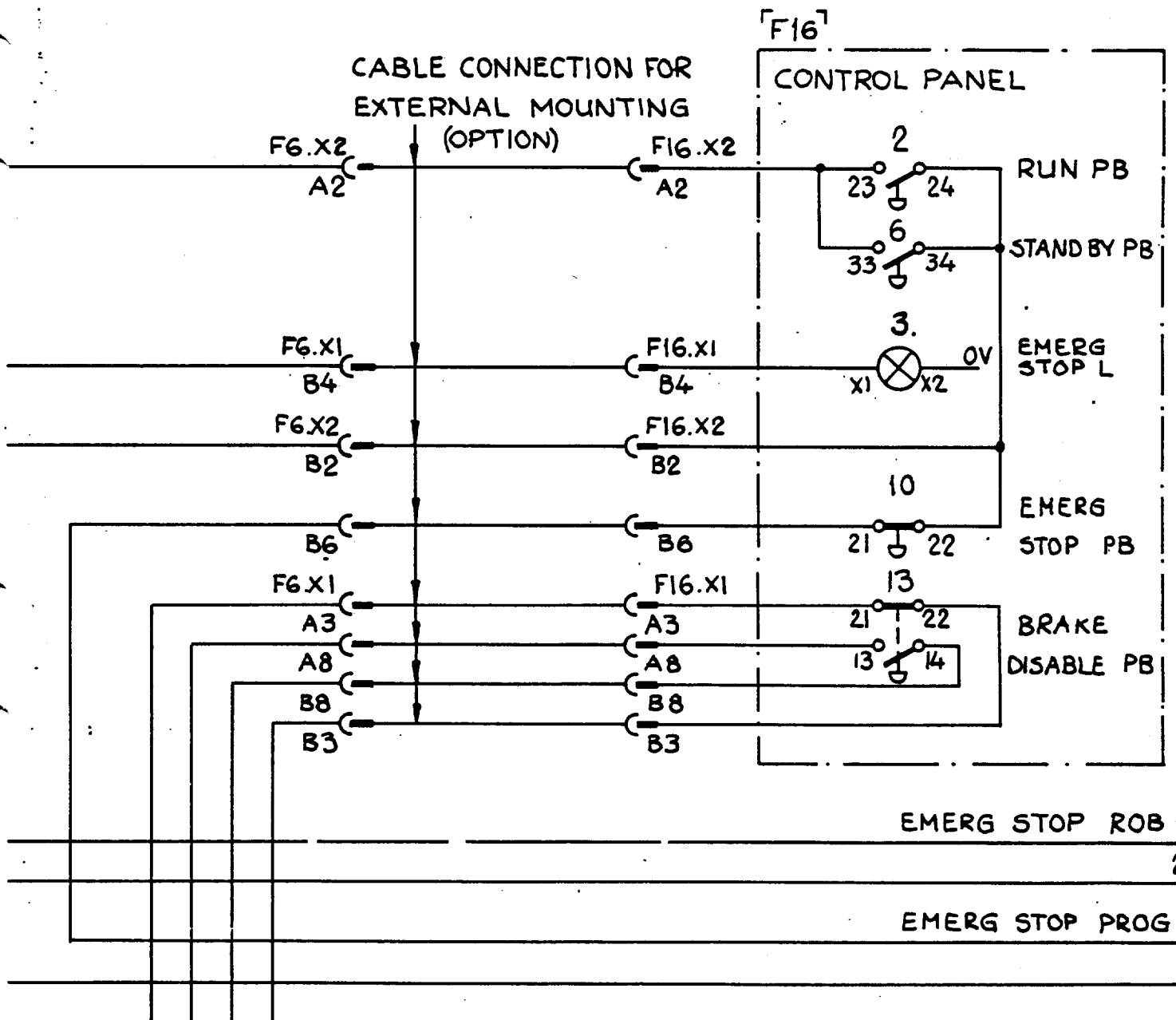


ASEA

Industrial Robot System

IRB 6/2



Circuit Diagrams for ASEA Industrial Robot System IRB 6/2

The symbols used in the diagrams are drawn in accordance with IEC publication 117

CONTENTS	Diagram No
Mechanical Robot	6397 001-TS
Control Cabinet	
- Control system	6704 100-BCA
- Bus Back Plane	6704 102-ANA
- Bus board Drive Units	6704 102-AAA

All documents included in this instruction are subject to alterations, additions or deletions without notice.

Art no 6397 004-9

Industrial robot IRB 6/2

6397 001-TS

ASEA

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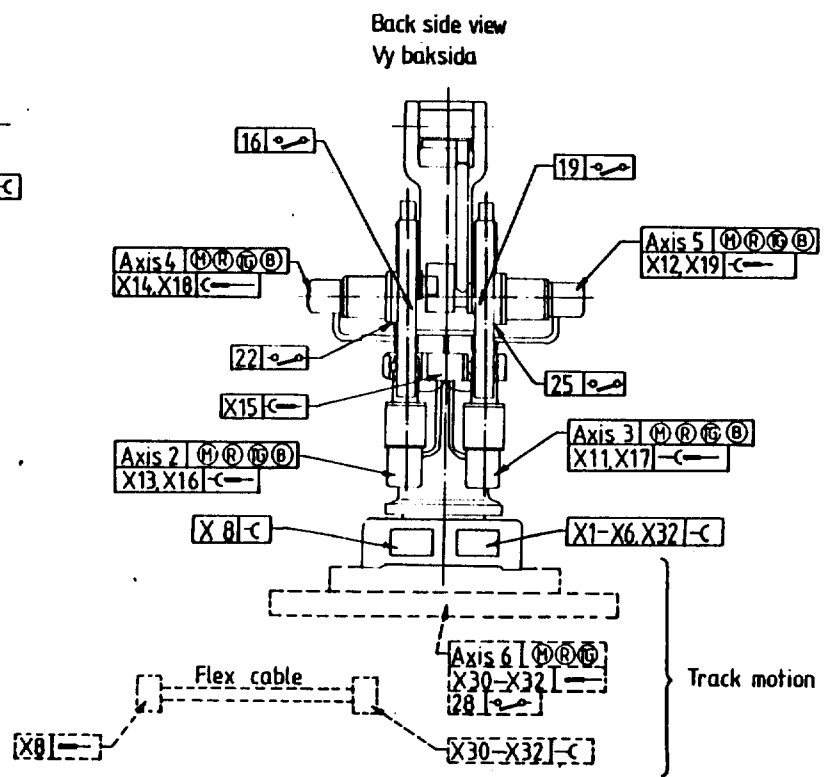
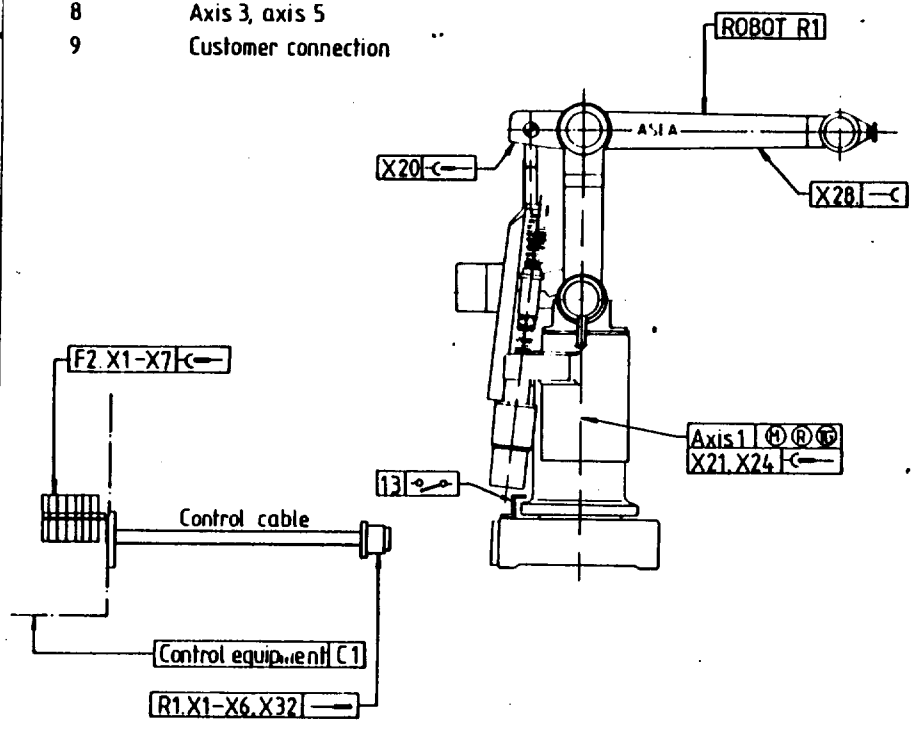
BR JKK

1
2
82 37

Sheet	Contents
2-5	Control cable
6	Axis 1, axis 6
7	Axis 2, axis 4
8	Axis 3, axis 5
9	Customer connection

Review: Location axis, connectors (←) and switches (↔)

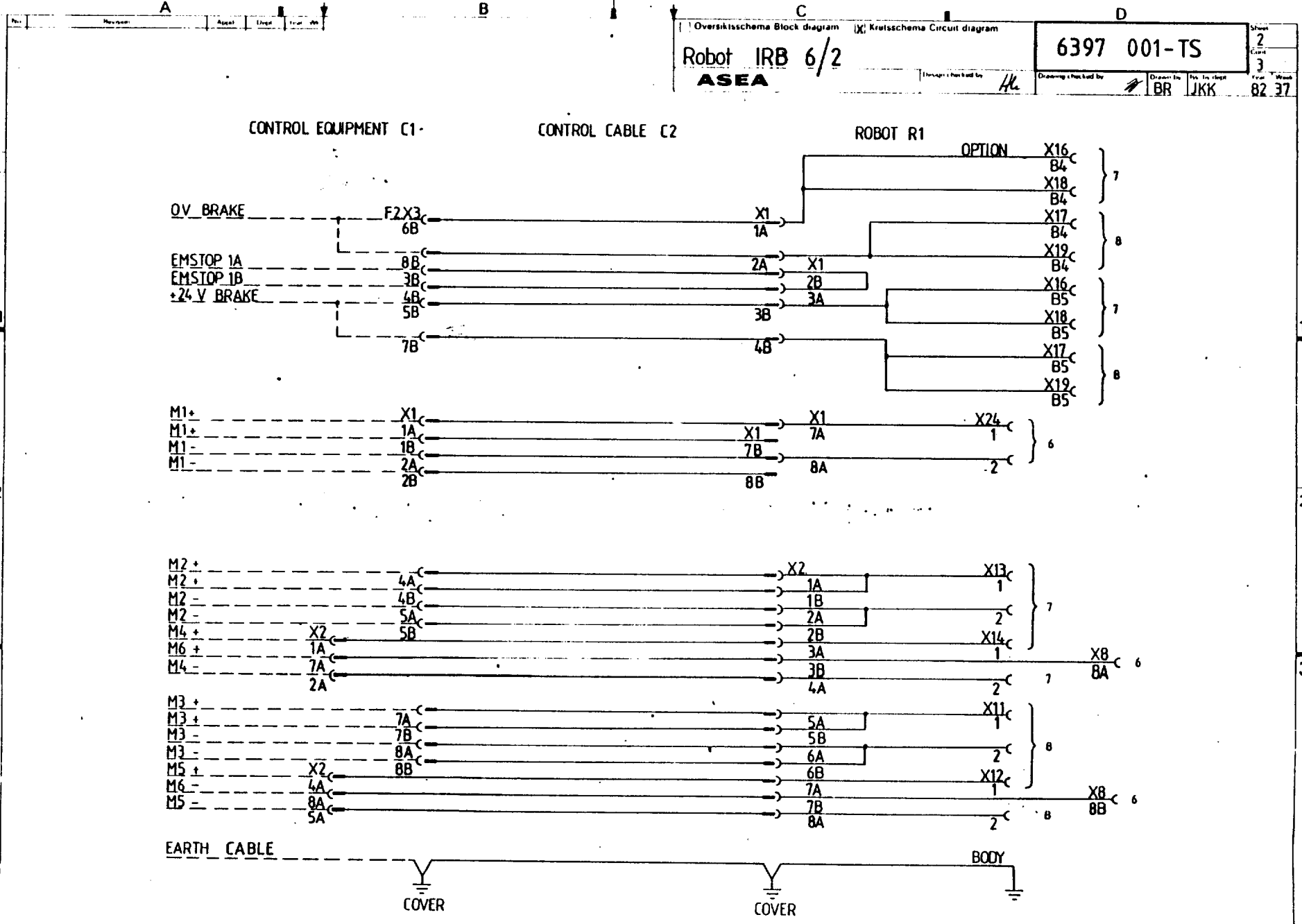
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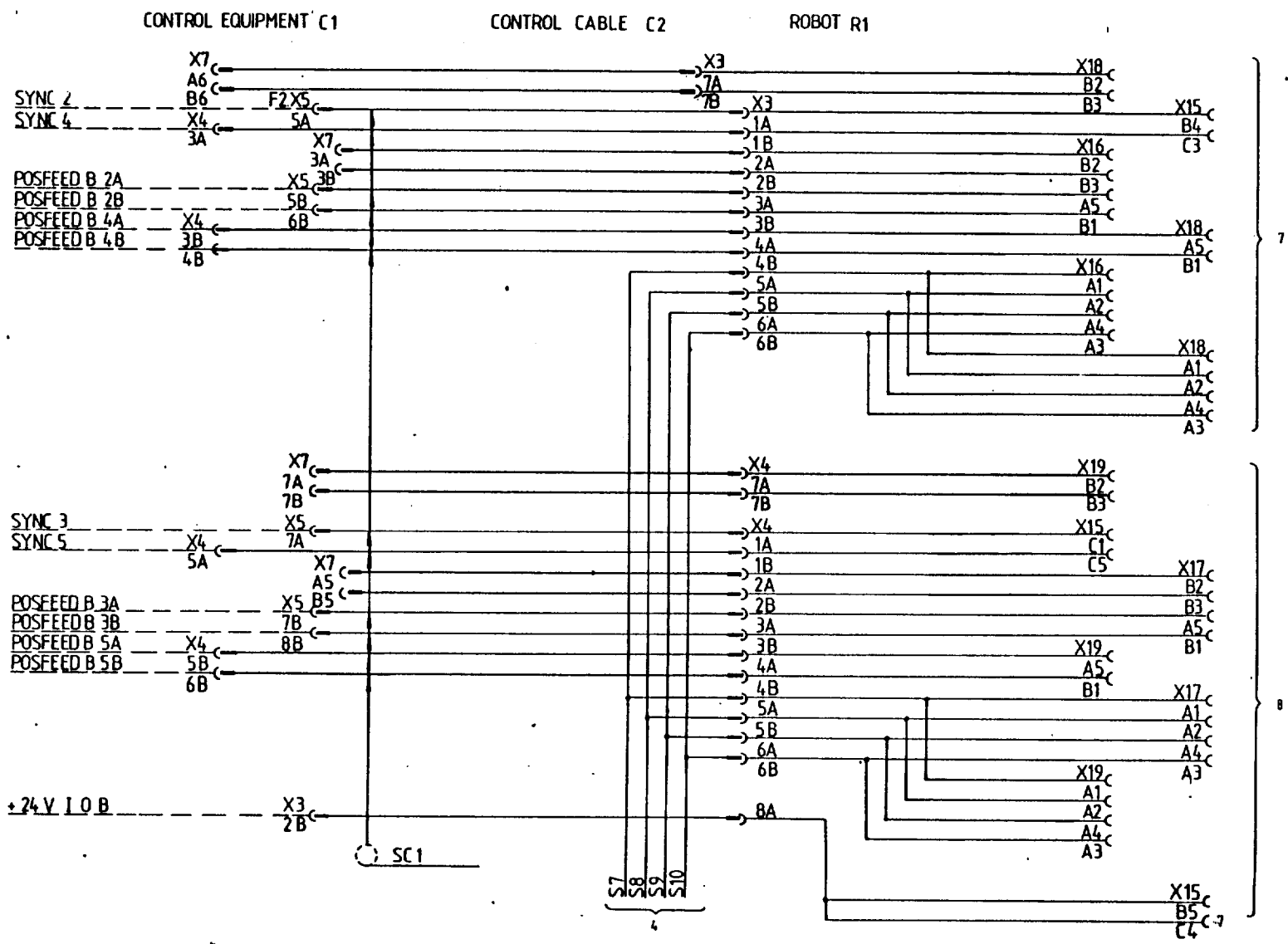
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Oversiktschema Block diagram Robot IRB 6/2 ASEA	[X] Krettschema Circuit diagram Through checked by <i>Hu</i> Drawing checked by <i>BR</i> <i>JKK</i>	6397 001-TS	Sheet 2 Total 3 Date 82 37
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A		B		C		D			
Revision	Appr	Dept	Year	Week	<input type="checkbox"/> Översiktsschema Block diagram <input checked="" type="checkbox"/> Kretsschema Circuit diagram		Robot IRB 6/2 ASEA	6397 001-TS Design checked by <i>HL</i> Drawing checked by <i>BR</i> JKK	Sheet 3 Cont 4 Year 82 Week 37



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Order No	Year	Week

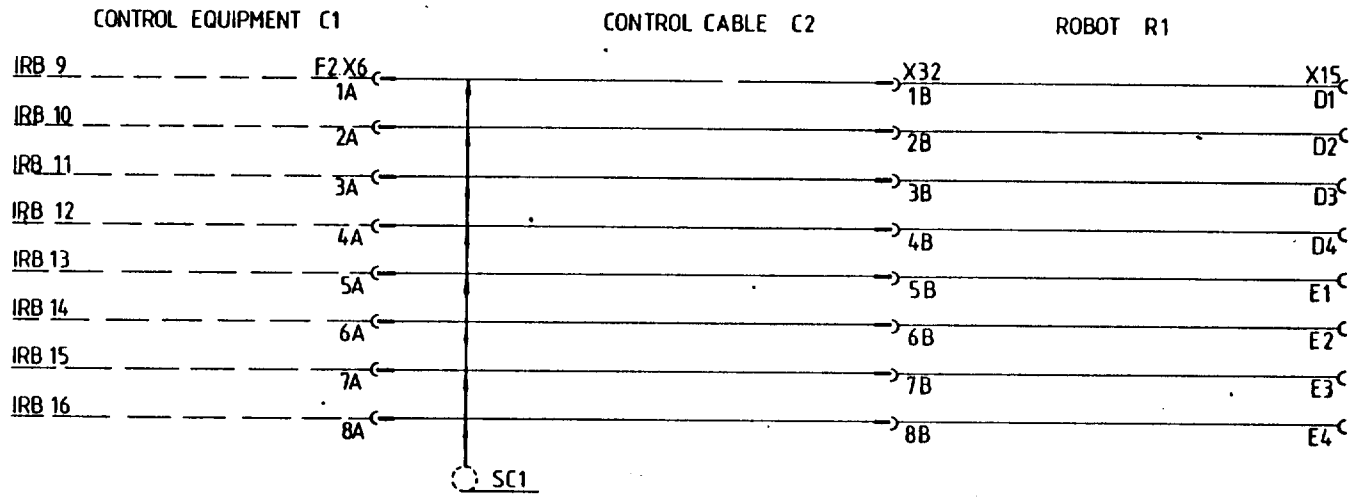
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A		B		C		D	
				Oversiktsschema Block diagram		Kretsschema Circuit diagram	
				Robot IRB 6/2		6397 001-TS	
				ASEA		Design checked by Hh	
						Drawing checked by BR JKK	
						Year 82	
						Week 37	



