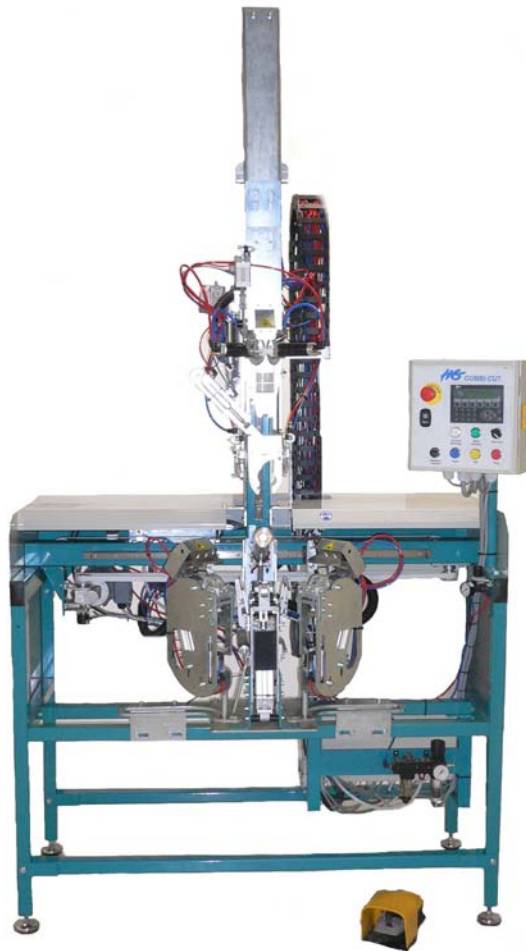




USERS MANUAL



Combi Cut
opdate

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2. Introduction.

The following instruction describes the Combi Cut update's new settings and their function.

It is divided into sections containing the various options under the concerned Menu button.

In order to increase the clarity, the new features are marked with *.

3. Menu F1.

In Button F1 are the following options:

Language:

Here you can choose Danish and English texts in the panel.

For Danish texts keys 0 and Enter.

For English texts keys 1 and Enter.

Program date:

Version Date of software saved in the machine.

Login / Logout:

Login function is only used by Hedensted Group service team.

4. Menu F2.

This menu can only be used by Hedensted Group service team.

5. Menu F3.

Under the button F3 is following options:

* **STR.POS Knife M: (mm)**

Adjustment of stretch length for Male before the knife starts running.

If you type 50mm, the machine has to stretch the animal 50 mm from the starting position before the knife moves to the right.

If you a high stretch pressure, you can type a small value, because the knife starts to position earlier.

* **STR.POS Knife F: (mm)**

Adjustment of stretch length for female before the knife starts running.

If you use a low stretch pressure, a high value must be entered. Then the machine gets more time to stretch the animal, before the cross cut knife starts.

If the value is bigger than the animal's length, the knife will stand at the starting position and wait. In this case the value must be lower.

***Extra stretch: (sek)**

Adjustment of extra stretch time. Increasing this value makes it easier for the machine to find the correct cross cut position. At 0.1 sec the machine runs as fast as possible, and are default settings. If the stretch pressure is very low, it may be necessary to increase this time, so that the operator gets more time to put the animal correctly in before the knife reads its cutting position.

If the cross knife runs left and will not continue running, the knife has found its position before stretching of the animal is done, and margin between stretch and cross sections are too large. Reset the machine and set up stretch time a bit.

6. Menu Vertical.

Under vertical button is the following options:

Spade down M: (mm)

Setting the depth of the triangle cut in Male program.

Spade down F: (mm)

Setting the depth of the triangle cut in Female program,

Leghooks close M: (mm)

Setting the depth, the leghooks must run, before it closes for Male program.

Leghooks close F: (mm)

Setting the depth, the leghook´s must run, before it closes for Female program.

Tailroller IN: (sek)

Setting the gap between the spade reaches its bottom position (Spade down) and the Tailroller closes.

Step vertical: (on/off)

You can disconnect the foot pedal to the tail spade and the tail hook. After the leghooks is closed, the machine will finish without further steps.

***Step Tailhook: (on/off)**

Step tailhook is only active when vertical step is set to OFF. Here you can select if the operator wants a step between the tailhook close and the tower going up.

The feature can protect against pelting error at the tailhook when running without vertical steps.

Leghooks: (on/off)

You can switch off the hind leg loosener module. Now the machine will run as an ordinary slicing machine.

Spade Belly SPD: (%)

Adjust the speed the belly spade runs down with. Set as a % of max speed.

Skinloosener SPD: (%)

Adjust the speed the tower runs up with, when you loosen the skin on the legs and the tail. Set as a % of max speed.

Leghooks SPD: (%)

Adjust the speed the leg hooks run down with. Set as a % of max speed.

*** Startposition M: (mm)**

Setting the tower's starting position in Male program. The distance calculated from the tower's top position.

*** Startposition F: (mm)**

Setting the tower's starting position in Female program. The distance calculated from the tower's top position.

*** Open Bodylock M: (mm)**

Setting the position in the Male program where the skinloosen sequence is completed, and it releases the animal. This way the machine does not have to run all the way to the top if it is not necessary. When the tower has reached the position, it releases the animal, and the next cycle may begin. The distance is calculated from tower top and down.

*** Open Bodylock F: (mm)**

Setting the position in the Female program where the skinloosen sequence is completed, and it releases the animal. This way the machine does not have to drive all the way to the top if it is not necessary. When the tower has reached the position, it releases the animal, and the next cycle may begin. The distance is calculated from tower top and down.

7. Menu Knife.

Under the button knife is following options:

Knife korr L: (mm)

Adjusting the crosscut starting position.

Knife korr C: (mm)

Adjusting the crosscut knives center position. Adjusted so that the tower can run down without a collision with the knife.

Knife korr R: (mm)

Adjusting the cross-cut finishing position.

Number of Paw cut Male: (piece)

Setting the number of paw cut for Male program.

Number of Paw cut Female: (piece)

Setting the number of paw cut for female program.

Knife stop L: (on/off)

Here you can turn on and off, the stop of the cross knife. At stop, the knife only drives on by activating the foot pedal. If you keep down the foot pedal after start the knife runs without stopping.

Grinding: (on/off)

Grinding function. Press this button to turn the knives on and off manually.

*** Paw blow: (on/off)**

Blow of paws can here switched on and off. Blow can only be turned ON, when running with option Paw OFF.

Paw (of/on)

Adjust the machine to run with paw clip (OF) or paw cut (ON).

When paw on function is used, paw blow cannot be turned ON.

*** Cutting speed M: (%)**

Setting the cross cut speed for Male program.

Speed entered in % of max speed.

*** Cutting speed F: (%)**

Setting the cross cut speed for Female program.

Speed entered in % of max speed.

