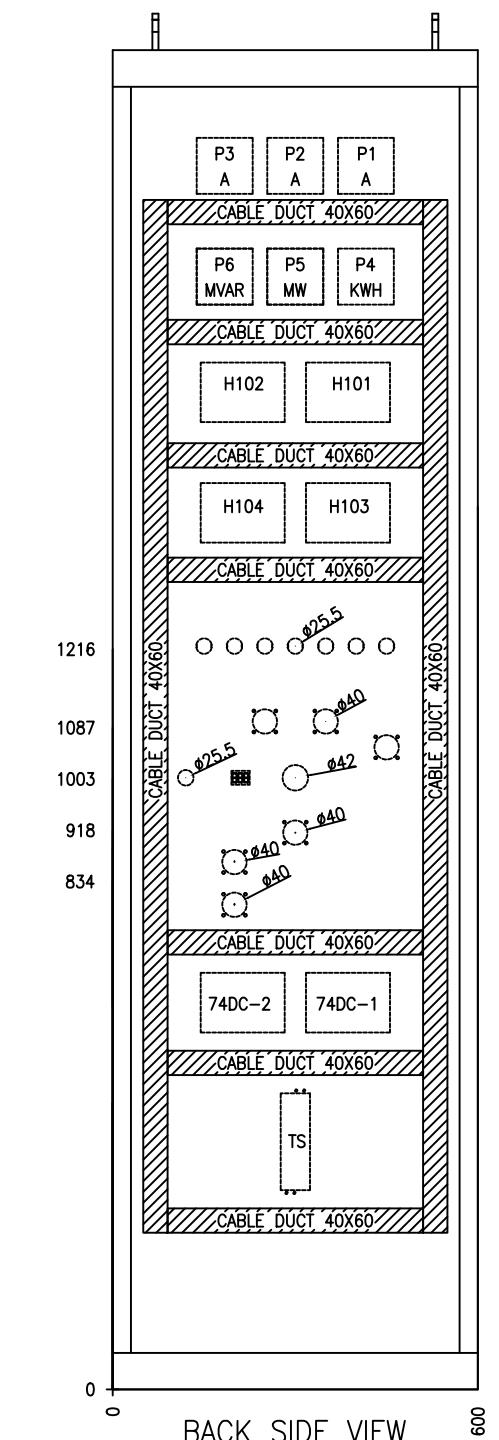
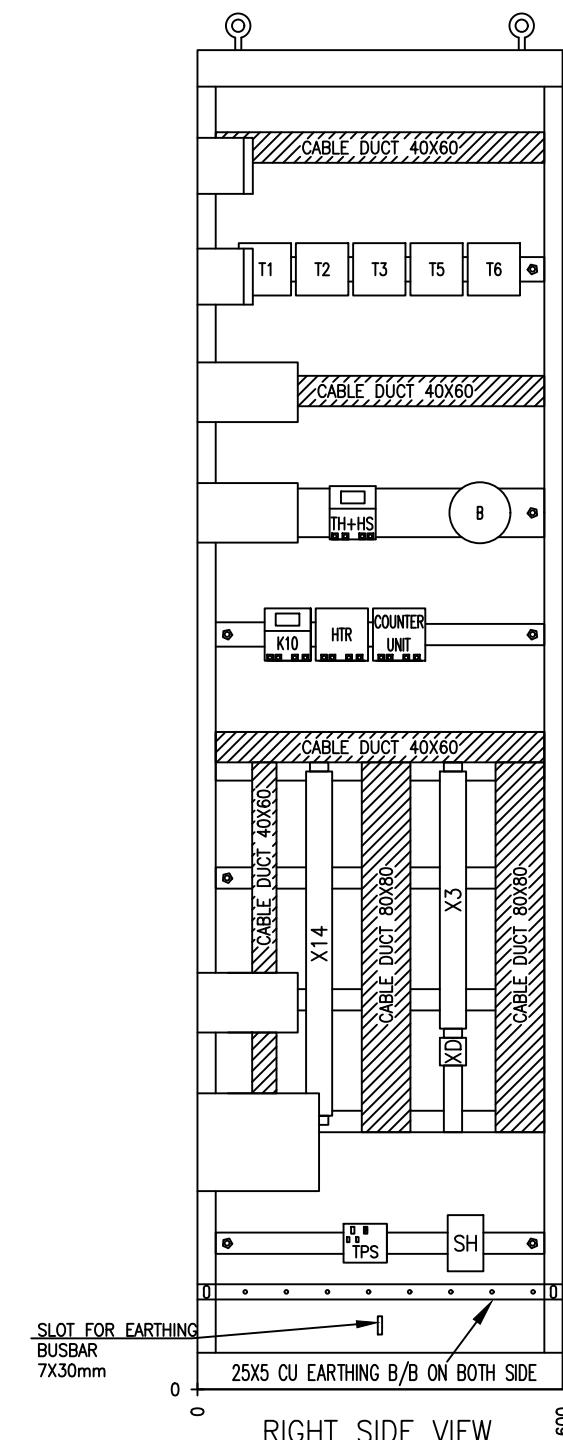
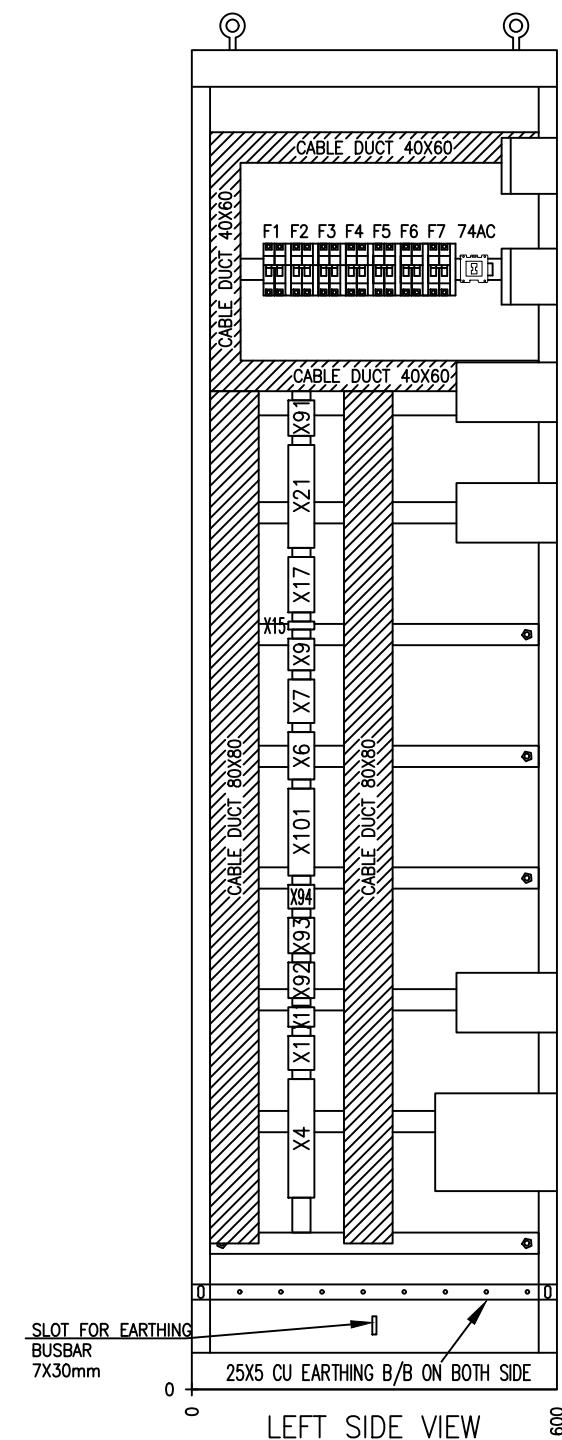
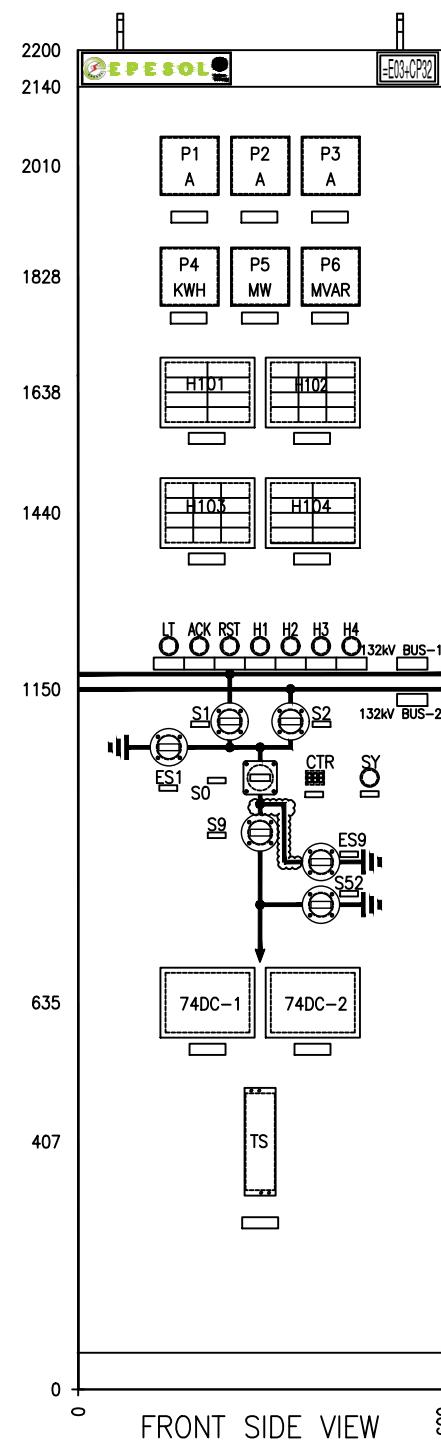


LAYOUT DRAWING

132kV LINE CONTROL PANEL

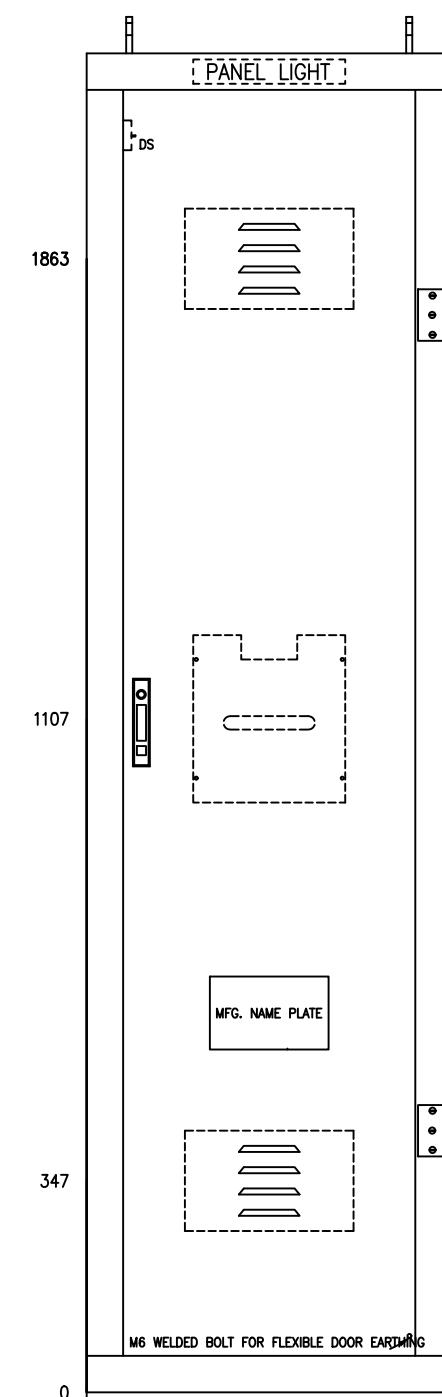
TYPE CP32

APPROVED	CHECKED	DRAWN	PROJECT:  DESCON PO#45000100989 DATED 06.03.2018 PROCUREMENT OF 132kV RELAY, CONTROL PANELS	TITLE: COVER SHEET 132kV LINE CONTROL PANEL TYPE CP32	 E P E S O L Pvt. Ltd. 71-B Garden Block, New Garden Town, Lahore, Pakistan	DWG# EPE/ENU-18/P1411	SHT: 01 OF 03
NAH	RAA	MUR				DATE:15.02.2019	AS BUILT

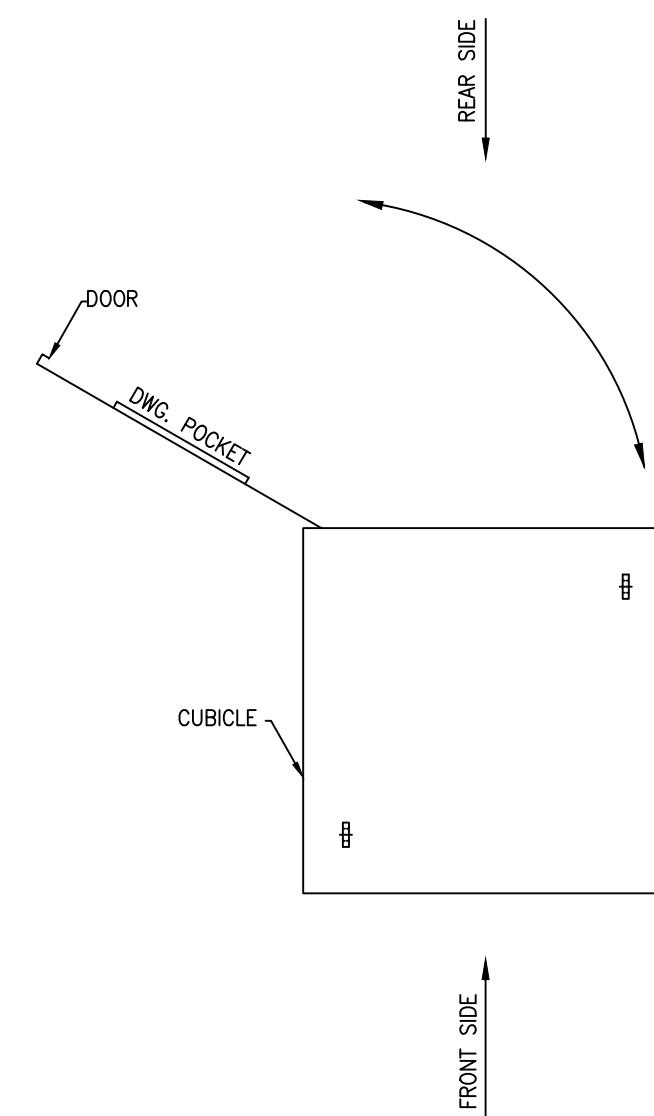
**NOTES**

1. CONTROL PANEL: 600x600x2200 mm
2. FACE SHEET: 600x2200 mm²
3. EARTHING BUSBAR 25x5 mm²
4. FLEXIBLE EARTHING STRAP 16mm²
5. COLOUR: RAL7032
6. CLASS OF PROTECTION: IP51
7. APPLICABLE SPECS: P-151 : 2008
8. MIMIC BUS 6mm(W)x4mm(D) COLOURED RED FOR 132kV
9. PANEL SHEET THICKNESS 2.5 mm

APPROVED	CHECKED	DRAWN	PROJECT: DESCON PO#45000100989 DATED 06.03.2018 PROCUREMENT OF 132kV RELAY, CONTROL PANELS	TITLE: GENERAL ARRANGEMENT 132kV LINE CONTROL PANEL TYPE CP32	EPE SOL Pvt. Ltd. 71-B Garden Block, New Garden Town, Lahore, Pakistan	DWG# EPE/ENU-18/P1411	SHT: 02 OF 03
NAH	RAA	MUR				DATE:15.02.2019	AS BUILT



[:::PANEL LIGHT:::]



