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CR10-VL1C 200- 230V+N+PE US Variable speed driver

PCSHEMATIC Automation

Varimixer A/S
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Component	Article no.	Type	Function	Description	Manufacturer	Position
-F2	R20E-418.9	10A				/4.1
-K2	RC0603FR-071K8L	Guard closed PCB relay 1				/6.1
-K3	RC0603FR-071K8L	Guard closed PCB relay 2				/6.2
-K4	RC0603FR-071K8L	Bowl present PCB relay 3				/6.2
-KM1	LP4K12015BW3	Motor contactor				/6.5
-M1	CR20-85	Main motor 0,7 kW				/7.2
-Q1	CR30-601.1	Variable speed driver				/7.2
-Q2	CR10-501.3	PCB Master Controlle unit				/7.8
-R1	CR10-545M	GND wire choker				/4.2
-S1	CR10-174.35	E-stop				/6.3
-S2	56CR10-110.2M	Switch box guard 1				/6.1
-S3	56CR10-110.2M	Switch box guard 2				/6.2
-S4	56CR10-111.1M	Switch box bowl 1				/6.3
-S5	56CR10-111.1M	Switch box bowl 2				/6.2
-T1	CR10-601.1	EMC filter FN2450G-10-61				/4.1
-T2	CR10-501.4	SMPS +24VDC supply				/5.1
-W1	CR10-542	Main cable CR10				/6.4
-W2	CR10-194.10	Modbus rtu RS428				/7.4
-W3	WR10-543	Connection cable				/4.1
-W4	CR30-194.16M	Cable security input				/4.1
-W5	CR30-194.17M	Frequency converter cable output				/7.1
-W6	CR20-85.1	Motor cable 3P+PE+STO Shield				/7.1
-W7	CR10-544	Connection cable CR10				/6.6
-W8	CR20-194.25M	Cable for contactor				/4.1
-W9	CR10-194.39M	Cable emergency stop				/6.3
-W10	CR20-194.6M	Grounding cable with connectors M4				/7.2
-W11	CR30-194.7M	Ground wire with M6				/7.3
-X3	R20E-510.29	TE Mate-N-Lok 9P				/4.1

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Component	Article no.	Type	Function	Description	Manufacturer	Position
-X4	STA7210	Power Socket	1P+N+PE			/4.1
-X5	R20E-410.26	TE Mate-N-LOK	6P			/7.1
-X6	CR20-22.17	PE pins on CR20	backplade			/4.2
-X8	R20E-410.24	TE Mate-N-LOK	4P			/7.2
-X9	R20E-510.4	Molex Mini-Fit Jr.	4P			/6.3
-X10	STA7256	Cat5e RJ-45	C			/7.2
-XQ2_CN1	R20E.510.36	Molex Mini-Fit Jr.	16P			/6.1
-XQ2_X1	R20E-510.4	Molex Mini-Fit Jr.	4P			/6.1
-XQ3	R20E-510.4	Molex Mini-Fit Jr.	4P			/6.6



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Article no.	Type	Quantity
56CR10-110.2M	Switch box guard 1	1
56CR10-111.1M	Switch box bowl 1	1
CR10-174.35	E-stop	1
CR10-194.10	Modbus rtu RS428	1
CR10-194.39M	Cable emergency stop	1
CR10-501.3	PCB Master Controlle unit	1
CR10-501.4	SMPS +24VDC supply	1
CR10-542	Main cable CR10	1
CR10-544	Connection cable CR10	1
CR10-545M	GND wire choker	1
CR10-601.1	EMC filter FN2450G-10-61	1
CR20-22.17	PE pins on CR20 backplade	1
CR20-85	Main motor 0,7 kW	1
CR20-85.1	Motor cable 3P+PE+STO Shield	1
CR20-194.6M	Grounding cable with connectors M4	1
CR20-194.25M	Cable for contactor	1
CR30-194.7M	Ground wire with M6	1
CR30-194.16M	Cable security input	1
CR30-194.17M	Frequency converter cable output	1
CR30-601.1	Variable speed driver	1
LP4K12015BW3	Motor contactor	1
R20E-410.24	TE Mate-N-LOK 4P	1
R20E-410.26	TE Mate-N-LOK 6P	1
R20E-418.9	10A	1
R20E-510.4	Molex Mini-Fit Jr. 4P	2
R20E-510.29	TE Mate-N-Lok 9P	1
R20E.510.36	Molex Mini-Fit Jr. 16P	1
RC0603FR-071K8L	Guard closed PCB relay 2	3

Article no.	Type	Quantity
STA7210	Power Socket 1P+N+PE	1
STA7256	Cat5e RJ-45 C	1
WR10-543	Connection cable	1

