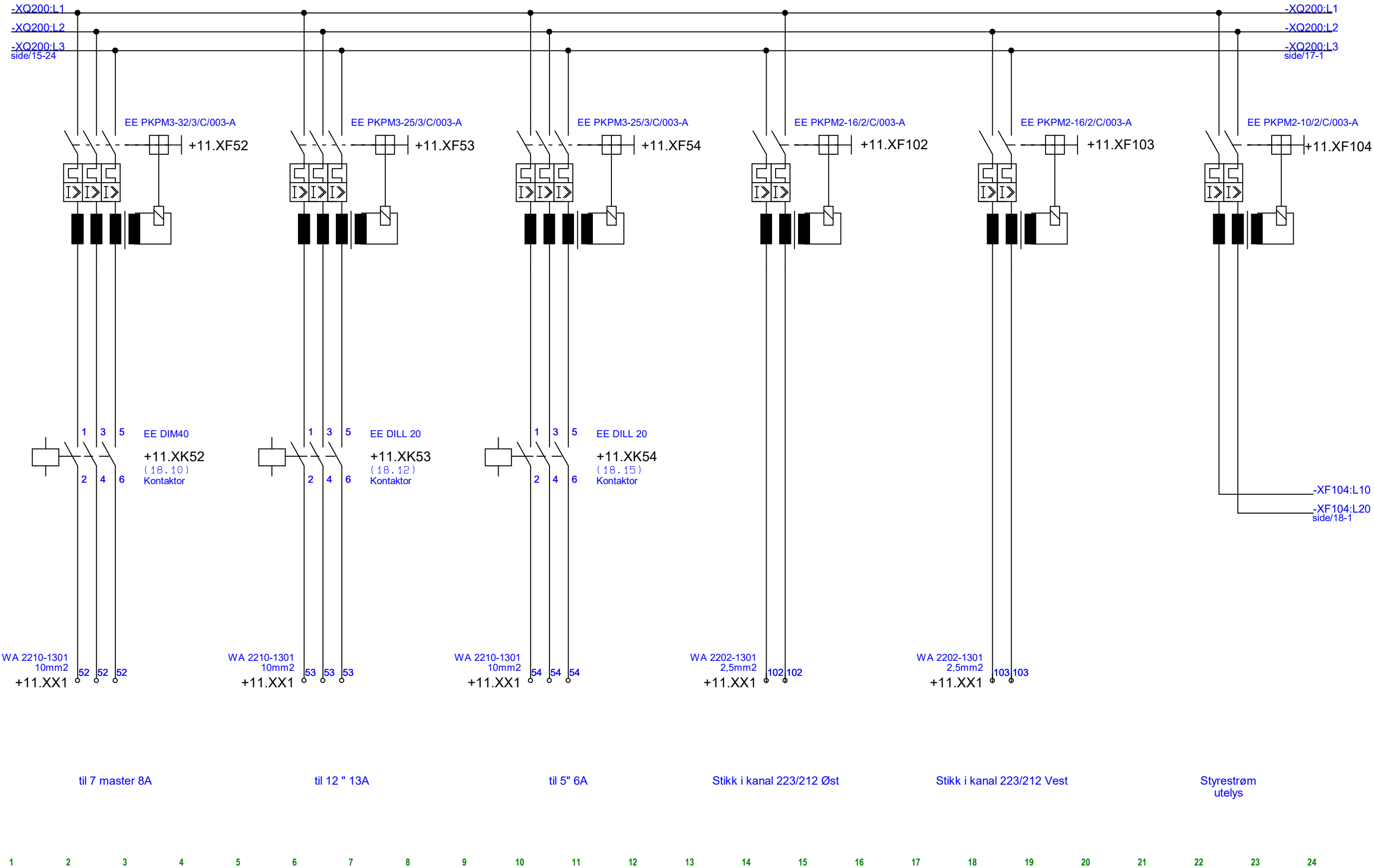
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24

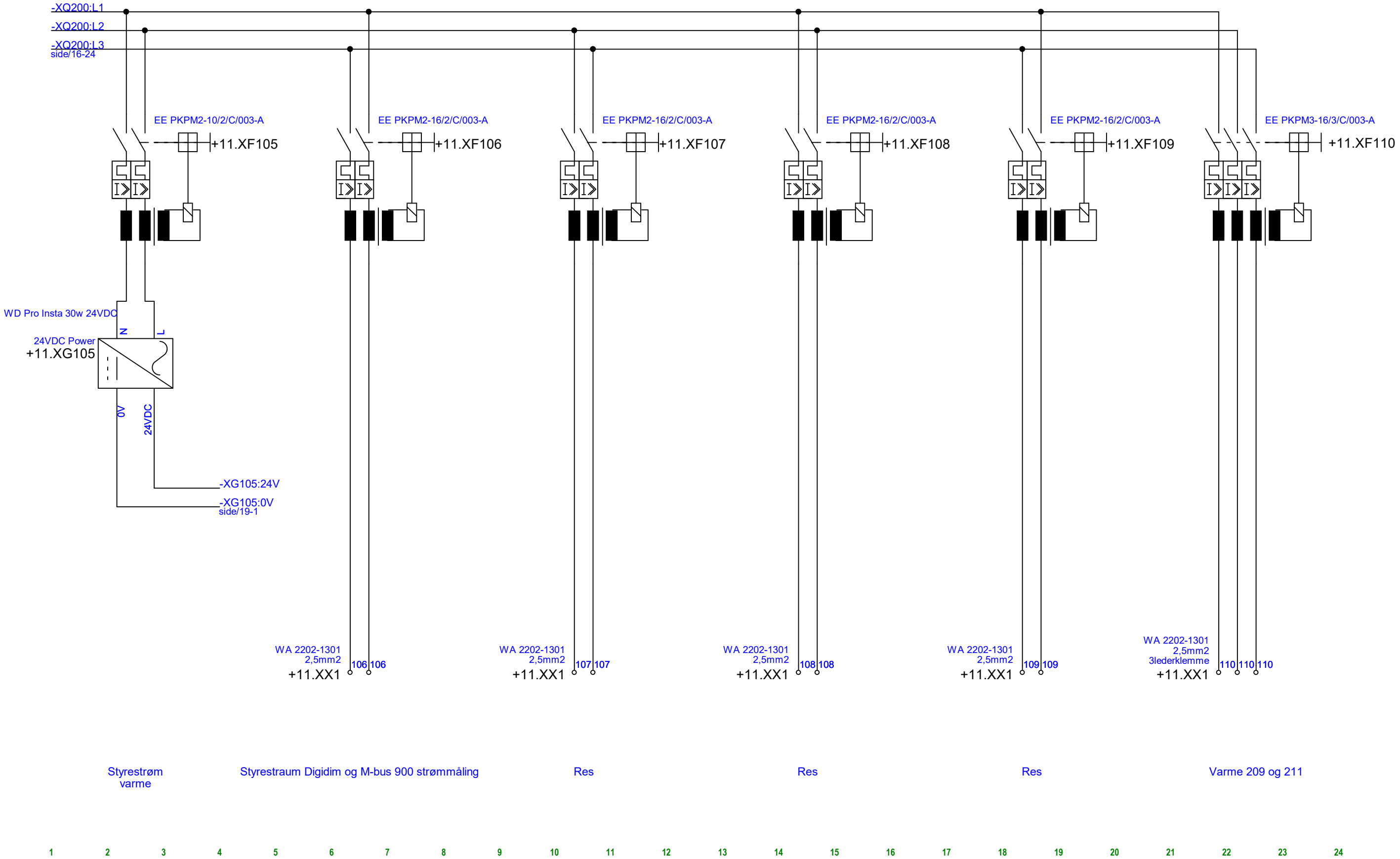


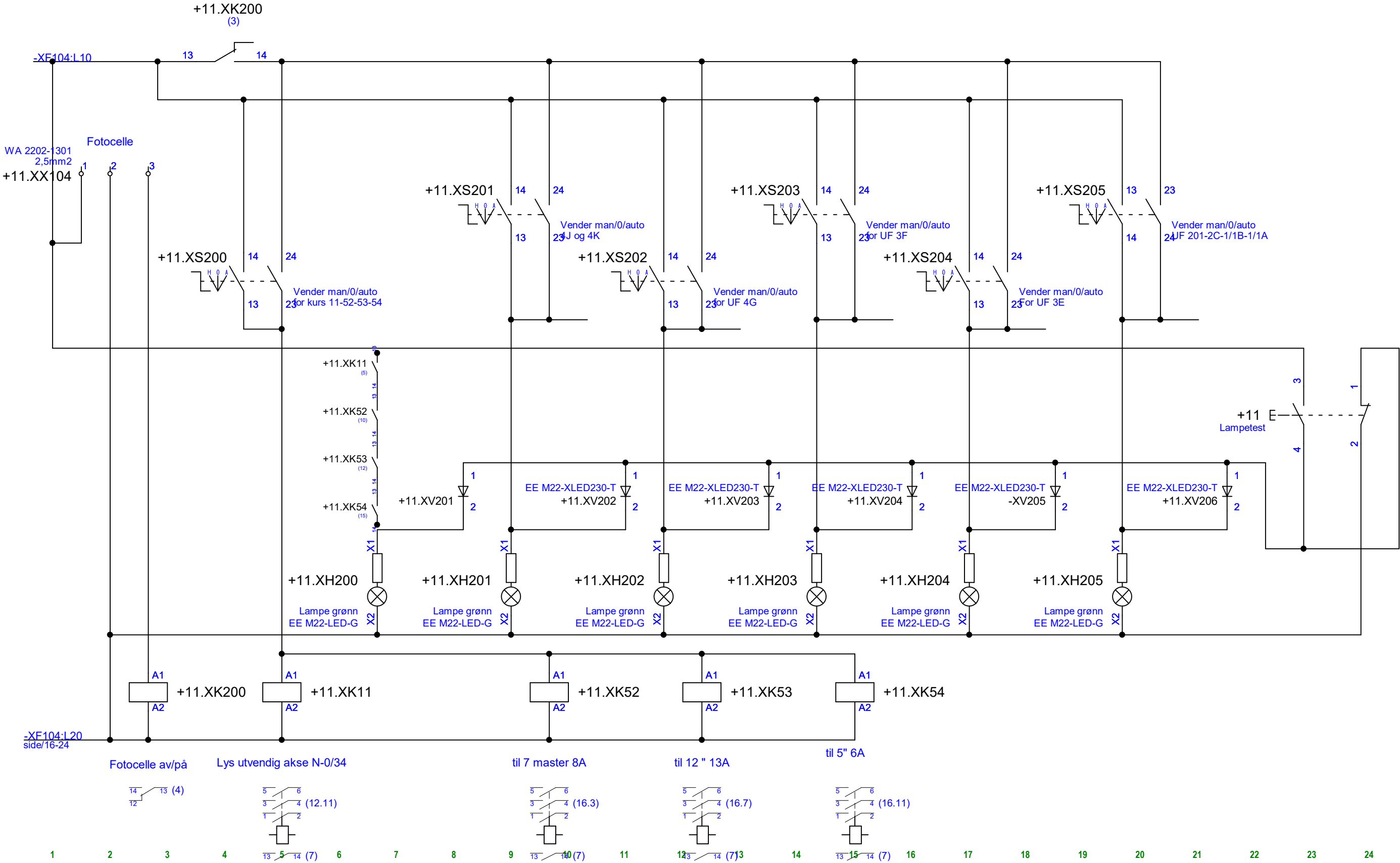
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24

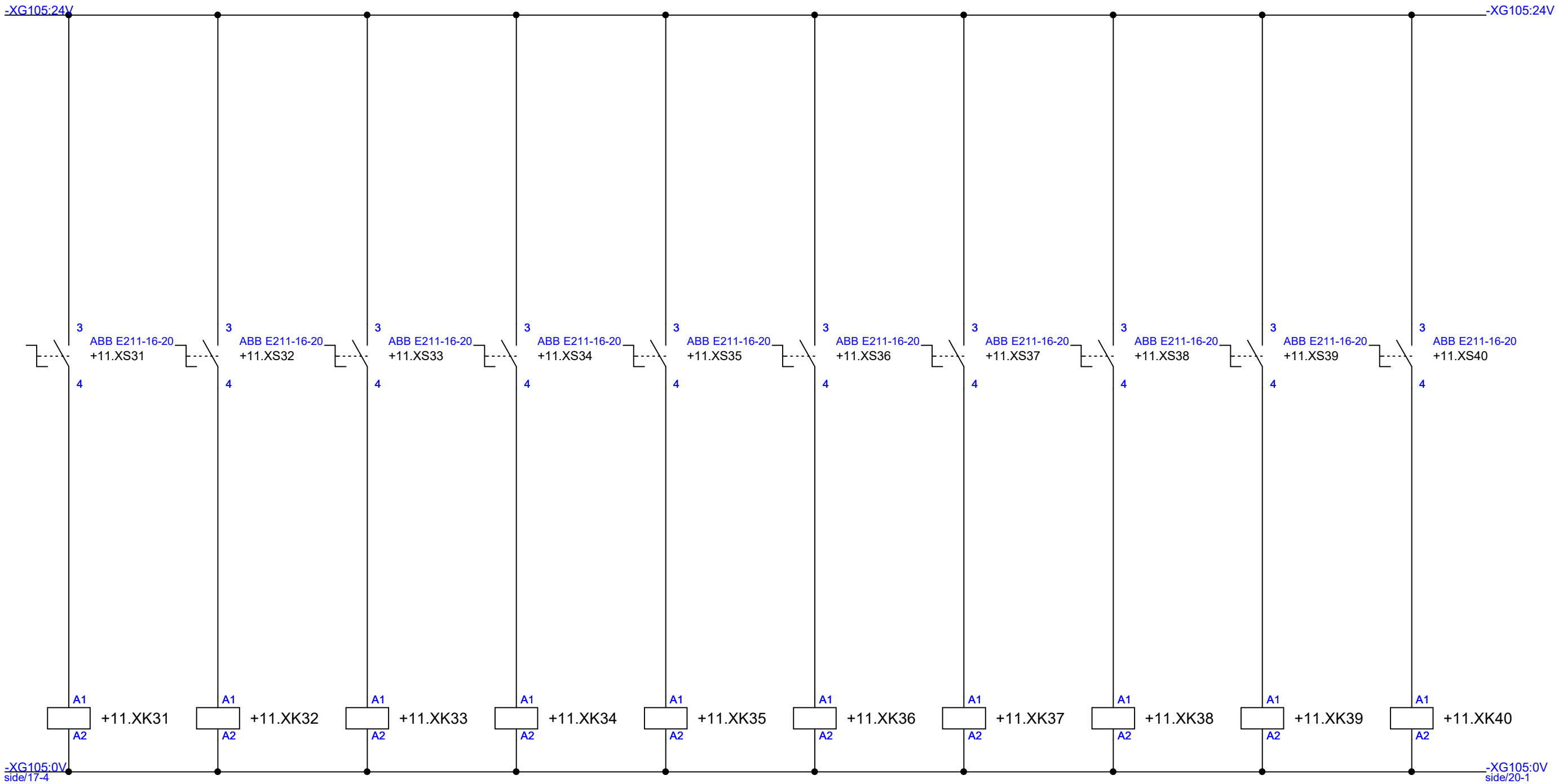




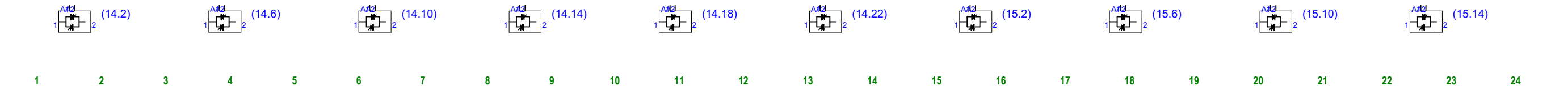








Varmer hovedlærer 209 og helsesøster-leg 211
Varmer grupperom 212
Varmer grupperom 213
Varmer korridor akse 26-29/D-N
Varmer korridor akse 26-29/D-N
Varmer hovedtavlerom
Varmer vaktm verksted 219





Komponentliste

Årdal VGS

Komponentliste

Navn	El-nummer/ Artikkelnummer	Type	Funksjon
-RE74	1612776	Circutor WGC-35	Summasjonstrafo KL.A 35mm
-RE75	1612776	Circutor WGC-35	Summasjonstrafo KL.A 35mm
-RE76	1612776	Circutor WGC-35	Summasjonstrafo KL.A 35mm
-RE77	1612776	Circutor WGC-35	Summasjonstrafo KL.A 35mm
-RE78	1612779	Circutor WGC-110	Summasjonstrafo KL.A 110mm
-RE80	1612776	Circutor WGC-35	Summasjonstrafo KL.A 35mm
-RE81	1612779	Circutor WGC-110	Summasjonstrafo KL.A 110mm
-XQ74	4358710	EE NZMN1-A100	Til fordeling IV/VVS/3
-XQ75	4358710	EE NZMN1-A100	Til fordeling III/VVS/4
-XQ76	4358709	EE NZMN1-A80	Til fordeling III/VVS/5
-XQ77	4358710	EE NZMN1-A100	Til fordeling IV/VVS/6
-XQ78	4362710	EE NZMH3-VX400	Til fordeling I/TVSS
-XQ80	4358710	EE NZMN1-A100	Til fordeling I/THE
-XQ81	4362710	EE NZMH3-VX400	Til fordeling V/1A
-RE70	1612778	Circutor WGC-80	Summasjonstrafo KL.A 80mm
-RE71	1612780	Circutor WGC-140	Summasjonstrafo KL.A 140mm
-RE72	1612780	Circutor WGC-140	Summasjonstrafo KL.A 140mm
-RE73	1612778	Circutor WGC-80	Summasjonstrafo KL.A 80mm
-RE79	1612778	Circutor WGC-80	Summasjonstrafo KL.A 80mm
-XX3 (36)	2202-1201	WA 2202-1201 2,5mm2	Rekkeklemme 2,5mm2 grå
-XQ70	4362732	EE NZMH2-PX250	Til fordeling IV/J
-XQ71	4362775	EE NZMH3-VX630	Til fordeling IV/J
-XQ72	4362775	EE NZMH3-VX630	Til fordeling IV/VVS/1
-XQ73	4362731	EE NZMH2-PX160	Til fordeling IV/VVS/2
-XQ79	4362731	EE NZMH2-PX160	Til fordeling vasstank
-QE1	3336263706	EEVPU AC II 3+1 R 350/50 kA	Overspenningsvern
-RE1.4	8022229	FU TD8 1200/5A 0,5	Strømtrafo 1200/5A
-RE1.6	8022229	FU TD8 1200/5A 0,5	Strømtrafo 1200/5A
-RE2.4	8022229	FU TD8 1200/5A 0,5	Strømtrafo 1200/5A
-RE2.6	8022229	FU TD8 1200/5A 0,5	Strømtrafo 1200/5A
-XD1	788-312	Wago 788-312 24VDC	Hjelperele Nettbryter Arms
-XF1	1664191	EE CH223DU 22x58 125A gG	Kortslutningsvern for overspenningsvern

Komponentliste

Navn	El-nummer/ Artikelnummer	Type	Funksjon
-XF1.2	1695178	EE FAZ-C4/3	Instrumentsikring
-XF1.3	1695164	EE FAZ-C4/2	Instrumentsikring ARMS Funksjon hovedbry
-XG1	HDR-15-24	MW HDR-15-24	24VDC Power
-XP1	8000564	SE CVM-C10-ITF-RS485	Nettanalysator
-XQ1	189834	EE NZM4-XBSM-TAZ-N	ARMS-Module
-XQ1	4363173	EE NZMH4-PX1250-TAZ	Hovedvern Trafo 1
-XS1	M22-T-DQ	EE M22-T-D	Maintenance ARC Switch
-XX1 (2)	3042152185	A2C 2,5	Rekkeklemme 2,5mm2 grå
-XXMOD (8)	2202-1201	WA 2202-1201 2,5mm2	Rekkeklemme 2,5mm2 grå
-OE			KWH-MÅLER
-OS1	1602030	CBS-16A TypeA	Jordfeilscanner 16 kanaler
-OS2	1602030	CBS-16A TypeA	Jordfeilscanner 16 kanaler
-UX	991	MOK 230V	MÅLEROMKOBLER
-XD2	788-312	Wago 788-312 24VDC	Hjelperele Nettbryter Arms
-XF2.2	1695178	EE FAZ-C4/3	Instrumentsikring
-XF2.3	1695164	EE FAZ-C4/2	Instrumentsikring ARMS Funksjon hovedbry
-XG2	HDR-15-24	MW HDR-15-24	24VDC Power
-XP2	8000564	SE CVM-C10-ITF-RS485	Nettanalysator
-XQ2	189834	EE NZM4-XBSM-TAZ-N	ARMS-Module
-XQ2	4363173	EE NZMH4-PX1250-TAZ	Hovedvern Trafo 2
-XS2	M22-T-DQ	EE M22-T-D	Maintenance ARC Switch
-XQ61	4362731	EE NZMH2-PX160	Til fordeling I/1A
-XQ62	4362710	EE NZMH3-VX400	Til fordeling I/1B
-XQ65	4362710	EE NZMH3-VX400	Til fordeling II/C
-XQ66	4362732	EE NZMH2-PX250	Til fordeling II/D1
-XQ68	4362775	EE NZMH3-VX630	Til fordeling III/F
-XQ69	4362775	EE NZMH3-VX630	Til fordeling IV/G
-RE61	1612778	Circutor WGC-80	Summasjonstrafo KL.A 80mm
-RE62	1612779	Circutor WGC-110	Summasjonstrafo KL.A 110mm
-RE65	1612779	Circutor WGC-110	Summasjonstrafo KL.A 110mm
-RE66	1612778	Circutor WGC-80	Summasjonstrafo KL.A 80mm
-RE68	1612780	Circutor WGC-140	Summasjonstrafo KL.A 140mm

Komponentliste

Navn	El-nummer/ Artikelnummer	Type	Funksjon						
-RE69	1612780	Circutor WGC-140	Summasjonstrafo KL.A 140mm						
-XQ63	4362710	EE NZMH3-VX400	Til fordeling I/2A						
-XQ64	4362710	EE NZMH3-VX400	Til fordeling I/2B						
-XQ67	4362732	EE NZMH2-PX250	Til fordeling III/E						
-XQ200	4362732	EE NZMH2-PX250	Gruppesikring Småkurser						
-RE63	1612779	Circutor WGC-110	Summasjonstrafo KL.A 110mm						
-RE64	1612779	Circutor WGC-110	Summasjonstrafo KL.A 110mm						
-RE67	1612778	Circutor WGC-80	Summasjonstrafo KL.A 80mm						
			Lampetest						
-XF1	1654704	EE PKPM2-10/2/C/003-A	Lys korridor						
-XF2	1654704	EE PKPM2-10/2/C/003-A	Lys korridor						
-XF5	1654706	EE PKPM2-16/2/C/003-A	Lys+ stikk hovedlærer 209 forrom 210+ ly						
-XF6	1654704	EE PKPM2-10/2/C/003-A	Lys + stikk gr.rom 212						
-XF7	1654704	EE PKPM2-10/2/C/003-A	Lys + stikk gr.rom 223						
-XF8	1654704	EE PKPM2-10/2/C/003-A	Lys + stikk gr.rom 213+ Lys dusj 214 toa						
-XF9	1654704	EE PKPM2-10/2/C/003-A	Lys vifterom						
-XF10	1654706	EE PKPM2-16/2/C/003-A	Lys + stikk vaktm. verksted 219 + lys ho						
-XF11	1654704	EE PKPM2-10/2/C/003-A	Lys utvendig akse N-0/34						
-XF22	1654706	EE PKPM2-16/2/C/003-A	Stikk helsesøster-lege 211 + hovedlærer						
-XF23	1654706	EE PKPM2-16/2/C/003-A	Stikk korr akse 26-29/D=K						
-XF24	1654706	EE PKPM2-16/2/C/003-A	Stikk korr akse 26-29/K=N						
-XF25	1654908	EE PKPM3-25/3/C/003-A	Stikk 3/25+j vaktm.verksted 219						
-XF26	1654706	EE PKPM2-16/2/C/003-A	Vifterom stikkontakt						
-XF27	1654908	EE PKPM3-25/3/C/003-A	Stikk 3/25+j vifterom						
-XF31	1654704	EE PKPM2-10/2/C/003-A	Varme hovedlærer 209 og helsesøster-leg						
-XF32	1654879	EE PKPM2-20/2/C/003-A-OL	Ledig						
-XF33	1654706	EE PKPM2-16/2/C/003-A	Varme grupperom 212						
-XF34	1654706	EE PKPM2-16/2/C/003-A	Varme grupperom 223						
-XF35	1654706	EE PKPM2-16/2/C/003-A	Varme grupperom 213						
-XF36	1654704	EE PKPM2-10/2/C/003-A	Varme korridor akse 26-29/D-N						
-XF37	1654704	EE PKPM2-10/2/C/003-A	Varme korridor akse 26-29/D-N						
-XF38	1654704	EE PKPM2-10/2/C/003-A	Varme korridor akse 26-29/D-N						
Elektroentreprenør Caverion		Tavleprodusent 	Øyane 12 6770 Nordfjordeid Tlf 57 86 47 60 post@eidelektro.no	Ordrenummer 107478 Ansvarlig EK	Sideinformasjon Komponentliste	Prosjektinformasjon Ardal VGS	Identifikasjon Hovedfordeling Rev. r2 Dato 04.09.2025 Side 23 av 28		

Komponentliste

Navn	El-nummer/ Artikkelnummer	Type	Funksjon
-XF39	1654704	EE PKPM2-10/2/C/003-A	Varme hovedtavlerom
-XF40	1654704	EE PKPM2-10/2/C/003-A	Varme vaktm verksted 219
-XF41	1654706	EE PKPM2-16/2/C/003-A	Varme vindfang 221
-XF42	1654704	EE PKPM2-10/2/C/003-A	Varmekabel i dusj 214
-XF52	1654909	EE PKPM3-32/3/C/003-A	til 7 master 8A
-XF53	1654908	EE PKPM3-25/3/C/003-A	til 12 " 13A
-XF54	1654908	EE PKPM3-25/3/C/003-A	til 5" 6A
-XF102	1654706	EE PKPM2-16/2/C/003-A	Stikk i kanal 223/212 Øst
-XF103	1654706	EE PKPM2-16/2/C/003-A	Stikk i kanal 223/212 Vest
-XF104	1654704	EE PKPM2-10/2/C/003-A	Styrestrøm utelys
-XF105	1654704	EE PKPM2-10/2/C/003-A	Styrestrøm varme
-XF106	1654706	EE PKPM2-16/2/C/003-A	Styrestraum Digidim og M-bus 900 strømmå
-XF107	1654706	EE PKPM2-16/2/C/003-A	Res
-XF108	1654706	EE PKPM2-16/2/C/003-A	Res
-XF109	1654706	EE PKPM2-16/2/C/003-A	Res
-XF110	1654720	EE PKPM3-16/3/C/003-A	Varme 209 og 211
-XG105	2580190000	WD Pro Insta 30w 24VDC	24VDC Power
-XH200	4355369	EE M22-LED-G	Lampe grønn
-XH201	4355369	EE M22-LED-G	Lampe grønn
-XH202	4355369	EE M22-LED-G	Lampe grønn
-XH203	4355369	EE M22-LED-G	Lampe grønn
-XH204	4355369	EE M22-LED-G	Lampe grønn
-XH205	4355369	EE M22-LED-G	Lampe grønn
-XK11	4134241	EE DILL 20	Kontaktor
-XK31	GNR30DCZH	GNR30DCZH	Varme hovedlærer 209 og helsesøster-leg
-XK32	GNR30DCZH	GNR30DCZH	Solid State rele 20A
-XK33	GNR30DCZH	GNR30DCZH	Solid State rele 20A
-XK34	GNR30DCZH	GNR30DCZH	Solid State rele 20A
-XK35	GNR30DCZH	GNR30DCZH	Solid State rele 20A
-XK36	GNR30DCZH	GNR30DCZH	Solid State rele 20A
-XK37	GNR30DCZH	GNR30DCZH	Solid State rele 20A
-XK38	GNR30DCZH	GNR30DCZH	Solid State rele 20A

Komponentliste

Navn	El-nummer/ Artikkelnummer	Type	Funksjon
-XK39	GNR30DCZH	GNR30DCZH	Solid State rele 20A
-XK40	GNR30DCZH	GNR30DCZH	Solid State rele 20A
-XK41	GNR30DCZH	GNR30DCZH	Solid State rele 20A
-XK52	4130439	EE DIM40	Kontaktor
-XK53	4134241	EE DILL 20	Kontaktor
-XK54	4134241	EE DILL 20	Kontaktor
-XK200			Fotocelle av/på
-XS31	1429731	ABB E211-16-20	Bryter av/på Varme hovedlærer 209 og he
-XS32	1429731	ABB E211-16-20	Bryter av/på Varme hovedlærer 209 og he
-XS33	1429731	ABB E211-16-20	Bryter av/på Varme grupperom 212
-XS34	1429731	ABB E211-16-20	Bryter av/på Varme grupperom 223
-XS35	1429731	ABB E211-16-20	Bryter av/på Varme grupperom 213
-XS36	1429731	ABB E211-16-20	Bryter av/på Varme korridor akse 26-29/D
-XS37	1429731	ABB E211-16-20	Bryter av/på Varme korridor akse 26-29/D
-XS38	1429731	ABB E211-16-20	Bryter av/på Varme korridor akse 26-29/D
-XS39	1429731	ABB E211-16-20	Bryter av/på Varme hovedtavlerom
-XS40	1429731	ABB E211-16-20	Bryter av/på Varme vaktm verksted 219
-XS41	1429731	ABB E211-16-20	Bryter av/på Varme vindfang 221
-XS200	4355293	EE M22-WRK3/K20	Vender man/0/auto for kurs 11-52-53-54
-XS201	4355293	EE M22-WRK3/K20	Vender man/0/auto 4J og 4K
-XS202	4355293	EE M22-WRK3/K20	Vender man/0/auto for UF 4G
-XS203	4355293	EE M22-WRK3/K20	Vender man/0/auto for UF 3F
-XS204	4355293	EE M22-WRK3/K20	Vender man/0/auto For UF 3E
-XS205	4355293	EE M22-WRK3/K20	Vender man/0/auto UF 201-2C-1/1B-1/1A
-XV201	4355450	EE M22-XLED230-T	Lampe diode
-XV202	4355450	EE M22-XLED230-T	Lampe diode
-XV203	4355450	EE M22-XLED230-T	Lampe diode
-XV204	4355450	EE M22-XLED230-T	Lampe diode
-XV206	4355450	EE M22-XLED230-T	Lampe diode
-XX1 (63)	2202-1301	WA 2202-1301 2,5mm2	Rekkeklemme 2,5mm2 grå
-XX1 (8)	2206-1301	WA 2206-1301 6mm2	Rekkeklemme 6mm2 grå
-XX1 (9)	2210-1301	WA 2210-1301 10mm2	Rekkeklemme10mm2 grå

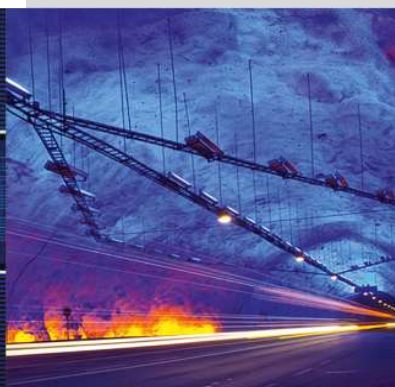
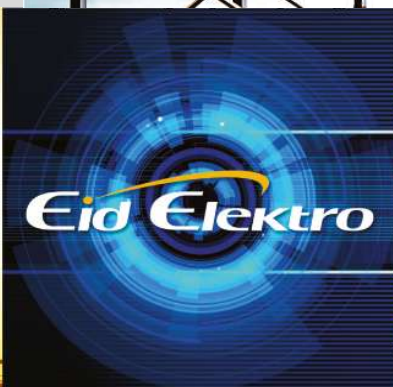
Komponentliste

[illegible]

Article no.	Type	Manufacturer	Quantity	Article no.	Type	Manufacturer	Quantity
			3	4358709	EE NZMN1-A80		1
788-312	Wago 788-312 24VDC		2	4358710	EE NZMN1-A100		4
991	MOK 230V		1	4362710	EE NZMH3-VX400		6
2202-1201	WA 2202-1201 2,5mm2		44	4362731	EE NZMH2-PX160		3
2202-1301	WA 2202-1301 2,5mm2		98	4362732	EE NZMH2-PX250		4
2206-1301	WA 2206-1301 6mm2		8	4362775	EE NZMH3-VX630		4
2210-1301	WA 2210-1301 10mm2		9	4363173	EE NZMH4-PX1250-TAZ		2
189834	EE NZM4-XBSM-TAZ-N		2	8000564	SE CVM-C10-ITF-RS485		2
1429731	ABB E211-16-20		11	8022229	FU TD8 1200/5A 0,5		4
1602030	CBS-16A TypeA		2	2580190000	WD Pro Insta 30w 24VDC		1
1612776	Circutor WGC-35		5	3042152185	A2C 2,5		2
1612778	Circutor WGC-80		6	3336263706	EEVPU AC II 3+1 R 350/50 kA		1
1612779	Circutor WGC-110		6	GNR30DCZH	GNR30DCZH		11
1612780	Circutor WGC-140		4	HDR-15-24	MW HDR-15-24		2
1654704	EE PKPM2-10/2/C/003-A		16	M22-T-DQ	EE M22-T-D		2
1654706	EE PKPM2-16/2/C/003-A		16	VG03-0007	OUNEVA VG03-0007 400A		3
1654720	EE PKPM3-16/3/C/003-A		1				
1654879	EE PKPM2-20/2/C/003-A-OL		1				
1654908	EE PKPM3-25/3/C/003-A		4				
1654909	EE PKPM3-32/3/C/003-A		1				
1664191	EE CH223DU 22x58 125A gG		1				
1695164	EE FAZ-C4/2		2				
1695178	EE FAZ-C4/3		2				
4130439	EE DIM40		1				
4134241	EE DILL 20		3				
4355293	EE M22-WRK3/K20		6				
4355369	EE M22-LED-G		6				
4355450	EE M22-XLED230-T		6				

FDV-dokumentasjon

Årdal VGS
HF



Tavle produsert for:

Caverion



Eid Elektro

Sjekkliste prosjektleiar

Prosjekt nr.:	Prosjektnavn:	Fordeling:
107478	Årdal VGS	HF

V = OK
-- = Uaktuelt

Jording/PE	Riktig dimensjonering av jording iht tabell NEK 439 Tabell 5 Dette gjeld både hovedjord i inntaksfelt og jordskinne for avganger/i kabelfelt. C35x30x1mm = 113mm ² = opp til og med 400A C35x30x2mm = 217mm ² = opp til og med 1250A C35x30x4mm = 402mm ² = opp til og med 2000A 2500A og oppover, minimum 1/4 av tverrsnitt hovedfase Overgang mellom horisontal og vertikal skinne i kabelfelt: største avgang = 400A = 2 lisser a` 125A Største avgang = 630A = 3 lisser a` 125A Eventuelt 30x10mm flat Cu Tilstrekkelig med jordklemmer, og store nok for kablar? Er det brukt kortast mogeleg vei for overspennings- vernet til hovedjord og utjevning til gods?	✓
Inntak	Er PEN Dimensjonert riktig? Må vurderast i kvart enkelt tilfelle. Fulldimensjonerast opp til 800A	✓
Målertrafo E-verk	Er avstander mellom måletrafoar iht REN-BLAD? 2000A og nedover: 30mm frå kant måletrafo til nabofase. 2000A og oppover: 30mm + 10mm pr 1000A. (2500A = 35mm)	✓
Tiltrekking	Er tilkoplingar med moment synleg merka? (ikkje bak avdekning) Tatt ein stikkprøvekontroll på nokon tilkoplingar at dei er "tigha"?	✓
Ekom	Inneheld tavla utstyr for elektronisk kommunikasjon? (bus, fiber o.l.) Sjekk at utstyr/kablar er montert iht NEK700, samt bruksanvisning for produkta	✓
Merking	Brytarar og vendarar tilstrekkelig merka? Merkeskilt komponentar bak avdekning? Dører merka?	✓
Generelt/ diverse	Nok flensar for kablar inn og ut? Merking UPS-Vendar (UPS settast i statisk og posisjonsmerke)? Tilgong til alle ledningar i tavle? Det skal nyttast rør på ledningar som ligg skjult bak t.d montasjeplate eller effektbryterfelt. Unntaket kan være store forsyningskablar. Er det tatt bilder av tavla? Nettanalysator/jordfeilvarsling programmert? Er det passa på at alle fasar i ein kurs går gjennom same hull i gjennomføring av eventuelle stålplater? T.d spenningsfasar på MOK, avgangar osv?	✓

Dato:	30.06.2025
Sign.	EH

Rev.dato	Navn på dokument, revisjon nr	Utført av
08.05.2023	Dokumentasjonsmal EE tavleproduksjon, R16	Tore Hjelle, QA



Eid Elektro

Rutineprøve for Elektrotavler

Prosjekt nr.:	Prosjektnavn:	Fordeling:
107478	Årdal VGS	HF

11.9.2: Test 2, Spenningsprøving

Utførast på all hovedstrøm med alle automatsikringer på.