8. Menu Counter.

Under the button counter is following options:

Cycletime: (sec)

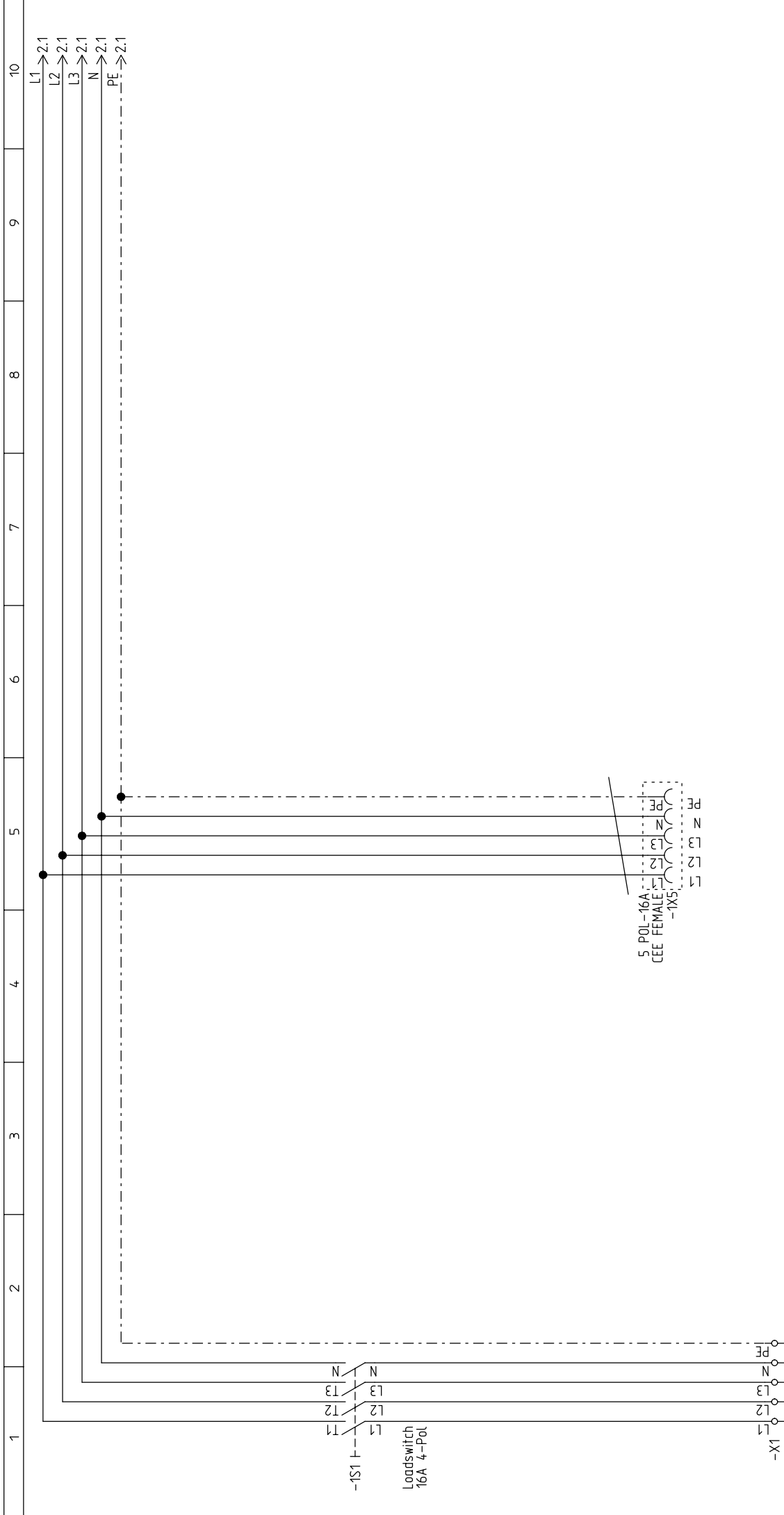
Cycle Time in seconds.

No of cycles: (piece)

Counts the number of driven cycles. Can be reset as needed.


Total cycles: (piece)

Counts the number of driven cycles. Cannot be reset.



1	2	3	4	5	6	7	8	9	10
L1 → 2:1	L2 → 2:1	L3 → 2:1	N → 2:1	PE → 2:1					

HEDENSTED GRUPPEN
 Vejlevej 15, DK-8722 HEDENSTED
 (+45) 75891244 - Fax: (+45) 75891180



Main supply

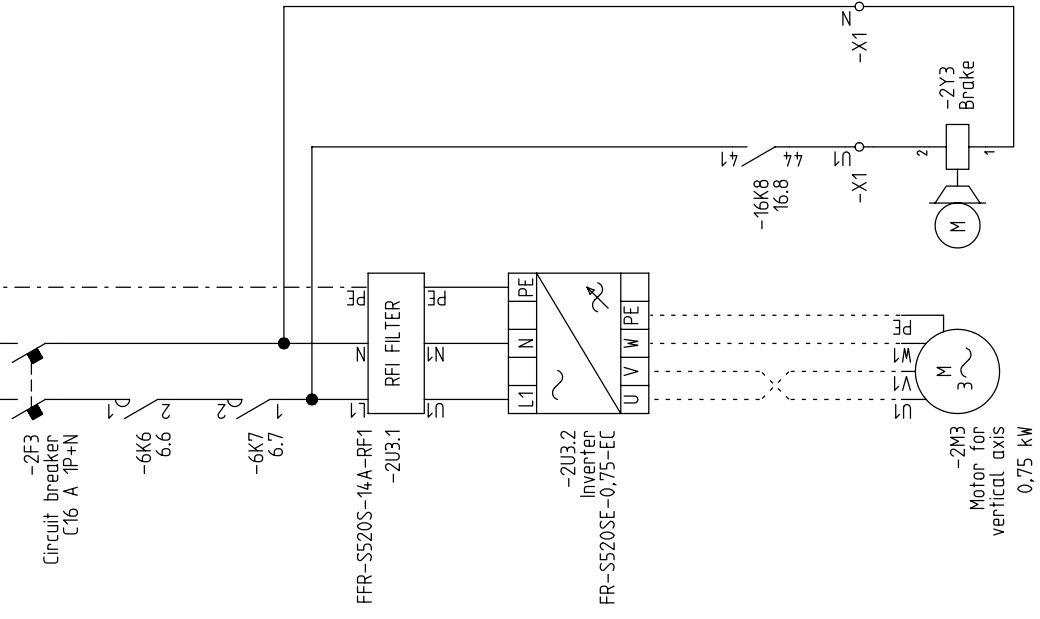
Projektnavn:
Combi_Cut_2009_01_Pawblow

Næste Side: 2 Side nr.: **1**

Printdato:

Tegnet: KE
 Rettet: 25-08-2010
 Side af: **27**

1	2	3	4	5	6	7	8	9	10
1:10 > L1									
1:10 > L2									L2 → 3:1
1:10 > L3									L3 → 3:1
1:10 > N									N → 3:1
1:10 > PE									PE → 3:1



PARAMETER FUNCTION	PARAMETER SETTING	NOTES
TORQUE BOOST	P 0	10
MAX. FREKVENNS	P 1	85
MIN. FREKVENNS	P 2	0
BASE. FREKVENNS	P 3	50
HØJ HASTIGHED	P 4	50
LAV HASTIGHED	P 6	30
ACCELERATION	P 7	0,5
DECELERATION	P 8	0,2
TERMORELÆ	P 9	3,8
DC-BREMSE HZ	P 10	4,9
DC-BREMSE TID	P 11	1
DC-BREMSE VOLT %	P 12	10
ACC/DEC REFERENCE	P 20	50
UDVIDET DISPLAY	P 30	1
ANALOG 10 VOLT - HZ	P 38	77
ANALOG 20 mA - HZ	P 39	50
ANALOG 0-5 / 0-10 V	P 73	1