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/7.1 L1
/7.1 N_1



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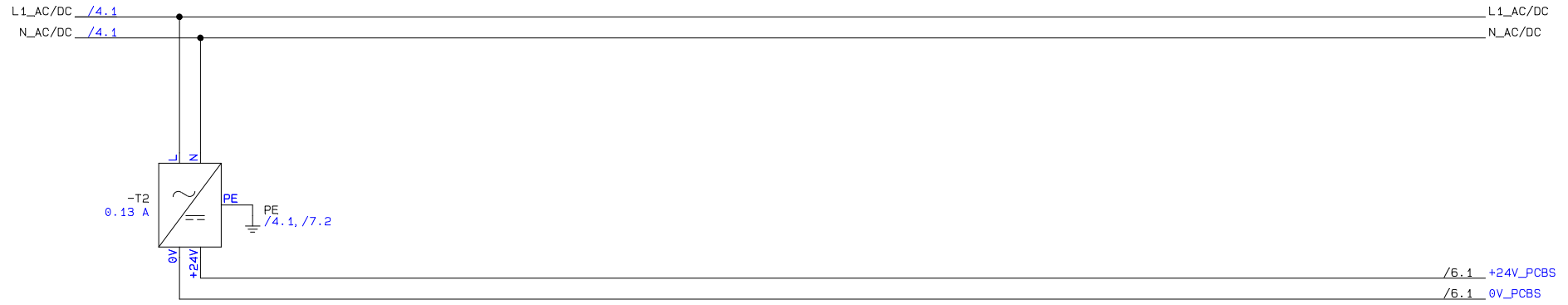
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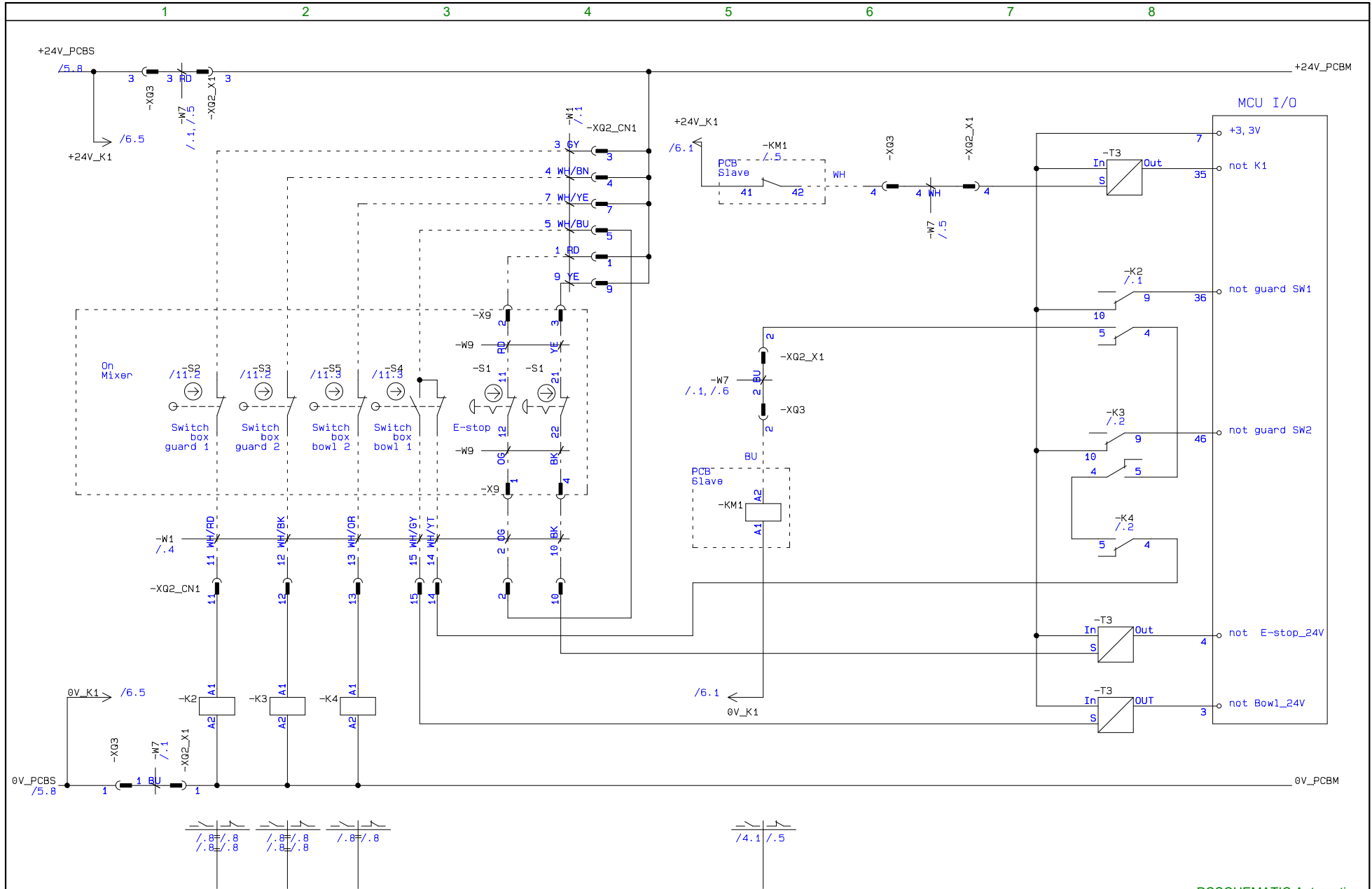