APPROVED	CHECKED	DRAWN	PROJECT: DESCON PO#45000100989 DATED 06.03.2018 PROCUREMENT OF 132KV RELAY, CONTROL PANELS	TITLE: GENERAL ARRANGEMENT 132KV LINE CONTROL PANEL TYPE CP32	DWG# EPE/ENU-18/P1411 71-B Garden Block, New Garden Town, Lahore, Pakistan	SHT: 03 OF 03
NAH	RAA	MUR				DATE:15.02.2019 AS BUILT REV: 0

LIST OF APPARATUS

132kV LINE CONTROL PANEL

TYPE CP32

APPROVED	CHECKED	DRAWN	PROJECT: DESCON PO#45000100989 DATED 06.03.2018 PROCUREMENT OF 132kV RELAY, CONTROL PANELS	TITLE: COVER SHEET 132kV LINE CONTROL PANEL TYPE CP32	 EPESOL Pvt Ltd. 71-B Garden Block, New Garden Town, Lahore, Pakistan	DWG# EPE/ENU-18/P1412 DATE:15.02.2019	SHT: 01 OF 04 AS BUILT REV: 0
NAH	RAA	MUR					

	1	2	3	4	5	6	7	8			
SR. #	ITEM DESIGNATION		DESCRIPTION			QTY	TYPE	MAKE	COUNTRY OF ORIGIN	ORDERING INFORMATION	SHEET NO
A	1	P1+T1, P3+T3	METER: 240 DEGREE TRANSDUCER OPERATED ANALOGUE AMPERE METER, INPUT 0...20/30 mA, ACCURACY CLASS 1, SCALE1 0...300/450A, SCALE2 0...600/900A, SCALE3 0...1200/1800A, CT RATIO 1200:600:300/5A, CURRENT TRANSDUCER: NOMINAL INPUT CURRENT 5/7.5A, OUTPUT 0...20/30mA, AUX. VOLTAGE 110 VDC, ACCURACY CLASS 1	2	A96MMA+	FRER	ITALY	A96MMA+MCOEAQ	05		
					MCOEAQ						
B	2	P2+T2	METER: TRANSDUCER OPERATED DIGITAL AMPERE METER, INPUT 0...20/30 mA, ACCURACY CLASS 1, SCALE1 0...300/450A, SCALE2 0...600/900A, SCALE3 0...1200/1800A, CT RATIO 1200:600:300/5A, AUX. VOLTAGE 110 VDC CURRENT TRANSDUCER: NOMINAL INPUT CURRENT 5/7.5A, OUTPUT 0...20/30mA, AUX. VOLTAGE 110 VDC, ACCURACY CLASS 1	1	D96MMA+	FRER	ITALY	D96MMA+MCOEAQ	05		
					MCOEAQ						
C	3	P4	THREE PHASE DIGITAL POWER METER, ACCURACY CLASS 0.5s, INPUT NOMINAL CURRENT 1/5A, INPUT NOMINAL VOLTAGE 100–480 VAC, AUXILIARY VOLTAGE 110–375 VDC	1	ENERIUM 150	ENERDIS	FRANCE	ENERIUM 150	05		
D	4	P5+T5	METER: 240 DEGREE TRANSDUCER OPERATED ANALOGUE MW METER, INPUT -12.5/10...0...10/+12.5 mA, ACCURACY CLASS 1, SCALE 375/300-0-300/375 MW, CT RATIO 1200/5A PT RATIO 132kV/110V(L-L). MW TRANSDUCER: NOMINAL INPUT VOLTAGE 110/137.5 VAC (L-L), NOMINAL INPUT CURRENT 5/6.25A, OUTPUT -12.5/10...0...10/+12.5 mA, AUXILIARY VOLTAGE 110VDC, ACCURACY CLASS 1	1	A96MMA+	FRER	ITALY	A96MMA+MCOWT	05		
					MCOWT						
E	5	P6+T6	METER: 240 DEGREE TRANSDUCER OPERATED ANALOGUE MVAR METER, INPUT -12.5/10...0...10/+12.5 mA, ACCURACY CLASS 1, SCALE 375/300-0-300/375 MVAR, CT RATIO 1200/5A PT RATIO 132kV/110V(L-L). MVAR TRANSDUCER: NOMINAL INPUT VOLTAGE 110/137.5 VAC (L-L), NOMINAL CURRENT 5/6.25A, OUTPUT -12.5/10...0...10/+12.5 mA, AUXILIARY VOLTAGE 110VDC, ACCURACY CLASS 1	1	A96MMA+	FRER	ITALY	A96MMA+MCORT	05		
					MCORT						
F	6	H101	EIGHT WINDOW ANNUNCIATOR, RATED VOLTAGE 110 VDC	1	AM101	ELABS	PAKISTAN	AM-101	11		
G	7	H102, H103	TWELVE WINDOW ANNUNCIATOR, RATED VOLTAGE 110 VDC	2	AM101	ELABS	PAKISTAN	AM-101	12,13		
H	8	H104	EIGHT WINDOW ANNUNCIATOR, RATED VOLTAGE 240 VAC	1	AM101	ELABS	PAKISTAN	AM-101	14		
I	9	TS	TEST BLOCK (14 FINGER) FOR METERING CIRCUIT	1	saTECH	ARTECHE	SPAIN	TSB-14-222211111AAB-V	05,18		
J	10	F1, F2, F3, F7	DC MCB 2POLE 10A, WITH ONE C/O CONTACT, 10kA	4	EP-100	GE	HUNGRY	EP102UCC10+(CAH1)	06		
K	11	F4, F5	AC MCB 2POLE 10A, WITH ONE C/O CONTACT, 10kA	2	G60	GE	HUNGRY	G62C10+(CAH1)	16		
L	12	F6	AC ELCB, 2POLE, 16A, 30mA, WITH ONE C/O CONTACT	1	DM100	GE	HUNGRY	DM100C16/030+(CAH1)			
M	13	74DC-1, 74DC-2	DC SUPPLY SUPERVISION RELAY, RATED VOLTAGE 110 VDC	2	TS101	ELABS	PAKISTAN	TS101	10,13		
N	14	74AC	AC SUPPLY SUPERVISION RELAY, RATED VOLTAGE 240 VAC 3 C/O CONTACTS	1	MCR	GE	POLAND	MCRA022ATN	14		
O	15	K10	FLASHER RELAY, 1 C/O CONTACT, RATED VOLTAGE 110 VDC	1		ELABS	PAKISTAN		09		
P	16	S0	CONTROL DISCREPANCY SWITCH WITH LAMP ACCESSORIES (CB), SQUARE TYPE, 110 VDC	1	YS-IC-4456	YONGSUNG	SOUTH KOREA	YS-IC-4456-S4(49)	07		
								-PM-K-G-D11-G			
								-PM-K-G-D11-G			
Q	17	S1,S2,S9,S52,ES1,ES9	CONTROL DISCREPANCY SWITCH WITH LAMP ACCESSORIES (ISO), ROUND TYPE, 110 VDC	6	YS-IC-4456	YONGSUNG	SOUTH KOREA	YS-IC-4456-R4(49)	09		
								-PM-K-G-D11-G			
								-PM-K-G-D11-G			
R	18	TS+HS	THERMOSTAT AND HUMIDSTAT	1	ELH220	ELABS	PAKISTAN	ELH220	16		
S	19	SH	SPACE HEATER	1	ELH220	ELABS	PAKISTAN	ELH220	16		
APPROVED	CHECKED	DRAWN	PROJECT:  DESCON PO#45000100989 DATED 06.03.2018 PROCUREMENT OF 132kV RELAY, CONTROL PANELS	TITLE: LIST OF APPARATUS 132kV LINE CONTROL PANEL TYPE CP32	 EPESOL Pvt. Ltd. 71-B Garden Block, New Garden Town, Lahore, Pakistan			DWG# EPE/ENU-18/P1412	SHT: 02 OF 04		
NAH	RAA	MUR						DATE:15.02.2019	AS BUILT	REV: 0	

		1	2	3	4	5	6	7	8		
SR. #	ITEM DESIGNATION	DESCRIPTION				QTY	TYPE	MAKE	COUNTRY OF ORIGIN	ORDERING INFORMATION	SHEET NO
A	20	DS	DOOR SWITCH WITH COVER			1	YSP+YSMS	YONGSUNG	SOUTH KOREA	YSP3315GWB+YSMS-C	16
	21	IL	ILLUMINATION LIGHT, 5W, 260 VAC			1	YST8	YONGSUNG	SOUTH KOREA	YST8-30-5W	16
	22	TPS	THREE PIN SOCKET OUTLET, 240 VAC, 16A			1		LEAR	CHINA		16
	23	HI,H2,H3,H4	INDICATION LAMPS, COLOURED RED			4	YSPL	YONGSUNG	SOUTH KOREA	YSPL2-DL12RW	09,10,13
B	24	LT, ACK, RST	PUSH BUTTON FOR ANNUNCIATORS LAMP TEST, ACKNOWLEDGE AND RESET, FOUR NO CONTACTS EACH			3	YSAP1	YONGSUNG	SOUTH KOREA	YSAP1240RDW+YSAP1240GDW	11
	25	CTR	COUNTER FOR CIRCUIT BREAKER			1		ELABS	PAKISTAN		07
	26	SY	KEY OPERATED SWITCH FOR BREAKER LOCAL-OFF-REMOTE CONTROL			1	YSAK	YONGSUNG	SOUTH KOREA	YSAK2380D	07
	27	HTR	HOOTER, RATED VOLTAGE 110VDC			1	AH-101	ELABS	PAKISTAN		11
c	28	B	BELL, RATED VOLTAGE 240VAC			1	YSMB	YONGSUNG	SOUTH KOREA	YSMB-722A	14
	29	X1	DISCONNECTING TERMINAL BLOCK (SCREW TYPE) FOR CT CIRCUIT WITH SHORTENING ARRANGEMENT			7	SCB-6	CABUR	ITALY		
	30	X2	DISCONNECTING TERMINAL BLOCK (SCREW TYPE) FOR VT CIRCUIT			4	SCB-6	CABUR	ITALY		
	31	X3	TERMINAL BLOCKS FOR CONTROL FUNCTION			94	CBD-4	CABUR	ITALY		
D	32	X6	TERMINAL BLOCKS FOR TRIP CIRCUIT-1			14	CBD-4	CABUR	ITALY		
	33	X7	TERMINAL BLOCKS FOR TRIP CIRCUIT-2			11	CBD-4	CABUR	ITALY		
	34	X9	TERMINAL BLOCKS FOR ANNUNCIATION SUPPLY DISTRIBUTION			8	CBD-4	CABUR	ITALY		
	35	X11	TERMINAL BLOCKS FOR CURRENT METERING CIRCUIT			4	CBD-4	CABUR	ITALY		
E	36	X14	TERMINAL BLOCKS FOR SCADA/TELECOM			88	CBD-4	CABUR	ITALY		
	37	X15	TERMINAL BLOCKS FOR RS485 COMMUNICATION			2	CBD-4	CABUR	ITALY		
	38	X17	TERMINAL BLOCKS FOR AC SUPPLY DISTRIBUTION			20	CBD-4	CABUR	ITALY		
	39	X21	TERMINAL BLOCKS FOR VOLTAGE METERING CIRCUIT			26	CBD-4	CABUR	ITALY		
F	40	X91	TERMINAL BLOCKS FOR ANNUNCIATION CIRCUIT			10	CBD-4	CABUR	ITALY		
APPROVED	CHECKED	DRAWN	PROJECT:  DESCON PO#45000100989 DATED 06.03.2018 PROCUREMENT OF 132KV RELAY, CONTROL PANELS		TITLE: LIST OF APPARATUS 132KV LINE CONTROL PANEL TYPE CP32	 EPESOL Pvt Ltd. 71-B Garden Block, New Garden Town, Lahore, Pakistan			DWG# EPE/ENU-18/P1412	SHT: 03 OF 04	
NAH	RAA	MUR							DATE:15.02.2019	AS BUILT	REV: 0

			1	2	3	4	5	6	7	8	
SR. #	ITEM DESIGNATION		DESCRIPTION			QTY	TYPE	MAKE	COUNTRY OF ORIGIN	ORDERING INFORMATION	SHEET NO
A 41	X92		TERMINAL BLOCKS FOR ANNUNCIATION CIRCUIT			16	CBD-4	CABUR	ITALY		A
A 42	X93		TERMINAL BLOCKS FOR ANNUNCIATION CIRCUIT			14	CBD-4	CABUR	ITALY		A
A 43	X94		TERMINAL BLOCKS FOR ANNUNCIATION CIRCUIT			7	CBD-4	CABUR	ITALY		A
B 44	X101		TERMINAL BLOCKS FOR DC SUPPLY DISTRIBUTION			32	CBD-4	CABUR	ITALY		B
B 45	XD		TERMINAL BLOCKS WITH DIODE TYPE IN-D4007, RATED MAXIMUM VOLTAGE 350VDC, RATED BREAK DOWN VOLTAGE 430VDC			07	DAS.4/6	CABUR	ITALY		B
B 46	X4		SPARE TERMINAL BLOCKS			30	CBD-4	CABUR	ITALY		B
B 47	K11		COIL VOLTAGE 110VDC WITH 4C/O CONTACTS			1	PRC	GE	HUNGRY	PRC4M40CJL	B
c											c
d											d
e											e
f											f

APPROVED	CHECKED	DRAWN	PROJECT:  DESCON PO#45000100989 DATED 06.03.2018 PROCUREMENT OF 132KV RELAY, CONTROL PANELS	TITLE: LIST OF APPARATUS 132KV LINE CONTROL PANEL TYPE CP32	 EPESOL Pvt. Ltd. 71-B Garden Block, New Garden Town, Lahore, Pakistan	DWG# EPE/ENU-18/P1412	SHT: 04 OF 04
NAH	RAA	MUR				DATE:15.02.2019	AS BUILT

