

ANNEXURE: CCR-1 MCC PANEL

SPECIFICATION OF MCC PANEL FOR CCR-1 MCC PANEL.

The MCC Panel shall be made of 2mm thick CRCA sheet steel painted with POWDER COATING in SIEMENS GREY SHADE.

The Panel shall have BASE FRAME painted black enamel paint.

The offer shall include supply of MS STAND made of suitable size painted enamel black for mounting the panel. The ground clearance should be 750 mm.

The panel shall be provided with 3mm thick DETACHABLE GLAND PLATES for Incoming cable and Outgoing Cables.

The outgoing Motor Cables and Control and Remote Cables shall be taken through CABLE CHAMBER and terminated in the Terminal Blocks. The size of the Cable Chamber shall be of sufficient size for all the cables.

All the Doors of the MCC Feeders, Incoming SFU, Cable Chamber etc shall have individual doors which are lockable.

The panel shall be provided with EARTHING BOLTS on either side. Also, the Panel and the Frame (STAND) shall be earthed using 50 x 6 mm GI STRIP on either side.

DANGER BOARD of standard size made of MS Sheet with instructions in TELUGU, HINDI AND ENGLISH shall be fixed to the Panel.

The Control Transformer shall be placed in a separate CHAMBER. Control Bus Bars shall be of Copper of size 10mm x 5 mm (P & N).

The MAIN BUS BARS shall be of suitable size ALUMINIUM FOR R, Y, B AND N. The Connection from Incoming SFU to the MAIN BUS BARS shall also be of suitable size ALUMINIUM.

The TYPICAL GA Drawing of the MCC Panels with SLD and Control Circuit are attached.

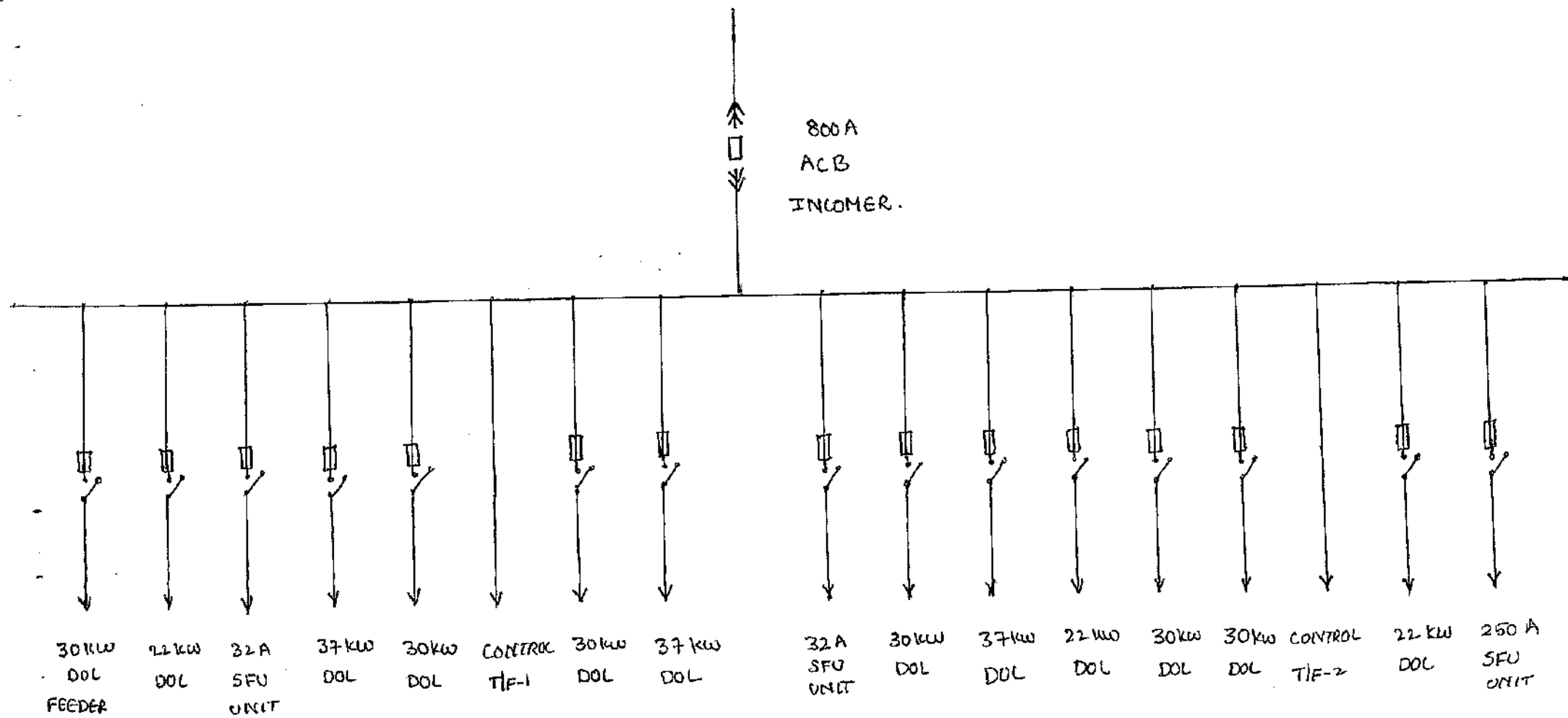
The BOM i.e COMPONENT LIST WITH PREFERRED MAKES is attached.

Anything required for correct operation of the system (if not included in our specification and drawings) may be added and intimated for approval.

NOTE : TB FOR MOTOR CABLES SHALL BE OF BOLTED TYPE WITH SEPARATORS, LINK TYPE FOR CT CONNECTIONS AND STACK TYPE SUITABLE FOR PIN TYPE LUGS FOR CONTROL CIRCUIT. ALL SHOULD BE OF SUITABLE RATING.

NOTE : ALL THE DRAWINGS AND BOM SHOULD BE GOT APPROVED BEFORE TAKING FOR MANUFACTURE

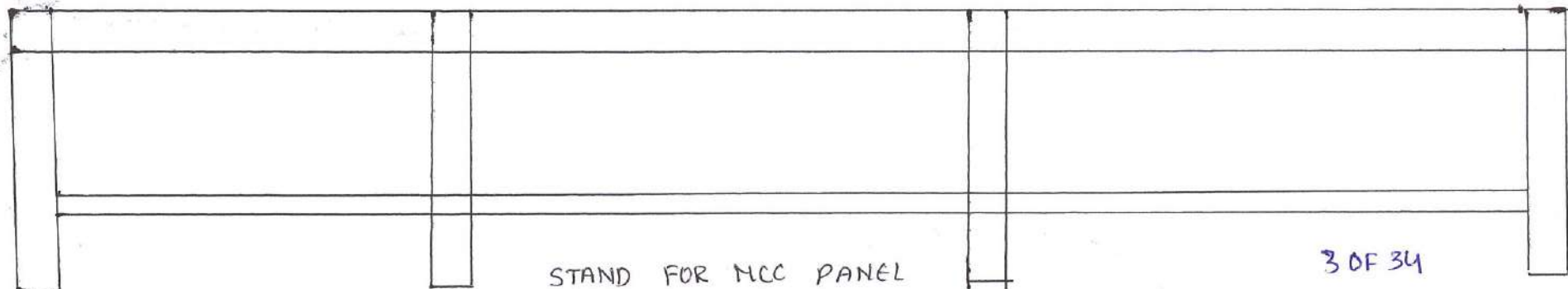
SLD OF CCR-1 MCC PANEL.



GA DRAWING OF CCR-1 MCC PANEL.

MAIN BUS BAR & CONTROL BUS BAR CHAMBER.