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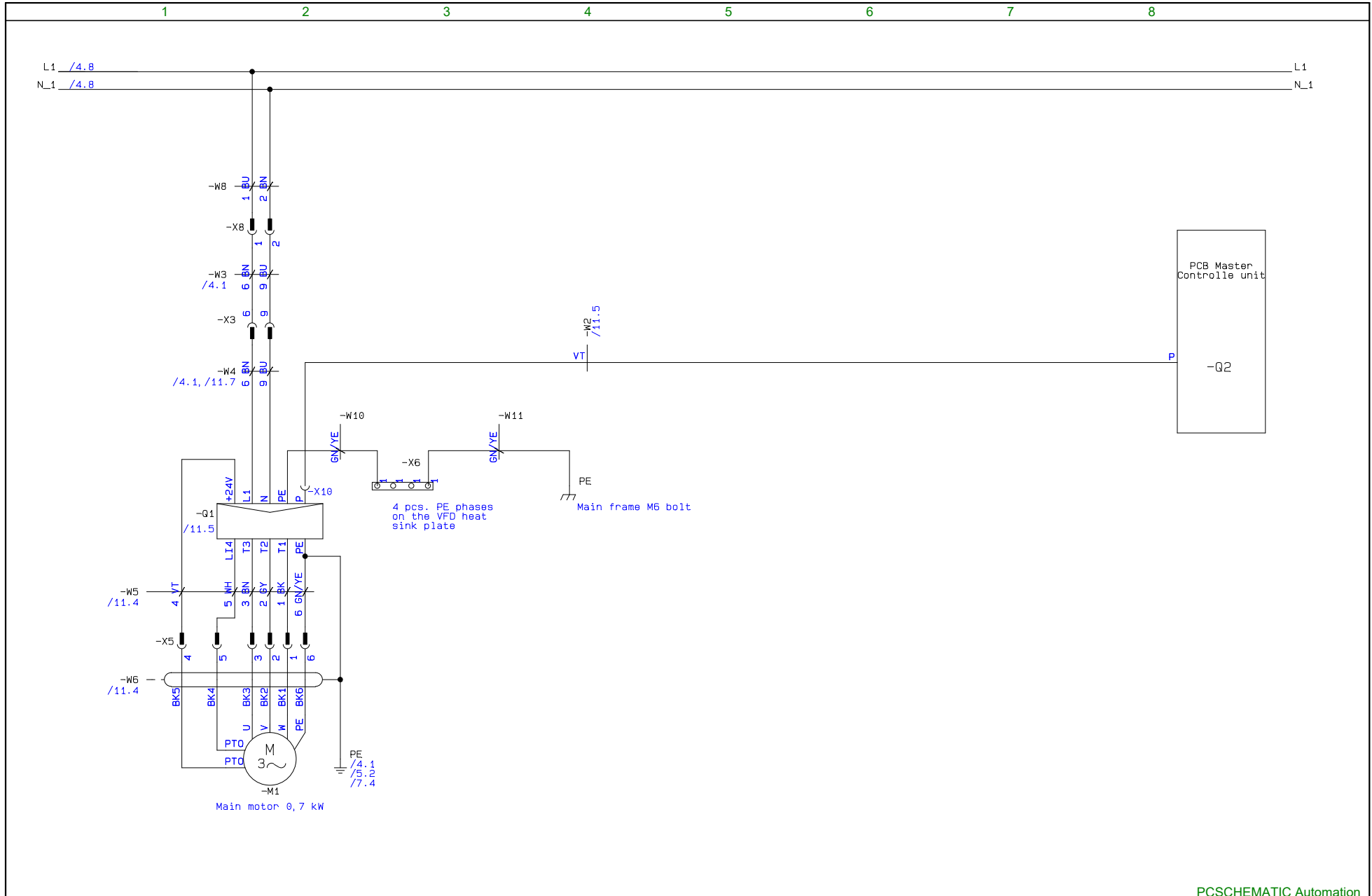
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Fra			Kabel		Til			Type
-X9	2	/6.3	-W1	1 RD	-XQ2_CN1	1	/6.4	Main cable CR10
-S2	1	/6.1	-W1	3 GY	-XQ2_CN1	3	/6.4	Main cable CR10
-S3	1	/6.2	-W1	4 WH/BN	-XQ2_CN1	4	/6.4	Main cable CR10
-S4	1	/6.3	-W1	5 WH/BU	-XQ2_CN1	5	/6.4	Main cable CR10
-S5	1	/6.2	-W1	7 WH/YE	-XQ2_CN1	7	/6.4	Main cable CR10
-X9	3	/6.4	-W1	9 YE	-XQ2_CN1	9	/6.4	Main cable CR10
-X9	1	/6.3	-W1	2 OG	-XQ2_CN1	2	/6.3	Main cable CR10
-X9	4	/6.4	-W1	10 BK	-XQ2_CN1	10	/6.4	Main cable CR10
-S2	2	/6.1	-W1	11 WH/RD	-XQ2_CN1	11	/6.1	Main cable CR10
-S3	2	/6.2	-W1	12 WH/BK	-XQ2_CN1	12	/6.2	Main cable CR10
-S5	2	/6.2	-W1	13 WH/OR	-XQ2_CN1	13	/6.2	Main cable CR10
-S4	4	/6.3	-W1	14 WH/YT	-XQ2_CN1	14	/6.3	Main cable CR10
-S4	2	/6.3	-W1	15 WH/GY	-XQ2_CN1	15	/6.3	Main cable CR10
-X10	1	/7.2	-W2	VT	-Q2	P	/7.8	Modbus rtu RS428
-T1	PE	/4.1	-W3	5 YE/GN	-X3	5	/4.1	Connection cable
-T1	L	/4.1	-W3	7 BU	-X3	7	/4.1	Connection cable
-T1	P	/4.1	-W3	8 BN	-X3	8	/4.1	Connection cable
-X8	1	/7.2	-W3	6 BN	-X3	6	/7.2	Connection cable
-X8	2	/7.2	-W3	9 BU	-X3	9	/7.2	Connection cable
-X3	5	/4.1	-W4	5 YE/GN	-X6	1	/4.2	Cable security input
-X3	7	/4.1	-W4	7 BU	-X4	N	/4.1	Cable security input
-X3	8	/4.1	-W4	8 BN	-F2	2	/4.1	Cable security input
-X3	6	/7.2	-W4	6 BN	-Q1	L1	/7.2	Cable security input
-X3	9	/7.2	-W4	9 BU	-Q1	N	/7.2	Cable security input