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6397 001-TS

Robot IRB 6/2
ASEA

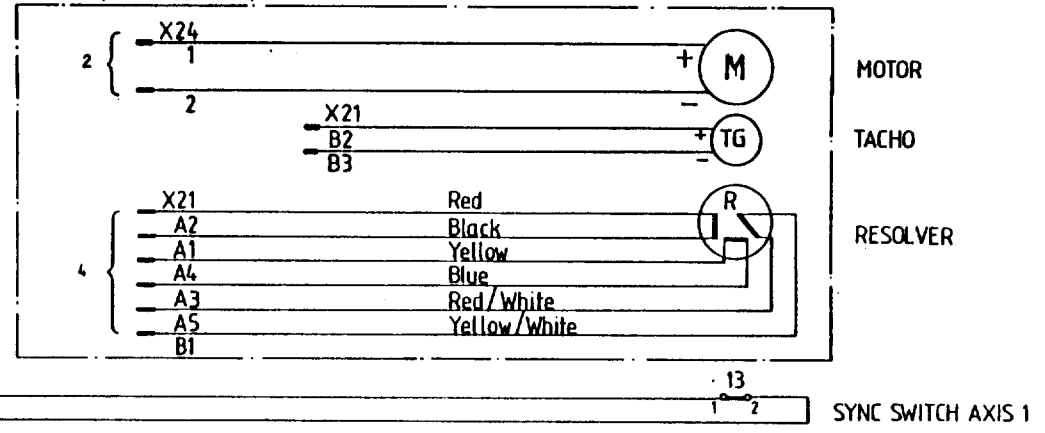
Checked by: *HL*

Drawing checked by: *HL*

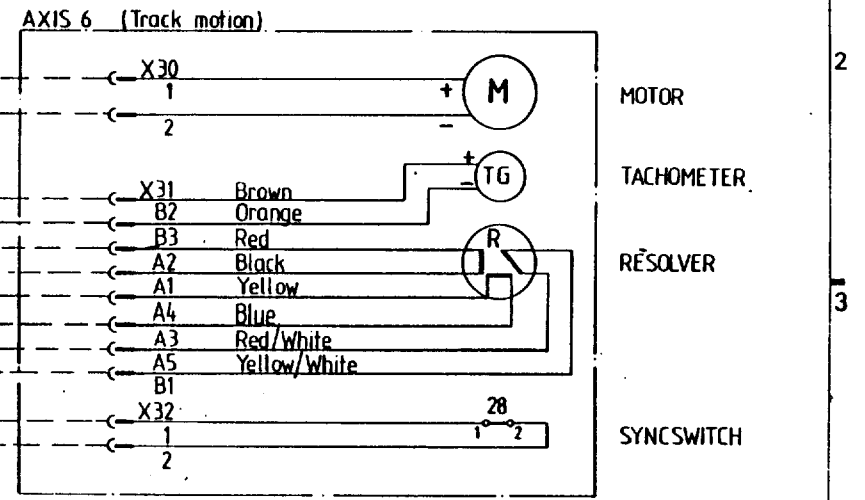
Drawn by: BR
 Iss. by dept: LJKK

Sheet 6
 Total 7
 No. 82.37

ROBOT R1
 AXIS 1 (Robot rotation)



OPTION



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Scale: 1:1

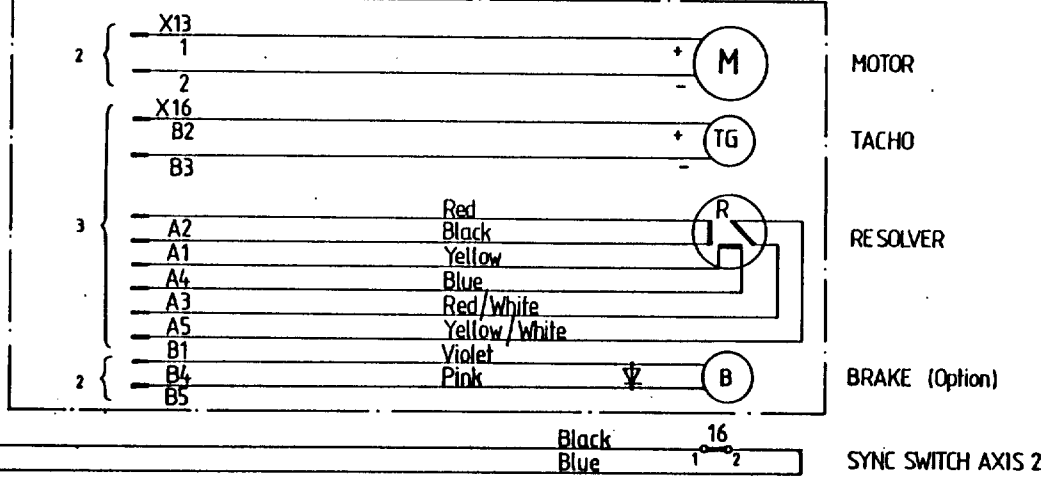
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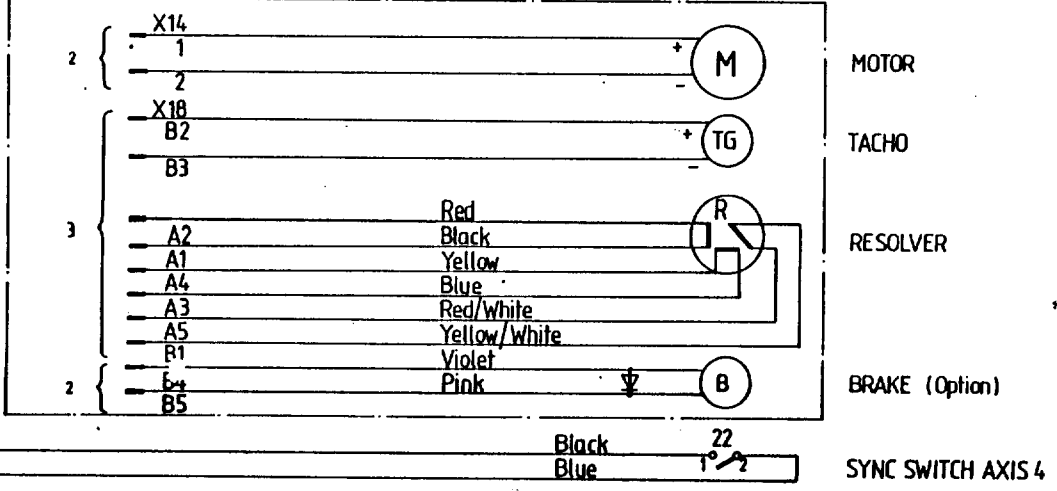
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Week	
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No.	Revision				Appd.	Dept.	Year	Wk.	<input type="checkbox"/> Översiktsschema Block diagram <input type="checkbox"/> Kretschema Circuit diagram		Sheet 7	Covr 8		
	A		B						C				D	
Robot IRB 6/2									Design checked by	He	Drawing checked by	BR	Iss. by dept.	JKK
ROBOT R1									ASEA					

AXIS 2 (Lower arm)



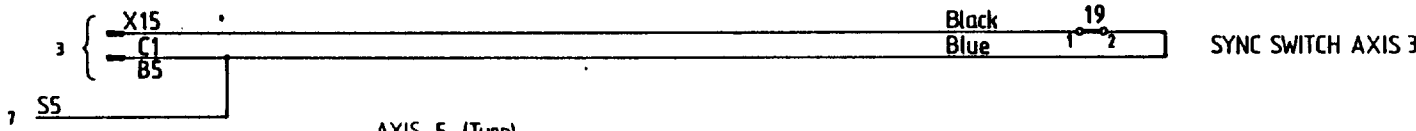
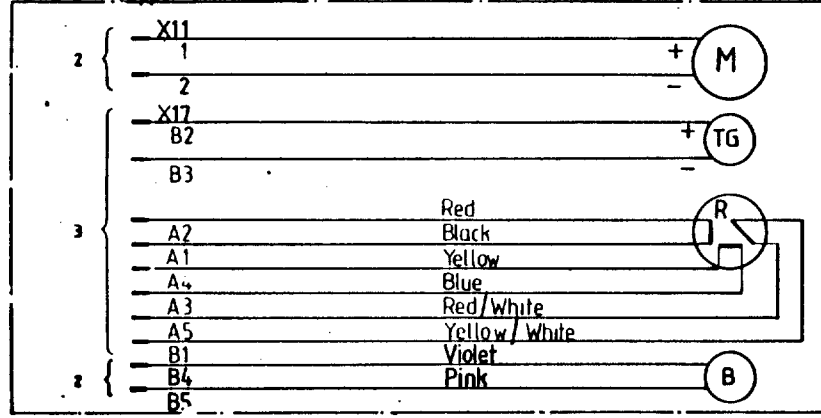
AXIS 4 (Tilt)



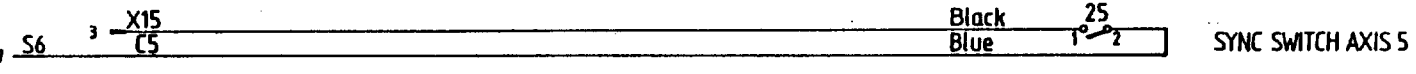
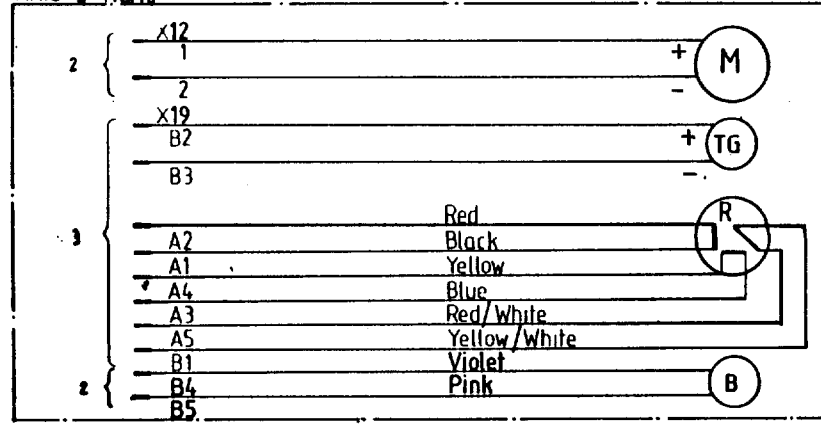
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ROBOT R1

AXIS 3 (Upper arm)

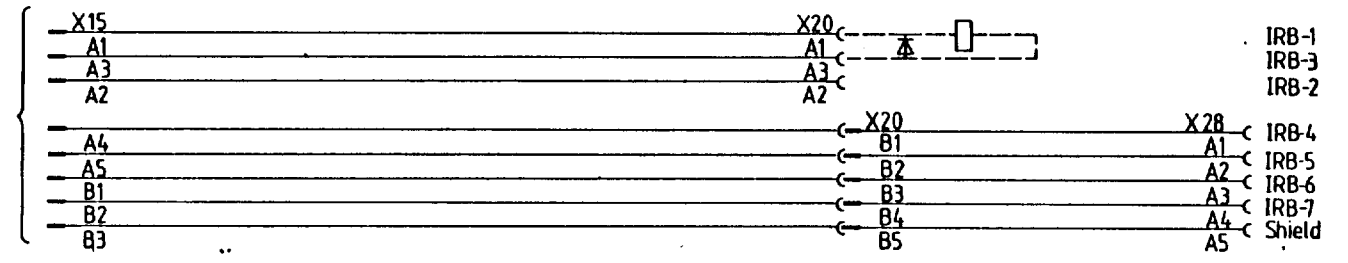


AXIS 5 (Turn)



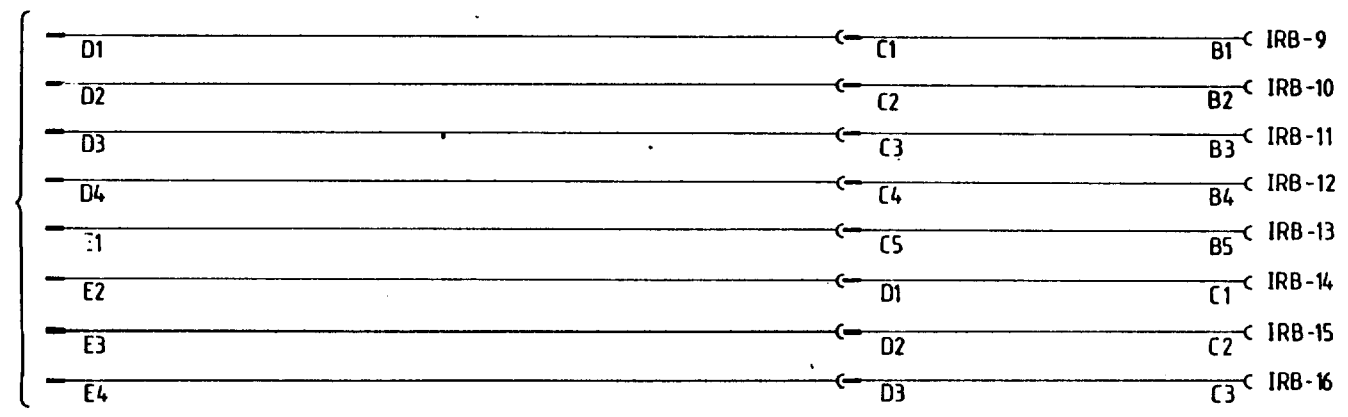
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No.	Revision	Appl.	Dept.	Year	Wk.	<input type="checkbox"/> Overrikschema Block diagram				<input checked="" type="checkbox"/> Kretschema Circuit diagram					
Robot IRB 6/2						6397 001-TS				Sheet 9 Circ.					
ASEA						Design checked by <i>HL</i>				Drawing checked by <i>J</i>					
						Drawn by <i>BR</i>				No. for dept. <i>JKK</i>					
						Year <i>82</i>				Week <i>37</i>					

ROBOT R1



Customer connection *)
 (IRB-1, IRB-2 and
 IRB-3 also used for
 magnet valves)

*) Max current for cables 1A



*)

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Order No.	Year	Wk.
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Revision		Appr	Dept	Year	Wk	<input type="checkbox"/> Übersichtsschema Block diagram <input checked="" type="checkbox"/> Kretsschema Circuit diagram		6704 100-BCA		Sheet
1 Sh.L.3.7.15 Sch. sh. 29,30 add. DSAO 110 Computer link con. add.		MA.H	JKCS	83	23	Control system IRB 6/2				1
ASEA						Design checked by JKEM AA		Drawing checked by JKEM AA		2
						Ebk		JJK		Year Week 83 20

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SHEET	CONTENTS
1	LIST OF CONTENTS
2	VIEW OF CONTROL CABINET
3	BLOCK DIAGRAM
4	JUMPERS ON CIRCUIT BOARDS
10	MAIN POWER CONNECTION
11	POWER DISTRIBUTION
12	ELECTRONIC POWER DISTRIBUTION
13	EMERGENCY STOP LOOP
14	CONTROL PANEL AND BASIC IN/OUTPUTS
15	PROGRAMMING UNIT AND FLOPPY-DISC UNIT
16	AXIS CONTROL FOR AXIS 1-5
20	AXIS CONTROL FOR AXIS 6
21	AXIS CONTROL FOR AXIS 7-9
23	DIGITAL IN/OUTPUTS 24V D.C. , DSDX 110
24	DIGITAL INPUTS 24V D.C. , DSDI 110
25	DIGITAL INPUTS 110V A.C. , DSDI 130
26	DIGITAL OUTPUTS 24V D.C. , DSDO 110
27	DIGITAL OUTPUTS RELAY , DSDO 130
28	ANALOG INPUTS , DSAI 120
29	ANALOG OUTPUTS , DSAO 110
30	DATA TERMINAL AND COMPUTER LINK CONNECTION

ATTENTION: IN THIS CIRCUIT DIAGRAM ARE NOT ALL FUNCTIONS INCLUDED. CIRCUIT DIAGRAMS FOR THESE ARE TO BE FOUND IN SEPARATE DOCUMENTS FOR RESP OPTIONAL FUNCTION

Revision A

B

C

D

Översiktsschema Block diagram Krets-schema Circuit diagram
 Control system IRB 6/2
ASEA