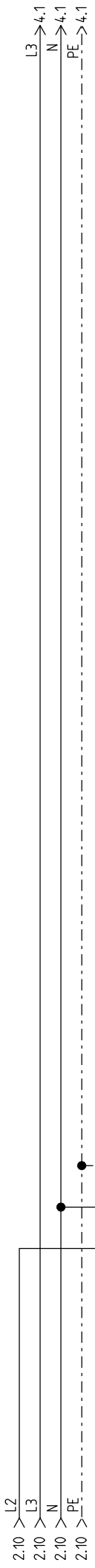
Mains, vertical

Projektnavn:
Combi_Cut_2009_01_Pawblow

Næste Side: 3
 Opr: 09-01-1900
 Printdato:
 28-06-2007

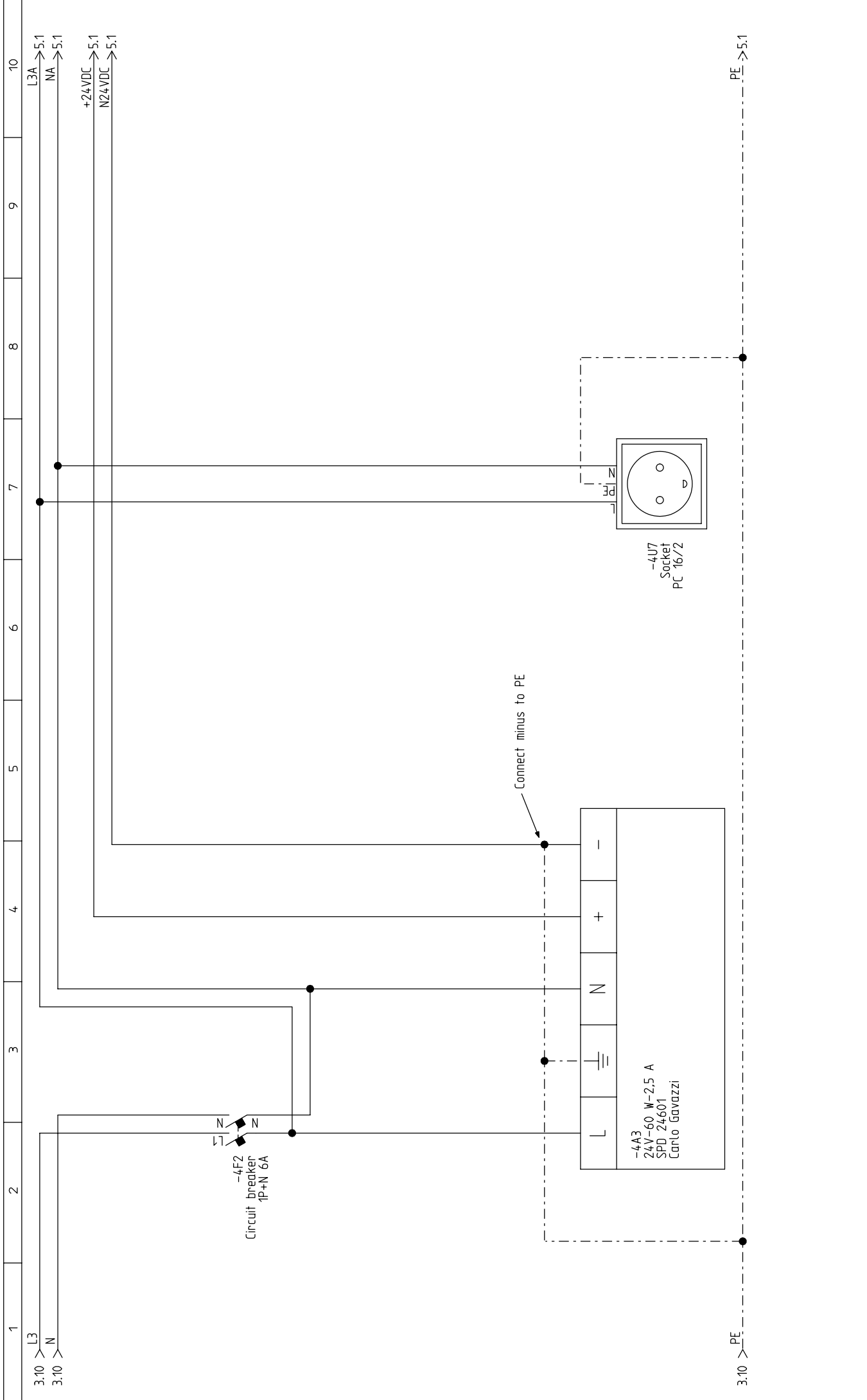
Side nr.: **2**


Tegnet: KE
 Rettet: 10-09-2010
 Side af: **27**

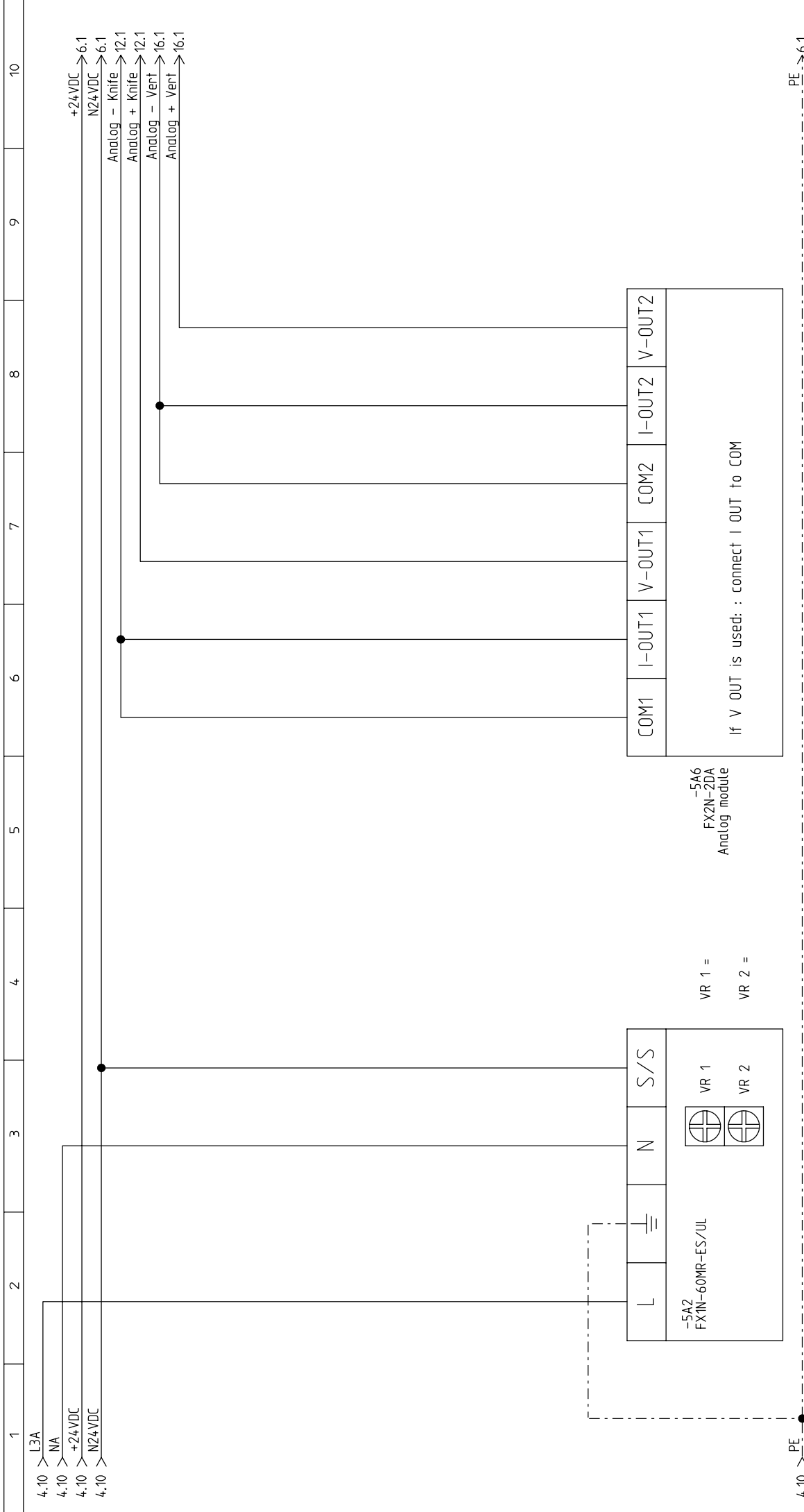


PARAMETER FUNCTION	PARAMETER SETTING	NOTES
TORQUE BOOST	P 0	15
MAX. FREKVENNS	P 1	95
MIN. FREKVENNS	P 2	2.0
BASE. FREKVENNS	P 3	50
HØJ HASTIGHED	P 4	90
LAV HASTIGHED	P 6	4.0
ACCELERATION	P 7	0.1
DECELERATION	P 8	0.1
TERMORELÆ	P 9	1.0
DC-BREMSE HZ	P 10	5.0
DC-BREMSE TID	P 11	1.0
DC-BREMSE VOLT %	P 12	10.0
ACC/DEC REFERENCE	P 20	50
UDVIDET DISPLAY	P 30	1
ANALOG 10 VOLT - HZ	P 38	65.0
ANALOG 20 mA - HZ	P 39	50.0
ANALOG 0-5 / 0-10 V	P 73	1





HEDENSTED GRUPPEN Vejlevej 15, DK-8722 HEDENSTED (+45) 75891244 - Fax: (+45) 75891180		Supply 24VDC	Projektnavn: Combi_Cut_2009_01_Pawblow	Tegnet: KE Rettet: 25-08-2010 Side af: 27
			Næste Side: 5 Opr: 09-01-1900	Printdato: Side nr.: 4