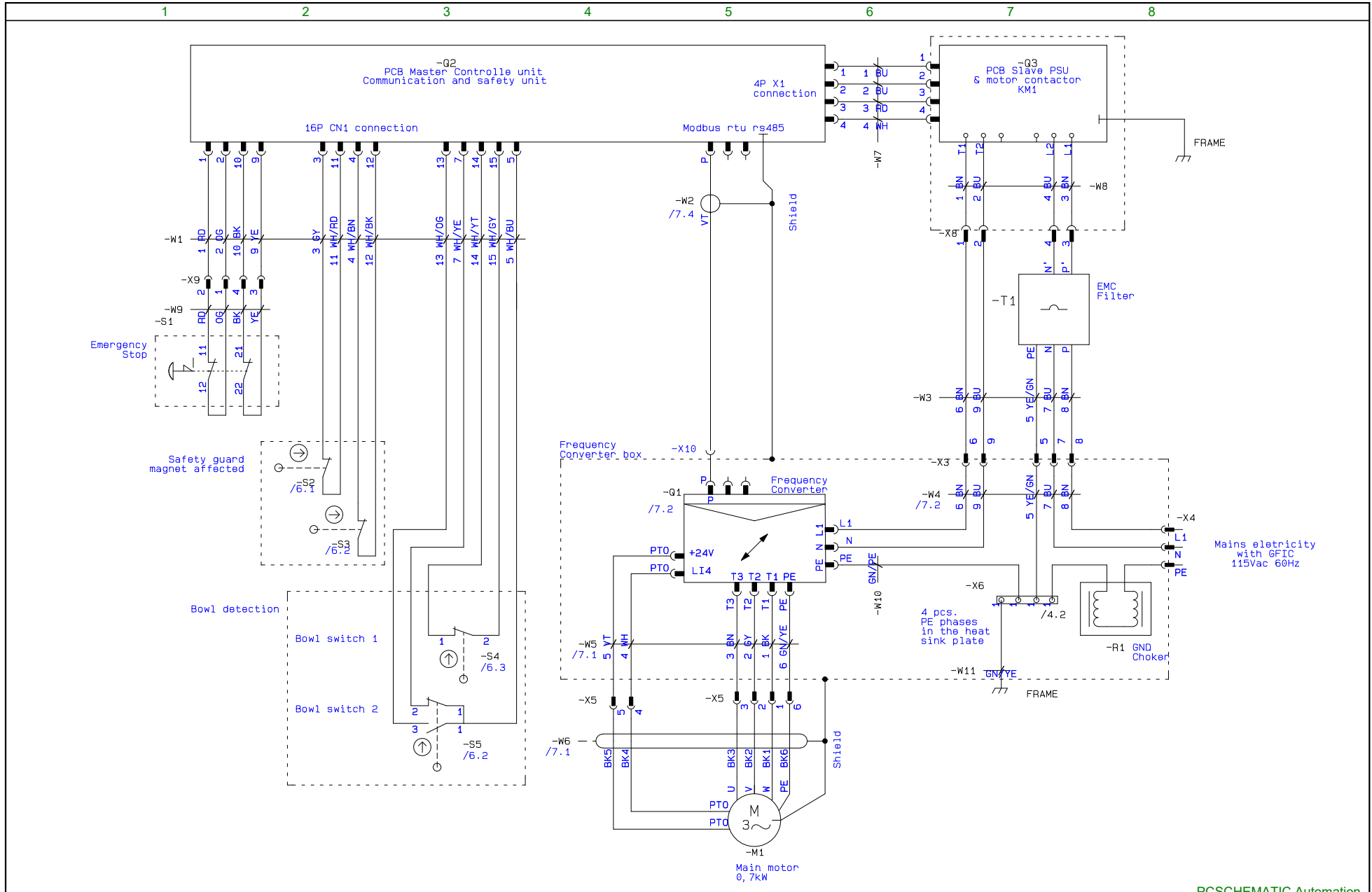


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Fra			Kabel		Til			Type
-Q1	T1	/7.2	-W5	1 BK	-X5	1	/7.2	Frequency converter cable output
-Q1	T2	/7.2	-W5	2 GY	-X5	2	/7.2	Frequency converter cable output
-Q1	T3	/7.2	-W5	3 BN	-X5	3	/7.2	Frequency converter cable output
-Q1	+24V	/7.2	-W5	4 VT	-X5	4	/7.1	Frequency converter cable output
-Q1	LI4	/7.2	-W5	5 WH	-X5	5	/7.1	Frequency converter cable output
-Q1	PE	/7.2	-W5	6 GN/YE	-X5	6	/7.2	Frequency converter cable output
-X5	1	/7.2	-W6	BK1	-M1	W	/7.2	Motor cable 3P+PE+STO Shield
-X5	2	/7.2	-W6	BK2	-M1	V	/7.2	Motor cable 3P+PE+STO Shield
-X5	3	/7.2	-W6	BK3	-M1	U	/7.2	Motor cable 3P+PE+STO Shield
-X5	5	/7.1	-W6	BK4	-M1	PTO	/7.1	Motor cable 3P+PE+STO Shield
-X5	4	/7.1	-W6	BK5	-M1	PTO	/7.1	Motor cable 3P+PE+STO Shield
-X5	6	/7.2	-W6	BK6	-M1	PE	/7.2	Motor cable 3P+PE+STO Shield
-XQ3	1	/6.1	-W7	1 BU	-XQ2_X1	1	/6.1	Connection cable CR10
-XQ2_X1	2	/6.5	-W7	2 BU	-XQ3	2	/6.5	Connection cable CR10
