

Softstart

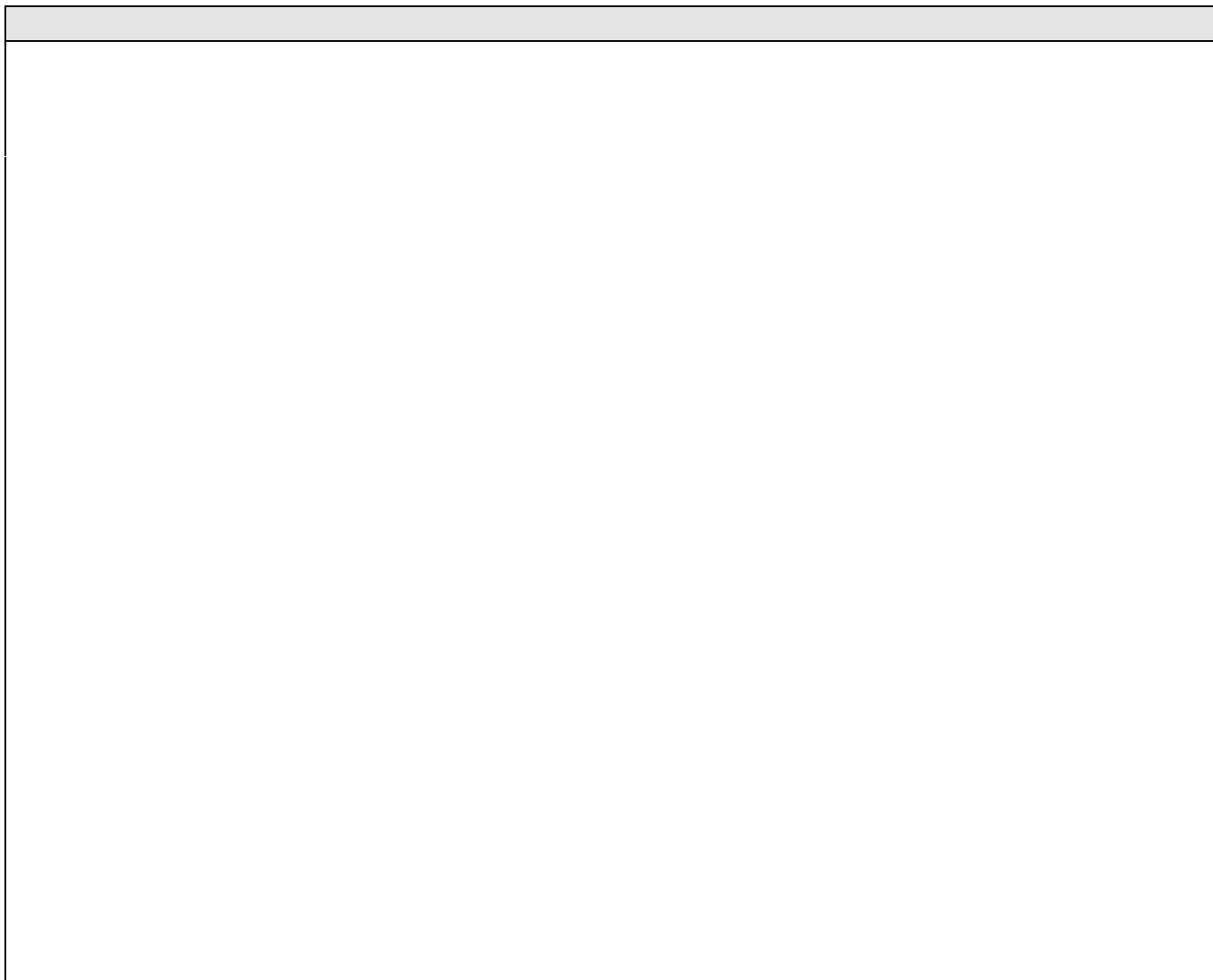
Diagram for softstarters

PS A18...60

PS D75...840

PS DH30...720

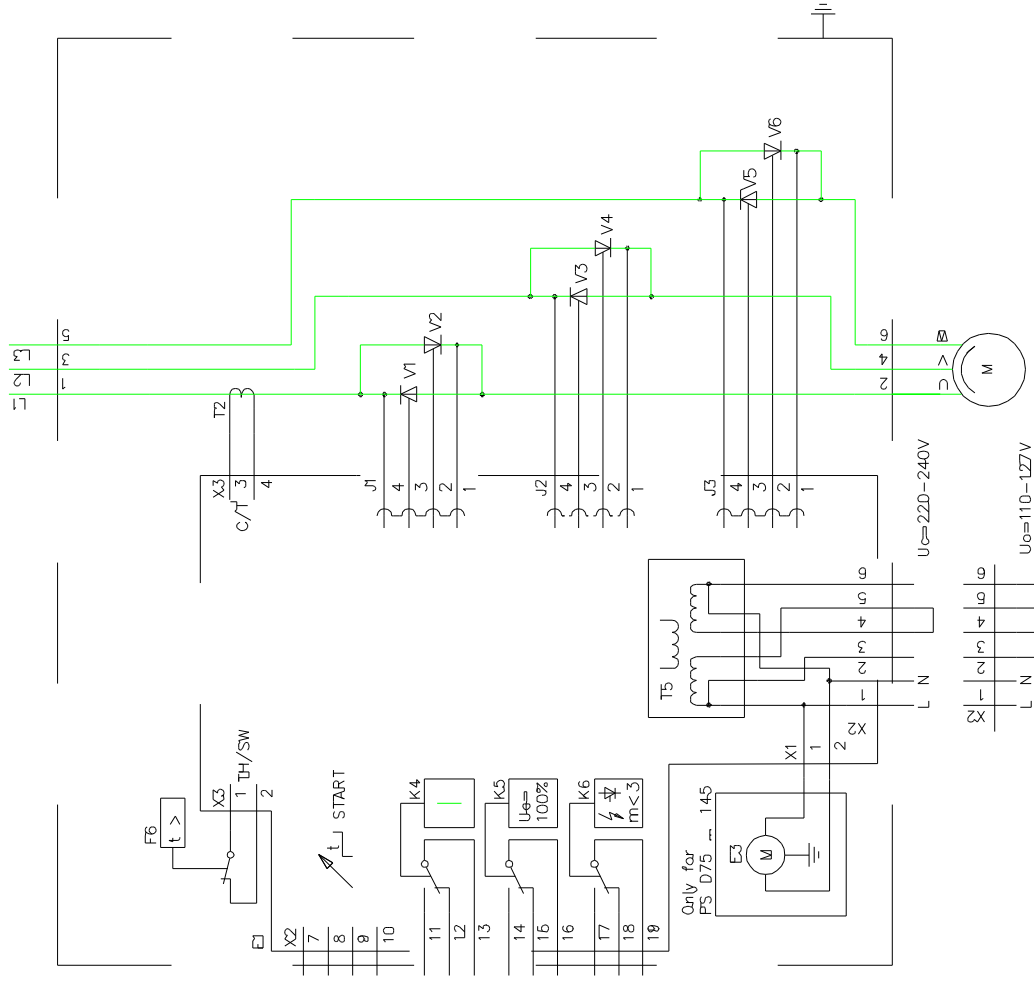
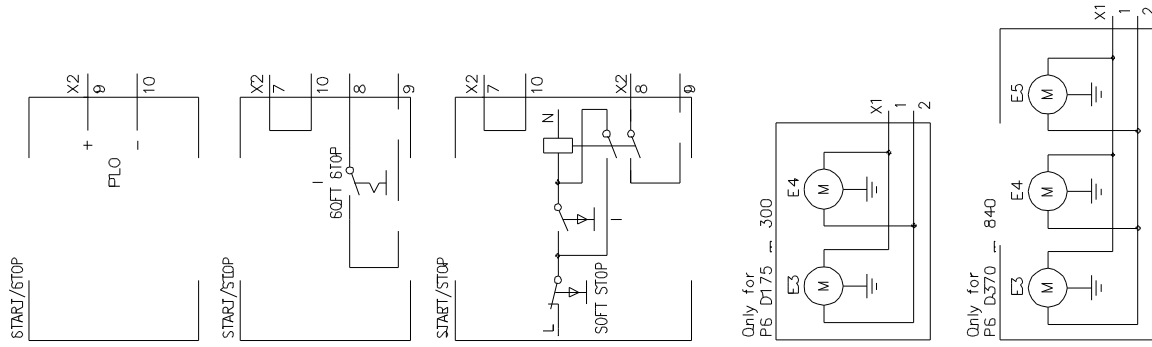
5309 698-1 Edition 4 Dec-01 (English)



STANDARD DIAGRAM

5366 104-1	PS A18...60	Standard.
5366 104-2	PS D75...840	Standard.
5366 104-3	PS D75...840	Standard.
	PS DH30...720	

Soft Starter PS D75...840 standard diagram.



- E1 - E5
- F6 - E5
- J1 - J3
- K4
- K5
- K6
- T2
- T5
- V1 - V6
- X1 - X3

- Circuit board
- Fan
- Temperature monitor
- Contact blocks
- Relay, actuated in operational position
- Relay, actuated at full voltage (U₀=100%)
- Relay, fault signal
- Current transformer
- Control transformer
- Thyristor
- Terminal block

ST04-2

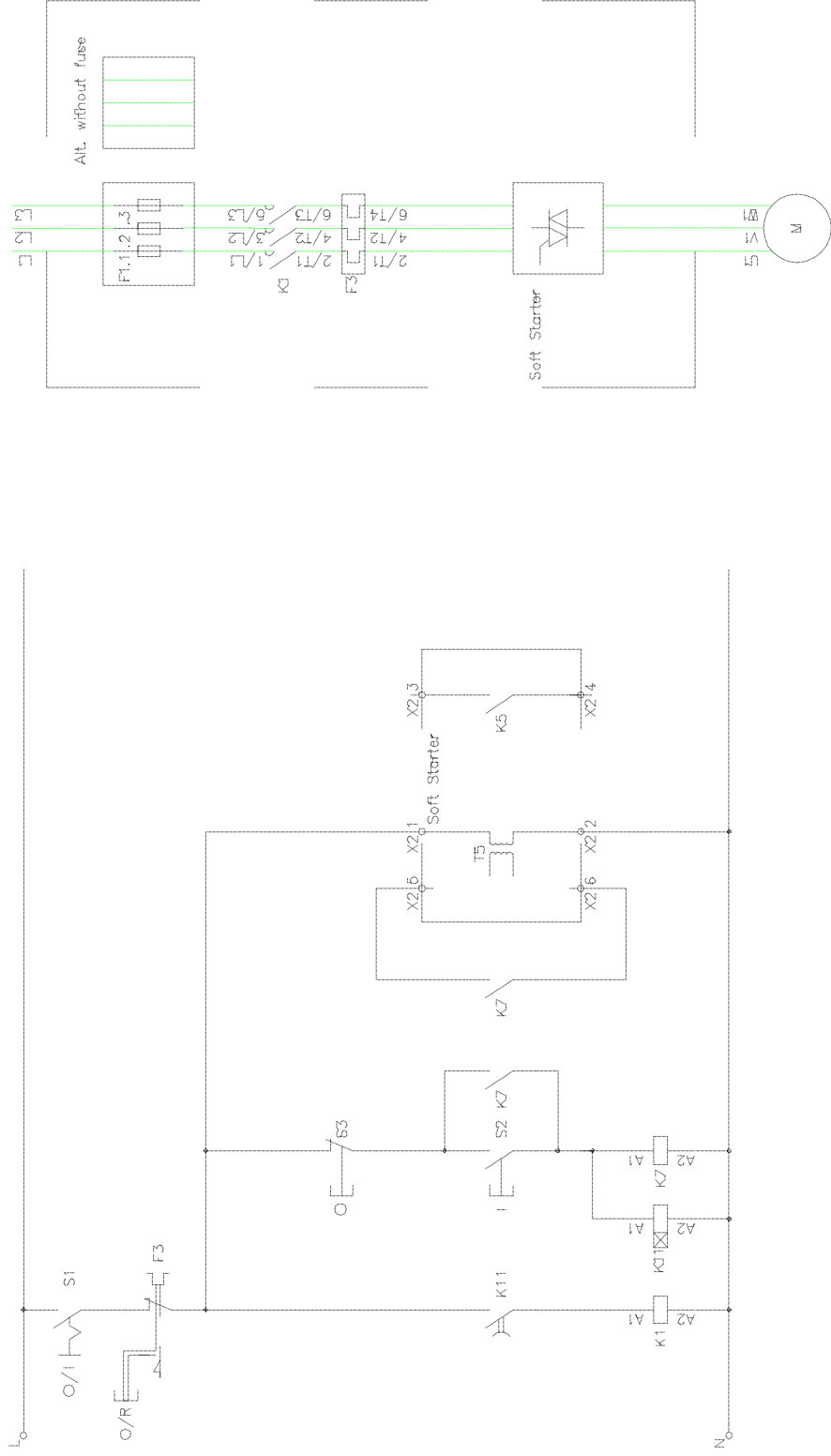
4	Approved	TP	95	07	Year	1995	Week	07
	Rev. int.	Appl.			Year		Week	
Design checked by T. PERSSON Drawing checked by T. PERSSON Drawn by TP								
Circuit diagram SOFT STARTERS MJKSTARTARE								
ABB Control								
Iss. by Dept. Sec. No. / Rev. No. / Part No. / Year / Week / No. of Sheets / Total No. of Sheets								
5366 104-2								
ISSUED								
Rev. int. Sheet. / Logg. Sheet. / Rev. int. Cont. / Total Cont.								
4 / 4 / 4 / 4								

APPLICATION DIAGRAM

5366 105-1	PS A18...60	With motor protection and softstop.
5366 105-2	PS D75...300	With motor protection and softstop.
5366 105-3	PS D370...840	With motor protection and softstop.
5366 105-4	PS D75...300	With motor protection and softstop.
	PS DH30...250	
5366 105-5	PS D370...840	With motor protection and softstop.
	PS DH300...720	
5366 105-6	PS A18...60	With softstop and By-pass.
5366 105-7	PS D75...300	With softstop and By-pass.
5366 105-8	PS D370...840	With softstop and By-pass.
5366 105-9	PS D75...145	With softstop and By-pass.
	PS DH30...110	
5366 105-10	PS D175...300	With softstop and By-pass.
	PS DH145...250	The internal overload relay is working also together with By-pass.
5366 105-11	PS D370...840	With softstop and By-pass.
	PS DH300...720	The internal overload relay is working also together with By-pass.
5366 105-12	PS A18...60	With motor protection, softstop and By-pass.
5366 105-13	PS D75...300	With motor protection, softstop and By-pass.
5366 105-14	PS D370...840	With motor protection, softstop and By-pass.
5366 105-15	PS D75...145	With motor protection, softstop and By-pass.
	PS DH30...110	
5366 105-16	PS D175...300	With motor protection, softstop and By-pass.
	PS DH145...250	The internal overload relay is working also together with By-pass.
5366 105-17	PS D370...840	With motor protection, softstop and By-pass.
	PS DH300...720	The internal overload relay is working also together with By-pass.
5366 105-18	PS A18...60	With reversing and softstop.
5366 105-19	PS D75...300	With reversing and softstop.
5366 105-20	PS D370...840	With reversing and softstop.
5366 105-21	PS D75...840	With reversing and softstop.
	PS DH30...720	
5366 105-22	PS A18...60	With reversing, By-pass and softstop.
5366 105-23	PS D75...300	With reversing, By-pass and softstop.
5366 105-24	PS D370...840	With reversing, By-pass and softstop.
5366 105-25	PS D75...145	With reversing, By-pass and softstop.
	PS DH30...110	
5366 105-26	PS D175...300	With reversing, By-pass and softstop.
	PS DH145...250	The internal overload relay is working also together with By-pass.
5366 105-27	PS D370...840	With reversing, By-pass and softstop.
	PS DH300...720	The internal overload relay is working also together with By-pass.

5366 105-28	PS A18...60	With pole-changing and softstop. For motor with two winding.
5366 105-29	PS D75...300	With pole-changing and softstop. For motor with two winding.
5366 105-30	PS D370...840	With pole-changing and softstop. For motor with two winding.
5366 105-31	PS A18...60	With pole-changing, By-pass and softstop. For motor with two winding.
5366 105-32	PS D75...300	With pole-changing, By-pass and softstop. For motor with two winding.
5366 105-33	PS D370...840	With pole-changing, By-pass and softstop. For motor with two winding.
5366 105-34	PS A18...60	With pole-changing and softstop.
5366 105-35	PS D75...300	For motor with one winding (Dallander). With pole-changing and softstop.
5366 105-36	PS D370...840	For motor with one winding (Dallander). With pole-changing and softstop.
5366 105-37	PS A18...60	For motor with one winding (Dallander). With pole-changing, By-pass and softstop.
5366 105-38	PS D75...300	For motor with one winding (Dallander). With pole-changing, By-pass and softstop.
5366 105-39	PS D370...840	For motor with one winding (Dallander). With pole-changing, By-pass and softstop.