SCHEMATIC DIAGRAMS

132kV LINE CONTROL PANEL

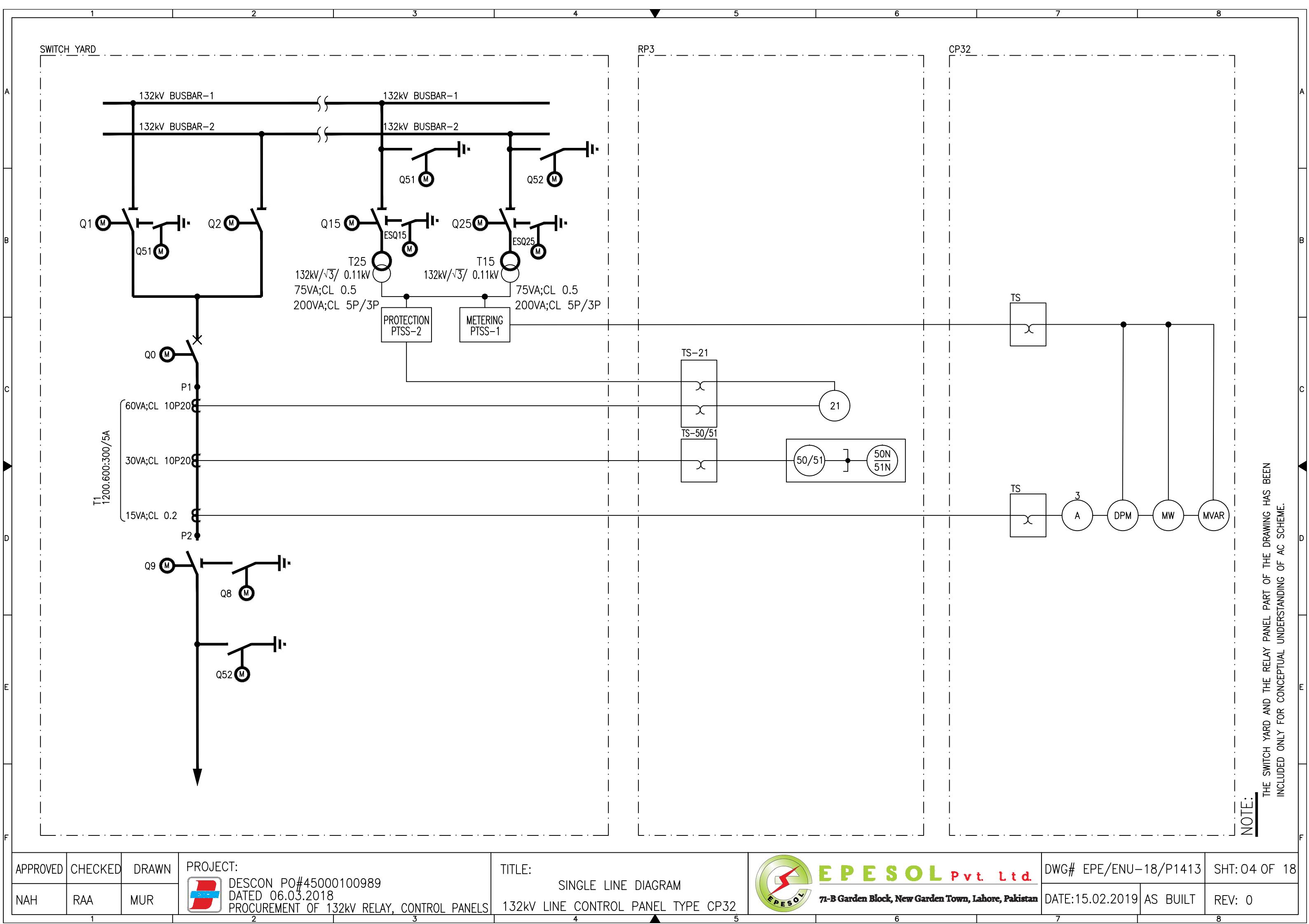
TYPE CP32

APPROVED	CHECKED	DRAWN	PROJECT: DESCON PO#45000100989 DATED 06.03.2018 PROCUREMENT OF 132kV RELAY, CONTROL PANELS	TITLE: COVER SHEET 132kV LINE CONTROL PANEL TYPE CP32	EPESOL Pvt Ltd. 71-B Garden Block, New Garden Town, Lahore, Pakistan	DWG# EPE/ENU-18/P1413 DATE:15.02.2019 AS BUILT	SHT: 01 OF 18 REV: 0
NAH	RAA	MUR					

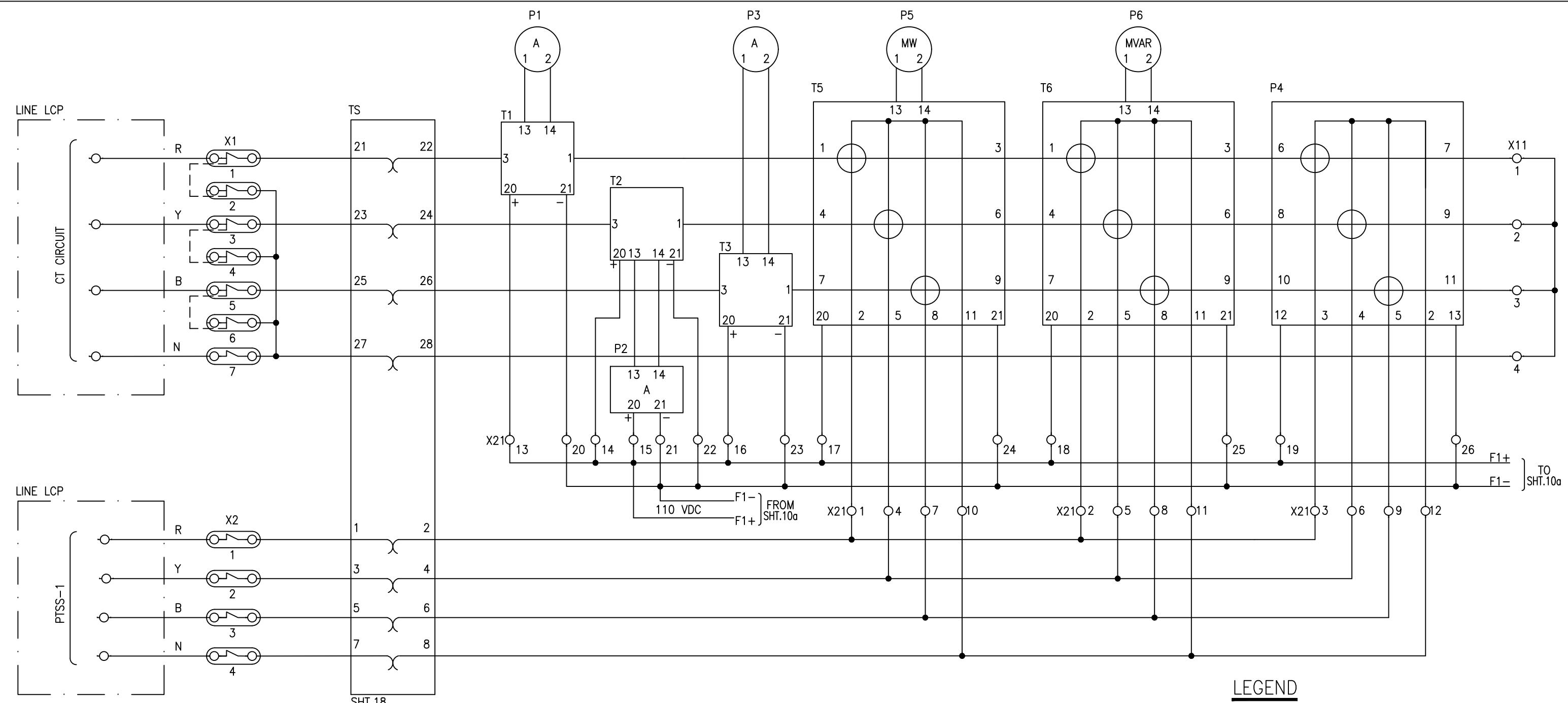
DESCRIPTION	SHEET NO
COVER SHEET	01
LIST OF CONTENTS	02
LIST OF SYMBOLS	03
SINGLE LINE DIAGRAM	04
AC SCHEMATIC DIAGRAM	05
DC SUPPLY DISTRIBUTION	06
CB CONTROL & TRIP CIRCUIT-1	07
CB TRIP CIRCUIT – 2	08
DEVICE POSITION INDICATION	09
ISOLATOR & EARTH SWITCH INTERLOCKING	10,10a
ANNUCIATOR UNIT – 1	11
ANNUCIATOR UNIT – 2	12
ANNUCIATOR UNIT – 3	13
ANNUCIATOR UNIT – 4	14
TERMINAL BLOCKS FOR SCADA/TELECOM	15
AC SUPPLY DISTRIBUTION	16
RS485 COMMUNICATION	17
TEST BLOCK TYPE TSB-14 DETAILS	18

LIST OF SYMBOLS

A		HV DISCONNECTOR		EQUIPMENT WITHIN PANEL
B	*	HV CIRCUIT BREAKER	— — — —	INDEPENDENT PANEL
C		CURRENT TRANSFORMER	— · — · —	INDEPENDENT PANEL
D		POWER TRANSFORMER	21	DISTANCE RELAY
E	⊗	RELAY PANEL TERMINAL BLOCK	50/51	OVER CURRENT & EARTH FAULT RELAY
F	φ	CONTROL PANEL TERMINAL BLOCK	TS	TEST BLOCK
	— =	EARTH CONNECTION	74DC-1/2	DC SUPPLY SUPERVISION RELAY
	X	TEST BLOCK TERMINAL	X	TERMINAL BLOCK
	L	NORMALLY CLOSED CONTACT	MW	MEGAWATT METER
	Y	NORMALLY OPEN CONTACT	MVAR	MEGAVAR METER
	— ↗ —	CHANGE OVER CONTACT	KWH	ENERGY METER
	— ↙ —	MINIATURE CIRCUIT BREAKER		
	⊗	INDICATING BULB/LED		
	○:○	240 VAC SOCKET		
	— — —	SPACE HEATER		
	VSS	VOLTAGE SELECTOR SWITCH		
	— ⊥ —	COIL		
	A	AMPERE METER		



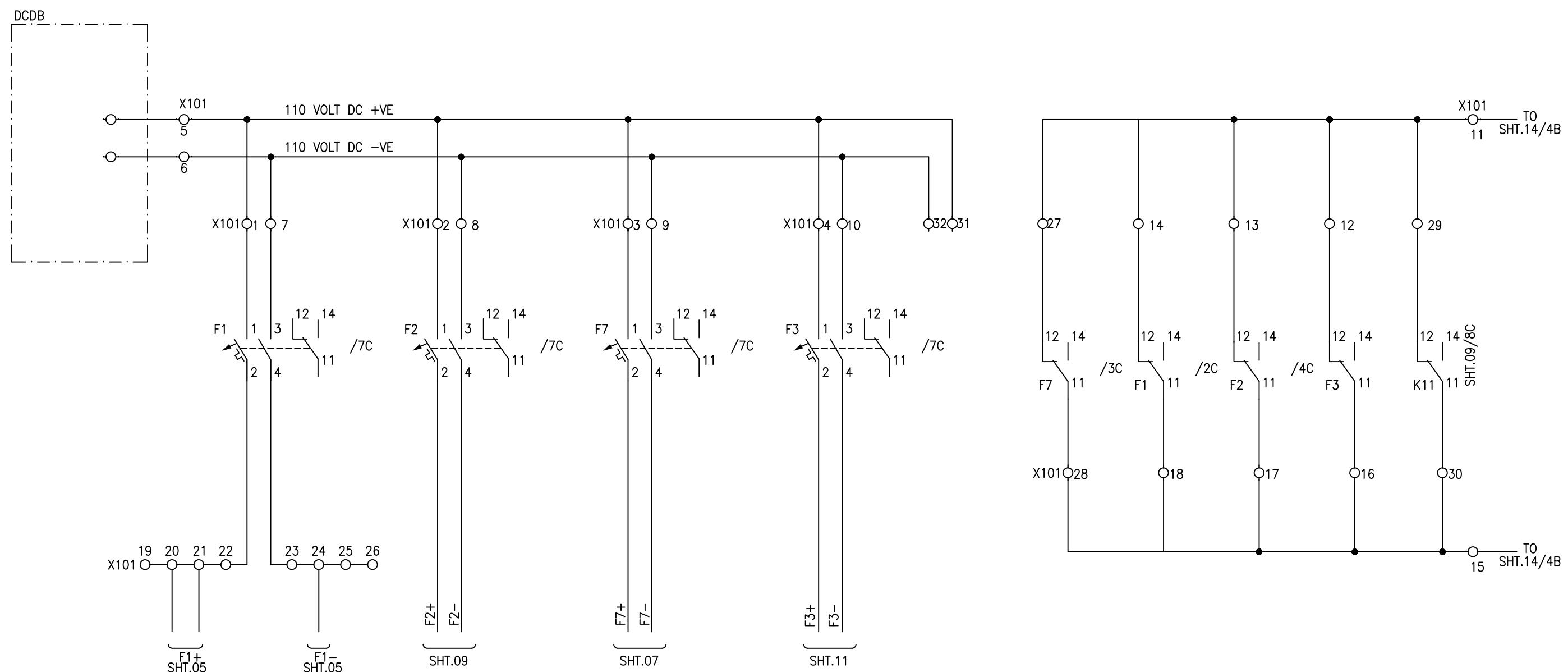
ANALOGUE AMMETER DIGITAL AMMETER ANALOGUE AMMETER ANALOGUE MW METER ANALOGUE MVAR METER DIGITAL POWER METER

**NOTE:**

1. CT CIRCUIT WIRE SIZE IS 4mm² (COLOURED RED, YELLOW, BLUE AND BLACK).
2. VT CIRCUIT WIRE SIZE IS 2.5mm² (COLOURED RED, YELLOW, BLUE AND BLACK).

DES.	DESCRIPTION	TYPE	MAKE
TS	TEST BLOCK	TSB14	ARTECHE
P1+T1, P3+T3	ANALOGUE AMMETER WITH TRANSDUCER	A96MMA+MC0FAQ	FRER
P2+T2	DIGITAL AMMETER WITH TRANSDUCER	D96MMA+MC0FAQ	FRER
P4	DIGITAL POWER METER	ENERIUM150	ENERDIS
P5+T5	ANALOGUE MW METER WITH TRANSDUCER	A96MMA+MC0WT	FRER
P6+T6	ANALOGUE MVAR METER WITH TRANSDUCER	A96MMA+MC0RT	FRER