800A ACB INCOMER	CABLE ALLEY CHAMBER	1F1 30 kW DOL FEEDER	MAIN BUS BAR CHAMBER	2F1 37 kW DOL FEEDER	CABLE ALLEY CHAMBER	CABLE ALLEY CHAMBER	3F1 30 kW DOL FEEDER	MAIN BUS BAR CHAMBER	4F1 30 kW DOL FEEDER	CABLE ALLEY CHAMBER	CABLE ALLEY CHAMBER	5F1 30 kW DOL FEEDER	MAIN BUS BAR CHAMBER	6F1 22 kW DOL FEEDER	CABLE ALLEY CHAMBER	MARSHALLING PANEL
		1F2 22 kW DOL FEEDER		2F2 30 kW DOL FEEDER			3F2 37 kW DOL FEEDER		4F2 37 kW DOL FEEDER			5F2 30 kW DOL FEEDER		6F2 250A SFU UNIT		
		1F3 32A SFU UNIT		2F3 CONTROL T/F-1			3F3 32A SFU UNIT		4F3 22kW DOL FEEDER			5F3 CONTROL T/F-2				



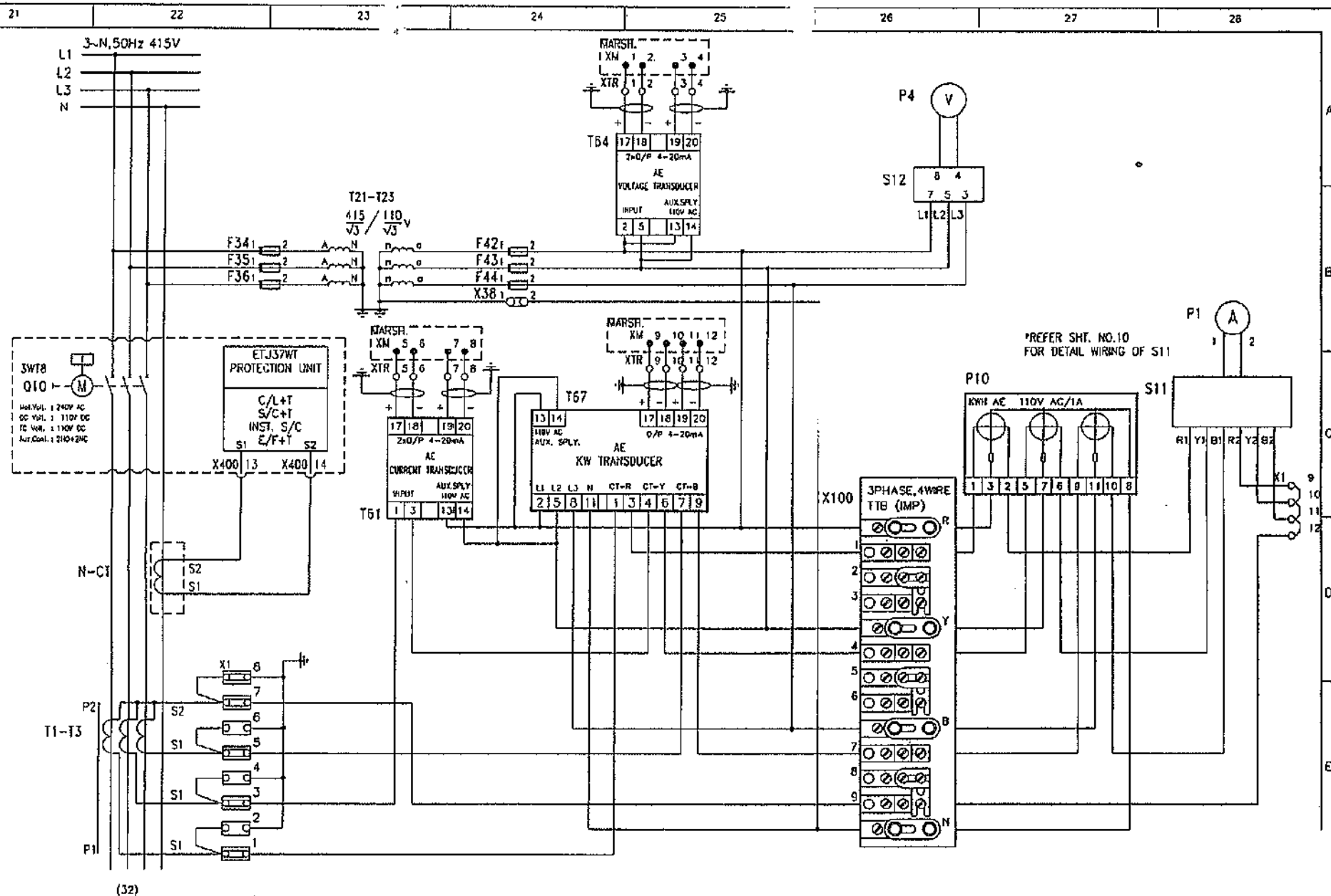
MARSHALLING PANEL:

Main Sign	Terminal No.		Main Sign	Terminal No.
	XM		FDR NO. *	
PLC	0	1	XTR	1
PLC	0	2	XTR	2
PLC	0	3	XTR	3
PLC	0	4	XTR	4
PLC STOP	0	5	X3	9
PLC STOP	0	6	X3	10
PLC START COMMAND	Q	7	X3	13
PLC START COMMAND	0	8	X3	14
PLC COMMON	0	9	X5	1
PLC RUN STATUS	0	10	X5	2
PLC RUN LOCAL MODE SEL	0	11	X5	3
PLC REMOTE MODE SELECTED	0	12	X5	4
PLC READY TO CLOSE	0	13	X5	5
PLC MOTOR TRIP	0	14	X5	7
SPARE	0	15		
SPARE	0	16		

*. MARSHALLING PANEL FOR CCR-1 MCC PANEL FOR THE FOLLOWING FDR NO: 1F1, 1F2, 2F1, 2F2, 3F1, 3F2, 4F1, 4F2, 4F3, 5F1, 5F2 AND 6F1.