6704 100-BCA

Design checked by JKEM

Drawing checked by JKEM

Drawn by BMc

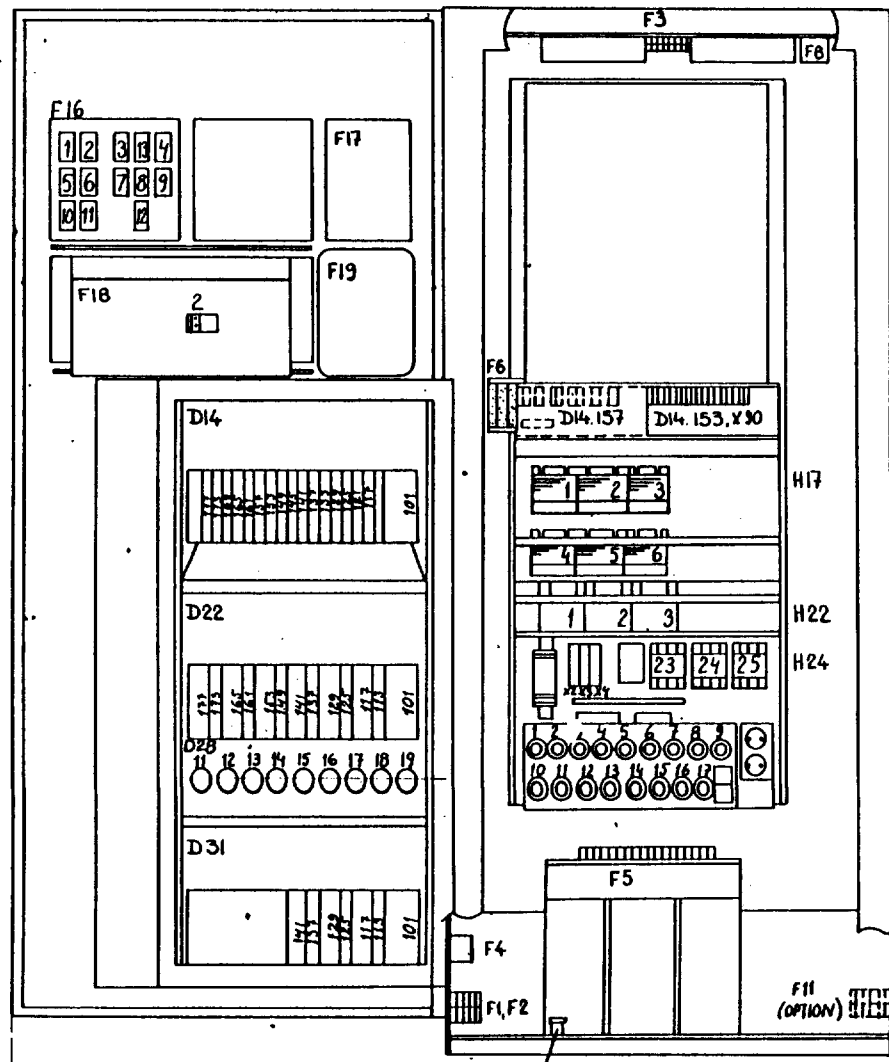
Int. by JKK

Sheet 2
 Cont. 3
 Year 'Week 83 20

VIEW OF CONTROL CABINET

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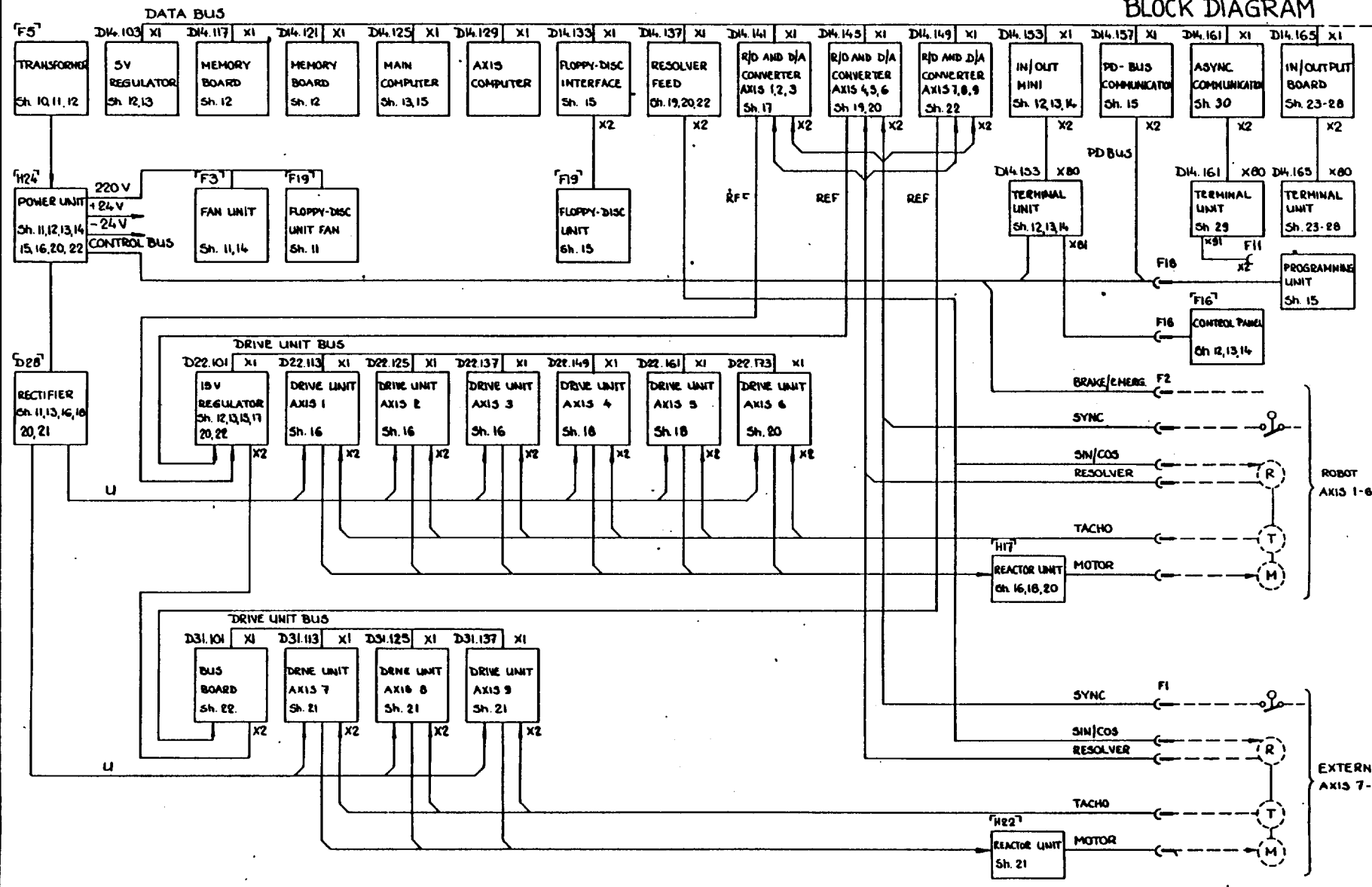
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 Year 'Week

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BLOCK DIAGRAM



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Date	Year	Wk	Cont

**JUMPERS ON MAIN COMPUTER
AND MEMORY BOARDS**

D14.125	
DSPC 153 Main single-board computer	
1. Memory address field	
S6: 1-2, 3-4, 5-6	<input checked="" type="checkbox"/> 0-64 kbytes
2. Memory type	
S10: 1-3, 5-6, 9-10	<input checked="" type="checkbox"/> EPROM 2764
S20: 1-3, 5-6, 9-10	<input checked="" type="checkbox"/> EPROM 2764
S2: 2-4	<input checked="" type="checkbox"/> Normal operation
3. Back-up voltage	
S5: 1-2, 3-5, 4-6	<input checked="" type="checkbox"/> None
4. Access time	
S1: 7-8	<input checked="" type="checkbox"/> 2 wait-states
5. Mode	
S2: 7-8	<input checked="" type="checkbox"/> Normal
S8: 1-2	<input checked="" type="checkbox"/> Normal
S9: 1-2	<input checked="" type="checkbox"/> Normal

D14.121	
DSMB 124 PROM/RW memory board	
1. Memory address field	
S1: 2-3, 4-5, 8-9, 11-12	<input checked="" type="checkbox"/> 256k - 384 k bytes
2. Memory type	
S10: 2-4, 5-6	<input checked="" type="checkbox"/> EPROM 2764
S11: 1-2, 3-4	<input checked="" type="checkbox"/> RW 6116
S12: 1-2, 3-4	<input checked="" type="checkbox"/> RW 6116
3. Back-up voltage	
S2: 5-6, 9-10, 11-12, 13-14, 15-16	<input checked="" type="checkbox"/> External and separate RW
4. Access time	
S4: 1-2	<input checked="" type="checkbox"/> Quick acknowledge activated

D14.117	
DSMB 125 PROM/RW memory board (Option)	
1. Memory address field	
S1: 1-2, 4-5, 8-9, 11-12	<input checked="" type="checkbox"/> 384k - 512 kbytes
2. Memory type	
S10: 2-4, 5-6	<input checked="" type="checkbox"/> EPROM 2764
S11: 1-2, 3-4	<input checked="" type="checkbox"/> RW 6116
S12: 1-2, 3-4	<input checked="" type="checkbox"/> RW 6116
3. Back-up voltage	
S2: 5-6, 9-10, 11-12, 13-14, 15-16	<input checked="" type="checkbox"/> External and separate RW
4. Access time	
S4: 1-2	<input checked="" type="checkbox"/> Quick acknowledge activated

Attention! The jumpers which are not marked must be placed according to the actual options which are included in the system

Other jumper groups are not to be used.

The pin marked "1" on the shack side of the straps groups is the first pin.

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Drawn by	Desg.	Year '83	Cont.
Checked by			

<input type="checkbox"/> Översiktsschema Block diagram		<input checked="" type="checkbox"/> Kretsschema Circuit diagram	
Control system IRB 6/2		6704 100-BCA	
ASEA		Design checked by JKEM	Drawing checked by JKEM
Drawn by	In. by dept	Bjle	JKK

JUMPERS ON AXIS CONTROL BOARDS

DI4.129

DSPA 110 Axis slave computer

1. I/O address	
S1: 1-2, 5-6, 8-9, 10-11	<input checked="" type="checkbox"/> \$ 29
14-15, 16-17, 20-21, 23-24	
2. Memory type	
S6: 1-2, 3-4	<input checked="" type="checkbox"/> RW 6116
S5: 1-3, 5-6	<input checked="" type="checkbox"/> EPROM 2764
3. Access time	
S4: 3-4	<input checked="" type="checkbox"/> 1 wait-state
S3: 1-2	<input checked="" type="checkbox"/> 0 wait-state area 3
4. Mode	
S2: 7-9	<input checked="" type="checkbox"/> Normal
S7: 1-2	<input checked="" type="checkbox"/> Normal

DI4.145

DSQC 104 R/D and D/A converter Axis 4, 5, 6

1. I/O address	
S1: 1-2, 5-6, 7-8, 11-12	<input checked="" type="checkbox"/> \$ 45
14-15, 17-18, 19-20, 23-24	
2. Measuring channels	
X4: 21-23, 24-26	<input type="checkbox"/> Axis 4, 5
X4: 21-23, 22-24	<input type="checkbox"/> Axis 4, 5, 6 (Option)

DI4.149

DSQC 104 R/D and D/A converter Axis 7, 8, 9 (Option)

1. I/O address	
S1: 1-2, 5-6, 8-9, 10-11	<input checked="" type="checkbox"/> \$ 49
14-15, 17-18, 19-20, 23-24	
2. Measuring channels	
X4: 23-25, 24-26	<input type="checkbox"/> Axis 7 (Option)
X4: 21-23, 24-26	<input type="checkbox"/> Axis 7, 8 (Option)
X4: 21-23, 22-24	<input type="checkbox"/> Axis 7, 8, 9 (Option)

DI4.141

DSQC 104 R/D and D/A converter Axis 1, 2, 3

1. I/O address	
S1: 1-2, 5-6, 8-9, 11-12	<input checked="" type="checkbox"/> \$ 41
14-15, 17-18, 19-20, 23-24	
2. Measuring channels	
X4: 21-23, 22-24	<input checked="" type="checkbox"/> Axis 1, 2, 3

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No	Revision	Appd	Dept	Year	Wk

No	Revision	Appd	Dept	Year	Wk
1	DM 14.161 ASYNK. KOMMUNIKATION MOD. KAH	JKK	5	83	23

C		D		Sheet
<input type="checkbox"/> Översiktsschema Block diagram <input checked="" type="checkbox"/> Kretsschema Circuit diagram		6704 100-BCA		6
Control system IRB 6/2				7
ASEA	Design checked by JKEM	Drawing checked by JKEM	Drawn by BWe	Int. by dept JKK
				Year Week 83 20

JUMPERS ON I/O BOARDS

DI4.133

DSMC 110 Floppy-disc interface	
1. I/O address	
SI: 1-2, 4-5, 8-9, 11-12	<input checked="" type="checkbox"/> \$ 33
13-14, 16-17, 20-21, 23-24	
2. Density, writepulse adjustment and mode	
S2: 1-2, 3-4	<input checked="" type="checkbox"/> Normal
S3: 1-2	<input checked="" type="checkbox"/> Normal

DI4.161

DSCA 114 Asynchronous communication module (Option)	
1. I/O-address and interrupt level	
SI: 8-9, 11-12, 14-15, 16-17, 19-20, 23-24	<input checked="" type="checkbox"/> \$ 60
SI: 2-3, 4-5	<input checked="" type="checkbox"/> Level 2

DI4.153

DSDX 110 I/O-mini	
1. I/O address	
SI: 1-2, 4-5, 8-9, 11-12	<input checked="" type="checkbox"/> \$ 53
13-14, 17-18, 19-20, 23-24	
2. Mode	
X3: 37-38, 39-40	<input checked="" type="checkbox"/> Normal

DI4.157

DSCA 121 PD-bus communication	
1. I/O address and interrupt level	
SI: 4-5, 7-8, 11-12	<input checked="" type="checkbox"/> \$ 56
13-14, 17-18, 19-20, 23-24	
SI: 1-2	<input checked="" type="checkbox"/> Level 2
2. Mode	
S2: 1-2, 3-4, 5-6, 7-8, 9-10	<input checked="" type="checkbox"/> Normal

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No	Revision	Appd	Dept	Year	Wk

No	Revision			Appd	Desg	Year	Wk
	1	DSA0 110 add. D14.165 was D14.169	D14.169 was D14.165				

<input type="checkbox"/> Översiktsschema Block diagram <input checked="" type="checkbox"/> Kretsschema Circuit diagram		6704 100-BCA	
Control system IRB 6/2		Design checked by JKEM	Drawing checked by JKEM
ASEA		Drawn by BWe	Iss. by dept. JKK

Sheet 7	Cont 7.5	Year 83	Week 20
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JUMPERS ON I/O BOARD

'D14.165'

DSDX 110 DSDO 110, 120, 130, 140 DSDI 110, 120, 130, 140 DSAI 120 DSAO 110	I/O-mini Digital outputs Digital inputs Analog inputs Analog outputs	} (Option)
1. I/O address S1: 1-2, 5-6, 7-8, 11-12 <input checked="" type="checkbox"/> \$ 65 14-15, 16-17, 19-20, 23-24		
2. Test light diodes on DSAI 120 S2: 1-2 <input checked="" type="checkbox"/> Off		
3. Mode on DSDX 110, DSDI 110, 120, 130, 140 X3: 37-38, 39-40 <input checked="" type="checkbox"/> Normal		
4. Function on DSAO 110 S 101, S201, S301, S401 : 1-2, 3-4, 5-6, 7-8 <input checked="" type="checkbox"/> Normal		
5. Mode on DSAO 110 1) S 102, S202, S302, S402 1-2, 5-6 <input type="checkbox"/> 0-±10V 1-2, 7-8 <input type="checkbox"/> 0-±10mA 1-3, 7-8 <input type="checkbox"/> 0-±20mA		

'D14.169'

DSDX 110 DSDO 110, 120, 130, 140 DSDI 110, 120, 130, 140 DSAI 120 DSAO 110	I/O-mini Digital outputs Digital inputs Analog inputs Analog outputs	} (Option)
1. I/O address S1: 1-2, 5-6, 8-9, 10-11 <input checked="" type="checkbox"/> \$ 69 14-15, 16-17, 19-20, 23-24		
2. Test light diodes on DSAI 120 S2: 1-2 <input checked="" type="checkbox"/> Off		
3. Mode on DSDX 110, DSDI 110, 120, 130, 140 X3: 37-38, 39-40 <input checked="" type="checkbox"/> Normal		
4. Function on DSAO 110 S 101, S201, S301, S401 1-2, 3-4, 5-6, 7-8 <input checked="" type="checkbox"/> Normal		
5. Mode on DSAO 110 1) S 102, S202, S302, S402 1-2, 5-6 <input type="checkbox"/> 0-±10V 1-2, 7-8 <input type="checkbox"/> 0-±10mA 1-3, 7-8 <input type="checkbox"/> 0-±20mA		

1) Strap group orientation for mode on DSAO 110

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Year	Wk
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Year	Wk
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No	Revision	Appd	Dept	Year	Wk
1	DSA0 110 add. D14.173 was D14.169 D14.177 was D14.173	NAH	JKCS	83	23

C		D		Sheet
<input type="checkbox"/> Översiktsschema Block diagram	<input checked="" type="checkbox"/> Kretsschema Circuit diagram	6704 100-BCA		75
Control system IRB 6/2				Cont 8
ASEA		Design checked by JKEM	Drawing checked by JKEM	Year 83
		Drawn by Ble	Iss. by dept JKK	Week 20

JUMPERS ON I/O BOARDS

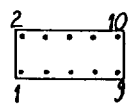
D14.173

DSDX 110 DSDO 110, 120, 130, 140 DSDI 110, 120, 130, 140 DSA0 110	I/O-mini Digital outputs Digital inputs Analog outputs	} OPTION
1. I/O address S1: 1-2, 4-5, 8-9, 11-12 13-14, 16-17, 19-20, 23-24		
2. Made on DS < 110, DSDI 110, 120, 130, 140 X3: 37-38, 39-40		<input checked="" type="checkbox"/> Normal
3. Function on DSA0 110 S101, S201, S301, S401: 1-2, 3-4, 5-6, 7-8		<input checked="" type="checkbox"/> Normal
4. Made on DSA0 110 1) S102, S202, S302, S402 1-2, 5-6 1-2, 7-8 1-3, 7-8		<input type="checkbox"/> 0 - ±10V <input type="checkbox"/> 0 - ±10mA <input type="checkbox"/> 0 - ±20mA

D14.177

DSDX 110 DSDO 110, 120, 130, 140 DSDI 110, 120, 130, 140	I/O-mini Digital outputs Digital inputs	} OPTION
1. I/O address S1: 1-2, 4-5, 7-8, 11-12 13-14, 16-17, 19-20, 23-24		
2. Made on DSDX 110, DSDI 110, 120, 130, 140 X3: 37-38, 39-40		<input checked="" type="checkbox"/> Normal

1) Strap group orientation for mode on DSA0 110



Sheet	Year	Wk	Cont

No.	Revision	Appr.	Dgn.	Year	Mk.