4.10 > PE -> 6.1

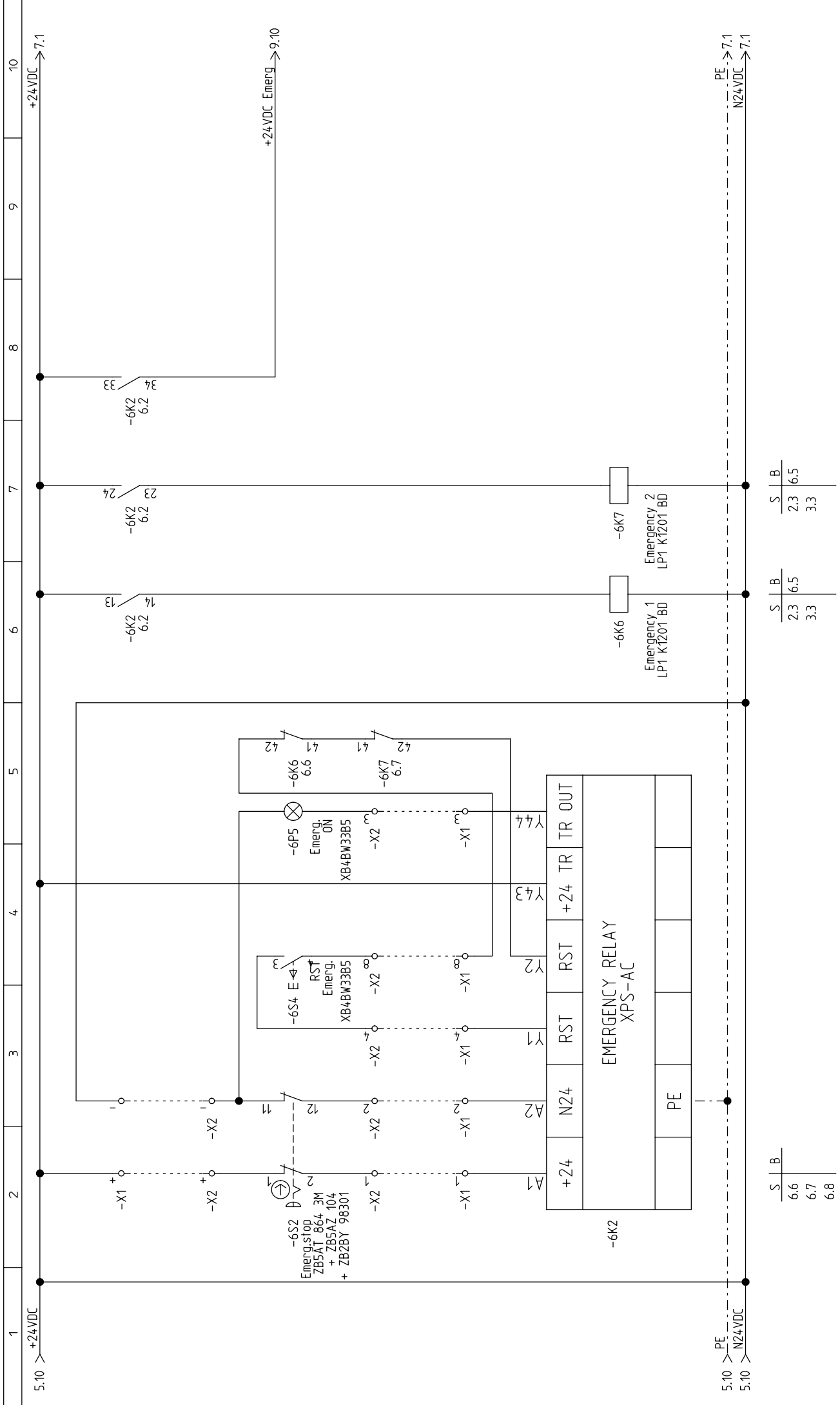


Supply PLC

Projektnavn:
Combi_Cut_2009_01_Pawblow

Tegnet: KE
 Rettet: 25-08-2010
 Side af: **27**

Næste Side: 6
 Opr: 09-01-1900
 Printdato: 25-08-2010
 Side nr.: **5**

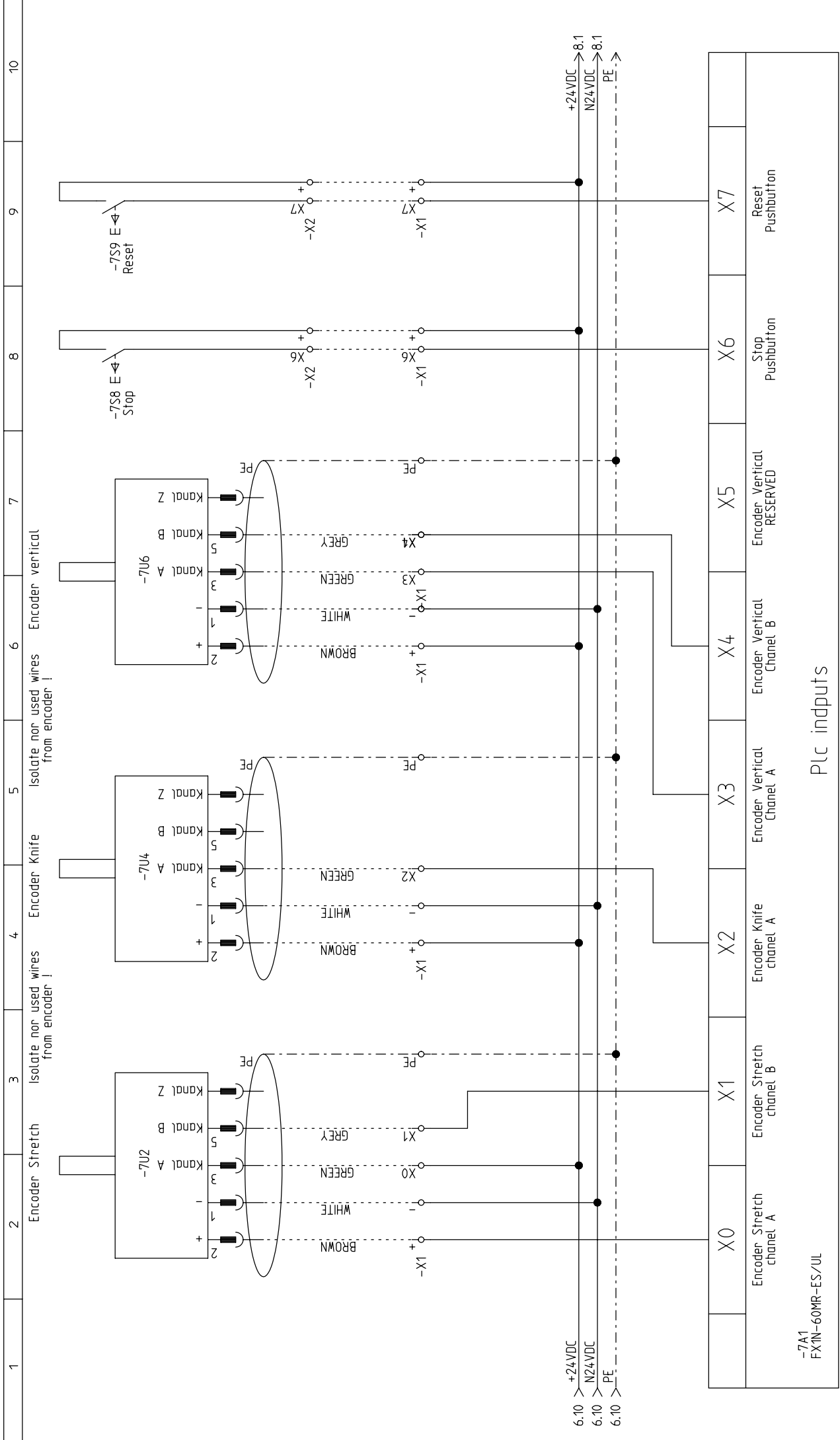


S	B
6.6	
6.7	
6.8	

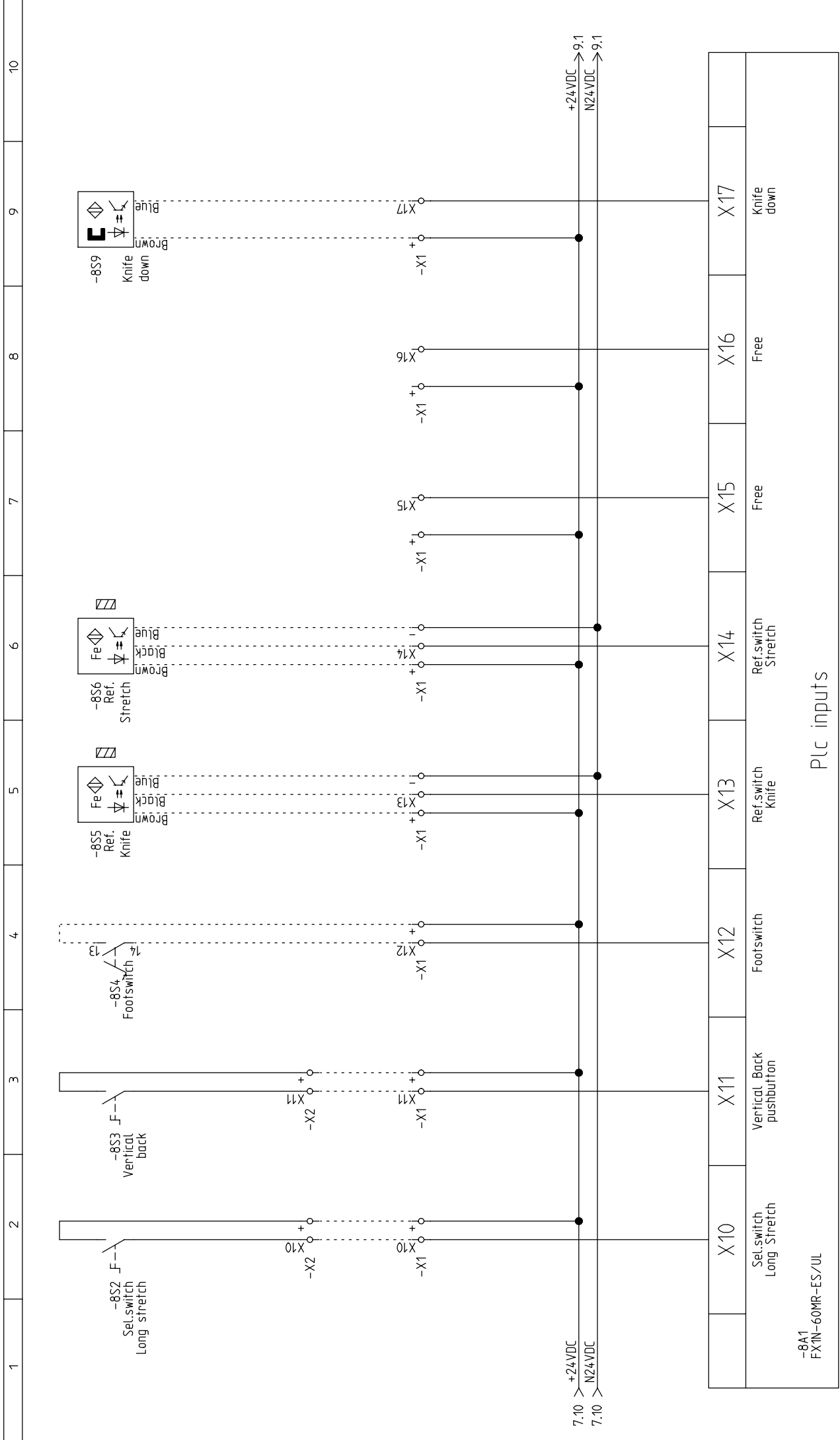
S	B
2.3	6.5
3.3	

S	B
2.3	6.5
3.3	

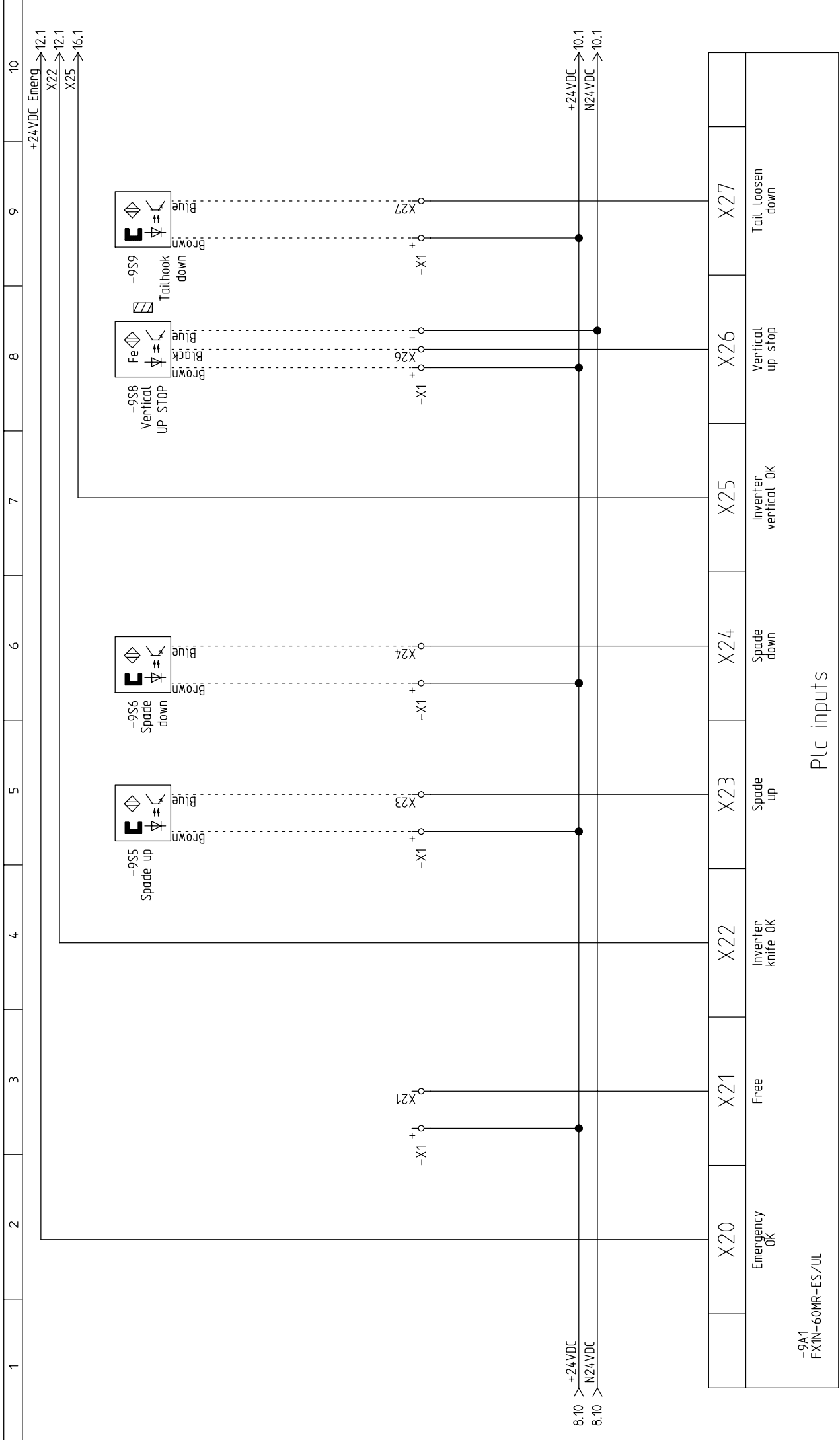





Plc indputs

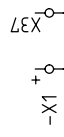
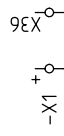