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BASIC MODULE - 1001-1003



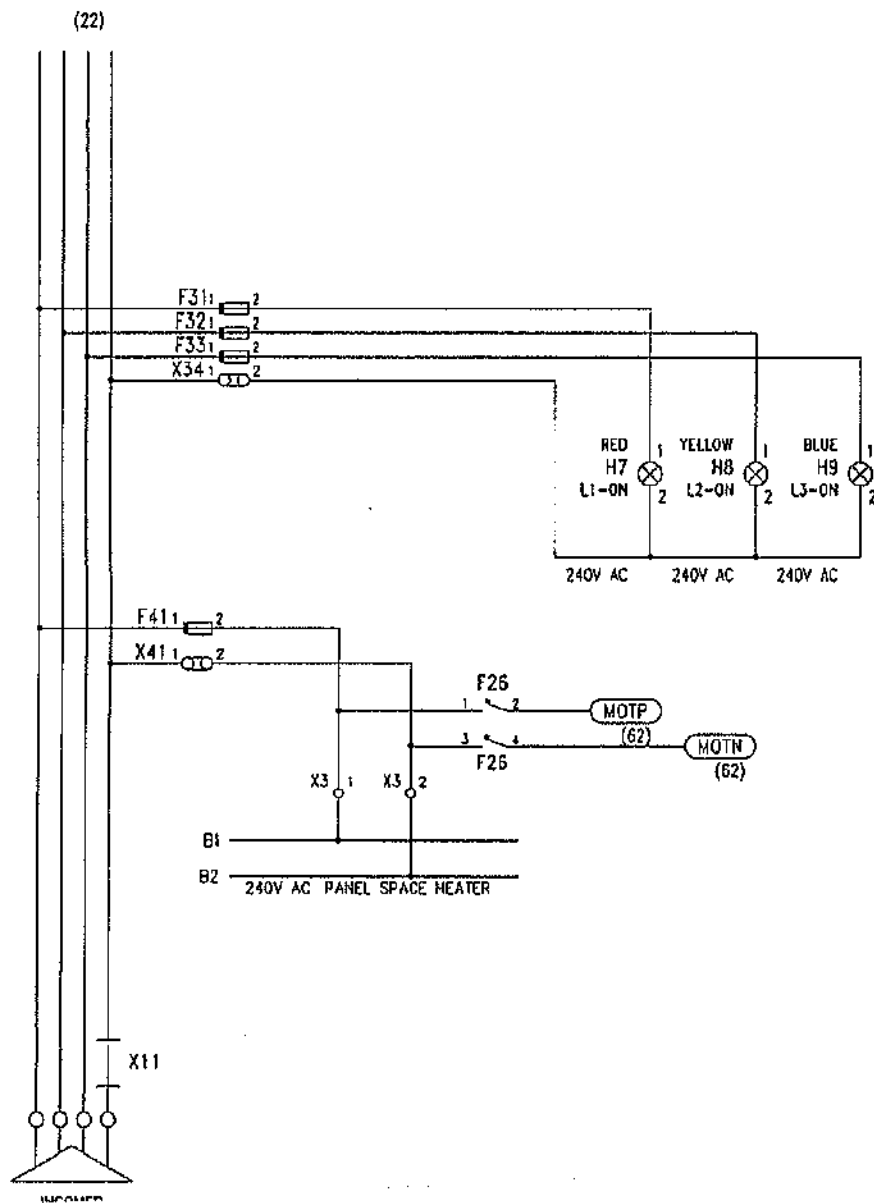
800A ACB

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BASIC MODULE : - 1001-1003

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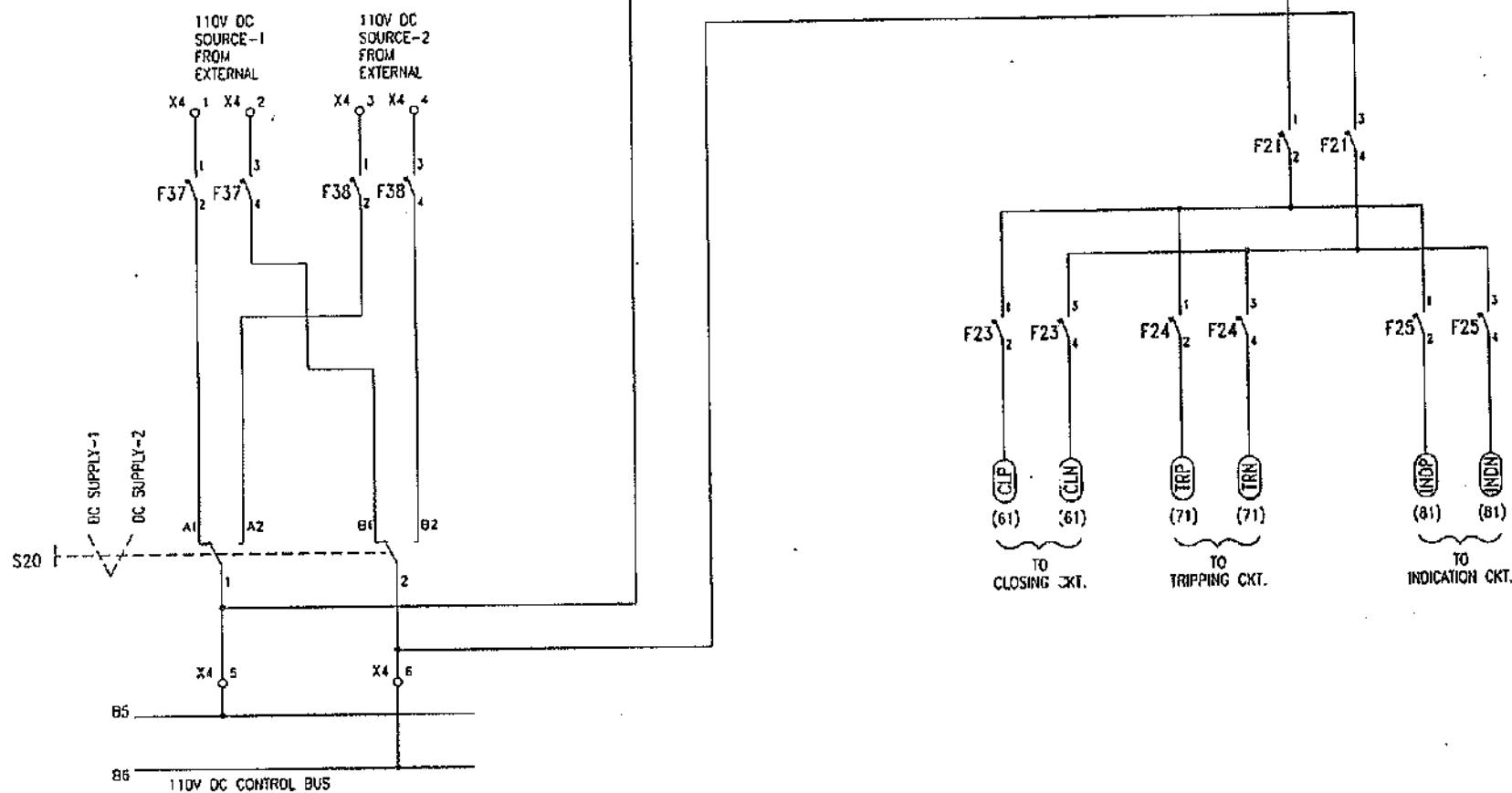
ACR 1/0

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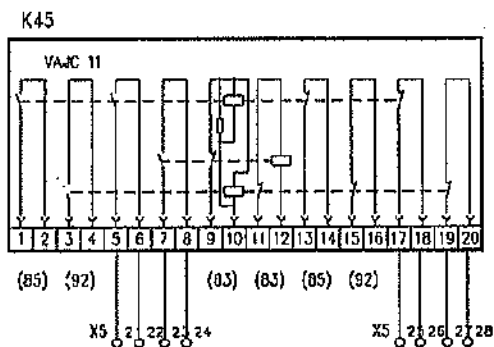
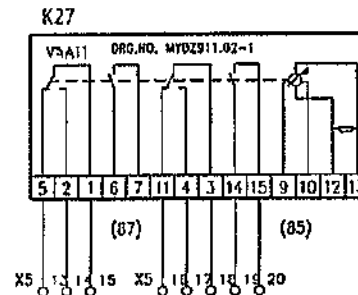
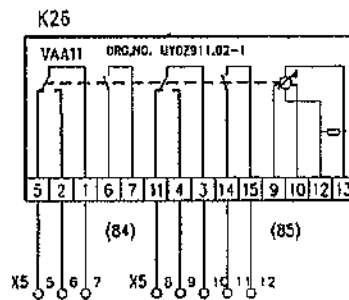
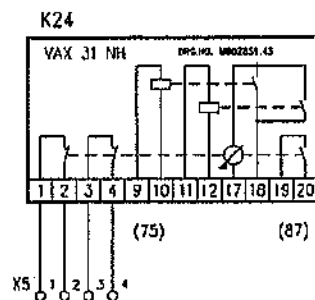
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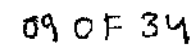
DUPLICATE - 1001-1003