Tavla skal vere spenningslaus.

All styrestrøm, overspenningsvern, instrumentering, kWh-målarar og lignande skal vere FRÅKOBLA!!!

Dersom tavla har inntak over 250A, skal tavletestar nyttast.

Inntak opp til og med 250A så kan vanlig meggar nyttast.

Megger: Bruk minimum 500V prøvespenning

Tavletester: Prøvespenning iht NEK439:2013 tab8. Bruk innstilling 2500V, test minimum 1 sek.

Mål rett etter hovedbryter. NB! Dersom tavla innehelde XDIGITAL-

JFautomatar/digitale jordfeilbrytarar, eller Schneder Micrologic E, må desse leggst ut under testinga!

Målestad	Kontrollert - OK
Jord – L1/L2/L3 (Laska saman)	✓
L1 – Jord/L2/L3/N (Laska saman)	✓
L2 – Jord/L1/L3/N (Laska saman)	✓
L3 – Jord/L1/L2/N (Laska saman)	✓
N – L1/L2/L3 (Laska saman) Kun aktuelt ved TN, set strek elles	—
Isolasjonsmåling/megging på tavler opp til og med 250A (kvar fase + N mot PE). Kan i dette tilfellet sette strek i dei 4 radene over	—

11.10 Ledningsforlegning, driftsmessige ytelsar og funksjon

Sjekk at tavla er riktig merka. Gjeld både komponentar i tavla og skilt utanpå tavle



Funksjonsprøv alle styringar, betjeningsorgan, nettanalysator osv og sjekk at alt fungerer som det skal



Evt test at inn- og utgangar på PLS fungerer



Tilleggsinformasjon frå rutineprøve:

Dato:

30/7/2025

Tore H

Underskrift, montør som har testa tavla

Rev.dato	Navn på dokument, revisjon nr	Utført av
08.05.2023	Dokumentasjonsmal EE tavleproduksjon, R16	Tore Hjelte, QA

Eid Elektro AS
6770 Nordfjordeid
5224 Nesttun
www.eidelektro.no



Tore Hjelte
Avdelingsleder teknisk avd.
Mob: 90 69 20 07



Eid Elektro

Sjekkliste Montør

Prosjekt nr.:	Prosjektnavn:	Fordeling:
107478	Årdal VGS	HF
Før rutineprøve		V = OK -- = Uaktuelt
Jording/PE	Hovedjord inntak: nok tilkoblinger? Al klemme på jordskinne for hovedfordelinger?	✓
	Forbindelse hovedjord - utg. jordskinne	✓
	Riktig antall tilkoblinger inn/ut	✓
	Jordskinne merket	✓
	Lisse i dør m/instrument	✓
Inntak	Ved 400V TN-C-S, er det tilrettelagt for PEN-splitt inklusiv merking?	✓
	Kabelfestjern	✓
Målerfremlegg	E. Verk måleropplegg koblet korrekt/merket og med riktige farger	✓
	Lask E-verk trafoer fjernet/plombering monterert på?	✓
Merking	Avstander på måletrafoer mot andre faser iht REN?	✓
	L1-L2-L3-N merking	✓
	Komponentmerking	✓
	Rekkeklemmer + List nr	✓
	Dører merka med Eid Elektro skilt, tavlenavn, sp.skilt, feltmerker?	✓
	Momentlapper på effektbrytere og AL-klemmer?	✓
Tiltrekking	Effektbrytere merket med skilt for justerte verdier	✓
	Eff.br trukket med moment og synlig merket (ikkje bak avdekning)	✓
	Sjekk at samtlige klemmer i tavla er trekt til, husk på mateskinner, distr.blokker, komponenter i dør, etc etc	✓
Dør	Dokumentholder, kursfortegnelse	✓
	Låseleppe for sylindrlås lagt med	✓
Diverse	Endedeksel samleskinner automatar	✓
	Veggfester / flenser / nøkkel	✓
	Evt. Info forside hensyntatt / utført?	✓
Funksjon/ Spenningsstest	Overflate, sentral og sokkel rengjort / støvsuget	✓
	Utfør enkel isolasjonstesting / megging av tavle ved hjelp av liten meggar (kvar fase inkl N mot PE)	✓
	Kople til og sette spenning på tavle iht rutiner i FSE	✓
	Utfør ein kort funksjonstest av dei viktigaste funksjonane i tavla	✓
	Programmer nettanalysatorar/kwh-målarar med riktig nettype og omsetningsforhold. J.f.varslings med antal sumtrafoer, mA o.l.	✓
	Kontroller at nettanalysatorar/kwh-målarar har riktig strømtrekk. Strømtrekk skal vere ca 8A ved bruk av 1800W varmluftpistol	✓
Tavle klar for rutineprøve		
Etter rutineprøve		V = OK -- = Uaktuelt
Diverse	Montere alle deksel og avdekninger	✓
	Direktesløyfe E-verk kuttet/terminert	✓
	Er eventuelle endringer i skjema og på layout kladda inn?	✓
	Tatt bilder av tavla?	✓
	Sjekk at nødvendige lause deler medfølger (veggfester, flensar, mutterar, deksel til strømtafoar osv)	✓
	Løse ledninger godt merket v / deling	✓
	Sjekk at all dokumentasjon, datablad, kurslister er i tavla	✓
	Komponentar/deler til tavla som ikkje er monterert ved testing/sending:	
Dato:	30/7/2025	
Sign.		
Rev.dato	Navn på dokument, revisjon nr	Utført av
08.05.2023	Dokumentasjonsmal EE tavleproduksjon, R16	Tore Hjelle, QA



Eid Elektro

Rutineprøve for Elektrotavler

Produsert av Eid Elektro AS
Sjekkliste iht NEK439:2013 kap 11, Rutineverifikasjon

Prosjekt nr.:	Prosjektnavn:	Fordeling:
107478	Ardal VGS	HF
11.2 Beskyttelsegrad for kapsling		
Visuell kontroll for å sikre at sjølve kapslinga/skapet har tilstrekkelig beskyttelsesgrad. Sjekk at pakninger, evt hol vi har tatt, nipplar, flenser osv er riktig montert		☒
11.3 Klaring og krypeavstandar		
Visuell kontroll/måling. Iht tabell 1 s 85, NEK439. Alle avstandar mellom uisolert fase/jord og fase/fase skal vere over 14mm		☒
11.4 Beskyttelse mot elektrisk sjokk/strømgjennomgang og integritet av beskyttelseskretser		
Visuell sjekk avdekninger, sjekk av jordtilkoblingar, evt moment på desse		☒
Intern kabling i tavle fram til 1.jordfeilbryter i tavler med nett 230V IT/TT:		JA / Ikkje Aktuelt
Ivaretatt ved:Dobbelisolert kabel / Strømpe på RQ/RK /Dobbelisolert kapsling (Klasse II)	☒	☐
Ivaretatt ved:RQ/RK forlagt i samsvar med NEK 439-1 8.4.4, dvs forlagt slik at tilfeldig berøring ikkje er mulig (bak deksel, i kanal, bak kabelfeltdør med lås for nøkkel/skrudjern, dvs ikkje opent forlagt i tavler)	☒	☐
Ivaretatt ved foranstående jordfeilvarsling/isolasjonsovervåkning	☒	☐
11.5 Innlemming av innebygde komponentar		
Sjekk at tavla er riktig merka. Gjeld både komponentar i tavla og skilt utanpå tavle		☒
11.6 Interne elektriske kretsar og forbindelsar		
Sjekk at alle momenttilkoplingar er synleg merka (ikkje bak avdekning)		☒
Ta rikeleg med stikkprøvar og dra i ledningar for å sjekke at klemmene er trekt til i tavle.		☒
11.7 Koplingsklemmer for eksterne ledarar		
Visuell sjekk. Sjekk antal, type, merking stemmer med skjema		☒
Spenningssett tavla. Spenningsmåling på rekkeklemmer ved å legge inn / ut kurs		☒
11.8 Mekanisk funksjon		
Sjekk at betjening av alle komponentar, samt forrigingar, låsar, dører osv er ok		☒
11.9 Dielektriske egenskapar		
Alle hovedstrømkretsar (altså ikkje styrestrøm) skal støtspennings-testast. Vi foretar også kontinuitetsmåling av tavlene. Testane blir gjort for å avsløre evt. Materalfeil eller feil montering/kobling		
11.9.1: Test 1, Kontinuitetsmåling		
Kontinuitetsmåling: Set tavltester på kontinuitetsmåling 10A, motstanden som målast skal ikkje overstige 0,1ohm. Instrumentet skal ikkje vise høgare spenningsfall enn 1V		
Målestad	Kontrollert - OK	
Rammeverk	☒	
Sideplater - jord (kun der det er montert el.utstyr)	☒	
Dører - Jord (Kun der det er montert el.utstyr)	☒	
Rev.dat	Navn på dokument, revisjon nr	Utført av
08.05.2023	Dokumentasjonsmal EE tavleproduksjon, R16	Tore Hjelte, QA

Bussmann

Cylindrical fuse links



Product description

Bussmann's range of cylindrical class gG/gL and aM fuse links are suitable for industrial applications.

Standard features

- Compact design
- Tool free installation
- Low temperature rise
- Available with strikers and indicators
- Compatible with Bussmann's modular fuse holders

Table 1. Catalogue Symbol:

Size (mm)	Without indicator (example)	With indicator (example)	With striker* (example)
Class gG/gL			
8 x 31	C08G (amps) (C08G4)	C08G(amps)I (C08G4I)	N/A
10 x 38	C10G(amps) (C10G4)	C10G(amps)I (C10G4I)	N/A
14 x 51	C14G(amps) (C14G4)	C14G(amps)I (C14G4I)	C14G(amps)S* (C14G4S)
22 x 58	C22G(amps) (C22G4)	C22G(amps)I (C22G4I)	C22G(amps)S* (C22G4S)
Class aM			
8 x 31	C08M(amps) (C08M4)	N/A	N/A
10 x 38	C10M(amps) (C10M4)	C10M(amps)I (C10M4I)	N/A
14 x 51	C14M(amps) (C14M4)	C14M(amps)I (C14M4I)	C14M(amps)S* (C14M4S)
22 x 58	C22M(amps) (C22M12)	C22M(amps)I (C22M12I)	C22M(amps)S* (C22M12S)

* Striker fuse links can operate a microswitch for remote fuse link operated indication

Fuse size:

- 8 x 31, 10 x 38, 14 x 51 and 22 x 58 mm

Technical data:

- Volts: 400 to 690 V a.c.
- Amps: 0.25 to 125 A
- Breaking capacity: 20 to 120 kA AC
- Class of operation: gG/gL and aM

Standards/Approvals:

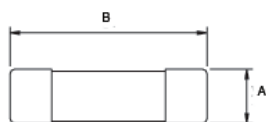
- IEC 60269

Packaging:

- 10 per carton

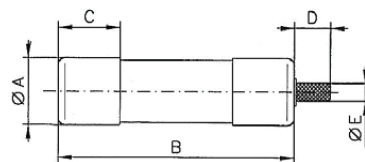
Dimensions - mm

Fuse links with or without indicator



Size (mm)	A	B
8 x 31 mm	8	31
10 x 38 mm	10	38
14 x 51 mm	14	51
22 x 58 mm	22	58

Fuse links with striker



Size (mm)	A	B	C	D	E
14 x 51	14	51	13	8	4
22 x 58	22	58	16	8	4

* For striker fuse links applications use CH14(# of poles) DMSU-F or CH22(# of poles)DMSU-F fuse holders with microswitch auxiliary contacts

Table 2. Catalogue Numbers gG/gL 8 x 31, 10 x 38 and 14 x 51 mm

Size (mm)	Class	Current (A)	Voltage (V a.c.)	Breaking Capacity (kA)	Catalogue Numbers	Pack Quantity	Fuse Holders*	Size (mm)	Class	Current (A)	Voltage (V a.c.)	Breaking Capacity (kA)	Catalogue Numbers	Pack Quantity	Fuse Holders*
8 x 31 mm Without indicator								14 x 51 mm Without indicator							
8 x 31	gG/gL	0.5	400	20	C08G0-5	10	-	14 x 51	gG/gL	1	690	80	C14G1	10	CH14
8 x 31	gG/gL	1	400	20	C08G1	10	-	14 x 51	gG/gL	2	690	80	C14G2	10	CH14
8 x 31	gG/gL	2	400	20	C08G2	10	-	14 x 51	gG/gL	4	690	80	C14G4	10	CH14
8 x 31	gG/gL	4	400	20	C08G4	10	-	14 x 51	gG/gL	6	690	80	C14G6	10	CH14
8 x 31	gG/gL	6	400	20	C08G6	10	-	14 x 51	gG/gL	8	690	80	C14G8	10	CH14
8 x 31	gG/gL	8	400	20	C08G8	10	-	14 x 51	gG/gL	10	690	80	C14G10	10	CH14
8 x 31	gG/gL	10	400	20	C08G10	10	-	14 x 51	gG/gL	12	690	80	C14G12	10	CH14
8 x 31	gG/gL	12	400	20	C08G12	10	-	14 x 51	gG/gL	16	690	80	C14G16	10	CH14
8 x 31	gG/gL	16	400	20	C08G16	10	-	14 x 51	gG/gL	20	690	80	C14G20	10	CH14
8 x 31	gG/gL	20	400	20	C08G20	10	-	14 x 51	gG/gL	25	690	80	C14G25	10	CH14
8 x 31 mm With indicator								14 x 51	gG/gL	32	500	120	C14G32	10	CH14
8 x 31	gG/gL	2	400	20	C08G2I	10	-	14 x 51	gG/gL	40	500	120	C14G40	10	CH14
8 x 31	gG/gL	4	400	20	C08G4I	10	-	14 x 51	gG/gL	50	400	120	C14G50	10	CH14
8 x 31	gG/gL	6	400	20	C08G6I	10	-	14 x 51 mm With indicator							
8 x 31	gG/gL	8	400	20	C08G8I	10	-	14 x 51	gG/gL	1	690	80	C14G1I	10	CH14
8 x 31	gG/gL	10	400	20	C08G10I	10	-	14 x 51	gG/gL	2	690	80	C14G2I	10	CH14
8 x 31	gG/gL	12	400	20	C08G12I	10	-	14 x 51	gG/gL	4	690	80	C14G4I	10	CH14
8 x 31	gG/gL	16	400	20	C08G16I	10	-	14 x 51	gG/gL	6	690	80	C14G6I	10	CH14
8 x 31	gG/gL	20	400	20	C08G20I	10	-	14 x 51	gG/gL	8	690	80	C14G8I	10	CH14
10 x 38 mm Without indicator								14 x 51	gG/gL	10	690	80	C14G10I	10	CH14
10 x 38	gG/gL	0.5	500	120	C10G0-5	10	CHM	14 x 51	gG/gL	12	690	80	C14G12I	10	CH14
10 x 38	gG/gL	1	500	120	C10G1	10	CHM	14 x 51	gG/gL	16	690	80	C14G16I	10	CH14
10 x 38	gG/gL	2	500	120	C10G2	10	CHM	14 x 51	gG/gL	20	690	80	C14G20I	10	CH14
10 x 38	gG/gL	4	500	120	C10G4	10	CHM	14 x 51	gG/gL	25	690	80	C14G25I	10	CH14
10 x 38	gG/gL	6	500	120	C10G6	10	CHM	14 x 51	gG/gL	32	500	120	C14G32I	10	CH14
10 x 38	gG/gL	8	500	120	C10G8	10	CHM	14 x 51	gG/gL	40	500	120	C14G40I	10	CH14
10 x 38	gG/gL	10	500	120	C10G10	10	CHM	14 x 51	gG/gL	50	400	120	C14G50I	10	CH14
10 x 38	gG/gL	12	500	120	C10G12	10	CHM	14 x 51 mm With striker							
10 x 38	gG/gL	16	500	120	C10G16	10	CHM	14 x 51	gG/gL	2	500	120	C14G2S	10	CH14
10 x 38	gG/gL	20	500	120	C10G20	10	CHM	14 x 51	gG/gL	4	500	120	C14G4S	10	CH14
10 x 38	gG/gL	25	500	120	C10G25	10	CHM	14 x 51	gG/gL	6	500	120	C14G6S	10	CH14
10 x 38	gG/gL	32	400	120	C10G32	10	CHM	14 x 51	gG/gL	8	500	120	C14G8S	10	CH14
10 x 38 mm With indicator								14 x 51	gG/gL	10	500	120	C14G10S	10	CH14
10 x 38	gG/gL	1	500	120	C10G1I	10	CHM	14 x 51	gG/gL	12	500	120	C14G12S	10	CH14
10 x 38	gG/gL	2	500	120	C10G2I	10	CHM	14 x 51	gG/gL	16	500	120	C14G16S	10	CH14
10 x 38	gG/gL	4	500	120	C10G4I	10	CHM	14 x 51	gG/gL	20	500	120	C14G20S	10	CH14
10 x 38	gG/gL	6	500	120	C10G6I	10	CHM	14 x 51	gG/gL	25	500	120	C14G25S	10	CH14
10 x 38	gG/gL	8	500	120	C10G8I	10	CHM	14 x 51	gG/gL	32	500	120	C14G32S	10	CH14
10 x 38	gG/gL	10	500	120	C10G10I	10	CHM	14 x 51	gG/gL	40	500	120	C14G40S	10	CH14
10 x 38	gG/gL	12	500	120	C10G12I	10	CHM	14 x 51	gG/gL	50	400	120	C14G50S	10	CH14
10 x 38	gG/gL	16	500	120	C10G16I	10	CHM								
10 x 38	gG/gL	20	500	120	C10G20I	10	CHM								
10 x 38	gG/gL	25	500	120	C10G25I	10	CHM								
10 x 38	gG/gL	32	500	120	C10G32I	10	CHM								
10 x 38	gG/gL	40	500	120	C10G40I	10	CHM								
10 x 38	gG/gL	50	400	120	C10G50I	10	CHM								

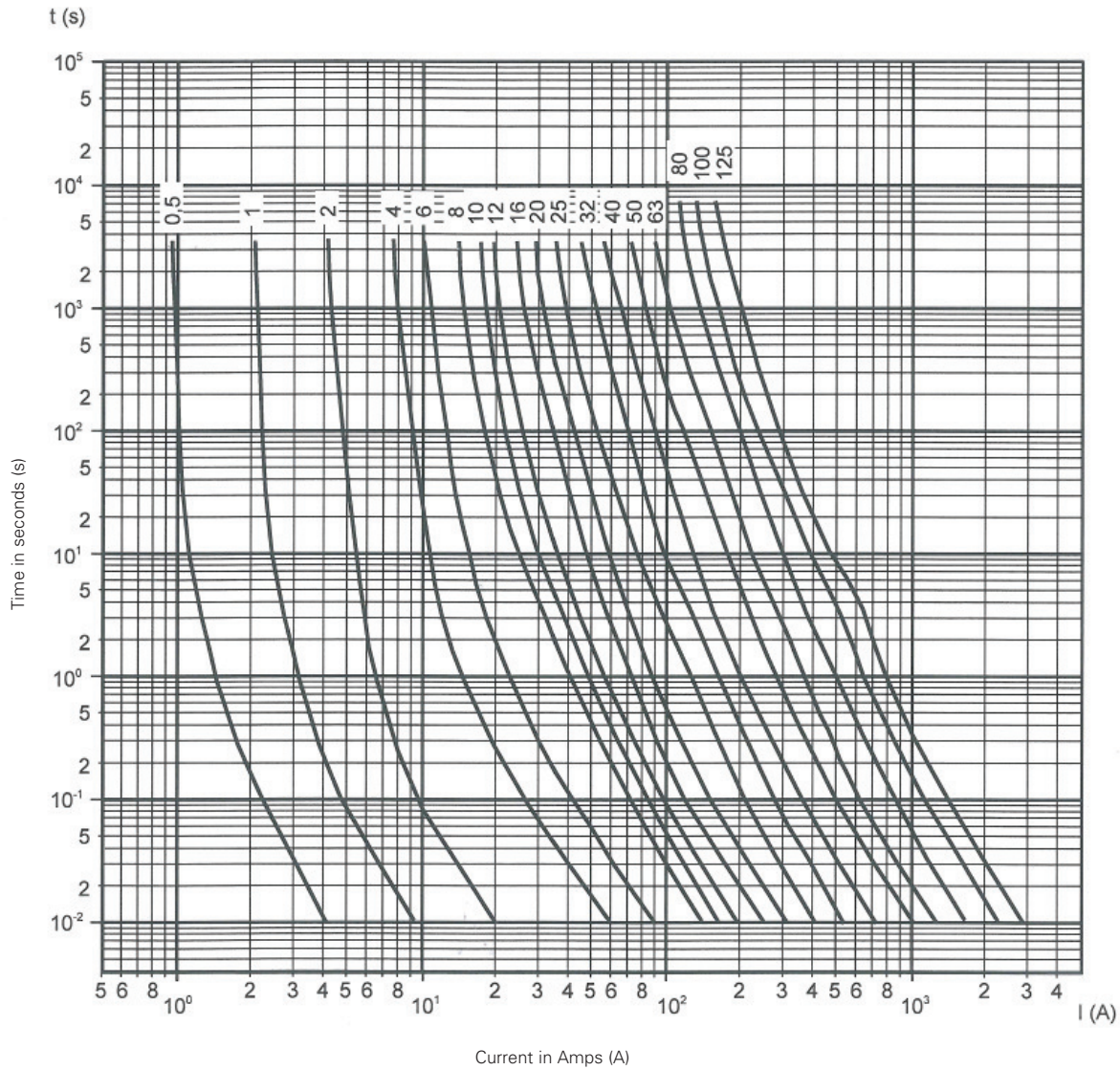
* Please contact our Technical department for further information on our range of modular fuse holders: 00 44 1509 882 699 or buletechnical@eaton.com

Table 3. Catalogue Numbers 22 x 58 mm

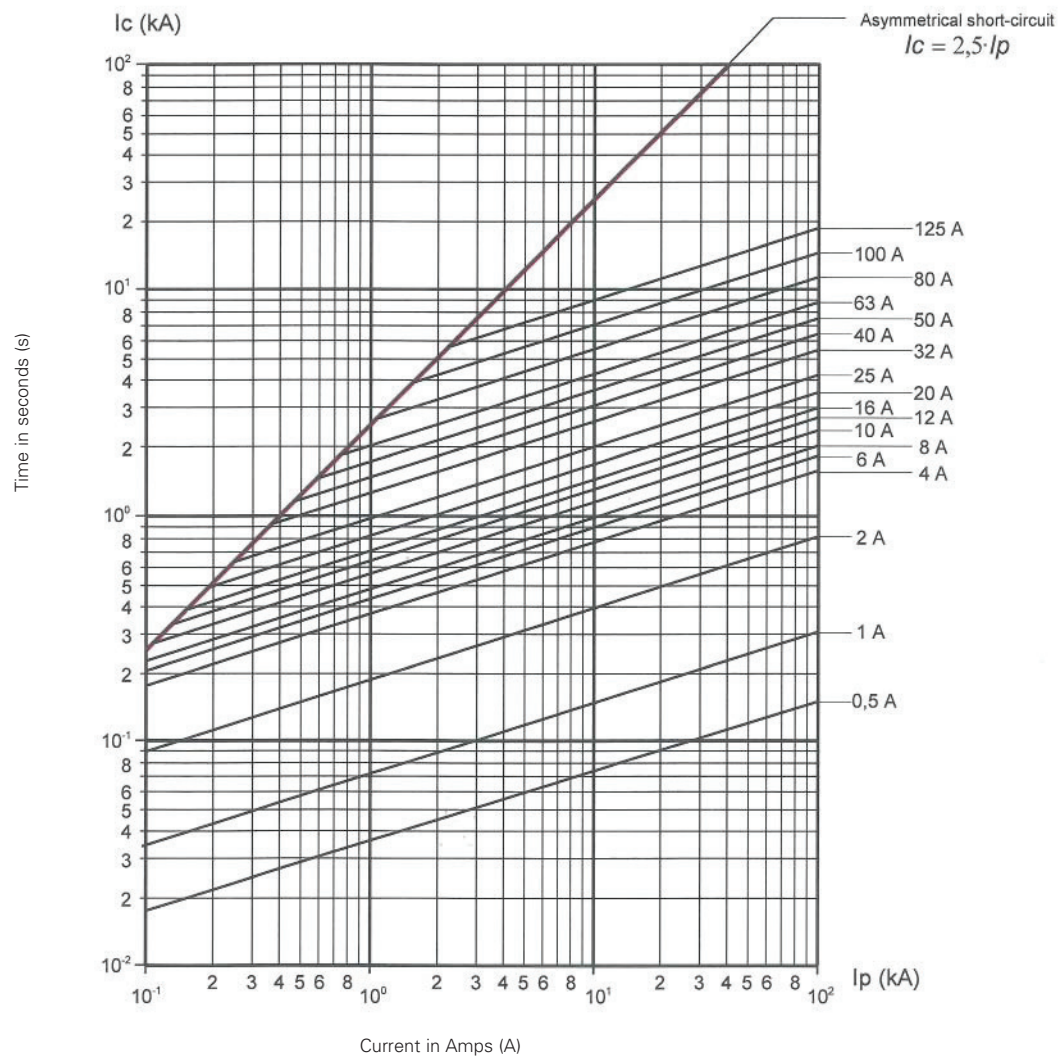
Size (mm)	Class	Current (A)	Voltage (V a.c.)	Breaking Capacity (kA)	Catalogue Numbers	Pack Quantity	Fuse Holders*
22 x 58 mm Without indicator							
22 x 58	gG/gL	2	690	80	C22G2	10	CH22
22 x 58	gG/gL	4	690	80	C22G4	10	CH22
22 x 58	gG/gL	6	690	80	C22G6	10	CH22
22 x 58	gG/gL	8	690	80	C22G8	10	CH22
22 x 58	gG/gL	10	690	80	C22G10	10	CH22
22 x 58	gG/gL	12	690	80	C22G12	10	CH22
22 x 58	gG/gL	16	690	80	C22G16	10	CH22
22 x 58	gG/gL	20	690	80	C22G20	10	CH22
22 x 58	gG/gL	25	690	80	C22G25	10	CH22
22 x 58	gG/gL	32	690	80	C22G32	10	CH22
22 x 58	gG/gL	40	690	80	C22G40	10	CH22
22 x 58	gG/gL	50	690	80	C22G50	10	CH22
22 x 58	gG/gL	63	690	80	C22G63	10	CH22
22 x 58	gG/gL	80	500	120	C22G80	10	CH22
22 x 58	gG/gL	100	500	120	C22G100	10	CH22
22 x 58	gG/gL	125	400	120	C22G125	10	CH22
22 x 58 mm With indicator							
22 x 58	gG/gL	2	690	80	C22G2I	10	CH22
22 x 58	gG/gL	4	690	80	C22G4I	10	CH22
22 x 58	gG/gL	6	690	80	C22G6I	10	CH22
22 x 58	gG/gL	8	690	80	C22G8I	10	CH22
22 x 58	gG/gL	10	690	80	C22G10I	10	CH22
22 x 58	gG/gL	12	690	80	C22G12I	10	CH22
22 x 58	gG/gL	16	690	80	C22G16I	10	CH22
22 x 58	gG/gL	20	690	80	C22G20I	10	CH22
22 x 58	gG/gL	25	690	80	C22G25I	10	CH22
22 x 58	gG/gL	32	690	80	C22G32I	10	CH22
22 x 58	gG/gL	40	690	80	C22G40I	10	CH22
22 x 58	gG/gL	50	690	80	C22G50I	10	CH22
22 x 58	gG/gL	63	690	80	C22G63I	10	CH22
22 x 58	gG/gL	80	500	120	C22G80I	10	CH22
22 x 58	gG/gL	100	500	120	C22G100I	10	CH22
22 x 58	gG/gL	125	400	120	C22G125I	10	CH22
22 x 58 mm With striker							
22 x 58	gG/gL	4	690	80	C22G4S	10	CH22
22 x 58	gG/gL	6	690	80	C22G6S	10	CH22
22 x 58	gG/gL	8	690	80	C22G8S	10	CH22
22 x 58	gG/gL	10	690	80	C22G10S	10	CH22
22 x 58	gG/gL	12	690	80	C22G12S	10	CH22
22 x 58	gG/gL	16	690	80	C22G16S	10	CH22
22 x 58	gG/gL	20	690	80	C22G20S	10	CH22
22 x 58	gG/gL	25	690	80	C22G25S	10	CH22
22 x 58	gG/gL	32	690	80	C22G32S	10	CH22
22 x 58	gG/gL	40	690	80	C22G40S	10	CH22
22 x 58	gG/gL	50	690	80	C22G50S	10	CH22
22 x 58	gG/gL	63	690	80	C22G63S	10	CH22
22 x 58	gG/gL	80	500	120	C22G80S	10	CH22
22 x 58	gG/gL	100	500	120	C22G100S	10	CH22
22 x 58	gG/gL	125	400	120	C22G125S	10	CH22

* Please contact our Technical department for further information on our range of modular fuse holders: 00 44 1509 882 699 or buletechnical@eaton.com

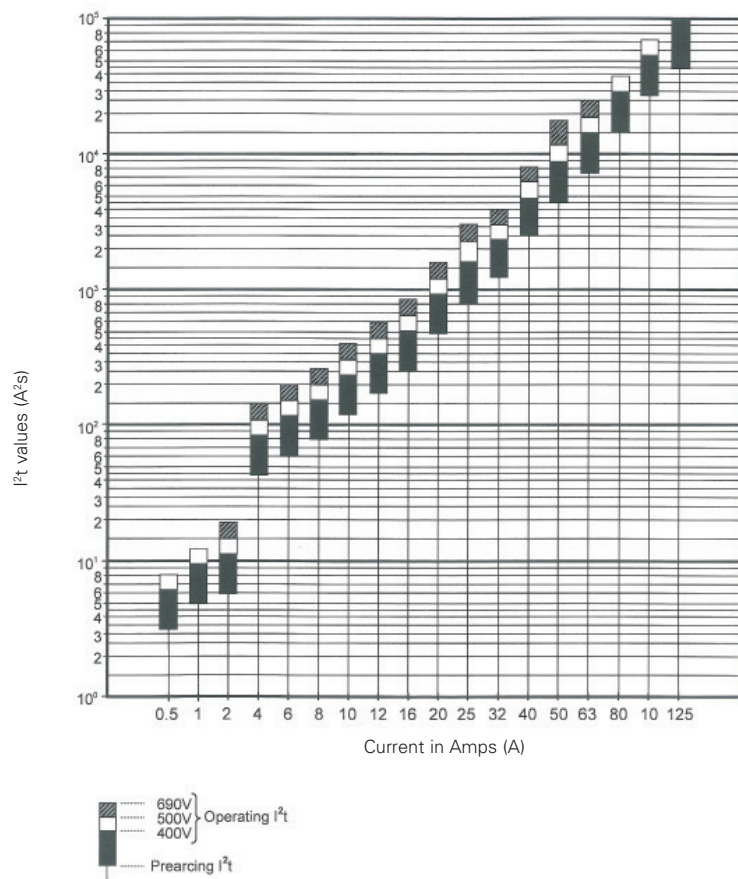
Time-current curves - Class gG/gL



Cut-off characteristics - Class gG/gL



I^2t Values - Class gG/gL



Class gG/gL - Watts loss values

Amp	Size mm			
	8 x 31	10 x 38	14 x 51	22 x 58
0.5	1.2	1.43	-	-
1	2	2.77	3.9	-
2	0.5	0.6	0.9	1
4	0.8	0.7	1	1.1
6	1.1	0.85	1.15	1.3
8	1.3	0.75	1	1.1
10	1	1	1.3	1.5
12	1.2	1.3	1.7	1.8
16	1.5	1.6	2	2.1
20	2	2	2.5	2.7
25	2.6	2.6	3.3	3.3
32	-	2.9	3.5	3.5
40	-	-	4.75	4
50	-	-	4.8	5.5
63	-	-	-	6.9
80	-	-	-	7.8
100	-	-	-	9
125	-	-	-	11.4