METERING POSITION INDICATION TRIP CIRCUIT-2 ANNUNCIATION
SUPPLY & DEVICE INTERLOCKING SUPPLY SUPPLY

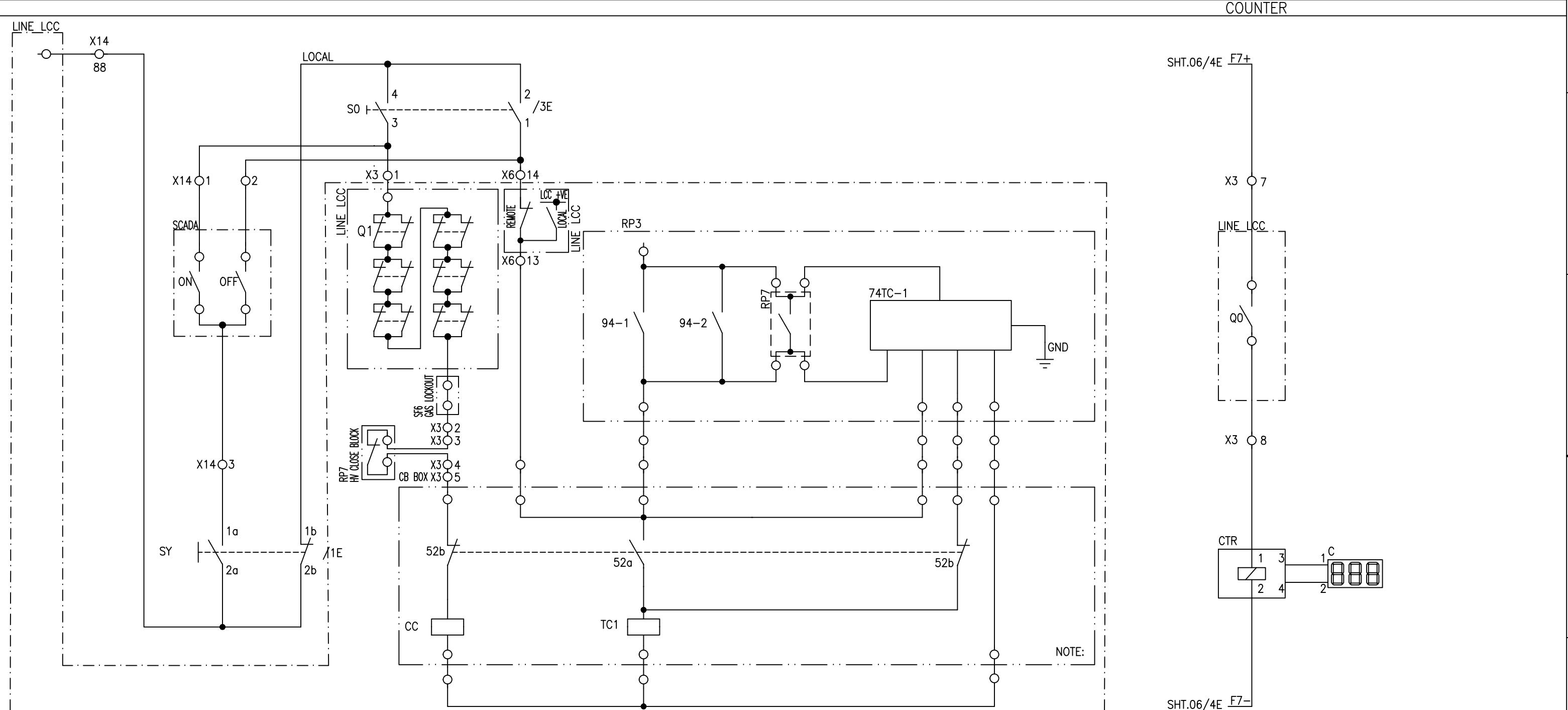


LEGEND

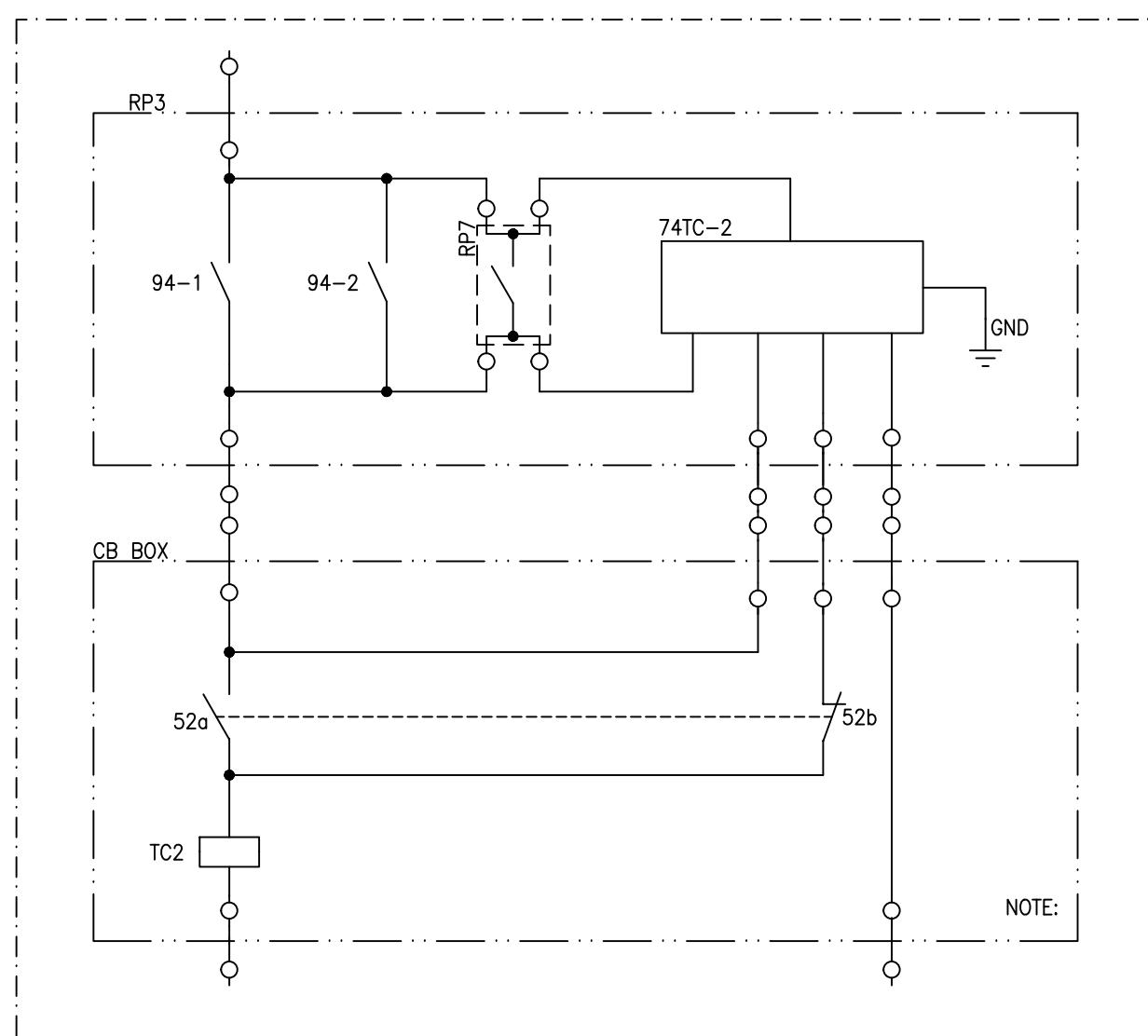
DES:	DESCRIPTION	TYPE	MAKE
F1,F2, F3,F7	DC MCB, 2P, 10A	EP-100	GE
K10	FLASHER RELAY	F101	E-LABS

C.B Q0
ON OFF

PROTECTION TRIPPINGS

TRIP CIRCUIT-1
SUPERVISIONCB OPERATION
COUNTER

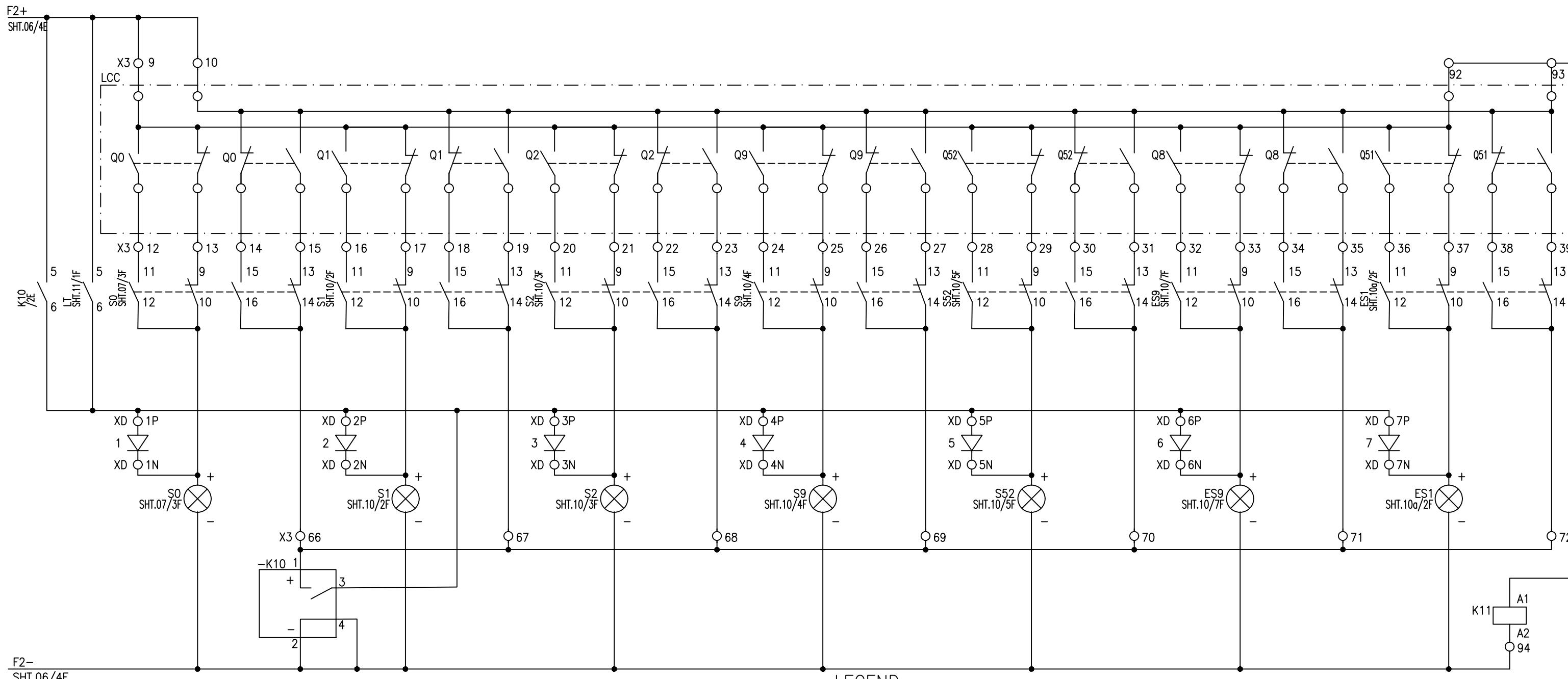
PROTECTION TRIPPINGS

TRIP CIRCUIT-2
SUPERVISION

NOTE:
THE INTERNAL MECHANISM OF CIRCUIT BREAKER CONTROL
IS NOT THE PART OF CONTROL PANEL.
IT HAS BEEN SHOWN ONLY FOR CLARITY OF SCHEME.

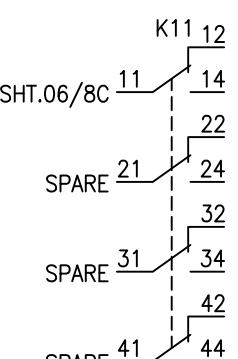
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NAH	RAA	MUR					

	DISCREPANCY INITIATION CIRCUIT BREAKER Q0	DISCREPANCY INITIATION BUS-I ISOLATOR Q1	DISCREPANCY INITIATION BUS-II ISOLATOR Q2	DISCREPANCY INITIATION LINE ISOLATOR Q9	DISCREPANCY INITIATION EARTHING SWITCH Q52	DISCREPANCY INITIATION LINE ISOLATOR Q9 ES Q8	DISCREPANCY INITIATION BUS-I ISOLATOR Q1 ES Q51
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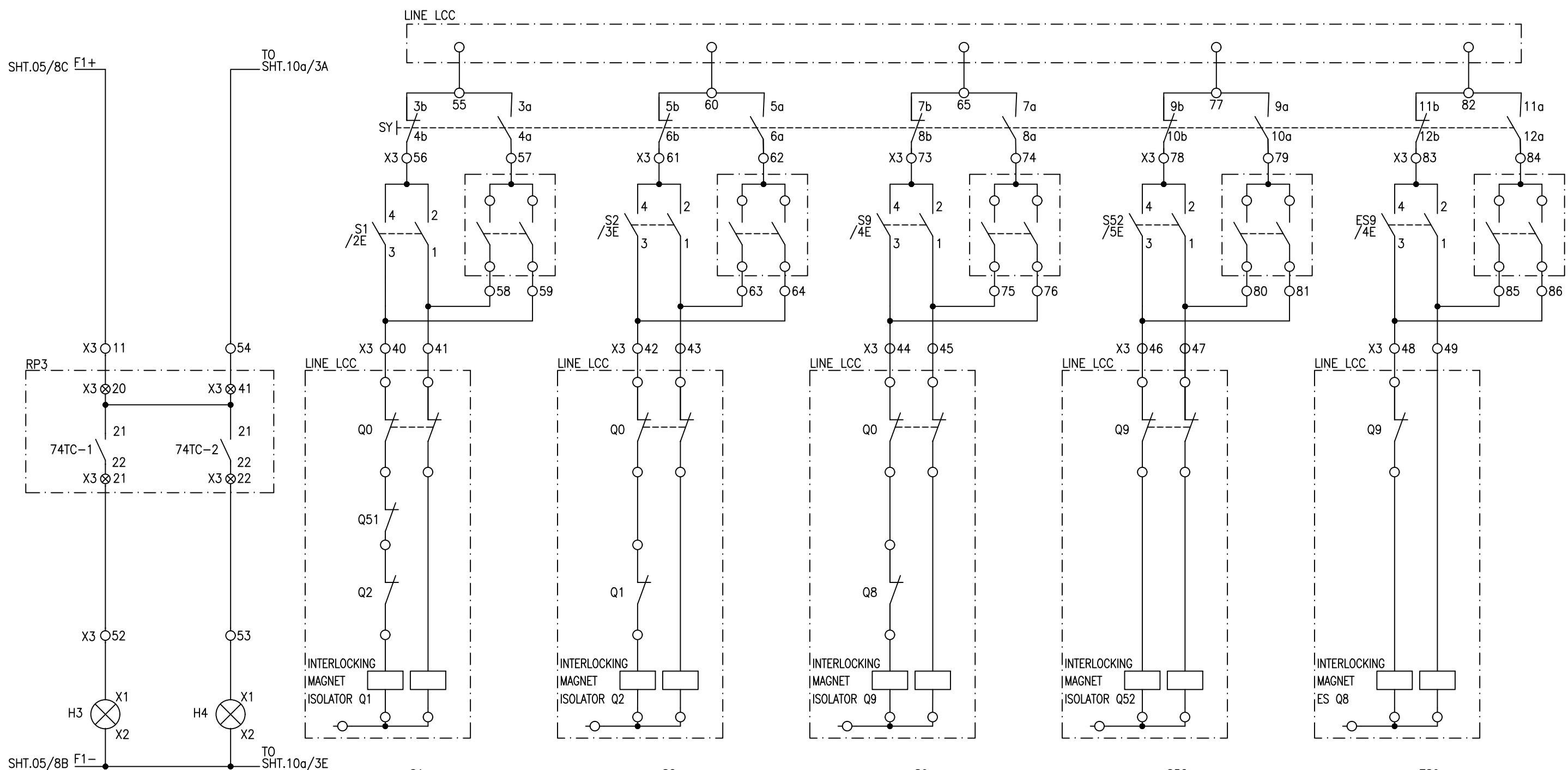


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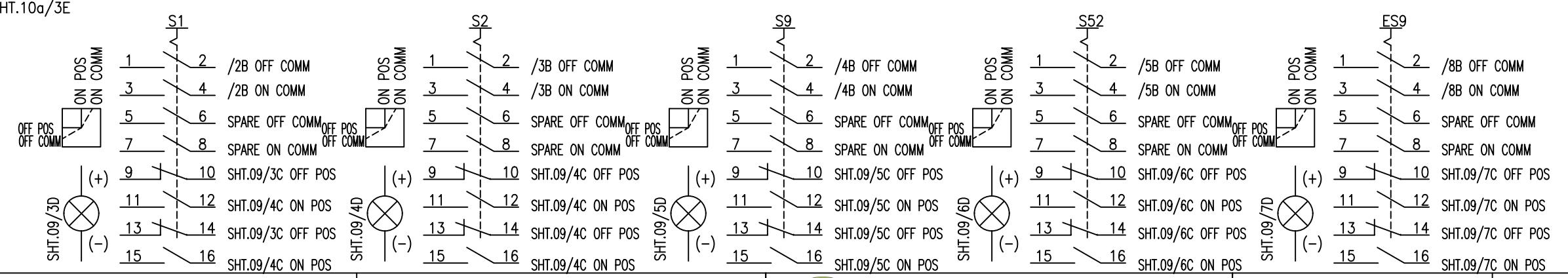
DES.	DESCRIPTION	TYPE	MAKE
S0	CONTROL & DISCREPANCY SWITCH, SQUARE TYPE	YS-IC-4456	YONGSUNG
S1, S2, ES1 S9, S52, ES9	CONTROL & DISCREPANCY SWITCH, ROUND TYPE	YS-IC-4456	YONGSUNG



CIRCUIT BREAKER		BUS-I ISOLATOR		BUS-II ISOLATOR		LINE ISOLATOR		EARTH SWITCH	LINE ISOLATOR Q9 ES	
TRIP CKT	HEALTHY	INTERLOCKING Q1		INTERLOCKING Q2		INTERLOCKING Q9		INTERLOCKING Q52	INTERLOCKING Q8	
TC-1	TC-2	ON	OFF	ON	OFF	ON	OFF	ON	OFF	

