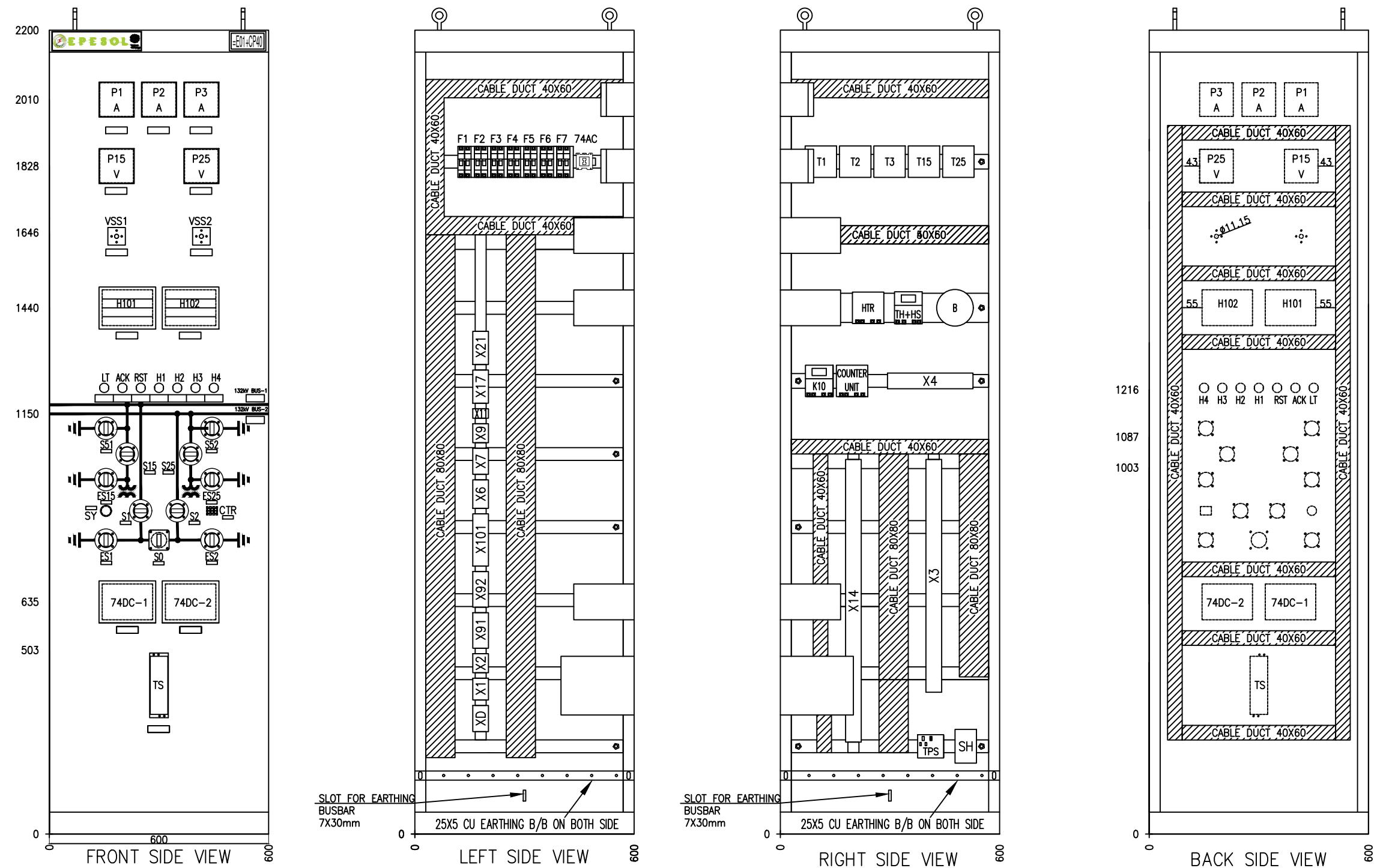


LAYOUT DRAWING

132kV BUSCOUPLER CONTROL PANEL

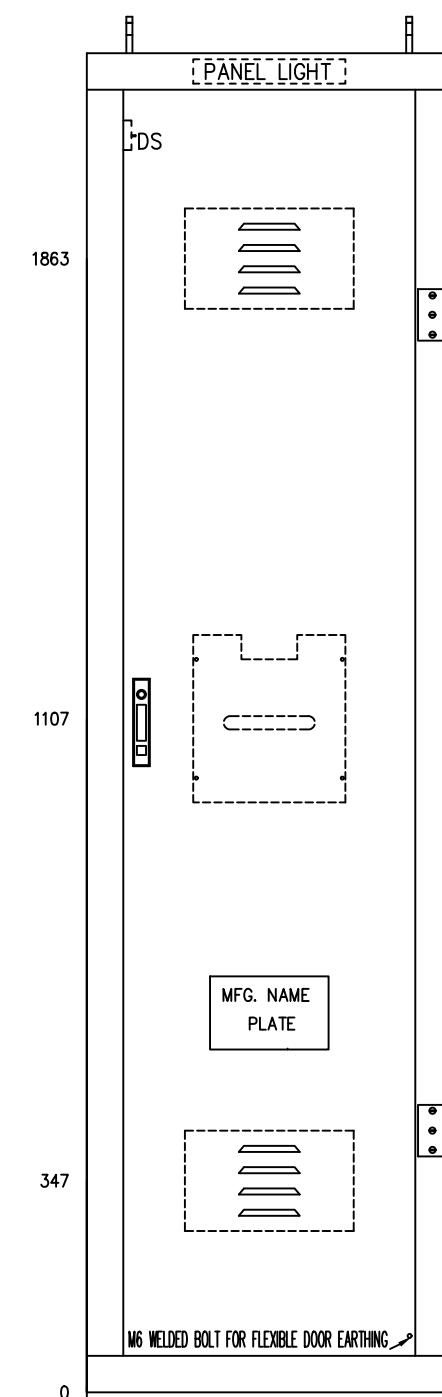
TYPE CP40

APPROVED	CHECKED	DRAWN	PROJECT: DESCON PO#45000100989 DATED 06.03.2018 PROCUREMENT OF 132kV RELAY, CONTROL PANELS	TITLE: COVER SHEET 132kV BUSCOUPLER CONTROL PANEL TYPE CP40	DWG# EPE/ENU-18/P1415 71-B Garden Block, New Garden Town, Lahore, Pakistan	SHT: 01 OF 03
NAH	ABA	MSC		 E P E S O L Pvt Ltd 71-B Garden Block, New Garden Town, Lahore, Pakistan	DATE:15.02.2019 AS BUILT	REV: 0