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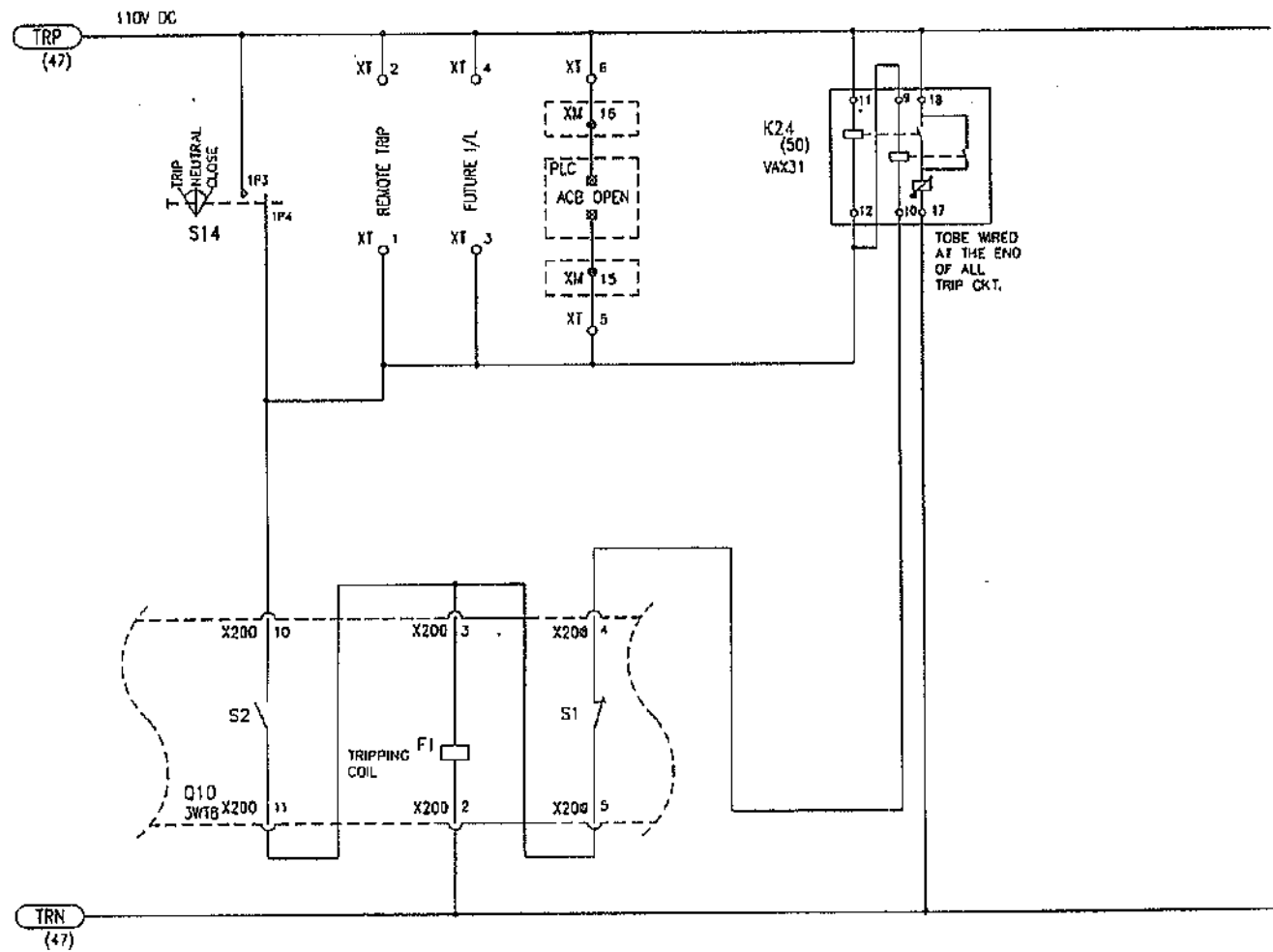