-XQ3	3	/6.1	-W7	3 RD	-XQ2_X1	3	/6.1	Connection cable CR10
-XQ3	4	/6.6	-W7	4 WH	-XQ2_X1	4	/6.7	Connection cable CR10
-KM1	T1	/4.1	-W8	1 BU	-X8	1	/7.2	Cable for contactor
-KM1	T2	/4.1	-W8	2 BN	-X8	2	/7.2	Cable for contactor
-KM1	L1	/4.1	-W8	3 BN	-T1	P'	/4.1	Cable for contactor
-KM1	L2	/4.1	-W8	4 BU	-T1	L'	/4.1	Cable for contactor
-S1	22	/6.4	-W9	BK	-X9	4	/6.4	Cable emergency stop
-S1	12	/6.3	-W9	OG	-X9	1	/6.3	Cable emergency stop
-X9	2	/6.3	-W9	RD	-S1	11	/6.3	Cable emergency stop
-X9	3	/6.4	-W9	YE	-S1	21	/6.4	Cable emergency stop

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PCB Master:
CR10-501.3

CR10-501.2M / CR10-501.3M



CR10-544



CR10-542



CR10-194.10

Variable speed drivers
110-120V: CR10-501.10



PCB Slave:
WR10-22.38M

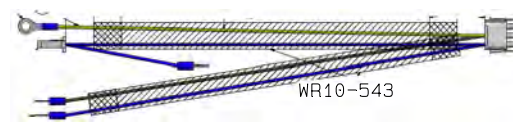
WR10-22.38M



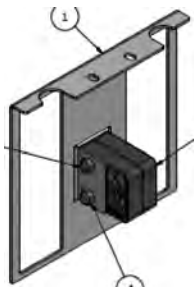
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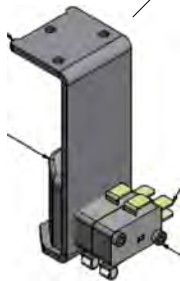
CR10-552.1M