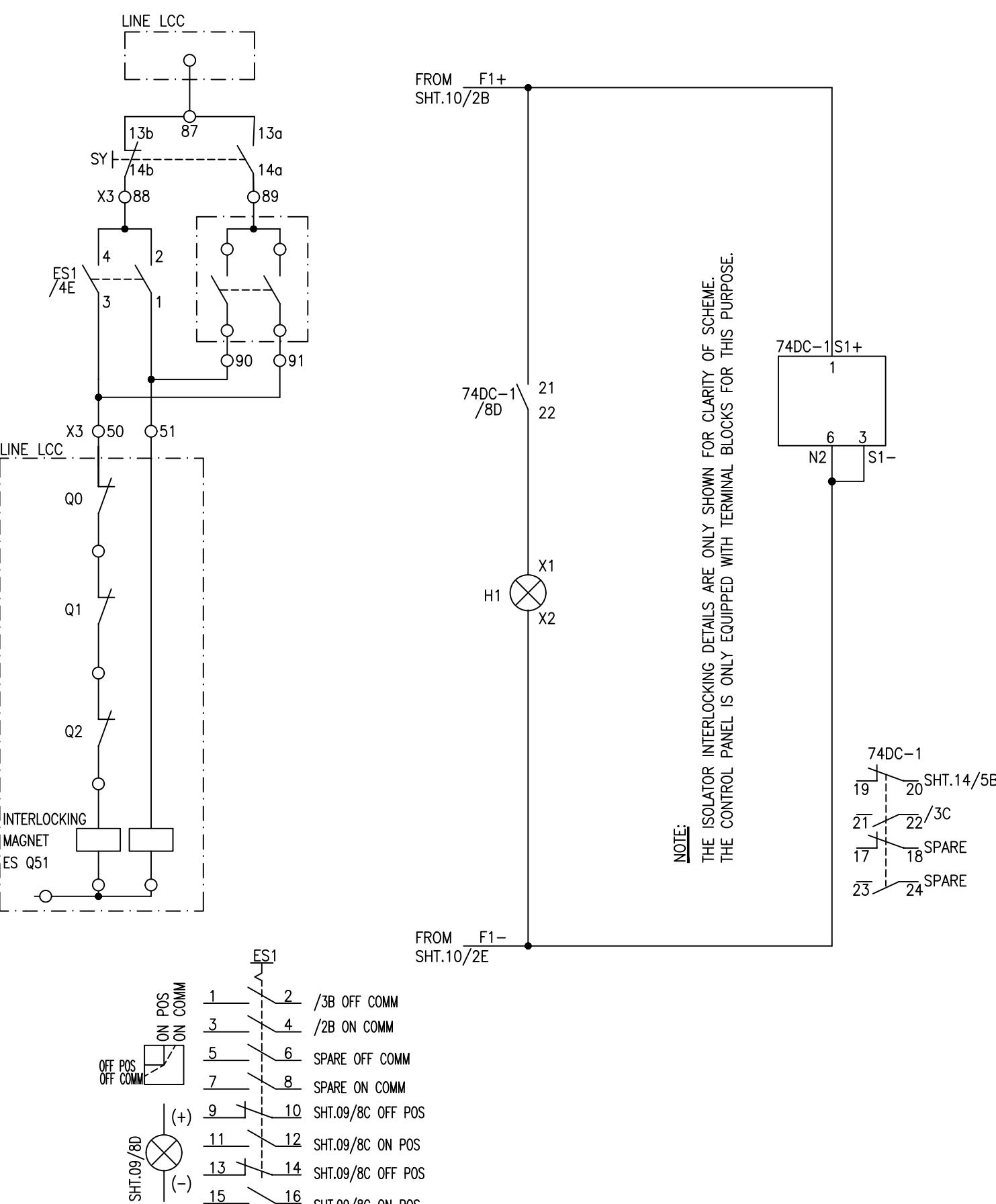
LEGEND

DES.	DESCRIPTION
H3,H4	INDICATION LAMP

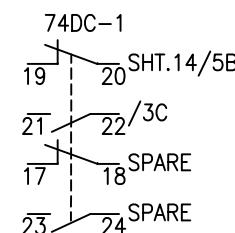


BUS-1 ISOLATOR Q1 ES	INDICATION
INTERLOCKING Q51	SUPPLY HEALTHY
ON OFF	

INDICATION SUPPLY SUPERVISION



NOTE: THE ISOLATOR INTERLOCKING DETAILS ARE ONLY SHOWN FOR CLARITY OF SCHEME. THE CONTROL PANEL IS ONLY EQUIPPED WITH TERMINAL BLOCKS FOR THIS PURPOSE.



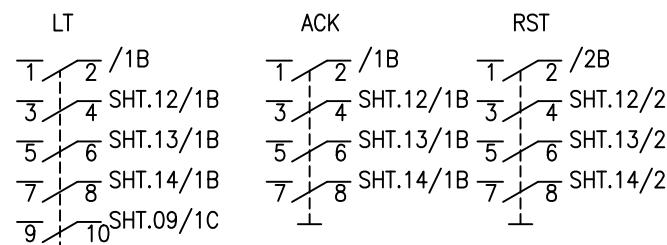
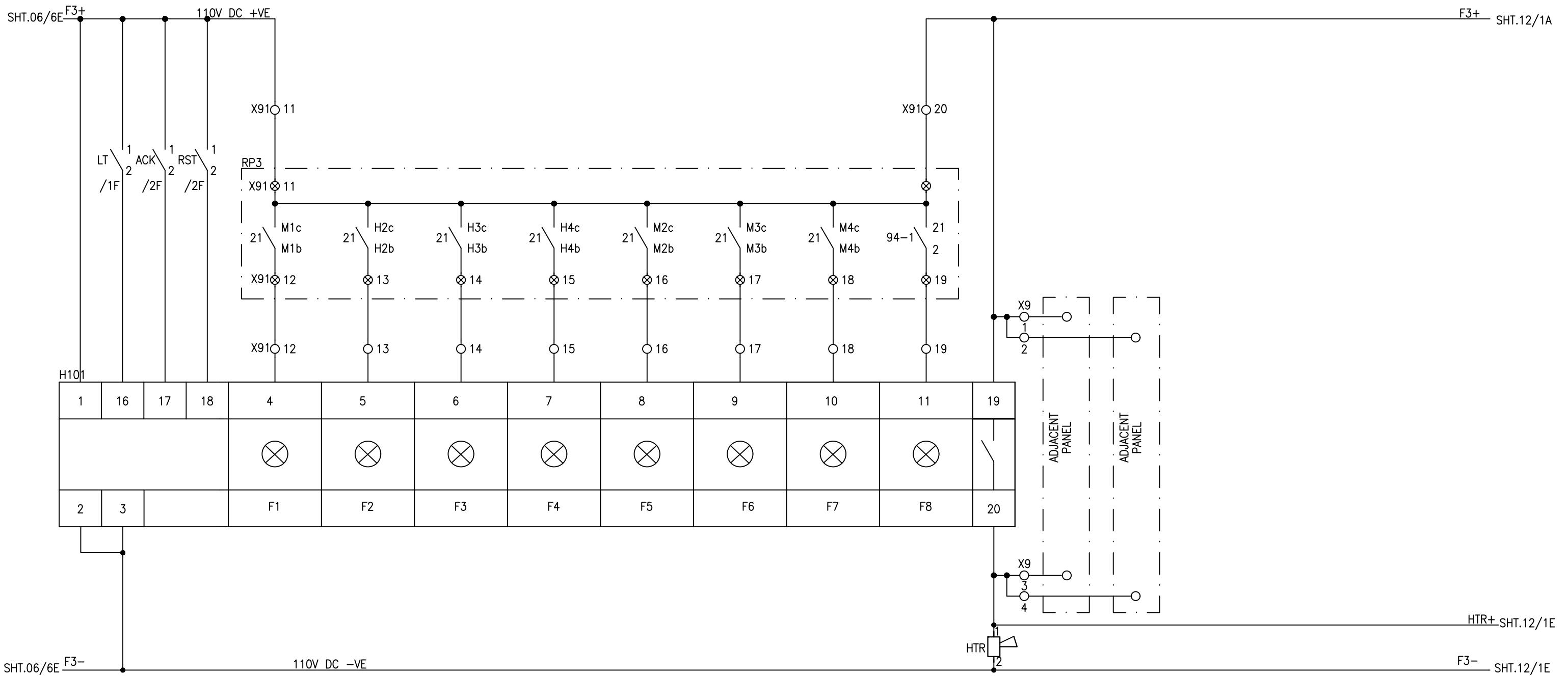
LEGEND

DES.	DESCRIPTION
74DC-1	DC SUPERVISION
H1	INDICATION LAMP

APPROVED	CHECKED	DRAWN	PROJECT: DESCON PO#45000100989 DATED 06.03.2018 PROCUREMENT OF 132KV RELAY, CONTROL PANELS	TITLE: ISOLATOR & EARTH SWITCH INTERLOCKING 132KV LINE CONTROL PANEL TYPE CP32	 EPESOL Pvt. Ltd 71-B Garden Block, New Garden Town, Lahore, Pakistan	DWG# EPE/ENU-18/P1413	SHT:10aOF 18	
NAH	RAA	MUR				DATE:15.02.2019	AS BUILT	REV: 0

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LAMP TEST	ACK RESET	PICKUP	R PHASE TRIP	Y PHASE TRIP	B PHASE TRIP	ZONE-1 TRIP	ZONE-2 TRIP	ZONE-3 TRIP	GENERAL TRIP
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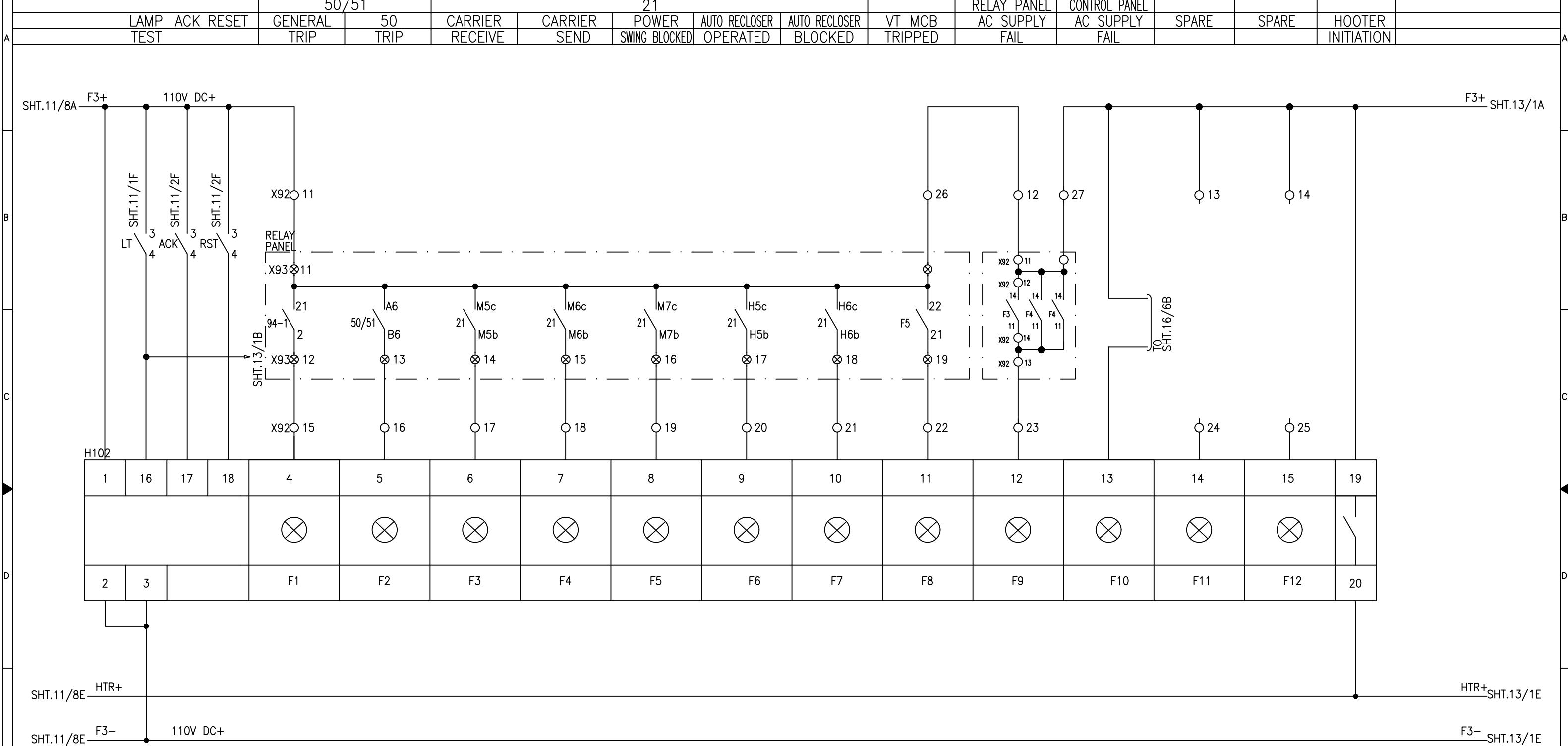
DES.	DESCRIPTION	TYPE	MAKE
LT,ACK RST	PUSH BUTTONS	YSAP1	YONGSUNG

DES.	DESCRIPTION	TYPE	MAKE
H101	DC ANNUNCIATOR	AM-101	ELABS

DES.	DESCRIPTION	TYPE	MAKE
HTR	HOOTER	AH-101	ELABS

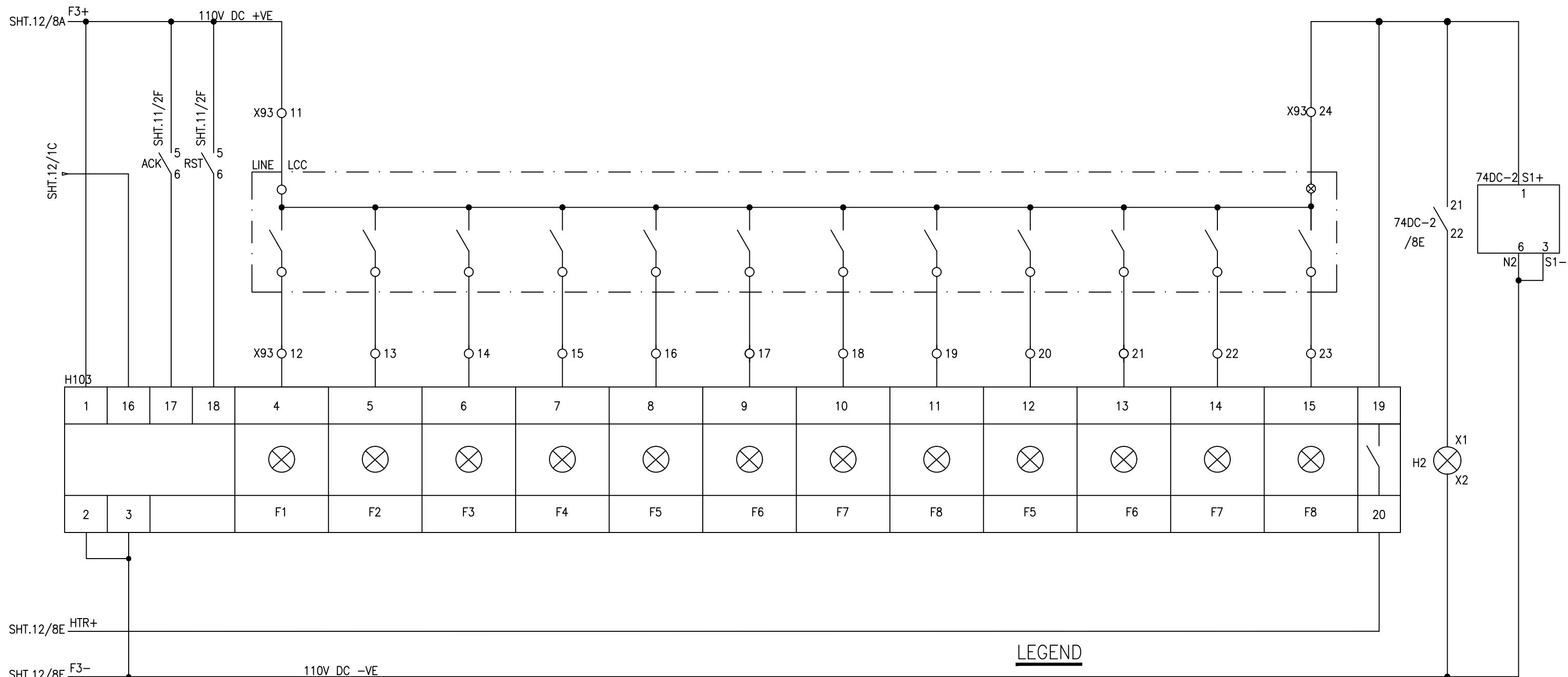
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21