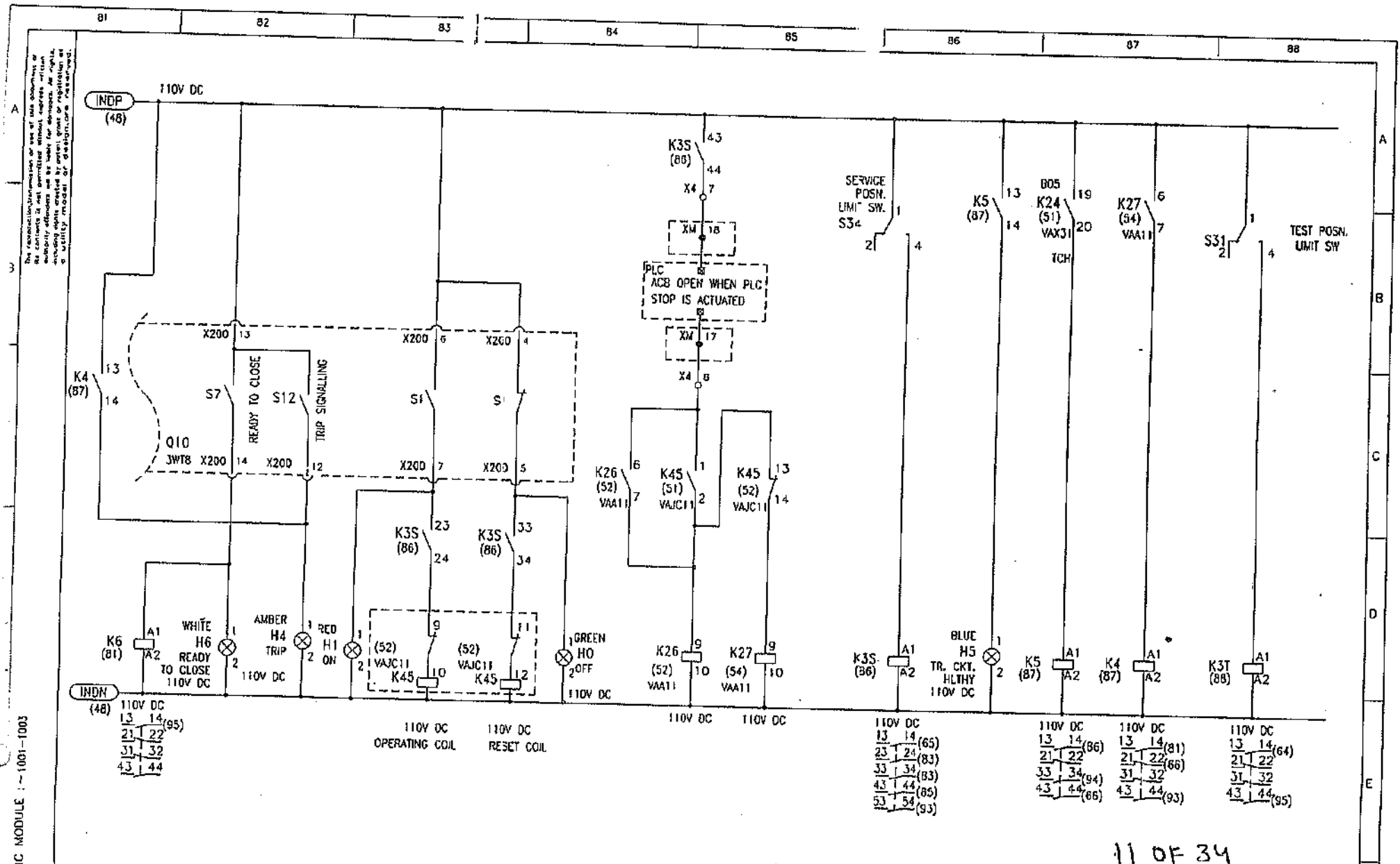


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DATE 1001-1003

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MODULE 1001-1003

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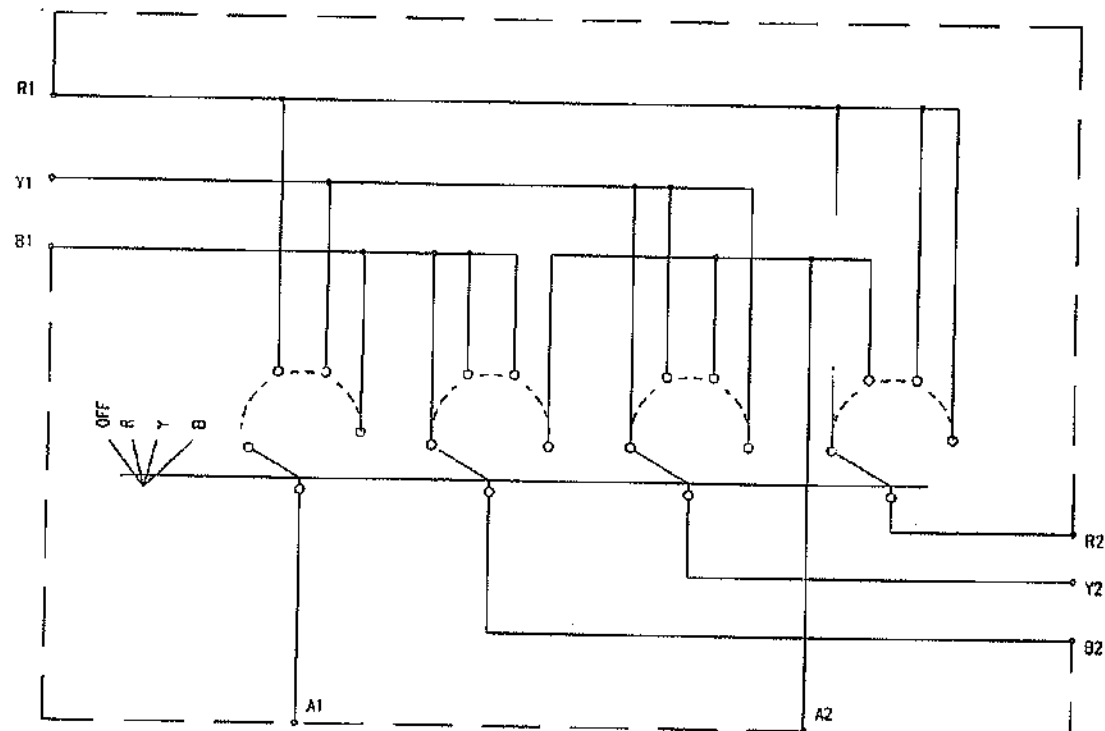
106

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AMMETER SELECTOR SWITCH (S11)

STAYPUT MAKE BEFORE BREAK TYPE
WITH WING KNOB HANDLE



CONTACT NORMALLY OPEN

A

B

C

D

E

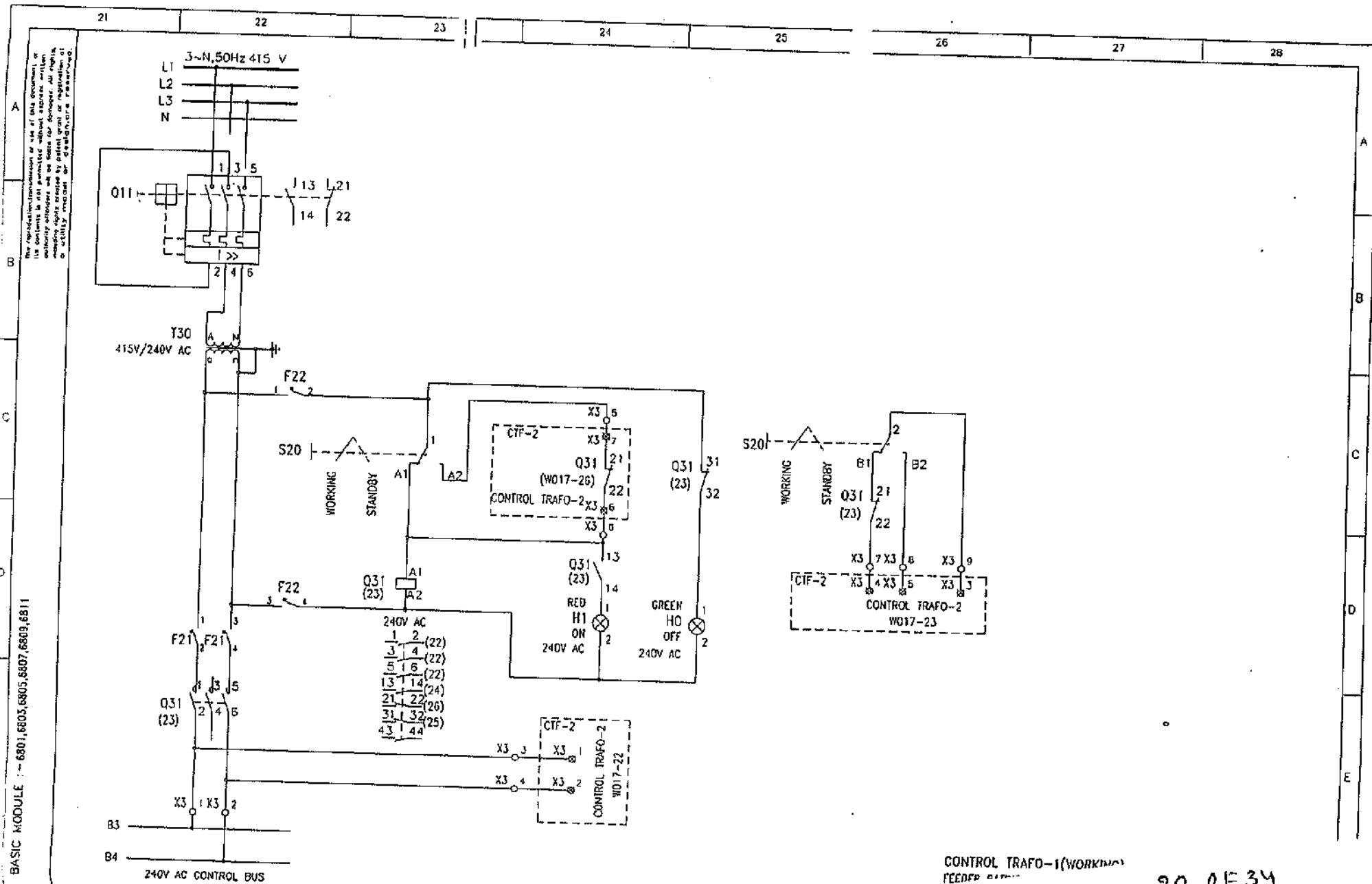
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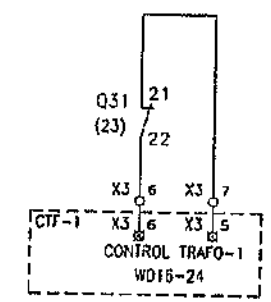
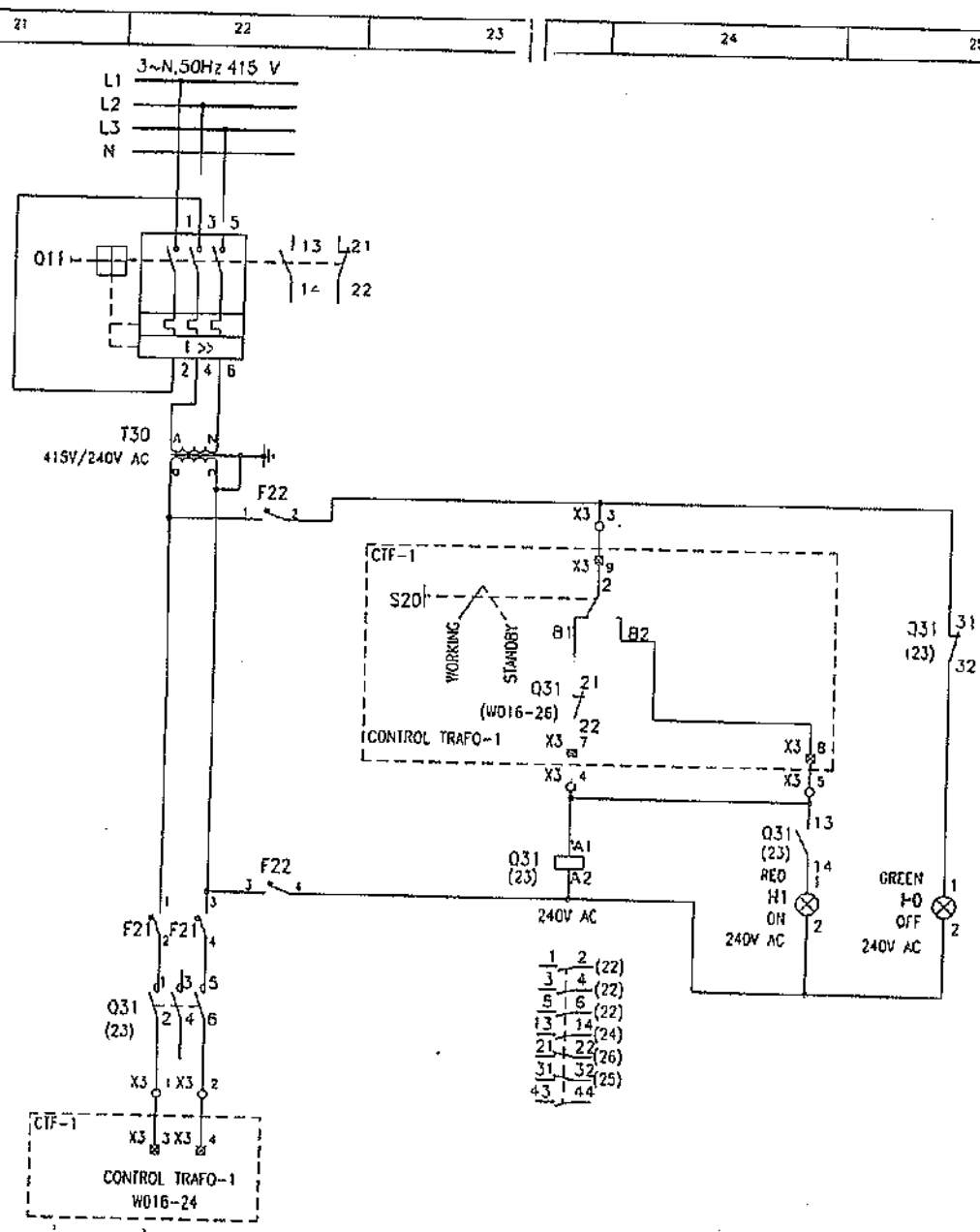
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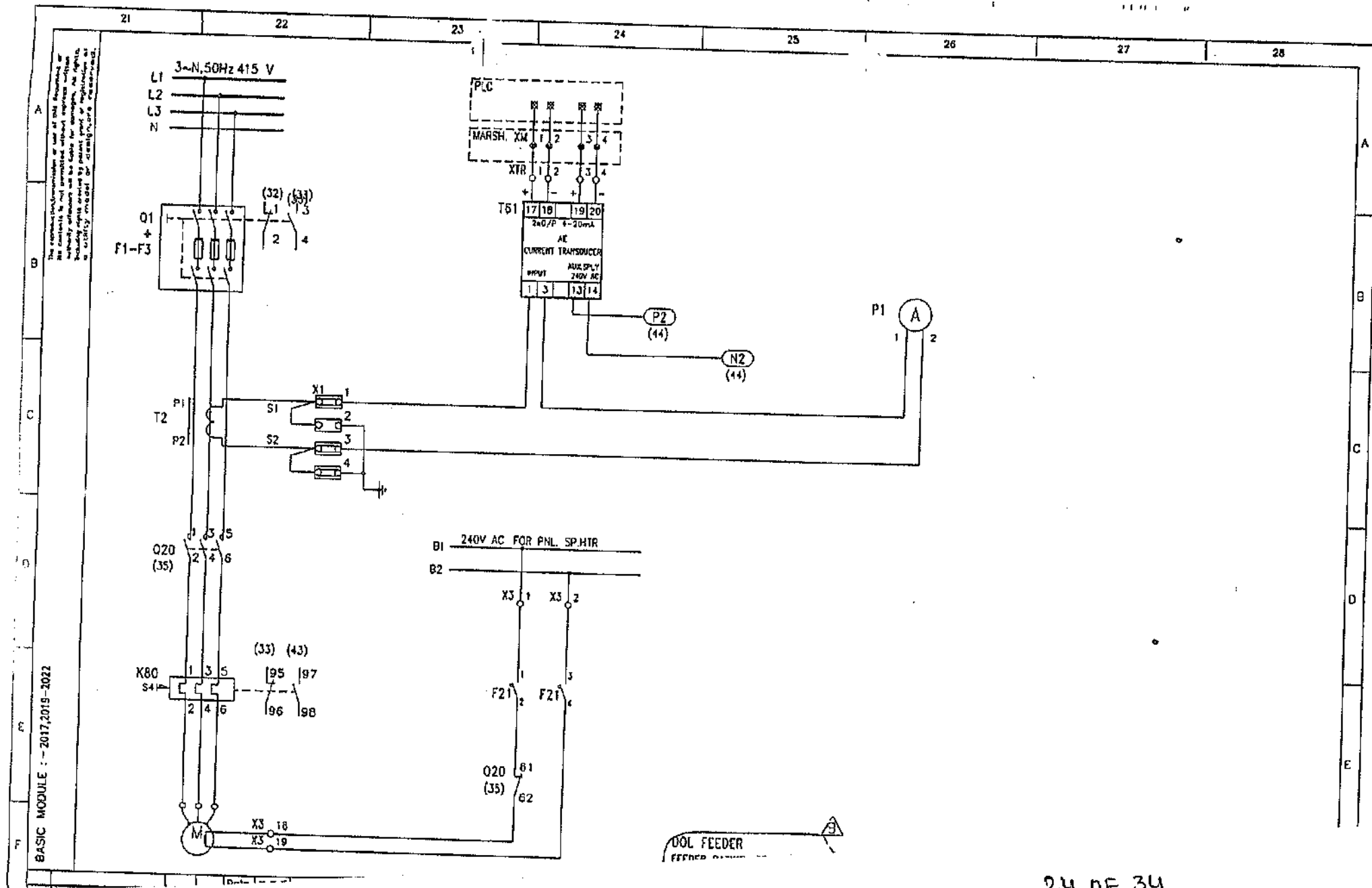