WR10-543



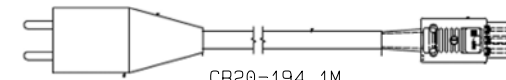
56CR10-111.1M



56CR10-110.2M



CR20-85



CR20-194.1M

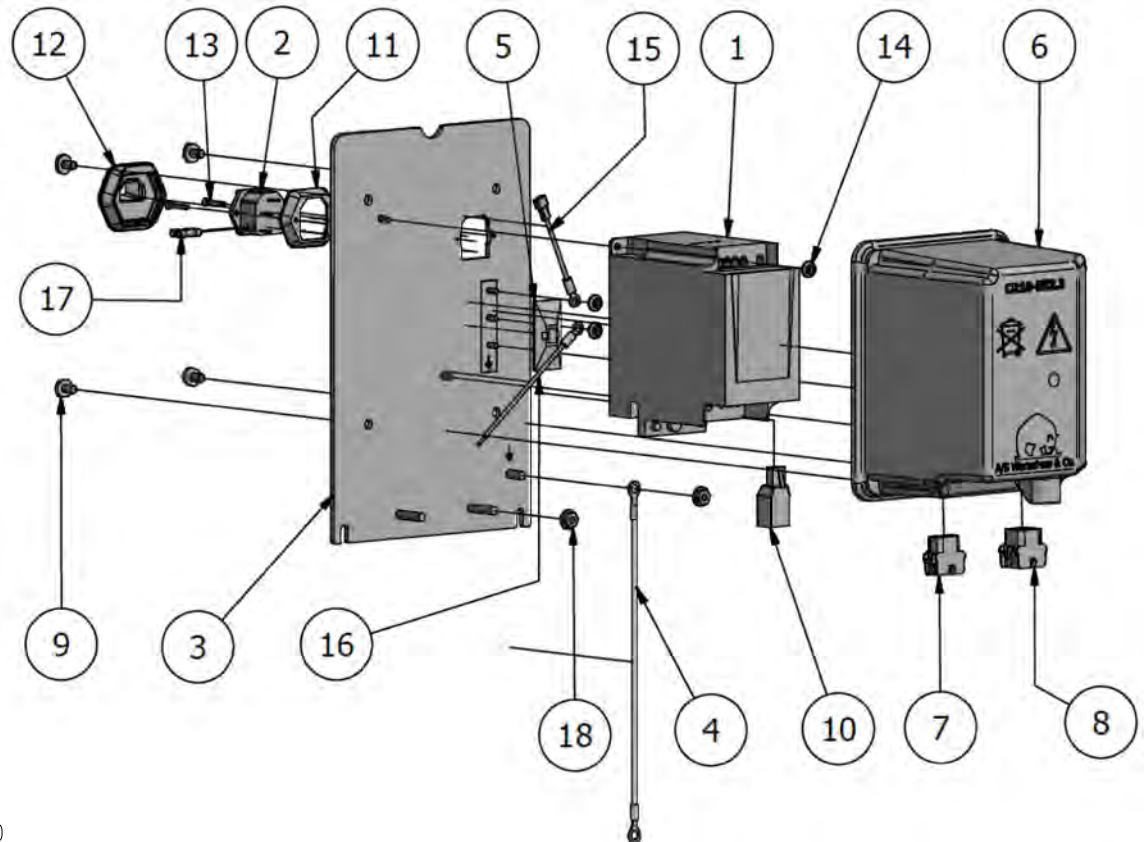
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CR10 frekvenomfrømer monteret: WR20-552.5M

- (1) CR30-601.1: Frekvensomformer Schnieder ATV12HU15M2 1 stk.
- (1) CR30-261: Silicone HTS transfer compound EHTS01K.
- (2) STA7210: El-brønd 1F nul+jord. 1 stk.
- (3) CR20-22.17: Bagplade CR20. 1 stk.
- (4) CR30-194.7M: Jordkabel med Ringkabelsko M6. 1 stk.
- (6) CR10-552.3M: Bagkasse frekvensomformer med o-ring. 1 stk.
- (7) CR20-194.27M: Kabel for frekvensomformer til styring. 1 stk.
- (8) CR20-194.26M: Mellemkabel sikkerhedskreds input. 1 stk.
- (9) STA9000: M6X10mm Rustfri skrue marine. 4 stk.
- (10) STA7256: Kryds adapter RJ-45. 1 stk.
- (11) CR10-551: Pakning stikbrønd. 1 stk.
- (13) STA5799: Skrue M3x20 RST undersænket indv. 6 kant. 2 stk.
- (14) STA5899: M4 Flangemøtrik FZB DIN6923. 5 stk.
- (15) CR20-194.5M: Jordkabel kort CR20. 1 stk.
- (16) CR20-194.6M: Jordkabel kort CR20. 1 stk.
- (17) R20E-418.9: Sikring træg 10A. 2 stk.
- (18) STA5896: Flangemøtrik M6 FZB DIN6923. 2 stk.