<input type="checkbox"/> Översiktschema Block diagram <input checked="" type="checkbox"/> Kretsschema Circuit diagram		Control system IRB 6/2		6704 100-BCA		Sheet 8
ASEA		Design checked by JKEM	Drawing checked by JKEM	Drawn by BJK	In. by dept. JKK	Year 83 Week 20

JUMPERS ON DRIVE UNITS

D22.113

YYT 102D	Control board with tacho	Axis 1
1. Overload	SI:7-8	<input checked="" type="checkbox"/> 6,5 A, IRB 6/2

D22.137

YYT 102D	Control board with tacho	Axis 3
1. Overload	SI:7-8	<input checked="" type="checkbox"/> 6,5 A IRB 6/2

D22.125

YYT 102D	Control board with tacho	Axis 2
1. Overload	SI:7-8	<input checked="" type="checkbox"/> 6,5 A, IRB 6/2

D22.149

YYT 102E	Control board with tacho	Axis 4
1. Overload	SI:7-8	<input checked="" type="checkbox"/> 6,5 A, IRB 6/2

D22.161

YYT 102E	Control board with tacho	Axis 5
1. Overload	SI:7-8	<input checked="" type="checkbox"/> 6,5 A, IRB 6/2

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No	Revision	Appd	Date	Year	Wk	Cont
<input type="checkbox"/> Översiktsschema Block diagram <input checked="" type="checkbox"/> Kretsschema Circuit diagram Control system IRB 6/2						Sheet 9 Cont 10 Year 83 Week 20
ASEA			Design checked by JKEM	Drawing checked by JKEM	Drawn by BWE	Iss by dept JKK

JUMPERS ON DRIVE UNITS AND CONVERTER

D22.173

YYT 102A Control board with tach. External axis 6 (Option)

1. Overload

SI: 7-8 6.5A, IRB 60/2 and external small motor

SI: 1-2 8A, External large motor

D31.125

YYT 102A Control board with tach. External axis 8 (Option)

1. Overload

SI: 7-8 6.5A External small motor

SI: 1-2 8A External large motor

D31.113

YYT 102A Control board with tach. External axis 7 (Option)

1. Overload

SI: 7-8 6.5A External small motor

SI: 1-2 8A External large motor

D31.137

YYT 102A Control board with tach. External axis 9 (Option)

1. Overload

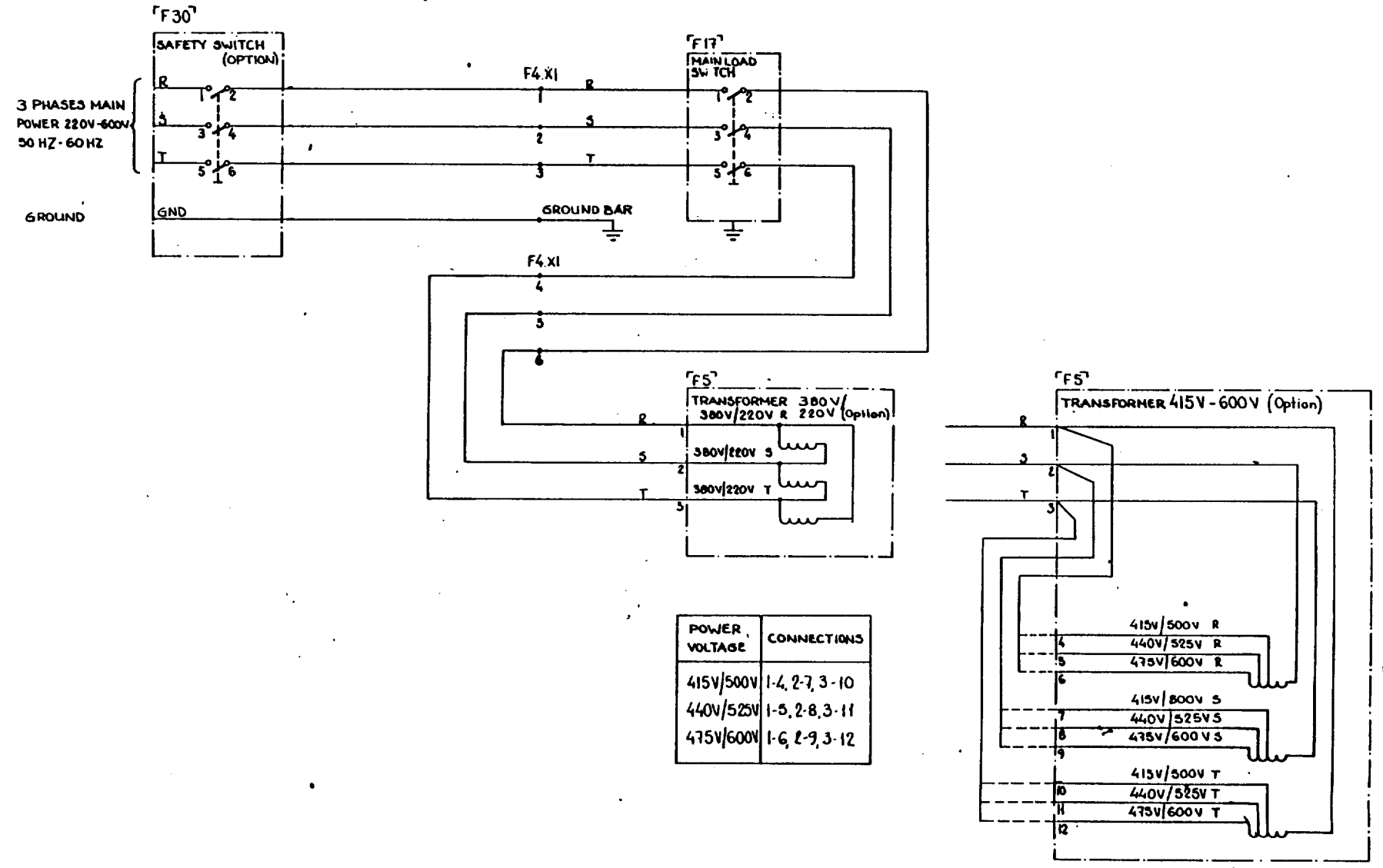
SI: 7-8 6.5A, External small motor

SI: 1-2 8A, External large motor

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Revision		Appd		Dept		Year		WK		
A		B		C		D				
<input type="checkbox"/> Översätschema Block diagram <input checked="" type="checkbox"/> Kretschema Circuit diagram Control system IRB 6/2							6704 100-BCA		Sheet 10 Cont 11	
ASEA				Design checked by JKEM		Drawing checked by JKEM		Drawn by BHC JKK		Year 83 Week 20

MAIN POWER CONNECTION



POWER VOLTAGE	CONNECTIONS
415V/500V	1-4, 2-7, 3-10
440V/525V	1-5, 2-8, 3-11
475V/600V	1-6, 2-9, 3-12

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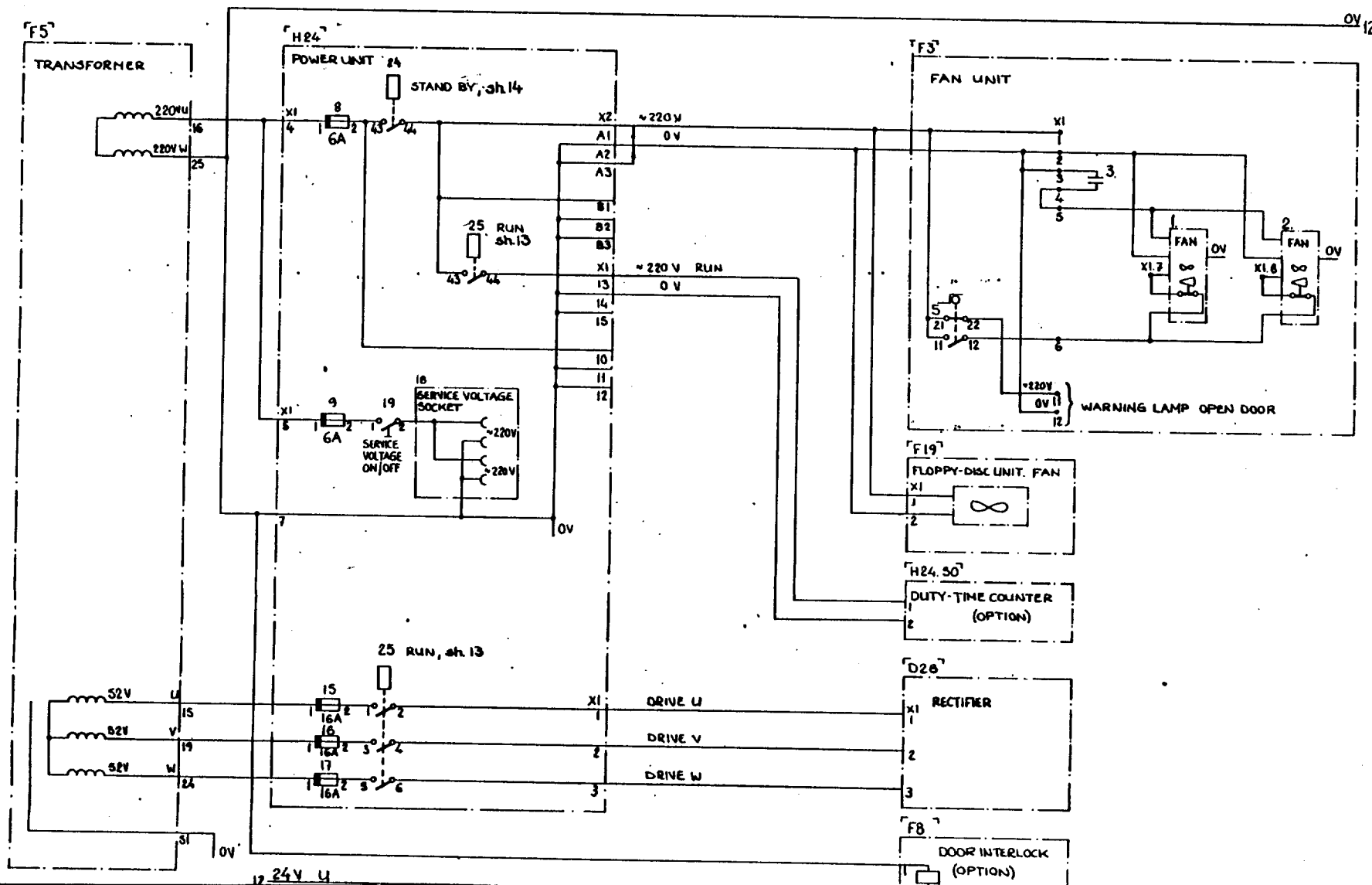
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TID No.		
Checked by	Year	WK
Drawn by		

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No.	Revision	Appd.	Dept.	Year	Wk.	C		D		Sheet
						□ Översiktsschema Block diagram <input checked="" type="checkbox"/> Kretschema Circuit diagram		Control system IRB 6/2		11
						6704 100-BCA				Copy
						ASEA		Design checked by JKEM	Drawing checked by JKEM	Drawn by BIK
								Iss. by dept. JKK	Year	Week
									83	20

POWER DISTRIBUTION



OV 12

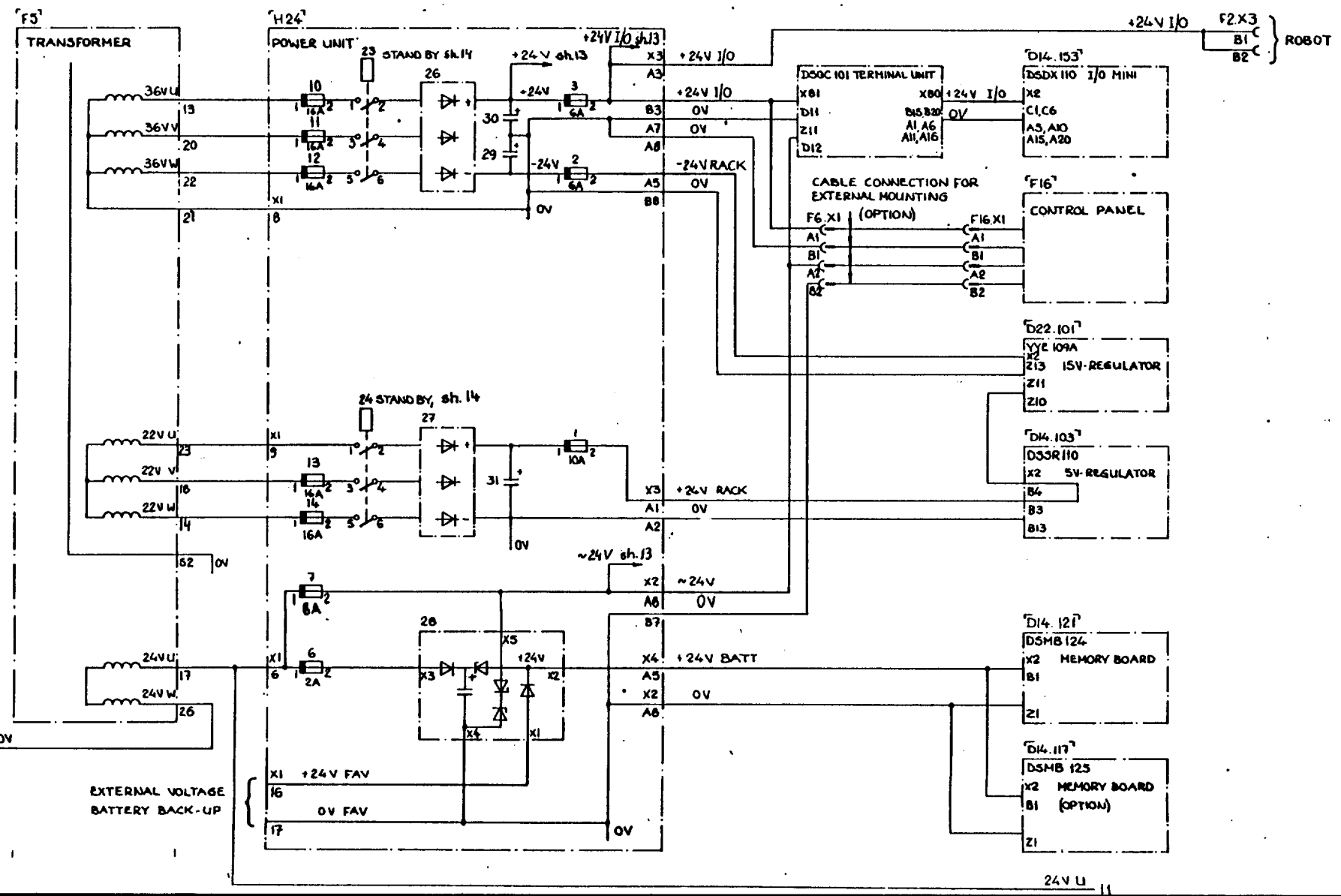
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<input type="checkbox"/> Översiktschema Block diagram <input checked="" type="checkbox"/> Kretschema Circuit diagram		Control system IRB 6/2		6704 100-BCA		Sheet 12 of 13
ASEA		Design checked by JKEM	Drawing checked by JKEM	Drawn by BHe	Iss. by dept JKK	Year 83 Week 20

ELECTRONIC POWER DISTRIBUTION



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Issue	
Year	
Issue	

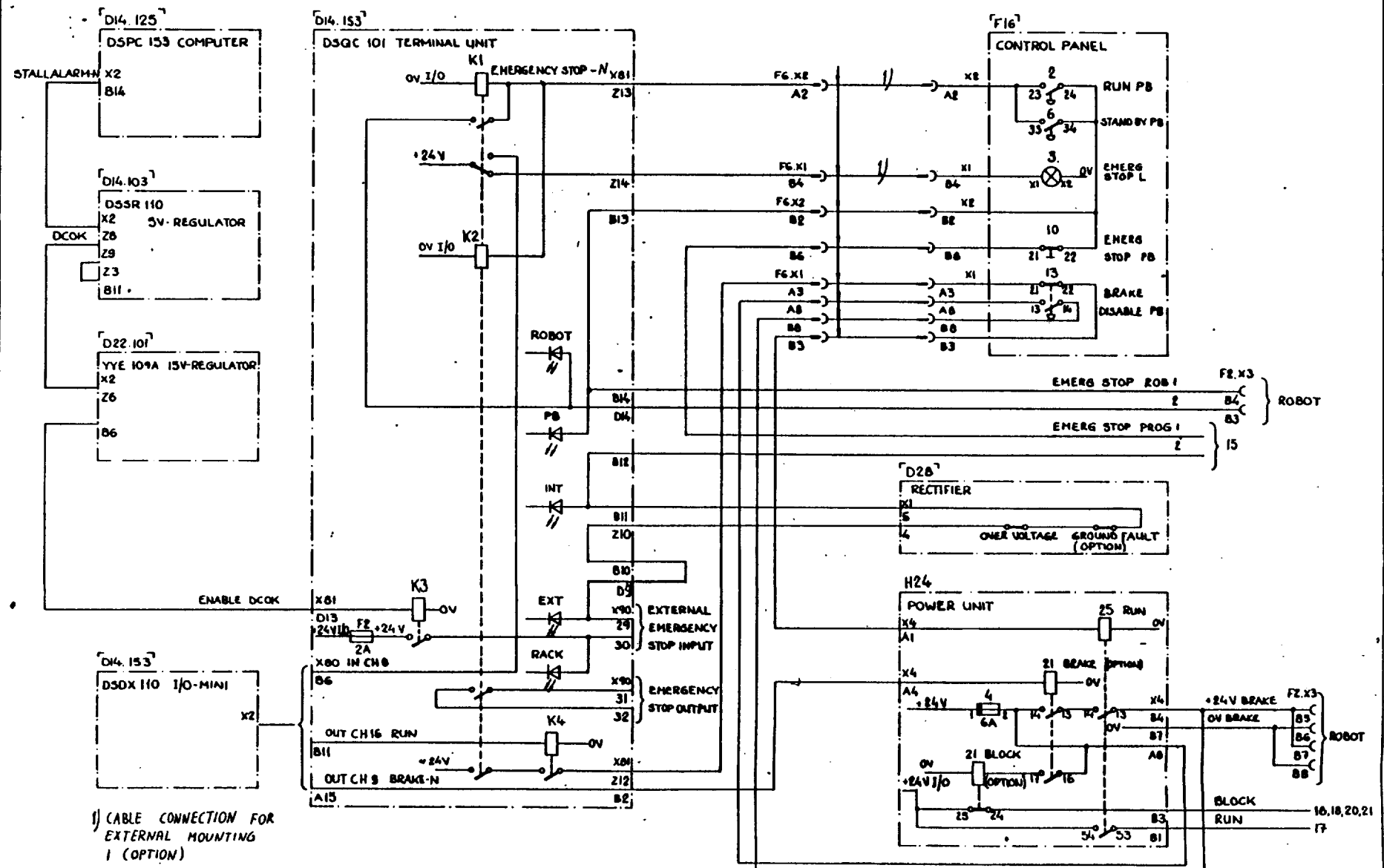
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No	Revision	Appr	Drawn	Year	Wk	Control system		6704 100-BCA		Sheet
						Å	IRB 6/2			13
										14
ASEA						Design checked by	Checked by	Drawn by	Iss. by	Year
						JKEM	JKEM	BHE	JKK	83 20

EMERGENCY STOP LOOP



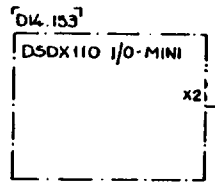
1) CABLE CONNECTION FOR EXTERNAL MOUNTING 1 (OPTION)

Rev	Revision	Appd	Dept	Year	Wk

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ASEA Design checked by JKEM	Drawing checked by JKEM Drawn by BKZ JKK Year 83 Week 20

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D14.153 ¹ D5QC IO1 TERMINAL UNIT			
X80	OUT CH 10	X81	83
B14	OUT CH 11		81
A14	OUT CH 12		23
B13	OUT CH 13		24
A13	OUT CH 14		25
B12	OUT CH 15		D5
A12			
IN CH 11			
A4	IN CH 12	Z6	
B3	IN CH 13	D10	
A3	IN CH 14	D8	
B2	IN CH 15	D1	
A2	IN CH 16	Z9	
B1		D7	
IN CH 9			
A5	IN CH 10	D6	
B4		D4	
D15.820 0V 4			
A14	OUT CH 1	GRAB 1	1
A13	OUT CH 2		2
B19	OUT CH 3	OUT 1	7
A19	OUT CH 4		2
B18	OUT CH 5		3
A18	OUT CH 6		4
B17	OUT CH 7		5
A17	OUT CH 8		6
B16	IN CH 1	IN 1	13
A10	IN CH 2		2
B9	IN CH 3		3
A9	IN CH 4		4
B8	IN CH 5		5
A8	IN CH 6		6
B7	IN CH 7		7
A7			20
+24V I/O 2A 0V EXT 2			
F1			
+24V EXT 20			
0V EXT 2			
J			
X81 IRB 1			
Z8		2	21
B4		3	22
B5		4	23
B6		5	24
B7		6	25
Z7		7	26
B8		8	27
Z8			28