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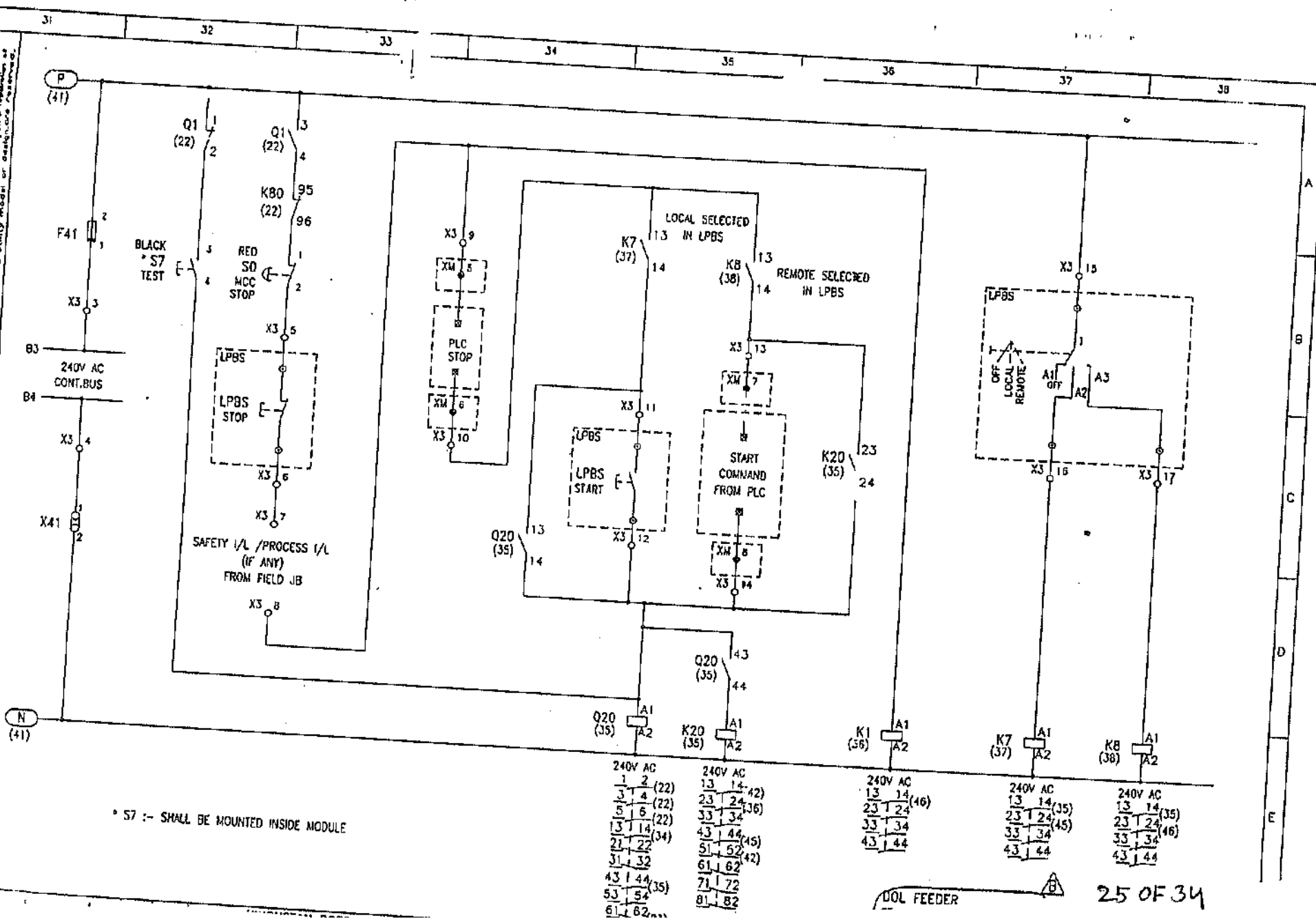
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* S7 :- SHALL BE MOUNTED INSIDE MODULE