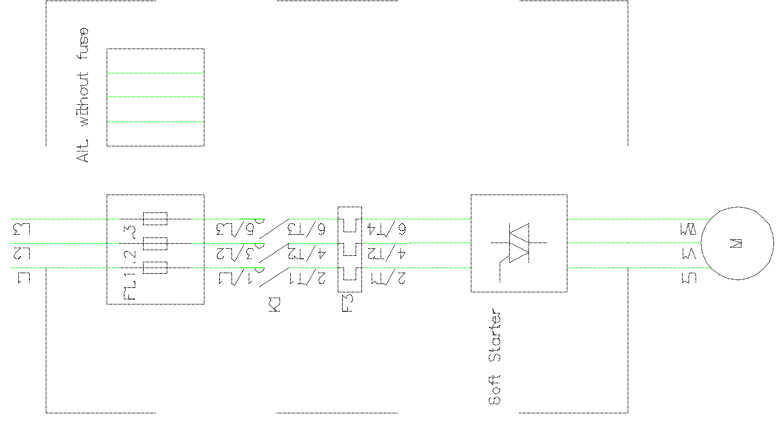
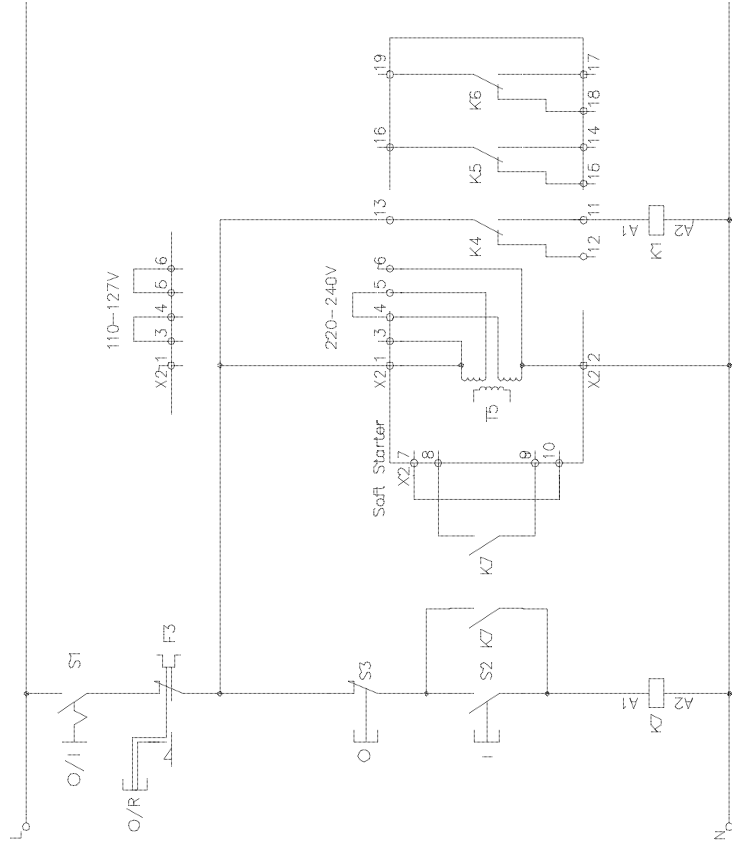
Soft Starter PS A18...60 with motor protection and softstop.
 Main contactor open during pause



A105-1

APPLICATION DIAGRAM		ISSUED	
Soft Starter		82	
Mjukstare		5366 105-1	
T Persson		SECUR/B06 B05	
T Persson		1	
TP		1	
1 K11 Insert and fuse moved		1	
TP: 06 40		1	
App: Yar		1	
Desk: Yar		1	

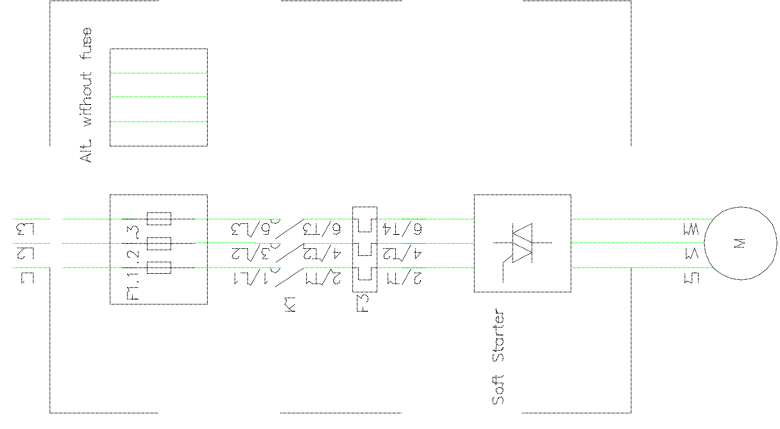
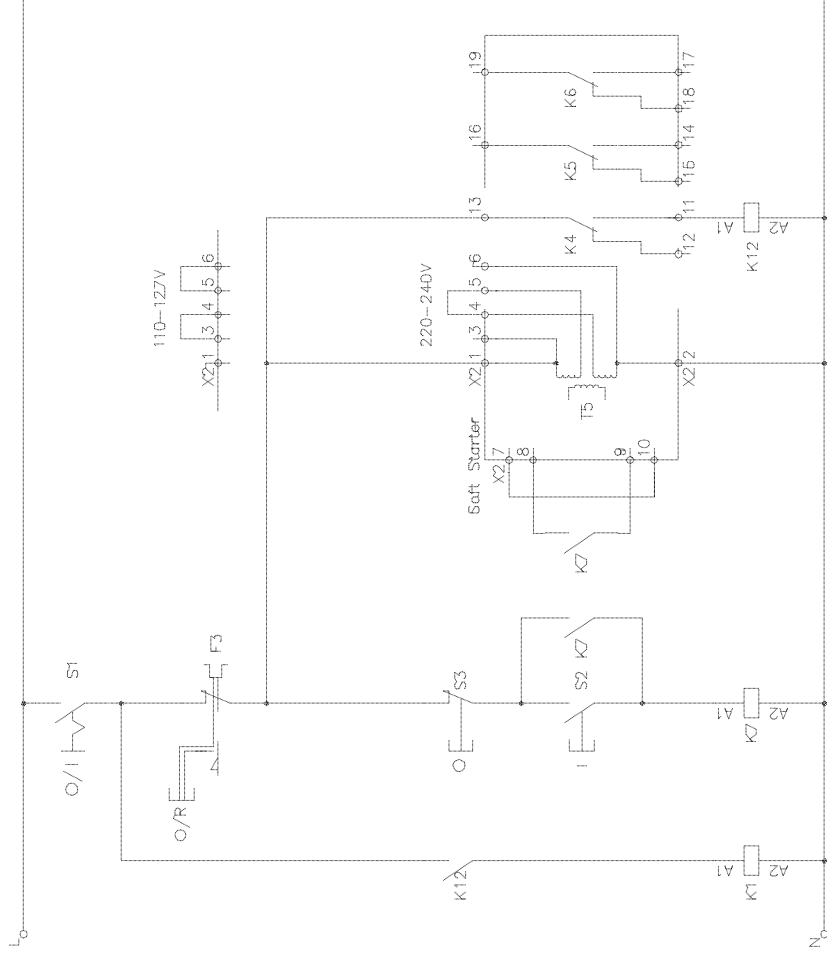
Soft Starter PS D75...300 with motor protection and softstop.
 Main contactor open during pause



A105-2

Design checked by T. PERSSON		APPLICATION DIAGRAM Soft Starter Mjokstortare		Rev. no. Sheet 82 1	
Drawing checked by T. PERSSON		ABB ABB Control		5366 105-2	
Drawn by TP		Iss. by Dept. SECUR/BB		Rev. no. Cont. 1 1	
Appr. Year TP 06 40		Year Week 05 05		ISSUED	
Rev. no.		Year		Week	

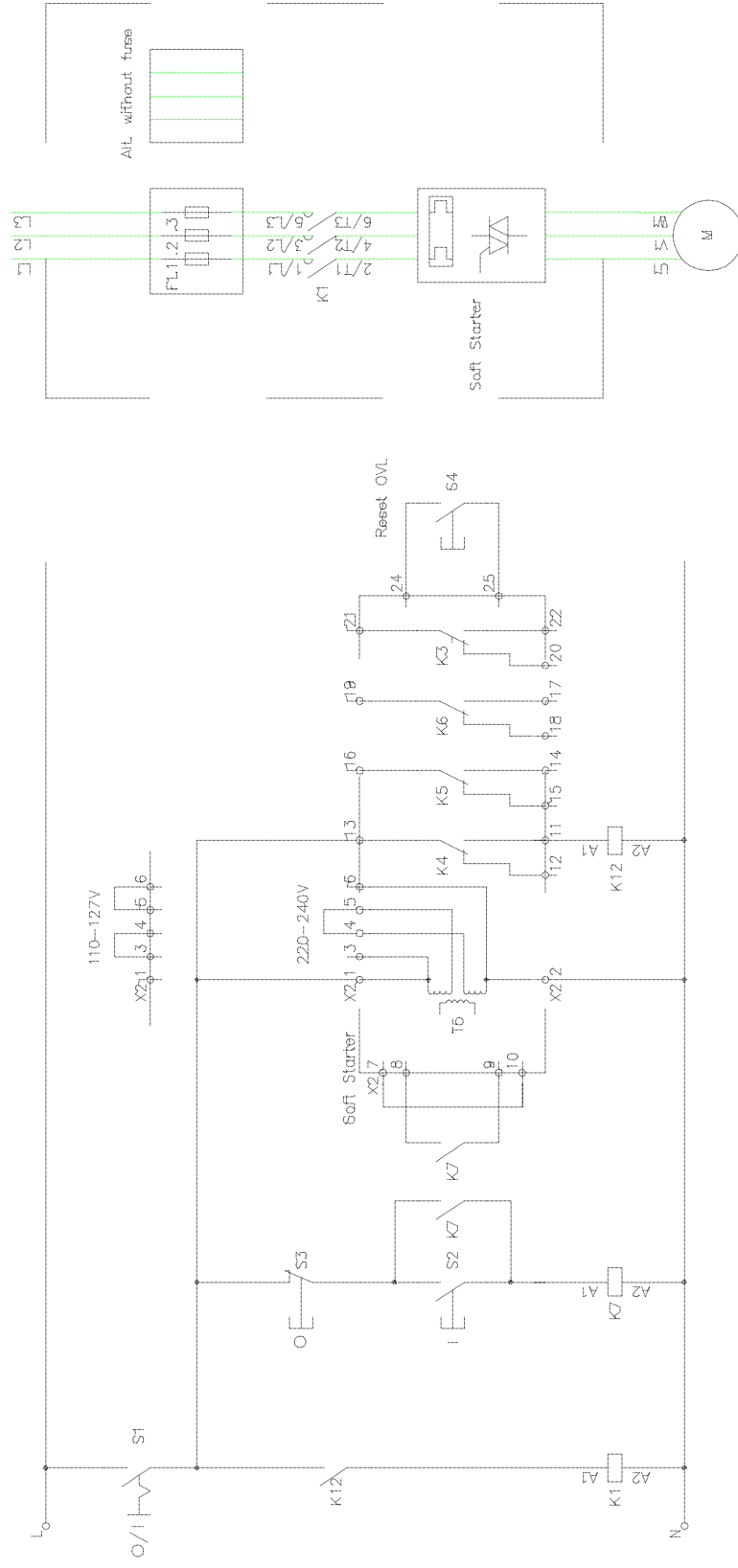
Soft Starter PS D370...840 with motor protection and softstop.
 Main contactor onen during pause



AI05-3

5366 105-3		82	1
ISSUED		1	...
SECUR/B00 B05			
APPLICATION DIAGRAM			
Soft Starter			
Mjakstartare			
T Perissaa			
T Perissaa			
TP			
Rev: int		TP: 06	40
		App: int	Rev: int

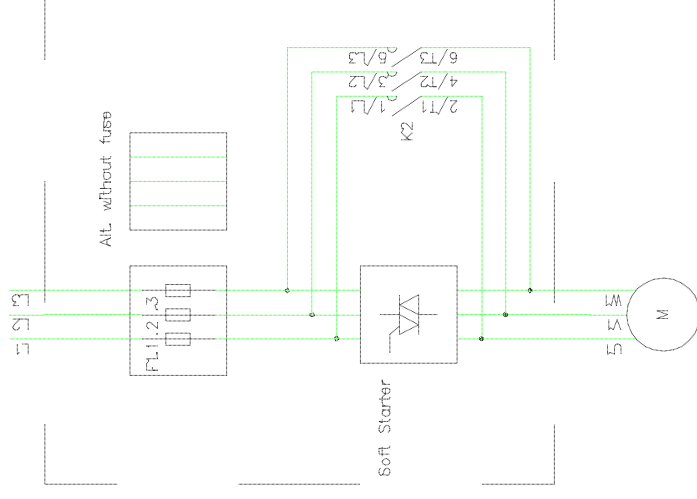
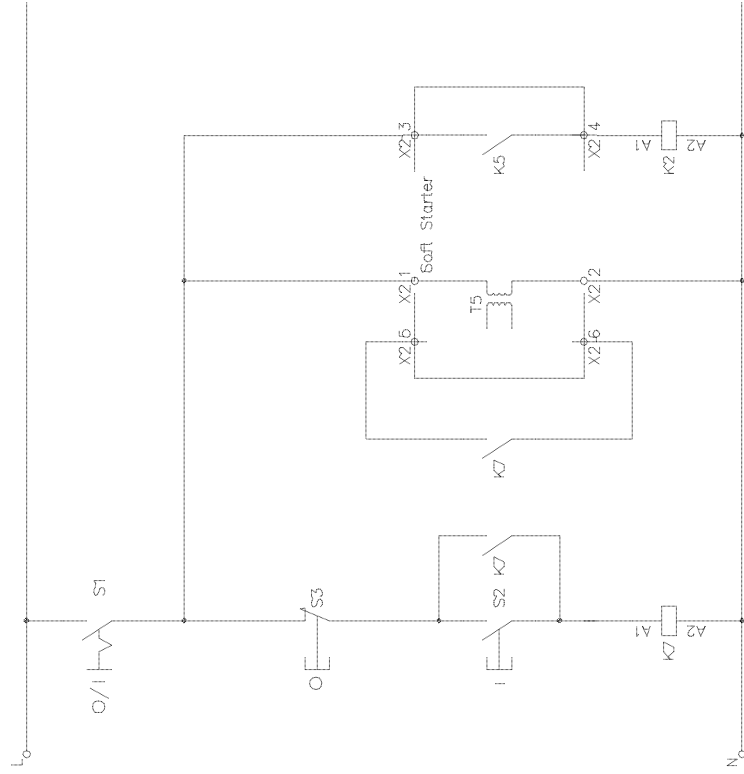
Soft Starter PS D370...840, PS DH300...720 with motor protection and softstop.
 Main contactor open during pause



A105-6

Rev. no		Date		Description		Issued	
2	K12 Insert and fuse moved	TP	06	40			
1	Adjusted	TP	06	09			
		Appd	Yarr	Week			
Design checked by I. Persson		Application Diagram		Soft Starter		Mjukstare	
Drawing checked by I. Persson		ABB Control		Secur/BQ		05	
Drawn by TP		5366 105-5		Long Sheet		1	
		ISSUED		Rev. no		2	
				Cont.		...	

Soft Starter PS A18...60 with softstop and By-pass.

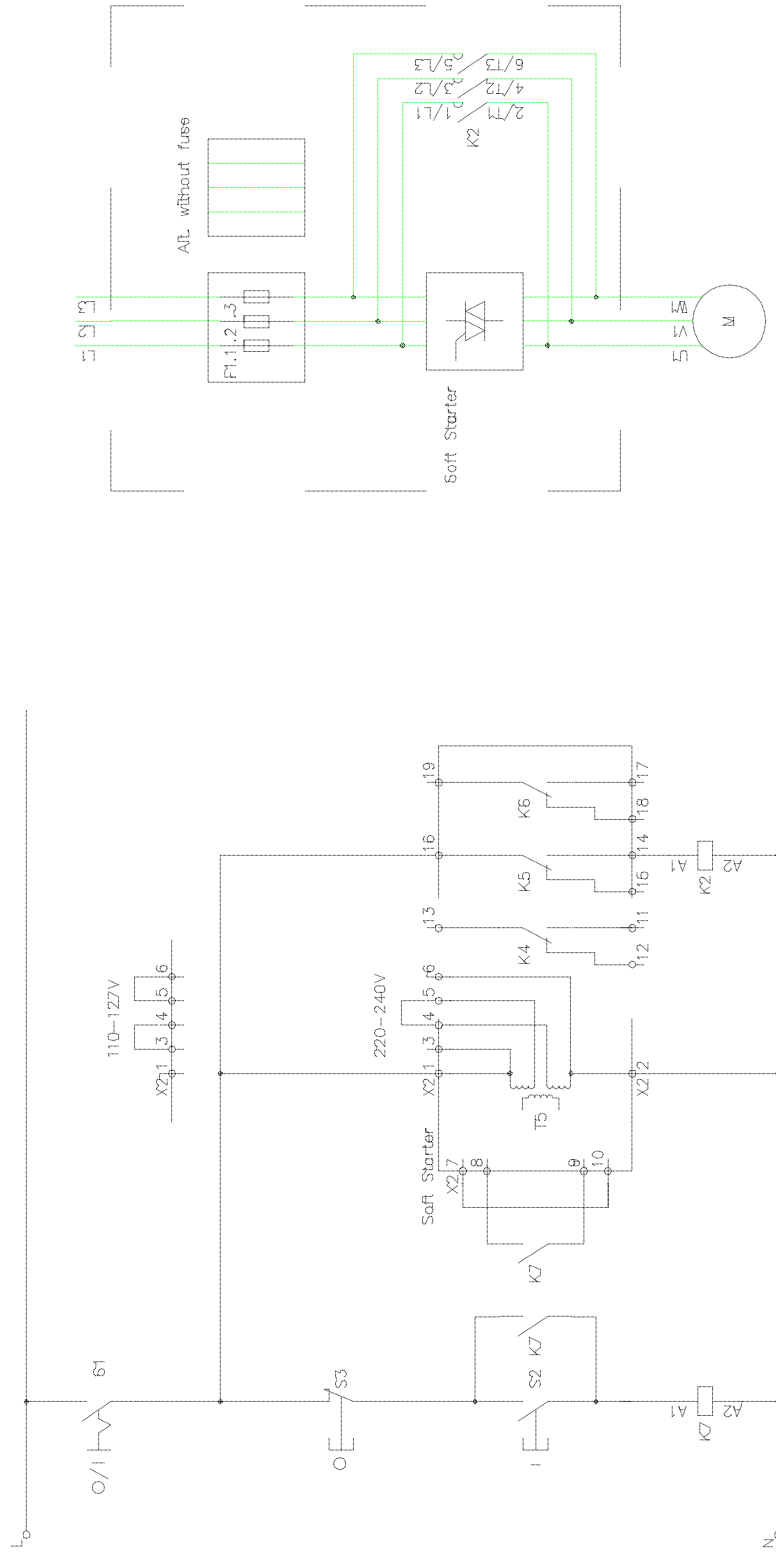


A105-6

APPLICATION DIAGRAM		SECUR/80 06 05	
I Perissos	Soft Starter	82	1
I Perissos	Mjuketartare	5366 105-6	1
TP		ISSUED	...