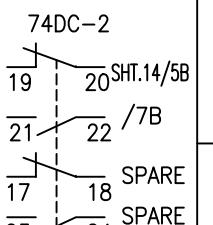
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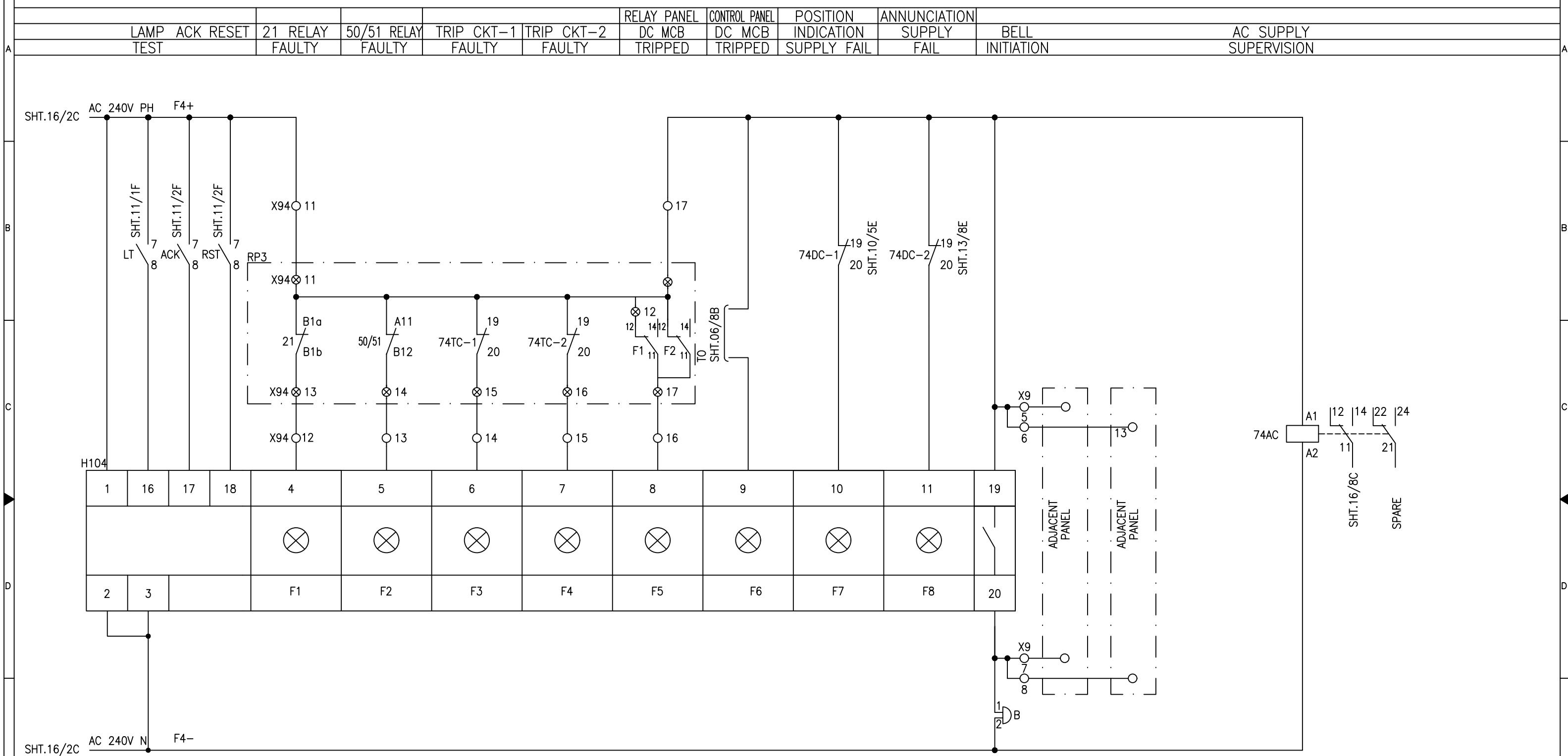
DES.	DESCRIPTION	TYPE	MAKE
H102	DC ANNUNCIATOR	AM-101	ELAB
LT,ACK RST	PUSH BUTTONS	YSAP1	YONGSUNG

	CIRCUIT BREAKER				SF6 GAS	SF6 GAS	LCC	LCC	LCC	LCC	SF6 GAS	SF6 GAS	ANN	ANN					
A	LAMP TEST	ACK	RESET	MECHANICAL FAILURE	SPRING UNCHARGED	MOTOR SUPPLY FAIL	TRIP LOCK OUT	PRES. LOW STAGE-1	PRES. LOW STAGE-2	ON LOCAL MODE	ON REMOTE MODE	AC SUPPLY FAIL	DC SUPPLY FAIL	PRES. HIGH FAIL	PRES. HIGH FAIL	HOOTER STAGE-1 STAGE-2	SUPPLY INITIATION STAGE-2	SUPPLY HEALTHY	SUPVN

LEGEND

DES.	DESCRIPTION	TYPE	MAKE
74DC-2	DC SUPPLY SUPERVISION RELAY	TS101	ELABS
H103	DC ANNUNCIATOR	AM101	ELABS
H2	INDICATION LAMP	YSPL	YONGSUNG
LT,ACK RST	PUSH BUTTONS	YSAP1	YONGSUNG



LEGEND

DES.	DESCRIPTION	TYPE	MAKE
LT,ACK RST	PUSH BUTTONS	YSAP1	YONGSUNG
B	BELL	YSMB	YONGSUNG

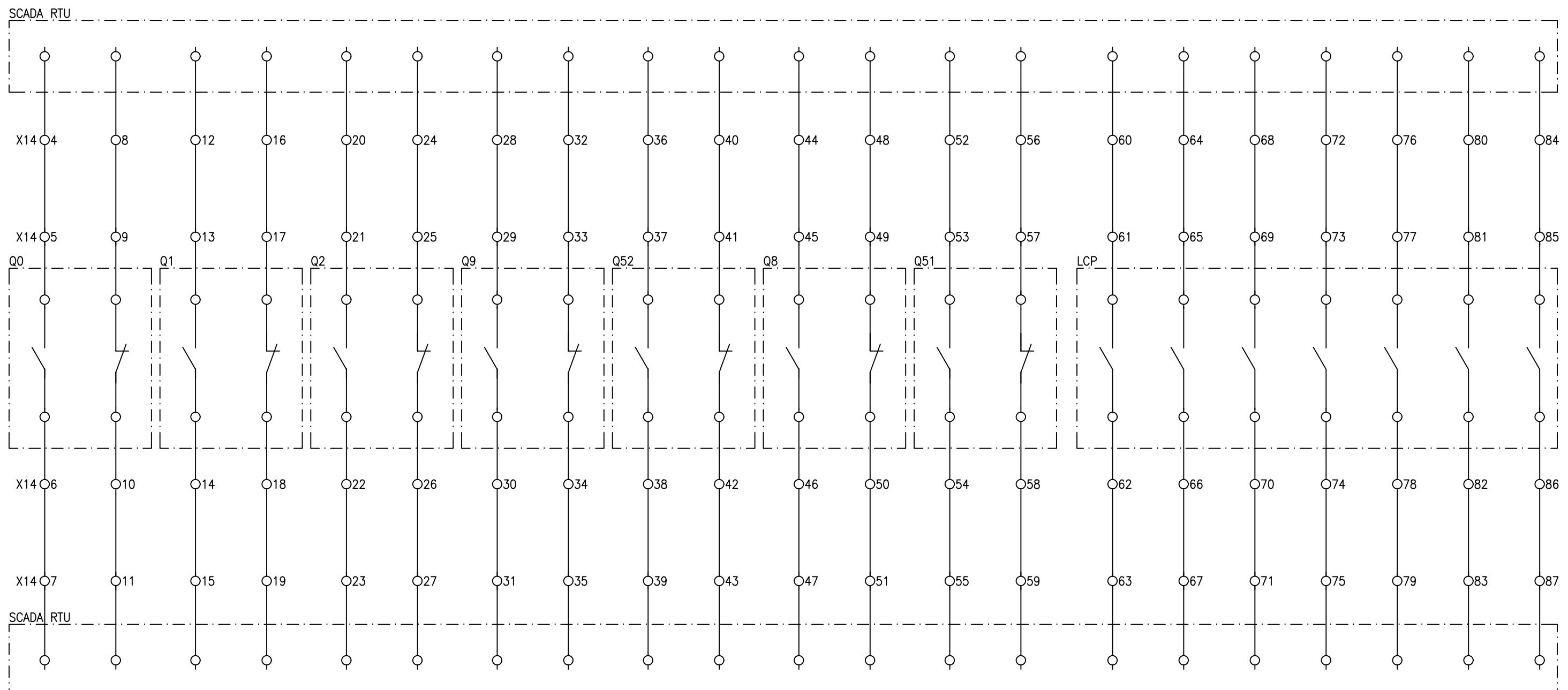
LEGEND

DES.	DESCRIPTION	TYPE	MAKE
H104	AC ANNUNCIATOR	AM-101	ELABS
74AC	AC SUPPLY SUPERVISION RELAY	MCR	GE

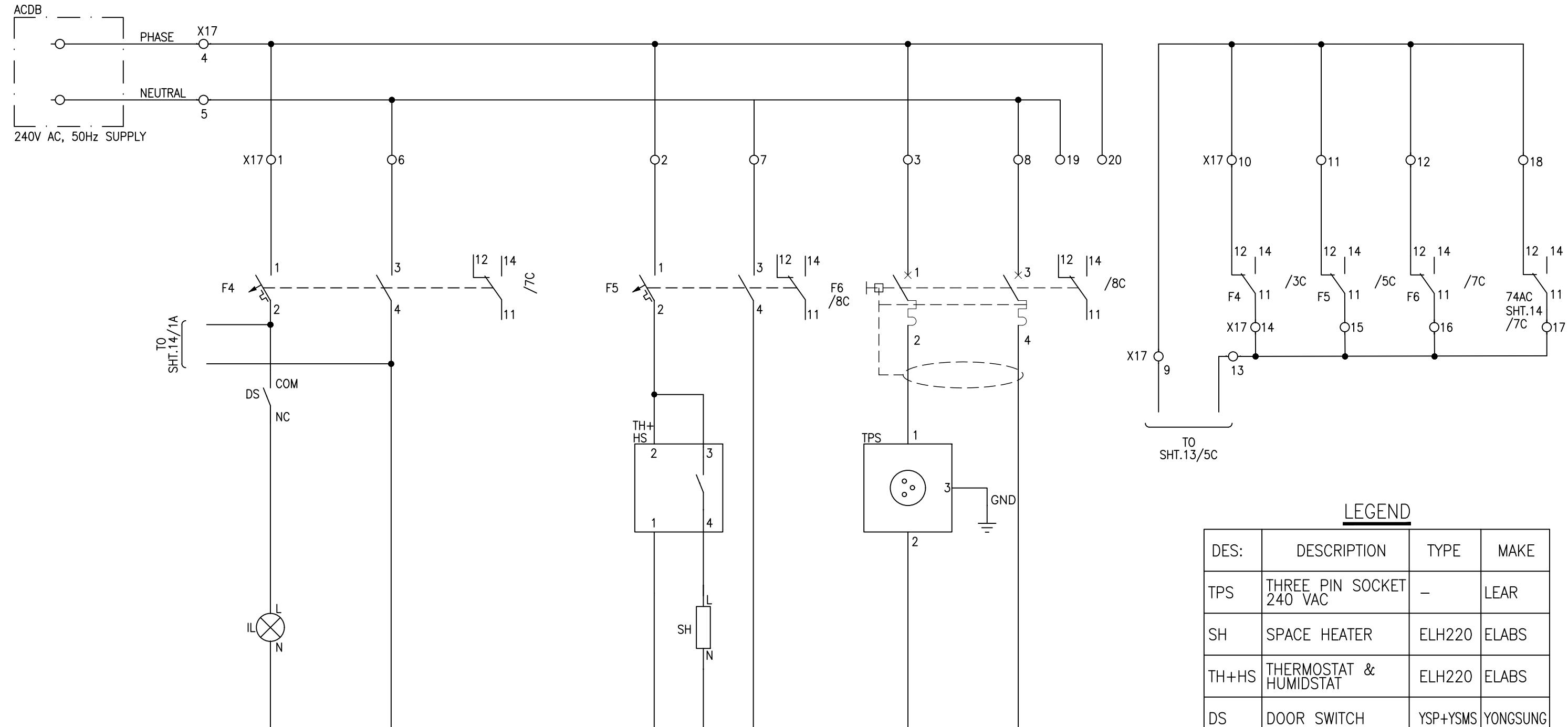
LEGEND

DES.	DESCRIPTION	TYPE	MAKE
74DC-1 74DC-2	DC SUPPLY SUPERVISION RELAY	TS101	ELABS

							CB GAS	CB GAS	CB GAS	CB MOTOR	CB MECH.	CB MECH.	LCP AC
A	CIRCUIT BREAKER	BUS ISOLATOR	BUS-2 ISOLATOR	LINE ISOLATOR	EARTHING SWITCH	LINE ISO. Q9 ES	BUS-I ISO. Q1 ES	PRESSURE HIGH	PRESSURE LOW	PRESSURE LOW	SUPPLY FAIL	FAIL	FAIL
	Q0	Q1	Q2	Q9	Q52	Q8	Q51	STAGE-1	STAGE-2				SUPPLY FAIL



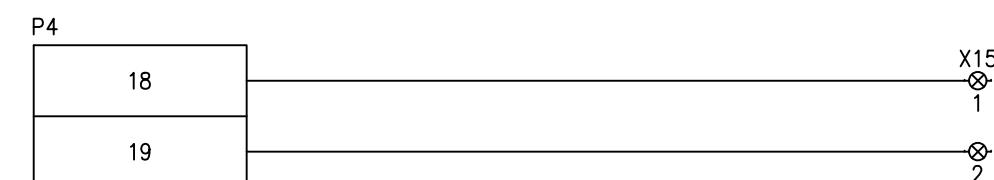
AC SUPPLY DISTRIBUTION

DOOR SWITCH &
CUBICLE LIGHTSPACE HEATER
THERMOSTATTHREE
PIN SOCKET

LEGEND

DES:	DESCRIPTION	TYPE	MAKE
TPS	THREE PIN SOCKET 240 VAC	-	LEAR
SH	SPACE HEATER	ELH220	ELABS
TH+HS	THERMOSTAT & HUMIDSTAT	ELH220	ELABS
DS	DOOR SWITCH	YSP+YSMS	YONGSUNG
F4,F5	AC MCB, 2P, 10A	G60	GE
IL	ILLUMINATION LIGHT	YST8	YONGSUNG
F6	ELCB	DM100	GE