240V AC
1 2 (22)
3 4 (22)
5 6 (22)
13 14 (34)
21 22 (34)
31 32 (34)
43 44 (35)
53 54 (35)
61 62 (35)

240V AC
13 14 (42)
23 24 (42)
33 34 (42)
43 44 (42)
53 54 (42)
63 64 (42)
71 72 (42)
81 82 (42)

240V AC
13 14 (46)
23 24 (46)
33 34 (46)
43 44 (46)

240V AC
13 14 (35)
23 24 (35)
33 34 (35)
43 44 (35)

240V AC
13 14 (35)
23 24 (35)
33 34 (35)
43 44 (35)

DOL FEEDER

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10016 : - 2017, 2019 - 2022

PANEL NO.		FEEDER NO.		WIRE LOOPS		CABLE DETAILS		NO.		TYPE	
1	161	1	1	1	1	1	1	1	1	1	1
2	P1	2	2	2	2	2	2	2	2	2	2
3		3	3	3	3	3	3	3	3	3	3
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57		57	57	57	57	57	57	57	57	57	57
58		58	58	58	58	58	58	58	58	58	58

$\frac{A}{B}$

BOM FOR 800 AMPS ACB INCOMER

Sl.No	Description	Code	Qty(Nos)
1	ACB: Siemens make withdrawable ACB with guide frame, 3 pole, 500V, 50/60Hz, size 1, current rating: 800 Amps, STC: 50KA/1 sc at 415V, manual/motorised operating mechanism with stored energy feature with mechanical/electrical closing, motor voltage: 240V AC, closing solenoid voltage: 110V DC, Shunt trip release voltage: 110V DC, Aux contacts: 2NO+2NC, Ready to close signalling contact, operation counter, safety shutters with isolated position limit switch S30(@ 1CO), with test position limit switch S31(@1CO), with service position limit switch S34(@1CO), Door interlock, with sealing cap over OFF push button with ETU37WT LSING release with LCD display, Terminal configuration: H-V, Type: 3WT8 81-6TF08-5BA2, Make: Siemens	Q10	1
2	N-CT: External CT for Neutral conductor, Type: 3WL9 111-OAA21-OAAO, Make: Siemens	N-CT	1
3	800/1A Current T/F 15VA, Class 1, Bar primary cast resin, insulated, 0.66KV, CT type: AET, Make: Siemens	T1-T3	3
4	415/root3/110/root3 potential T/F, 1 Phase, 50VA, CI-1, resin cast, Voltage factor: 1.1 continuous & 1.5 for 30 sec, effectively earthed, Make: Precise	T21-T23	3
5	Current Transducer 1 -Ph, CT sec input 1A, Auxiliary supply: 110V AC, Dual DC O/P: 4-20 mA, Make: AE	T61	1
6	Voltage Transducer PTR: 415/root3/110/root3, Aux supply: 110V AC, Dual DC O/P: 4-20mA, Make:AE	T64	1
7	KW Transducer 3 Ph-4wire, 3E, CTR: 800/1A, I/P voltage:110V AC, Aux supply:110V AC, Dual DC O/P: 4-20mA, Acc class:1.0, Make: AE	T67	1
8	0-500V voltmeter, ACC class:1.0, scale:240 deg, taut band, size: 96x96 sqmm, flush mounting, PTR: 415/root3/110/root3	P4	1
9	10A selector switch for voltmeter, Make: Kaycee	S12	1
10	3 Ph 4 wire Test terminal block, flush ounting with rare screw type terminals, make: IMP	X100	1
11	KWH meter, 3 ph 4 wire 3 element, CTR:800/1A, PTR:415/root3/110/root3, size: 96 x 96sqmm, Acc class:1, flush mounting with electromechanical display, Make: AE	P10	1
12	0-800A Ammeter with CT sec 1A, taut band, size:96x96 sqmm, scale: 240 deg, Acc class:1, flush mounting, Mak:;AE	P1	1
13	10A rotary switch 4 pole, 4 way, NO OFF, 440V AC indicating plate 75x75 sqmm, stayput make before break type with wing Knob handle, inscription:1-OFF, 2-R,3-Y,4-B, flush mounting, Make: Kaycee	S11	1
14	6A control fuse link, BS type,Make: siemens	F31-F36	6
15	4A control fuse link, BS type,Make: siemens	F41	1

16	2A control fuse link, BS type, Make: siemens	F42-F44	3
17	20A Neutral link, make: Siemens	X34, X38, X41	3
18	2A, MCB, DP, 10KA, Make: Siemens	F26, F21, F23-F25	5
19	Red Indicating lamp compact LED type, 240V AC, Make: Siemens	H7	1
20	Yellow Indicating lamp compact LED type, 240V AC, Make: Siemens	H8	1
21	Blue Indicating lamp compact LED type, 240V AC, Make: Siemens	H9	1
22	16A, MCB, DP, 3kA, Make: Siemens	F37, F38	2
23	16A AC/DC rotary switch 2 pole, 2 way with NO OFF, 250V DC indicating plate 75x75 sqmm, flush mounting with wing type knob inscription, 1:DC supply-1, 2: DC Supply-2, Make: Kaycee	S20	1
24	Trip circuit supervision protective relay for continuous supervision 1/2NH, voltage:110V DC, 1No +2 NC S?R, on alarm unit, flush mounting with REV flag, AREVA(VAX31ZG8074B)	K24	1
25	Voltage operated aux relay 1 element with flag 2 NO+2C/O S/R contacts, Aux supply:110-125V DC, case size:1/4NV, flush mounting, AREVA(VAA11YF8402F)	K26, K27	2
26	Electrically reset Aux relay flush mounting, aux voltage:110V DC, Contacts; 4No +4 NC SR, size:1DV with flag, AREVA(VAJC11)	K45	1
27	16A selector switch suitable for 250V DC inscription: 1-test, 2-normal, 3-switchgear, Make: Kaycee	S15	1
28	Breaker control switch ODS type for 250V AC?DC non lockable with pistol grip handle, spring return to neutral with 2NO at close & 2NO at trip, Make: AREVA	S14	1
29	10A, AC15, Aux contactor with 2NO + 2NC aux contact, 110V DC coil, Make: Siemens	K3T, K4, K9, K7, K8, K6	5
30	10A, AC15, Aux contact with 4 NO aux contact, 110V DC coil, Make: Siemens	K3S	1
31	10A, AC15, Aux contact with 3 NO +1NCaux contact, 110V DC coil, Make: Siemens	K5	1
32	Red Indicating lamp compact LED type, 110V DC, Make: Siemens	H1	1
33	Green Indicating lamp compact LED type, 110V DC, Make: Siemens	H0	1
34	Amber Indicating lamp compact LED type, 110V DC, Make: Siemens	H4	1
35	White Indicating lamp compact LED type, 110V DC, Make: Siemens	H6	1
36	Blue Indicating lamp compact LED type, 110V DC, Make: Siemens	H5	1