1 Fuses moved
 TP 86 40
 Appl Xor 10x6

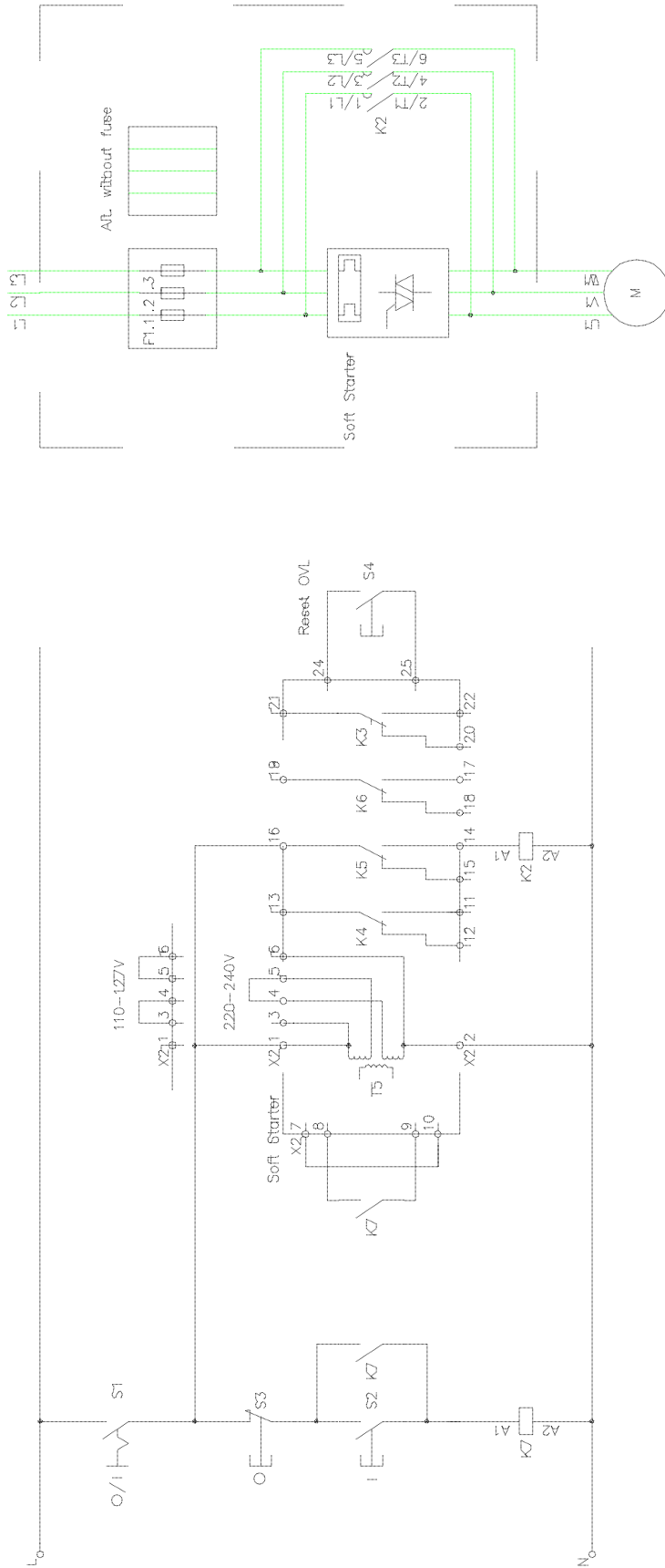
Soft Starter PS D75...300 with softstop and By-pass.



A105-7

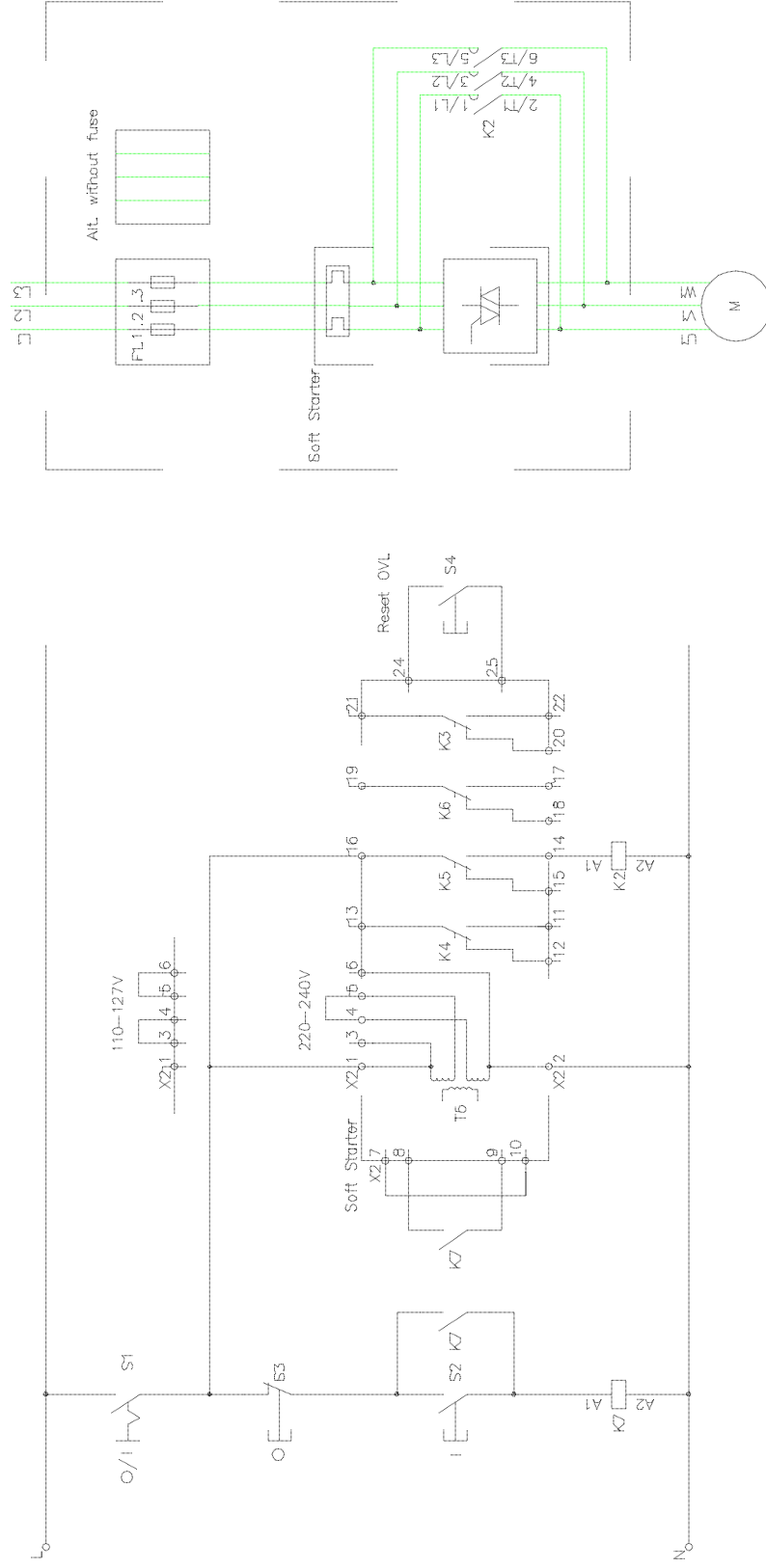
APPLICATION DIAGRAM		SECUR/80 06 05		ISSUED	1	...
Soft Starter		Mjpkstartare		5366 105-7	82	1
I Pensjon		TP				
I Pensjon		TP				
TP		TP				
1 Fuses moved		TP 86 40				
Rev int		Appt Xor Work				

Soft Starter PS D75...145, PS DH30...110 with softstop and By-pass.



Rev. no.		Date		Issued		5366 105-9		Rev. no.		Date		Issued			
2	Fuses moved	TP	86	40					2						
1	Adjusted	TP	86	08					1						
Rev. no.		Appd.		Year		Week		Rev. no.		Date		Issued			
		TP		86		08									
Design checked by				APPLICATION DIAGRAM				Rev. no.				Date			
I. Persson				Soft Starter				A105-9				2008-08-05			
Drawing checked by				Soft Starter				5366 105-9				2008-08-05			
I. Persson				Mjukartare				ISSUED				2008-08-05			
Drawn by				ABB Control				5366 105-9				2008-08-05			
TP				ABB				ISSUED				2008-08-05			

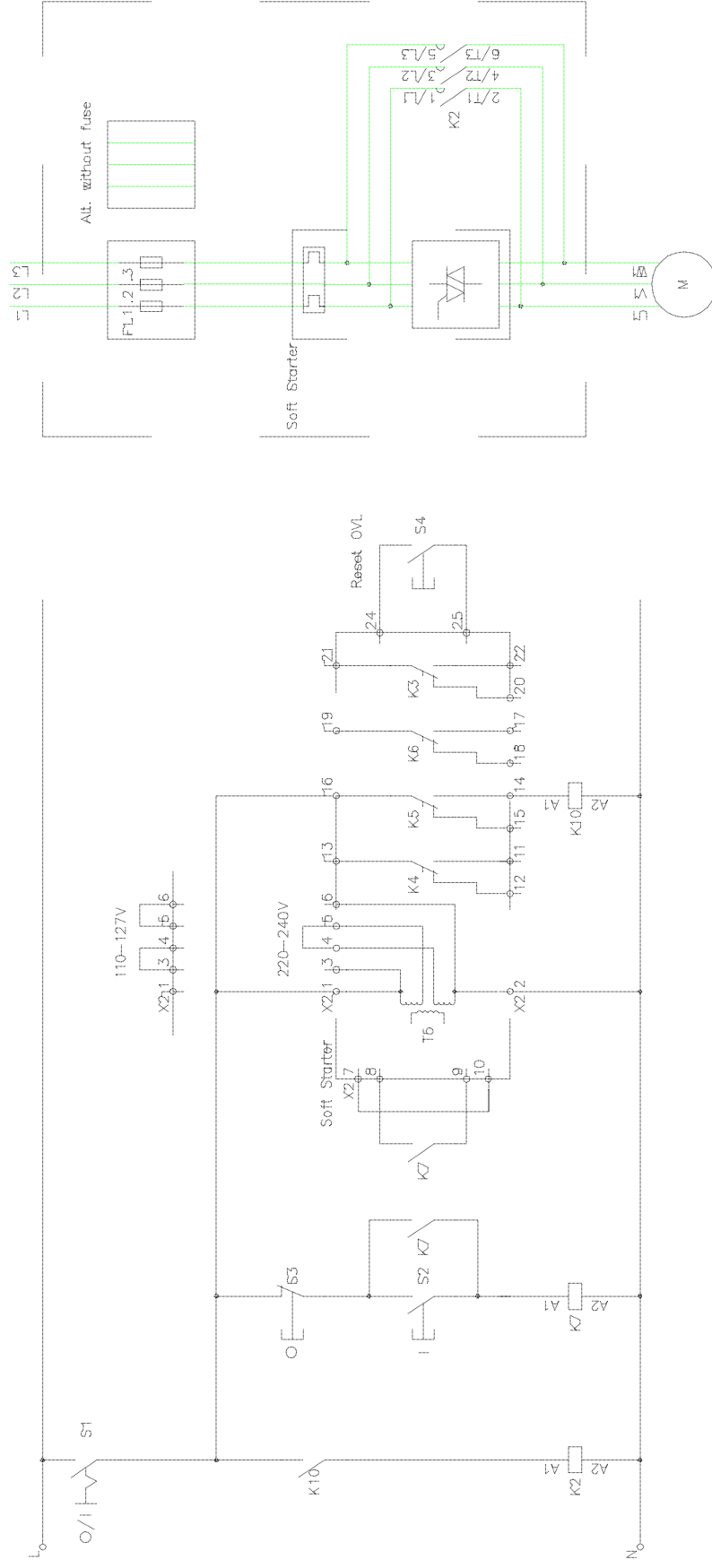
Soft Starter PS D175...300, PS DH145...250 with softstop and By-pass.
 The internal overload relay is working also together with By-pass.



A105-10

		APPLICATION DIAGRAM		ISSUED	
		Soft Starter		82	
		Mjukstartare		2	
		SECORL/80 06 05		5366 105-10	
2	KT0 removed	TP	06 40		1
1	Adjusted	TP	06 09		...
Rev. int.		Appl.	Year	Week	

Soft Starter PS D370...840, PS DH300...720 with softstop and By-pass.
 The internal overload relay is working also together with By-pass.



A105-11

Rev. no.	Appd.	Year	Week	Issued	Rev. no.	Appd.	Year	Week	Issued
2	TP	86	40						
1	TP	86	08						

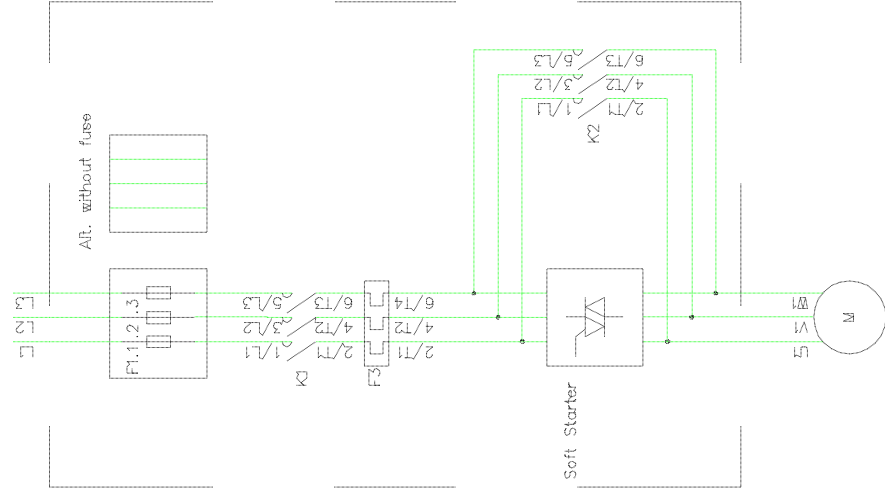
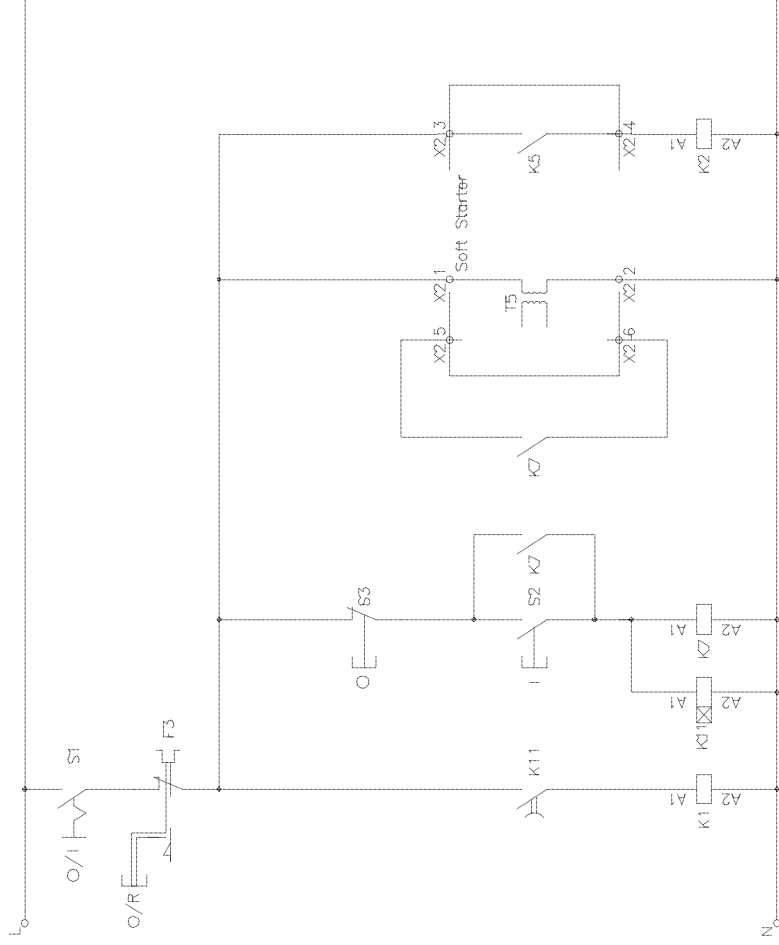
Design checked by		Year		Week	
I. Persson		86		05	
Drawing checked by		Year		Week	
I. Persson		86		05	
Drawn by		Year		Week	
TP		86		05	

APPLICATION DIAGRAM	
Soft Starter	Mikstartare
ABB Control	

Rev. no.	Long	Rev. no.	Cont.
2	82	1	...
1	82	1	...