P4 RS485

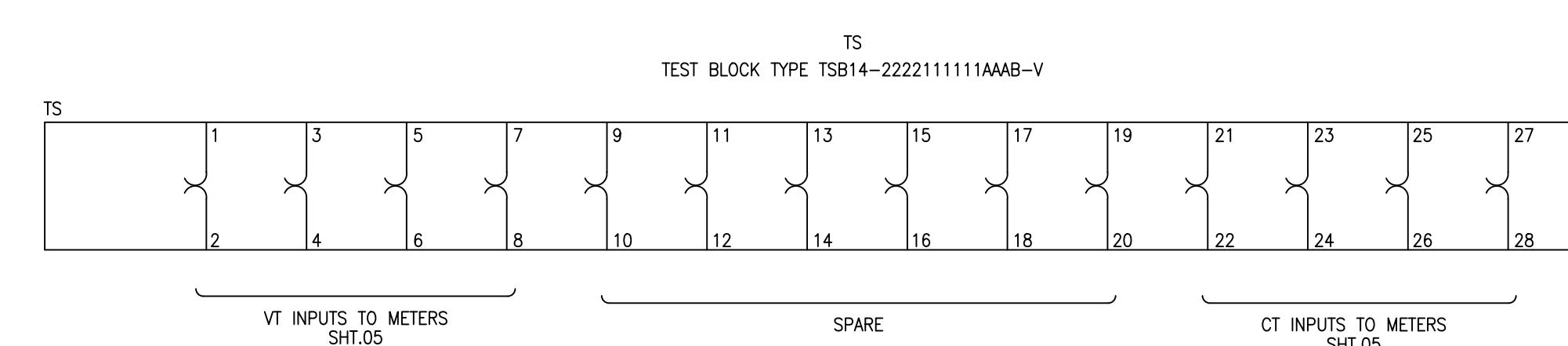
LEGEND

DES:	DESCRIPTION	TYPE	MAKE
P4	DIGITAL POWER METER	ENERIUM 150	ENERDIS

APPROVED	CHECKED	DRAWN	PROJECT: DESCON PO#45000100989 DATED 06.03.2018 PROCUREMENT OF 132KV RELAY, CONTROL PANELS	TITLE: RS485 COMMUNICATION 132KV LINE CONTROL PANEL TYPE CP32	DWG# EPE/ENU-18/P1413 71-B Garden Block, New Garden Town, Lahore, Pakistan	SHT: 17 OF 18
NAH	RAA	MUR			DATE:15.02.2019 AS BUILT	REV: 0



E P E S O L Pvt. Ltd.
71-B Garden Block, New Garden Town, Lahore, Pakistan

LEGEND

DES.	DESCRIPTION	TYPE	MAKE
TS	TEST BLOCK	TSB-14	ARTECHE

APPROVED	CHECKED	DRAWN	PROJECT:  DESCON PO#45000100989 DATED 06.03.2018 PROCUREMENT OF 132KV RELAY, CONTROL PANELS	TITLE: TEST BLOCK TYPE TSB-14 DETAILS 132KV LINE CONTROL PANEL TYPE CP32	 EPESOL Pvt. Ltd. 71-B Garden Block, New Garden Town, Lahore, Pakistan	DWG# EPE/ENU-18/P1413 DATE:15.02.2019 AS BUILT	SHT: 18 OF 18 REV: 0
NAH	RAA	MUR					

	1	2	3	4	5
Sr.	CABLE DESIGNATION	CORE CROSS SECTION	DESTINATION		
A	1				
	2				
	3				
	4				
	5				
B	6				
	7				
	8				
	9				
	10				
C	11				
	12				
	1	2	3	4	5
					6
					7
D					8
					9
					10
					11
					12
E					
F					

LEGEND:



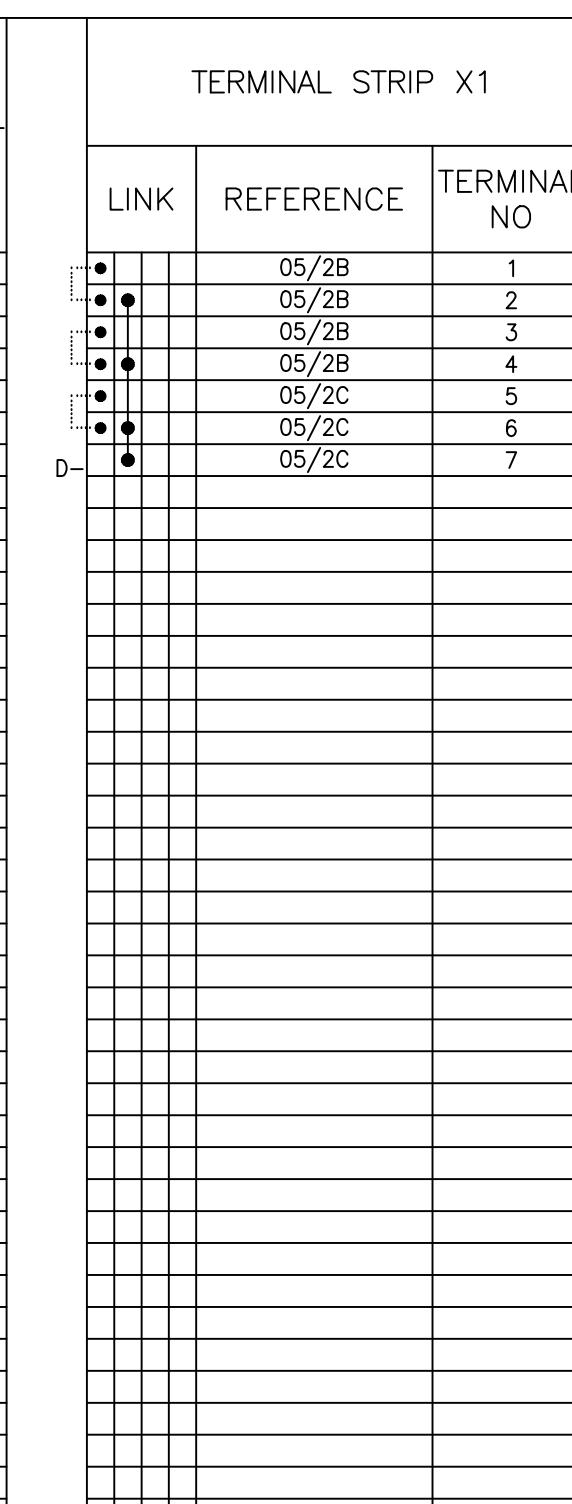
TEMPORARY SHORTENING LINK



PERMANENT LINK

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END COVER



APPROVED	CHECKED	DRAWN	PROJECT: DESCON PO#45000100989 DATED 06.03.2018 PROCUREMENT OF 132kV RELAY, CONTROL PANELS	TITLE: TERMINAL DETAIL 132kV LINE CONTROL PANEL TYPE CP32	 EPESOL PVT. LTD. 71-B Garden Block, New Garden Town, Lahore, Pakistan	DWG# EPE/ENU-18/P1414	SHT:01 OF 18
NAH	ABA	MSC				DATE:15.02.2019	AS BUILT



E P E S O L Pvt. Ltd.
71-B Garden Block, New Garden Town, Lahore, Pakistan

DWC#_FPE /ENCL 18 /P1414 SUT:02 OF 18

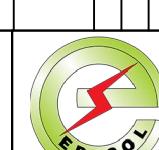
DWG# E1 E/ ENO-18/1 1414 SMT.02 01 18

DATE:15.02.2019 AS BUILT REV: 0

APPROVED	CHECKED	DRAWN	P
NAH	ABA	MSC	

PROJECT: DESCON PO#45000100989
DATED 06.03.2018
PROCUREMENT OF 132kV RELAY, CONTROL PANEL

S TITLE: TERMINAL DETAIL
132kV LINE CONTROL PANEL TYPE CP32



E P E S O L Pvt. Ltd.
71-B Garden Block, New Garden Town, Lahore, Pakistan

DWG# EPE/ENU-18/P1414 SHT:03 OF 18

DATE:15.02.2019 AS BUILT REV: 0

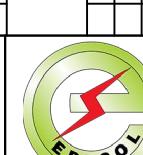
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PROJECT

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PROJECT: DESCON PO#45000100989
DATED 06.03.2018
PROCUREMENT OF 132kV RELAY, CONTROL PANEL

TITLE: TERMINAL DETAIL
1721V LINE CONTROL PANEL TYPE CR72



E P E S O L Pvt. Ltd.
71-B Garden Block, New Garden Town, Lahore, Pakistan

TITLE: TERMINAL DETAIL

PROJECT:
 DESCON PO#45000100989
DATED 06.03.2018

PROJECT


1:
DESCON PO#4500010098
DATED 06.03.2018

1:
DESCON PO#45000100
DATED 06.03.2018

1:
DESCON PO#45000100989
DATED 06.03.2018

二四

TERMINAL DETAIL

TERMINAL DETAIL
LINE CONTROL PANEL TYPE CP32

S52

3

DWG# EPE/ENU-18/P1414 SH1:03aOF 18

SH1:03a0F 18

DATE:15.02.2019 AS BUILT REV: 0

REV. 0



E P E S O L P v t . L t d .
71-B Garden Block, New Garden Town, Lahore, Pakistan

DWC#_FPE /ENCL 18 /P1414 SUIT:03bOE 18

DWG# E1 E/ EN0-18/1 1414 SHT.05001 18

DATE:15.02.2019 AS BUILT REV: 0

APPROVED CHECKED DRAWN BY

PROJECT

10

PROJECT:

 DESCON PO#45000100989
DATED 06.03.2018

DECON P0#45000100989
DATED 06.03.2018
PROCUREMENT OF 132kV RELAY CONTROL PANEL

TITLE

TITLE: TERMINAL DETAIL
S 1.32kV LINE CONTROL PANFI TYPE CP.32



E P E S O L Pvt. Ltd.
71-B Garden Block, New Garden Town, Lahore, Pakistan

DWG# EPE /ENLL-18/P1414 SHT:04 OF 18

DWG# E1 E/ ENU-18/11414 SHT.04 OF 18

DATE:15.02.2019 AS BUILT REV: 0

APPROVED	CHECKED	DRAWN	PR
NAH	ABA	MSC	

PROJECT:
 DESCON PO#45000100989
DATED 06.03.2018
PROCUREMENT OF 132KV RELAY CONTROL PANEL

TITLE: TERMINAL DETAIL
S 132kV LINE CONTROL PANEL TYPE CP32



E P E S O L P v t . L t d .

DWG # EDE-ENH-12/2014 OUT OF 25 25-12

DWG# EPE/ENU-18/P1414 SH1:05 OF 18

DATE:15.02.2019 AS BUILT REV: 0

APPROVED	CHECKED	DRAWN	P
NAH	ABA	MSC	

PROJECT: DESCON PO#45000100989
E DATE: 06.03.2018
PROCUREMENT OF 132KV RELAY, CONTROL PANE

TITLE: TERMINAL DETAIL
LS 132kV LINE CONTROL PANEL TYPE CP32

	1	2	3	4
Sr.	CABLE DESIGNATION	CORE CROSS SECTION	DESTINATION	
A	1			
	2			
	3			
	4			
	5			
B	6			
	7			
	8			
	9			
	10			
C	11			
	12			
	1	2	3	4
	5	6	7	8
	9	10	11	12
D				
E				

LEGEND:



TEMPORARY SHORTENING LINK



PERMANENT LINK



END COVER

REMOTE DESTINATION	TERMINAL BLOCK	TERMINAL NO	TERMINAL STRIP X9			ITEM DESIGNATION	TERMINAL NO
			LINK	REFERENCE	TERMINAL NO		
D-	11/6C 11/6C 11/6D 11/6D 14/6C 14/6C 14/6D 14/6D	1				H101	19
		2				X91	11
		3				H101	20
		4				HTR	1
		5				H104	19
		6				74DC-2	19
		7				H104	20
		8				B	1



E P E S O L P v t . L t d .

DWC // FBF /ENLJ_18 /B1414 SUT-06 OF 18

DWG# E1 E/ ENR-18/1 1414 311.00 OF 18

DATE:15.02.2019 AS BUILT REV: 0

APPROVED	CHECKED	DRAWN	PR
NAH	ABA	MSC	

JECT:
 DESCON PO#45000100989
DATED 06.03.2018
PROCUREMENT OF 132kV RELAY, CONTROL PANE

TITLE: TERMINAL DETAIL
132KV LINE CONTROL PANEL TYPE CP32

LEGEND:



TEMPORARY SHORTENING LINK



PERMANENT LINK

D-

END COVER

TERMINATION B

APPROVED	CHECKED	DRAWN
NAH	ABA	MSC

PROJECT:
 DESCON PO#45000100989
DATED 06.03.2018
PROCUREMENT OF 132kV RELAY, CONTROL PANEL

TITLE: TERMINAL DETAIL
1721V LINE CONTROL PANEL TYPE CR32



E P E S O L Pvt. Ltd
71-B Garden Block, New Garden Town, Lahore, Pakistan

DWG# EPE/ENU-18/P1414 SHT:07 OF 18
DATE:15.02.2019 AS BUILT REV: 0

LEGEND:



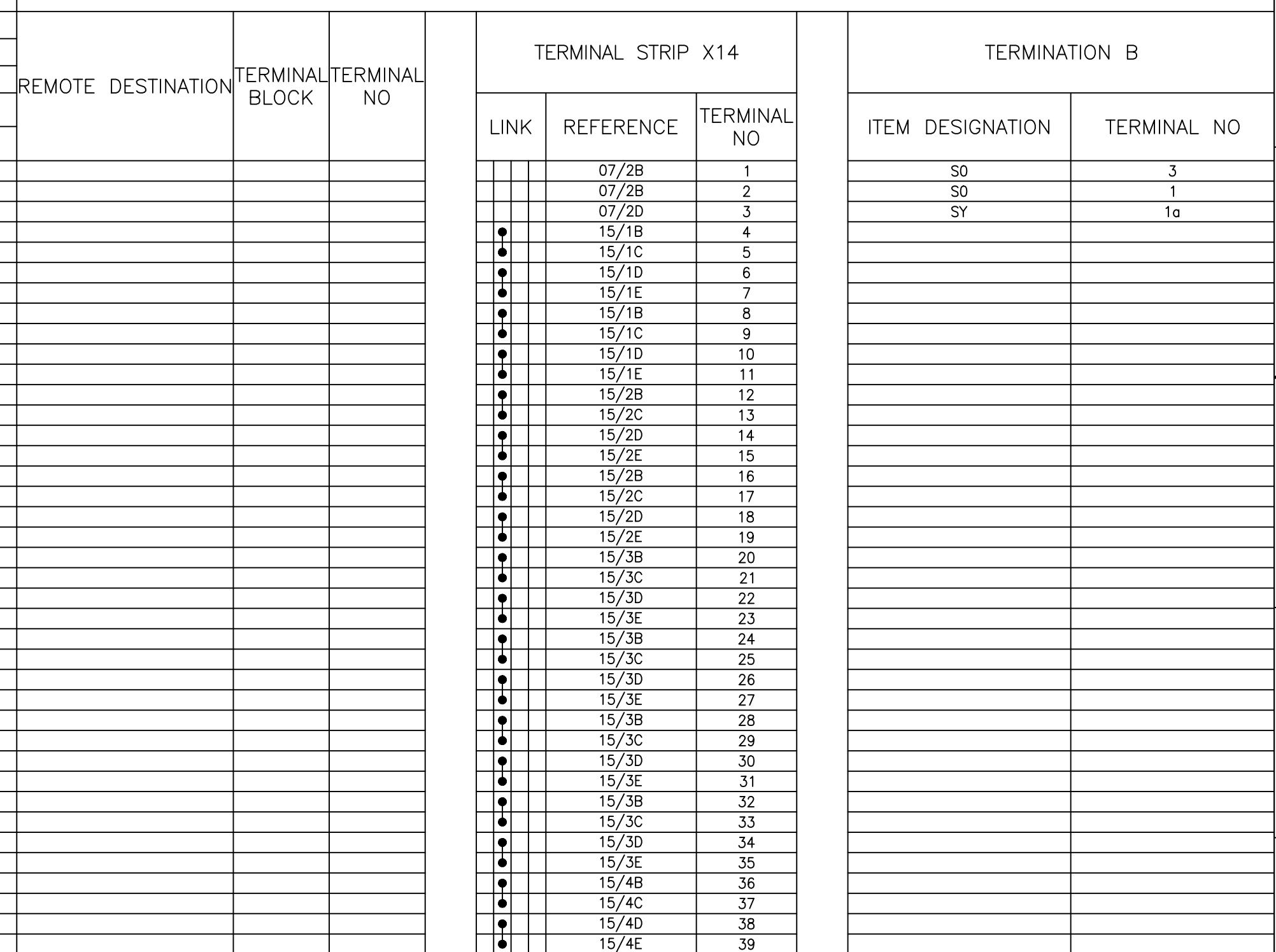
TEMPORARY SHORTENING LINK



PERMANENT LINK

D-

END COVER



E P E S O I Part 1 of 4

EFE SOL Pvt. Ltd.