Montage:

- 1) Monter net brønd: Posi. 2, 3, 11, 13, 15 & 17.
- 2) Monter frekvensomformer: Pos. 1, 14 & 10. (NB: husk Silicone)
- 3) Monter forsynings kabel og motor kabel: Pos. 4, 7, 8, 14 & 16. Vejledning følger på næste side.
- 4) Moter bagkasse og flangemøtrikker: Pos. 6, 9 & 18.
- 5) Frakobel intern EMC filter og indlæs frekvensomformerens parameter indstillinger

Tilspændingsmoment for møtrikker og skruer:

Pos (9)	Marine skruer	0.5 Nm
Pos (13)	net-brønd Skruer	0.8 Nm
Pos (14)	Frek.omf. møtrik	0.8 Nm
Pos (18)	Flangemøtrik	0.8 Nm

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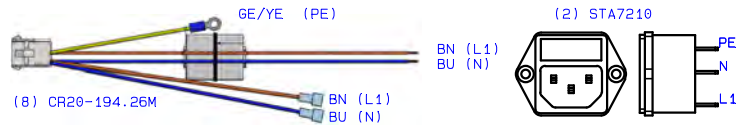
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Montage af mellemkabel CR20-194.26M og PE kabler.

- (8) CR20-194.26M: BN & BU uden kabelsko monteres på ATV12 L1 & N indgang. BN & BU med kabelsko monteres på netbrønds L1 & N terminaler. GE/YE monteres på ATV12 PE terminal (billede 2).
- (15) CR20-194.5M, PE monteres mellem net brønd (2) STA7210 og bagplade.
- (16) CR20-194.5M, Jordkabel monteres mellem ATV12 jordterminal og bagplade.



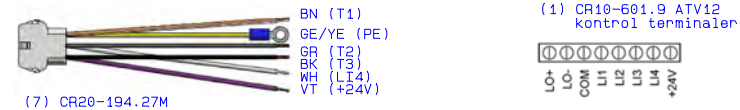
Tilspændingsmoment for power terminaler:
0.8 til 1.0 Nm



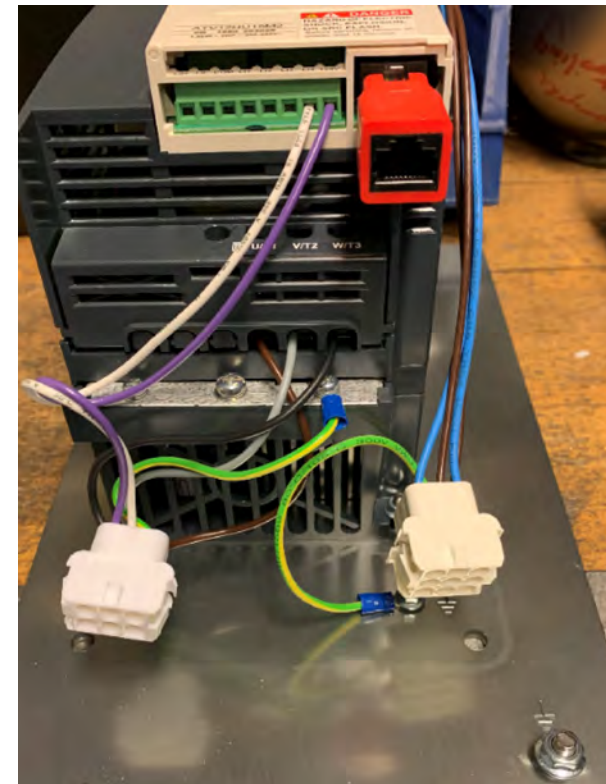
Billede 1: Frekvensomformer ATV12, forsyningsterminaler ind.

Montage af kabel for frekvensomformer til styring CR20-194.27M.

- (7) CR20-194.27M, BN, GR og BK monteres på ATV12 T1, T2 og T3. GE/YE monteres på ATV12 PE. VT monteres på ATV12 kontrol terminal +24V. WH monteres på ATV12 kontrol terminal LI4



Tilspændingsmoment for kontrol terminaler:
0.5 til 0.6 Nm



Billede 2: Frekvensomformer ATV12, forsyningsterminaler ud.

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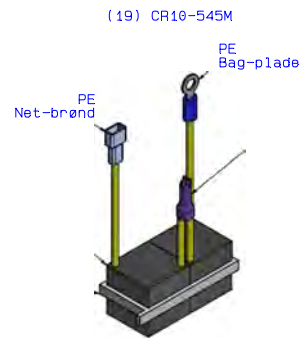
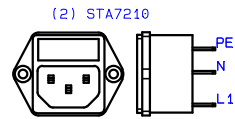
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Montage af jordfilter CR10-545M mellem net-brønd og bag-plade.