5366 105-11	
-------------	--

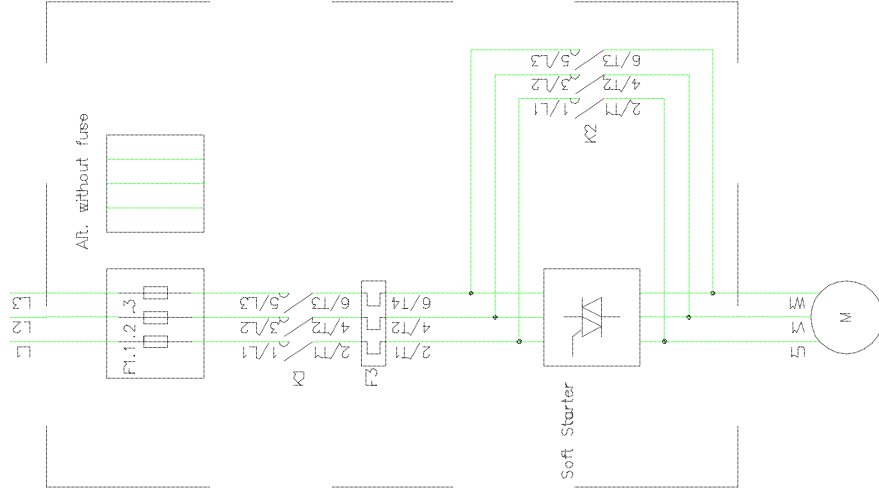
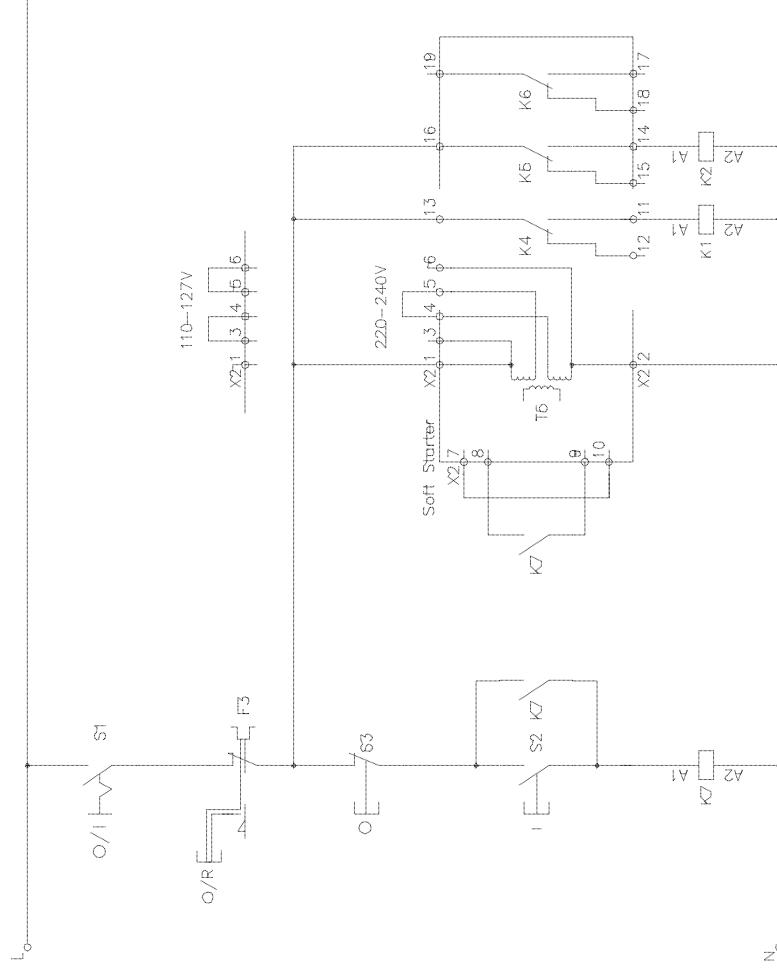
Soft Starter PS A18...60 with motor protection, softstop and By-pass.
 Main contactor open during pause



A105-12

Rev	Int	Sheet	5366 105-12	Issued	1	...
1	Redrains	TP	86 40	Appt	Year	Week
Design checked by I. Persson			APPLICATION DIAGRAM			
Drawing checked by I. Persson			Soft Starter			
Drawn by TP			Mjukstartare			
			ABB Control			
			let by Dept. Year Week			
			SECUR/80 06 05			

Soft Starter PS D75...300 with motor protection, softstart and By-pass.
 Main contactor open during pause



AJ05-13

APPLICATION DIAGRAM
 Soft Starter
 Mjukstartare

I Persson
 I Persson
 TP

1 K10 removed, K1, K2 and fuses moved
 TP 06 40
 Appl Year Week

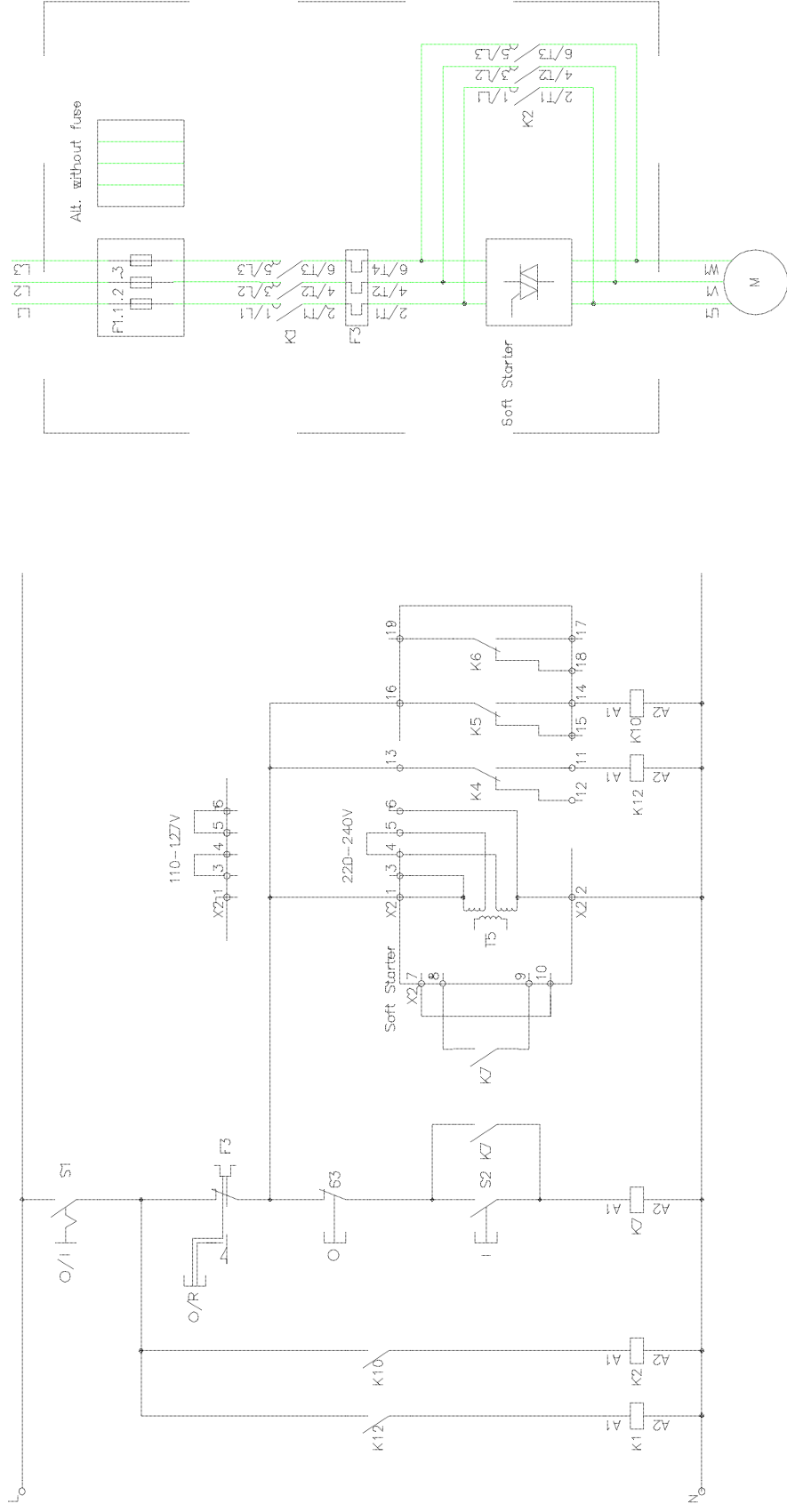
SECUR/80 06 05
 ISSUED

5366 105-13

82 1

1

Soft Starter PS D370...840 with motor protection, softstop and By-pass.
 Main contactor open during pause



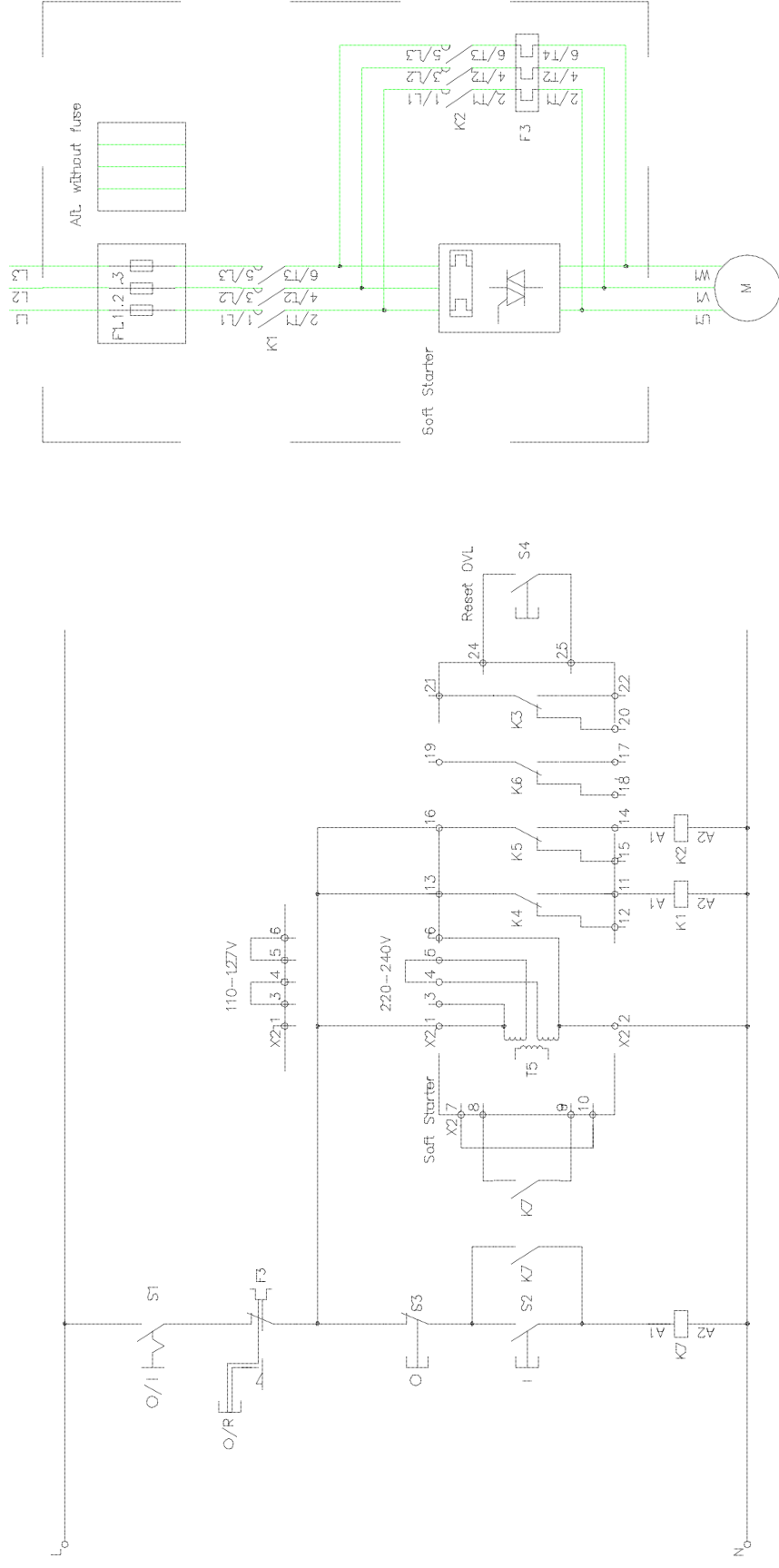
A105-14

APPLICATION DIAGRAM		SECUR/80 06 05	
I Pensson	Soft Starter	82	1
I Pensson	Mjpkstartare	5366 105-14	1
TP		ISSUED	...

1 K12 fasett and fuses moved

Rev: ut Appl: 06 40 Year: 05

Soft Starter PS D75...145, PS DH30...110 with motor protection, softstop and By-pass.
 Main contactor open during pause



A105-15

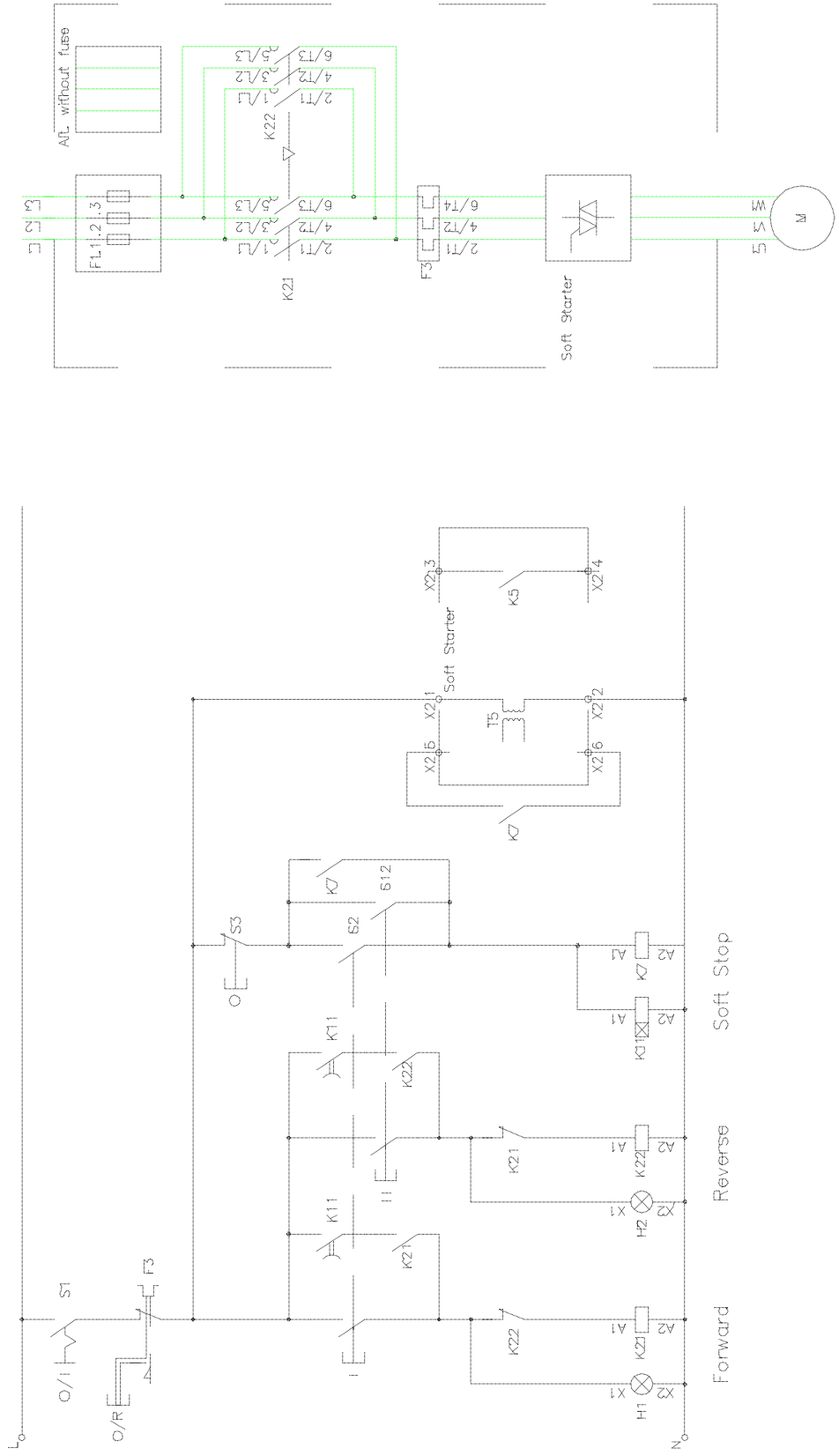
Rev int	2	Issued	5366 105-15	Rev int Sheet	2
2	K1 and fuses moved	TP		Long Sheet	1
1	Adjusted	TP		Rev int Cont.	...
Rev int	Appd	Year	Week	Issued by	TP
Design checked by I. Persson			APPLICATION DIAGRAM Soft Starter Mjukstartare		
Drawing checked by I. Persson			Rev int Sheet		
Drawn by TP			Issued by ISS/ED		
Created by TP			Rev int Sheet		
Checked by TP			Rev int Sheet		
Approved by TP			Rev int Sheet		
Date 08/08/06			Rev int Sheet		
Version 01			Rev int Sheet		
Project 5366 105-15			Rev int Sheet		
Client ABB Control			Rev int Sheet		
Scale 1:1			Rev int Sheet		
Notes See by Dept. Year Week STCRL/80 06 05			Rev int Sheet		

Soft Starter PS A18...60 with reversing and softstop.

To be stopped before reversing.

Start at optional direction.

If softstop is not needed set the time for softstop to 0.5.