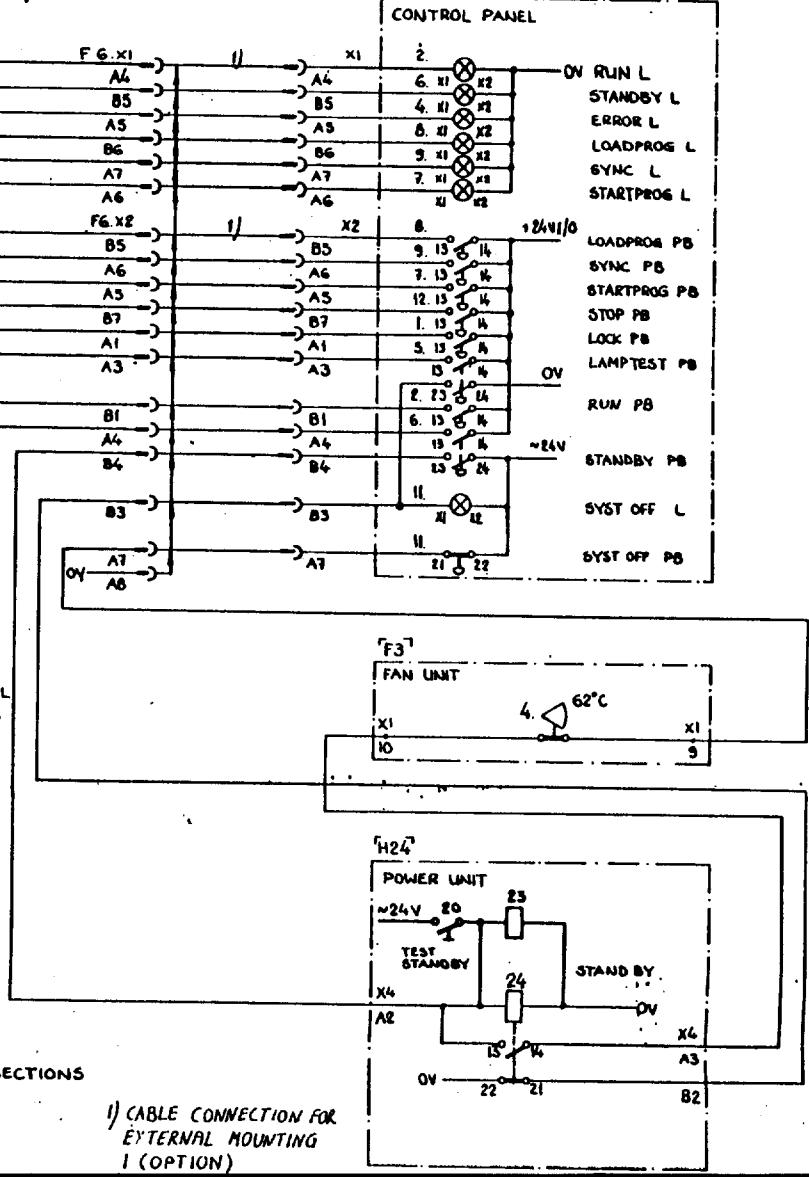
ROBOT	
F2.X3	
A1	
A2	
A3	
A4	
A5	
A6	
A7	
A8	

BASIC DIGITAL INPUTS AND OUTPUTS

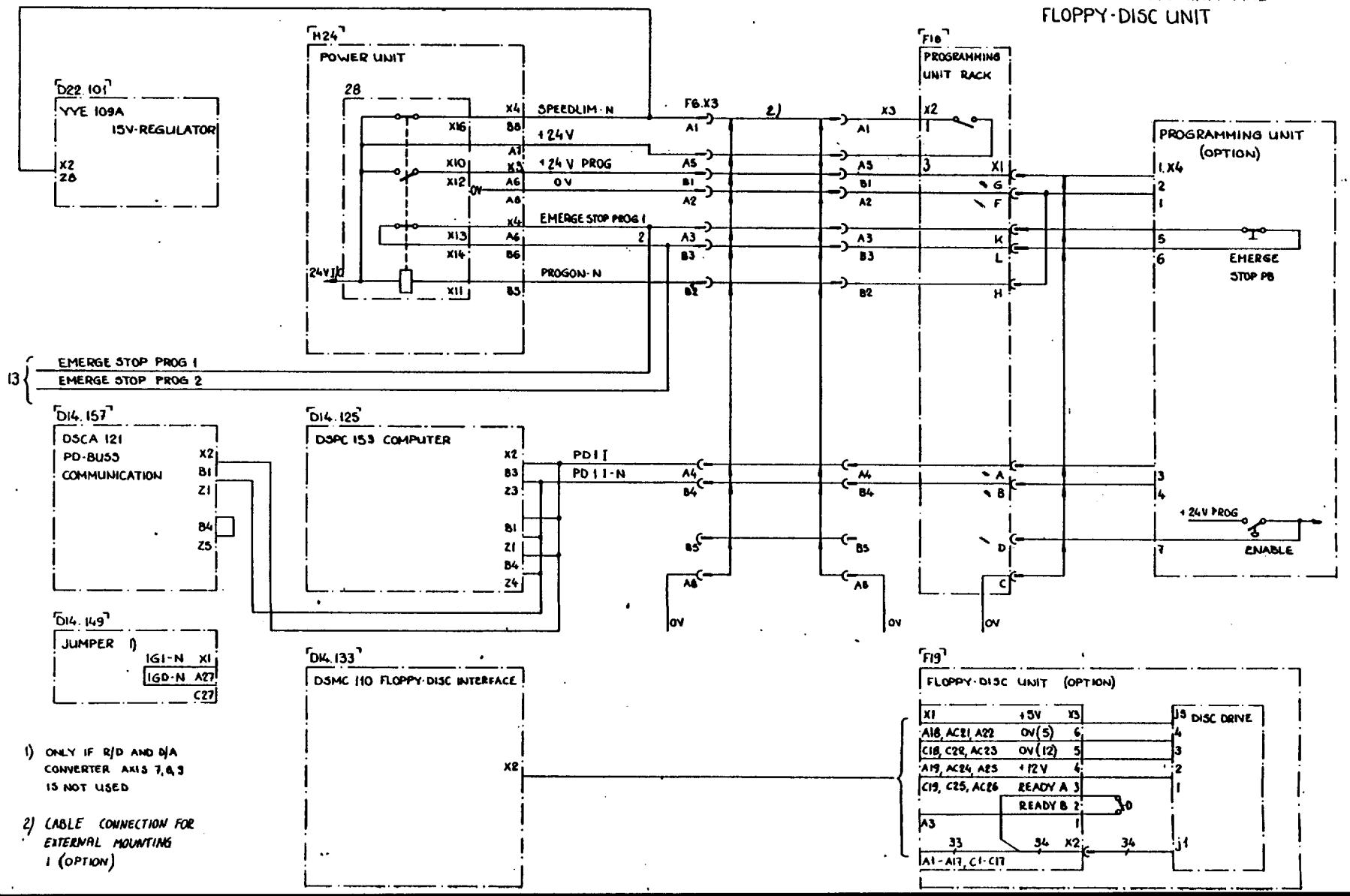
ROBOT CONNECTIONS

1) CABLE CONNECTION FOR EXTERNAL MOUNTING (OPTION)

FIG 1 CONTROL PANEL AND BASIC IN/OUTPUTS



PROGRAMMING UNIT AND
FLOPPY-DISC UNIT



13 { EMERGE STOP PROG 1
EMERGE STOP PROG 2

1) ONLY IF R/D AND D/A
CONVERTER AXIS 7, 8, 3
IS NOT USED

2) CABLE CONNECTION FOR
EXTERNAL MOUNTING
1 (OPTION)

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No	Revision	Appd	Dsgt	Year	Wk

Översiktsschema Block diagram Kretsschema Circuit diagram
Control system IRB 6/2

6704 100-BCA
Sheet 16
Cont 17
Year 83 Week 20

ASEA

Design checked by JKEM

Drawing checked by JKEM

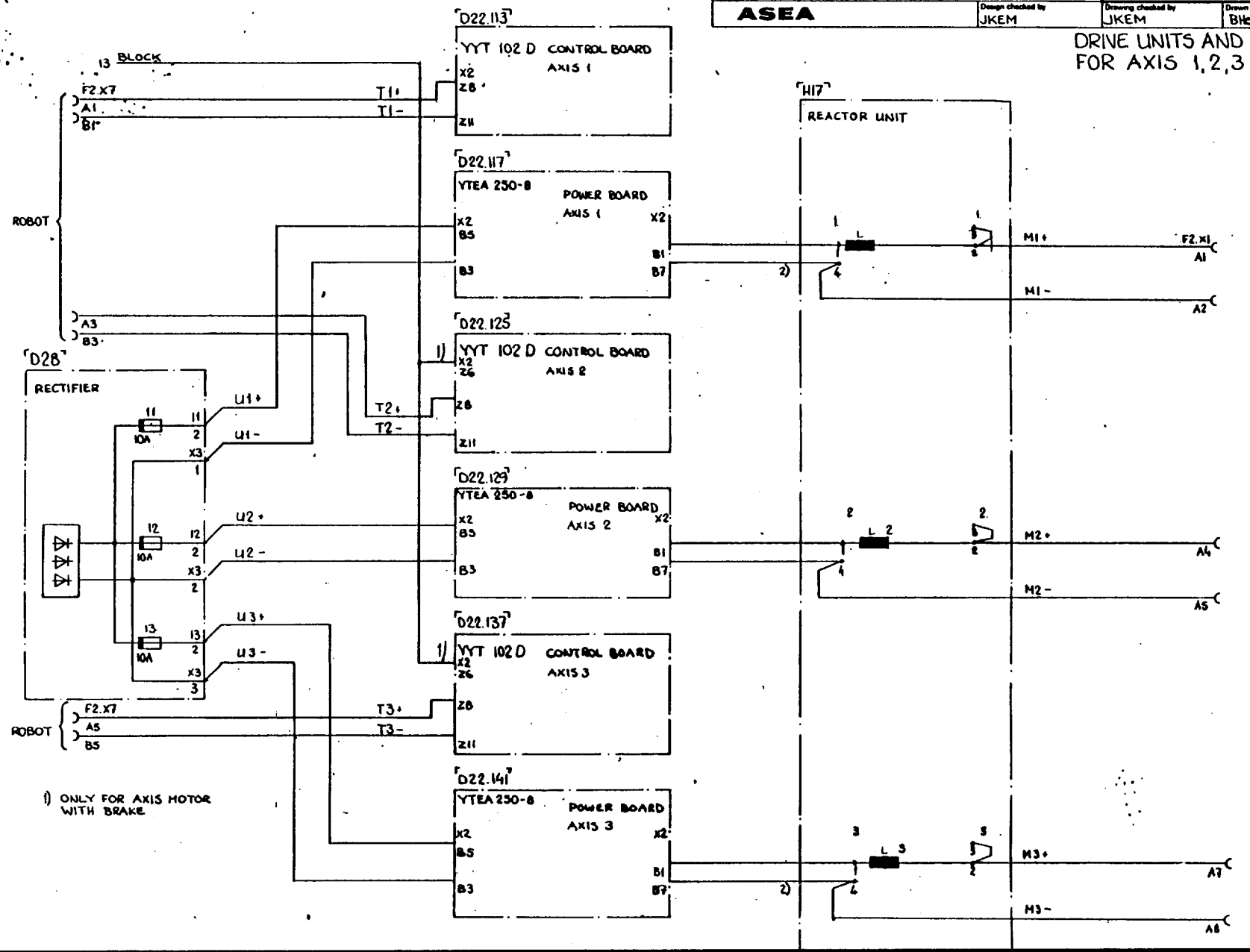
Drawn by BHe

Iss by dept JKK

DRIVE UNITS AND REACTORS FOR AXIS 1,2,3

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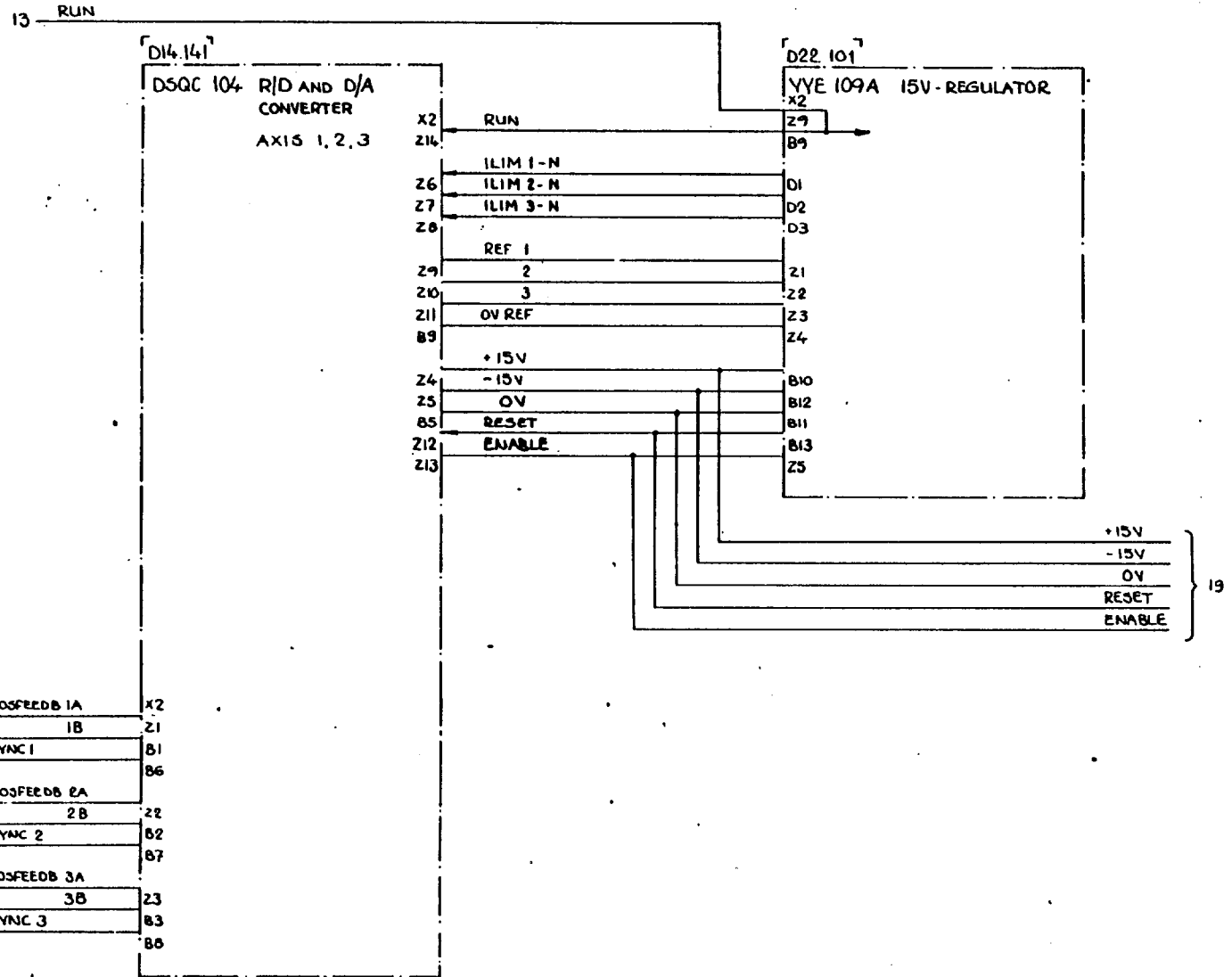
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	A	B	C	D	
No	Revision	Appr	Dept	Year	WK
<input type="checkbox"/> Översiktschema Block diagram <input checked="" type="checkbox"/> Kretsschema Circuit diagram Control system IRB6/2				6704 100-BCA	
ASEA			Design checked by JKEM	Drawing checked by JKEM	Drawn by BHE
				In by dept JKK	Year Week 83 20

R/D AND D/A CONVERTER
FOR AXIS 1,2,3



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No	Revision	Appr	Dept	Year	WK
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				In by dept JKK	Year Week 83 20

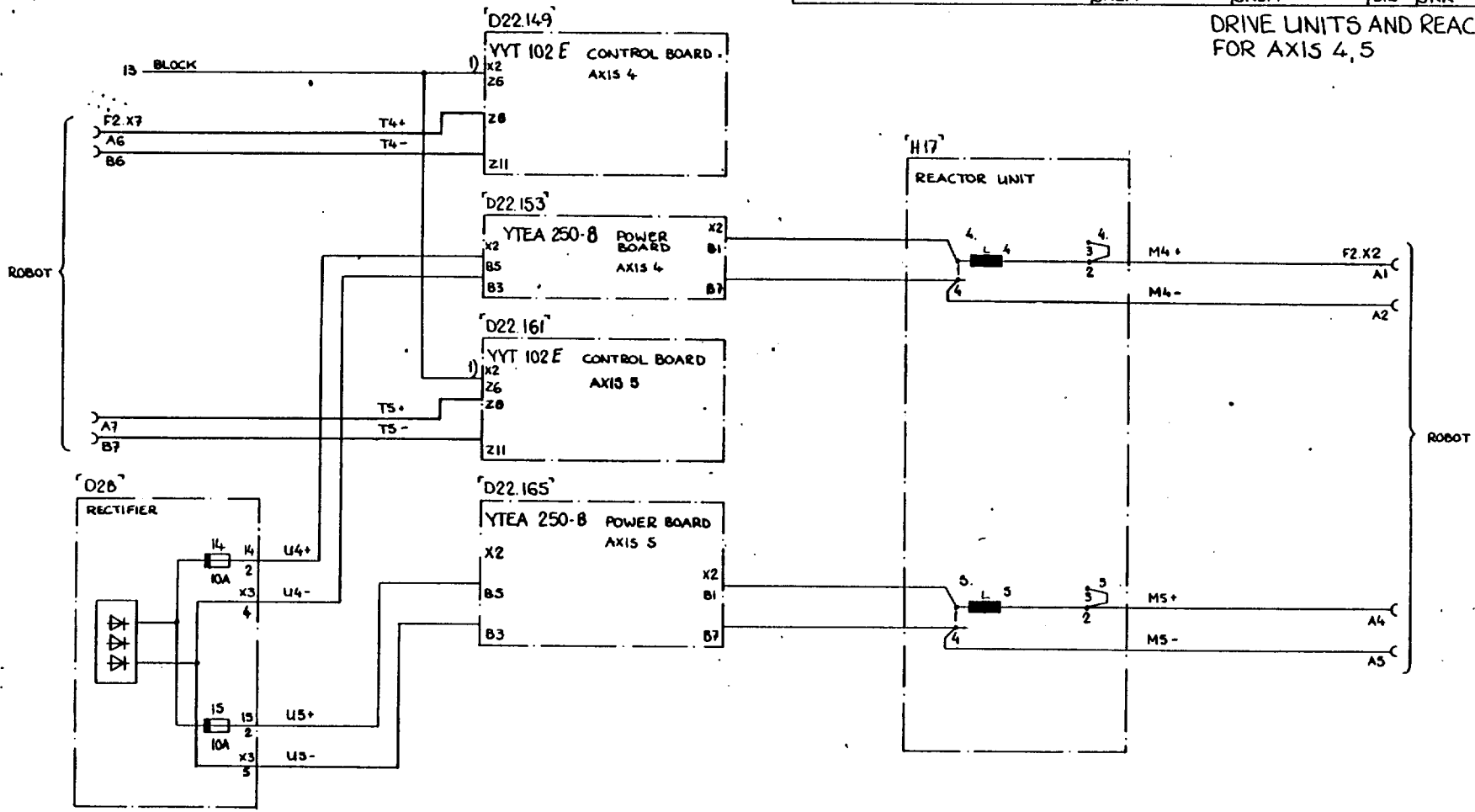
ROBOT

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No.		Revision		Appd.		Dept.		Year		WA	