Table 4. Catalogue Numbers aM 8 x 31, 10 x 38 and 14 x 51 mm

Size (mm)	Class	Current (A)	Voltage (V a.c.)	Breaking Capacity (kA)	Catalogue Numbers	Pack Quantity	Fuse Holders*	Size (mm)	Class	Current (A)	Voltage (V a.c.)	Breaking Capacity (kA)	Catalogue Numbers	Pack quantity	Fuse Holders*
8 x 31 mm Without indicator								14 x 51 mm Without indicator							
8 x 31	aM	1	400	20	C08M1	10	-	14 x 51	aM	0.25	690	120	C14M0-25	10	CH14
8 x 31	aM	2	400	20	C08M2	10	-	14 x 51	aM	0.5	690	120	C14M0-5	10	CH14
8 x 31	aM	4	400	20	C08M4	10	-	14 x 51	aM	1	690	80	C14M1	10	CH14
8 x 31	aM	6	400	20	C08M6	10	-	14 x 51	aM	2	690	80	C14M2	10	CH14
8 x 31	aM	8	400	20	C08M8	10	-	14 x 51	aM	4	690	80	C14M4	10	CH14
10 x 38 mm Without indicator								14 x 51	aM	6	690	80	C14M6	10	CH14
10 x 38	aM	0.25	500	120	C10M0-25	10	CHM	14 x 51	aM	8	690	80	C14M8	10	CH14
10 x 38	aM	0.5	500	120	C10M0-5	10	CHM	14 x 51	aM	10	690	80	C14M10	10	CH14
10 x 38	aM	1	500	120	C10M1	10	CHM	14 x 51	aM	12	690	80	C14M12	10	CH14
10 x 38	aM	2	500	120	C10M2	10	CHM	14 x 51	aM	16	690	80	C14M16	10	CH14
10 x 38	aM	4	500	120	C10M4	10	CHM	14 x 51	aM	20	690	80	C14M20	10	CH14
10 x 38	aM	6	500	120	C10M6	10	CHM	14 x 51	aM	25	690	80	C14M25	10	CH14
10 x 38	aM	8	500	120	C10M8	10	CHM	14 x 51	aM	32	500	120	C14M32	10	CH14
10 x 38	aM	10	500	120	C10M10	10	CHM	14 x 51	aM	40	500	120	C14M40	10	CH14
10 x 38	aM	12	500	120	C10M12	10	CHM	14 x 51	aM	50	400	120	C14M50	10	CH14
10 x 38	aM	16	500	120	C10M16	10	CHM	14 x 51 mm With indicator							
10 x 38	aM	20	400	120	C10M20	10	CHM	14 x 51	aM	1	690	80	C14M1I	10	CH14
10 x 38	aM	25	400	120	C10M25	10	CHM	14 x 51	aM	2	690	80	C14M2I	10	CH14
10 x 38 mm With indicator								14 x 51	aM	4	690	80	C14M4I	10	CH14
10 x 38	aM	1	500	120	C10M1I	10	CHM	14 x 51	aM	6	690	80	C14M6I	10	CH14
10 x 38	aM	2	500	120	C10M2I	10	CHM	14 x 51	aM	8	690	80	C14M8I	10	CH14
10 x 38	aM	4	500	120	C10M4I	10	CHM	14 x 51	aM	10	690	80	C14M10I	10	CH14
10 x 38	aM	6	500	120	C10M6I	10	CHM	14 x 51	aM	12	690	80	C14M12I	10	CH14
10 x 38	aM	8	500	120	C10M8I	10	CHM	14 x 51	aM	16	690	80	C14M16I	10	CH14
10 x 38	aM	10	500	120	C10M10I	10	CHM	14 x 51	aM	20	690	80	C14M20I	10	CH14
10 x 38	aM	12	500	120	C10M12I	10	CHM	14 x 51	aM	25	690	80	C14M25I	10	CH14
10 x 38	aM	16	500	120	C10M16I	10	CHM	14 x 51	aM	32	500	120	C14M32I	10	CH14
10 x 38	aM	20	400	120	C10M20I	10	CHM	14 x 51	aM	40	500	120	C14M40I	10	CH14
10 x 38	aM	25	400	120	C10M25I	10	CHM	14 x 51	aM	50	400	120	C14M50I	10	CH14
								14 x 51 mm With striker							
								14 x 51	aM	2	500	120	C14M2S	10	CH14
								14 x 51	aM	4	500	120	C14M4S	10	CH14
								14 x 51	aM	6	500	120	C14M6S	10	CH14
								14 x 51	aM	8	500	120	C14M8S	10	CH14
								14 x 51	aM	10	500	120	C14M10S	10	CH14
								14 x 51	aM	12	500	120	C14M12S	10	CH14
								14 x 51	aM	16	500	120	C14M16S	10	CH14
								14 x 51	aM	20	500	120	C14M20S	10	CH14
								14 x 51	aM	25	500	120	C14M25S	10	CH14
								14 x 51	aM	32	500	120	C14M32S	10	CH14
								14 x 51	aM	40	500	120	C14M40S	10	CH14
								14 x 51	aM	50	400	120	C14M50S	10	CH14

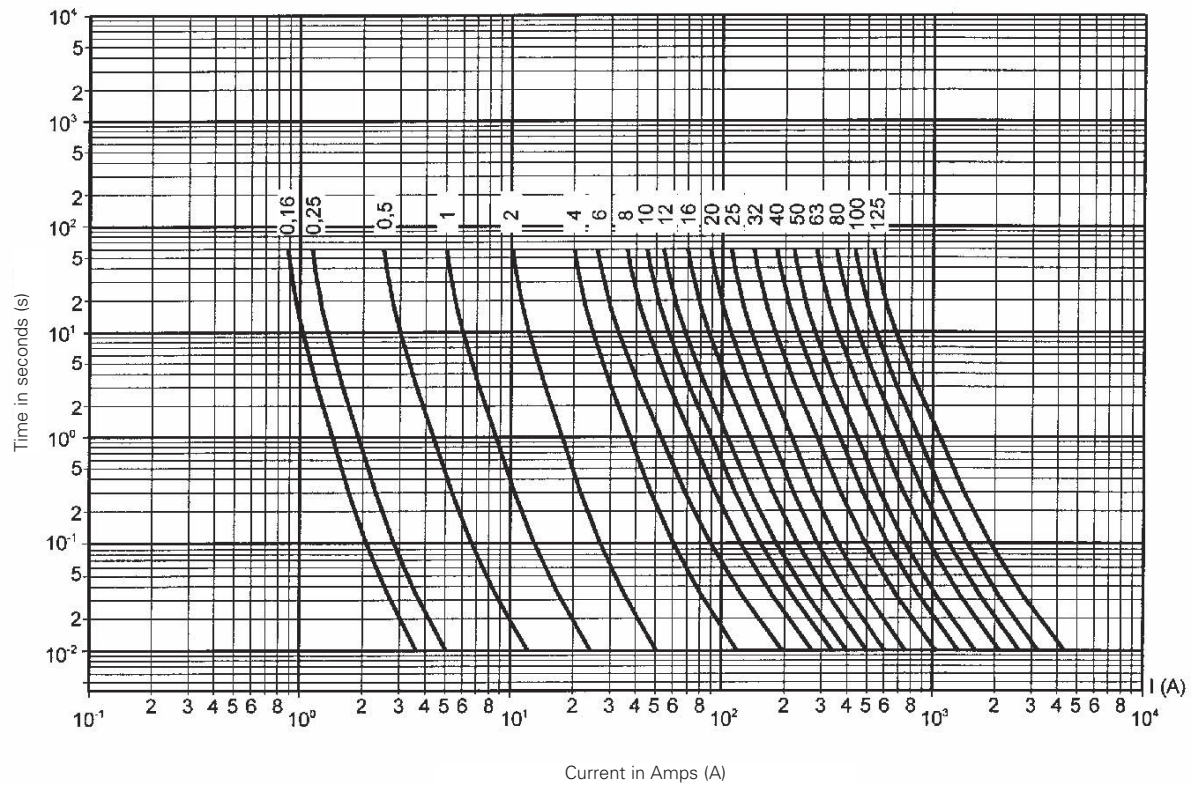
* Please contact our Technical department for further information on our range of modular fuse holders: 00 44 1509 882 699 or buletechnical@eaton.com

Table 5. Catalogue Numbers aM 22 x 58 mm

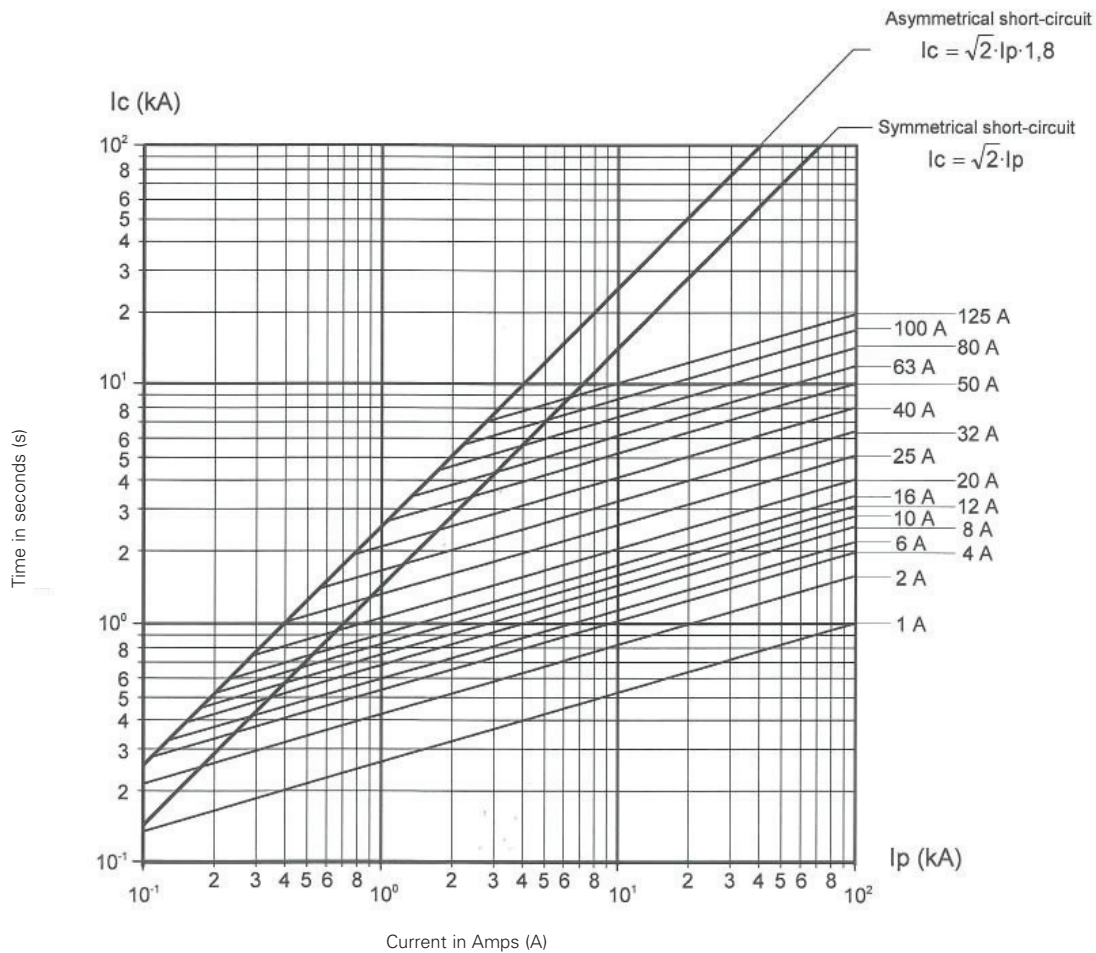
Size (mm)	Class	Current (A)	Voltage (V a.c.)	Breaking Capacity (kA)	Catalogue Numbers	Pack Quantity	Fuse Holders*
22 x 58 mm Without indicator							
22 x 58	aM	2	690	80	C22M2	10	CH22
22 x 58	aM	4	690	80	C22M4	10	CH22
22 x 58	aM	6	690	80	C22M6	10	CH22
22 x 58	aM	8	690	80	C22M8	10	CH22
22 x 58	aM	10	690	80	C22M10	10	CH22
22 x 58	aM	12	690	80	C22M12	10	CH22
22 x 58	aM	16	690	80	C22M16	10	CH22
22 x 58	aM	20	690	80	C22M20	10	CH22
22 x 58	aM	25	690	80	C22M25	10	CH22
22 x 58	aM	32	690	80	C22M32	10	CH22
22 x 58	aM	40	690	80	C22M40	10	CH22
22 x 58	aM	50	690	80	C22M50	10	CH22
22 x 58	aM	63	690	80	C22M63	10	CH22
22 x 58	aM	80	500	120	C22M80	10	CH22
22 x 58	aM	100	500	120	C22M100	10	CH22
22 x 58	aM	125	400	120	C22M125	10	CH22
22 x 58 mm With indicator							
22 x 58	aM	2	690	80	C22M2I	10	CH22
22 x 58	aM	4	690	80	C22M4I	10	CH22
22 x 58	aM	6	690	80	C22M6I	10	CH22
22 x 58	aM	8	690	80	C22M8I	10	CH22
22 x 58	aM	10	690	80	C22M10I	10	CH22
22 x 58	aM	12	690	80	C22M12I	10	CH22
22 x 58	aM	16	690	80	C22M16I	10	CH22
22 x 58	aM	20	690	80	C22M20I	10	CH22
22 x 58	aM	25	690	80	C22M25I	10	CH22
22 x 58	aM	32	690	80	C22M32I	10	CH22
22 x 58	aM	40	690	80	C22M40I	10	CH22
22 x 58	aM	50	690	80	C22M50I	10	CH22
22 x 58	aM	63	690	80	C22M63I	10	CH22
22 x 58	aM	80	500	120	C22M80I	10	CH22
22 x 58	aM	100	500	120	C22M100I	10	CH22
22 x 58	aM	125	400	120	C22M125I	10	CH22
22 x 58 mm With striker							
22 x 58	aM	12	690	80	C22M12S	10	CH22
22 x 58	aM	16	690	80	C22M16S	10	CH22
22 x 58	aM	20	690	80	C22M20S	10	CH22
22 x 58	aM	25	690	80	C22M25S	10	CH22
22 x 58	aM	32	690	80	C22M32S	10	CH22
22 x 58	aM	40	690	80	C22M40S	10	CH22
22 x 58	aM	50	690	80	C22M50S	10	CH22
22 x 58	aM	63	690	80	C22M63S	10	CH22
22 x 58	aM	80	500	120	C22M80S	10	CH22
22 x 58	aM	100	500	120	C22M100S	10	CH22
22 x 58	aM	125	400	120	C22M125S	10	CH22

* Please contact our Technical department for further information on our range of modular fuse holders: 00 44 1509 882 699 or buletechnical@eaton.com

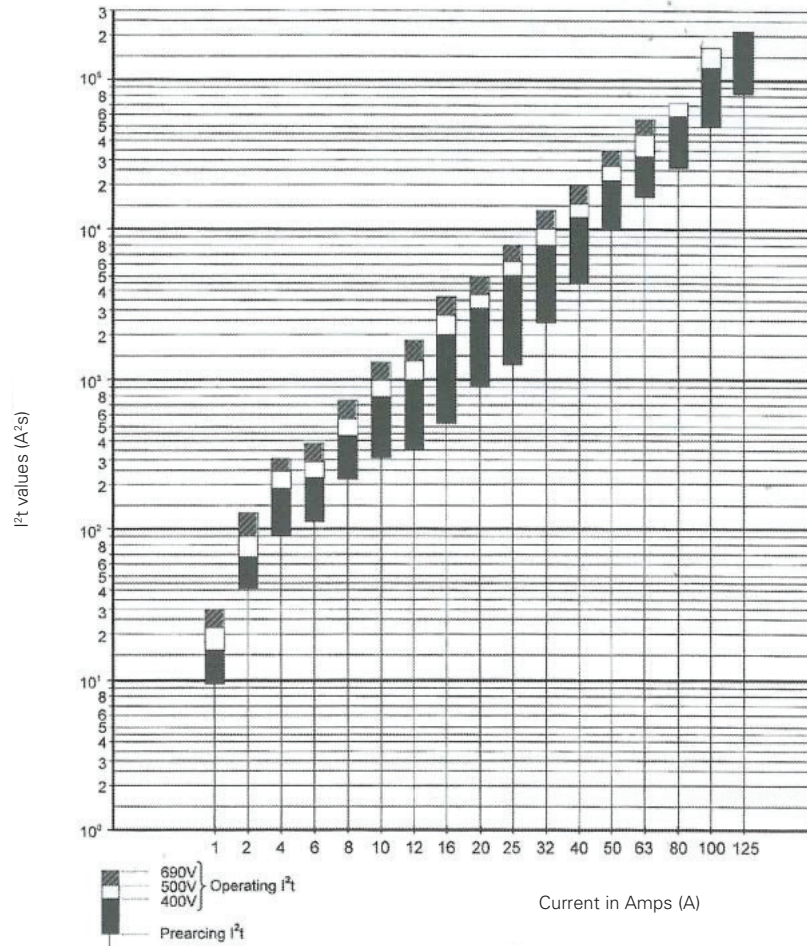
Time-current curves - Class aM



Cut-off characteristics - Class aM



I^2t Values - Class aM



Class aM - Watts loss values

Amp	Size mm			
	8 x 31	10 x 38	14 x 51	22 x 58
0.25	-	0.35	0.41	-
0.5	-	0.49	0.69	-
1	0.1	0.10	0.14	-
2	0.16	0.18	0.24	0.29
4	0.25	0.31	0.45	0.48
6	0.35	0.32	0.42	0.47
8	0.4	0.52	0.70	0.73
10	0.65	0.55	0.53	0.74
12	-	0.63	0.88	0.83
16	-	0.92	1.16	1.21
20	-	0.96	1.23	1.29
25	-	1.40	1.46	1.53
32	-	-	2.04	2.13
40	-	-	2.60	3.40
50	-	-	2.90	3.48
63	-	-	-	4.46
80	-	-	-	5.86
100	-	-	-	6.61
125	-	-	-	8.42

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September 2014

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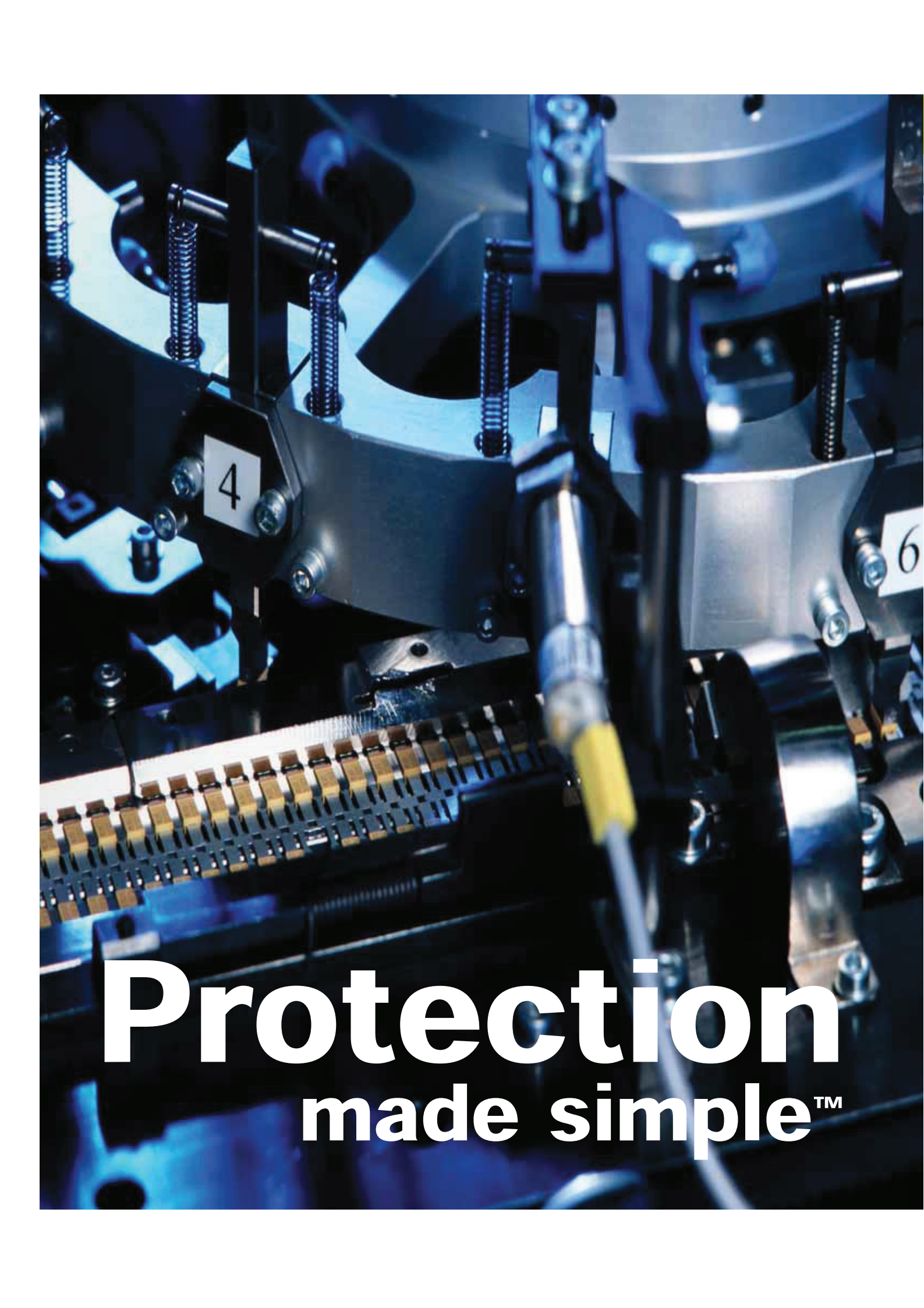


Compact Modular Fuse Holders With the Industry's Best Ratings

Products for PV, IEC and UL Applications

COOPER  **Bussmann**





**Protection
made simple™**

Compact DIN-Rail Mountable Fuse Holders



Cooper Bussmann CH Series finger-safe modular fuse holders offer a set of advantages you can't find anywhere else.



Best Ratings

With a wide wire range and industry leading ratings - up to 32A, 1000V, 200kA SCCR - the new CH Series provides worldwide acceptance and easy specification - including the latest PV fuse holder standard (UL 4248-18)



Smallest Footprint

The CH Series conserves valuable panel space. Up to 10 percent smaller than the competition.



Ease of Use

Easy to identify and specify, product color coding shows PV, IEC and UL holders at a glance. Optional factory-installed neutral pole and open fuse indication speeds troubleshooting.



Accessories Provide Greater Flexibility

Save time and money by reducing wiring and components. Advanced comb-bus bar and PLC communication accessories expand design possibilities while delivering superior performance.



QuikShip[™] Service Everyday

In stock for QuikShip Everyday Service - 90% of our orders ship within 24 hours. QuikShip Emergency Service ensures you're covered 24/7, 365 with "Next flight out" courier service.

Modular Fuse Holder Specifications and Selection Guide

Features and Benefits

- High SCCR rated, UL Listed Class CC holder with indicator option for 600Vac/dc and 48Vdc.
- UL Recognized midget and 10 x 38 holders with factory assembled neutral pole option.
- Agency ratings up to 1000Vdc for use with solar PV fuses.
- Available remote PLC indication with the CH-PLC module.
- Rated for use with 75°C or 90°C wire, fine stranded wire, spade terminals and comb-bus bars. Use any higher temperature rated wire with appropriate derating.
- Complete range of UL Listed and high SCCR rated 1-phase and 3-phase finger-safe comb-bus bars and power feed lugs.

RoHS



Specifications

Agency Information: UL File E14853

Guide IZLT Listed, IZLT2 Recognized

CSA: File 47235, CHPV and CHM - Class 6225-30, CHCC - Class 6225-01

Ratings:

600V/30A (UL)

690V/32A (IEC)

Wire Range:

#18 to #4 (0.8mm² to 21.1mm²)

Torque Ratings:

30 Lb-In (3.4 N•m) maximum

Flammability Ratings:

UL 94V0, self-extinguishing

Storage & Operating Temperature Range:

-20°C to +90°C (indicating)

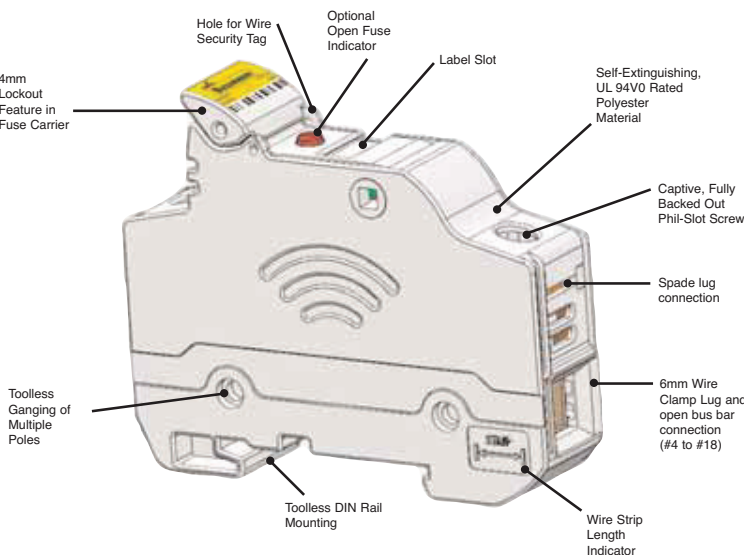
-20°C to +120°C (non-indicating)

Series & Size	Catalog Number		Voltage & Current	Agency Markings	Number of Poles	Terminal Rating	SCCR Rating	Cooper Bussmann Fuses
	With Indicator	Without Indicator						
CHM 10x38 and Midget	CHM1DIU	CHM1DU	UL 600V/30A; IEC 690V/32A	UR; IEC 60269-2; CSA; CCC	1	Solid, Stranded, Fine Stranded, Spade Lug, Comb Bus Bar; Single and Dual Wire; 75°C and 90°C Cu wire	200kA rms sym	FNQ, KLM, FNM, KTK, BAF, FWA, DCM, C10 SERIES, AGU, BAN, FWC
	CHM2DIU	CHM2DU			2			
	CHM3DIU	CHM3DU			3			
	CHM4DIU	CHM4DU			4			
	CHM1DNIU	CHM1DNU		IEC 60269-2	1 pole + 1 neutral			
	CHM3DNIU	CHM3DNU			3 poles + 1 neutral			
	CHM1DI-48U		UL 48Vdc/30A; IEC 48Vdc/32A	UR; IEC 60269-2; CSA; CCC	1			
CHPV		CHM1DNXU	IEC 690V/32A	IEC60269-2	1 neutral	75°C and 90°C Cu wire	n/a	n/a
	CHPV1IU	CHPV1U	UL & IEC; 1000Vdc/30A	UL; CSA; UL4248-18; IEC60269-1; CCC	1		33kA	Solar PV series
	CHPV2IU	CHPV2U			2			
CHCC Class CC	CHCC1DIU	CHCC1DU	UL 600V/30A	UL; CSA; CCC	1		200kA rms sym	LP-CC, FNQ-R, KTK-R
	CHCC2DIU	CHCC2DU			2			
	CHCC3DIU	CHCC3DU			3			
		CHCC1DI-48U	UL 48Vdc/30A		1			

Modular Fuse Holder Features and Installation Guide

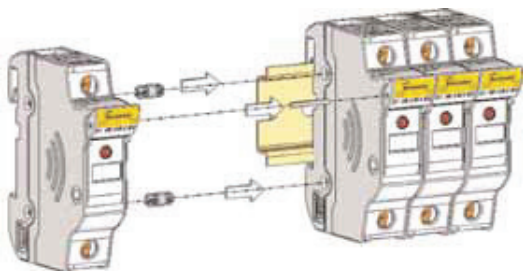


Features

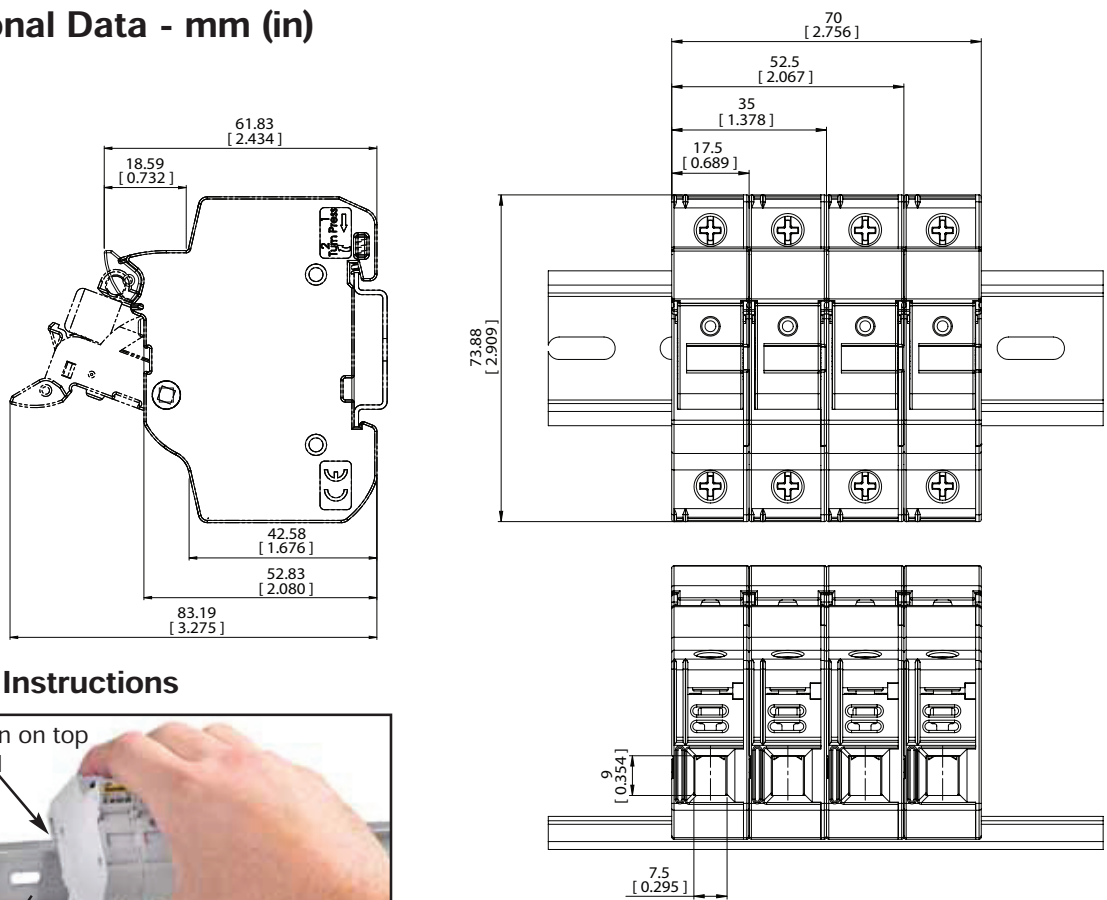


Multi-Pole Ganging

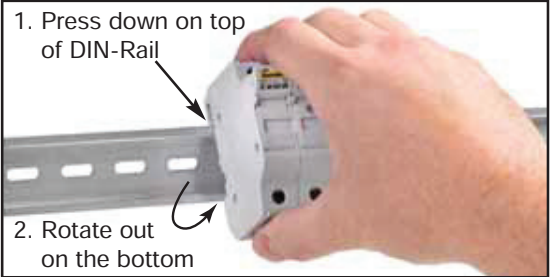
Use multi-pole connection kit part number JV-L to gang multiple poles together. One JV-L kit is sufficient to gang up to 4 poles.



Dimensional Data - mm (in)



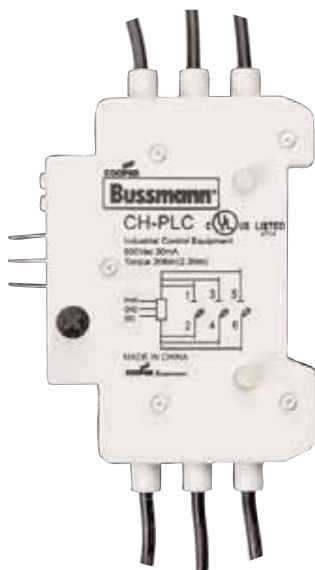
Removing Instructions



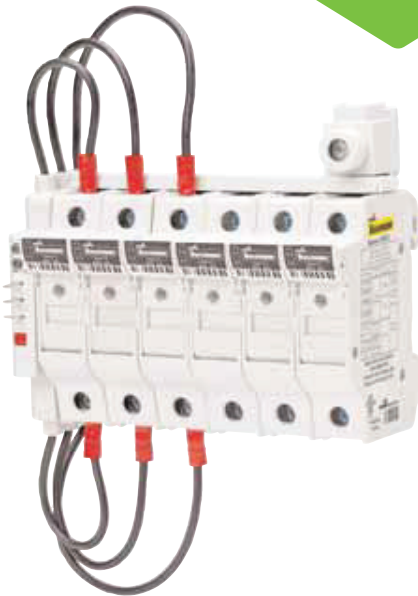
Remote Fuse Monitoring Accessory CH-PLC



Make it Simple with
Cooper Bussmann resettable
three-phase remote fuse monitor
that integrates with a
Programmable Logic Controller
(PLC) or other monitoring and
control equipment.



RoHS



Specifications:

- **Power Input:** 24Vdc / 5mA
- **Sensing Voltage:** 600V/30mA
- **Output Signals:** Digital 0Vdc (Low), 24Vdc (High)
 - 0Vdc Low – Fuse is good
 - 24Vdc High – Fuse has openedWhen the fuse opens, the output signal is sent high and will remain high until the unit is reset
- **Rated Impulse Voltage:** 8kV
- **Local Indication:** Two distinct LEDs indicate unit power (green) and open fuse (red). Upon the replacement of the fuse, the actuation of the reset switch will reset the open fuse LED
- **Flammability Rating:** UL 94V0

Wiring:

- For power, signal and ground connections use 22-24AWG (0.25mm²) 300V rated wire

Emissions and Immunity Testing:

- Electrostatic Discharge IEC 61000-4-2
- Electrical Fast Transient/Burst IEC 6100-4-4
- Surge Immunity IEC61000-4-5

Packaging:

- The CH-PLC is packaged individually
- A single unit monitors up to three phases
- Package includes 0.11" (2.8mm) quick connects for power, signal and ground connections

Minimum Circuit Voltage:

- Minimum circuit voltage required across the CH holder is 100Vac for the remote indication device to operate

Installation Technique:

- Mounts on the left side of the fuse holder and mechanically interlocks with the fuse holder switch handle with hardware provided

IP20 Rating: Yes

Environmental Data:

- Storage and Operating Temperature: -20°C to 75°C

Agency Information:

- UL 508
- cULus to CSA Standard 22.2 No.14

PLC Programming:

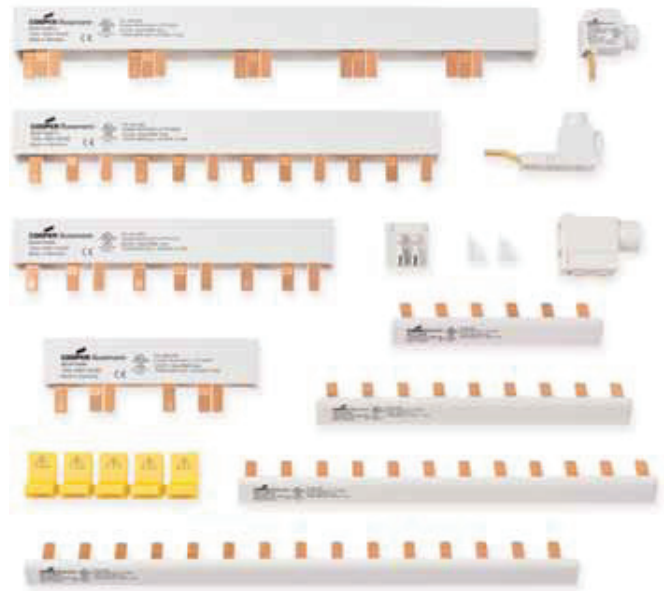
- The CH-PLC signal line is designed to provide a digital input to a PLC I/O card.
- Programmable Logic Control program must be written to properly interpret the input signal to the PLC.
- The PLC program should check for consecutive high signals before taking action on a critical process.