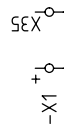
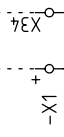
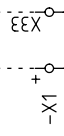
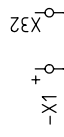
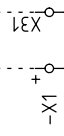
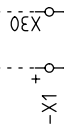
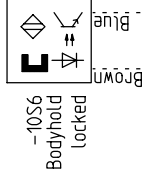
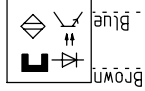
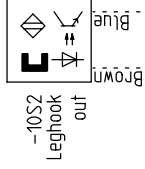


Plc inputs



Plc inputs

HEDENSTED GRUPPEN Vejlevej 15, DK-8722 HEDENSTED (+45) 75891244 - Fax: (+45) 75891180		PLC Inputs X20-X27		Projektnavn: Combi_Cut_2009_01_Pawblow	Tegnet: KE
		Næste Side: 10	Side nr.: 9	Printdato: 22-04-2007	Retter: 25-08-2010



9.10 > +24VDC
9.10 > N24VDC

+24VDC
N24VDC

X30	X31	X32	X33	X34	X35	X36	X37
Leghooks out	Leghooks In	Free	Tailhook Locked	Bodyhold Locked	Free	Free	Free

-10A1
FX1N-60MR-ES/UL

Plc inputs




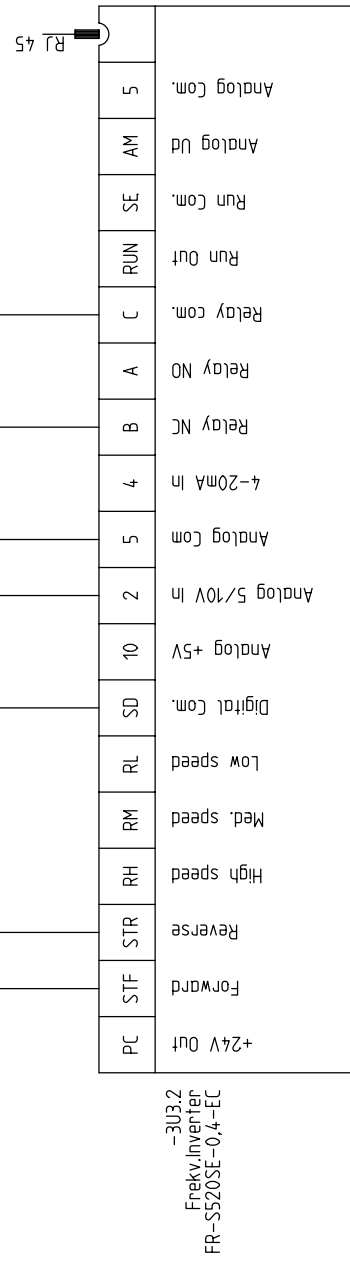
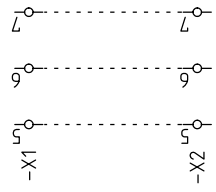
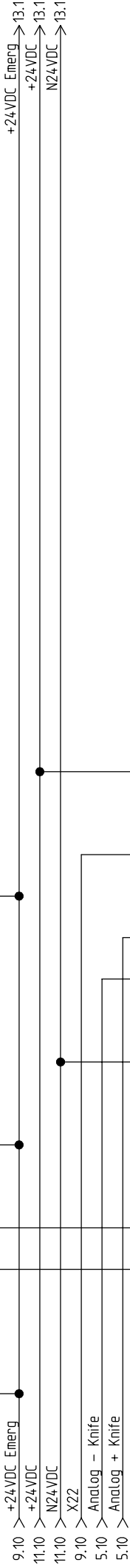
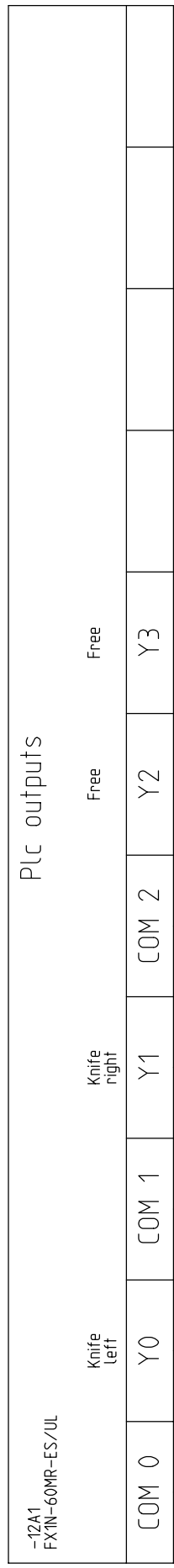
PLC Inputs X30-X37