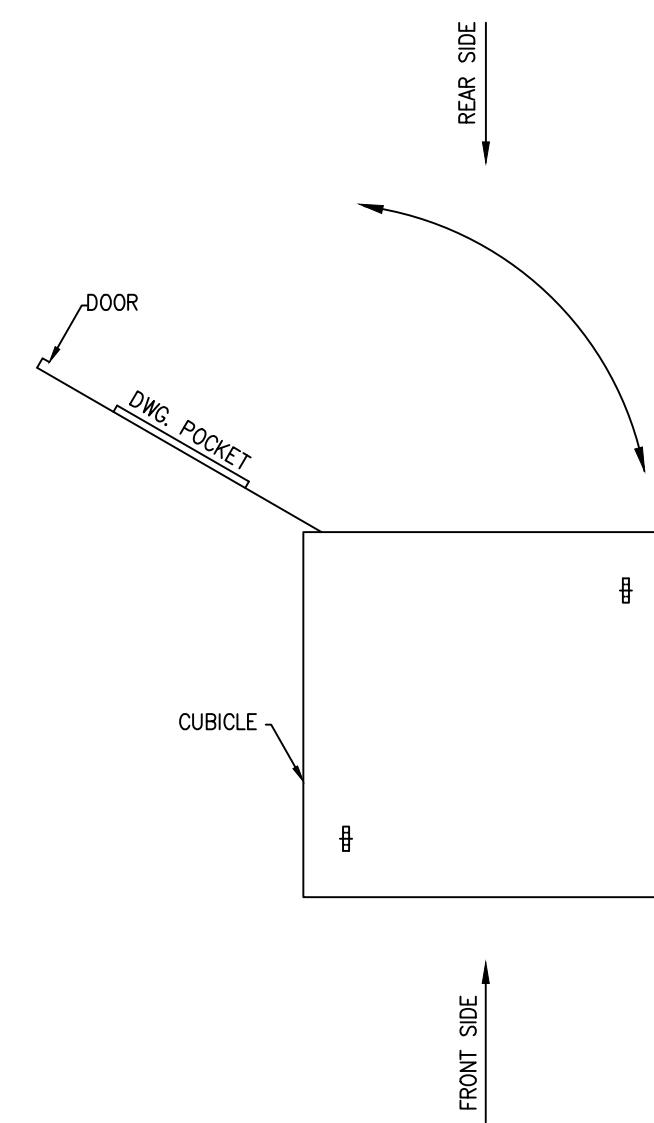
**NOTES**

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 BUSCOUPLER CONTROL PANEL TYPE CP40	EPE SOL Pvt. Ltd. 71-B Garden Block, New Garden Town, Lahore, Pakistan	DWG# EPE/ENU-18/P1415 DATE:15.02.2019 AS BUILT	SHT: 02 OF 03 REV: 0
NAH	ABA	MSC					



[PANEL LIGHT]



APPROVED	CHECKED	DRAWN	PROJECT:  DESCN PO#45000100989 DATED 06.03.2018 PROCUREMENT OF 132KV RELAY, CONTROL PANELS	TITLE: GENERAL ARRANGEMENT 132KV BUSCOUPLER CONTROL PANEL TYPE CP40	DWG# EPE/ENU-18/P1415	SHT: 03 OF 03
NAH	ABA	MSC			DATE:15.02.2019 AS BUILT	REV: 0

LIST OF APPARATUS

132kV BUSCOUPLER CONTROL PANEL

TYPE CP40

APPROVED	CHECKED	DRAWN	PROJECT: DESCON PO#45000100989 DATED 06.03.2018 PROCUREMENT OF 132kV RELAY, CONTROL PANELS	TITLE: COVER SHEET 132kV BUSCOUPLER CONTROL PANEL TYPE CP40	E P E S O L P v t . L t d . 71-B Garden Block, New Garden Town, Lahore, Pakistan	DWG# EPE/ENU-18/P1416 DATE:15.02.2019	SHT: 01 OF 04 AS BUILT REV: 0
NAH	ABW	ASJ					