De-energize all circuits before installing or removing any CH-PLC devices and follow all prescribed safety procedures.

Comb-Bus Bar Specifications and Selection Guide

Features and Benefits

- Easily distribute power in single-phase or three-phase configurations
- Flexible cut-to-length solutions without compromising on the product's finger-safe features
- 100kA SCCR (Short Circuit Current Rating) when protected by a 200A Class J fuse
- Single-phase bus bars rated to 1000Vdc and 100A in end-fed configuration (200A for center-fed configuration)
- Three-phase bus bars rated to 600Vac/dc and 100A in end-fed configuration (200A for center-fed configuration)
- Power feed terminals for single-phase and three-phase service



RoHS

Specifications

Agency Information: UL508, File E195399

Pitch: 17.8mm

SCCR: 10kA (default)

100kA (with upstream Class J 200A fuses)

Max Current: 100A (power feed from end;
200A (power feed from center)

Max Voltage: 600Vac/dc (three phase)
1000Vdc/600Vac (single phase)

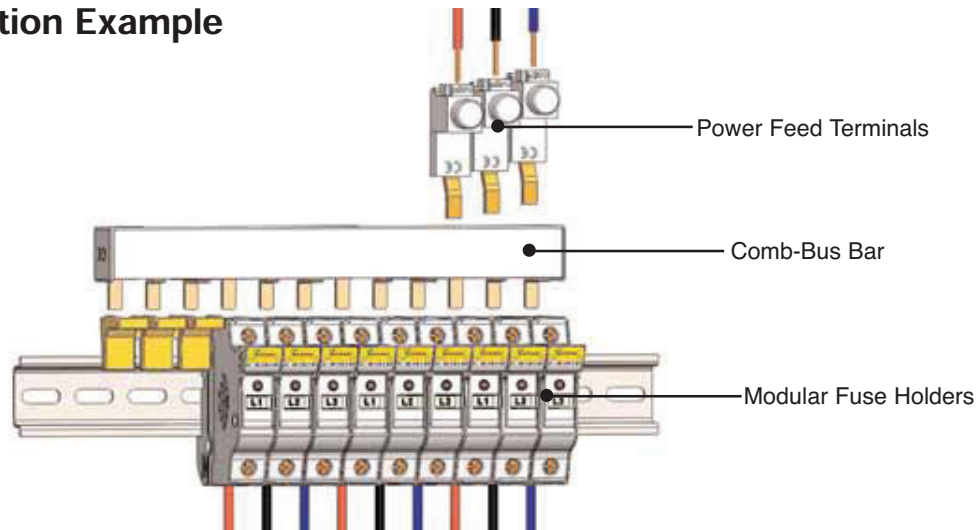


Selection Guide

Part Number	Description
BB1P100M3	Single-phase 1000Vdc busbar, 100A, 3 pins, assembled endcap
BB1P100M6	Single-phase 1000Vdc busbar, 100A, 6 pins, assembled endcap
BB1P100M9	Single-phase 1000Vdc busbar, 100A, 9 pins, assembled endcap
BB1P100M12	Single-phase 1000Vdc busbar, 100A, 12 pins, assembled endcap
BB1P100M15	Single-phase 1000Vdc busbar, 100A, 15 pins, assembled endcap
BB1P100M57	Single-phase 1000Vdc cuttable busbar, 100A, 57 pins, without endcap
BB3P100M6	Three-phase 600V busbar, 100A, 6 pins, assembled endcap
BB3P100M9	Three-phase 600V busbar, 100A, 9 pins, assembled endcap
BB3P100M12	Three-phase 600V busbar, 100A, 12 pins, assembled endcap
BB3P100M15	Three-phase 600V busbar, 100A, 15 pins, assembled endcap
BB3P100M57	Three-phase 600V cuttable busbar, 100A, 57 pins, without endcap
ECAP1P	Single-phase busbar endcap
ECAPMP	Three-phase busbar endcap
PWR35MM	35mm ² feeder terminal for three-phase busbar (115A, 1000Vac/dc)
FSCVR	Spare contact safety protection covers
PWR1PLP	Single-phase low-profile feeder terminal (115A, 1000Vac/dc)
PWR50MM	50mm ² direct feed terminal (1000Vac/dc)

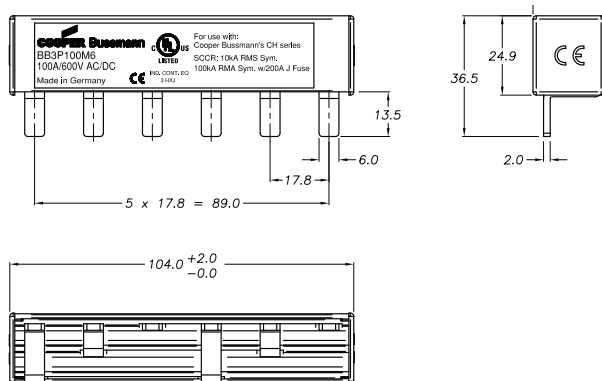
Comb-bus Bar Features and Installation Guide

Typical Installation Example

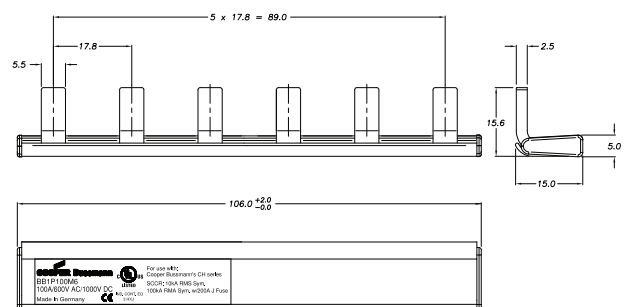


Typical Dimensional Data

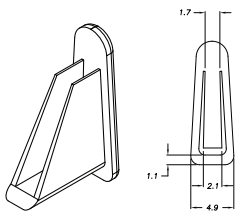
Three-phase



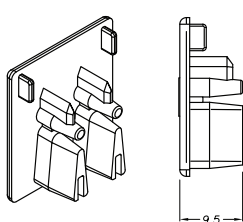
Single-phase



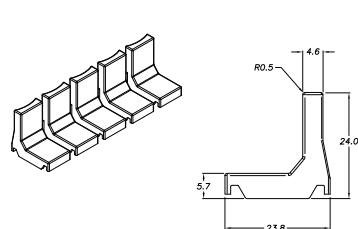
ECAP1P



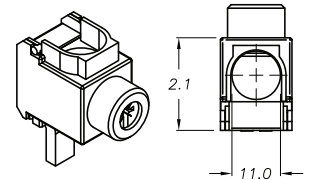
ECAPMP



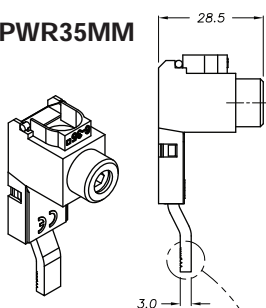
FSCVR



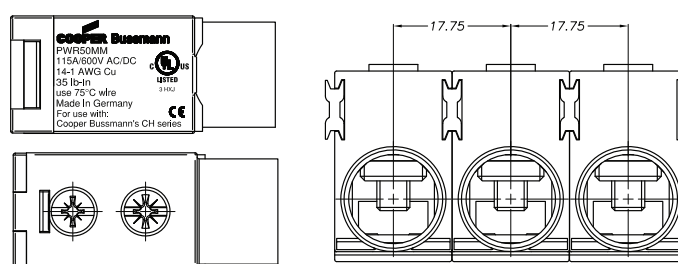
PWR1PLP



PWR35MM



PWR50MM



CH Series Modular Fuse Holder Specifications



PV



UL



IEC



Class J 30A



8x32 IEC



14x51 IEC



22x58 IEC

Catalog Numbers

Without Indication	With* Indication	Size	Max Voltage & Current	IEC	UL	Phase Configuration	No. of 17.5mm Modules	Wire Range	Maximum Torque
CH081D	CH081DI	CH08 8x32	IEC 400Vac 25A	•		1-pole	1	1-16mm ² (18-8 AWG)	2.5 N•m (22LB-In)
CH081DNX	-			•		1 Neutral Pole	1		
CH081DNS	CH081DNSI			•		1-pole + Neutral	1	1-10mm ² (18-8 AWG)	2.0 N•m (17.5LB-In)
CH081DN	CH081DNI			•		1-pole + Neutral	2		
CH082D	CH082DI			•		2-pole	2	1-16mm ² (18-8 AWG)	2.5 N•m (22LB-In)
CH083D	CH083DI			•		3-pole	3		
CH083DNS	CH083DNSI			•		3-pole + Neutral	3		
CH083DN	CH083DNI			•		3-pole + Neutral	4		
CH084D	CH084DI			•		4-pole	4		
CHM1DU	CHM1DIU	CHM 10X38 and Midget	UL 600V/30A; IEC 690V/32A	•	*	1-pole	1	1-21mm ² (18-4 AWG)	3.4 N•m (30LB-In)
CHM2DU	CHM2DIU			•	*	2-pole	2		
CHM3DU	CHM3DIU			•	*	3-pole	3		
CHM4DU	CHM4DIU			•	*	4-pole	4		
CHM1DNU	CHM1DNIU		UL 48Vdc/30A; IEC 48Vdc/32A	•	*	1-pole + Neutral	2		
CHM3DNU	CHM3DNIU			•	*	3-pole + Neutral	4		
-	CHM1DI-48U			•	*	1-pole	1		
CHM1DNXU	-		IEC 690V/32A	•		1-pole + Neutral	2		
CHPV1U	CHPV1IU	CHPV	UL & IEC; 1000Vdc/30A	•	†††	1-pole	1	1-21mm ² (18-4 AWG)	3.4 N•m (30LB-In)
CHPV2U	CHPV2IU			•	†††	2-pole	2		
CHCC1DU	CHCC1DIU	CHCC Class CC	UL 600V/30A		**	1-pole	1		
CHCC2DU	CHCC2DIU				**	2-pole	2		
CHCC3DU	CHCC3DIU				**	3-pole	3		
CHCC1DI-48U	-		UL 48Vdc/30A		**	1-pole	1		
CH141D	CH141DI	CH14 14x51	UL 600Vac/dc 40A (5 Watt) IEC 690Vac, 50A	•		1-pole	1.5	2.5-16mm ² (14-6 AWG)	3.0 N•m (26LB-In)
CH141DMS	-			•		1-pole + Microswitch	1.5		
CH141DNX	-			•		1 Neutral Pole	1.5		
CH141DN	CH141DNI			•		1-pole + Neutral	3		
CH142D	CH142DI			•	†	2-pole	3		
CH143D	CH143DI			•	†	3-pole	4.5		
CH143DMS	-			•		3-pole + Microswitch	4.5		
CH143DN	CH143DNI			•		3-pole + Neutral	6		
CH143DNMS	-	CH22 22x58	UL 600Vac/dc, 100A (9.5 Watt) IEC 690Vac, 125A	•		3-pole + Neutral + Microswitch	6	2.5-50mm ² (14-1 AWG)	4.0 N•m (35LB-In)
CH144D	CH144DI			•		4-pole	6		
CH221D	Not Available with local neon indication (remote microswitch only)			•	†	1-pole	2		
CH221DMS				•		1-pole + Microswitch	2		
CH221DNX				•		1 Neutral Pole	2		
CH221DN				•		1-pole + Neutral	4		
CH222D				•	†	2-pole	4		
CH223D				•	†	3-pole	6		
CH223DMS				•		3-pole + Microswitch	6		
CH223DN				•	†	3-pole + Neutral	8		
CH223DNMS				•		3-pole + Neutral + Microswitch	8		
CH224D				•		4-pole	8		
Class J easyID™ Indication	Neon Indication								
CH30J1	CH30J1I	CH30J	UL/CSA		††	1-pole	—	1-50mm ² (18-1 AWG)	1-8 AWG 4.0 N•m (35LB-In)
CH30J2	CH30J2I	30A	600Vac		††	2-pole	—		10-18 AWG 2.7N•m (24LB-In)
CH30J3	CH30J3I	Class J			††	3-pole	—		
CH60J1	CH60J1I	CH60J	UL/CSA		††	1-pole	—	1-50mm ² (18-1 AWG)	1-8 AWG 4.0 N•m (35LB-In)
CH60J2	CH60J2I	60A	600Vac		††	2-pole	—		10-18 AWG 2.7N•m (24LB-In)
CH60J3	CH60J3I	Class J			††	3-pole	—		

† UL Recognized (cURus) †† UL Listed (cULus) ††† UL Recognized, Standard 4248-18, CSA
For further details see Data Sheets 2053 (CH08, CHM, CHCC, CH14 AND CH22) and 2144 (CHJ Class J)

* UL Recognized, CSA
** UL Listed, CSA

*90V minimum required for illumination
***12V minimum required for illumination

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IEC Series		Bolt-Down Series	
CH Series		In-line Series	
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- Product & technical materials
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Eaton 259085

Catalog Number: 259085

Eaton Moeller series NZM - Molded Case Circuit Breaker. Circuit-breaker, 3p, 100A, N, frame1, A100



Photo is representative

General specifications

Product Name	Catalog Number
Eaton Moeller series NZM molded case circuit breaker thermo-magnetic	259085
	Model Code
	NZMN1-A100
EAN	Product Length/Depth
4015082590857	88 mm
Product Height	Product Width
145 mm	90 mm
Product Weight	Compliances
1.073 kg	RoHS conform
Certifications	
IEC/EN 60947	
IEC	

Type

Circuit breaker

Special features

Maximum back-up fuse, if the expected short-circuit currents at the installation location exceed the switching capacity of the circuit breaker (Rated short-circuit breaking capacity I_{cn})

Rated current = rated uninterrupted current: 100 A

Terminal capacity hint: Up to 95 mm² can be connected depending on the cable manufacturer.

Application

Use in unearthed supply systems at 690 V

Amperage Rating

100 A

Voltage rating

690 V - 690 V

Circuit breaker frame type

NZM1

Features

Protection unit

10.10 Temperature rise

The panel builder is responsible for the temperature rise calculation. Eaton will provide heat dissipation data for the devices.

10.11 Short-circuit rating

Is the panel builder's responsibility. The specifications for the switchgear must be observed.

10.12 Electromagnetic compatibility

Is the panel builder's responsibility. The specifications for the switchgear must be observed.

10.13 Mechanical function

The device meets the requirements, provided the information in the instruction leaflet (IL) is observed.

Brochures

[eaton-feerum-the-whole-grain-solution-success-story-en-us.pdf](#)

[eaton-digital-nzm-brochure-br013003en-en-us.pdf](#)

Catalogs

[eaton-digital-nzm-catalog-ca013003en-en-us.pdf](#)

Certification reports

[DA-DC-03_N1](#)

Characteristic curve

[eaton-circuit-breaker-nzm-mccb-characteristic-curve-051.eps](#)

[eaton-circuit-breaker-let-through-current-nzm-mccb-characteristic-curve-002.eps](#)

[eaton-circuit-breaker-nzm-mccb-characteristic-curve.eps](#)

Drawings

[eaton-circuit-breaker-nzm-mccb-dimensions-017.eps](#)

[eaton-circuit-breaker-switch-nzm-mccb-dimensions-014.eps](#)

[eaton-circuit-breaker-switch-nzm-mccb-3-d-drawing-006.eps](#)

eCAD model

[ETN.NZMN1-A100](#)

Installation instructions

[eaton-circuit-breaker-switch-disconnector-nzmb-il01203004z.pdf](#)

Installation videos

[The new digital NZM Range](#)

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mCAD model

[DA-CD-nzm1_3p](#)

[DA-CS-nzm1_3p](#)

Technical data sheets

[eaton-nzm-technical-information-sheet](#)

10.2.2 Corrosion resistance

Meets the product standard's requirements.

10.2.3.1 Verification of thermal stability of enclosures

Meets the product standard's requirements.

10.2.3.2 Verification of resistance of insulating materials to normal heat

Meets the product standard's requirements.

10.2.3.3 Resist. of insul. mat. to abnormal heat/fire by internal elect. effects

Meets the product standard's requirements.

10.2.4 Resistance to ultra-violet (UV) radiation

Meets the product standard's requirements.

10.2.5 Lifting

Does not apply, since the entire switchgear needs to be evaluated.

10.2.6 Mechanical impact

Does not apply, since the entire switchgear needs to be evaluated.

10.2.7 Inscriptions

Meets the product standard's requirements.

10.3 Degree of protection of assemblies

Does not apply, since the entire switchgear needs to be evaluated.

10.4 Clearances and creepage distances

Meets the product standard's requirements.

10.5 Protection against electric shock

Does not apply, since the entire switchgear needs to be evaluated.

10.6 Incorporation of switching devices and components

Does not apply, since the entire switchgear needs to be evaluated.

10.7 Internal electrical circuits and connections

Is the panel builder's responsibility.

10.8 Connections for external conductors

Is the panel builder's responsibility.

10.9.2 Power-frequency electric strength

Is the panel builder's responsibility.

10.9.3 Impulse withstand voltage

Is the panel builder's responsibility.

10.9.4 Testing of enclosures made of insulating material

Is the panel builder's responsibility.

Pollution degree

3

Mounting Method

Built-in device fixed built-in technique

Fixed

DIN rail (top hat rail) mounting optional

Climatic proofing

Damp heat, constant, to IEC 60068-2-78

Damp heat, cyclic, to IEC 60068-2-30

Equipment heat dissipation, current-dependent

21.9 W

Utilization category

A (IEC/EN 60947-2)

Isolation

500 V AC (between auxiliary contacts and main contacts)

300 V AC (between the auxiliary contacts)

Ambient operating temperature - max

70 °C

Ambient operating temperature - min

-25 °C

Ambient storage temperature - max

70 °C

Ambient storage temperature - min

-40 °C

Number of auxiliary contacts (change-over contacts)

0

Number of auxiliary contacts (normally closed contacts)

0

Number of auxiliary contacts (normally open contacts)

0

Protection against direct contact

Finger and back-of-hand proof to DIN EN 50274/VDE 0106 part

110

Degree of protection

IP20

IP20 (basic degree of protection, in the operating controls area)

Direction of incoming supply

As required

Electrical connection type of main circuit

Frame clamp

Lifespan, mechanical

20000 operations

Overvoltage category

III

Degree of protection (IP), front side

IP66 (with door coupling rotary handle)

IP40 (with insulating surround)

Degree of protection (terminations)

IP00 (terminations, phase isolator and strip terminal)

IP10 (tunnel terminal)

Number of poles

Three-pole

Terminal capacity (copper strip)

Min. 2 segments of 9 mm x 0.8 mm at box terminal

Max. 9 segments of 9 mm x 0.8 mm at box terminal

Lifespan, electrical

10000 operations at 415 V AC-1

10000 operations at 400 V AC-1

7500 operations at 690 V AC-1

Functions

System and cable protection

Shock resistance

20 g (half-sinusoidal shock 20 ms)

Position of connection for main current circuit

Front side

Rated operational current for specified heat dissipation (In)

100 A

Power loss

21.9 W

Release system

Thermomagnetic release

Short-circuit total breaktime

< 10 ms

Short-circuit release non-delayed setting - max

1000 A

Short-circuit release non-delayed setting - min

600 A

Terminal capacity (control cable)

0.75 mm² - 1.5 mm² (2x)

0.75 mm² - 2.5 mm² (1x)

Terminal capacity (copper busbar)

Min. 12 mm x 5 mm direct at switch rear-side connection

M6 at rear-side screw connection

Max. 16 mm x 5 mm direct at switch rear-side connection

Terminal capacity (copper solid conductor/cable)

10 mm² - 16 mm² (1x) at box terminal

16 mm² (1x) at tunnel terminal

10 mm² - 16 mm² (1x) direct at switch rear-side connection

6 mm² - 16 mm² (2x) direct at switch rear-side connection

6 mm² - 16 mm² (2x) at box terminal

Terminal capacity (aluminum solid conductor/cable)

16 mm² (1x) at tunnel terminal

10 mm² - 16 mm² (2x) direct at switch rear-side connection

10 mm² - 16 mm² (1x) direct at switch rear-side connection

Terminal capacity (copper stranded conductor/cable)

25 mm² - 95 mm² (1x) at 1-hole tunnel terminal

6 mm² - 25 mm² (2x) at box terminal

25 mm² (2x) direct at switch rear-side connection

10 mm² - 70 mm² (1x) at box terminal

10 mm² - 70 mm² (1x) direct at switch rear-side connection

Terminal capacity (aluminum stranded conductor/cable)

25 mm² - 95 mm² (1x) at tunnel terminal

25 mm² - 35 mm² (1x) direct at switch rear-side connection

25 mm² - 35 mm² (2x) direct at switch rear-side connection

Handle type

Rocker lever

Short delay current setting (I_{sd}) - max

0 A

Short delay current setting (I_{sd}) - min

0 A

Instantaneous current setting (I_i) - max

1000 A

Instantaneous current setting (I_i) - min

600 A

Number of operations per hour - max

120

Overload current setting (Ir) - max

100 A

Overload current setting (Ir) - min

80 A

Rated short-circuit breaking capacity Ics (IEC/EN 60947) at 230 V, 50/60 Hz

85 kA

Rated short-circuit breaking capacity Ics (IEC/EN 60947) at 400/415 V, 50/60 Hz

50 kA

Rated short-circuit breaking capacity Ics (IEC/EN 60947) at 440 V, 50/60 Hz

35 kA

Rated short-circuit breaking capacity Ics (IEC/EN 60947) at 525 V, 50/60 Hz

10 kA

Rated short-circuit breaking capacity Ics (IEC/EN 60947) at 690 V, 50/60 Hz

7.5 kA

Rated short-circuit making capacity Icm at 400/415 V, 50/60 Hz

105 kA

Rated short-circuit making capacity Icm at 440 V, 50/60 Hz

74 kA

Rated short-circuit making capacity Icm at 525 V, 50/60 Hz

40 kA

Rated short-circuit making capacity Icm at 690 V, 50/60 Hz

17 kA

Standard terminals

Box terminal

Optional terminals

Connection on rear. Screw terminal. Tunnel terminal

Rated short-circuit making capacity Icm at 240 V, 50/60 Hz

187 kA

Rated impulse withstand voltage (Uimp) at auxiliary contacts

6000 V

Rated impulse withstand voltage (Uimp) at main contacts

6000 V

Voltage rating (DC)

450 VDC

Rated insulation voltage (Ui)

690 V AC



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Tunnel terminal, 3p, 1 page, size 2

Part no. NZM2-XKA
Catalog No. 271457

Similar to illustration

Delivery program

Standard/Approval			UL/CSA, IEC
Number of conductors			3 pole
Accessories			Tunnel terminal
Rated current	I_n	A	Cu 300, Al 250
For use with			NZM2, PN2, N(S)2
Terminal capacities			
Type of conductor			
Cu/Al cable			Copper cable Al cable
Terminal capacities			
Stranded		mm ²	1 x 25 - 185 Up to 240 mm ² can be connected depending on the cable manufacturer.
AWG/kcmil		mm ²	1 x 6 - 350
Notes			
Type contains parts for a terminal located at top or bottom for 3 or 4-pole circuit-breakers.			
A standard with control circuit terminal for 1 x 0.75 - 2.5 mm ² (18 - 14 AWG) or 2 x 0.75 - 1.5 mm ² (18 - 16 AWG) copper conductors.			
Fitted outside the switch housing			
Use with flexible and highly flexible conductors ferrules. Maximum specified cross-section can only be connected when stranded and without ferrules.			
Mounting of the cover NZM2(-4)-XKSA obligatory (supplied).			

Design verification as per IEC/EN 61439

IEC/EN 61439 design verification			
10.2 Strength of materials and parts			
10.2.2 Corrosion resistance			Meets the product standard's requirements.
10.2.3.1 Verification of thermal stability of enclosures			Meets the product standard's requirements.
10.2.3.2 Verification of resistance of insulating materials to normal heat			Meets the product standard's requirements.
10.2.3.3 Verification of resistance of insulating materials to abnormal heat and fire due to internal electric effects			Meets the product standard's requirements.
10.2.4 Resistance to ultra-violet (UV) radiation			Meets the product standard's requirements.
10.2.5 Lifting			Does not apply, since the entire switchgear needs to be evaluated.
10.2.6 Mechanical impact			Does not apply, since the entire switchgear needs to be evaluated.
10.2.7 Inscriptions			Meets the product standard's requirements.
10.3 Degree of protection of ASSEMBLIES			Does not apply, since the entire switchgear needs to be evaluated.
10.4 Clearances and creepage distances			Meets the product standard's requirements.
10.5 Protection against electric shock			Does not apply, since the entire switchgear needs to be evaluated.
10.6 Incorporation of switching devices and components			Does not apply, since the entire switchgear needs to be evaluated.
10.7 Internal electrical circuits and connections			Is the panel builder's responsibility.
10.8 Connections for external conductors			Is the panel builder's responsibility.
10.9 Insulation properties			
10.9.2 Power-frequency electric strength			Is the panel builder's responsibility.
10.9.3 Impulse withstand voltage			Is the panel builder's responsibility.
10.9.4 Testing of enclosures made of insulating material			Is the panel builder's responsibility.
10.10 Temperature rise			The panel builder is responsible for the temperature rise calculation. Eaton will provide heat dissipation data for the devices.
10.11 Short-circuit rating			Is the panel builder's responsibility. The specifications for the switchgear must be observed.

10.12 Electromagnetic compatibility		Is the panel builder's responsibility. The specifications for the switchgear must be observed.
10.13 Mechanical function		The device meets the requirements, provided the information in the instruction leaflet (IL) is observed.

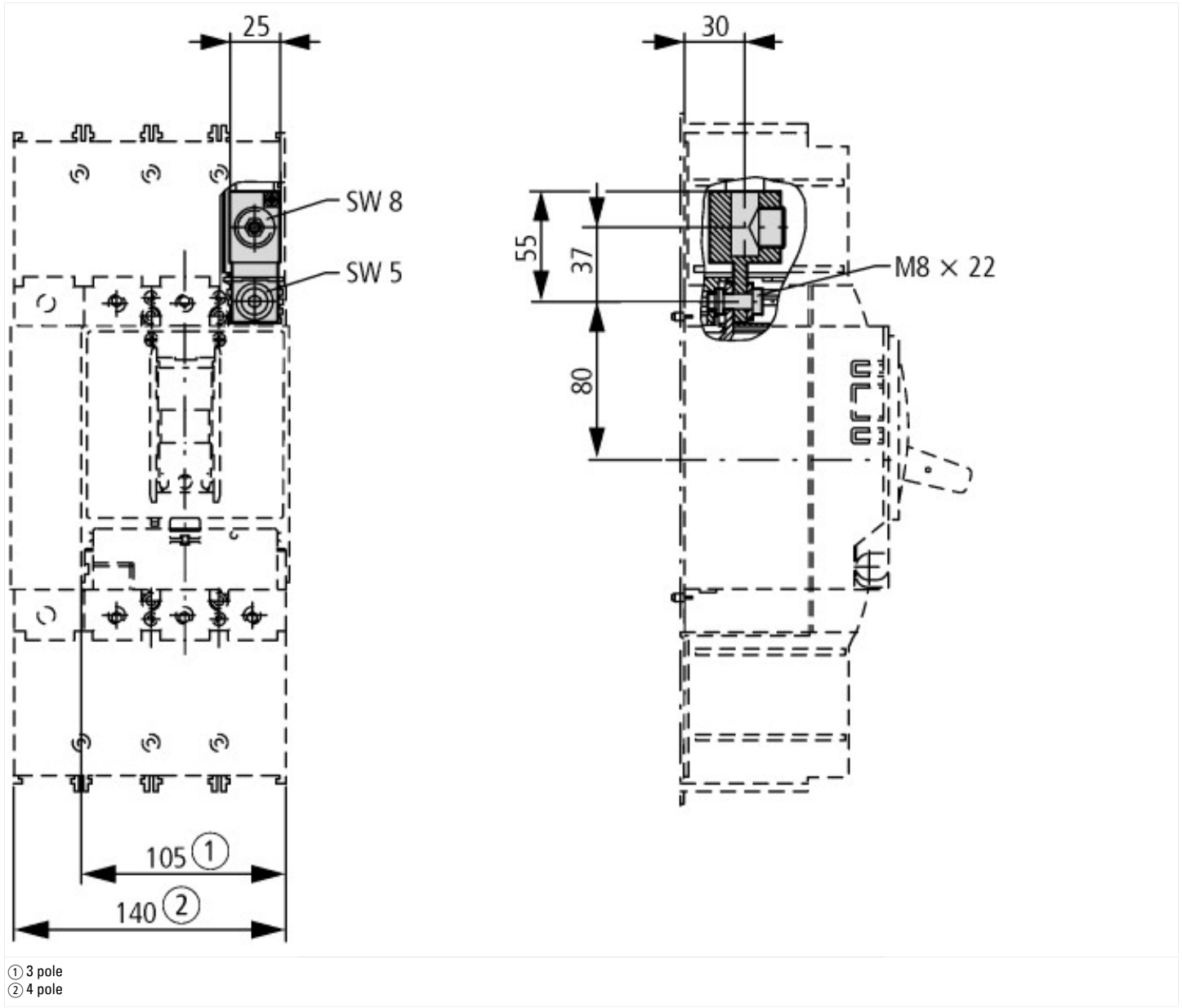
Technical data ETIM 7.0

Low-voltage industrial components (EG000017) / Wiring set for power circuit breaker (EC002050)		
Electric engineering, automation, process control engineering / Low-voltage switch technology / Circuit breaker (LV < 1 kV) / Wiring set for circuit breaker (ecl@ss10.0.1-27-37-04-24 [ACN957011])		
Suitable for number of poles		3
Model		Other

Approvals

Product Standards		UL489; CSA-C22.2 No. 5-09; IEC60947, CE marking
UL File No.		E31593
UL Category Control No.		DIHS
CSA File No.		022086
CSA Class No.		1432-01
North America Certification		UL listed, CSA certified
Suitable for		Refer to main component information

Dimensions



Eaton 259084

Catalog Number: 259084

Eaton Moeller series NZM - Molded Case Circuit Breaker. Circuit-breaker, 3p, 80A, N, frame 1, A80

General specifications



Photo is representative

Product Name	Catalog Number
Eaton Moeller series NZM molded case circuit breaker thermo-magnetic	259084
	Model Code
	NZMN1-A80
EAN	Product Length/Depth
4015082590840	88 mm
Product Height	Product Width
145 mm	90 mm
Product Weight	Compliances
1.05 kg	RoHS conform
Certifications	
IEC/EN 60947	
IEC	

Type

Circuit breaker

Special features

Maximum back-up fuse, if the expected short-circuit currents at the installation location exceed the switching capacity of the circuit breaker (Rated short-circuit breaking capacity I_{cn})

Rated current = rated uninterrupted current: 80 A

Terminal capacity hint: Up to 95 mm² can be connected depending on the cable manufacturer.

Application

Use in unearthed supply systems at 690 V

Amperage Rating

80 A

Voltage rating

690 V - 690 V

Circuit breaker frame type

NZM1

Features

Protection unit

10.10 Temperature rise

The panel builder is responsible for the temperature rise calculation. Eaton will provide heat dissipation data for the devices.

10.11 Short-circuit rating

Is the panel builder's responsibility. The specifications for the switchgear must be observed.

10.12 Electromagnetic compatibility

Is the panel builder's responsibility. The specifications for the switchgear must be observed.

10.13 Mechanical function

The device meets the requirements, provided the information in the instruction leaflet (IL) is observed.

Brochures

[eaton-feerum-the-whole-grain-solution-success-story-en-us.pdf](#)

[eaton-digital-nzm-brochure-br013003en-en-us.pdf](#)

Catalogs

[eaton-digital-nzm-catalog-ca013003en-en-us.pdf](#)

Certification reports

[DA-DC-03_N1](#)

Characteristic curve

[eaton-circuit-breaker-nzm-mccb-characteristic-curve-051.eps](#)

[eaton-circuit-breaker-let-through-current-nzm-mccb-characteristic-curve-002.eps](#)

[eaton-circuit-breaker-nzm-mccb-characteristic-curve.eps](#)

Drawings

[eaton-circuit-breaker-switch-nzm-mccb-dimensions-014.eps](#)

[eaton-circuit-breaker-nzm-mccb-dimensions-017.eps](#)

[eaton-circuit-breaker-switch-nzm-mccb-3d-drawing-006.eps](#)

eCAD model

[ETN.259084.edz](#)

[ETN.NZMN1-A80](#)

Installation instructions

[eaton-circuit-breaker-switch-disconnector-nzmb-il01203004z.pdf](#)

Installation videos

[Introduction of the new digital circuit breaker NZM](#)

[The new digital NZM Range](#)

mCAD model

[DA-CS-nzm1_3p](#)

[DA-CD-nzm1_3p](#)

Technical data sheets

[eaton-nzm-technical-information-sheet](#)

10.2.2 Corrosion resistance

Meets the product standard's requirements.

10.2.3.1 Verification of thermal stability of enclosures

Meets the product standard's requirements.

10.2.3.2 Verification of resistance of insulating materials to normal heat

Meets the product standard's requirements.

10.2.3.3 Resist. of insul. mat. to abnormal heat/fire by internal elect. effects

Meets the product standard's requirements.

10.2.4 Resistance to ultra-violet (UV) radiation

Meets the product standard's requirements.

10.2.5 Lifting

Does not apply, since the entire switchgear needs to be evaluated.

10.2.6 Mechanical impact

Does not apply, since the entire switchgear needs to be evaluated.

10.2.7 Inscriptions

Meets the product standard's requirements.

10.3 Degree of protection of assemblies

Does not apply, since the entire switchgear needs to be evaluated.

10.4 Clearances and creepage distances

Meets the product standard's requirements.