A105-18

APPLICATION DIAGRAM

Soft Starter
Mjakstartare

I Persson

I Persson

TP

Rev. nr	Appl.	Year	Issue
2	Revised	96	42
1	Adjusted	96	10

SECUR/80 06 05 ISSUED

5366 105-18

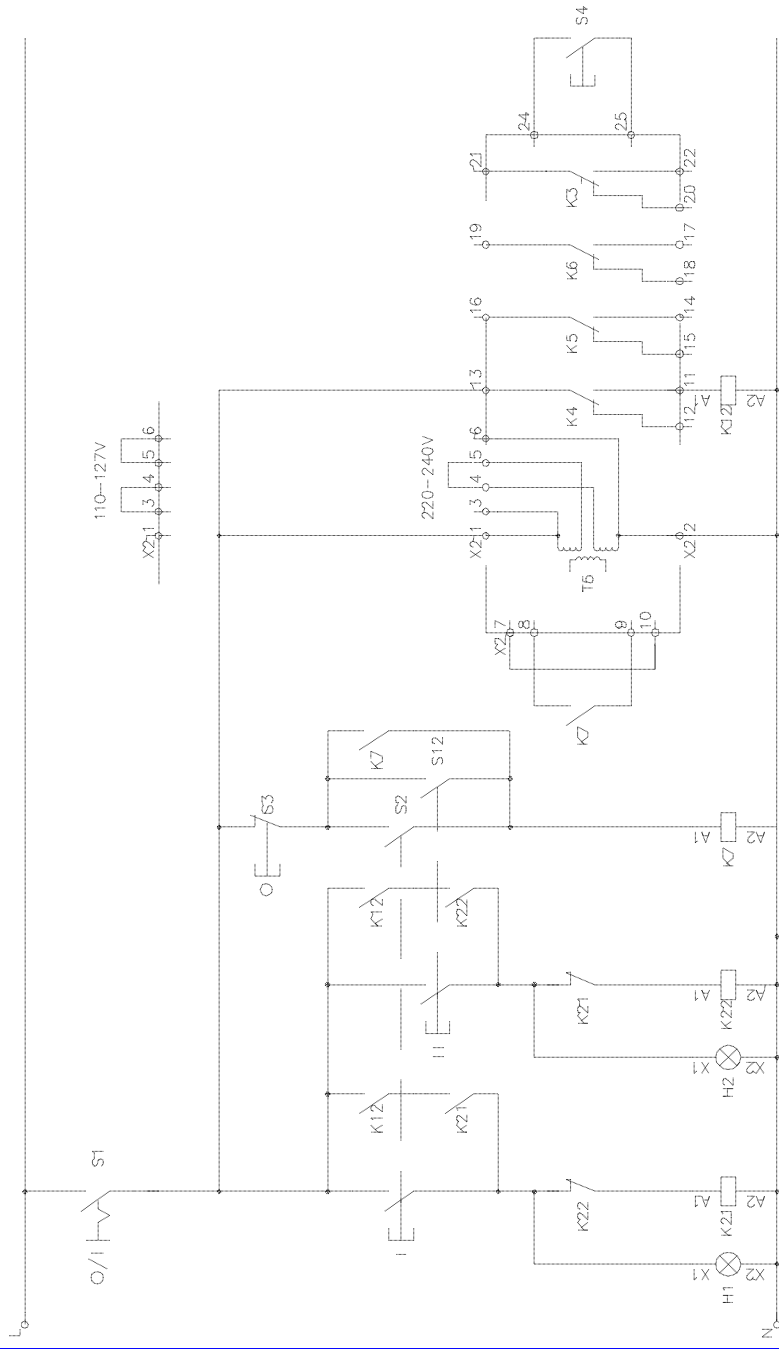
82	1
2	...

Soft Starter PS D75...840, PS DH30...720 with reversing and softstop.

To be stopped before reversing.

Start at optional direction.

If softstop is not needed set the time for softstop to 0.5.

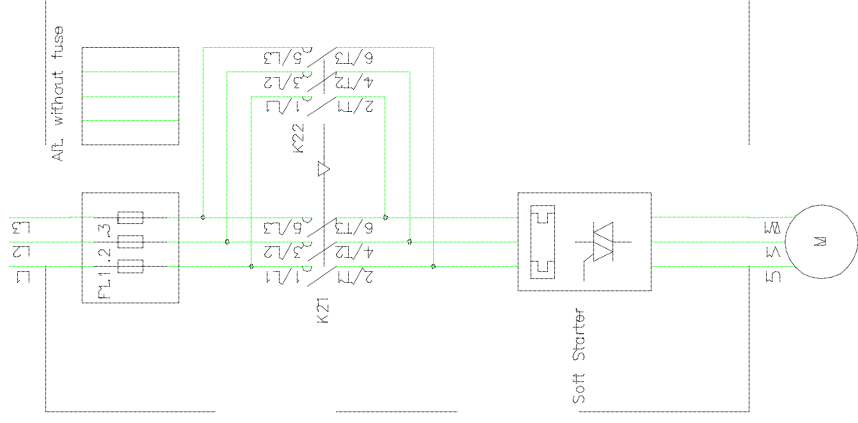


Reset OVL

Soft Stop

Reverse

Forward



A105-21

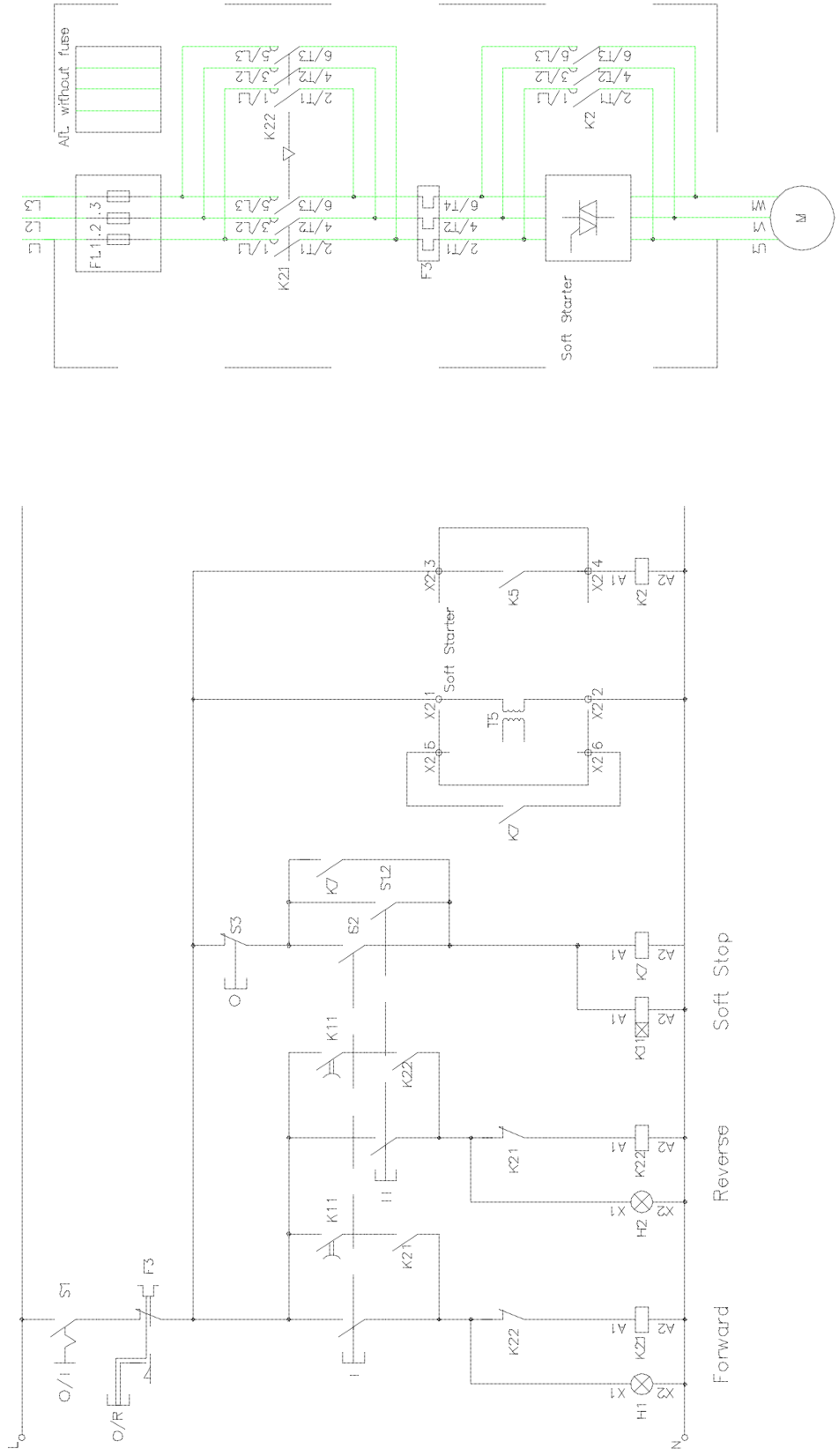
I Persson		APPLICATION DIAGRAM		ISSUED	
I Persson		Soft Starter		82	
TP		Mjukstartare		1	
1		Reviderad		5366 105-21	
Rev ut		Appl		1	
		Year		05	
		Week		06	
		SECUR/80		05	

Soft Starter PS A18...60 with reversing, By-pass and softstop.

To be stopped before reversing.

Start at optional direction.

If softstop is not needed set the time for softstop to 0.5.



A105-22

APPLICATION DIAGRAM

Soft Starter
Mjakstartare

T Perisson

T Perisson

TP

5366 105-22

ISSUED

SECRL/80 06 05

82

1

2

...

TP 96 42

TP 96 10

Appt Year Week

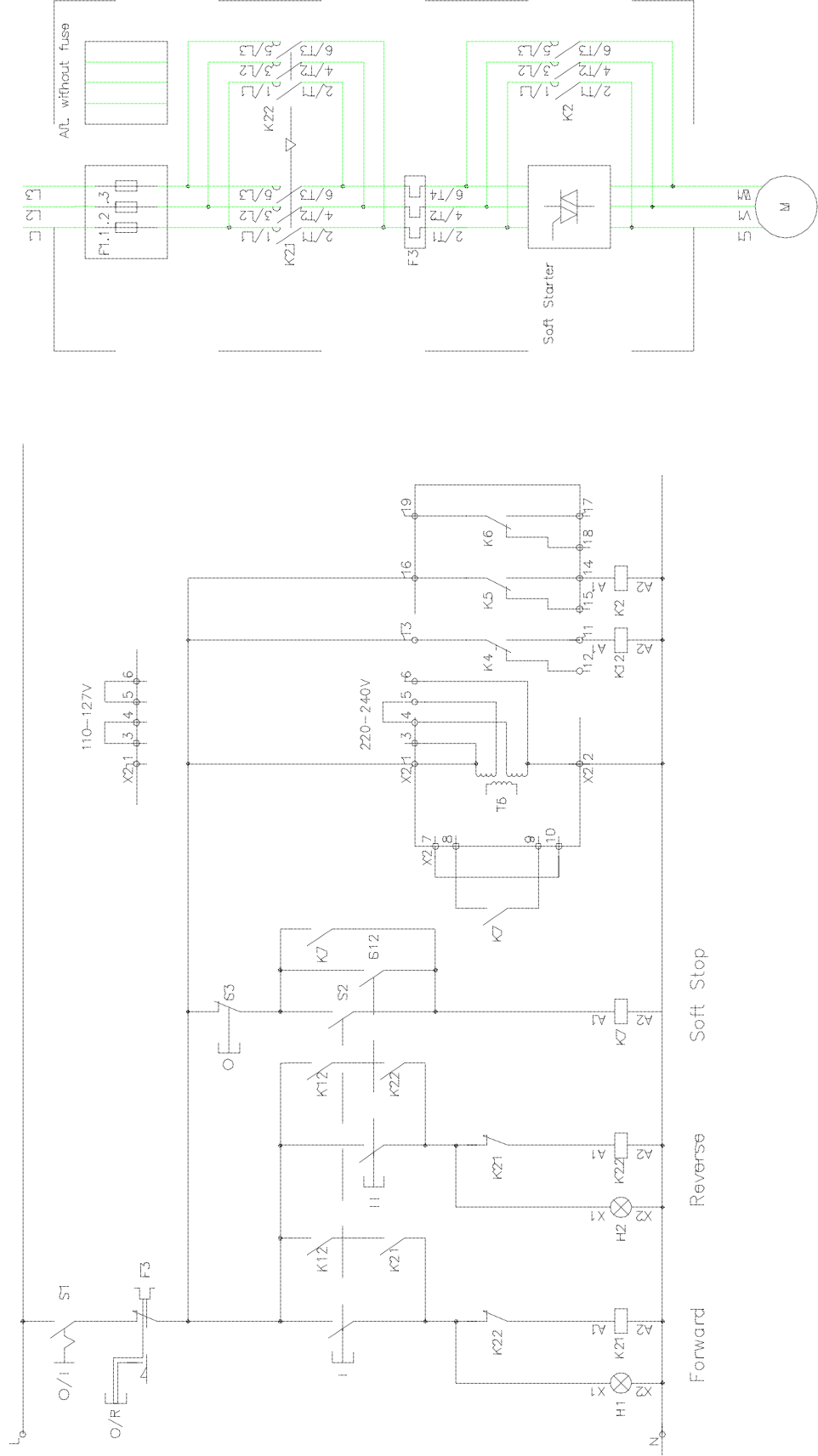
2

1

Adjusted

Rev int

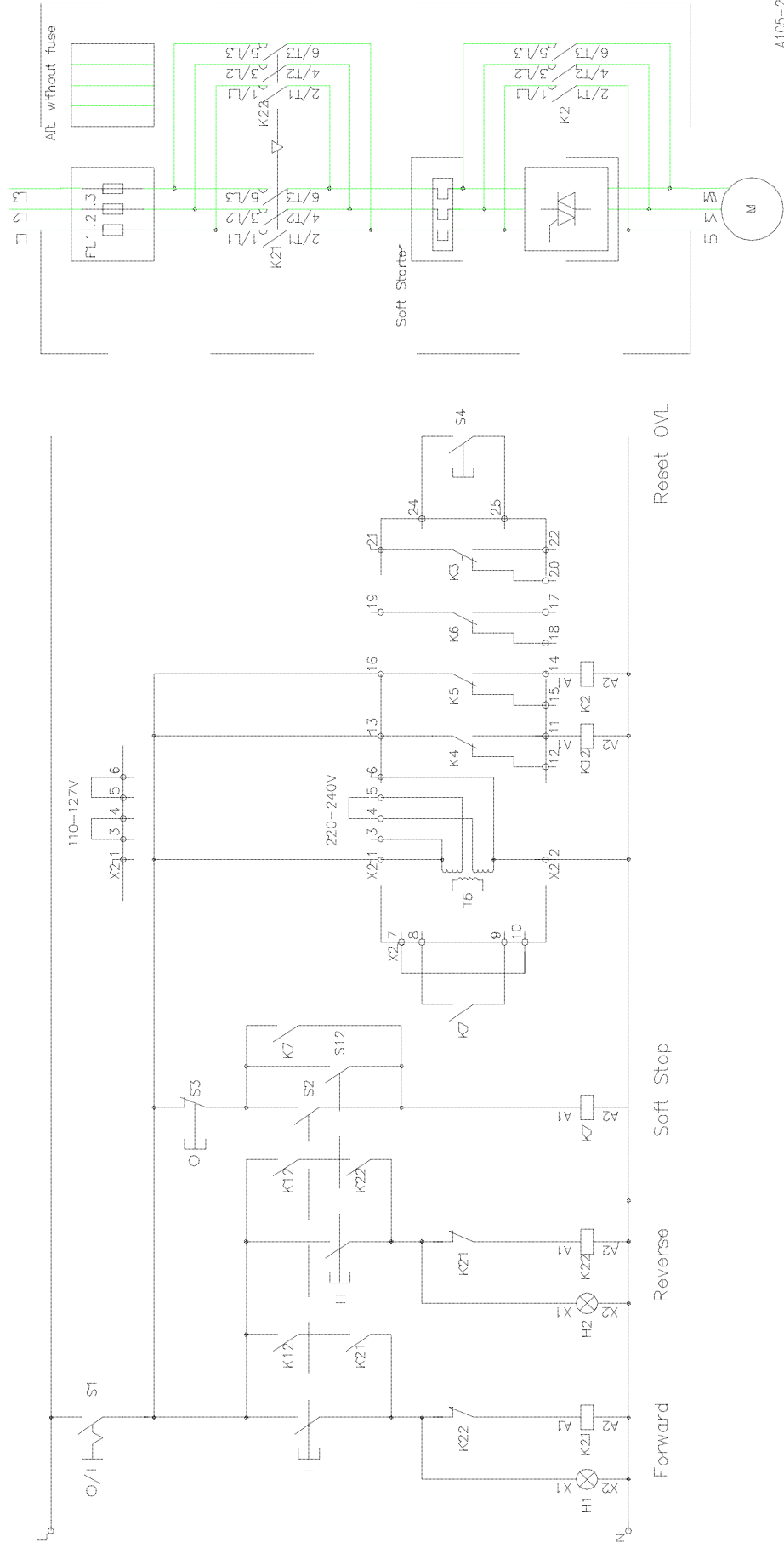
Soft Starter PS D75...300 with reversing, By-pass and softstop.
 To be stopped before reversing.
 Start at optional direction.
 If softstop is not needed set the time for softstop to 0.5.



AJ05-23

APPLICATION DIAGRAM		Soft Starter		Mjakstartare	
I Perissaa		I Perissaa		TP	
1		Revised		TP 96 42	
Rev. no.		Appd.		Year	
5366 105-23		SECUR/80 06 05		ISSUED	
82		1		...	