		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...20/30mA, 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 0...5/7.5 A, OUTPUT 0...20/30 mA, AUX. VOLTAGE 110 VDC, ACCURACY CLASS 1		2	A96MMA+	FRER	ITALY	A96MMA+MCOEAQ	05	A	
B	2 P2+T2	METER: TRANSDUCER OPERATED DIGITAL AMPERE METER, AUX. VOLTAGE 110 VDC, 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 0...5/7.5 A, OUTPUT 0...20/30 mA, VOLTAGE 110 VDC, ACCURACY CLASS 1		1	D96MMA+	FRER	ITALY	D96MMA+MCOEAQ	05	B	
c	4 P15+T15	METER: 240 DEGREE TRANSDUCER OPERATED ANALOG VOLT METER, INPUT 0...20/30mA ACCURACY CLASS 1, SCALE 0...132/198 kV (MARKED RED AT 132 kV). VOLTAGE TRANSDUCER: NOMINAL INPUT VOLTAGE 0...110/165 VAC (L-L), OUTPUT 0...20/30 mA AUXILIARY VOLTAGE 110 VDC, ACCURACY CLASS 1		1	A96MMA+	FRER	ITALY	A96MMA+MCOEVQ	06	c	
D	8 F1, F2, F3, F7	METER: 240 DEGREE TRANSDUCER OPERATED ANALOG VOLT METER, INPUT 0...20/30mA ACCURACY CLASS 1, SCALE 0...132/198 kV (MARKED RED AT 132 kV). VOLTAGE TRANSDUCER: NOMINAL INPUT VOLTAGE 0...110/165 VAC (L-L), OUTPUT 0...20/30 mA AUXILIARY VOLTAGE 110 VDC, ACCURACY CLASS 1		1	A96MMA+	FRER	ITALY	A96MMA+MCOEVQ	06	D	
E	9 F4, F5	TWELVE WINDOW ANNUNCIATOR, RATED VOLTAGE 110 VDC		1	AM101	ELABS	PAKISTAN	AM-101	13	E	
F	10 F6	TWELVE WINDOW ANNUNCIATOR, RATED VOLTAGE 240 VAC		1	AM101	ELABS	PAKISTAN	AM-101	14	F	
G	7 TS	TEST BLOCK (14 FINGER) FOR METERING CIRCUIT		1	soTECH-TSB14	ARTECHE	SPAIN	TSB14-222211111AAAB-V	05,06,17	G	
H	11 74DC-1, 74DC-2	DC SUPPLY SUPERVISION RELAY, RATED VOLTAGE 110 VDC		2	TS101	ELABS	PAKISTAN	TS101	11,13	H	
I	12 74AC	AC SUPPLY SUPERVISION RELAY, RATED VOLTAGE 240 VAC, 3 C/O CONTACTS		1	MCR	GE	POLAND	MCRA022ATN	14	I	
J	13 K10	FLASHER RELAY, 1 C/O CONTACT, RATED VOLTAGE 110 VDC		1		ELABS	PAKISTAN		10	J	
K	14 S0	CONTROL AND DISCREPANCY SWITCH FOR CIRCUIT BREAKER CONTROL AND INDICATION, SQUARE TYPE FOUR CONTACTS FOR COMMAND AND FOUR CONTACTS FOR INDICATION		1	YS-IC-4456	YONGSUNG	KOREA	YS-IC-4456-S4(49)-PM-K-G-D11-G	08	K	
L	15 S1,S2,S15,ES25,ES15	CONTROL AND DISCREPANCY SWITCH FOR ISOLATOR CONTROL AND INDICATION, ROUND TYPE		10	YS-IC-4456	YONGSUNG	KOREA	YS-IC-4456-R4(49)-PM-K-G-D11-G	11, 12	L	
M	S25,S51,S52,ES1,ES2	FOUR CONTACTS FOR COMMAND AND FOUR CONTACTS FOR INDICATION								M	
APPROVED	CHECKED	DRAWN	PROJECT:  DESCON PO#45000100989 DATED 06.03.2018 PROCUREMENT OF 132kV RELAY, CONTROL PANELS	TITLE: LIST OF APPARATUS 132kV BUSCOUPLER CONTROL PANEL TYPE CP40	 EPESOL Pvt. Ltd. 71-B Garden Block, New Garden Town, Lahore, Pakistan				DWG# EPE/ENU-18/P1416	SHT: 02 OF 04	