10.5 Protection against electric shock

Does not apply, since the entire switchgear needs to be evaluated.

10.6 Incorporation of switching devices and components

Does not apply, since the entire switchgear needs to be evaluated.

10.7 Internal electrical circuits and connections

Is the panel builder's responsibility.

10.8 Connections for external conductors

Is the panel builder's responsibility.

10.9.2 Power-frequency electric strength

Is the panel builder's responsibility.

10.9.3 Impulse withstand voltage

Is the panel builder's responsibility.

10.9.4 Testing of enclosures made of insulating material

Is the panel builder's responsibility.

Pollution degree

3

Mounting Method

Fixed

Built-in device fixed built-in technique

DIN rail (top hat rail) mounting optional

Climatic proofing

Damp heat, cyclic, to IEC 60068-2-30

Damp heat, constant, to IEC 60068-2-78

Equipment heat dissipation, current-dependent

16.32 W

Utilization category

A (IEC/EN 60947-2)

Isolation

300 V AC (between the auxiliary contacts)

500 V AC (between auxiliary contacts and main contacts)

Ambient operating temperature - max

70 °C

Ambient operating temperature - min

-25 °C

Ambient storage temperature - max

70 °C

Ambient storage temperature - min

40 °C

Number of auxiliary contacts (change-over contacts)

0

Number of auxiliary contacts (normally closed contacts)

0

Number of auxiliary contacts (normally open contacts)

0

Protection against direct contact

Finger and back-of-hand proof to DIN EN 50274/VDE 0106 part

110

Degree of protection

IP20 (basic degree of protection, in the operating controls area)

IP20

Direction of incoming supply

As required

Electrical connection type of main circuit

Frame clamp

Lifespan, mechanical

20000 operations

Overvoltage category

III

Degree of protection (IP), front side

IP66 (with door coupling rotary handle)

IP40 (with insulating surround)

Degree of protection (terminations)

IP00 (terminations, phase isolator and strip terminal)

IP10 (tunnel terminal)

Number of poles

Three-pole

Terminal capacity (copper strip)

Max. 9 segments of 9 mm x 0.8 mm at box terminal

Min. 2 segments of 9 mm x 0.8 mm at box terminal

Lifespan, electrical

7500 operations at 690 V AC-1

10000 operations at 415 V AC-1

10000 operations at 400 V AC-1

Functions

System and cable protection

Shock resistance

20 g (half-sinusoidal shock 20 ms)

Position of connection for main current circuit

Front side

Rated operational current for specified heat dissipation (I_n)

80 A

Power loss

16.3 W

Release system

Thermomagnetic release

Short-circuit total breaktime

< 10 ms

Short-circuit release non-delayed setting - max

800 A

Short-circuit release non-delayed setting - min

480 A

Terminal capacity (control cable)

0.75 mm² - 1.5 mm² (2x)

0.75 mm² - 2.5 mm² (1x)

Terminal capacity (copper busbar)

Max. 16 mm x 5 mm direct at switch rear-side connection

Min. 12 mm x 5 mm direct at switch rear-side connection

M6 at rear-side screw connection

Terminal capacity (copper solid conductor/cable)

10 mm² - 16 mm² (1x) at box terminal

6 mm² - 16 mm² (2x) direct at switch rear-side connection

6 mm² - 16 mm² (2x) at box terminal

10 mm² - 16 mm² (1x) direct at switch rear-side connection

16 mm² (1x) at tunnel terminal

Terminal capacity (aluminum solid conductor/cable)

10 mm² - 16 mm² (2x) direct at switch rear-side connection

16 mm² (1x) at tunnel terminal

10 mm² - 16 mm² (1x) direct at switch rear-side connection

Terminal capacity (copper stranded conductor/cable)

25 mm² (2x) direct at switch rear-side connection

25 mm² - 95 mm² (1x) at 1-hole tunnel terminal

10 mm² - 70 mm² (1x) at box terminal

6 mm² - 25 mm² (2x) at box terminal

10 mm² - 70 mm² (1x) direct at switch rear-side connection

Terminal capacity (aluminum stranded conductor/cable)

25 mm² - 35 mm² (1x) direct at switch rear-side connection

25 mm² - 35 mm² (2x) direct at switch rear-side connection

25 mm² - 95 mm² (1x) at tunnel terminal

Handle type

Rocker lever

Short delay current setting (I_{sd}) - max

0 A

Short delay current setting (I_{sd}) - min

0 A

Instantaneous current setting (I_i) - max

800 A

Instantaneous current setting (I_i) - min

480 A

Number of operations per hour - max

120

Overload current setting (Ir) - max

80 A

Overload current setting (Ir) - min

63 A

Rated short-circuit breaking capacity Ics (IEC/EN 60947) at 230 V, 50/60 Hz

85 kA

Rated short-circuit breaking capacity Ics (IEC/EN 60947) at 400/415 V, 50/60 Hz

50 kA

Rated short-circuit breaking capacity Ics (IEC/EN 60947) at 440 V, 50/60 Hz

35 kA

Rated short-circuit breaking capacity Ics (IEC/EN 60947) at 525 V, 50/60 Hz

10 kA

Rated short-circuit breaking capacity Ics (IEC/EN 60947) at 690 V, 50/60 Hz

7.5 kA

Rated short-circuit making capacity Icm at 400/415 V, 50/60 Hz

105 kA

Rated short-circuit making capacity Icm at 440 V, 50/60 Hz

74 kA

Rated short-circuit making capacity Icm at 525 V, 50/60 Hz

40 kA

Rated short-circuit making capacity Icm at 690 V, 50/60 Hz

17 kA

Standard terminals

Box terminal

Optional terminals

Connection on rear. Screw terminal. Tunnel terminal

Rated short-circuit making capacity Icm at 240 V, 50/60 Hz

187 kA

Rated impulse withstand voltage (Uimp) at auxiliary contacts

6000 V

Rated impulse withstand voltage (Uimp) at main contacts

6000 V

Voltage rating (DC)

450 VDC

Rated insulation voltage (Ui)

690 V AC



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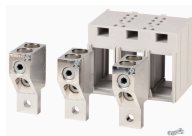
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Tunnel terminal, 3p, 1 page, max. 2x240mm², size 3

Part no. NZM3-XKA2
Catalog No. 271461

EL-Nummer (Norway) 4358874

Delivery program

Standard/Approval			UL/CSA, IEC
Number of conductors			3 pole
Accessories			Tunnel terminal
Rated current	I _n	A	IEC: 630 UL/CSA: 550
For use with			NZM3, PN3, N(S)3

Terminal capacities

Type of conductor			
Cu/Al cable			Copper cable Al cable
Terminal capacities			
Stranded		mm ²	1 x 50 - 240 2 x 50 - 240
AWG/kcmil		mm ²	1 x 0 - 500 2 x 0 - 500

Notes

Type contains parts for a terminal located at top or bottom for 3 or 4-pole circuit-breakers.

A standard with control circuit terminal for 1 x 0.75 - 2.5 mm² (18 - 14 AWG) or 2 x 0.75 - 1.5 mm² (18 - 16 AWG) copper conductors.

Fitted outside the switch housing

Use with flexible and highly flexible conductors ferrules. Maximum specified cross-section can only be connected when stranded and without ferrules.

Mounting of the cover NZM3(-4)-XKSA obligatory (supplied).

Design verification as per IEC/EN 61439

IEC/EN 61439 design verification			
10.2 Strength of materials and parts			
10.2.2 Corrosion resistance			Meets the product standard's requirements.
10.2.3.1 Verification of thermal stability of enclosures			Meets the product standard's requirements.
10.2.3.2 Verification of resistance of insulating materials to normal heat			Meets the product standard's requirements.
10.2.3.3 Verification of resistance of insulating materials to abnormal heat and fire due to internal electric effects			Meets the product standard's requirements.
10.2.4 Resistance to ultra-violet (UV) radiation			Meets the product standard's requirements.
10.2.5 Lifting			Does not apply, since the entire switchgear needs to be evaluated.
10.2.6 Mechanical impact			Does not apply, since the entire switchgear needs to be evaluated.
10.2.7 Inscriptions			Meets the product standard's requirements.
10.3 Degree of protection of ASSEMBLIES			Does not apply, since the entire switchgear needs to be evaluated.
10.4 Clearances and creepage distances			Meets the product standard's requirements.
10.5 Protection against electric shock			Does not apply, since the entire switchgear needs to be evaluated.
10.6 Incorporation of switching devices and components			Does not apply, since the entire switchgear needs to be evaluated.
10.7 Internal electrical circuits and connections			Is the panel builder's responsibility.
10.8 Connections for external conductors			Is the panel builder's responsibility.
10.9 Insulation properties			
10.9.2 Power-frequency electric strength			Is the panel builder's responsibility.
10.9.3 Impulse withstand voltage			Is the panel builder's responsibility.
10.9.4 Testing of enclosures made of insulating material			Is the panel builder's responsibility.
10.10 Temperature rise			The panel builder is responsible for the temperature rise calculation. Eaton will provide heat dissipation data for the devices.
10.11 Short-circuit rating			Is the panel builder's responsibility. The specifications for the switchgear must be observed.

10.12 Electromagnetic compatibility			Is the panel builder's responsibility. The specifications for the switchgear must be observed.
10.13 Mechanical function			The device meets the requirements, provided the information in the instruction leaflet (IL) is observed.

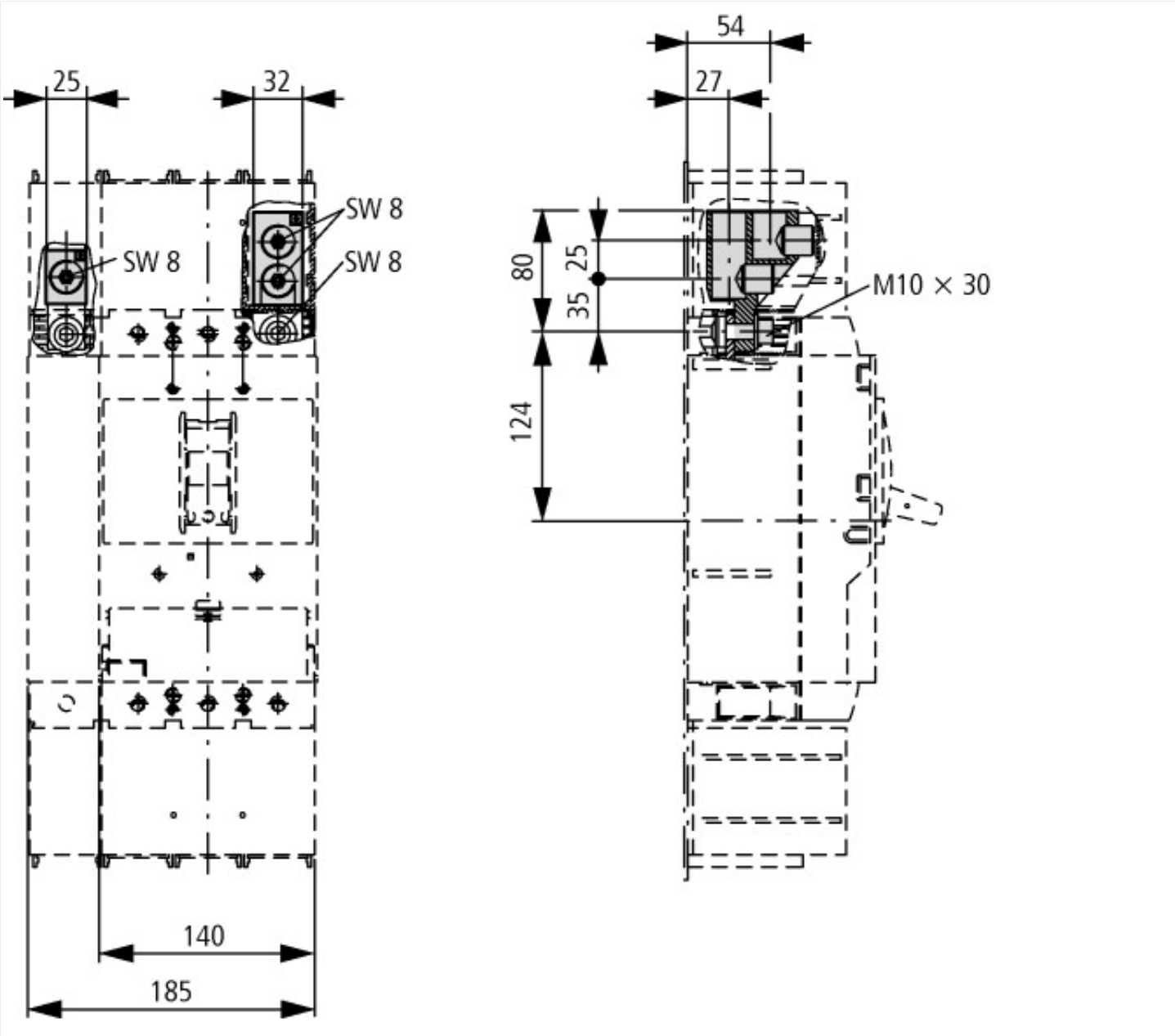
Technical data ETIM 7.0

Low-voltage industrial components (EG000017) / Wiring set for power circuit breaker (EC002050)			
Electric engineering, automation, process control engineering / Low-voltage switch technology / Circuit breaker (LV < 1 kV) / Wiring set for circuit breaker (ecl@ss10.0.1-27-37-04-24 [ACN957011])			
Suitable for number of poles			3
Model			Other

Approvals

Product Standards			UL489; CSA-C22.2 No. 5-09; IEC60947, CE marking
UL File No.			E31593
UL Category Control No.			DIHS
CSA File No.			022086
CSA Class No.			1432-01
North America Certification			UL listed, CSA certified
Suitable for			Refer to main component information

Dimensions



Eaton 191351

Catalog Number: 191351

Eaton Moeller series NZM - Molded Case Circuit Breaker. NZM3 PXR20 circuit breaker, 630A, 3p, screw terminal, H, 3

General specifications



Photo is representative

Product Name	Catalog Number
Eaton Moeller series NZM - Molded case circuit breaker	191351
	Model Code
	NZMH3-VX630
EAN	Product Length/Depth
4015081918638	166 mm
Product Height	Product Width
275 mm	140 mm
Product Weight	Compliances
7.054 kg	RoHS conform
Certifications	
IEC/EN 60947	
IEC	

Type

Circuit breaker

Special features

LSI overload protection and delayed and non-delayed short-circuit protective device

R.m.s. value measurement and "thermal memory"

USB interface for configuration and test function with Power Xpert

Protection Manager software

Optionally communication-capable with interface module and internal Modbus RTU module or CAM

Maximum back-up fuse, if the expected short-circuit currents at the installation location exceed the switching capacity of the circuit breaker (Rated short-circuit breaking capacity I_{cn})
Rated current = rated uninterrupted current: 630 A
Terminal capacity hint: Up to 240 mm² can be connected depending on the cable manufacturer.

Application

Use in unearthed supply systems at 690 V

Amperage Rating

630 A

Voltage rating

690 V - 690 V

Circuit breaker frame type

NZM3

Features

Protection unit

Brochures

[eaton-feerum-the-whole-grain-solution-success-story-en-us.pdf](#)

[eaton-digital-nzm-brochure-br013003en-en-us.pdf](#)

Catalogs

[eaton-digital-nzm-catalog-ca013003en-en-us.pdf](#)

Characteristic curve

[eaton-circuit-breaker-nzm-mccb-characteristic-curve-012.eps](#)

[eaton-circuit-breaker-nzm-mccb-characteristic-curve-016.eps](#)

Drawings

[eaton-circuit-breaker-nzm-mccb-dimensions-020.eps](#)

[eaton-circuit-breaker-switch-nzm-mccb-dimensions-016.eps](#)

Installation instructions

[eaton-circuit-breaker-basic-unit-bg3-il012100zu.pdf](#)

Installation videos

[The new digital NZM Range](#)

[Introduction of the new digital circuit breaker NZM](#)

mCAD model

[DA-CD-nzm3_3p](#)

[DA-CS-nzm3_3p](#)

Technical data sheets

[eaton-nzm-technical-information-sheet](#)

Motor drive optional

10.10 Temperature rise

The panel builder is responsible for the temperature rise calculation. Eaton will provide heat dissipation data for the devices.

10.11 Short-circuit rating

Is the panel builder's responsibility. The specifications for the switchgear must be observed.

10.12 Electromagnetic compatibility

Is the panel builder's responsibility. The specifications for the switchgear must be observed.

10.13 Mechanical function

The device meets the requirements, provided the information in the instruction leaflet (IL) is observed.

10.2.2 Corrosion resistance

Meets the product standard's requirements.

10.2.3.1 Verification of thermal stability of enclosures

Meets the product standard's requirements.

10.2.3.2 Verification of resistance of insulating materials to normal heat

Meets the product standard's requirements.

10.2.3.3 Resist. of insul. mat. to abnormal heat/fire by internal elect. effects

Meets the product standard's requirements.

10.2.4 Resistance to ultra-violet (UV) radiation

Meets the product standard's requirements.

10.2.5 Lifting

Does not apply, since the entire switchgear needs to be evaluated.

10.2.6 Mechanical impact

Does not apply, since the entire switchgear needs to be evaluated.

10.2.7 Inscriptions

Meets the product standard's requirements.

10.3 Degree of protection of assemblies

Does not apply, since the entire switchgear needs to be evaluated.

10.4 Clearances and creepage distances

Meets the product standard's requirements.

10.5 Protection against electric shock

Does not apply, since the entire switchgear needs to be evaluated.

10.6 Incorporation of switching devices and components

Does not apply, since the entire switchgear needs to be evaluated.

10.7 Internal electrical circuits and connections

Is the panel builder's responsibility.

10.8 Connections for external conductors

Is the panel builder's responsibility.

10.9.2 Power-frequency electric strength

Is the panel builder's responsibility.

10.9.3 Impulse withstand voltage

Is the panel builder's responsibility.

10.9.4 Testing of enclosures made of insulating material

Is the panel builder's responsibility.

Pollution degree

3

Mounting Method

Fixed

Built-in device fixed built-in technique

Climatic proofing

Damp heat, cyclic, to IEC 60068-2-30

Damp heat, constant, to IEC 60068-2-78

Equipment heat dissipation, current-dependent

119.07 W

Utilization category

A (IEC/EN 60947-2)

Isolation

300 V AC (between the auxiliary contacts)

500 V AC (between auxiliary contacts and main contacts)

Ambient operating temperature - max

70 °C

Ambient operating temperature - min

-25 °C

Ambient storage temperature - max

70 °C

Ambient storage temperature - min

40 °C

Number of auxiliary contacts (change-over contacts)

0

Number of auxiliary contacts (normally closed contacts)

0

Number of auxiliary contacts (normally open contacts)

0

Protection against direct contact

Finger and back-of-hand proof to DIN EN 50274/VDE 0106 part
110

Degree of protection

IP20 (basic degree of protection, in the operating controls area)
IP20

Direction of incoming supply

As required

Electrical connection type of main circuit

Screw connection

Lifespan, mechanical

15000 operations

Overvoltage category

III

Degree of protection (IP), front side

IP66 (with door coupling rotary handle)
IP40 (with insulating surround)

Degree of protection (terminations)

IP00 (terminations, phase isolator and strip terminal)
IP10 (tunnel terminal)

Number of poles

Three-pole

Terminal capacity (copper strip)

Min. 6 segments of 16 mm x 0.8 mm at rear-side connection
(punched)

Max. 10 segments of 32 mm x 1 mm + 5 segments of 32 mm x 1
mm at rear-side connection (punched)

Max. 10 segments of 24 mm x 1 mm + 5 segments of 24 mm x 1
mm

10 segments of 50 mm x 1 mm (2x) at rear-side width extension

Max. 8 segments of 24 mm x 1 mm (2x) at box terminal

Min. 6 segments of 16 mm x 0.8 mm at box terminal

Lifespan, electrical

5000 operations at 415 V AC-1

3000 operations at 690 V AC-1

5000 operations at 400 V AC-1

Functions

Systems, cable, selectivity and generator protection

Shock resistance

20 g (half-sinusoidal shock 20 ms)

Position of connection for main current circuit

Front side

Rated operational current for specified heat dissipation (In)

630 A

Release system

Electronic release

Short-circuit total breaktime

< 10 ms

Rated short-time withstand current (t = 0.3 s)

3.3 kA

Rated short-time withstand current (t = 1 s)

3.3 kA

Short-circuit release delayed setting - max

4410 A

Short-circuit release delayed setting - min

378 A

Short-circuit release non-delayed setting - max

5040 A

Short-circuit release non-delayed setting - min

1260 A

Terminal capacity (control cable)

0.75 mm² - 2.5 mm² (1x)

0.75 mm² - 1.5 mm² (2x)

Terminal capacity (copper busbar)

Max. 30 mm x 10 mm + 30 mm x 5 mm direct at switch rear-side connection

M10 at rear-side screw connection

Min. 20 mm x 5 mm direct at switch rear-side connection

Max. 10 mm x 50 mm (2x) at rear-side width extension

Terminal capacity (copper solid conductor/cable)

16 mm² (1x) at tunnel terminal

16 mm² (2x) at box terminal

300 mm² (2x) at rear-side width extension

16 mm² (1x) direct at switch rear-side connection

16 mm² (2x) direct at switch rear-side connection

Terminal capacity (aluminum solid conductor/cable)

16 mm² (1x) at tunnel terminal

Terminal capacity (copper stranded conductor/cable)

16 mm² - 185 mm² (1x) at 1-hole tunnel terminal

35 mm² - 240 mm² (1x) at box terminal

25 mm² - 120 mm² (2x) at box terminal

25 mm² - 240 mm² (1x) direct at switch rear-side connection

25 mm² - 240 mm² (2x) direct at switch rear-side connection

Terminal capacity (aluminum stranded conductor/cable)

50 mm² - 240 mm² (1x) at 2-hole tunnel terminal

25 mm² - 185 mm² (1x) at tunnel terminal

50 mm² - 240 mm² (2x) at 2-hole tunnel terminal

Handle type

Rocker lever

Short delay current setting (I_{sd}) - max

7 A

Short delay current setting (I_{sd}) - min

1.5 A

Instantaneous current setting (I_i) - max

5040 A

Instantaneous current setting (I_i) - min

1260 A

Number of operations per hour - max

60

Overload current setting (I_r) - max

630 A

Overload current setting (I_r) - min

252 A

Rated short-circuit breaking capacity I_{cs} (IEC/EN 60947) at 230 V, 50/60 Hz

150 kA

Rated short-circuit breaking capacity I_{cs} (IEC/EN 60947) at 400/415 V, 50/60 Hz

150 kA

Rated short-circuit breaking capacity I_{cs} (IEC/EN 60947) at 440 V, 50/60 Hz

130 kA

Rated short-circuit breaking capacity I_{cs} (IEC/EN 60947) at 525

V, 50/60 Hz

33 kA

Rated short-circuit breaking capacity I_{cs} (IEC/EN 60947) at 690 V, 50/60 Hz

9 kA

Rated short-circuit making capacity I_{cm} at 400/415 V, 50/60 Hz

330 kA

Rated short-circuit making capacity I_{cm} at 440 V, 50/60 Hz

286 kA

Rated short-circuit making capacity I_{cm} at 525 V, 50/60 Hz

143 kA

Rated short-circuit making capacity I_{cm} at 690 V, 50/60 Hz

70 kA

Standard terminals

Screw terminal

Optional terminals

Box terminal. Connection on rear. Tunnel terminal

Rated short-circuit making capacity I_{cm} at 240 V, 50/60 Hz

330 kA

Rated impulse withstand voltage (U_{imp}) at auxiliary contacts

6000 V

Rated impulse withstand voltage (U_{imp}) at main contacts

8000 V

Rated insulation voltage (U_i)

690 V AC

Eaton 191350

Catalog Number: 191350

Eaton Moeller series NZM - Molded Case Circuit Breaker. NZM3 PXR20 circuit breaker, 400A, 3p, screw terminal, H, 3

General specifications



Photo is representative

Product Name	Catalog Number
Eaton Moeller series NZM molded case circuit breaker electronic	191350
	Model Code
	NZMH3-VX400
EAN	Product Length/Depth
4015081918621	166 mm
Product Height	Product Width
275 mm	140 mm
Product Weight	Compliances
6.989 kg	RoHS conform
Certifications	
IEC	
IEC/EN 60947	

Type

Circuit breaker

Special features

LSI overload protection and delayed and non-delayed short-circuit protective device

R.m.s. value measurement and "thermal memory"

USB interface for configuration and test function with Power Xpert

Protection Manager software

Optionally communication-capable with interface module and internal Modbus RTU module or CAM

Maximum back-up fuse, if the expected short-circuit currents at the installation location exceed the switching capacity of the circuit breaker (Rated short-circuit breaking capacity I_{cn})
Rated current = rated uninterrupted current: 400 A
Terminal capacity hint: Up to 240 mm² can be connected depending on the cable manufacturer.

Application

Use in unearthed supply systems at 690 V

Amperage Rating

400 A

Voltage rating

690 V - 690 V

Circuit breaker frame type

NZM3

Features

Protection unit

Brochures

[eaton-feerum-the-whole-grain-solution-success-story-en-us.pdf](#)

[eaton-digital-nzm-brochure-br013003en-en-us.pdf](#)

Catalogs

[eaton-digital-nzm-catalog-ca013003en-en-us.pdf](#)

Characteristic curve

[eaton-circuit-breaker-nzm-mccb-characteristic-curve-012.eps](#)

[eaton-circuit-breaker-nzm-mccb-characteristic-curve-016.eps](#)

Drawings

[eaton-circuit-breaker-nzm-mccb-dimensions-020.eps](#)

[eaton-circuit-breaker-switch-nzm-mccb-dimensions-016.eps](#)

Installation instructions

[eaton-circuit-breaker-basic-unit-bg3-il012100zu.pdf](#)

Installation videos

[The new digital NZM Range](#)

[Introduction of the new digital circuit breaker NZM](#)

mCAD model

[DA-CD-nzm3_3p](#)

[DA-CS-nzm3_3p](#)

Technical data sheets

[eaton-nzm-technical-information-sheet](#)

Motor drive optional

10.10 Temperature rise

The panel builder is responsible for the temperature rise calculation. Eaton will provide heat dissipation data for the devices.

10.11 Short-circuit rating

Is the panel builder's responsibility. The specifications for the switchgear must be observed.

10.12 Electromagnetic compatibility

Is the panel builder's responsibility. The specifications for the switchgear must be observed.

10.13 Mechanical function

The device meets the requirements, provided the information in the instruction leaflet (IL) is observed.

10.2.2 Corrosion resistance

Meets the product standard's requirements.

10.2.3.1 Verification of thermal stability of enclosures

Meets the product standard's requirements.

10.2.3.2 Verification of resistance of insulating materials to normal heat

Meets the product standard's requirements.

10.2.3.3 Resist. of insul. mat. to abnormal heat/fire by internal elect. effects

Meets the product standard's requirements.

10.2.4 Resistance to ultra-violet (UV) radiation

Meets the product standard's requirements.

10.2.5 Lifting

Does not apply, since the entire switchgear needs to be evaluated.

10.2.6 Mechanical impact

Does not apply, since the entire switchgear needs to be evaluated.

10.2.7 Inscriptions

Meets the product standard's requirements.

10.3 Degree of protection of assemblies

Does not apply, since the entire switchgear needs to be evaluated.

10.4 Clearances and creepage distances

Meets the product standard's requirements.

10.5 Protection against electric shock

Does not apply, since the entire switchgear needs to be evaluated.

10.6 Incorporation of switching devices and components

Does not apply, since the entire switchgear needs to be evaluated.

10.7 Internal electrical circuits and connections

Is the panel builder's responsibility.

10.8 Connections for external conductors

Is the panel builder's responsibility.

10.9.2 Power-frequency electric strength

Is the panel builder's responsibility.

10.9.3 Impulse withstand voltage

Is the panel builder's responsibility.

10.9.4 Testing of enclosures made of insulating material

Is the panel builder's responsibility.

Pollution degree

3

Mounting Method

Built-in device fixed built-in technique

Fixed

Climatic proofing

Damp heat, cyclic, to IEC 60068-2-30

Damp heat, constant, to IEC 60068-2-78

Equipment heat dissipation, current-dependent

48 W

Utilization category

A (IEC/EN 60947-2)

Isolation

300 V AC (between the auxiliary contacts)

500 V AC (between auxiliary contacts and main contacts)

Ambient operating temperature - max

70 °C

Ambient operating temperature - min

-25 °C

Ambient storage temperature - max

70 °C

Ambient storage temperature - min

40 °C

Number of auxiliary contacts (change-over contacts)

0

Number of auxiliary contacts (normally closed contacts)

0

Number of auxiliary contacts (normally open contacts)

0

Protection against direct contact

Finger and back-of-hand proof to DIN EN 50274/VDE 0106 part
110

Degree of protection

IP20 (basic degree of protection, in the operating controls area)
IP20

Direction of incoming supply

As required

Electrical connection type of main circuit

Screw connection

Lifespan, mechanical

15000 operations

Overvoltage category

III

Degree of protection (IP), front side

IP40 (with insulating surround)
IP66 (with door coupling rotary handle)

Degree of protection (terminations)

IP00 (terminations, phase isolator and strip terminal)
IP10 (tunnel terminal)

Number of poles

Three-pole

Terminal capacity (copper strip)

Max. 10 segments of 24 mm x 1 mm + 5 segments of 24 mm x 1
mm

Max. 10 segments of 32 mm x 1 mm + 5 segments of 32 mm x 1
mm at rear-side connection (punched)

10 segments of 50 mm x 1 mm (2x) at rear-side width extension

Min. 6 segments of 16 mm x 0.8 mm at rear-side connection
(punched)

Max. 8 segments of 24 mm x 1 mm (2x) at box terminal

Min. 6 segments of 16 mm x 0.8 mm at box terminal

Lifespan, electrical

5000 operations at 400 V AC-1

3000 operations at 690 V AC-1

5000 operations at 415 V AC-1

Functions

Systems, cable, selectivity and generator protection

Shock resistance

20 g (half-sinusoidal shock 20 ms)

Position of connection for main current circuit

Front side

Rated operational current for specified heat dissipation (In)

400 A

Release system

Electronic release

Short-circuit total breaktime

< 10 ms

Rated short-time withstand current (t = 0.3 s)

3.3 kA

Rated short-time withstand current (t = 1 s)

3.3 kA

Short-circuit release delayed setting - max

4000 A

Short-circuit release delayed setting - min

320 A

Short-circuit release non-delayed setting - max

4800 A

Short-circuit release non-delayed setting - min

800 A

Terminal capacity (control cable)

0.75 mm² - 1.5 mm² (2x)

0.75 mm² - 2.5 mm² (1x)

Terminal capacity (copper busbar)

M10 at rear-side screw connection

Min. 20 mm x 5 mm direct at switch rear-side connection

Max. 30 mm x 10 mm + 30 mm x 5 mm direct at switch rear-side connection

Max. 10 mm x 50 mm (2x) at rear-side width extension

Terminal capacity (copper solid conductor/cable)

16 mm² (1x) at tunnel terminal

16 mm² (2x) direct at switch rear-side connection

300 mm² (2x) at rear-side width extension

16 mm² (1x) direct at switch rear-side connection

16 mm² (2x) at box terminal

Terminal capacity (aluminum solid conductor/cable)

16 mm² (1x) at tunnel terminal

Terminal capacity (copper stranded conductor/cable)

16 mm² - 185 mm² (1x) at 1-hole tunnel terminal

25 mm² - 120 mm² (2x) at box terminal

25 mm² - 240 mm² (2x) direct at switch rear-side connection

25 mm² - 240 mm² (1x) direct at switch rear-side connection

35 mm² - 240 mm² (1x) at box terminal

Terminal capacity (aluminum stranded conductor/cable)

50 mm² - 240 mm² (1x) at 2-hole tunnel terminal

25 mm² - 185 mm² (1x) at tunnel terminal

50 mm² - 240 mm² (2x) at 2-hole tunnel terminal

Handle type

Rocker lever

Short delay current setting (I_{sd}) - max

10 A

Short delay current setting (I_{sd}) - min

2 A

Instantaneous current setting (I_i) - max

12 A

Instantaneous current setting (I_i) - min

2 A

Number of operations per hour - max

60

Overload current setting (I_r) - max

400 A

Overload current setting (I_r) - min

160 A

Rated short-circuit breaking capacity I_{cs} (IEC/EN 60947) at 230 V, 50/60 Hz

150 kA

Rated short-circuit breaking capacity I_{cs} (IEC/EN 60947) at 400/415 V, 50/60 Hz

150 kA

Rated short-circuit breaking capacity I_{cs} (IEC/EN 60947) at 440 V, 50/60 Hz

130 kA

Rated short-circuit breaking capacity I_{cs} (IEC/EN 60947) at 525

V, 50/60 Hz

33 kA

Rated short-circuit breaking capacity I_{cs} (IEC/EN 60947) at 690 V, 50/60 Hz

9 kA

Rated short-circuit making capacity I_{cm} at 400/415 V, 50/60 Hz

330 kA

Rated short-circuit making capacity I_{cm} at 440 V, 50/60 Hz

286 kA

Rated short-circuit making capacity I_{cm} at 525 V, 50/60 Hz

143 kA

Rated short-circuit making capacity I_{cm} at 690 V, 50/60 Hz

70 kA

Standard terminals

Screw terminal

Optional terminals

Box terminal. Connection on rear. Tunnel terminal

Rated short-circuit making capacity I_{cm} at 240 V, 50/60 Hz

330 kA

Rated impulse withstand voltage (U_{imp}) at auxiliary contacts

6000 V

Rated impulse withstand voltage (U_{imp}) at main contacts

8000 V

Rated insulation voltage (U_i)

690 V AC

Eaton 191679

Catalog Number: 191679

Eaton Moeller series NZM - Molded Case Circuit Breaker. NZM2 PXR20 circuit breaker, 160A, 3p, screw terminal, H, 2



Photo is representative

General specifications

Product Name	Catalog Number
Eaton Moeller series NZM molded case circuit breaker electronic	191679
	Model Code
	NZMH2-VX160
EAN	Product Length/Depth
4015081921911	190 mm
Product Height	Product Width
160 mm	115 mm
Product Weight	Compliances
2.3 kg	RoHS conform
Certifications	
IEC	
IEC/EN 60947	

Type

Circuit breaker

Special features

LSI overload protection and delayed and non-delayed short-circuit protective device

R.m.s. value measurement and "thermal memory"

USB interface for configuration and test function with Power Xpert

Protection Manager software

Optionally communication-capable with interface module and internal Modbus

RTU module or CAM

Maximum back-up fuse, if the expected short-circuit currents at the installation

location exceed the switching capacity of the circuit breaker (Rated short-circuit breaking capacity I_{cn})

Rated current = rated

uninterrupted current: 160 A

Application

Use in unearthed supply systems at 690 V

Amperage Rating

160 A

Voltage rating

690 V - 690 V

Circuit breaker frame type

NZM2

Features

Motor drive optional

Protection unit

10.10 Temperature rise

The panel builder is responsible for the temperature rise calculation. Eaton will provide heat dissipation data for the

Brochures

[eaton-feerum-the-whole-grain-solution-success-story-en-us.pdf](#)

[eaton-digital-nzm-brochure-br013003en-en-us.pdf](#)

Catalogs

[eaton-digital-nzm-catalog-ca013003en-en-us.pdf](#)

Characteristic curve

[eaton-circuit-breaker-nzm-mccb-characteristic-curve-014.eps](#)

[eaton-circuit-breaker-nzm-mccb-characteristic-curve-010.eps](#)

Drawings

[eaton-circuit-breaker-switch-nzm-mccb-dimensions-017.eps](#)

[eaton-circuit-breaker-nzm-mccb-dimensions-019.eps](#)

Installation instructions

[eaton-circuit-breakers-nzmb-nzmn-basic-unit-bg2-instruction-leaflet-il012099zu.pdf](#)

Installation videos

[The new digital NZM Range](#)

[Introduction of the new digital circuit breaker NZM](#)

mCAD model

[DA-CD-nzm2_3p](#)

[DA-CS-nzm2_3p](#)

Technical data sheets

[eaton-nzm-technical-information-sheet](#)

devices.