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ASEA		Design checked by JKEM		Drawing checked by JKEM		Drawn by BHE	
				Iss. by dept JKK		Year Week 83 20	

DRIVE UNITS AND REACTORS FOR AXIS 4,5



1) ONLY FOR AXIS MOTOR WITH BRAKE

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Checked	
Year	WA
Cont	

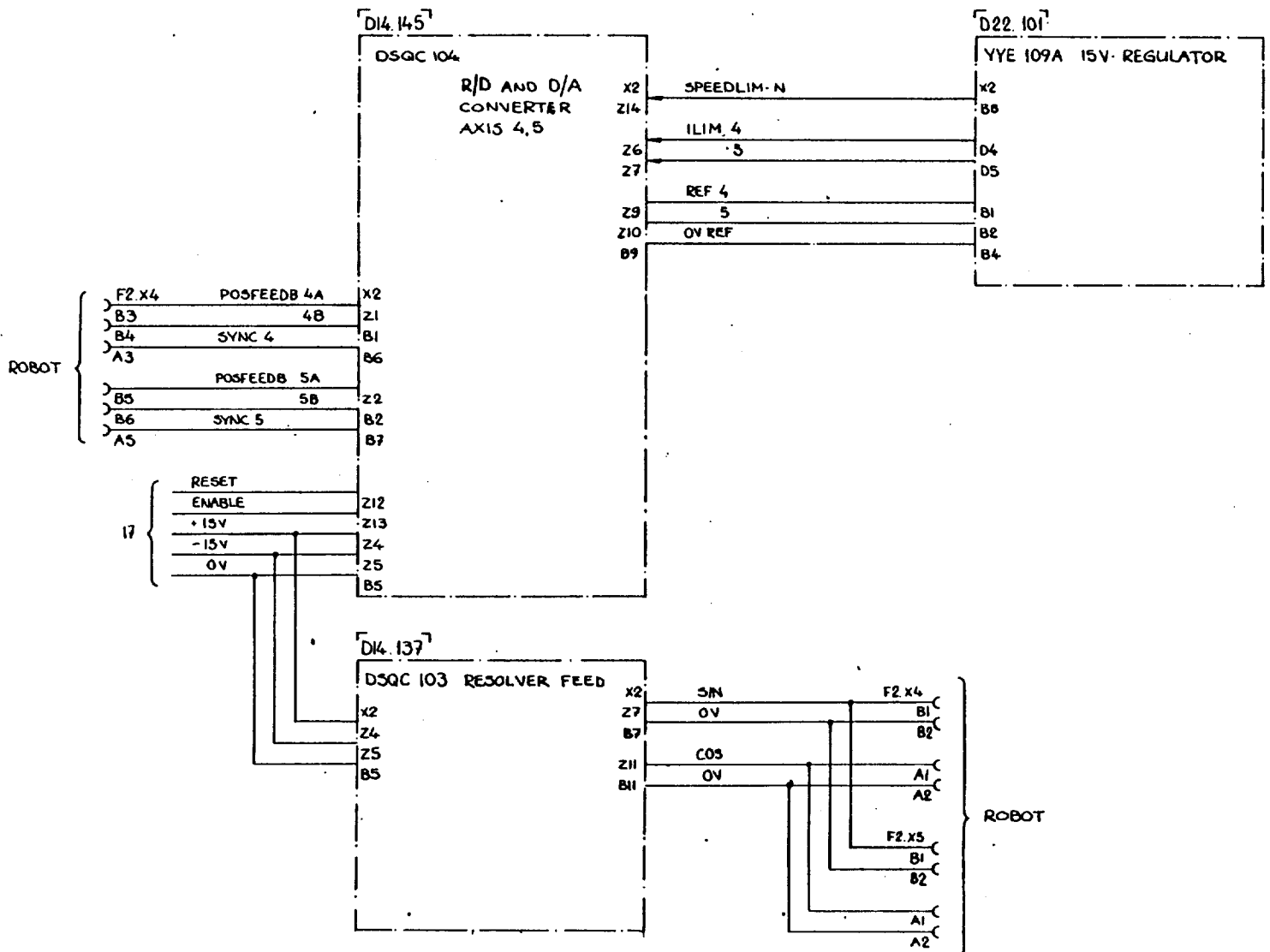
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Control system IRB 6/2		6704 100-BCA	
ASEA		Design checked by JKEM	Drawing checked by JKEM
Drawn by BHE		Ink by digit JKK	Year 83
Week 20		Sheet 19	
Core 20		Year 83	
Week 20		Sheet 19	

R/D AND D/A CONVERTER
FOR AXIS 4,5 RESOLVER FEED



Order No.	
YTD-145	
Created in	
Year	
Date	
Year	
Wk.	

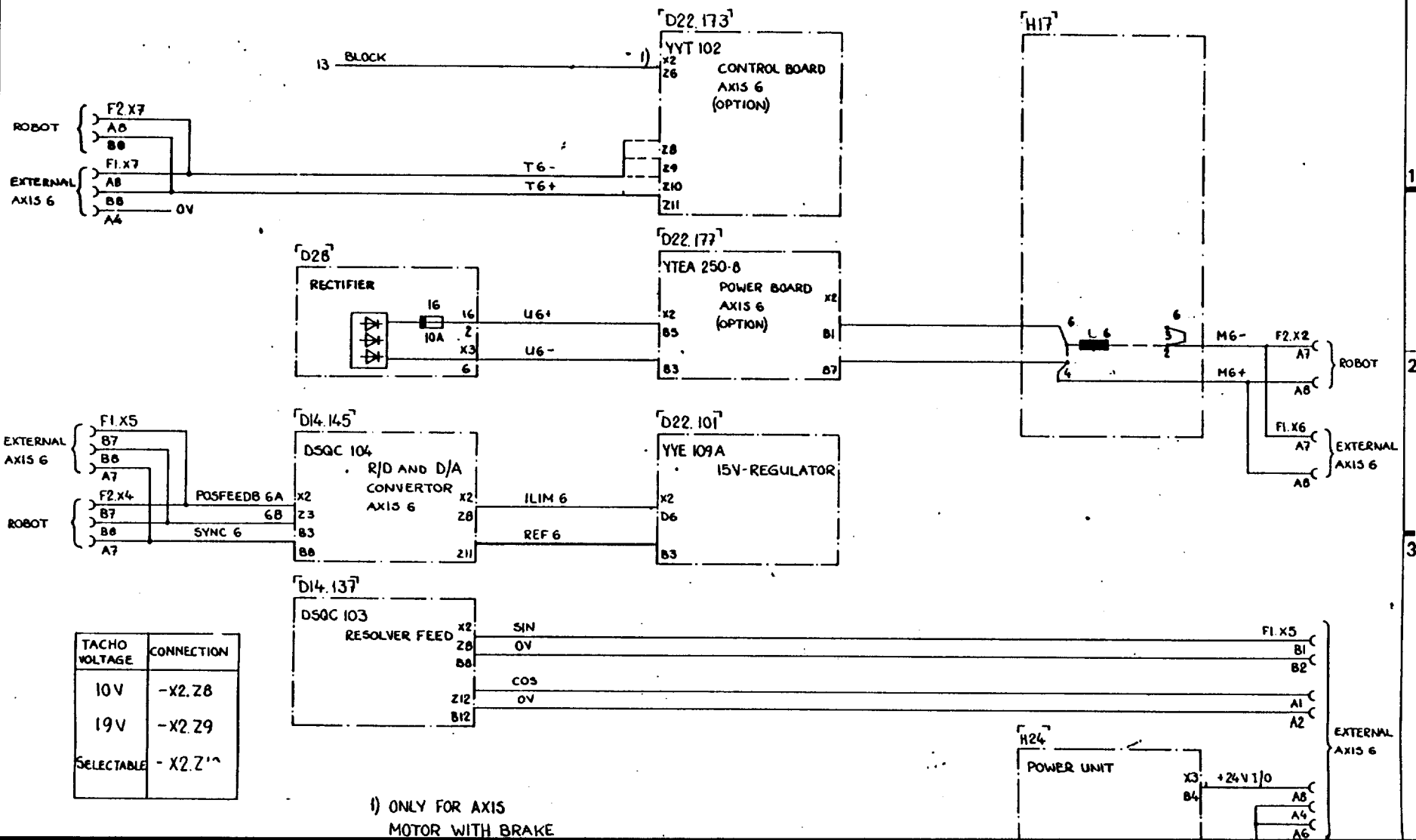
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No.	Revision				Apppl.	Dept.	Year	WA
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ASEA								Design checked by JKEM Drawing checked by JKEM Drawn by BHe Int. by dept JKCK Year 83 Week 20

AXIS CONTROL FOR AXIS 6
(OPTION)

Bilskon

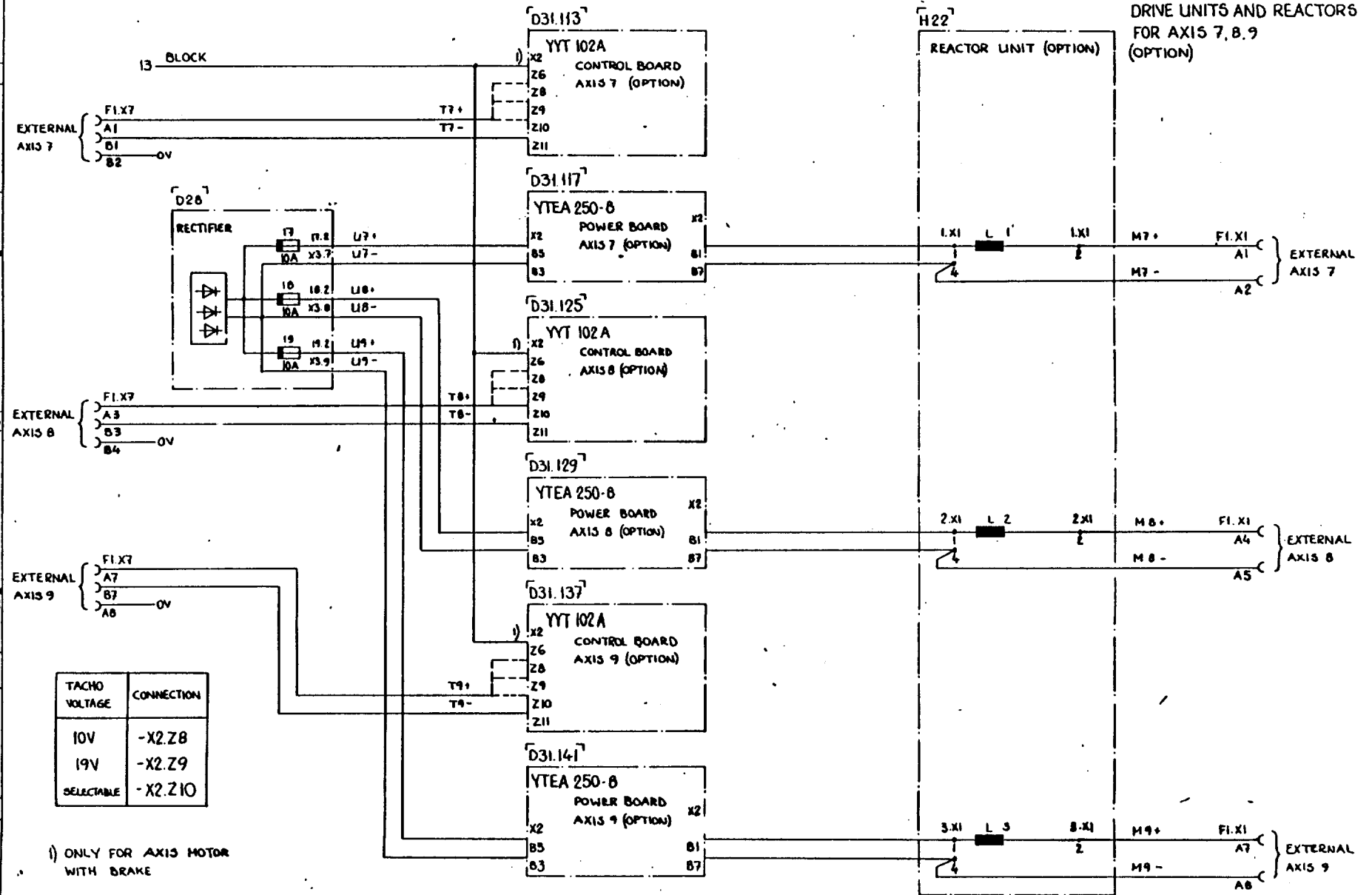
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TACHO VOLTAGE	CONNECTION
10V	-X2.Z8
19V	-X2.Z9
SELECTABLE	-X2.Z11

1) ONLY FOR AXIS MOTOR WITH BRAKE

DRIVE UNITS AND REACTORS FOR AXIS 7, 8, 9 (OPTION)



TACHO VOLTAGE	CONNECTION
10V	-X2.Z8
19V	-X2.Z9
SELECTABLE	-X2.Z10

1) ONLY FOR AXIS MOTOR WITH BRAKE

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No	Revision	Appr	Dgtr	Year	Wk

No		Revision		Appd	Dept	Year	WA
Date		Type		Scale		Sheet	
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Drawn by		Checked by		Design checked by		Drawing checked by	
Drawn by		Checked by		Design checked by		Drawing checked by	

Översiktsschema Block diagram Kretsschema Circuit diagram
Control system IRB 6/2

6704 100-BCA

Sheet 22
Cont 23
Year 83 Week 20

ASEA

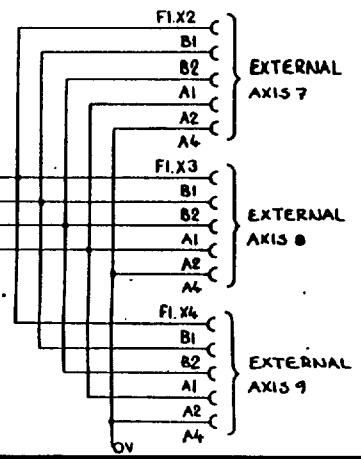
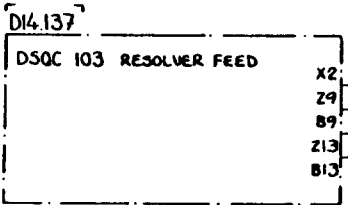
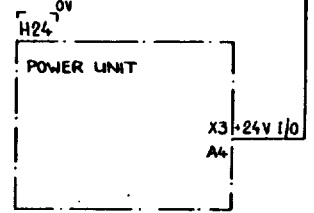
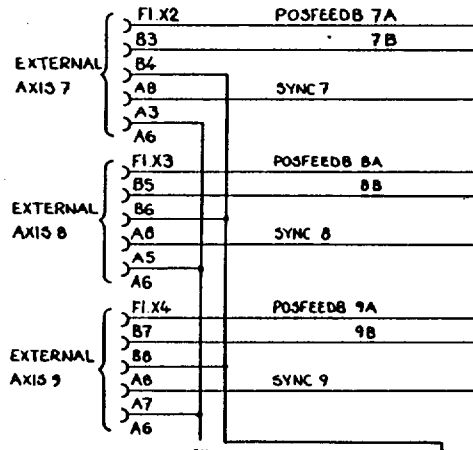
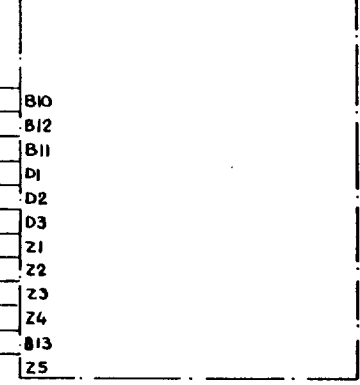
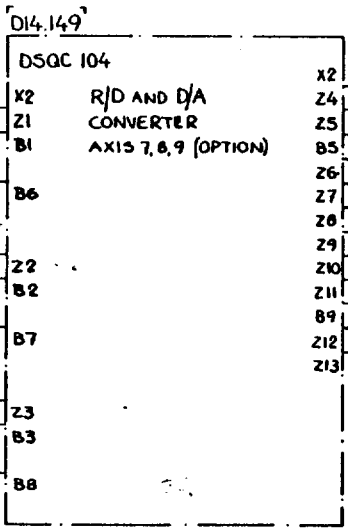
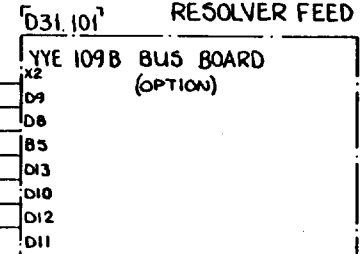
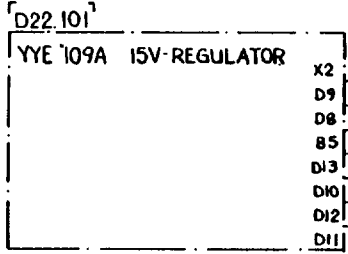
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Drawn by BHe
Iss. by dept JKK

R/D AND D/A CONVERTER FOR AXIS 7,8,9 (OPTION)

RESOLVER FEED



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Sheet	22
Cont	23
Year	83
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ASEA