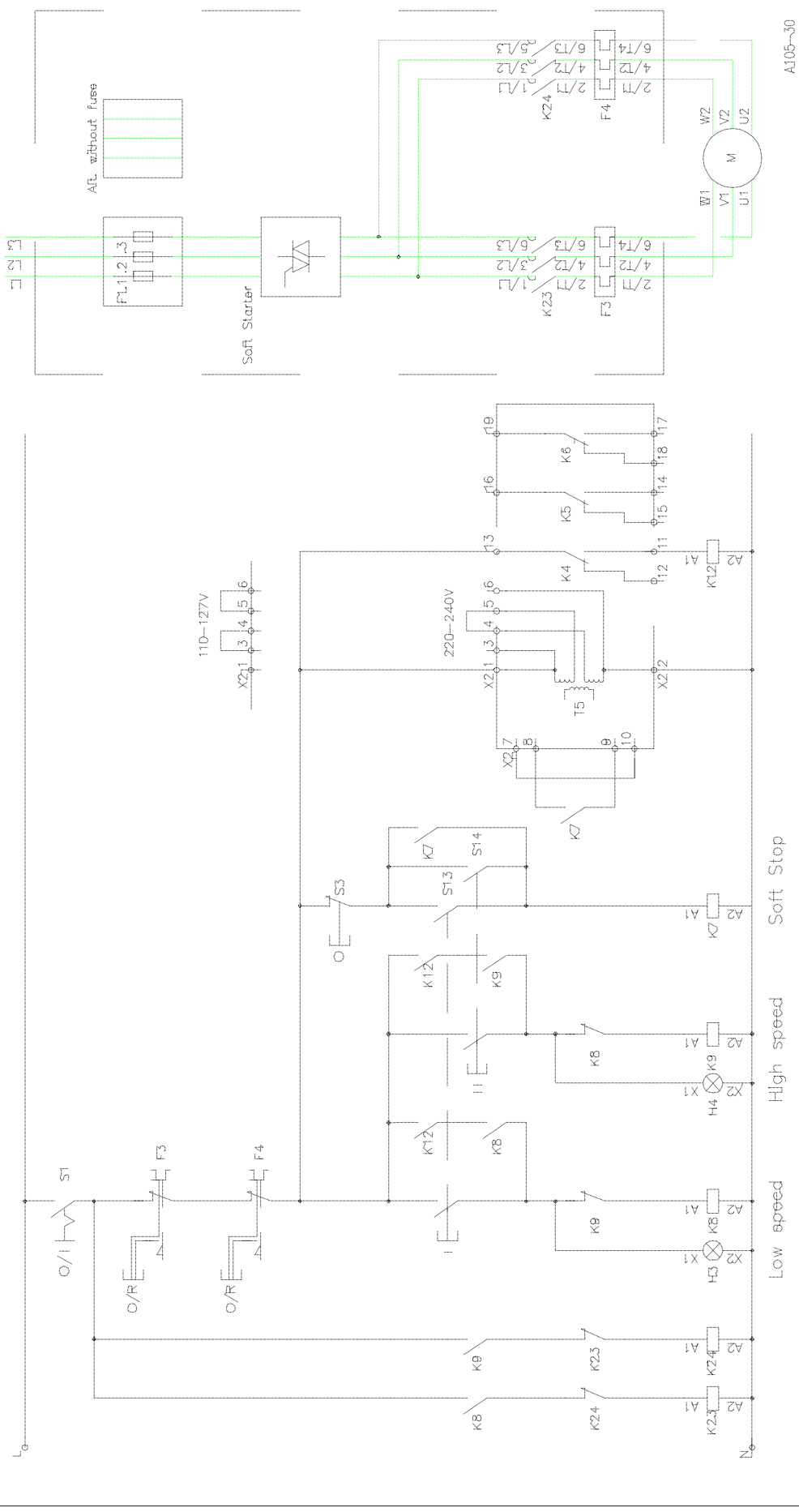
Soft Starter PS D175...300, PS DH145...250 with reversing, By-pass and softstop.
 To be stopped before reversing.
 Start at optional direction.
 If softstop is not needed set the time for softstop to 0.5.
 The internal overload relay is working also together with By-pass.



A105-26

APPLICATION DIAGRAM		I Perisson		I Perisson		I Perisson		I Perisson	
Soft Starter		Soft Starter		Soft Starter		Soft Starter		Soft Starter	
Mjuketartare		Mjuketartare		Mjuketartare		Mjuketartare		Mjuketartare	
TP		TP		TP		TP		TP	
Rev int		Rev int		Rev int		Rev int		Rev int	
Appl		Appl		Appl		Appl		Appl	
Year		Year		Year		Year		Year	
Issue		Issue		Issue		Issue		Issue	
1		1		1		1		1	
82		82		82		82		82	
5366 105-26		5366 105-26		5366 105-26		5366 105-26		5366 105-26	
ISSUED		ISSUED		ISSUED		ISSUED		ISSUED	
SECUR/80 06 05		SECUR/80 06 05		SECUR/80 06 05		SECUR/80 06 05		SECUR/80 06 05	

Soft Starter PS D370...840 with pole-changing and softstop.
 To be stopped before change of speed.
 Start at optional speed.
 For motor with two winding.
 If softstop is not needed set the time for softstop to 0.5.

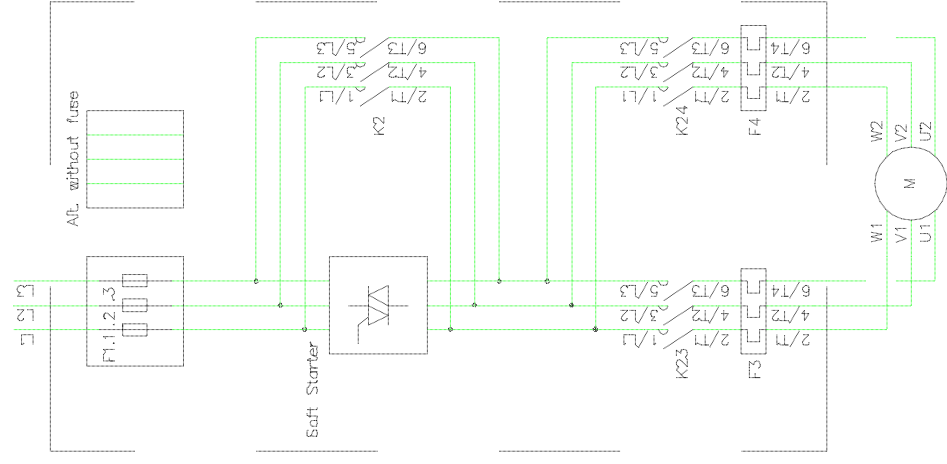
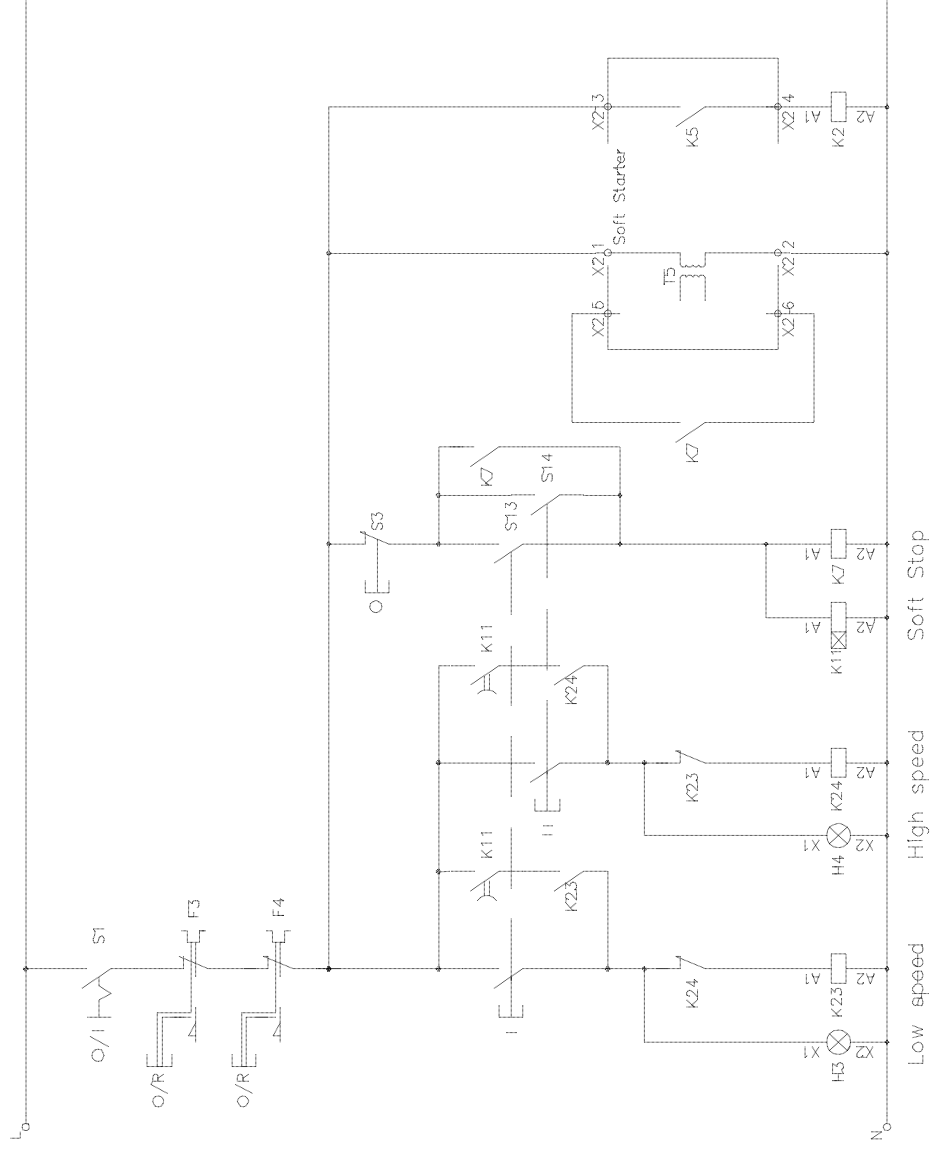


APPICATION DIAGRAM		Soft Starter		Mjakstartare	
I Perissos	I Perissos	TP	SECUR/80	86	42
ISSUED	82	1	...		
5366	105-30				

AJ05-30

Rev. int. Appl. Year. Week

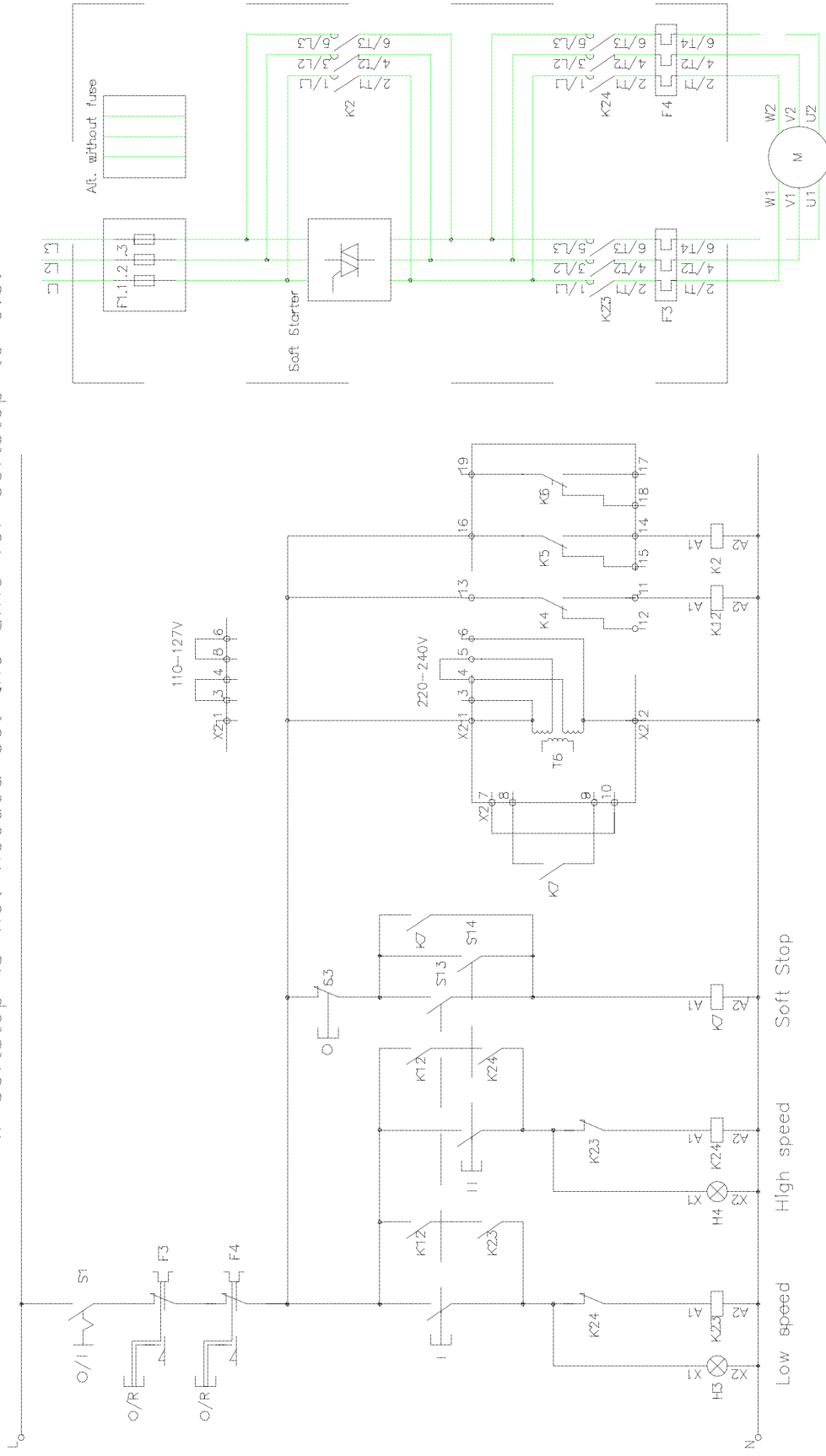
Soft Starter PS A18...60 with pole-changing, By-pass and softstop.
 To be stopped before change of speed.
 Start at optional speed.
 For motor with two winding.
 If softstop is not needed set the time for softstop to 0.5.



A105-31

Rev. int.	Appl.	Year	Issue	TP	T. Persson	APPLICATION DIAGRAM Soft starter Mjukstartare		SECUR/80 06 42	ISSUED	5366 105-31	82	1	---
-----------	-------	------	-------	----	------------	---	--	----------------	--------	-------------	----	---	-----

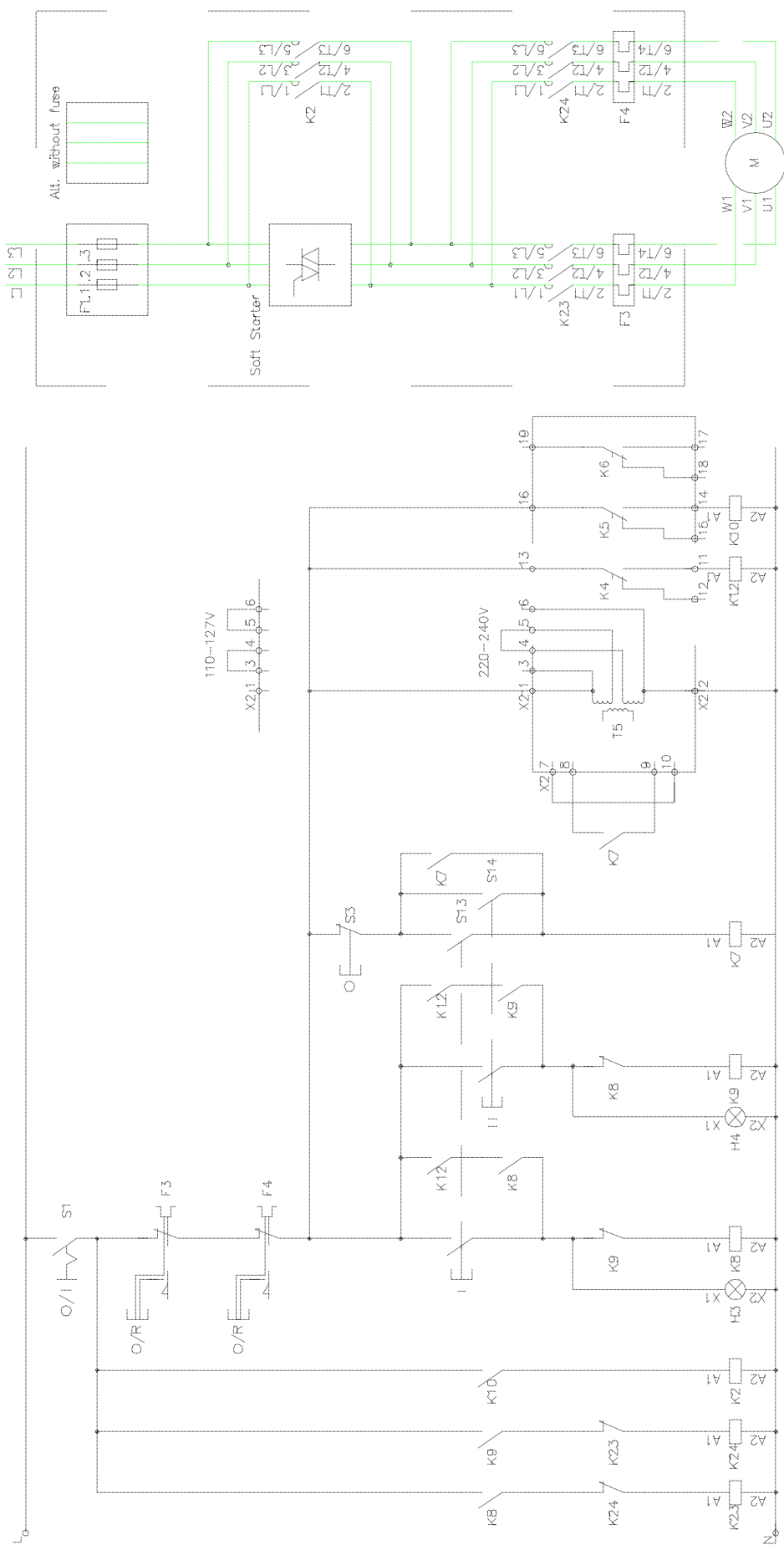
Soft Starter PS D75...300 with pole-changing, By-pass and softstop.
 To be stopped before change of speed.
 Start at optional speed.
 For motor with two winding.
 If softstop is not needed set the time for softstop to 0.5.