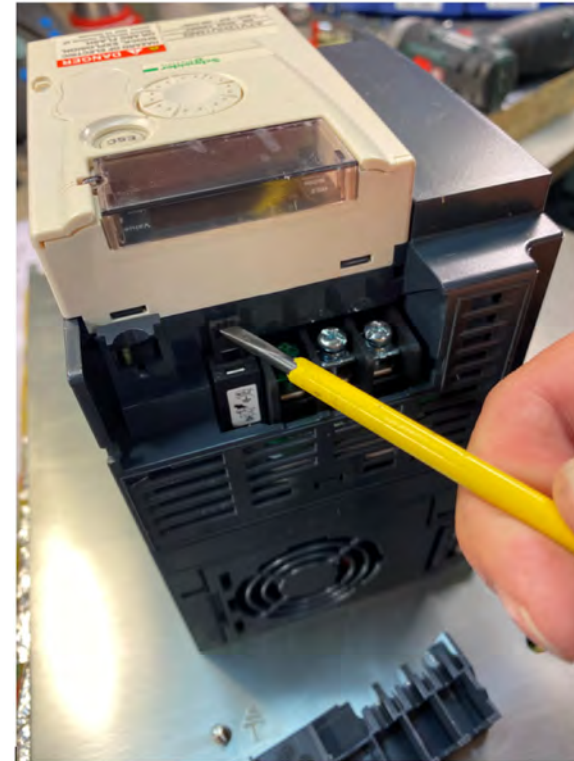
1. Jordfilter monteres jf. billede 3. connectoren monteres i (2) net-brøndens PE ben.
2. Ring kabelsko monterer på bag-pladen.



Billede 2: Jordfilter, CR10-545M

Ekstern EMC filter anvendes CR10-601.1

1. Det interne filter frakobles ved at fjerne dækslet til frekvensomformerens forsynings terminaler. Til højre for terminalerne løftes en jumper, denne jumper frakobler frekvensomformerens interne filter



Billede 4: Frekvensomformer ATV12, frakobling af intern filter.

PCSCHEMATIC Automation

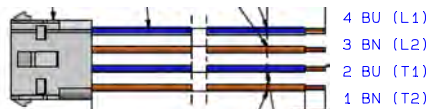
CR10 Power Supply Unit monteret: WR10-22.38M

- (1) CR10-501.3: PCB Print slave. 1 stk.
- (2) R10-557.2M: Dækkasse til PSU PCB med pakning. 1 stk.
- (3) CR20-194.25M: K1 kontaktor kabel. 1 stk.
- (4) STA5720: Cylinder skrue M5x8. 4 stk.
- (5) STA5764: Panhovedeskruer torx M3x5. 4 stk.
- (6) WR10-22.38: Beslag PSU & EMC. 1 stk.
- (7) CR10-601.1: EMC filter 2450G. 1 stk.
- (8) STA6488: Blindnitte Ø3,2x6,4. 2 stk.

Montage:

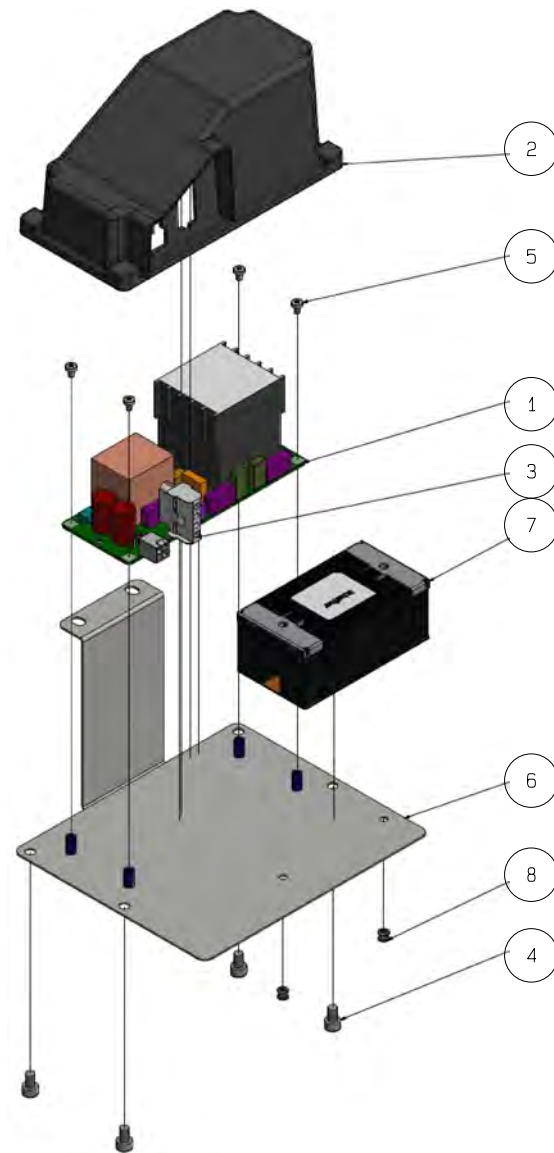
- 1) Monter PCB på beslag: Pos. 1, 5 & 6.
- 2) Monter dækkasse kabel til kontaktor: Pos. 3, 2 & 4.
- 3) Monter dækkasse på beslag: Pos. 2, 4 & 6.

CR20-194.25M CR10-501.3



Tilspændingsmoment for møtrikker og skruer:

- Pos (4) Cylinder skruer 0.5 Nm
- Pos (5) Panhovedeskruer 0.8 Nm



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