10.11 Short-circuit rating

Is the panel builder's responsibility. The specifications for the switchgear must be observed.

10.12 Electromagnetic compatibility

Is the panel builder's responsibility. The specifications for the switchgear must be observed.

10.13 Mechanical function

The device meets the requirements, provided the information in the instruction leaflet (IL) is observed.

10.2.2 Corrosion resistance

Meets the product standard's requirements.

10.2.3.1 Verification of thermal stability of enclosures

Meets the product standard's requirements.

10.2.3.2 Verification of resistance of insulating materials to normal heat

Meets the product standard's requirements.

10.2.3.3 Resist. of insul. mat. to abnormal heat/fire by internal elect. effects

Meets the product standard's requirements.

10.2.4 Resistance to ultra-violet (UV) radiation

Meets the product standard's requirements.

10.2.5 Lifting

Does not apply, since the entire switchgear needs to be evaluated.

10.2.6 Mechanical impact

Does not apply, since the entire switchgear needs to be evaluated.

10.2.7 Inscriptions

Meets the product standard's requirements.

10.3 Degree of protection of assemblies

Does not apply, since the entire switchgear needs to be evaluated.

10.4 Clearances and creepage distances

Meets the product standard's requirements.

10.5 Protection against electric shock

Does not apply, since the entire switchgear needs to be evaluated.

10.6 Incorporation of switching devices and components

Does not apply, since the entire switchgear needs to be

evaluated.

10.7 Internal electrical circuits and connections

Is the panel builder's responsibility.

10.8 Connections for external conductors

Is the panel builder's responsibility.

10.9.2 Power-frequency electric strength

Is the panel builder's responsibility.

10.9.3 Impulse withstand voltage

Is the panel builder's responsibility.

10.9.4 Testing of enclosures made of insulating material

Is the panel builder's responsibility.

Pollution degree

3

Mounting Method

Fixed

Built-in device fixed built-in technique

DIN rail (top hat rail) mounting optional

Climatic proofing

Damp heat, cyclic, to IEC 60068-2-30

Damp heat, constant, to IEC 60068-2-78

Equipment heat dissipation, current-dependent

21.12 W

Utilization category

A (IEC/EN 60947-2)

Isolation

500 V AC (between auxiliary contacts and main contacts)

300 V AC (between the auxiliary contacts)

Ambient operating temperature - max

70 °C

Ambient operating temperature - min

-25 °C

Ambient storage temperature - max

70 °C

Ambient storage temperature - min

40 °C

Number of auxiliary contacts (change-over contacts)

0

Number of auxiliary contacts (normally closed contacts)

0

Number of auxiliary contacts (normally open contacts)

0

Protection against direct contact

Finger and back-of-hand proof to DIN EN 50274/VDE 0106 part 110

Degree of protection

IP20 (basic degree of protection, in the operating controls area)
IP20

Direction of incoming supply

As required

Electrical connection type of main circuit

Screw connection

Lifespan, mechanical

20000 operations

Overvoltage category

III

Degree of protection (IP), front side

IP66 (with door coupling rotary handle)
IP40 (with insulating surround)

Degree of protection (terminations)

IP00 (terminations, phase isolator and strip terminal)
IP10 (tunnel terminal)

Number of poles

Three-pole

Terminal capacity (copper strip)

Min. 2 segments of 9 mm x 0.8 mm at box terminal
Max. 10 segments of 24 mm x 0.8 mm at rear-side connection (punched)
Max. 8 segments of 24 mm x 1 mm (2x) at box terminal
Max. 10 segments of 16 mm x 0.8 mm at box terminal
Min. 2 segments of 16 mm x 0.8 mm at rear-side connection (punched)

Lifespan, electrical

10000 operations at 400 V AC-1
7500 operations at 690 V AC-1
10000 operations at 415 V AC-1

Functions

Systems, cable, selectivity and generator protection

Shock resistance

20 g (half-sinusoidal shock 20 ms)

Position of connection for main current circuit

Front side

Rated operational current for specified heat dissipation (I_n)

160 A

Power loss

21.12 W

Release system

Electronic release

Short-circuit total breaktime

< 10 ms

Rated short-time withstand current (t = 0.3 s)

1.9 kA

Rated short-time withstand current (t = 1 s)

1.9 kA

Short-circuit release delayed setting - max

1600 A

Short-circuit release delayed setting - min

320 A

Short-circuit release non-delayed setting - max

2880 A

Short-circuit release non-delayed setting - min

320 A

Terminal capacity (control cable)

0.75 mm² - 2.5 mm² (1x)

0.75 mm² - 1.5 mm² (2x)

Terminal capacity (copper busbar)

M8 at rear-side screw connection

Max. 24 mm x 8 mm direct at switch rear-side connection

Min. 16 mm x 5 mm direct at switch rear-side connection

Terminal capacity (copper solid conductor/cable)

6 mm² - 16 mm² (2x) at box terminal

6 mm² - 16 mm² (2x) direct at switch rear-side connection

16 mm² (1x) at tunnel terminal

10 mm² - 16 mm² (1x) direct at switch rear-side connection

10 mm² - 16 mm² (1x) at box terminal

Terminal capacity (aluminum solid conductor/cable)

16 mm² (1x) at tunnel terminal

Terminal capacity (copper stranded conductor/cable)

25 mm² - 70 mm² (2x) at box terminal

25 mm² - 185 mm² (1x) at 1-hole tunnel terminal

25 mm² - 185 mm² (1x) direct at switch rear-side connection

25 mm² - 185 mm² (1x) at box terminal

25 mm² - 70 mm² (2x) direct at switch rear-side connection

Terminal capacity (aluminum stranded conductor/cable)

25 mm² - 185 mm² (1x) at tunnel terminal

Handle type

Rocker lever

Short delay current setting (I_{sd}) - max

10 A

Short delay current setting (I_{sd}) - min

2 A

Instantaneous current setting (I_i) - max

18 A

Instantaneous current setting (I_i) - min

2 A

Number of operations per hour - max

120

Overload current setting (I_r) - max

160 A

Overload current setting (I_r) - min

64 A

Rated short-circuit breaking capacity I_{cs} (IEC/EN 60947) at 230 V, 50/60 Hz

150 kA

Rated short-circuit breaking capacity I_{cs} (IEC/EN 60947) at 400/415 V, 50/60 Hz

150 kA

Rated short-circuit breaking capacity I_{cs} (IEC/EN 60947) at 440 V, 50/60 Hz

130 kA

Rated short-circuit breaking capacity I_{cs} (IEC/EN 60947) at 525 V, 50/60 Hz

37.5 kA

Rated short-circuit breaking capacity I_{cs} (IEC/EN 60947) at 690 V, 50/60 Hz

5 kA

Rated short-circuit making capacity I_{cm} at 400/415 V, 50/60 Hz

330 kA

Rated short-circuit making capacity I_{cm} at 440 V, 50/60 Hz

286 kA

Rated short-circuit making capacity I_{cm} at 525 V, 50/60 Hz

110 kA

Rated short-circuit making capacity I_{cm} at 690 V, 50/60 Hz

40 kA

Standard terminals

Screw terminal

Optional terminals

Box terminal. Connection on rear. Tunnel terminal

Rated short-circuit making capacity I_{cm} at 240 V, 50/60 Hz

330 kA

Rated impulse withstand voltage (U_{imp}) at auxiliary contacts

6000 V

Rated impulse withstand voltage (U_{imp}) at main contacts

8000 V

Rated insulation voltage (U_i)

690 V AC



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Eaton 191680

Catalog Number: 191680

Eaton Moeller series NZM - Molded Case Circuit Breaker. NZM2 PXR20 circuit breaker, 250A, 3p, screw terminal, H, 2



General specifications

Product Name	Catalog Number
Eaton Moeller series NZM molded case circuit breaker electronic	191680
	Model Code
	NZMH2-VX250
EAN	Product Length/Depth
4015081921928	190 mm
Product Height	Product Width
160 mm	115 mm
Product Weight	Compliances
2.3 kg	RoHS conform
Certifications	
IEC/EN 60947	
IEC	

Type

Circuit breaker

Special features

LSI overload protection and delayed and non-delayed short-circuit protective device

R.m.s. value measurement and "thermal memory"

USB interface for configuration and test function with Power Xpert

Protection Manager software

Optionally communication-capable with interface module and internal Modbus

RTU module or CAM

Maximum back-up fuse, if the expected short-circuit currents at the installation

location exceed the switching capacity of the circuit breaker (Rated short-circuit breaking capacity I_{cn})

Rated current = rated

uninterrupted current: 250 A

Application

Use in unearthed supply systems at 690 V

Amperage Rating

250 A

Voltage rating

690 V - 690 V

Circuit breaker frame type

NZM2

Features

Motor drive optional

Protection unit

10.10 Temperature rise

The panel builder is responsible for the temperature rise calculation. Eaton will provide heat dissipation data for the

Brochures

[eaton-digital-nzm-brochure-br013003en-en-us.pdf](#)

[eaton-feerum-the-whole-grain-solution-success-story-en-us.pdf](#)

Catalogs

[eaton-digital-nzm-catalog-ca013003en-en-us.pdf](#)

Characteristic curve

[eaton-circuit-breaker-nzm-mccb-characteristic-curve-010.eps](#)

[eaton-circuit-breaker-nzm-mccb-characteristic-curve-014.eps](#)

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[eaton-circuit-breaker-switch-nzm-mccb-dimensions-017.eps](#)

Installation instructions

[eaton-circuit-breakers-nzmb-nzmn-basic-unit-bg2-instruction-leaflet-il012099zu.pdf](#)

Installation videos

[Introduction of the new digital circuit breaker NZM](#)

[The new digital NZM Range](#)

mCAD model

[DA-CS-nzm2_3p](#)

[DA-CD-nzm2_3p](#)

Technical data sheets

[eaton-nzm-technical-information-sheet](#)

devices.

10.11 Short-circuit rating

Is the panel builder's responsibility. The specifications for the switchgear must be observed.

10.12 Electromagnetic compatibility

Is the panel builder's responsibility. The specifications for the switchgear must be observed.

10.13 Mechanical function

The device meets the requirements, provided the information in the instruction leaflet (IL) is observed.

10.2.2 Corrosion resistance

Meets the product standard's requirements.

10.2.3.1 Verification of thermal stability of enclosures

Meets the product standard's requirements.

10.2.3.2 Verification of resistance of insulating materials to normal heat

Meets the product standard's requirements.

10.2.3.3 Resist. of insul. mat. to abnormal heat/fire by internal elect. effects

Meets the product standard's requirements.

10.2.4 Resistance to ultra-violet (UV) radiation

Meets the product standard's requirements.

10.2.5 Lifting

Does not apply, since the entire switchgear needs to be evaluated.

10.2.6 Mechanical impact

Does not apply, since the entire switchgear needs to be evaluated.

10.2.7 Inscriptions

Meets the product standard's requirements.

10.3 Degree of protection of assemblies

Does not apply, since the entire switchgear needs to be evaluated.

10.4 Clearances and creepage distances

Meets the product standard's requirements.

10.5 Protection against electric shock

Does not apply, since the entire switchgear needs to be evaluated.

10.6 Incorporation of switching devices and components

Does not apply, since the entire switchgear needs to be

evaluated.

10.7 Internal electrical circuits and connections

Is the panel builder's responsibility.

10.8 Connections for external conductors

Is the panel builder's responsibility.

10.9.2 Power-frequency electric strength

Is the panel builder's responsibility.

10.9.3 Impulse withstand voltage

Is the panel builder's responsibility.

10.9.4 Testing of enclosures made of insulating material

Is the panel builder's responsibility.

Pollution degree

3

Mounting Method

DIN rail (top hat rail) mounting optional

Fixed

Built-in device fixed built-in technique

Climatic proofing

Damp heat, cyclic, to IEC 60068-2-30

Damp heat, constant, to IEC 60068-2-78

Equipment heat dissipation, current-dependent

51.56 W

Utilization category

A (IEC/EN 60947-2)

Isolation

300 V AC (between the auxiliary contacts)

500 V AC (between auxiliary contacts and main contacts)

Ambient operating temperature - max

70 °C

Ambient operating temperature - min

-25 °C

Ambient storage temperature - max

70 °C

Ambient storage temperature - min

40 °C

Number of auxiliary contacts (change-over contacts)

0

Number of auxiliary contacts (normally closed contacts)

0

Number of auxiliary contacts (normally open contacts)

0

Protection against direct contact

Finger and back-of-hand proof to DIN EN 50274/VDE 0106 part 110

Degree of protection

IP20

IP20 (basic degree of protection, in the operating controls area)

Direction of incoming supply

As required

Electrical connection type of main circuit

Screw connection

Lifespan, mechanical

20000 operations

Overvoltage category

III

Degree of protection (IP), front side

IP66 (with door coupling rotary handle)

IP40 (with insulating surround)

Degree of protection (terminations)

IP00 (terminations, phase isolator and strip terminal)

IP10 (tunnel terminal)

Number of poles

Three-pole

Terminal capacity (copper strip)

Max. 8 segments of 24 mm x 1 mm (2x) at box terminal

Min. 2 segments of 9 mm x 0.8 mm at box terminal

Max. 10 segments of 16 mm x 0.8 mm at box terminal

Max. 10 segments of 24 mm x 0.8 mm at rear-side connection
(punched)

Min. 2 segments of 16 mm x 0.8 mm at rear-side connection
(punched)

Lifespan, electrical

7500 operations at 690 V AC-1

10000 operations at 400 V AC-1

10000 operations at 415 V AC-1

Functions

Systems, cable, selectivity and generator protection

Shock resistance

20 g (half-sinusoidal shock 20 ms)

Position of connection for main current circuit

Front side

Rated operational current for specified heat dissipation (I_n)

250 A

Power loss

51.56 W

Release system

Electronic release

Short-circuit total breaktime

< 10 ms

Rated short-time withstand current ($t = 0.3$ s)

1.9 kA

Rated short-time withstand current ($t = 1$ s)

1.9 kA

Short-circuit release delayed setting - max

2500 A

Short-circuit release delayed setting - min

200 A

Short-circuit release non-delayed setting - max

3000 A

Short-circuit release non-delayed setting - min

500 A

Terminal capacity (control cable)

0.75 mm² - 2.5 mm² (1x)

0.75 mm² - 1.5 mm² (2x)

Terminal capacity (copper busbar)

Min. 16 mm x 5 mm direct at switch rear-side connection

M8 at rear-side screw connection

Max. 24 mm x 8 mm direct at switch rear-side connection

Terminal capacity (copper solid conductor/cable)

10 mm² - 16 mm² (1x) direct at switch rear-side connection

6 mm² - 16 mm² (2x) direct at switch rear-side connection

16 mm² (1x) at tunnel terminal

6 mm² - 16 mm² (2x) at box terminal

10 mm² - 16 mm² (1x) at box terminal

Terminal capacity (aluminum solid conductor/cable)

16 mm² (1x) at tunnel terminal

Terminal capacity (copper stranded conductor/cable)

25 mm² - 70 mm² (2x) at box terminal

25 mm² - 185 mm² (1x) at 1-hole tunnel terminal

25 mm² - 70 mm² (2x) direct at switch rear-side connection

25 mm² - 185 mm² (1x) at box terminal

25 mm² - 185 mm² (1x) direct at switch rear-side connection

Terminal capacity (aluminum stranded conductor/cable)

25 mm² - 185 mm² (1x) at tunnel terminal

Handle type

Rocker lever

Short delay current setting (I_{sd}) - max

10 A

Short delay current setting (I_{sd}) - min

2 A

Instantaneous current setting (I_i) - max

12 A

Instantaneous current setting (I_i) - min

2 A

Number of operations per hour - max

120

Overload current setting (I_r) - max

250 A

Overload current setting (I_r) - min

100 A

Rated short-circuit breaking capacity I_{cs} (IEC/EN 60947) at 230 V, 50/60 Hz

150 kA

Rated short-circuit breaking capacity I_{cs} (IEC/EN 60947) at 400/415 V, 50/60 Hz

150 kA

Rated short-circuit breaking capacity I_{cs} (IEC/EN 60947) at 440 V, 50/60 Hz

130 kA

Rated short-circuit breaking capacity I_{cs} (IEC/EN 60947) at 525 V, 50/60 Hz

37.5 kA

Rated short-circuit breaking capacity I_{cs} (IEC/EN 60947) at 690 V, 50/60 Hz

5 kA

Rated short-circuit making capacity I_{cm} at 400/415 V, 50/60 Hz

330 kA

Rated short-circuit making capacity I_{cm} at 440 V, 50/60 Hz

286 kA

Rated short-circuit making capacity I_{cm} at 525 V, 50/60 Hz

110 kA

Rated short-circuit making capacity I_{cm} at 690 V, 50/60 Hz

40 kA

Standard terminals

Screw terminal

Optional terminals

Box terminal. Connection on rear. Tunnel terminal

Rated short-circuit making capacity I_{cm} at 240 V, 50/60 Hz

330 kA

Rated impulse withstand voltage (U_{imp}) at auxiliary contacts

6000 V

Rated impulse withstand voltage (U_{imp}) at main contacts

8000 V

Rated insulation voltage (U_i)

690 V AC



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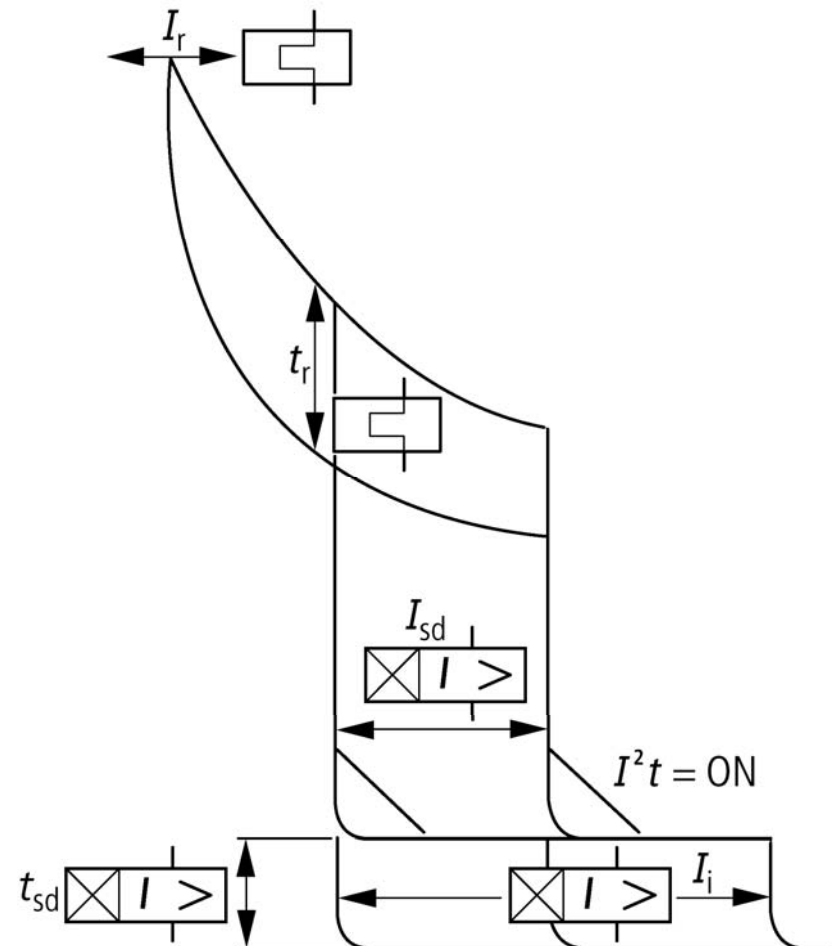
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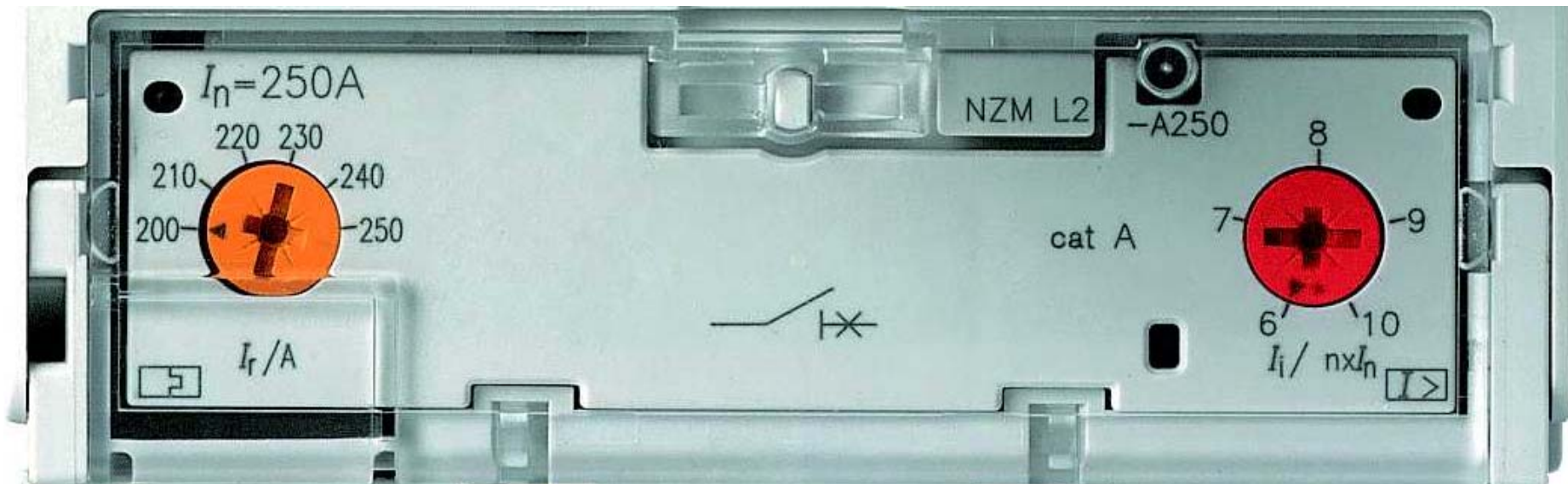
Tekniske betegnelser

- I_u Kontinuerlig merkestrøm; strøm som en bryter kan føre over lang tid uten avbrudd
- I_n Merkestrøm; for effektbrytere $I_u = I_n$
- I_r Innstillingsverdi overbelastningsvern
- t_r Tidsforsinkelse av overbelastningsvernet (definert ved $6 \times I_r$)
- I_i Innstillingsverdi av uforsinket kortslutningsvern (i = instantaneous)
- I_{sd} Innstillingsverdi av kortidsforsinket kortslutningsvern
- t_{sd} Korttidsforsinkelse av kortslutningsvern
- I^2t Gjennomsluppet energi, I^2t er en konstant funksjon (utløserkurve ON/OFF)



Termomagnetisk utløser NZM1- 2 A

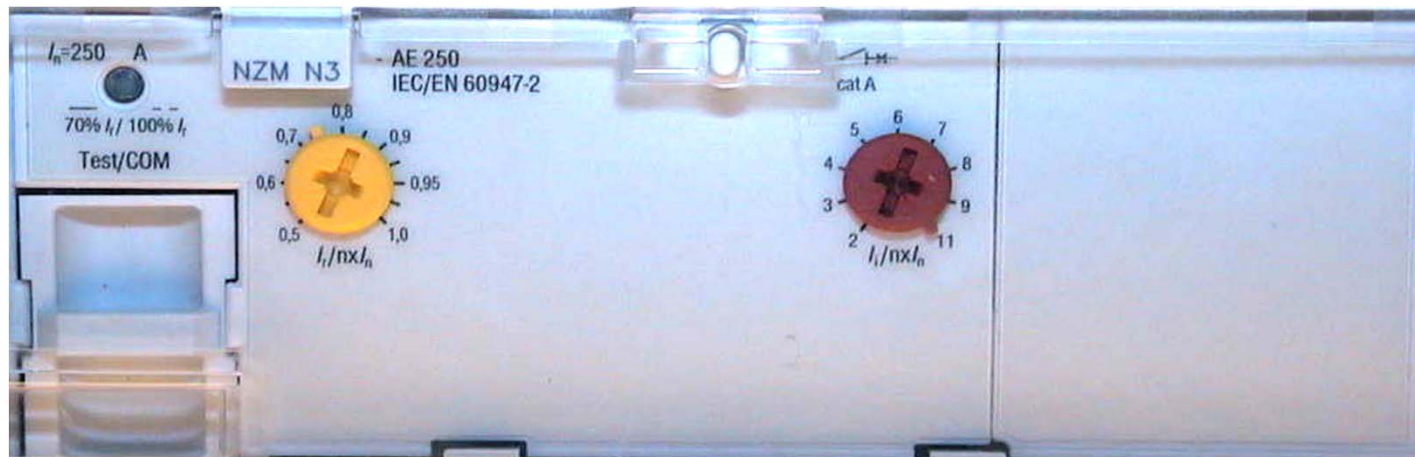
- justerbar overlast utløser I_r
- justerbar kortslutnings utløser I_i
- justerbar kortslutnings utløser I_i , uten Bimetall (S-Type)
- ikke følsom for "inrush current", -M
- følsom for fasebrudd, -M



Elektronisk vern NZM2-4 AE

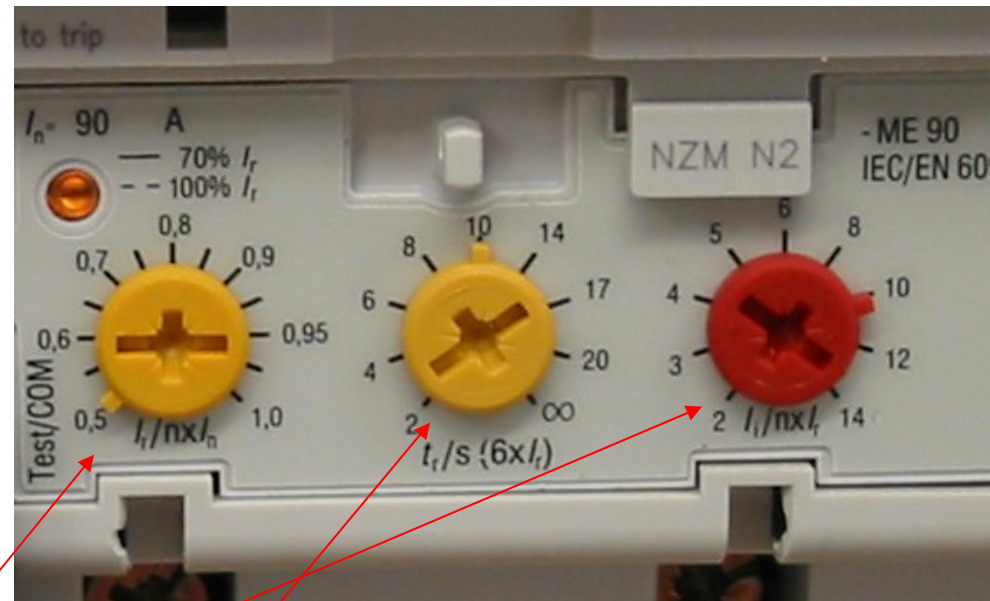
A = Systemer og kabelbeskyttelse

E = Elektroniskvern



- innstillbart overbelastningsvern I_r
- innstillbart uforsinket kortslutningsvern I_i
- r.m.s verdimåling og termisk minne
- overlast varsel 70% (fast lys), 100% (sakte blink), 120% (hurtig blink)
- DMI interface, PC, testenheter

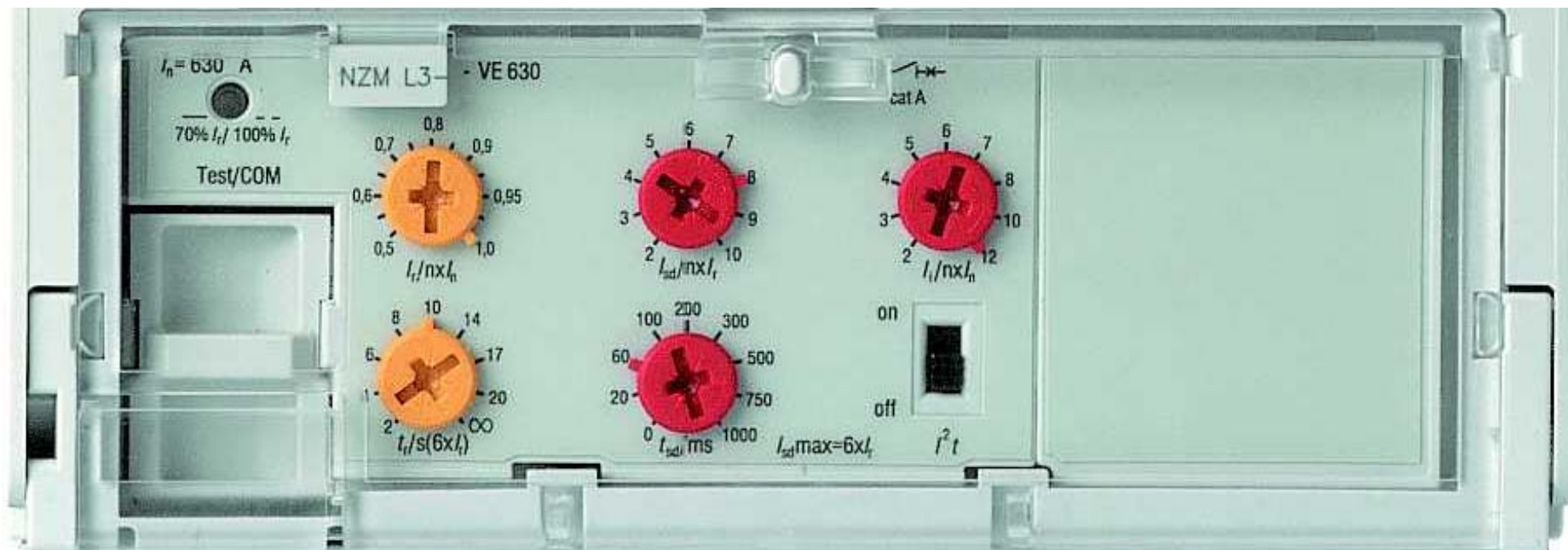
Elektronisk motorvern NZM2-4 ME



- innstillbart overbelastningsvern I_r
- innstillbart uforsinket kortslutningsvern I_i
- r.m.s verdimåling og termisk minne
- innstillbar forsinkelse t_r „ (ved tungstart)
- følsom for fasebrudd
- ufølsom for startstrømmer
- overlast varsel 70% (fast lys), 100% (sakte blink), 120% (hurtig blink)
- DMI interface, PC, testenhet

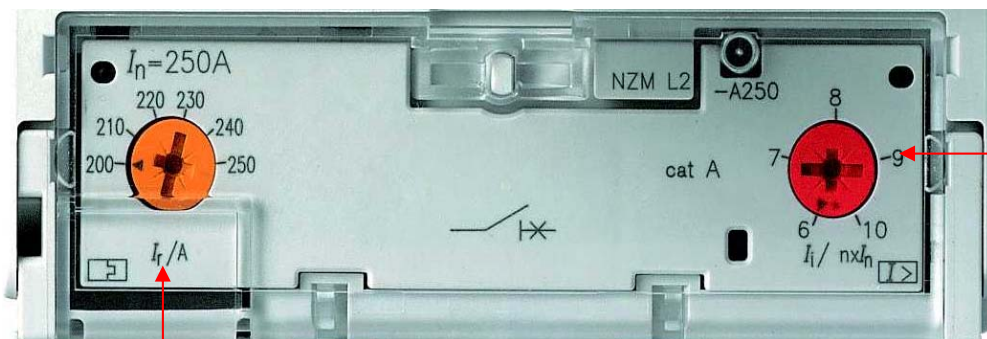
Elektronisk vern NZM2- 4 VE

- justerbar overlast utløser I_r
- justerbar kortslutningsutløser I_i
- r.m.s måling og termisk minne
- DMI interface, PC, test enhet
- overlast varsel 70% (fast lys) /100%(sakte blink) / 120% (hurtig blink)



Innstilling Temomagnetisk vern

NZM1-A63



Ir Overlastvern

Ir belastning er 60A

Gult ratt stilles inn på 60A

Ii Kortslutningsvern

Målt med instrument
 $I_{k2pmax} = \underline{1037A}$

Beregner I_{k2min} :
 $1037A \cdot 0,76 = \underline{788A}$

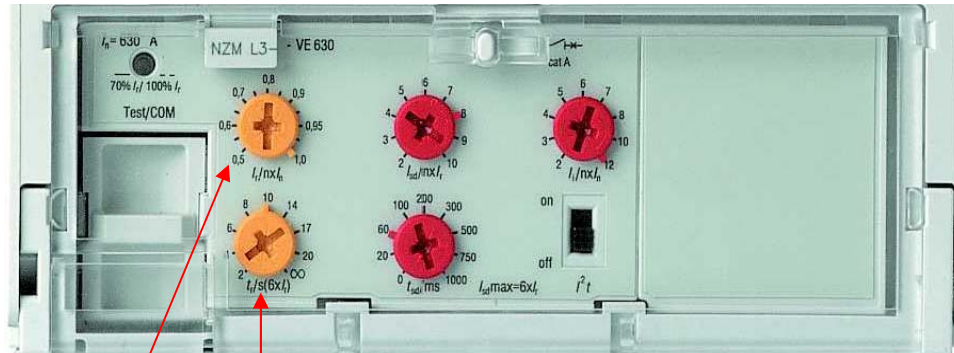
Trekker fra 20%
 $788A \cdot 0,8 = 630A = I_i$

$n = I_i / I_n = 630/63 = \underline{10}$

Rødt ratt stilles på 10 (Ii)