A105-32

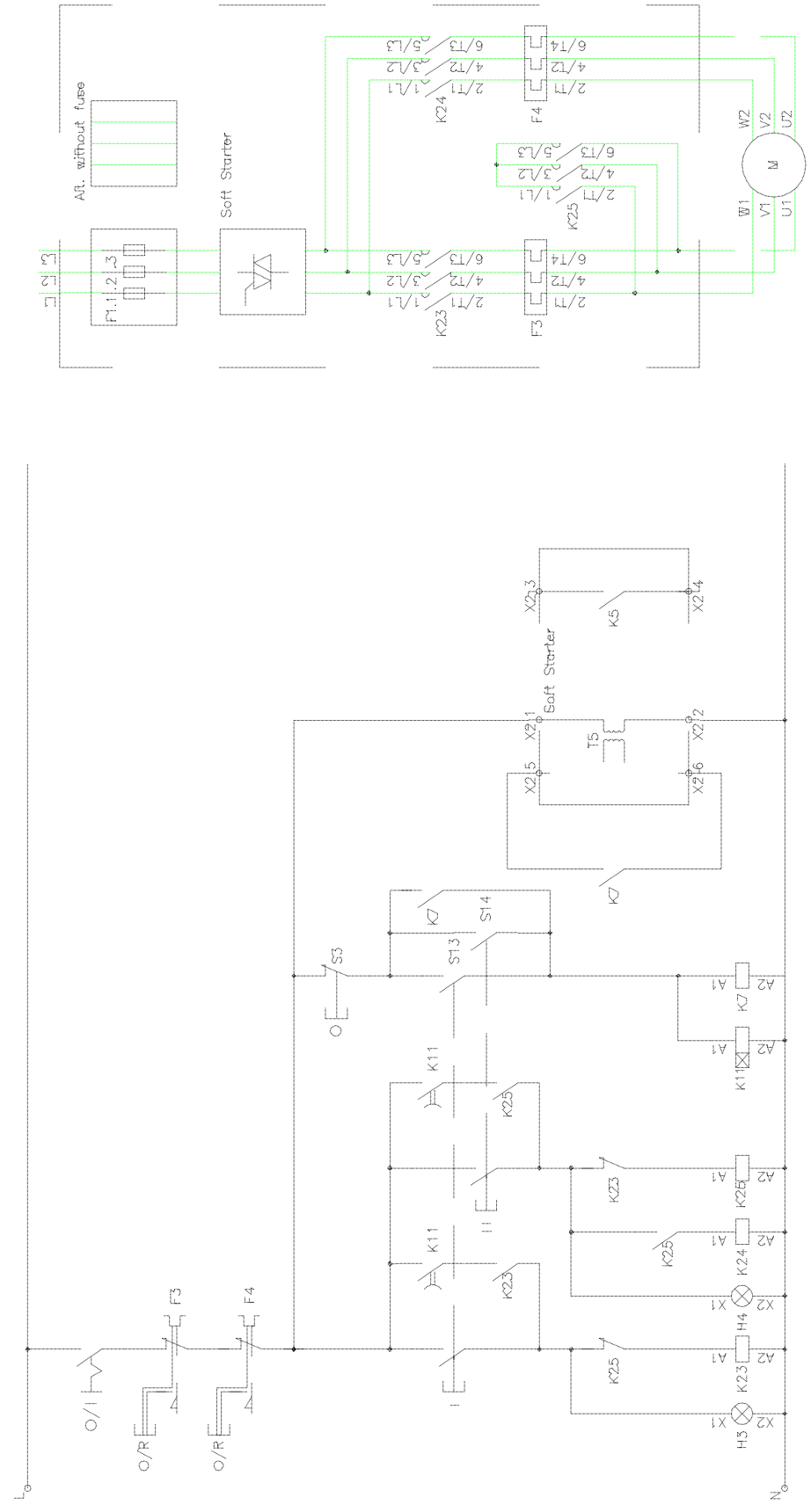
Rev. no.	Sheet	Rev. no.	Sheet
5366	105-32	ISSUED	...
des. by	year	year	week
SECUR/BO	06	02	
APPLICATION DIAGRAM		ABB Control	
Design checked by		I. Pefrsson	
Drawing checked by		I. Pefrsson	
Drawn by		I. P.	
Mjuktstartare		Soft Starter	
Mjuktstartare		Soft Starter	

Soft Starter PS D370...840 with pole-changing, By-pass and softstop.
 To be stopped before change of speed.
 Start at optional speed.
 For motor with two winding.
 If softstop is not needed set the time for softstop to 0.5.



APPLICATION DIAGRAM		I Perisosa		Soft Starter		Mjakstartare		SECUR/80 06 42		ISSUED	
		I Perisosa								5366 105-33	
		IP								1	
Rev. int		Appt		Year		Week				...	

Soft Starter PS A18...60 with pole-changing and softstop.
 To be stopped before change of speed.
 Start at optional speed.
 For motor with one winding (Dahlander).
 If softstop is not needed set the time for softstop to 0.5.

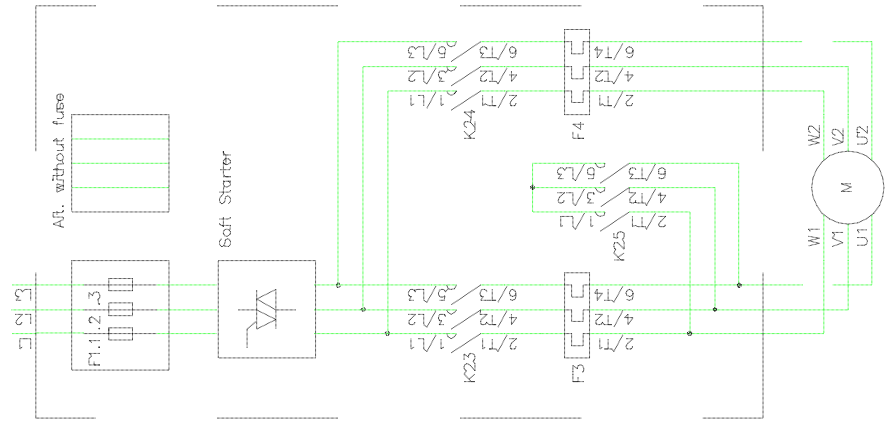
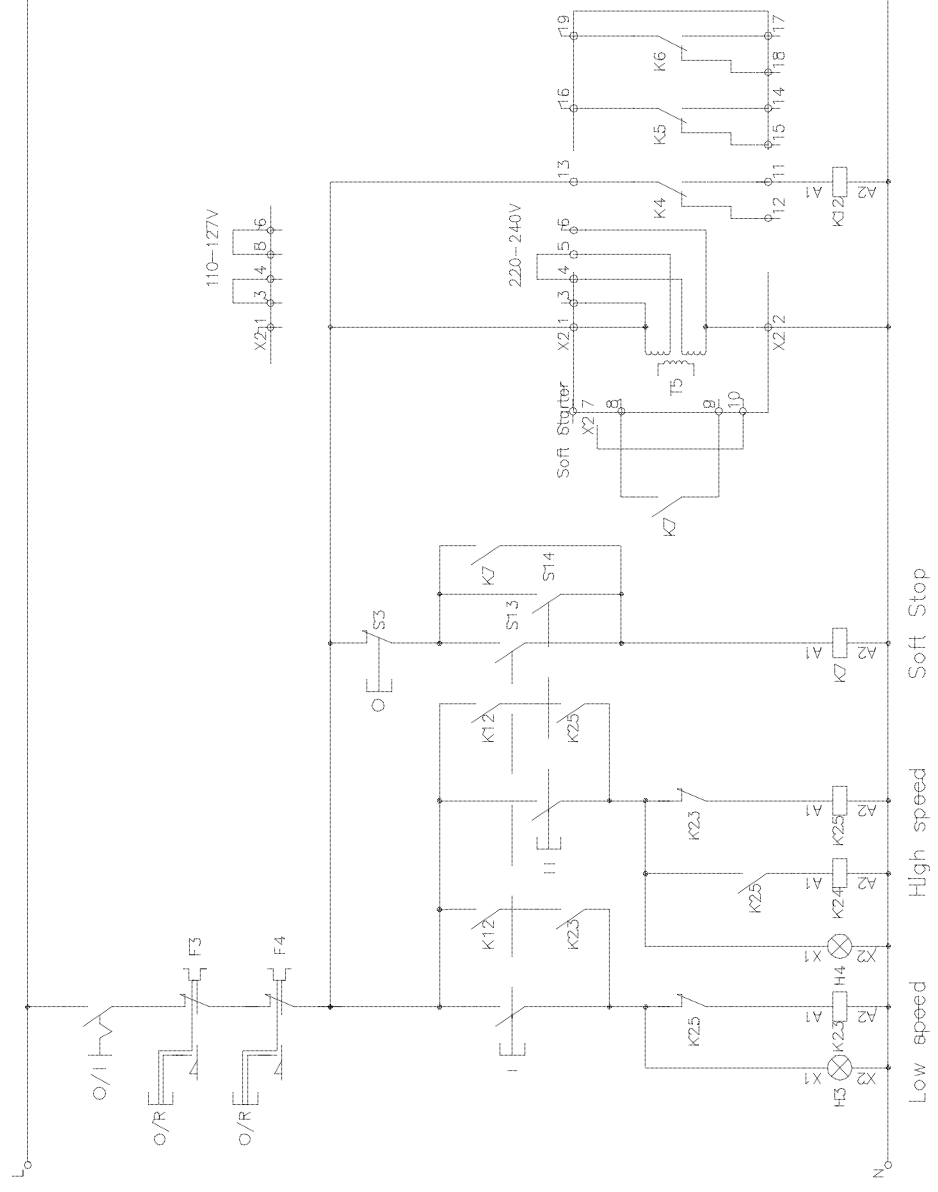


Low speed High speed Soft Stop

A105-34

Rev. int.	Appl.	Year	Week	ISSUED	82	1
				SECUR/80 06 42	5366 105-34	...
APPLICATION DIAGRAM				I Persson		
Soft Starter				I Persson		
Mjukstartare				TP		

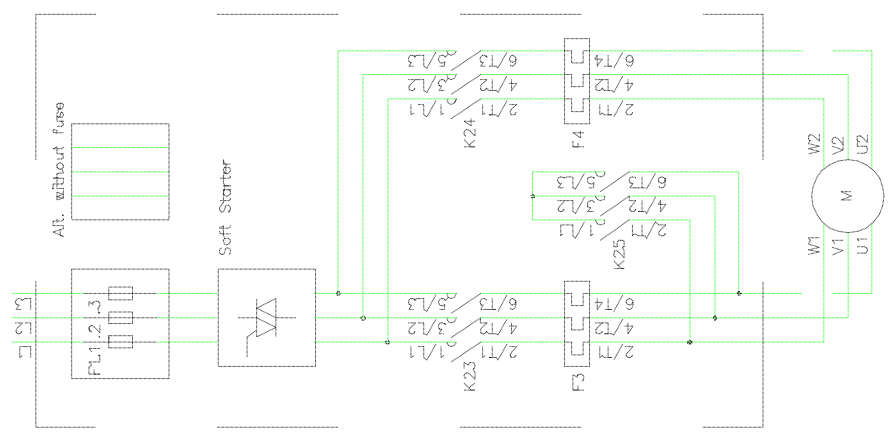
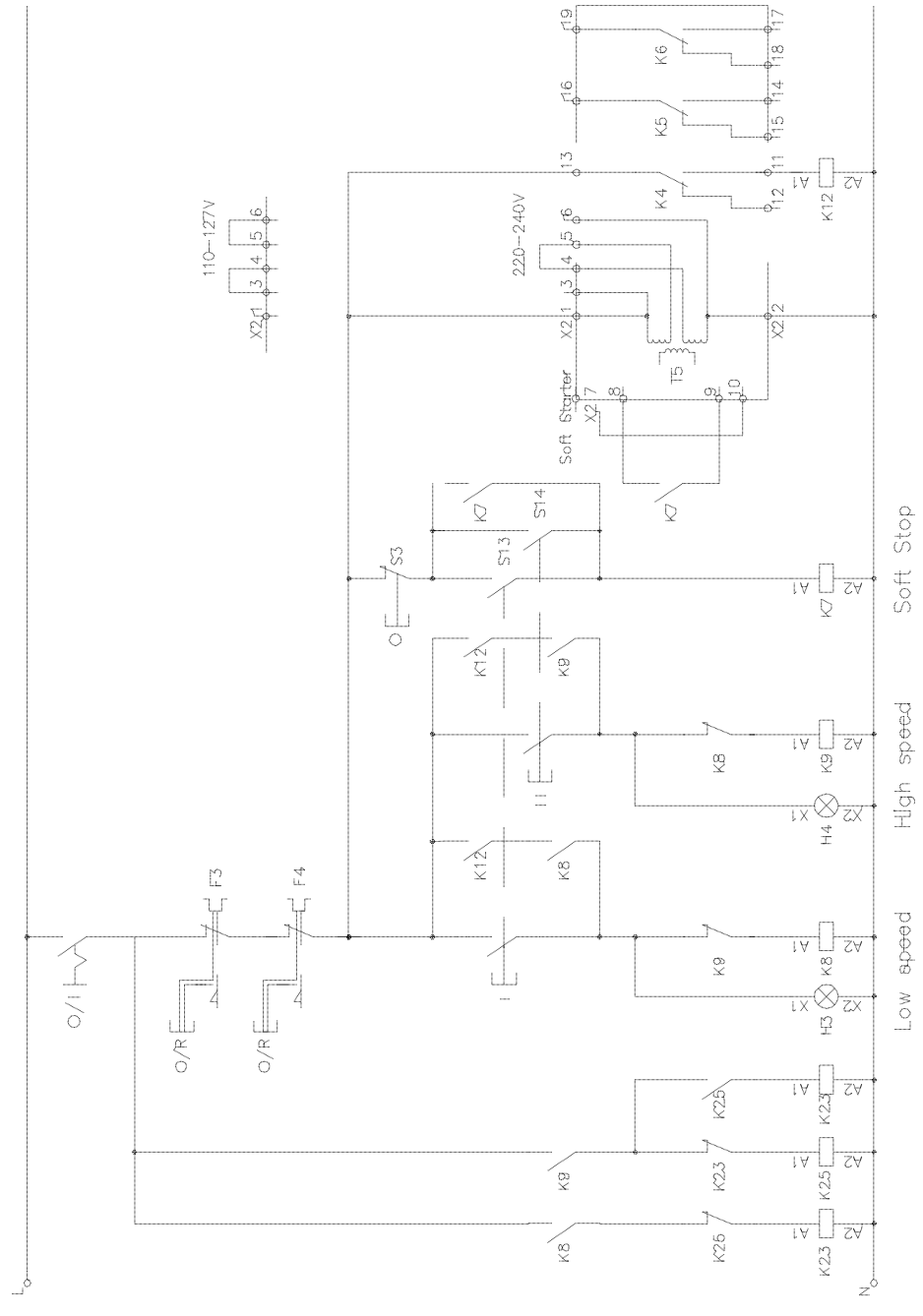
Soft Starter PS D75...300 with pole-changing and softstop.
 To be stopped before change of speed.
 Start at optional speed.
 For motor with one winding (Dahlander).
 If softstop is not needed set the time for softstop to 0.5.



AJ05-35

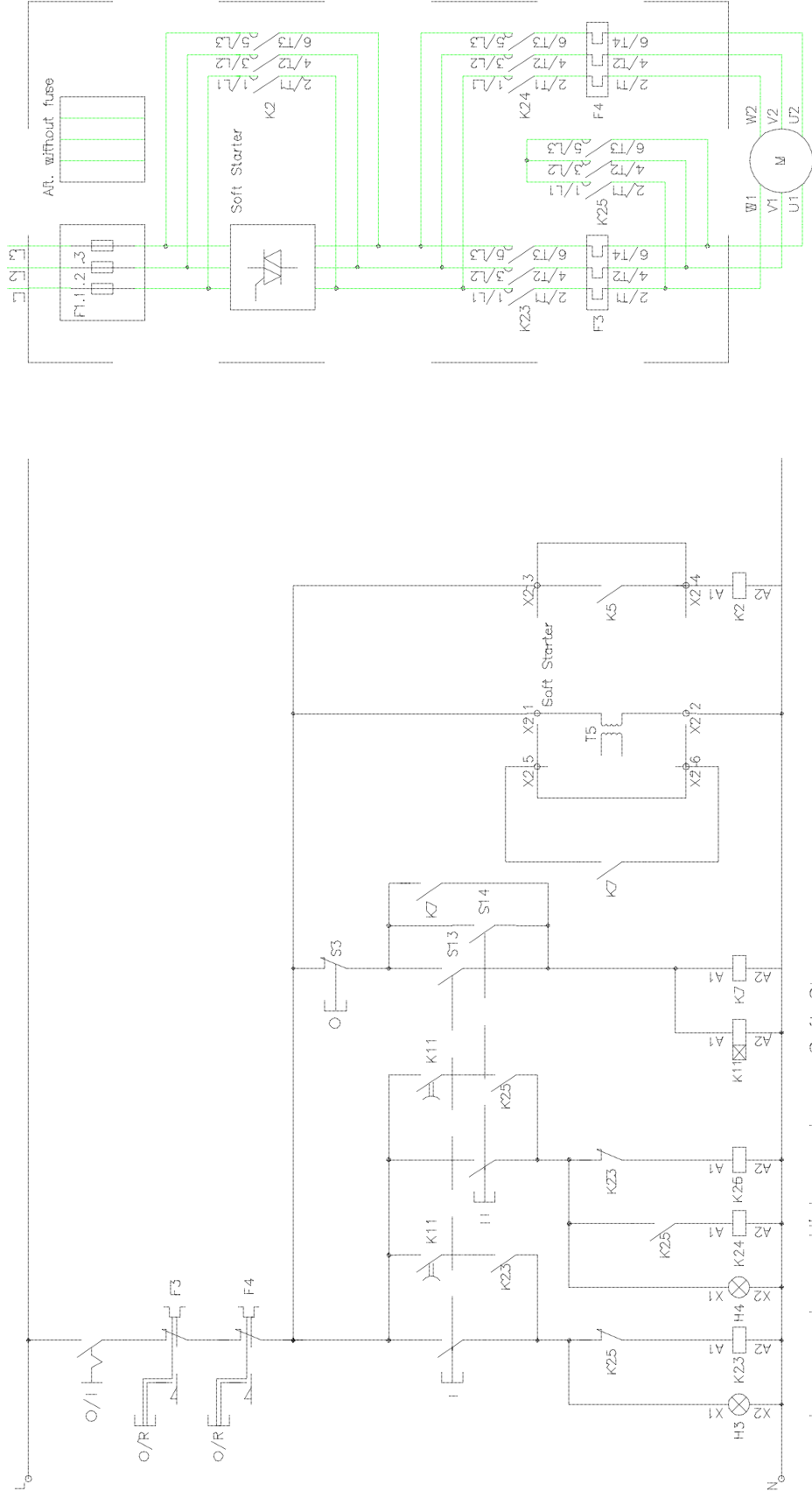
Rev. int.	Appt.	Year	Week	APPLICATION DIAGRAM		ISSUED	...
				I. Persson	Soft Starter	82	1
				I. Persson	Mjukstartare	5366 105-35	
				TP		SECUR/80 06 42	

Soft Starter PS D370...840 with pole-changing and softstop.
 To be stopped before change of speed.
 Start at optional speed.
 For motor with one winding (Dahlander).
 If softstop is not needed set the time for softstop to 0.5.