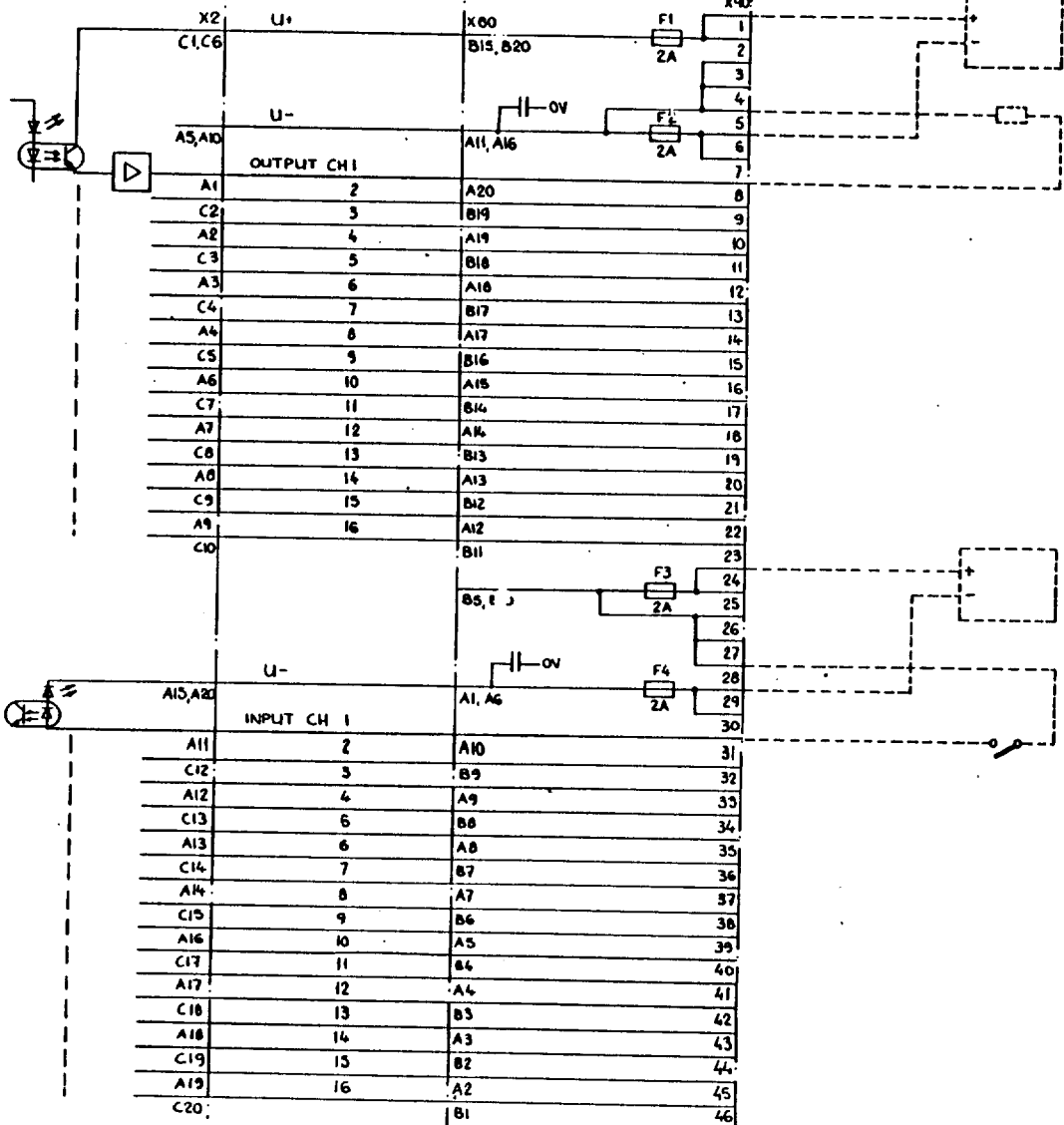
D14.XXX

D14.XXX

DIGITAL IN/OUTPUTS 24 V D.C.
D5DX 110 (OPTION)

D5DX 110 DIGITAL IN/OUTPUTS

DSTD 160 TERMINAL UNIT



SIGNAL FUNCTIONS IF FIRST OPTIONAL BOARD	
CHANNEL	OUTPUT SIGNALS
1	RUN
2	CYCLE ON
3	ERROR
4	PROG. UNIT EXTRACTED
5	GRIPP RELEASE 1
6	GRIPP RELEASE 2
7	SEARCH STOP
8	DIGITAL OUTPUT 7
16	DIGITAL OUTPUT 15
INPUT SIGNALS	
1	INTERRUPT INSTR.
2	INTERRUPT Progr.
3	JUMP Prog. 1
4	JUMP Prog. 2
5	JUMP Prog. 3
6	JUMP Prog. 4
7	JUMP Prog. 5
8	PROG. START
9	PROG. STOP
10	DIGITAL INPUT 8
16	DIGITAL INPUT 14

ATTENTION!
THE BOARD IS PLACED ON POSITION ACCORDING TO THE ACTUAL SYSTEM CONFIGURATION

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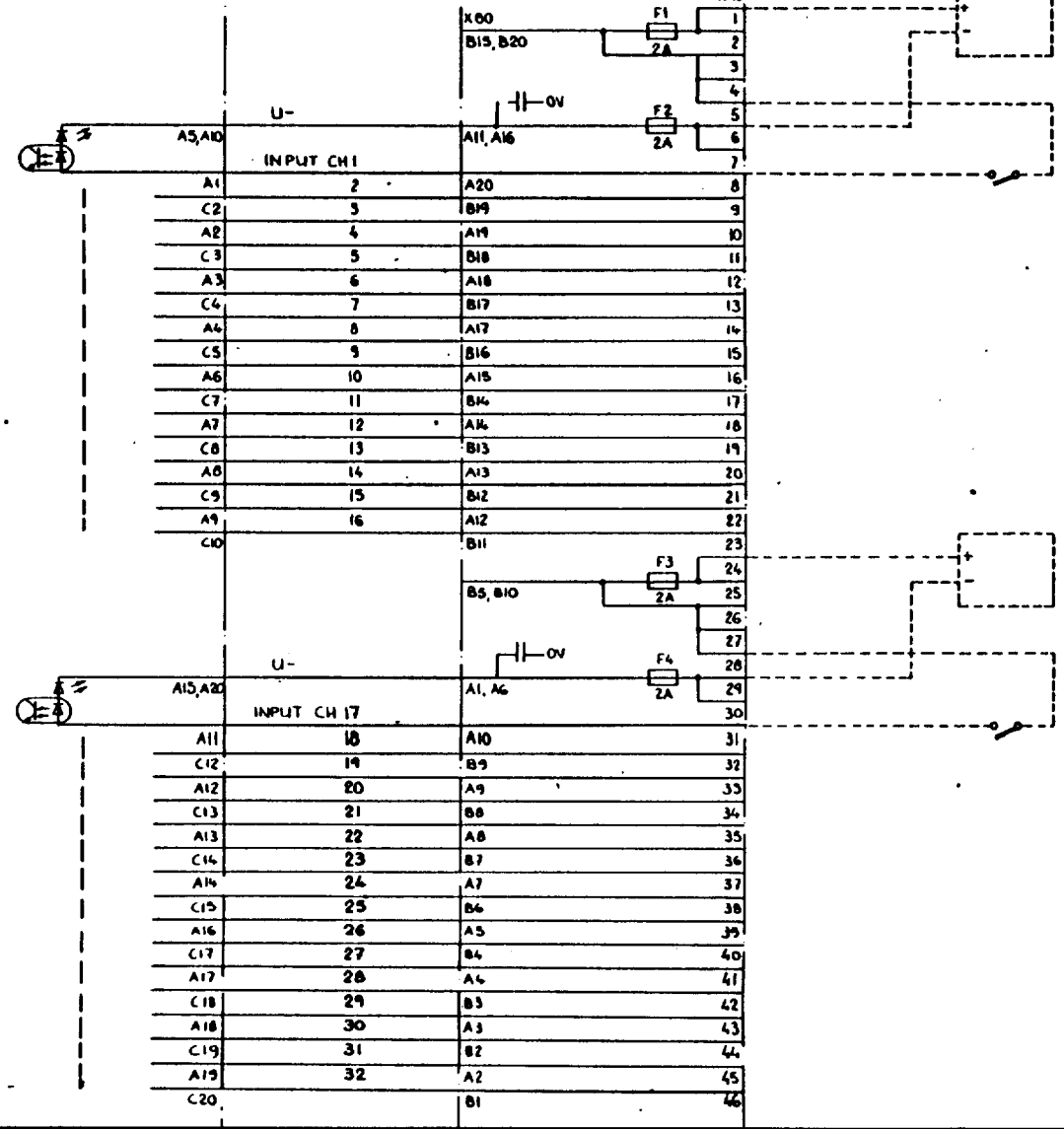
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No.	Revision	Appt.	Ingr.	Year	An.
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ASEA			Design finished by JKEM	Drawing checked by JKEM	Drawn by BHC
				No. by dept JKK	Year 83
				Week 20	Sheet 24 Cont 25

DI4 XXX
DSDI 110 DIGITAL INPUTS

DI4 XXX
DSTD 150 TERMINAL UNIT

DIGITAL INPUTS 24V D.C.
DSDI 110 (OPTION)



SIGNAL FUNCTIONS IF FIRST OPTIONAL INPUT BOARD	
CHANNEL	INPUT SIGNALS
1	INTERRUPT INSTR.
2	INTERRUPT PROGR.
3	JUMP PROG 1
4	JUMP PROG 2
5	JUMP PROG 3
6	JUMP PROG 4
7	JUMP PROG 5
8	PROG. START
9	PROG. STOPP
10	DIGITAL INPUT 8
16	DIGITAL INPUT 14

1

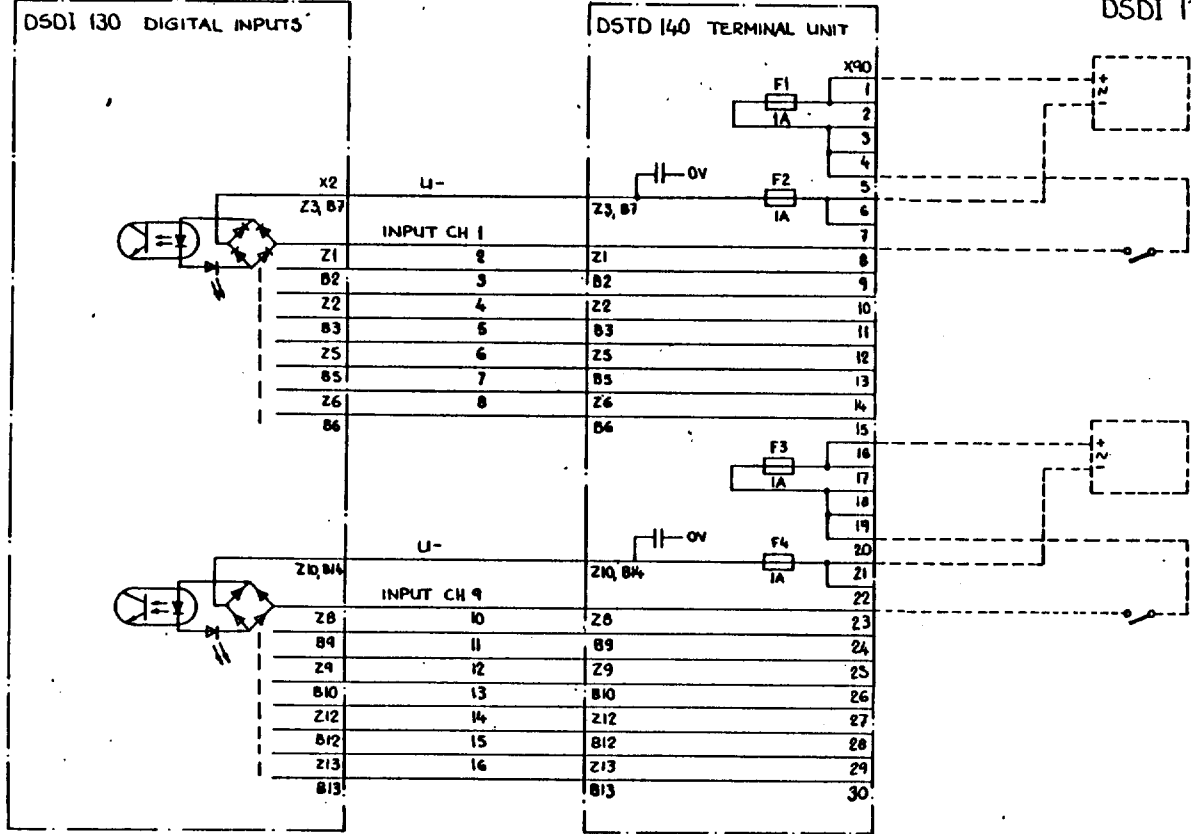
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DI4.XXX
DSDI 130 DIGITAL INPUTS

DI4.XXX
DSTD 140 TERMINAL UNIT

DIGITAL INPUTS 110V A.C.
DSDI 130 (OPTION)



SIGNAL FUNCTIONS IF FIRST OPTIONAL INPUT BOARD	
CHANNEL	INPUT SIGNALS
1	INTERRUPT INSTR.
2	INTERRUPT PROGR.
3	JUMP PROG. 1
4	JUMP PROG. 2
5	JUMP PROG. 3
6	JUMP PROG. 4
7	JUMP PROG. 5
8	PROG. START
9	PROG. STOP
10	DIGITAL INPUT B
16	DIGITAL INPUT M ₁

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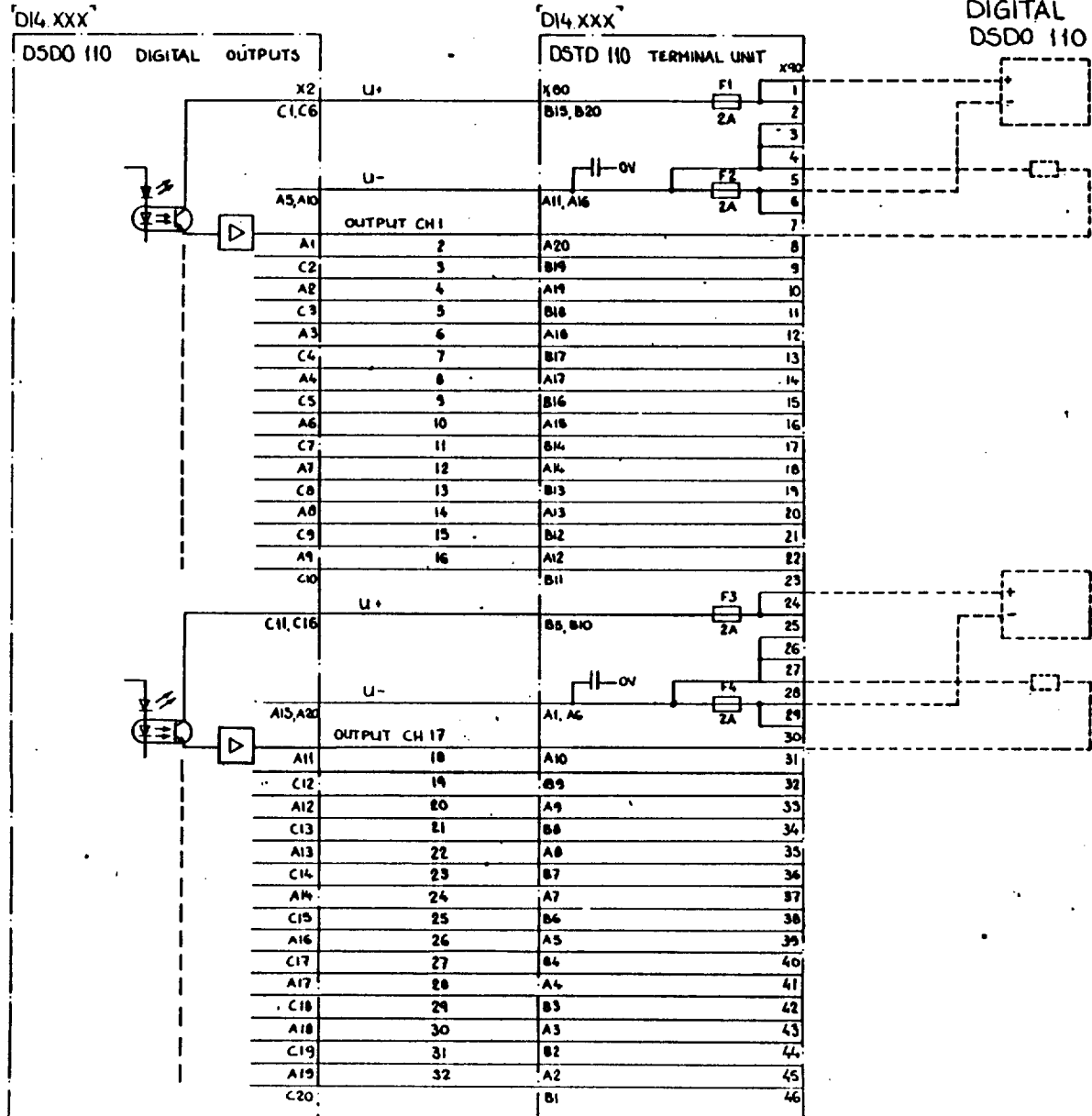
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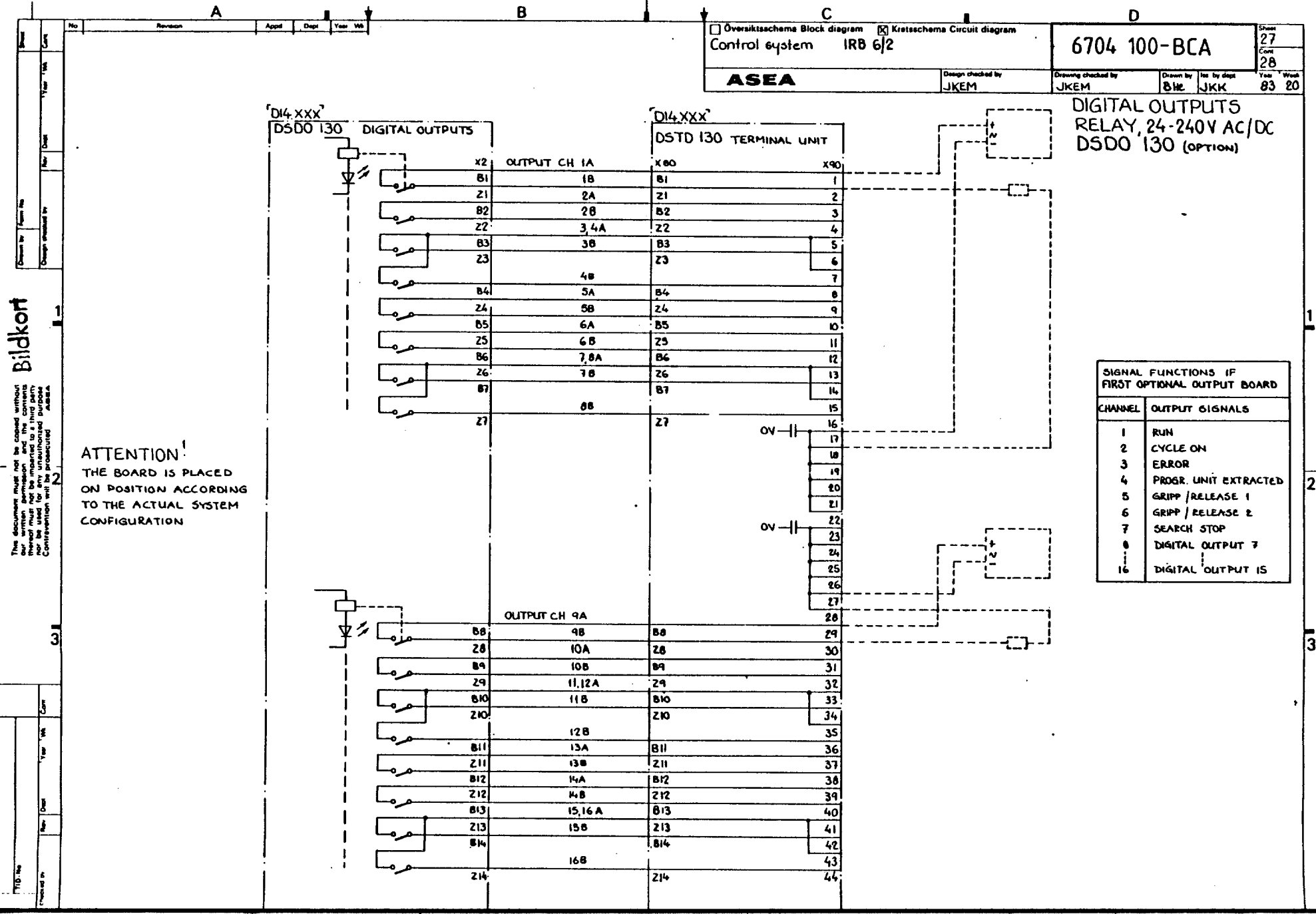
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DIGITAL OUTPUTS 24 V DC.
 D5D0 110 (OPTION)