Innstilling overlastvern

Elektronisk vern NZM3 – VE 250



tr forsinke overlastvern
Ratt stilles på 2-20s

Ir Overlastvern

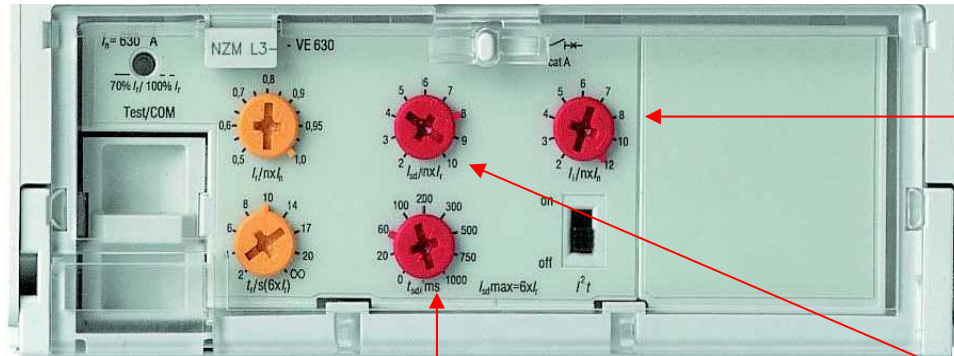
Ir belastning er 150A

$$n = I_r/I_n = 150A/250A = 0,6$$

Gult ratt stilles på 0,6

Innstilling kortslutningsvern

Elektronisk vern NZM2,3 – VE 250



tsd forsinkelse av kortsl.vern
Ratt stilles på 0-1000ms

Ii Innstilling momentant kortsl.vern

$$n = I_i / I_n$$

I_{sd} Forsinket kortslutningsvern

Målt med instrument

$$I_{k2pmax} = \underline{1480A}$$

Beregner I_{k2min} :

$$1480A \cdot 0,76 = \underline{1125A}$$

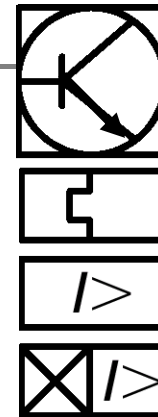
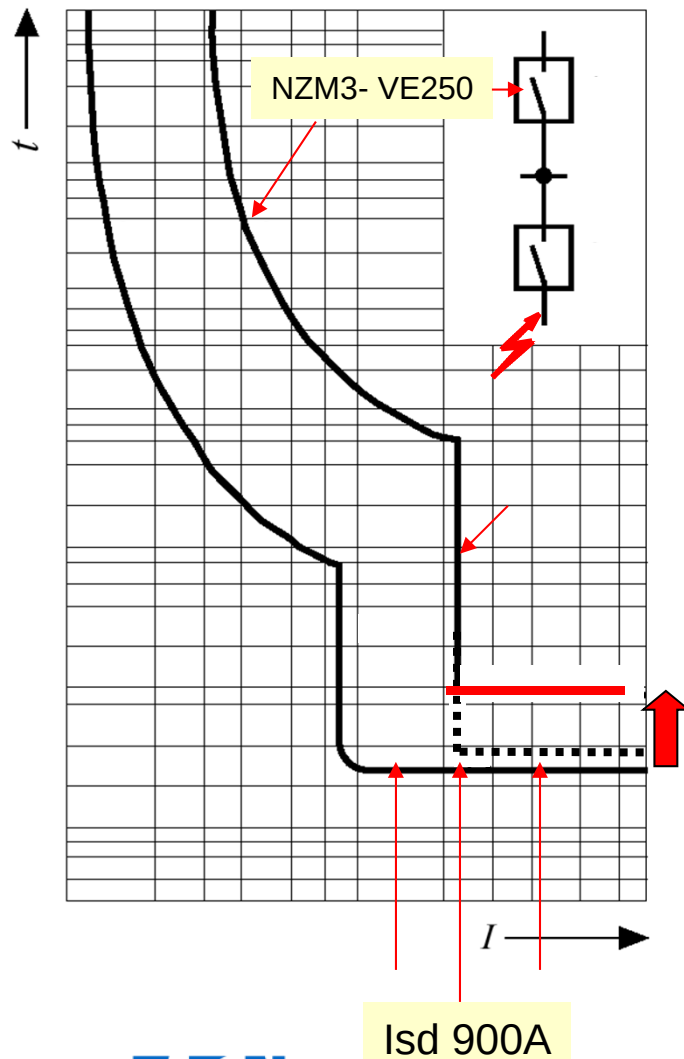
Trekker fra 20%

$$1125A \cdot 0,8 = 900A = \underline{I_{sd}}$$

$$n = I_{sd} / I_r = 900/150 = \underline{6}$$

Rødt ratt stilles på 6 (I_{sd})

Selektivitet



$$I_r = 0,5...1 \times I_n \text{ (opt. Off)}$$

$$t_r = 2...20s \text{ (6} \times I_r \text{)}$$

$$I_i = 2...12 \times I_n$$

$$I_{sd} = 2...10 \times I_r$$

$$I^2t = \text{ON/OFF}$$

$$t_{sd} = 0...1000ms \text{ (3000ms)}$$

$$I_{eff} \quad I_{rms}$$

- VE

Overlastsignal på elektroniske vern



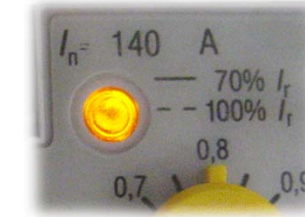
$< 70\%$



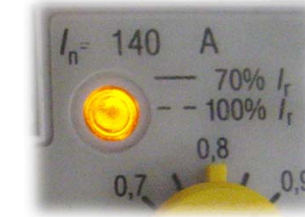
$> 70\%$ fast lys



$> 100\%$ sakte
blink



$> 120\%$ hurtig
blink



BRUKERVEILEDNING

Ved bruk av aluminiumkabel

Aluminiumledere er i motsetning til kopper dekket av et isolerende oksydsjikt. For å unngå varmgang i tilkoblingsklemmen, må oksydsjiktet fjernes.

Spesialklemmer for Al må ha følgende egenskaper:

1. De må ha en konstruksjon som trenger igjennom oksydsjiktet og gir metallisk kontakt.
2. De må være fjærende for å kompensere for aluminiumets sterke utvidelse under oppvarming i klemmen.
3. De må ha spesiell overflatebehandling tilpasset aluminium.

Klemmer fra Moeller og Jean Müller er spesialkonstruert for disse forhold, men krever riktig montering.

1. Rundpresses før montasje.
2. Aluminiumlederen må børstes, eller pusses med smergel, og absolutt omgående påføres antikorrosjonsmidlet Contax, som leveres av Moeller Electric AS.
3. Legges inn i klemmen som må tiltrekkes med riktig dreiemoment, Nm (Newton-meter), med dreiemomentnøkkel.

Både for svak og for sterk tiltrekking er farlig *)

BRUK MOMENTNØKKE!

*) Ettetrekking **uten** momentnøkkel må **ikke** foretas

Tilkoblingsmomenter:

NZM1	16-95 mm ²	Al/Cu	15Nm
NZM2	16-240 mm ²	Al/Cu	31Nm
NZM3	2X(50-240) mm ²	Al/Cu	31Nm
NZM4	4X(50-240) mm ²	Al/Cu	31Nm

Tiltrekkingsmoment for Cu/Al-klemmer

Følgende momenter skal benyttes ved tiltrekking av klemmer for Cu- og Al-ledere:

El.nr.	Klemmetype	Kabellvernsnitt mm ²	Tiltrekkingsmoment (Nm)		Bruk moment- nøkkel !
			Nominell verdi	Tillatt område	
16 549 40	K25AL-A	25	2,6		element- automater
16 549 46	P446	50	innebygget		
43 585 28	K189	95-150	innebygget		
16 901 45	P0070 (LTL/TL00-160A)	16-35 50-70	2,6 4,5	2,5-3 4-5	sikringsbrytere ↓
16 901 38	P0095 (LTL/TL00-160A)	35 50-95	2,6 4,5	2,5-3 4-5	
16 901 19	P1 (LTL 1-250A)	70-95 120-150	4,5 9,5	4-5 9-10	
16 901 20	P12 (LTL 1-250A)	2x70-95	4,5	4-5	
16 901 22	P2 (LTL 2-400A)	120-240	11	10-12	
16 901 23	P22 (LTL 2-400A)	2x120-150	11	10-12	
16 901 25	P3 (LTL 3-630A)	120-150 185-300	9,5 11	9-10 10-12	
16 901 26	P32 (LTL 3-630A)	2x120-240	11	10-12	
43 588 81/82	NZM1	16-95	15		effektbrytere tavlemateriell ↓
43 588 78/79	NZM2	16-240	31		
43 588 74/76	NZM3	2x(50-240)	31		
43 589 62/63	NZM4 (max 1250A)	4x(50-240)	31		
43 584 86	ACA-50-PD	2x50	10		
43 575 96	K2x120-NZM10	2x120	8		
43 575 97	K2x240-NZM10	2x240	50		
43 585 34	KL4x240-NZM14	4x50-240	40	35-50	
43 584 70	KKL1x240-NZM7	35-240	20		
43 584 73	KKL1x95/P-NZM7	16-95	15		
16 549 47	KKL1x50	2,5-50 Cu 16-50 Al	6(2,5-10mm ²) 10(16-50mm ²)		
43 585 29	KKL2x240-NZM14	2x35-240	20		
41 324 11	K95/1N(3-4-5)	1x16...95 Cu 1x35...70 Al	20		
41 324 17	K240/1(3-4-5)	1x50...240 Cu 2x25...120 Cu 1x95...185 Al 2x50... 95 Al	40		
41 324 20	K2x240/1(3-4-5)	1x150...300 Cu 2x 50...240 Cu 1x150...240 Al 2x 95...185 Al	50		
41 324 26	K3x240/1(3-4-5)	2x150...300 Cu 3x 50...240 Cu 2x150...240 Al 3x150...185 Al	60		

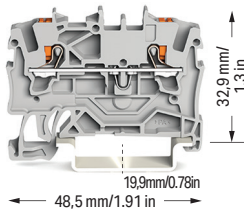
Tiltrekkingsmoment for CU-klemmer

Type	Beskrivelse	Anbefalt tiltrekkingsmoment Nm
PLSM, L7	Elementautomat	2-2,4
Z-A, A7	Lastbryter	2-2,4
PFIM, F7	Jordfeilbryter	2-2,4 (40A) 2-3 (80A)
PKPM, PKNM, FL7	Jordfeilautomat	2-2,4
PLHT, LH	Elementautomat	2,5-3,0
PKZM0, PKZM01	Motorvernryter	1,7
PKZM1	Motorvernryter	1,2
PKZ2	Motorvernryter	1,8
PKZM4	Motorvernryter	3
NZM1, PN1, N1	Effektbryter	Rammekl./bolt 9, 6 (2,5-10mm ²)
NZM2, PN2, N2	Effektbryter	Rammekl./bolt (>10mm ²) 14, 5 (<10mm ²)
NZM3, PN3, N3	Effektbryter	Rammekl. 19, bolt 31
NZM4, N4	Effektbryter	Bolt 50
NZM6 63, 100A	Effektbryter	10,0
NZM6 125, 160, 200A	Effektbryter	15,0
NZM7	Effektbryter	14,0
NZM9 250 (315)	Effektbryter	30,0 (40,0)
NZM10	Effektbryter	50,0
NZM12 1250 (1600)	Effektbryter	100,0 (40,0)
NZM14	Effektbryter	50,0
IZM	Effektbryter	50,0
DIL ER / DIL R / DIL A	Styrekontaktor	1,2
DIL EM	Minikontaktor	1,2
DIL M7 / DIL M9 / DIL M12	Kontaktor	1,2
DIL 00	Kontaktor	1,2
DIL 0	Kontaktor	1,8
DIL M17/DIL M25/DIL M32	Kontaktor	3,0
DIL M40/DIL M50/DIL M65	Kontaktor	3,0
DIL 1/DIL 2	Kontaktor	4,0
DIL 3	Kontaktor	6,0
DIL 4	Kontaktor	10,0
DIL M 185-250	Kontaktor	24
DIL M 300-500	Kontaktor	24
DIL M 580-650	Kontaktor	24
DIL M 750-820	Kontaktor	35
ZE	Motorvernrelé	1,2
Z00	Motorvernrelé	1,8
Z1	Motorvernrelé	3,5
Z5-/K3	Motorvernrelé	6,0
Z5-/K4	Motorvernrelé	10,0
Z5-/FF6	Motorvernrelé	10,0...14,0
ZWA elektronisk	Motorvernrelé	som for kontaktoren
T0	Kambryter	1,0
T3	Kambryter	1,5
T5B/T5	Kambryter	4,0
P1	Lastbryter	1,6
P3	Lastbryter	4,0
S00-70	LTL00-3...	4,5

OBS! Ved bruk av mangetrådet/fintrådet, benytt hylse

Rekkeklemmer med trykknapp TOPJOB® S; 1.5 (2.5) mm²; 2201 Serien

Teknisk data	
0.25 ... 1.5 (2.5) mm ² 1	22 ... 14 AWG
800 V/8 kV/3 2	
I _N 18 A (24 A)	
Rekkeklemme bredde 4.2 mm / 0.165 tommer	
L 9 ... 11 mm / 0.35 ... 0.43 tommer	



2-leder rekkeklemme med trykknapp, 100 stk pr pakke

Farge	Artikkelnummer	El. Nr.
grå	2201-1201	12 387 18
blå	2201-1204 3	12 387 19

2-leder rekkeklemme for jord med trykknapp, 100 stk pr pakke		
grønn-gul	2201-1207	12 387 29

Tilbehør; - varespesifikk
Ende og skilleplate 0,8mm tykk, 100(25) stk pr pakke

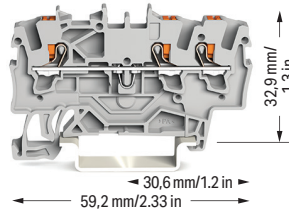
oransje	2002-1292	12 083 43
grå	2002-1291	12 083 42

Skilleplate, ekstra stor, 2mm tykk, 100(25) stk pr pakke

oransje	2002-1294	
grå	2002-1293	

Tilbehør 2201 Serien

Teknisk data	
0.25 ... 1.5 (2.5) mm ² 1	22 ... 14 AWG
800 V/8 kV/3 2	
I _N 18 A (24 A)	
Rekkeklemme bredde 4.2 mm / 0.165 tommer	
L 9 ... 11 mm / 0.35 ... 0.43 tommer	



3-leder rekkeklemme med trykknapp, 100 stk pr pakke

Farge	Artikkelnummer	El. Nr.
grå	2201-1301	12 387 30
blå	2201-1304 3	12 387 31

3-leder rekkeklemme for jord med trykknapp, 100 stk pr pakke		
grønn-gul	2201-1307	12 387 35

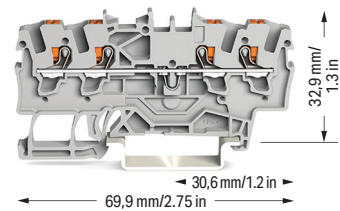
Tilbehør; - varespesifikk
Ende og skilleplate 0,8mm tykk, 100(25) stk pr pakke

oransje	2002-1392	12 083 50
grå	2002-1391	12 083 49

Skilleplate, ekstra stor, 2mm tykk, 100(25) stk pr pakke

oransje	2002-1394	
grå	2002-1393	

Teknisk data	
0.25 ... 1.5 (2.5) mm ² 1	22 ... 14 AWG
800 V/8 kV/3 2	
I _N 18 A (24 A)	
Rekkeklemme bredde 4.2 mm / 0.165 tommer	
L 9 ... 11 mm / 0.35 ... 0.43 tommer	



4-leder rekkeklemme med trykknapp, 100 stk pr pakke

Farge	Artikkelnummer	El. Nr.
grå	2201-1401	12 387 36
blå	2201-1404 3	12 387 37

4-leder rekkeklemme for jord med trykknapp, 100 stk pr pakke		
grønn-gul	2201-1407	12 387 41

Tilbehør; - varespesifikk
Ende og skilleplate 0,8mm tykk, 100(25) stk pr pakke

oransje	2002-1492	12 083 58
grå	2002-1491	12 083 57

Skilleplate, ekstra stor, 2mm tykk, 100(25) stk pr pakke

oransje	2002-1494	
grå	2002-1493	

Isolasjonsstopp; 5 stk / stripe; 0,25 ... 0,5 mm², 200(25) stk pr pakke

lysegrå	2001-171	
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Push in lask, isolert, IN = 18A, lysegrå, 25 stk pr pakke

2-veis	2001-402	12 083 10
3-veis	2001-403	12 083 11
4-veis	2001-404	12 083 12
5-veis	2001-405	12 083 13
6-veis	2001-406	12 083 14
7-veis	2001-407	12 083 15
8-veis	2001-408	12 083 16
9-veis	2001-409	12 083 17
10-veis	2001-410	12 083 18

Push in lask, isolert, IN = 18A, lysegrå, 25 stk pr pakke

1 til 3	2001-433	
1 til 4	2001-434	
1 til 5	2001-435	
1 til 6	2001-436	
1 til 7	2001-437	
1 til 8	2001-438	
1 til 9	2001-439	
1 til 10	2001-440	

Tilhørende - merke - system: - WMB/WMB Inline/ Merkestrip

Delta lask; Isolert, IN = IN for klemmen, lysegrå, 25 stk pr pakke

1-2 3-4 5-6	2001-406/020-000	
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Stjerpunkts lask; Isolert IN = IN rekkeklemme, lys grå, 25 stk pr pakke

1-3-5	2001-405/011-000	
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Push in Lask; isolert; 1,5mm² ledertverrsnitt; IN 18A, 100(10) stk pr pakke

L = 60 mm	2009-412	
L = 110 mm	2009-414	
L = 250 mm	2009-416	

Modulær tilkoblinger for testhullet som kan snappes sammen, 100(25) stk pr pakke

grå	2001-511	
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Avstandsstykke for testplugg, 100(25) stk pr pakke

grå	2001-549	
-----	----------	--

Endeplate for modulær testplugg; 1,5 mm tykk, 100(25) stk pr pakke

grå	2001-541	
-----	----------	--

Testplugg adapter; for 4 mm Ø test plugg, 100(25) stk pr pakke

grå	2009-174	
-----	----------	--

Bananplugg; for 4 mm plugg; fargemiks; 10 x oransje, - hvit, - sort, - blå, - gul; maks 42 V, 50 stk pr pakke

	215-111	
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Testadapter, max 2,5mm², 100(25) stk pr pakke

grå	2009-182	
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Test plugg; med 500 mm kabel; 2 mm Ø; maks. 42 V, 50 stk pr pakke

rød	210-136	
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Test plugg; med 500 mm kabel; 2,3 mm Ø; maks 42 V, 50 stk pr pakke

gul	210-137	
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WMB merker, blanke, 2000 WMB merker per rull, 4-4,2mm

hvit	2009-114	
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- 1 Ledertverrsnitt: 0.25 ... 2.5 mm² "s+f-st"
og 0.75 ... 1.5 mm² isolert endehylse

Innstikk tilkobling: 0.5 ... 2.5 mm² "s" og m/ endehylse
 - 2 800 V = nominell spenning
8 kV = nominell impuls-spenning
3 = forurensningsgrad
 - 3 Blå rekketeklemmer kan brukes i EXi applikasjoner
- " Godkjenninger og tilhørende dokumentasjon; se www.wago.no

Tilbehør 2201 Serien

Tilhørende - merke - system: - WMB/WMB Inline/
Merkestrip

Merkestrips blank, 11mm bred, 50m lengde

hvit 2009-110

**WMB merkesystem, 10 rader med 10 merker per kort,
4-4,2mm, 5 stk pr pakke**

blank 793-4501

**WMB merkesystem, 10 rader med 10 merker per kort,
4-4,2mm, 5 stk pr pakke**

gul 793-4501/000-002

rød 793-4501/000-005

blå 793-4501/000-006

grå 793-4501/000-007

oransje 793-4501/000-012

lysegrønn 793-4501/000-017

grønn 793-4501/000-023

fiolett 793-4501/000-024

**Skrueløs endestopper; for DIN-35 skinne; 6 mm bred,
100(25) stk pr pakke**

grå 249-116

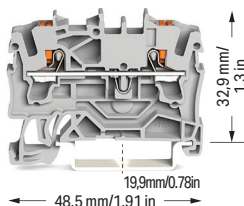
**Skrueløs endestopper; for DIN-35 skinne; 10 mm bred,
50(25) stk pr pakke**

grå 249-117



Rekkeklemmer med trykknapp TOPJOB® S; 2.5 (4) mm²; 2202 Serien

Teknisk data	
0.25 ... 2.5 (4) mm ² 1	22 ... 12 AWG
800 V/8 kV/3 2	
I _N 24 A (32 A)	
Rekkeklemme bredde: 5.2 mm / 0.205 tommer	
L 10 ... 12 mm / 0.39 ... 0.47 tommer	



2-leder rekkeklemme med trykknapp, 100 stk pr pakke

Farge	Artikkelnummer	El. Nr.
grå	2202-1201	12 387 42
blå	2202-1204 3	12 387 43

2-leder rekkeklemme for jord med trykknapp, 100 stk pr pakke

Farge	Artikkelnummer	El. Nr.
grønn-gul	2202-1207	12 387 47

Tilbehør; - varespesifikk

Ende og skilleplate 0,8mm tykk, 100(25) stk pr pakke

Farge	Artikkelnummer	El. Nr.
oransje	2002-1292	12 083 43
grå	2002-1291	12 043 42

Skilleplate, ekstra stor, 2mm tykk, 100(25) stk pr pakke

Farge	Artikkelnummer	El. Nr.
oransje	2002-1294	
grå	2002-1293	

Tilbehør; - 2202 - Serien

Isolasjonsstopp; 5 stk / stripe; 0,25 ... 0,5 mm², 200 (25) stk pr pakke

Farge	Artikkelnummer	El. Nr.
lysegrå	2002-171	

Isolasjonsstopp; 5 stk / stripe; 0,75 ... 1 mm², 200 (25) stk pr pakke

Farge	Artikkelnummer	El. Nr.
mørkegrå	2002-172	

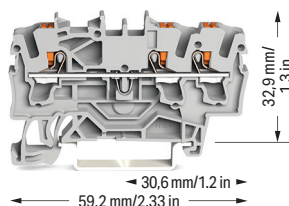
Push-in Lask, Isolert; IN 25A, lys grå, 25 stk pr pakke

Antall	Artikkelnummer	El. Nr.
2-veis	2002-402	12 083 28
3-veis	2002-403	12 083 29
4-veis	2002-404	12 083 30
5-veis	2002-405	12 083 31
6-veis	2002-406	12 083 32
7-veis	2002-407	12 083 33
8-veis	2002-408	12 083 34
9-veis	2002-409	12 083 35
10-veis	2002-410	12 083 36

Push-in Lask, Isolert; IN 25A, lys grå, 25 stk pr pakke

Antall	Artikkelnummer	El. Nr.
1 til 3	2002-433	12 083 69
1 til 4	2002-434	
1 til 5	2002-435	
1 til 6	2002-436	
1 til 7	2002-437	
1 til 8	2002-438	
1 til 9	2002-439	
1 til 10	2002-440	

Teknisk data	
0.25 ... 2.5 (4) mm ² 1	22 ... 12 AWG
800 V/8 kV/3 2	
I _N 24 A (32 A)	
Rekkeklemme bredde: 5.2 mm / 0.205 tommer	
L 10 ... 12 mm / 0.39 ... 0.47 tommer	



3-leder rekkeklemme med trykknapp, 100 stk pr pakke

Farge	Artikkelnummer	El. Nr.
grå	2202-1301	12 387 48
blå	2202-1304 3	12 387 49

3-leder rekkeklemme for jord med trykknapp,

Farge	Artikkelnummer	El. Nr.
grønn-gul	2202-1307	12 387 56

Tilbehør; - varespesifikk

Ende og skilleplate 0,8mm tykk, 100(25) stk pr pakke

Farge	Artikkelnummer	El. Nr.
oransje	2002-1392	12 083 50
grå	2002-1391	12 083 49

Skilleplate, ekstra stor, 2mm tykk, 100(25) stk pr pakke

Farge	Artikkelnummer	El. Nr.
oransje	2002-1394	
grå	2002-1393	

Tilhørende - merke - system: - WMB/WMB Inline/ Merkestrip

Delta lask; Isolert, IN = IN for klemmen, lysegrå, 25 stk pr pakke

Antall	Artikkelnummer	El. Nr.
1-2 3-4 5-6	2002-406/020-000	

Stjernetpunkts lask; Isolert IN = IN rekkeklemme, lys grå, 25 stk pr pakke

Antall	Artikkelnummer	El. Nr.
1-3-5	2002-405/011-000	

Lasker for kontinuerling lasking; isolert; IN 25A; Lys grå, 25 stk pr pakke

Antall	Artikkelnummer	El. Nr.
2-veis	2002-400	12 188 41

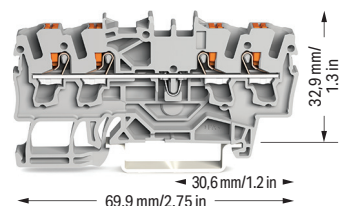
Lasker for kontinuerling lasking; isolert; IN 25A; 1 til 3, 25 stk pr pakke

Farge	Artikkelnummer	El. Nr.
lysegrå	2002-423	
rød	2002-423/000-005	
blå	2002-423/000-006	

Lasker for kontinuerling lasking; isolert; IN 25A; Lys grå, 25 stk pr pakke

Antall	Artikkelnummer	El. Nr.
5-veis	2002-415	

Teknisk data	
0.25 ... 2.5 (4) mm ² 1	22 ... 12 AWG
800 V/8 kV/3 2	
I _N 24 A (32 A)	
Rekkeklemme bredde: 5.2 mm / 0.205 tommer	
L 10 ... 12 mm / 0.39 ... 0.47 tommer	



4-leder rekkeklemme med trykknapp, 100 stk pr pakke

Farge	Artikkelnummer	El. Nr.
grå	2202-1401	12 387 57
blå	2202-1404 3	12 387 58

4-leder rekkeklemme for jord med trykknapp

Farge	Artikkelnummer	El. Nr.
grønn-gul	2202-1407	12 387 56

Tilbehør; - varespesifikk

Ende og skilleplate 0,8mm tykk, 100(25) stk pr pakke

Farge	Artikkelnummer	El. Nr.
oransje	2002-1492	12 083 48
grå	2002-1491	12 083 47

Skilleplate, ekstra stor, 2mm tykk, 100(25) stk pr pakke

Farge	Artikkelnummer	El. Nr.
oransje	2002-1494	
grå	2002-1493	

Forskjøvet lask, isolert, IN = 25A, lysegrå, 25 stk pr pakke

Antall	Artikkelnummer	El. Nr.
2-veis	2002-472	12 089 88
3-veis	2002-473	12 089 89
4-veis	2002-474	12 089 90
5-veis	2002-475	12 089 91
6-veis	2002-476	12 089 92
7-veis	2002-477	12 089 93
8-veis	2002-478	12 089 94
9-veis	2002-479	12 089 95
10-veis	2002-480	12 089 96
11-veis	2002-481	12 089 97
12-veis	2002-482	12 089 98

Konfigurerte lasker; isolert; med kontaktpunkter fjernet og med påskrift for riktig funksjon; IN25A, lysegrå, 25 stk pr pakke

Antall	Artikkelnummer	El. Nr.
1-3	2002-473/011-000	
1-3-5	2002-475/011-000	
1-3-5-7	2002-477/011-000	
1-3-5-7-9	2002-479/011-000	
1-3-5-7-9-11	2002-481/011-000	

Push in Lask; isolert; 1,5mm² ledertverrsnitt; IN 18A, 100(10) stk pr pakke

L	Artikkelnummer	El. Nr.
60 mm	2009-412	
110 mm	2009-414	
250 mm	2009-416	

- 1

Ledertverrsnitt: 0.25 ... 4 mm² "s+f-st"
og 0,75 ... 2,5mm² Isolerte endehtylser

Innstikkterminering: 0,75 ... 4 mm² "s"og m/ endehtylse
- 2

800 V = nominell spenning
8 kV = nominell impulshtpenning
3 = forurensningsgrad
- 3

Blå rekketeklemer kan brukes i EXi applikasjoner
- "

Godkjenninger og tilhørende dokumentasjon; se www.wago.no

Tilbehør; - 2202 - Serien

Tilhørende - merke - system: - WMB/WMB Inline/
Merkestrip

Modulær tilkoblinger for testhullet som kan snappes
sammen, 100(25) stk pr pakke



grå 2002-511

Avstandsstykke for testplugg, 100(25) stk pr pakke



grå 2002-549

Endeplate for modulær testplugg; 1.5 mm tykk, 100(25)
stk pr pakke



grå 2002-541

WMB merker, blanke, 1500 WMB merker per rull,
5-5,2mm



hvit 2009-115 1

Merkestrips blank, 11mm bred, 50m lengde



hvit 2009-110 1

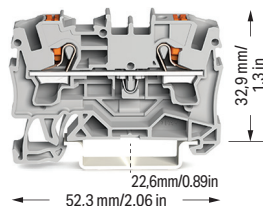
WMB merkesystem, 10 rader med 10 merker per kort,
5-5,2mm, 5 stk pr pakke



blank 793-5501

Rekkeklemmer med trykknapp TOPJOB® S; 4 (6) mm²; 2204 Serien

Teknisk data	
0.5 ... 4 (6) mm ² 1	20 ... 10 AWG
800 V/8 kV/3 2	
I _N 32 A (41 A)	
Rekkeklemme bredde: 6.2 mm / 0.244 tommer	
L 11 ... 13 mm / 0.43 ... 0.51 tommer	



2-leder rekkeklemme med trykknapp, 50 stk pr pakke		
Farge	Artikkelnummer	El. Nr.
grå	2204-1201	12 387 63
blå	2204-1204 3	12 387 64

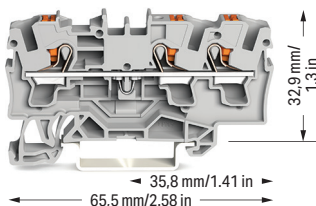
2-leder rekkeklemme for jord med trykknapp, 50 stk pr pakke		
grønn-gul	2204-1207	12 387 68

Tilbehør; - varespesifikk		
Ende og skilleplate, 1mm tykk, 100(25) stk pr pakke		
oransje	2004-1292	12 089 13
grå	2004-1291	12 089 12

Skilleplate, ekstra stor, 2mm tykk, 100(25) stk pr pakke		
oransje	2004-1294	
grå	2004-1293	

Tilbehør; - 2204 - Serien

Teknisk data	
0.5 ... 4 (6) mm ² 1	20 ... 10 AWG
800 V/8 kV/3 2	
I _N 32 A (41 A)	
Rekkeklemme bredde: 6.2 mm / 0.244 tommer	
L 11 ... 13 mm / 0.43 ... 0.51 tommer	



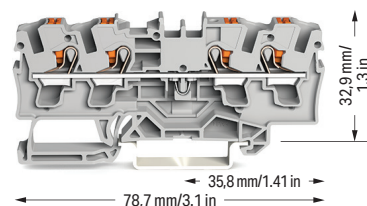
3-leder rekkeklemme med trykknapp, 50 stk pr pakke		
Farge	Artikkelnummer	El. Nr.
grå	2204-1301	12 387 69
blå	2204-1304 3	12 387 70

3-leder rekkeklemme for jord med trykknapp, 50 stk pr pakke		
grønn-gul	2204-1307	12 387 74

Tilbehør; - varespesifikk		
Ende og skilleplate, 1mm tykk, 100(25) stk pr pakke		
oransje	2004-1392	12 089 18
grå	2004-1391	12 089 17

Skilleplate, ekstra stor, 2mm tykk, 100(25) stk pr pakke		
oransje	2004-1394	
grå	2004-1393	

Teknisk data	
0.5 ... 4 (6) mm ² 1	20 ... 10 AWG
800 V/8 kV/3 2	
I _N 32 A (41 A)	
Rekkeklemme bredde: 6.2 mm / 0.244 tommer	
L 11 ... 13 mm / 0.43 ... 0.51 tommer	



4-leder rekkeklemme med trykknapp, 50 stk pr pakke		
Farge	Artikkelnummer	El. Nr.
grå	2204-1401	12 387 75
blå	2204-1404 3	12 387 76

4-leder rekkeklemme for jord med trykknapp, 50 stk pr pakke		
grønn-gul	2204-1407	12 387 80

Tilbehør; - varespesifikk		
Ende og skilleplate, 1mm tykk, 100(25) stk pr pakke		
oransje	2004-1492	12 089 23
grå	2004-1491	12 089 22

Skilleplate, ekstra stor, 2mm tykk, 100(25) stk pr pakke		
oransje	2004-1494	
grå	2004-1493	

Isolasjonsstopp; 5 stk / stripe; 0,25 ... 0,5 mm ² , 200(25) stk pr pakke		
lysegrå	2004-171	



Isolasjonsstopp; 5 stk / stripe; 0,75 ... 1 mm ² , 200(25) stk pr pakke		
mørkegrå	2004-172	



Push in lask, isolert, IN = 32A, lysegrå, 25 stk pr pakke		
2-veis	2004-402	12 089 00
3-veis	2004-403	12 089 01
4-veis	2004-404	12 089 02
5-veis	2004-405	12 089 03
6-veis	2004-406	12 089 04
7-veis	2004-407	12 089 05
8-veis	2004-408	12 089 06
9-veis	2004-409	12 089 07
10-veis	2004-410	12 089 08



Push in lask, isolert, IN = 32A, lysegrå, 25 stk pr pakke		
1 til 3	2004-433	12 083 38
1 til 4	2004-434	
1 til 5	2004-435	12 083 89
1 til 6	2004-436	
1 til 7	2004-437	
1 til 8	2004-438	
1 til 9	2004-439	
1 til 10	2004-440	



Tilhørende - merke - system: - WMB/WMB Inline/ Merkestrip

Stjerpunkts lask; Isolert IN = IN rekkeklemme, lys grå, 25 stk pr pakke		
1-3-5	2004-405/011-000	



Delta lask; Isolert, IN = IN for klemmen, lysegrå, 25 stk pr pakke		
1-2 3-4 5-6	2004-406/020-000	



Modulær tilkoblinger for testhullet som kan snapes sammen, 100(25) stk pr pakke		
grå	2004-511	



Avstandsstykke for testplugg, 100(25) stk pr pakke		
grå	2004-549	



Endeplate for modulær testplugg; 1.5 mm tykk, 100(25) stk pr pakke		
grå	2004-541	



Testplugg adapter; for 4 mm Ø test plugg, 100(25) stk pr pakke		
grå	2009-174	



Bananplugg; for 4 mm plugg; fargemiks; 10 x oransje, - hvit, - sort, - blå, - gul; maks 42 V, 50 stk pr pakke		
	215-111	