A105-36		ISSUED	
5366 105-36		82	1
APPLICATION DIAGRAM		SECUR/80	06 42
Soft Starter			
Mjpkstartare			
I Persson			
I Persson			
TP			
Rev. nr	Appl.	Year	Week

Soft Starter PS A18...60 with pole-changing, By-pass and softstop.
 To be stopped before change of speed.
 Start at optional speed.
 For motor with one winding (Dahlander).
 If softstop is not needed set the time for softstop to 0.5.

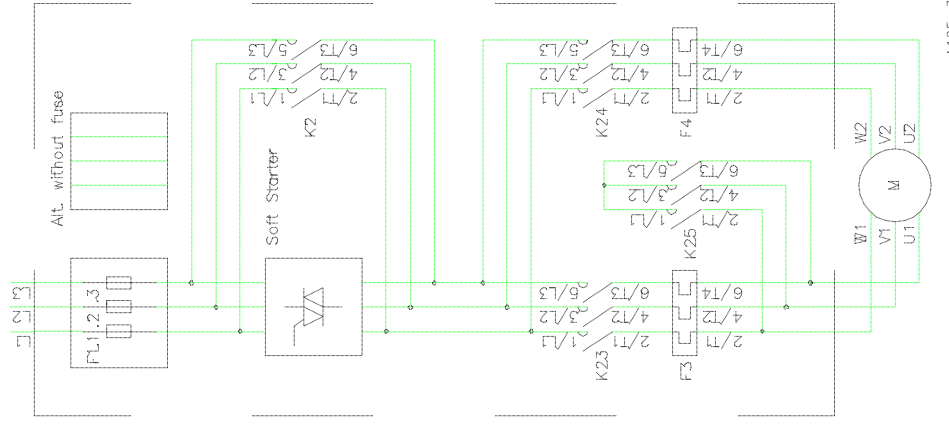
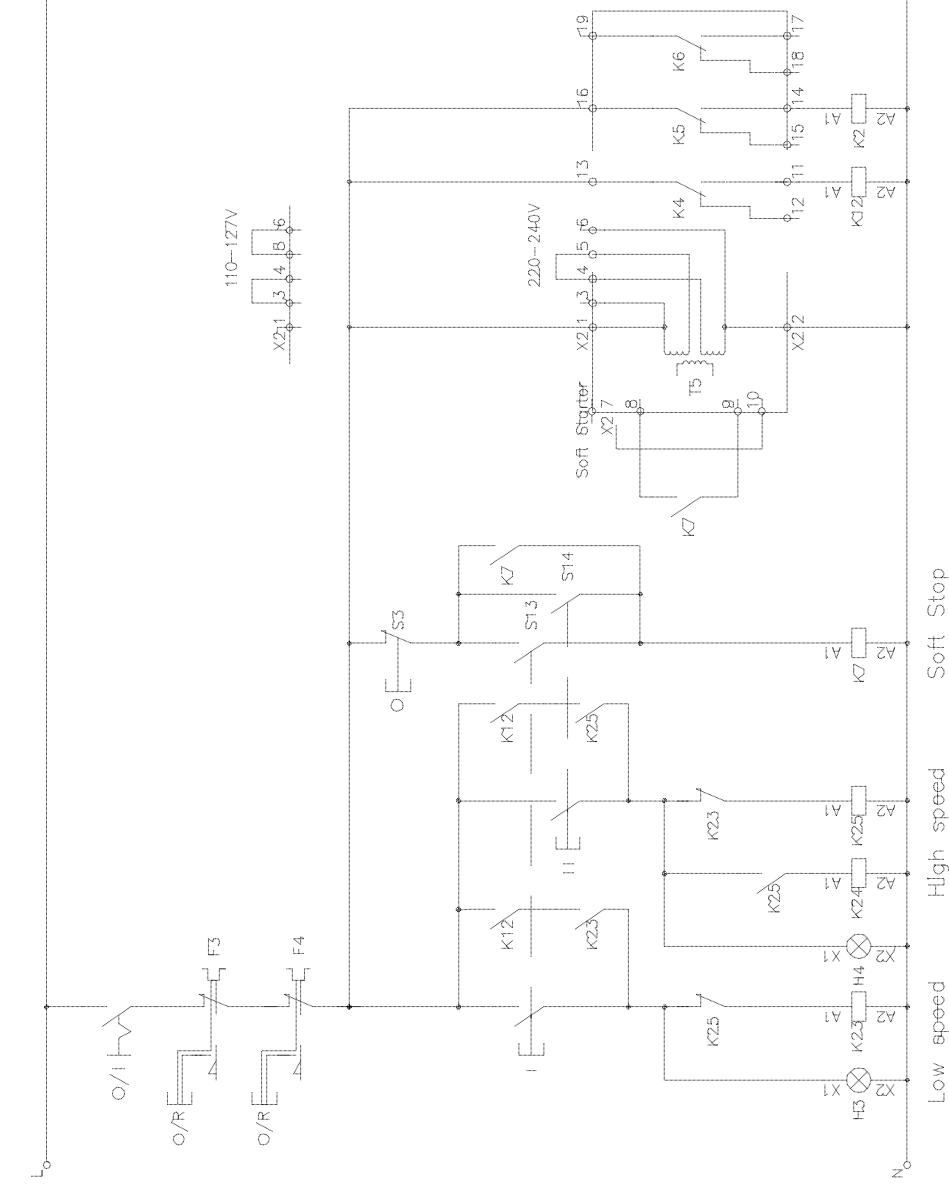


Low speed High speed Soft Stop

AJ05-37

Rev. int.	Appl.	Year	Issue	ISSUED	82	1
				SECUR/80 06 42	5366 105-37	...
APPLICATION DIAGRAM				I Persson		
Soft Starter				I Persson		
Mjukstartare				TP		

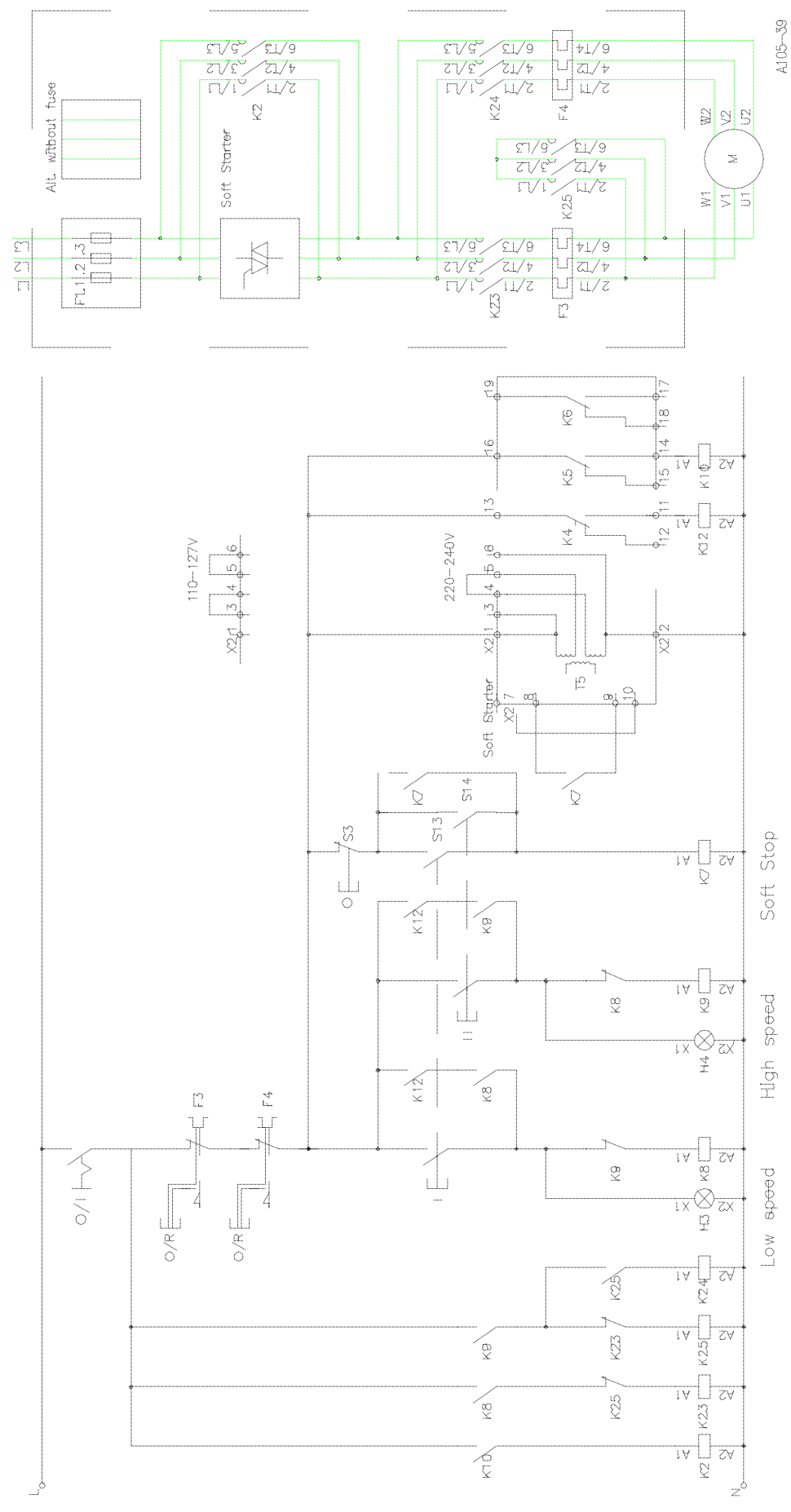
Soft Starter PS D75...300 with pole-changing, By-pass and softstop.
 To be stopped before change of speed.
 Start at optional speed.
 For motor with one winding (Dahlander).
 If softstop is not needed set the time for softstop to 0.5.



AJ05-38

Rev. int.	Appl.	Year	Issue	SECUR/80 06 42	ISSUED	5366 105-38	82	1	...
				APPLICATION DIAGRAM					
				I Perisosa		Soft Starter			
				I Perisosa		Mjukstartare			
				IP					

Soft Starter PS D370...840 with pole-changing and softstop.
 To be stopped before change of speed.
 Start at optional speed.
 For motor with one winding (Dahlander).
 If softstop is not needed set the time for softstop to 0.5.



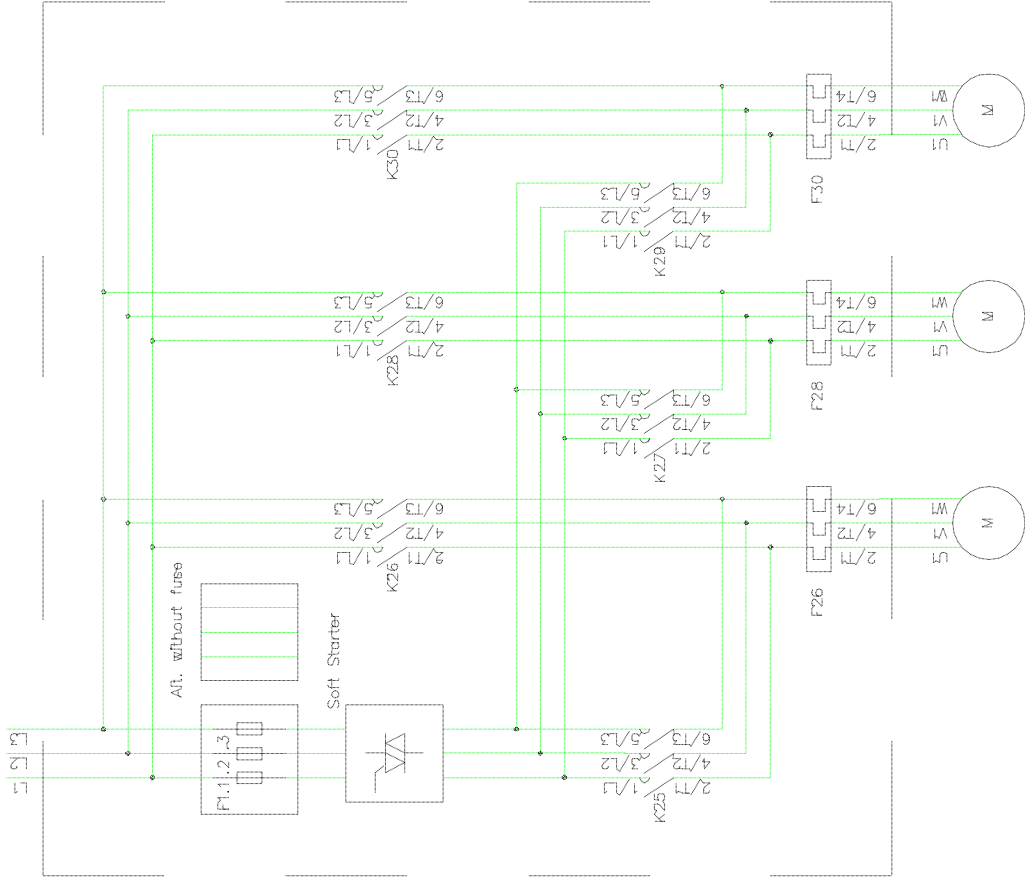
Rev. int.	Appl.	Year	Issue	SECUR/80 06 42	ISSUED	5366 105-39	82	1	...
				APPLICATION DIAGRAM					
				Soft Starter					
				Mjpkstartare					
				I Persson					
				I Persson					
				TP					

A105-39

SPECIAL APPLICATION DIAGRAM

5366 106-1	PS D75...840	Sequential start for 3 motors.
5366 106-2	PS D75...300	Start of 2 motors.

Sequential start for 3 motors.
 Soft Starter PS D75...300 with motor protection without softstop.
 Start of optional motor.



A106-1A

Rev. nr	Appr.	Year	Week
2	Uutetved	TP	96 43
1	Fuses moved.	TP	95 09

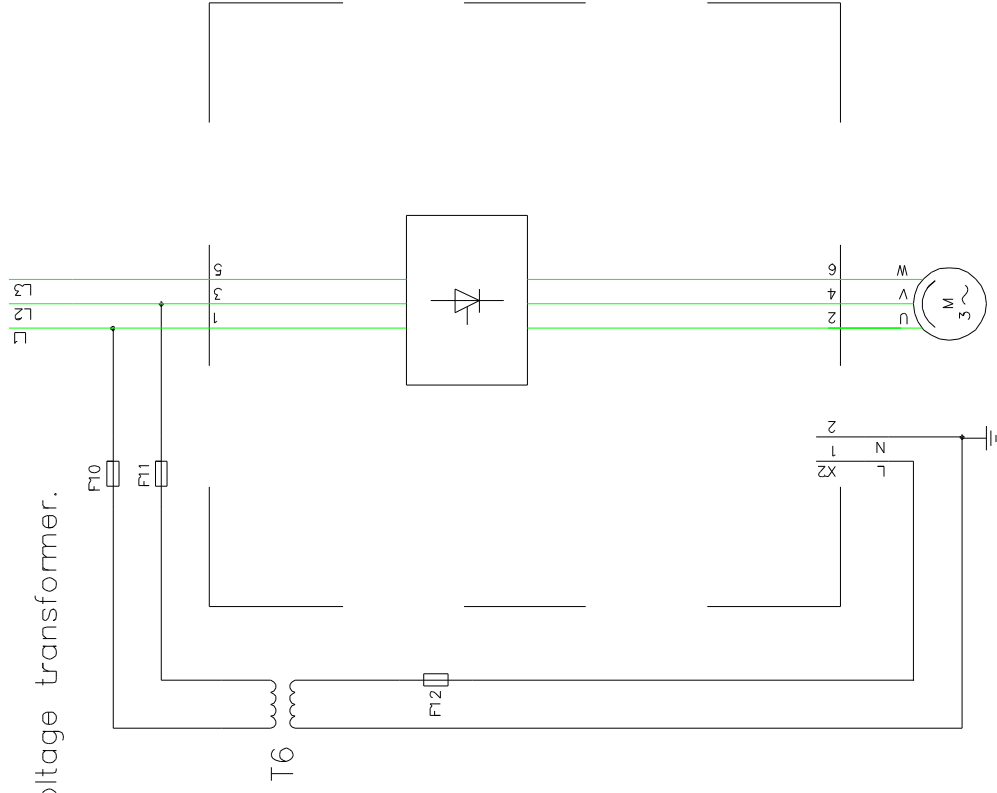
APPLICATION DIAGRAM		STORL/80 96 07	ISSUED
I Perisson	Soft Starter		
I Perisson	Mjpkstartare		
TP			

5366 106--1		82	1
		2	2

SPECIAL DIAGRAM

5366 107-1	PS A, PS D(H)	Connection of control voltage transformer.
5366 107-2	PS A, PS D(H)	Connection of control voltage between phase and neutral wire.

Connection of control voltage transformer.



A107-1

Rev	Ind	Sheet	5366 107-1	ISSUED	Drawn by SCORL/BM	Date 06/07	Diagram SOFT STARTERS M0DKSTARTARE	ABB ABB Control
Rev	Ind	Sheet						



ABB Automation Technology Products AB, Control
S-721 61 Västerås, SWEDEN

Telephone +46 21 32 07 00
TELEFAX +46 21 12 60 01

(53096981.doc)