BOM FOR CONTROL TRANSFORMER FEEDER

Sl.No	Description	Code	Qty(Nos)
1	Breaker operating kit for MPCB and accessories of MPCB,50kA, current limiter for 3UV13 and front drive handle for MPCB, Make: Siemens	Q11	2
2	3KVA control T/F, 1Ph, cast resin type, primary voltage: 415V AC with +/- 2.5% & +/- 5% taps, Sec Voltage: 240V AC short time rating:6KVA, Pf:0.7, Make: Precise	T30	2
3	2A, DP, MCB, 10KA, Make: Siemens	F21,F22	4
4	16A, power contactor 240V AC coil voltage with 4No+4NC aux contact block, Make: Siemens	Q31	2
5	16A rotary switch 2 pole 2 way with NO OFF, 250V AC indicating plate 75x75sqmm flush mounting with wing type knob, inscription:1-working,2-stand by, Make: Siemens	S20	1

BOM FOR CCR-1 MCC PANEL MOTOR FEEDERS

SR. NO.	COMPONENT	MAIN INCOMER-800ACB (Quantity1 No)	37 KW DOL STARTER (QUANTITY 3 NO'S)	22 KW DOL STARTER (QUANTITY 3 NO'S)	30 KW DOL STARTER (QUANTITY 6 NO'S)	32A SWITCH FUSE UNIT (QUANTITY 2NO'S)	250A SWITCH FUSE UNIT (QUANTITY 1NO)	REMARKS
1	SFU(WITH SEPERATORS) WITH OPERATING HANDLE MOUNTED ON THE DOOR.	x	125 AMPS TPN	100 AMPS TPN	100AMPS TPN	32 AMPS TPN	250A TPN	SIEMENS
2	HRC FUSES	x	50 AMPS	100 AMPS	100 AMPS	32 AMPS	250 AMPS	SIEMENS
3	MAIN CONTACTOR WITH 230V AC COIL AND 2NO + 2NC AUX CONTACTS	x	140 AMPS WITH 230V AC COIL	100 AMPS WITH 230V AC COIL	140 AMPS WITH 230V AC COIL	X	X	SIEMENS
4	THERMAL OVER LOAD RELAY { INDEPENDENT MOUNTING } MAN / AUTO RESET	x	50-70 AMPS	30-50 AMPS	40-57 AMPS	X	X	SIEMENS
5	AUXILIARY CONTACTOR WITH 230V AC COIL AND 4NO + 4 NC CONTACTS	x	YES	YES	YES	X	X	SIEMENS
6	PVC INSULATED MULTI STRAND FLEXIBLE COPPER WIRE FROM MAIN BUS BARS TO SFU	x	35 SQMM	25 SQMM	35 SQ MM	X	X	POLYCAB / FINOLEX
7	PVC INSULATED MULTI STRAND FLEXIBLE COPPER WIRE FROM SFU TO CONTACTOR	x	35 SQMM	25 SQMM	35 SQ MM	X	X	POLYCAB / FINOLEX
8	PVC INSULATED MULTI STRAND FLEXIBLE COPPER WIRE FROM CONTACTOR TO OVERLOAD RELAY	x	35 SQMM	25 SQMM	35 SQ MM	X	X	POLYCAB / FINOLEX
9	PVC INSULATED MULTI STRAND FLEXIBLE COPPER WIRE FROM OVERLOAD RELAY TO MAIN TERMINAL BLOCK	x	35 SQMM	25 SQMM	35 SQ MM	X	X	POLYCAB / FINOLEX
10	CAST RESIN TYPE TRANSFORMER KAPPA / KALPA / AE MAKE OF SUITABLE VA	x	80A/1A	50A/1A	60A/1A	X	X	KAPPA / KALPA / AE

11	2.5 SQ MM PVC INSULATED MULTI STRAND FLEXIBLE COPPER WIRE FOR ALL CONTROL WIRING INCLUDING METERING	YES	YES	YES	YES	X	X	POLYCAB / FINOLEX
12	PVC INSULATED MULTI STRAND FLEXIBLE COPPER WIRE FROM OVERLOAD RELAY TO MAIN TERMINAL BLOCK	x	35 SQMM	25 SQMM	35 SQ MM	X	X	POLYCAB / FINOLEX
13	AMMETER	x	SUITABLE RANGE	SUITABLE RANGE	SUITABLE RANGE	X	X	AE
14	AMMETER SELECTOR SWITCH	x	YES	YES	YES	X	X	VAISHNO / KAYCEE
15	VOLTMETER	0-600V	X	X	X	X	X	AE
16	VOLTMETER SELECTOR SWITCH	RY, YB, BR, OFF	X	X	X	X	X	VAISHNO / KAYCEE
17	MOTOR START (GREEN) AND STOP MUSHROOM TYPE SELF LOCKABLE (RED) PUSH BUTTON SWITCHES	X	YES	YES	YES	X	X	VAISHNO / SIEMENS / ABB
18	MAIN R Y B LED TYPE INDICATING LAMPS	RED, YELLOW, BLUE	X	X	X	X	X	VAISHNO / SIEMENS / ABB
19	MOTOR ON INDICATING LED LAMP RED	x	YES	YES	YES	X	X	VAISHNO / SIEMENS / ABB
20	MOTOR O / L TRIP LED INIDCATING LAMP	x	YES	YES	YES	X	X	VAISHNO / SIEMENS / ABB
21	LOCAL / OFF / REMOTE SELECTOR SWITCH 10 AMPS RATING	x	YES	YES	YES	X	X	VAISHNO / KAYCEE
22	TERMINAL BLOCK FOR MOTOR CABLE OF SUITABLE RATING WITH SEPERATORS BETWEEN TERMINALS (BOLTED TYPE)	X	YES	YES	YES	X	X	REPUTED
23	CONTROL FUSE	X	YES	YES	YES	X	X	SIEMENS / ABB
24	TERMINAL BLOCK FOR CT CONNECTIONS TO AMMETER AND ASS WITH CT SHORTING PROVISION	YES	YES	YES	YES	X	X	REPUTED

25	TERMINAL BLOCK FOR CONTROL AND REMOTE OPERATIONS	X	YES	YES	YES	X	X	REPUTED
26	20A METAL CLAD 3 PIN SOCKET WITH 20A DP MCB WITH METAL CLAD 3 PIN PLUG	1 No				X	X	BHARATIA CUTTLER HAMMER
27	SINGLE PHASE PREVENTER	X	YES	YES	YES	X	X	ABB/SIEMENS/L&T/GIC
28	COPPER CONTROL BUS BAR(P&N) 230V AC	COPPER BUS BAR OF SIZE 10MM X 5 MM(THE						
29	CONTROL TRANSFORMER	3KVA CONTROL TRANSFORMER, 1 PHASE, CAST RESIN TYPE, PRIMARY						
30	Current Transducer 1 -Ph, CT sec input 1A, Auxiliary supply: 230V AC, Dual DC O/P: 4-20 mA, Make: AE		YES	YES	YES	X	X	AE