Projektnavn:
Combi_Cut_2009_01_Pawblow

10.10 > +24VDC → 12.1
 10.10 > N24VDC → 12.1

X40	X41	X42	X43				
Free	JUMPER: reset total: cycl.	JUMPER: reset total: cycl.	Free	Plc inputs			
-11A1 FX1N-60MR-ES/UL							

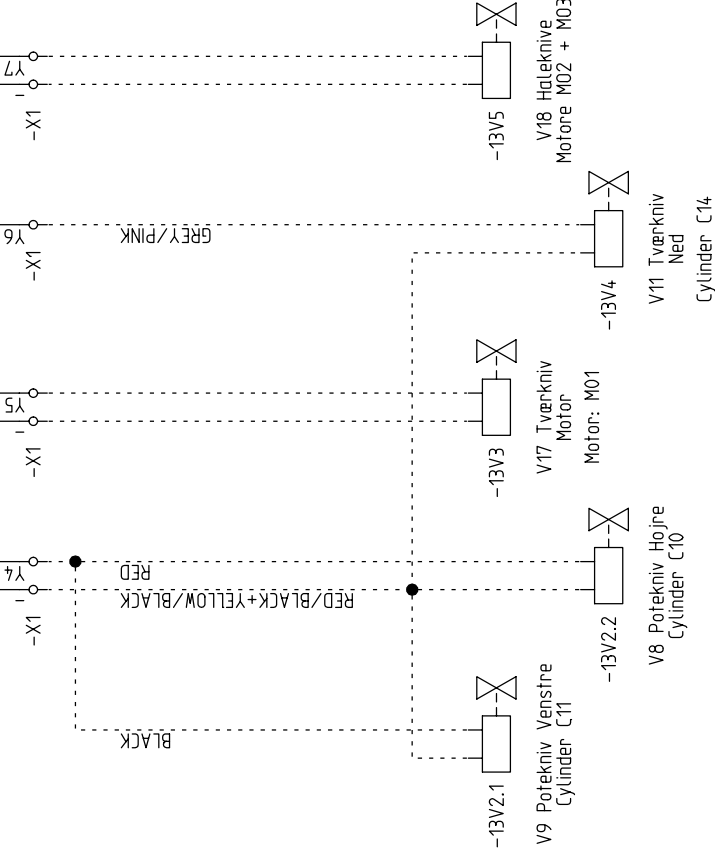
HEDENSTED GRUPPEN Vejlevej 15, DK-8722 HEDENSTED (+45) 75891244 - Fax: (+45) 75891180		PLC Inputs X40-X43	Projektnavn: Combi_Cut_2009_01_Pawblow	Tegnet: KE
			Næste Side: 12 Opdr: 09-01-1900	Rettet: 25-08-2010 Side af: 27
			Printdato: 22-04-2007	Side nr.: 11



Plc outputs

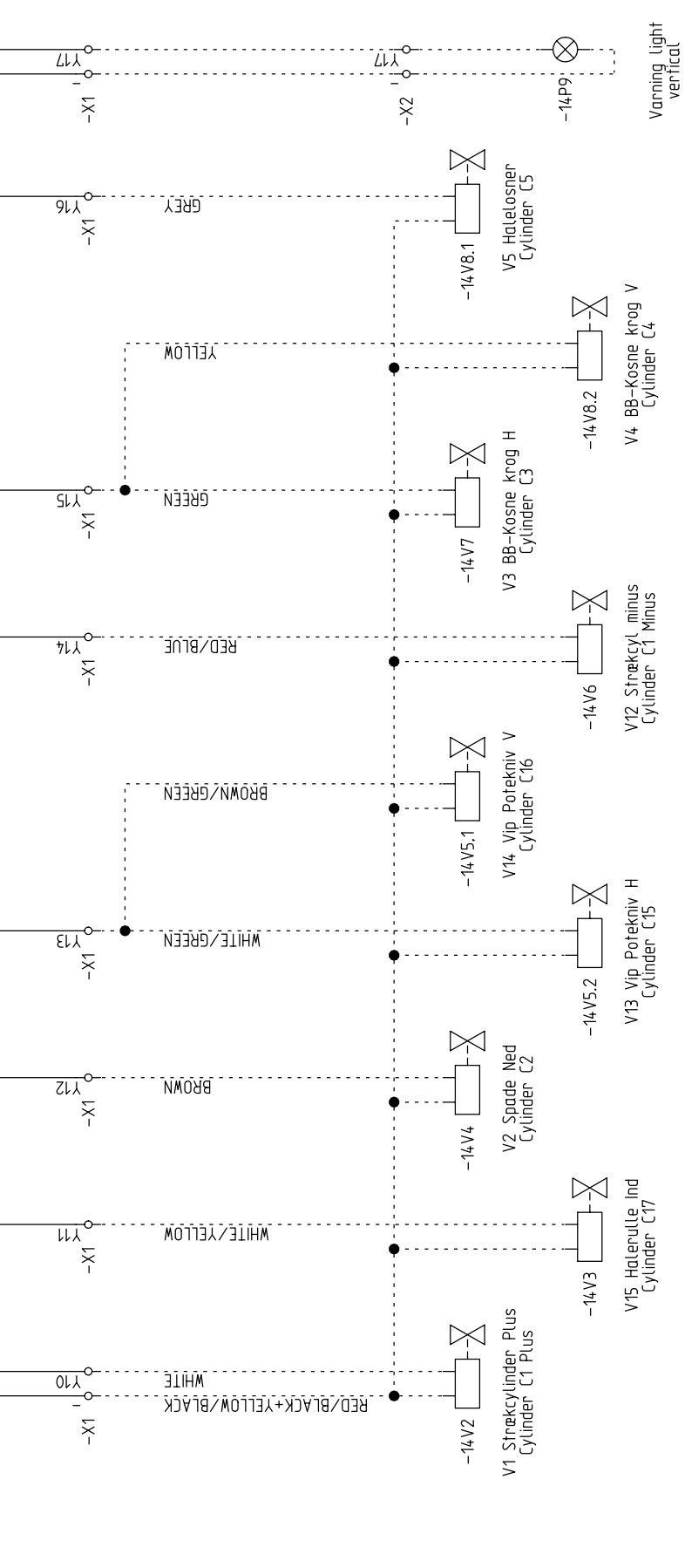
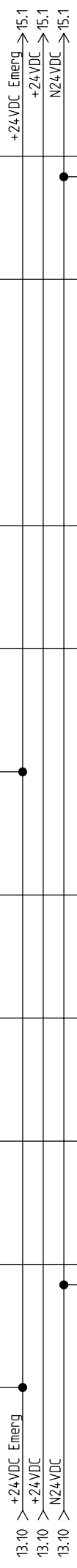
-13A1
FX1N-60MR-ES/UL