Testadapter, max 2,5mm ² , 100(25) stk pr pakke		
grå	2009-182	



Merkestrips blank, 11 mm bred, 50m lengde		
hvit	2009-110	



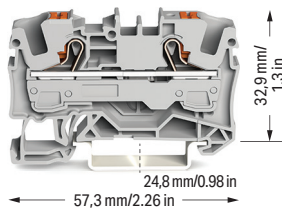
TOPJOB® S gruppemerkeholder; snap-on type for laske-spor; 5 mm bred, 50(25) stk pr pakke		
grå	2009-191	



- Ledningsversnitt: 0.5 ... 6 mm² "s+f-st"
Push-in: 1 ... 6 mm² "s"
og 0.75 ... 4 mm² Isolerte deenhyliser
 - 800 V = nominell spenning
8 kV = nominell impuls-spenning
3 = forurensningsgrad
 - Blå rekkeklemmer kan brukes i EXi applikasjoner
- " Godkjenninger og tilhørende dokumentasjon; se www.wago.no

Rekkeklemmer med trykknapp TOPJOB® S; 6 (10) mm²; 2206 Serien

Teknisk data	
0.5 ... 6 (10) mm ² 1	20 ... 8 AWG
800 V/8 kV/3 2	
I _N 41 A (57 A)	
Rekkeklemme bredde: 7.5 mm / 0.295 tommer	
L 13 ... 15 mm / 0.51 ... 0.59 tommer	



2-leder rekkeklemme med trykknapp, 50 stk pr pakke

Farge	Artikkelnummer	El. Nr.
grå	2206-1201	12 387 81
blå	2206-1204 3	12 387 82

2-leder rekkeklemme for jord med trykknapp, 50 stk pr pakke

grønn-gul	2206-1207	12 387 86
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Tilbehør; - varespesifikk

Ende og skilleplate, 1mm tykk, 100(25) stk pr pakke

oransje	2006-1292	12 089 32
grå	2006-1291	12 089 31

Skilleplate, ekstra stor, 2mm tykk, 100(25) stk pr pakke

oransje	2006-1294	
grå	2006-1293	

Tilbehør; - 2206 - Serien

Tilhørende - merke - system: - WMB/WMB Inline/ Merkestrip

Push-in lask, 41A, lys grå, 25 stk pr pakke

2-veis	2006-402	12 089 24
3-veis	2006-403	12 089 25
4-veis	2006-404	12 089 26
5-veis	2006-405	12 089 27

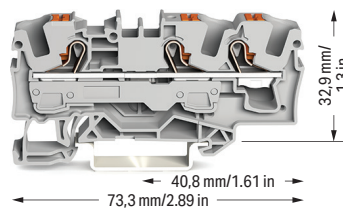
Push-in lask, 41A, lys grå, 25 stk pr pakke

1 til 3	2006-433	
1 til 4	2006-434	
1 til 5	2006-435	

Stjernetpunkts lask; Isolert IN = IN rekkeklemme, lys grå, 25 stk pr pakke

1-3-5	2006-405/011-000	
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Teknisk data	
0.5 ... 6 (10) mm ² 1	20 ... 8 AWG
800 V/8 kV/3 2	
I _N 41 A (57 A)	
Rekkeklemme bredde: 7.5 mm / 0.295 tommer	
L 13 ... 15 mm / 0.51 ... 0.59 tommer	



3-leder rekkeklemme med trykknapp, 25 stk pr pakke

Farge	Artikkelnummer	El. Nr.
grå	2206-1301	12 387 87
blå	2206-1304 3	12 387 88

3-leder rekkeklemme for jord med trykknapp, 25 stk pr pakke

grønn-gul	2206-1307	12 387 92
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Tilbehør; - varespesifikk

Ende og skilleplate, 1mm tykk, 100(25) stk pr pakke

oransje	2006-1392	12 089 37
grå	2006-1391	12 089 36

Skilleplate, ekstra stor, 2mm tykk, 100(25) stk pr pakke

oransje	2006-1394	
grå	2006-1393	

Modulær tilkoblinger for testhullet som kan snapes sammen, 50(25) stk pr pakke

grå	2006-511	
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Testplugg adapter; for 4 mm Ø test plugg, 100(25) stk pr pakke

grå	2009-174	
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Merkestrips blank, 11mm bred, 50m lengde

hvit	2009-110	
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WMB merkesystem, 10 rader med 10 merker per kort, 5-5,2mm, 5 stk pr pakke

blank	793-5501	
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1 Ledertverrsnitt: 0.5 ... 10 mm² "s+f-st" og 1.5 ... 6 mm² Isolerte endehylser
Innstikkterminering: 1 ... 10 mm² "s" og m/ endehylser

2 800 V = nominell spenning
8 kV = nominell impuls-spenning
3 = forurensningsgrad

3 Blå rekkeklemmer kan brukes i EXi applikasjoner

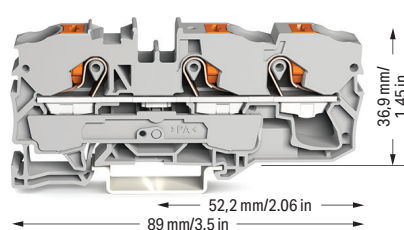
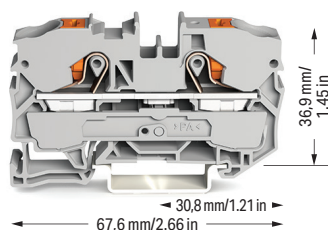
" Godkjenninger og tilhørende dokumentasjon; se www.wago.no

Rekkeklemmer med trykknapp TOPJOB® S; 10 (16) mm²; 2210 Serien

Teknisk data	
0.5 ... 10 (16) mm ² 1	20 ... 6 AWG
800 V/8 kV/3 2	
I _N 57 A (76 A)	
Rekkeklemme bredde: 10 mm / 0.394 tommer	
L 17 ... 19 mm / 0.67 ... 0.91 tommer	

Teknisk data	
0.5 ... 10 (16) mm ² 1	20 ... 6 AWG
800 V/8 kV/3 2	
I _N 57 A (76 A)	
Rekkeklemme bredde: 10 mm / 0.394 tommer	
L 17 ... 19 mm / 0.67 ... 0.91 tommer	

- 1 Ledetvernsnitt: 0.5 ... 16 mm² "s+f-st"
Push-in terminering: 2.5 ... 16 mm² "s"
og 2.5 ... 10 mm² isolerte hylser
 - 2 800 V = nominell spenning
8 kV = nominell impuls spenning
3 = forurensningsgrad
 - 3 Rekkeklemmer med en blå isolert ramme kan brukes i EXi applikasjoner
- " Godkjenninger og tilhørende dokumentasjon; se www.wago.no



2-leder rekkeklemme med trykknapp, 25 stk pr pakke		
Farge	Artikkelnummer	El. Nr.
grå	2210-1201	12 387 93
blå	2210-1204 3	12 387 94

3-leder rekkeklemme med trykknapp, 25 stk pr pakke		
Farge	Artikkelnummer	El. Nr.
grå	2210-1301	12 388 00
blå	2210-1304 3	12 388 01

2-leder rekkeklemme for jord med trykknapp, 25 stk pr pakke		
grønn-gul	2210-1207	12 387 97

3-leder rekkeklemme for jord med trykknapp, 25 stk pr pakke		
grønn-gul	2210-1307	12 388 04

Tilbehør; - varespesifikk		
Ende og skilleplate, 1mm tykk, 100(25) stk pr pakke		
oransje	2010-1292	12 089 46
grå	2010-1291	12 089 45

Tilbehør; - varespesifikk		
Ende og skilleplate, 1mm tykk, 100(25) stk pr pakke		
oransje	2010-1392	12 089 51
grå	2010-1391	12 089 50

Tilbehør; - 2210 - Serien

Tilhørende - merke - system: - WMB/WMB Inline/ Merkestrip

Push in lask, isolert, IN = 57A, lysegrå, 25 stk pr pakke		
2-veis	2010-402	
3-veis	2010-403	
4-veis	2010-404	
5-veis	2010-405	

Fingerbeskyttelse; dekker ubenyttede tilkoblinger, 100(25) stk pr pakke		
gul	2010-100	

Push in lask, isolert, IN = 57A, lysegrå		
1 til 3	2010-433	
1 til 4	2010-434	
1 til 5	2010-435	

Modulær tilkoblinger for testhullet som kan snappes sammen, 50(25) stk pr pakke		
grå	2010-511	

Stjernepunkts lask; Isolert IN = IN rekkeklemme, lys grå, 25 stk pr pakke		
1-3-5	2010-405/011-000	

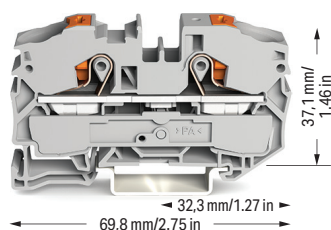
Testplugg adapter; for 4 mm Ø test plugg, 100(25) stk pr pakke		
grå	2009-174	

Merkestrips blank, 11mm bred, 50m lengde		
hvit	2009-110	

WMB merkesystem, 10 rader med 10 merker per kort, 5-5,2mm, 5 stk pr pakke		
blank	793-5501	

Rekkklemmer med trykknapp TOPJOB® S; 16 (25 "f-st") mm²; 2216 Serien

Teknisk data	
0.5 ... 16 (25 "f-st") mm ² 1	20 ... 4 AWG
800 V/8 kV/3 2	
I _N 76 A (90 A)	
Rekkklemme bredde: 12 mm / 0.472 tommer	
L 18 ... 20 mm / 0.71 ... 0.79 tommer	



2-leder rekkklemme med trykknapp, 20 stk pr pakke		
Farge	Artikkelnummer	El. Nr.
grå	2216-1201	12 388 05
blå	2216-1204 3	12 388 06

2-leder rekkklemme for jord med trykknapp, 20 stk pr pakke		
grønn-gul	2216-1207	12 388 09

Tilbehør; - varespesifikk		
Ende og skilleplate, 1mm tykk, 100(25) stk pr pakke		
oransje	2016-1292	12 089 60
grå	2016-1291	12 089 59

Tilbehør; - 2216 - Serien

Tilhørende - merke - system: - WMB/WMB Inline/ Merkestrip

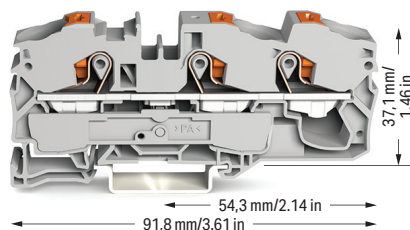
Push-in lask, 41A, lys grå, 25 stk pr pakke			
2-veis	2016-402	12 089 52	
3-veis	2016-403	12 089 53	
4-veis	2016-404	12 089 54	
5-veis	2016-405	12 089 55	

Push-in lask, 41A, lys grå, 25 stk pr pakke			
1 til 3	2016-433		
1 til 4	2016-434		
1 til 5	2016-435		

Stjernetpunkts lask; Isolert IN = IN rekkklemme, lys grå, 25 stk pr pakke

1-3-5	2016-405/011-000
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Teknisk data	
0.5 ... 16 (25 "f-st") mm ² 1	20 ... 4 AWG
800 V/8 kV/3 2	
I _N 76 A (90 A)	
Rekkklemme bredde: 12 mm / 0.472 tommer	
L 18 ... 20 mm / 0.71 ... 0.79 tommer	



3-leder rekkklemme med trykknapp, 20 stk pr pakke		
Farge	Artikkelnummer	El. Nr.
grå	2216-1301	12 388 10
blå	2216-1304 3	12 388 11

3-leder rekkklemme for jord med trykknapp, 20 stk pr pakke		
grønn-gul	2216-1307	12 388 14

Tilbehør; - varespesifikk		
Ende og skilleplate, 1mm tykk, 100(25) stk pr pakke		
oransje	2016-1392	12 089 65
grå	2016-1391	12 089 64

- 1 Ledertverrsnitt: 0.5 ... 16 mm² "s+f-st", 25 mm² f-st" og 2.5 ... 16 mm² Isolerte endehylser
Innstikkterminering: 2.5 ... 16 mm² "s" og m/endehylse
 - 2 800 V = nominell spenning
8 kV = nominell impuls spenning
3 = forurensningsgrad
 - 3 Blå rekkklemmer kan brukes i EXi applikasjoner
- " Godkjenninger og tilhørende dokumentasjon; se www.wago.no

Fingerbeskyttelse; dekker ubenyttede tilkoblinger, 100(25) stk pr pakke

gul	2016-100
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Modulær tilkoblinger for testhullet som kan snapes sammen, 50(25) stk pr pakke

grå	2016-511
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Testplugg adapter; for 4 mm Ø test plugg, 100(25) stk pr pakke

grå	2009-174
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Merkestrips blank, 11mm bred, 50m lengde

hvit	2009-110
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WMB merkesystem, 10 rader med 10 merker per kort, 5-5,2mm, 5 stk pr pakke

blank	793-5501
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Nettanalysator CVM-C11-IN-RS485

Art.nr: **CI58541FU**

El.nr: **8001580**



INFORMASJON

Tavlemontert 96x96mm instrument

- ☐ Tilpasset nettstasjonsovervåkning (NSO)
- ☐ Kommunikasjon Modbus/BACnet RS485 som standard
- ☐ Måling av N-leder
- ☐ Enkel programmering
- ☐ Til alle nettyper, 1-fase og 3-fase tilkoblinger

PRODUKTBESKRIVELSE

CVM-C11-IN-RS485 er en tavlemontert 96x96mm nettanalysator som måler dom aller fleste elektriske parameter, bla inntil 31:e enkelt harmoniske. CVM-C11 leveres med kommunikasjon Modbus/BACnet RS485 og har en oversiktlig og lettlest display som er enkel i oppsett samt bruk. CVM-C11-IN-RS485 kan tilkobles alle type nett både 1-fase og 3-fase og brukes sammen med alle type strømtransformatorer levert med ../5A alternativt ../1A sekundærstrøm. CVM-C11 har og egen strømtrafo inngang for måling av strøm i N-leder, denne inngangen må ikke tilkobles men er en mulighet der som det er ønskelig. Måling av strøm i N-leder er anbefalt i installasjoner der man ønsker å ha kontroll på strømmen i N-leder med anledning av 3: harmonisk støy.

CVM-C11-IN-RS485 leveres og med 2stk rele utganger, 2stk digitale utganger samt 2stk digitale innganger som kan settes opp for puls eller alarmer etter ønskede parametere. Bruksområder er alle type installasjoner som f.eks. næringsbygg, industri og nettstasjoner, helt enkelt der man ønsker at ha kontroll på nettkvalitet, forbruk og kontrollmåling.

CVM-C11-IN-RS485 er oppfølgeren til den populære CVM-C10 som er et standard instrument hos mange nettselskaper for nettstasjonsovervåking (NSO). CVM-C11-IN-RS485 er tilpasset kravene i henhold til REN filter for jordfeilovervåking.

Programmering gjøres i noen få enkle trinn med hjelp av de tre tydelige knappene, tilkoblingene har pluggbare kontakter som underletter installasjonen og vedlikehold.

NØKKELEGENSKAPER

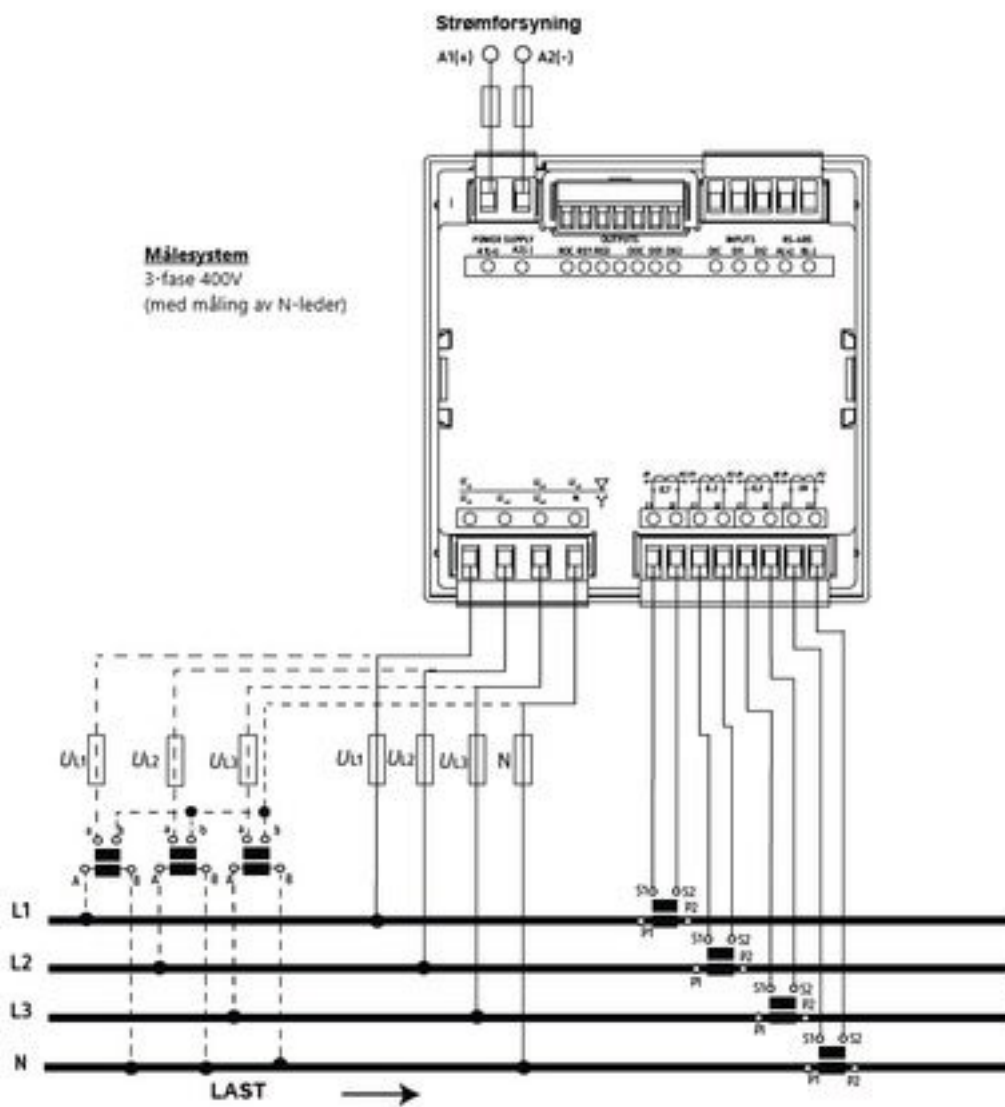
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Sekundærstrøm:	../ 1A ../ 5 A
Nett:	IT/TN/TT
Innfesting:	Tavlefront
Størrelse:	96 x 96 mm
Høyde produkt (mm):	96
Bredde produkt (mm):	67
Lengde/dybde produkt (mm):	96
Nettovekt på produkt uten emballasje (g):	353

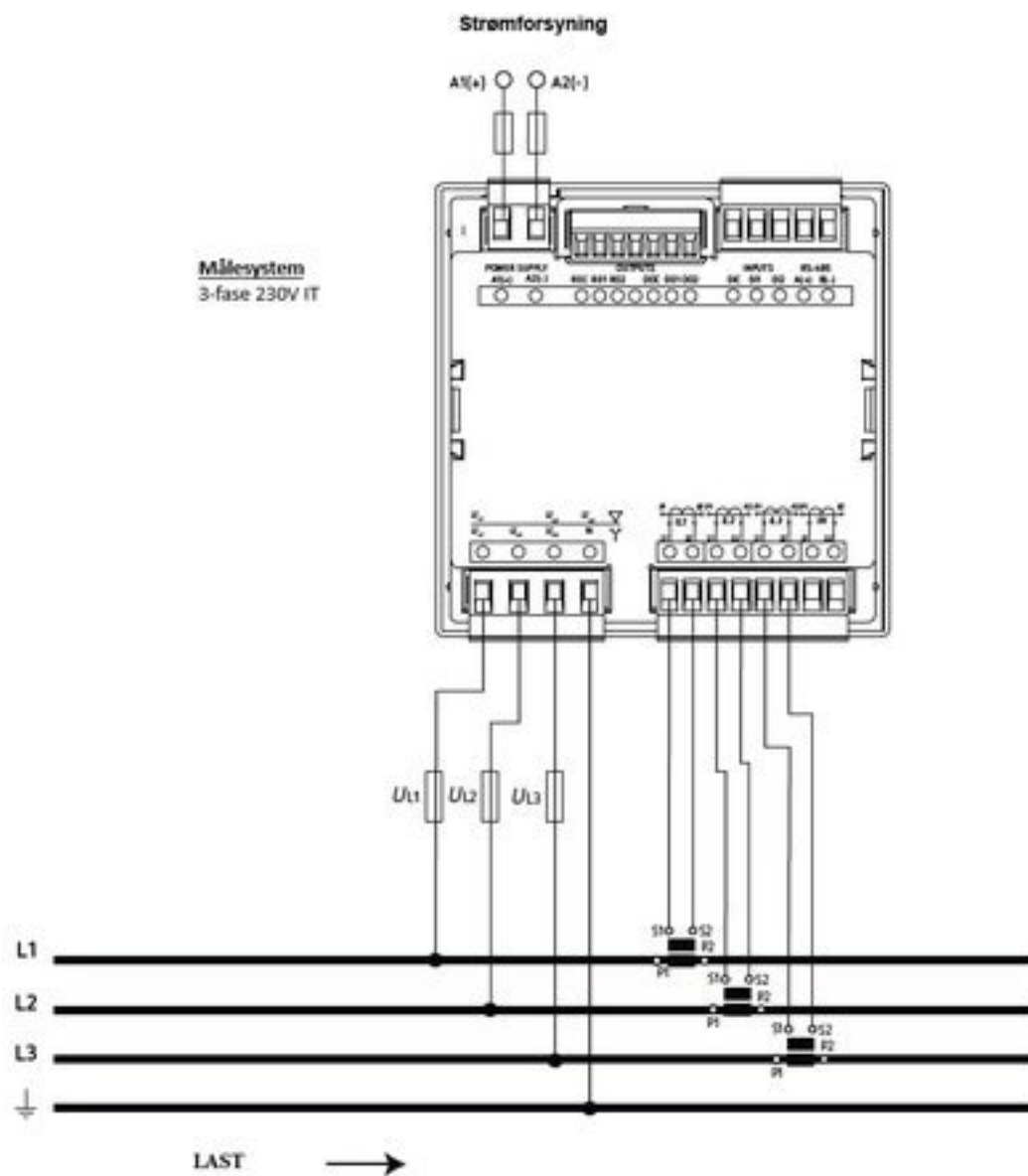
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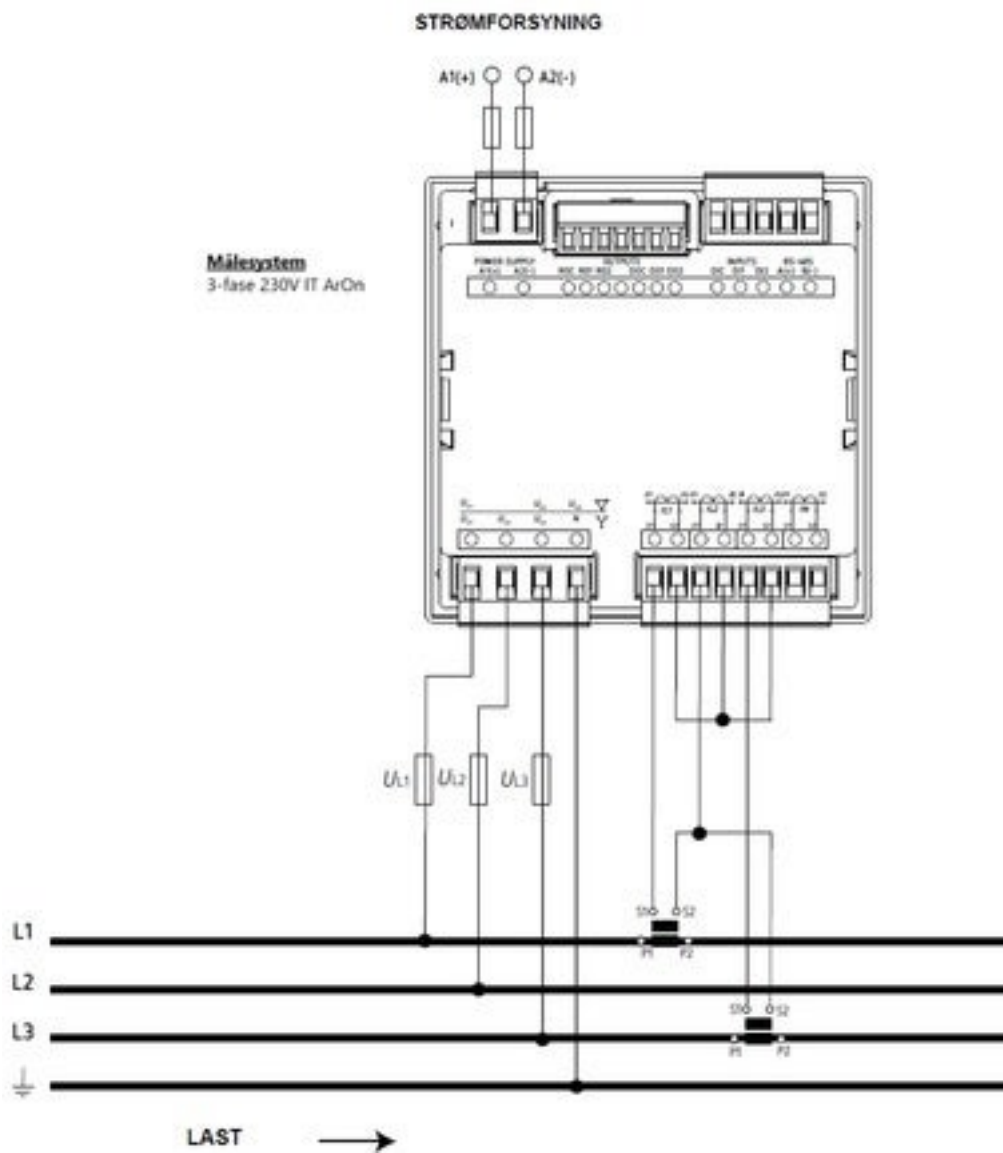
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Antall spenningsingangskanaler:	3
Antall strøminngangskanaler:	4
Harmonisk måling:	Ja
Effektfaktor:	Ja
Aktiv effekt:	Ja
Reaktiv effekt:	Ja
Reaktiv effekt:	Ja
Fasevinkel (cos phi):	Ja
Effekt/arbeid:	Ja

Grensesnitt:	Ja
Datalogger:	Nei
Strømforsyning:	Nettdrevet
Spenningsmålingsområde/AC direkte:	230 - 400 Volt

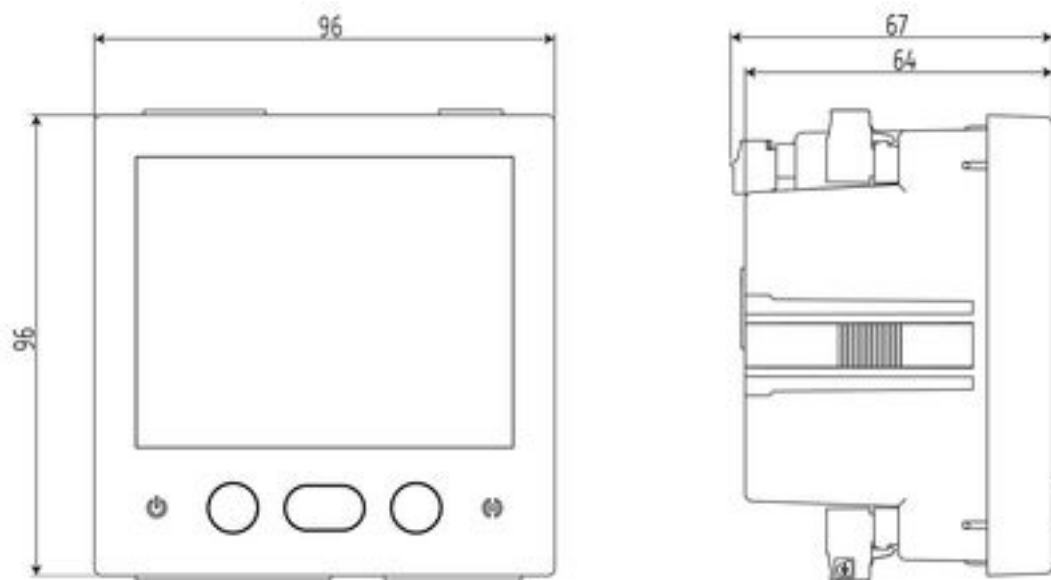
KOBLINGSSKJEMA







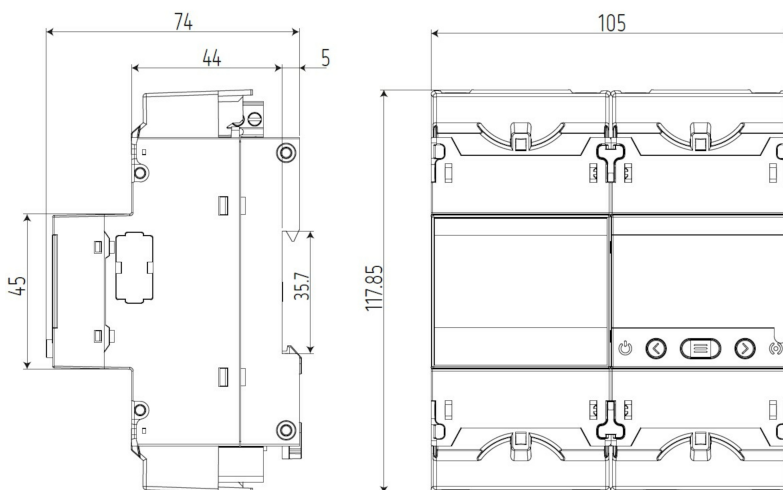
MÅLSKISSE



Jordfeilskanner CBS-16A TypeAVariant: **Jordfeilskanner CBS-16A TypeA**Art.nr: **CI12B01MC**El.nr: **1602030****INFORMASJON**

CBS-16A er en 16-kanals jordfeilskanner Type A, for skinnemontering 6 moduler. CBS-16A har digitalt display og leveres med alarm og pre-alarm-utganger samt kommunikasjon via RS485 Modbus. CBS-16A brukes sammen med summasjonstrafoer i WGC/WGS-serien som velges etter ønsket lysåpning og strømmer.

Displayet gir rask og oversiktlig visning av grenseverdier og nåtidsverdier for de enkelte kanalene. I historikkloggen finner man de 20 siste registrerte hendelsene fra alarmer, feil og tester fra aktuell kanal med f.eks. utkoblingsstrømmer, dato og klokkeslett. Dette gir enklere og raskere feilsøking av installasjonen.

MÅLSKISSE**SPESIFIKASJONER****Type:** Potensialfri NO/NC**Type:** Potensial fri**Frekvens:** 50...60Hz

Nominell spenning: 230 V ~ ± 15%

Forbruk: 10VA

Relative fuktighet (ikke kondenserende): 5... 95%

Oppbevaringstemperatur: -20 °C ... +70 °C

Beskyttelsegrad: IK08

Driftstemperatur: -10°C ... +50 °C

Installasjonstype: Summasjons transformatorer WGC/WGS (TypeA)

Maks strøm: 6A

Maks spenning: 230V

Antall: 2 (alarm + pre-alarm)

Antall: 1 (inngang for ekstern trip/reset)

Isolasjon: 5.3 kV

Kapsling: Selvslukkende VO plast

Vekt: 364gr

IP klasse: IP30, Front: IP40

Moment tilkobling: 0.4 Nm, M2.5

Display: LCD

Dimensjoner: 105 x 117.85 x 74 mm

Feste: Skinnemontering

Kabel tverrsnitt tilkobling: <2,5mm²

Protokoll: Modbus RTU

PRODUKTBESKRIVELSE

PROGRAMMERING

Alle kanaler på CBS-16A leveres med fabrikkinnstilte grenseverdier for alarm 100 mA og 1 sek tidsforsinkelse. Pre-alarm-grensen er fabrikkinnstilt til 100% av grenseverdien for alarm. Ved omprogrammering av grenseverdier kan man velge mellom felles programmering av alle kanaler eller individuell programmering av resepektive kanaler.

Eventuelle endringer i installasjonen så som f.eks. nye eller fjernede kanaler (WGC/WGS trafoer), må lagres under ny konfigurering for at kanal skal bli synlig og at eventuelle feilmeldinger slettes. For riktig historikk må konfigurering/lagring av klokkeinnstillinger alltid gjøres ved førstegangs oppsett. OBS! Skjermen er låst til kun visning, og programmering er ikke mulig før man har låst den opp under blokkeringsmenyen.

ALARMRELÈER

De 2 alarmrelèene er felles for alle kanaler og leveres som potensialfrie NO/NC-kontakter. Alarmrelè krever manuell reset direkte på CBS-16A, fjernstyrt via aktivering av digital trip-inngang eller over kommunikasjon med instrumentet. Pre-alarm relè er fabrikkinnstilt med automatisk reset, og anbefales som varslingsfunksjon for å unngå unødvendige alarmer og feilsøking på tilfeldige jordlekkasje-tripper. Testknapp på CBS-16A kan brukes for test av relèene sin funksjon. En manuell test må resettes via reset knapp på CBS-16A.

DISPLAY

CBS-16A leveres med 3 taster for navigering av visnings-programmeringsider og 2 stk LED-indikatorer som viser at enheten er på, samt at en eventuell alarm har oppstått. Forskjellige farger i displayet indikerer også status som normal drift (hvit), alarm (rødt), pre-alarm eller feil (gult) samt programmeringsmodus (blått). Display gir oversiktlig visning for aktuell kanal med f.eks. grenseverdier og nåtidsstrøm der man via piltaster kan bla seg mellom de forskjellige kanalene. CBS-16A viser kun kanalene som har summasjonstransformatorer tilkoblet, eventuelle endringer i installasjonen må lagres for riktig visning.

SUMMASJONSTRANSFORMATORER

CBS-16A kan kun brukes sammen med summasjonstransformatorer i WGC/WGS-serien levert fra Micro Matic. Summasjonstrafoene WGC/WGS (Type A) kobles mot CBS-16A via 2-tråds ledere 1 mm², og i installasjoner med mulig støy fra f.eks. andre spenningskilder og sterkstrømskabler anbefales skjermet kabel. For mer informasjon om kabler og forlegging for riktig nøyaktighet, se brukermanualen til WGC.

NØDVENDIG INFORMASJON

For riktig nøyaktighet og funksjon til CBS-16A må kabelforlegging i manualen til WGC-trafoene følges.