DWS II - FDF /ENH 12 /P144

OUT 22-05-18

DWG# EPE/ENU-18/P1414

SH1:08

APPROVED	CHECKED	DRAWN	P
NAH	ABA	MSC	

PROJECT: DESCON PO#45000100989
DATED 06.03.2018
PROCUREMENT OF 132KV RELAY, CONTROL PANEL

TITLE: TERMINAL DETAIL
1721V LINE CONTROL PANEL TYPE CR32

LEGEND



TEMPORARY SHORTENING LINK



PERMANENT LINK

D

END COVER

2	REMOTE DESTINATION	TERMINAL BLOCK	TERMINAL NO	TERMINAL STRIP X14			ITEM DESIGNATION	TERMINAL NO
				LINK	REFERENCE	TERMINAL NO		
●					15/4B	40		
●					15/4C	41		
●					15/4D	42		
●					15/4E	43		
●					15/5B	44		
●					15/5C	45		
●					15/5D	46		
●					15/5E	47		
●					15/5B	48		
●					15/5C	49		
●					15/5D	50		
●					15/5E	51		
●					15/5B	52		
●					15/5C	53		
●					15/5D	54		
●					15/5E	55		
●					15/6B	56		
●					15/6C	57		
●					15/6D	58		
●					15/6E	59		
●					15/6B	60		
●					15/6C	61		
●					15/6D	62		
●					15/6E	63		
●					15/6B	64		
●					15/6C	65		
●					15/6D	66		
●					15/6E	67		
●					15/7B	68		
●					15/7C	69		
●					15/7D	70		
●					15/7E	71		
●					15/7B	72		
●					15/7C	73		
●					15/7D	74		
●					15/7E	75		
●					15/7B	76		
●					15/7C	77		
●					15/7D	78		



E P E S O L P v t . L t d .

DWG# EPE/ENU-18/P1414	SHT:08b OF 18
DATE:15.02.2019	AS BUILT REV: 0



E P E S O L P v t . L t d .
71-B Garden Block, New Garden Town, Lahore, Pakistan

Figure 1. The relationship between the number of species and the area of forest.

DWG# EPE/ENU-18/P1414 SHT:09 OF 18

DATE:15.02.2019 AS BUILT REV: 0

APPROVED	CHECKED	DRAWN	PR
NAH	ABA	MSC	

PROJECT:
 DESCON PO#45000100989
DATED 06.03.2018
PROCUREMENT OF 132kV RELAY, CONTROL PANEL

TITLE: TERMINAL DETAIL
1321W LINE CONTROL PANEL TYPE CR32

LEGEND



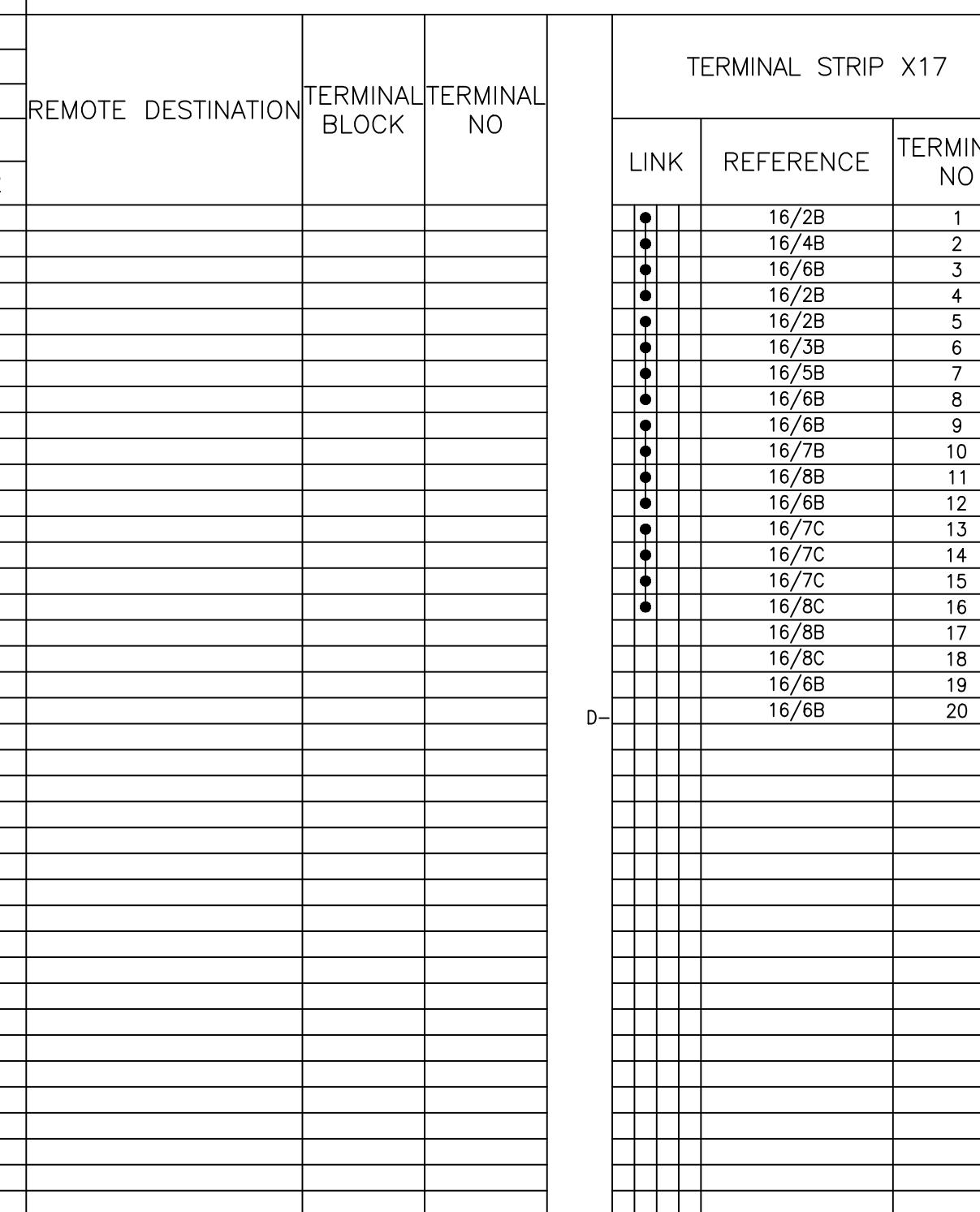
TEMPORARY SHORTENING LINK



PERMANENT LINK

D

END COVER



APPROVED	CHECKED	DRAWN	PROJECT: DESCON PO#45000100989 DATED 06.03.2018 PROCUREMENT OF 132kV RELAY, CONTROL PANELS	TITLE: TERMINAL DETAIL 132kV LINE CONTROL PANEL TYPE CP32	 EPESOL PVT. LTD. 71-B Garden Block, New Garden Town, Lahore, Pakistan	DWG# EPE/ENU-18/P1414	SHT:10 OF 18
NAH	ABA	MSC				DATE:15.02.2019	AS BUILT

LEGEND



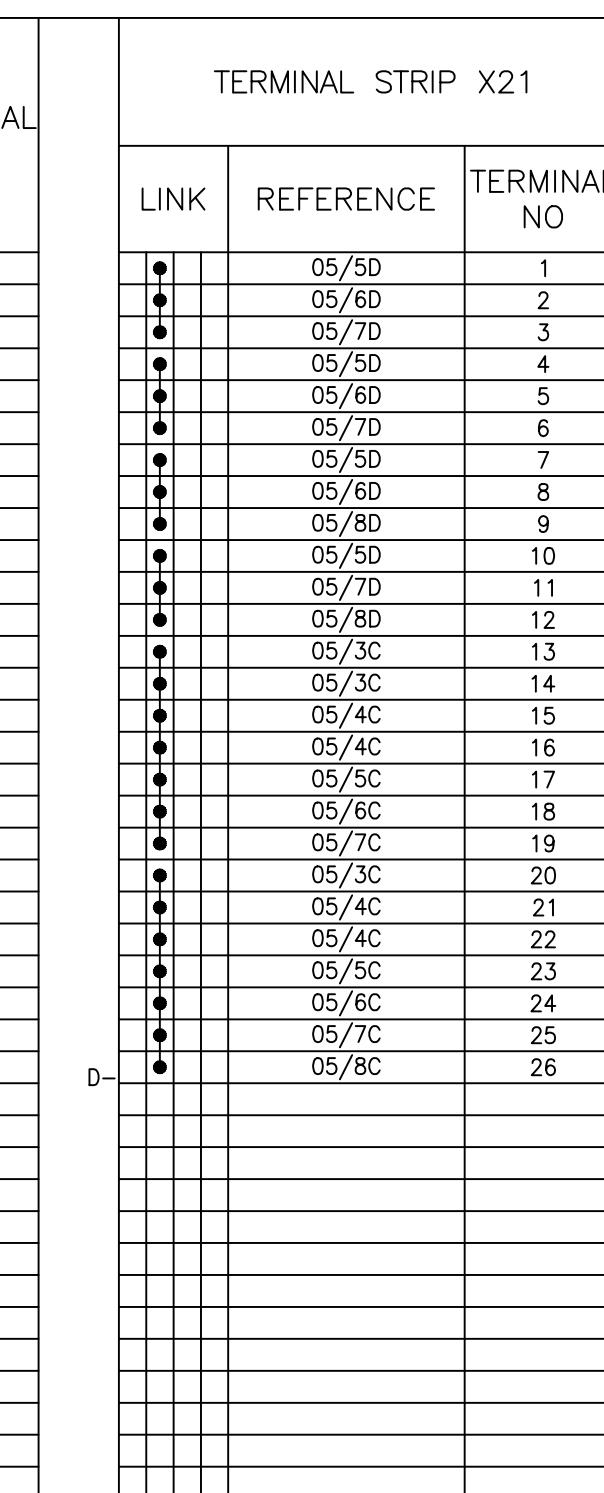
TEMPORARY SHORTENING LINK



PERMANENT LINK

D

END COVER



APPROVED	CHECKED	DRAWN	PROJECT: DESCON PO#45000100989 DATED 06.03.2018 PROCUREMENT OF 132kV RELAY, CONTROL PANELS	TITLE: 132kV LINE CONTROL PANEL TYPE CP32	 EPESOL PVT. LTD. 71-B Garden Block, New Garden Town, Lahore, Pakistan	DWG# EPE/ENU-18/P1414	SHT:11 OF 18	
NAH	ABA	MSC				DATE:15.02.2019	AS BUILT	REV: 0



E P E S O L P v t . L t d .

DWC# EPE /ENU-18/P1414 SHT:12 OF 18

DWG# E/L/ENO-18/11414 SMM.12 OF 18

DATE:15.02.2019 AS BUILT REV: 0

APPROVED	CHECKED	DRAWN
NAH	ABA	MSC

PROJECT: DESCON PO#45000100989
DATED 06.03.2018
PROCUREMENT OF 132kV RELAY, CONTROL PANEL

TITLE: TERMINAL DETAIL
S 132kV LINE CONTROL PANEL TYPE CP32



E P E S O L P v t . L t d .
71-B Garden Block, New Garden Town, Lahore, Pakistan

DWC# EPE /ENU 18 /P1414 SHT:13 OF 18

DWG# E1 E/ EN0-18/1 1414 SMT.15 01 18

DATE:15.02.2019 AS BUILT REV: 0

APPROVED	CHECKED	DRAWN	P
NAH	ABA	MSC	

PROJECT: DESCON PO#45000100989
DATED 06.03.2018
PROCUREMENT OF 132kV RELAY, CONTROL PANEL

TITLE: TERMINAL DETAIL
LS 132kV LINE CONTROL PANEL TYPE CP32



E P E S O L Pvt Ltd
71-B Garden Block, New Garden Town, Lahore, Pakistan

DWC# EPE /ENU 18 /P1414 SHT:14 OF 18

DWG# E1 E/ ENO-18/1 1414 SMT.14 01 18

DATE:15.02.2019 AS BUILT REV: 0

APPROVED	CHECKED	DRAWN	
NAH	ABA	MSC	

PROJECT: DESCON PO#45000100989
DATED 06.03.2018
PROCUREMENT OF 132kV RELAY, CONTROL PANEL

TITLE: TERMINAL DETAIL
132kV LINE CONTROL PANEL TYPE CP32



E P E S O L P v t . L t d .
71-B Garden Block, New Garden Town, Lahore, Pakistan

DWC# EPE /ENU 18 /P1414 SHT:15 OF 18

DWG# E1 E/ ENR-18/1 1414 SMT.15 01 18

DATE:15.02.2019 AS BUILT REV: 0

APPROVED	CHECKED	DRAWN	
NAH	ABA	MSC	

PROJECT:
 DESCON PO#45000100989
DATED 06.03.2018
PROCUREMENT OF 132kV RELAY, CONTROL PANEL

TITLE: TERMINAL DETAIL
132kV LINE CONTROL PANEL TYPE CP32



E P E S O L P v t . L t d .
71-B Garden Block, New Garden Town, Lahore, Pakistan

DWG# EPF/ENI-18/P1414 SHT:16 OF 18

APPROVED	CHECKED	DRAWN	
NAH	ABA	MSC	

PROJECT:
 DESCON PO#45000100989
DATED 06.03.2018
PROCUREMENT OF 132kV RELAY, CONTROL PANEL

TITLE: TERMINAL DETAIL
LS 132kV LINE CONTROL PANEL TYPE CP32



E P E S O L Pvt. Ltd.

DWS-11-EPE (ENH-10) DRAFT-07-05-10

DWG# EPE/ENU-18/P1414 SHI:17 OF 18

DATE:15.02.2019 AS BUILT REV: 0

APPROVED CHECKED DRAWN

PROJECT

PROJECT

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PROJECT:
 DESCON PO#45000100989
DATED 06.03.2018

TITLE: TERMINAL DETAIL
ARMANDINE DIVISION, MONTREAL, QUEBEC

LEGEND:



TEMPORARY SHORTENING LINK

PERMANENT LINK

D-

END COVER

REMOTE DESTINATION	TERMINAL BLOCK	TERMINAL NO	TERMINAL STRIP X4			ITEM DESIGNATION	TERMINAL NO
			LINK	REFERENCE	TERMINAL NO		
D-				SPARE	1		
				SPARE	2		
				SPARE	3		
				SPARE	4		
				SPARE	5		
				SPARE	6		
				SPARE	7		
				SPARE	8		
				SPARE	9		
				SPARE	10		
				SPARE	11		
				SPARE	12		
				SPARE	13		
				SPARE	14		
				SPARE	15		
				SPARE	16		
				SPARE	17		
				SPARE	18		
				SPARE	19		
				SPARE	20		

APPROVED	CHECKED	DRAWN	PROJECT: DESCON PO#45000100989 DATED 06.03.2018 PROCUREMENT OF 132kV RELAY, CONTROL PANELS	TITLE: TERMINAL DETAIL 132kV LINE CONTROL PANEL TYPE CP32	 EPESOL P v t L t d. 71-B Garden Block, New Garden Town, Lahore, Pakistan	DWG# EPE/ENU-18/P1414	SHT:18 OF 18
NAH	ABA	MSC				DATE:15.02.2019	AS BUILT