COM 3		Pawcut	Knife airmotor	Knife down	Tailknifes airmotors
Y4	Y5	Y6	Y7		

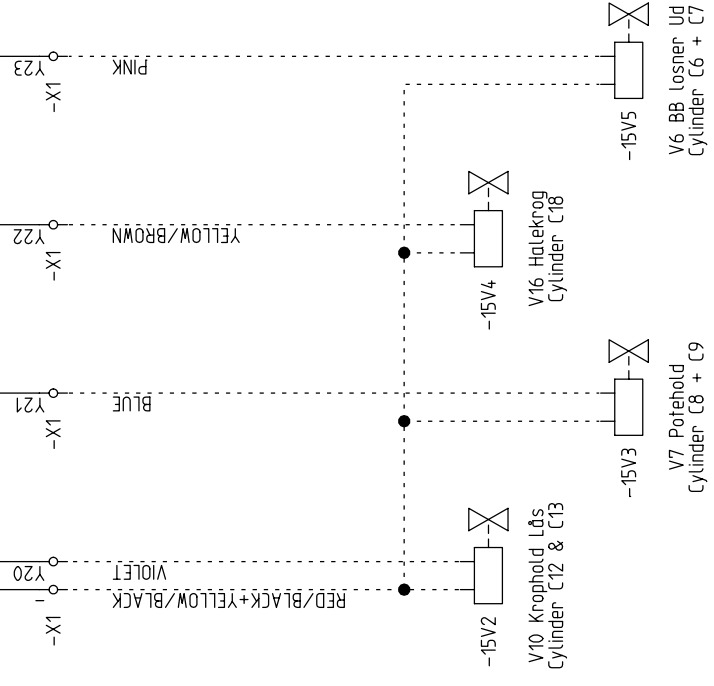
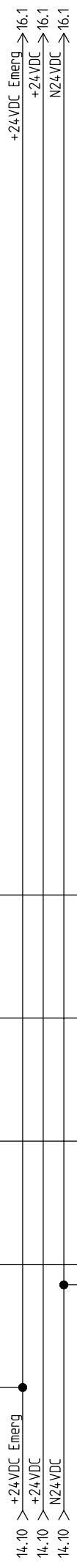
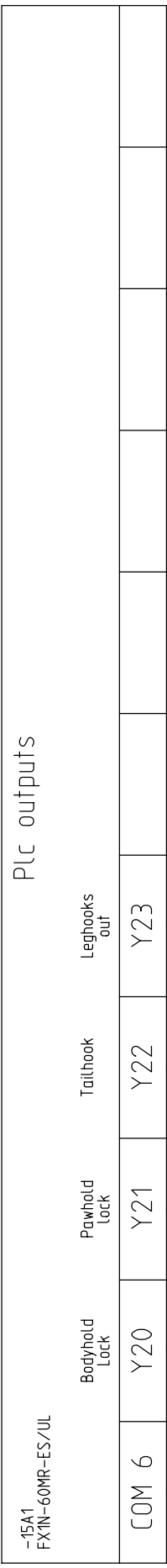


Plc outputs

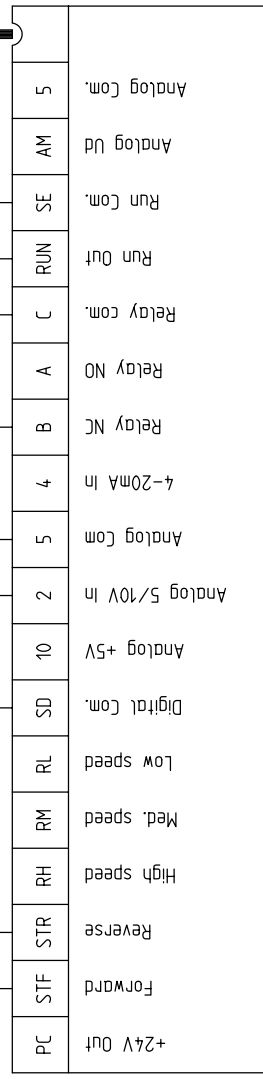
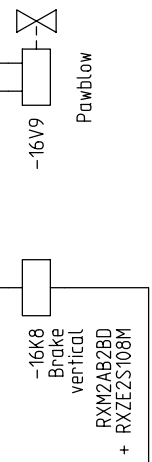
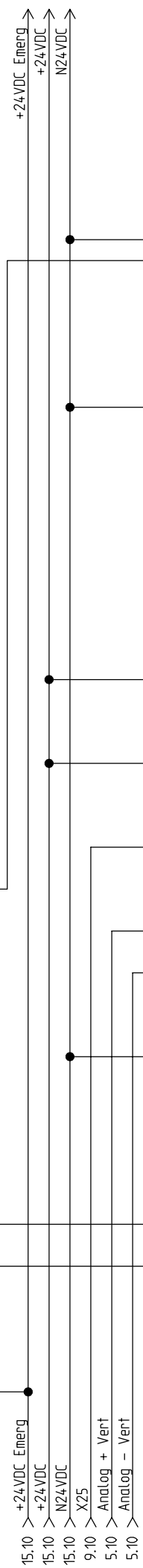
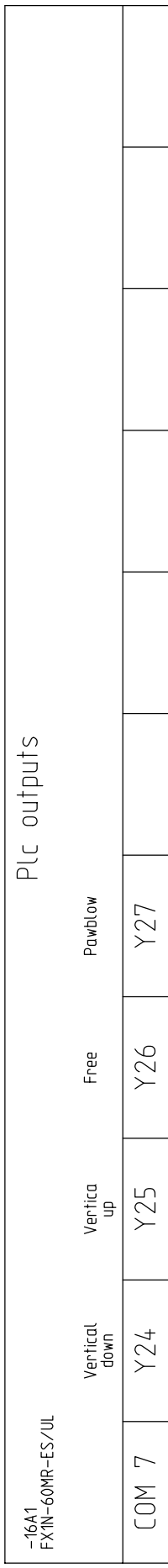
-14A1 FX1N-60MR-ES/UL		Tailrotter In		Spade down		pawcut down		COM 5		Stretchcylinder minus		Leghooks		Tailloosener down		Varning light vertical	
COM 4	Y10	Y11	Y12	Y13	Y14	Y15	Y16	Y17	Y17	Y16	Y15	Y14	Y13	Y12	Y11	Y10	Y17



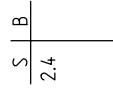
Plc outputs



Plc outputs



-2U3.2
Frequ.inverter
FR-S520SE-0.75-EC



Remove wires from main panel:

- From analog card 5A5 terminal V+ to inverter 2U3 terminal 2
- From analog card 5A5 terminal VI- to inverter 2U3 terminal 5
- Terminal blok, terminal 7 to inverter 3U3 terminal 10
- Terminal blok, terminal 6 to inverter 3U3 terminal 2
- Terminal blok, terminal 5 to inverter 3U3 terminal 5

Remove wires from operators panel:

- Terminal blok, terminal 7 to potentiometer
- Terminal blok, terminal 6 to potentiometer
- Terminal blok, terminal 5 to potentiometer

Remove potentiometer

Install blanking plug ZB5 SZ3

Install analog module: FX2N-2DA on right-hand side of PLC

Install wires in main panel:

- From analog module 5A6 terminal COM1 to analog module 5A6 terminal I-OUT1
- From analog module 5A6 terminal I-OUT1 to inverter 3U3.2 terminal 5
- From analog module 5A6 terminal V-OUT1 to inverter 3U3.2 terminal 2
- From analog module 5A6 terminal COM2 to analog module 5A6 terminal I-OUT2
- From analog module 5A6 terminal I-OUT2 to inverter 2U3.2 terminal 5
- From analog module 5A6 terminal V-OUT2 to inverter 2U3.2 terminal 2

Connect 2 wires from pawblow-valve to Y27 and N24.



Rewiring

Projektnavn:
Combi_Cut_2009_01_Pawblow

Næste Side:
 Opr: 09-01-1900

Printdato:
 Side nr.: **27**

Tegnet: KE
 Rettet: 10-09-2010
 Side af: **27**