SIGNAL FUNCTIONS IF FIRST OPTIONAL OUTPUT BOARD	
CHANNEL	OUTPUT SIGNALS
1	RUN
2	CYCLE ON
3	ERROR
4	PROGR UNIT EXTRACTED
5	GRIPP/RELEASE 1
6	GRIPP/RELEASE 2
7	SEARCH STOP
8	DIGITAL OUTPUT 7
16	DIGITAL OUTPUT 15



Översiktsschema Block diagram
 Kretsschema Circuit diagram
 Control system IRB 6/2
ASEA
 Design checked by JKEM

6704 100-BCA
 Sheet 27
 Cont 28
 Year 83
 Week 20
 Drawing checked by JKEM
 Drawn by BHe
 In by dept JKK

DIGITAL OUTPUTS
 RELAY, 24-240V AC/DC
 D5DO 130 (OPTION)

SIGNAL FUNCTIONS IF FIRST OPTIONAL OUTPUT BOARD	
CHANNEL	OUTPUT SIGNALS
1	RUN
2	CYCLE ON
3	ERROR
4	PROGR. UNIT EXTRACTED
5	GRIPP / RELEASE 1
6	GRIPP / RELEASE 2
7	SEARCH STOP
8	DIGITAL OUTPUT 7
16	DIGITAL OUTPUT 15

ATTENTION!
 THE BOARD IS PLACED
 ON POSITION ACCORDING
 TO THE ACTUAL SYSTEM
 CONFIGURATION

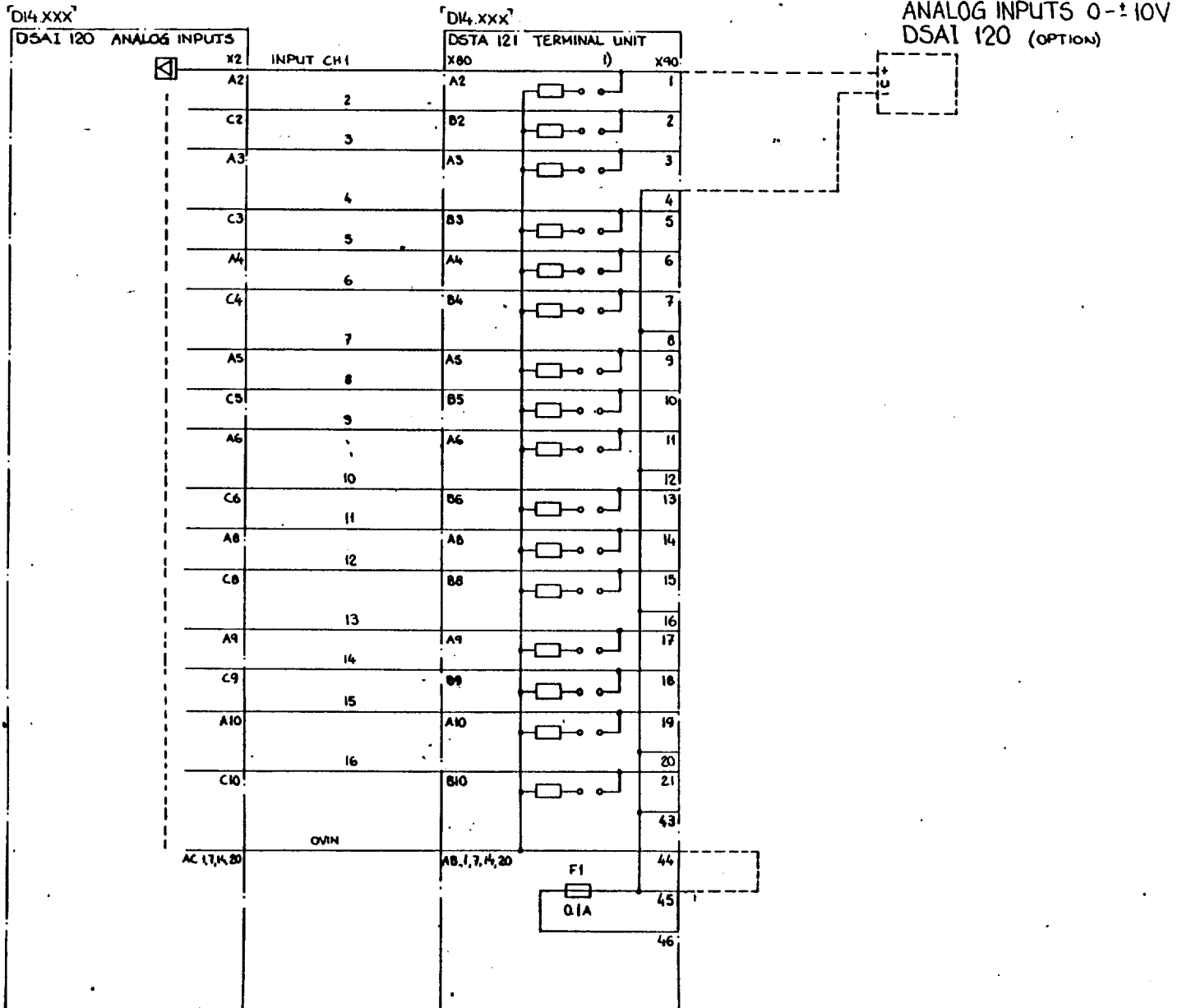
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No.	Revision	Appd.	Dept.	Year	WA

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Control system IRB 6/2				Cont 29
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			Int. by dept JKK	Year Week 83 20



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1) OPEN STRAPS FOR VOLTAGE SIGNAL

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710-100		
Order by	Year	WA

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No.	Revision	Appr.	Date	Year	Wk		
1	Sh added	NAH	DKCS	83	23		

Översiktsschema Block diagram
 Kretschema Circuit diagram
 Control system IRB 6/2

ASEA

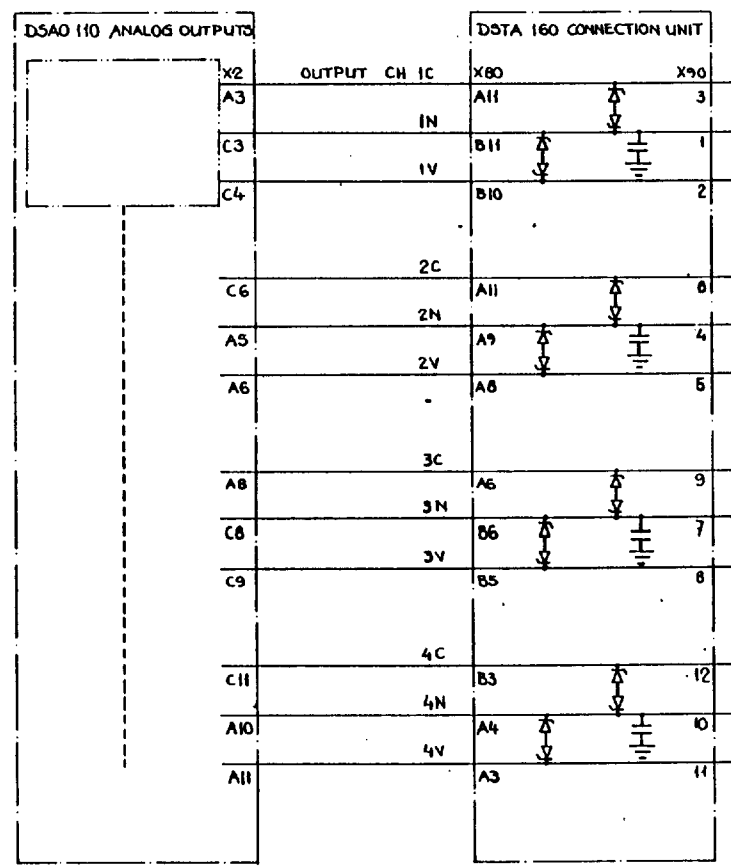
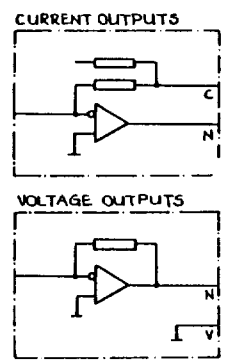
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6704 100-BCA

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 Drawn by BMe
 Iss. by dept. JKJ

Sheet 29
 Cont. 30
 Year 83 Week 20

ANALOG OUTPUTS ± 10V
 DSAO 110 (OPTION) ± 10mA
 ± 20mA



ATTENTION!

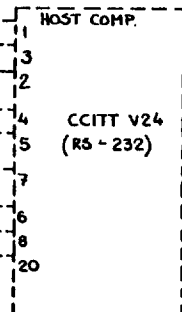
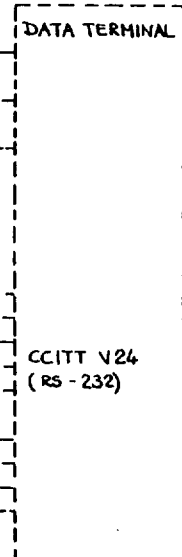
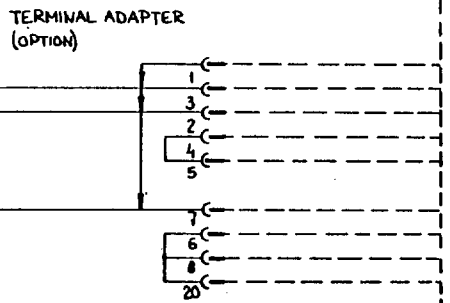
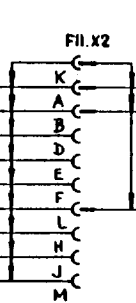
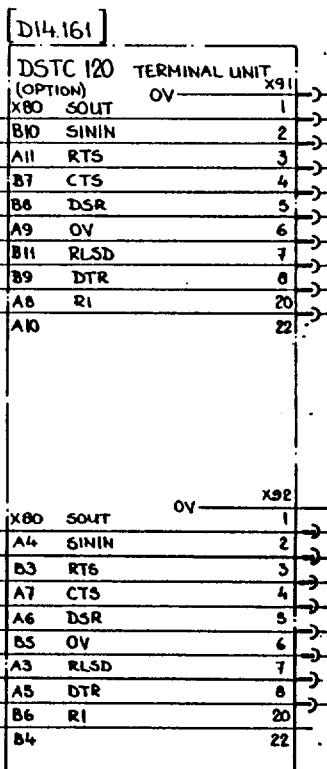
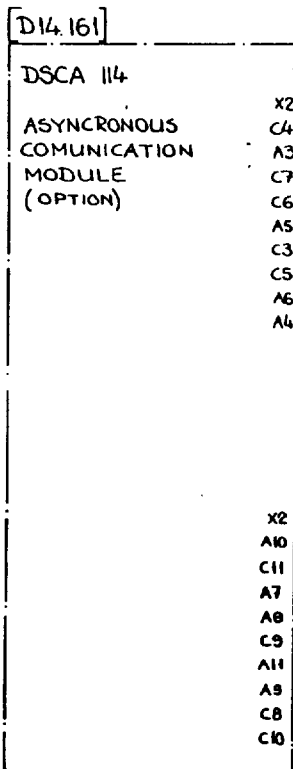
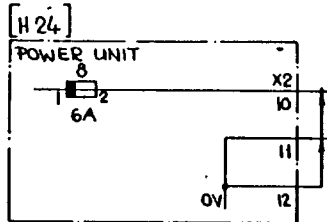
THE BOARD IS PLACED ON POSITION ACCORDING TO THE ACTUAL SYSTEM CONFIGURATION

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Drawn by	Checked by
Year	Year
Wk	Wk

A		B		C		D	
No	Revision	Appr	Dept	Year	Wk	<input type="checkbox"/> Översiktschema Block diagram <input checked="" type="checkbox"/> Kretschema Circuit diagram Control system IRB 6/2	
1	sh. added	NA.H	JKCS	83	23	6704 100-BCA	
ASEA						Design checked by JKEM <i>AA</i>	Drawing checked by JKEM <i>ell</i> Drawn by BMc In. by dept JKK
						Year	Week
						83	20

DATA TERMINAL AND COMPUTER LINK CONNECTION
(OPTION)



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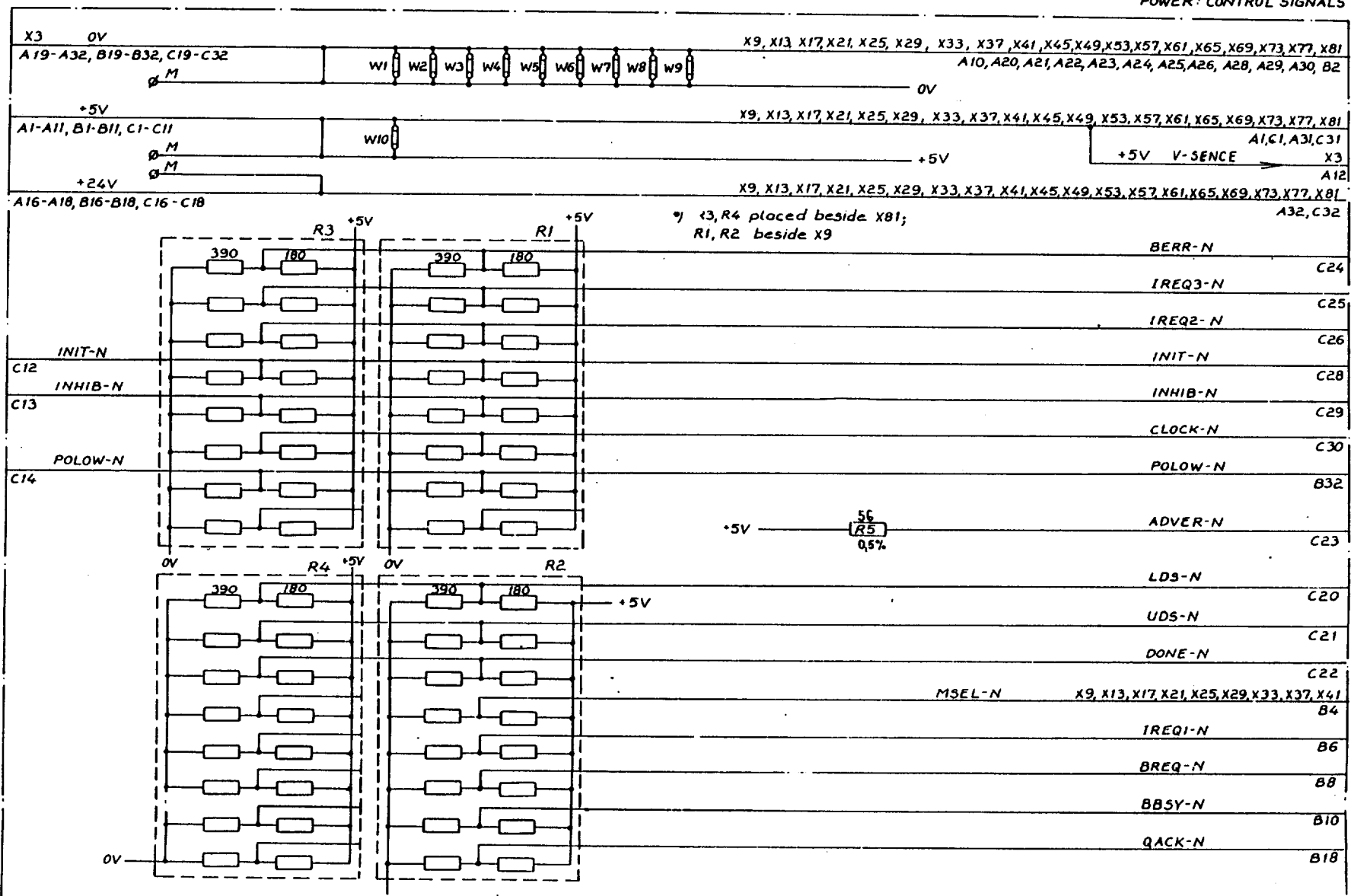
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Drawn by	Year	Wk
Checked by	Year	Wk
Approved by	Year	Wk

Bildkort

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No		Revision		Appd		Dept		Year		Wk		
A		B		C		D						
<input type="checkbox"/> Översiktsschema Block diagram <input checked="" type="checkbox"/> Krets-schema Circuit diagram DSQC 108. BUS BACK PLANE BUSSBAKPLAN								6704 102-ANA		Sheet 1		
ASEA								Design checked by A. JENSEN		Drawing checked by S. OLOVSON 16		Drawn by M.L. YLPKK
REF. YB 101 102-AN								POWER: CONTROL SIGNALS		Year 82 Week 09		



Drawn by	Year	Wk
Checked by	Year	Wk
Approved by	Year	Wk

Revision A B

<input type="checkbox"/> Översiktschema Block diagram <input checked="" type="checkbox"/> Kretscheema Circuit diagram		6704 102-ANA		Sheet 3
DSQC 108 BUS BACK PLANE BUSSBAKPLAN		6704 102-ANA		Cont. 4
ASEA	Design checked by Å. JENSEN	Drawing checked by S. OLOVSON 10	Drawn by / set by dept M.L. YLPKK	Year / Week 82 / 09

DMA REQUEST IDENT. CHAIN

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X17	BGD-N	BGI-N	X21
B20			B22
X21			X25
B20			B22
X25			X29
B20			B22
X29			X33
B20			B22
X33			X37
B20			B22
X37			X41
B20			B22
X41		X45, X49	
B20			B22

Sheet	Cont.
710-102	
Drawn by	Year / Week

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No	Revision				Appd	Dept	Year	Wk	C		D		Sheet 4
	Oversikisschema Block diagram		<input checked="" type="checkbox"/> Kretsschema Circuit diagram						6704 102 - ANA		Drawn by S.OLOVSON	J6	
DSQC 108 BUS BACK PLANE BUSSBAKPLAN									ASEA				Design checked by A.JENSSEN

D00	X9, X13, X17, X21, X25, X29, X33, X37, X41, X45, X49, X53, X57, X61, X65, X69, X73, X77, X81	A2
D01		C2
D02		A3
D03		C3
D04		A4
D05		C4
D06		A5
D07		C5
D08		A6
D09		C6
D10		A7
D11		C7
D12		A8
D13		C8
D14		A9
D15		C9
A01		C10
A02		A11
A03		C11
A04		A12
A05		C12
A06		A13
A07		C13
A08		A14
A09		C14
A10		A15
A11		C15
A12		A16
A13		C16
A14		A17
A15		C17
A16		A18
A17		C18
A18		B12
A19		B14
A20		B16
IOADR - N		A19
OUT - N		C19

Drawn by	TD No	Year	Wk	Com
Design checked by				