NAH	ABW	ASJ							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	16	VSS1, VSS2	7 POSITION VOLTMETER SELECTOR SWITCH POSITION INSCRIPTION RY, YB, BR, RN, YN, BN, OFF	2	PO	GIOVENZANA	ITALY	PO-160023R001	06	A	
	17	TH+HS	THERMOSTAT AND HUMIDSTAT	1	ELH220	ELABS	PAKISTAN	ELH220	16		
	18	SH	SPACE HEATER	1	ELH220	ELABS	PAKISTAN	ELH220	16		
B	19	DS	DOOR SWITCH	1	YSP+YSMS	YONGSUNG	SOUTH KOREA	YSP3315GW-B+YSMS-C	16	B	
	20	IL	ILLUMINATION LIGHT, 5W, 260 VAC	1	YST8	YONGSUNG	SOUTH KOREA	YST8-30-5W	16		
	21	TPS	THREE PIN SOCKET OUTLET, 240 VAC, 16A	1		LEAR	CHINA		16		
	22	HI,H2,H3,H4	INDICATION LAMPS COLOURED RED	4	YSPL	YONGSUNG	SOUTH KOREA	YSPL2-DL12RW	11, 12, 13		
c	23	LT, ACK, RST	PUSH BUTTON FOR ANNUNCIATORS LAMP TEST, ACKNOWLEDGE AND RESET, FOUR NO CONTACTS EACH	3	YSAP1	YONGSUNG	SOUTH KOREA	YSAP1240RDW+YSAP1240GDW +YSAP1240YDW	13	c	
	24	CTR	COUNTER FOR CIRCUIT BREAKER	1		ELABS	PAKISTAN		08		
	25	SY	KEY OPERATED SWITCH FOR BREAKER LOCAL-OFF-REMOTE CONTROL	1	YSAK	YONGSUNG	SOUTH KOREA	YSAK2380D	08		
	26	HTR	HOOTER, RATED VOLTAGE 110VDC	1	AH-101	ELABS	PAKISTAN		13		
D	27	B	BELL, RATED VOLTAGE 240VAC	1	YSMB	YONGSUNG	SOUTH KOREA	YSMB-722A	14	D	
	28	X1	DISCONNECTING TERMINAL BLOCK (SCREW TYPE) FOR CT CIRCUIT WITH SHORTENING ARRANGEMENT	7	SCB-6	CABUR	ITALY				
	29	X2	DISCONNECTING TERMINAL BLOCK (SCREW TYPE) FOR VT CIRCUIT	8	SCB-6	CABUR	ITALY				
E	30	X3	TERMINAL BLOCKS FOR CONTROL FUNCTION	155	CBD-4	CABUR	ITALY			E	
	31	X6	TERMINAL BLOCKS FOR TRIP CIRCUIT-1	14	CBD-4	CABUR	ITALY				
	32	X7	TERMINAL BLOCKS FOR TRIP CIRCUIT-2	11	CBD-4	CABUR	ITALY				
	33	X9	TERMINAL BLOCKS FOR ANNUNCIATION SUPPLY DISTRIBUTION	8	CBD-4	CABUR	ITALY				
F	34	X11	TERMINAL BLOCKS FOR CURRENT METERING CIRCUIT	4	CBD-4	CABUR	ITALY			F	
	35	X14	TERMINAL BLOCKS FOR SCADA/TELECOM	120	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 BUSCOUPLER CONTROL PANEL TYPE CP40	E P E S O L P v t . L t d. 71-B Garden Block, New Garden Town, Lahore, Pakistan	DWG# EPE/ENU-18/P1416 DATE:15.02.2019	SHT: 03 OF 04 AS BUILT REV: 0				
NAH	ABW	ASJ									

		1	2	3	4	5	6	7	8		
SR. #	ITEM DESIGNATION	DESCRIPTION				QTY	TYPE	MAKE	COUNTRY OF ORIGIN	ORDERING INFORMATION	SHEET NO
A											A
36	X17	TERMINAL BLOCKS FOR AC SUPPLY DISTRIBUTION				20	CBD-4	CABUR	ITALY		
37	X21	TERMINAL BLOCKS FOR VOLTAGE METERING CIRCUIT				14	CBD-4	CABUR	ITALY		
38	X91	TERMINAL BLOCKS FOR ANNUNCIATION CIRCUIT				18	CBD-4	CABUR	ITALY		
B	39	X92	TERMINAL BLOCKS FOR ANNUNCIATION CIRCUIT			16	CBD-4	CABUR	ITALY		B
40	X101	TERMINAL BLOCKS FOR DC SUPPLY DISTRIBUTION				32	CBD-4	CABUR	ITALY		
41	XD	TERMINAL BLOCKS WITH DIODE TYPE IN-D4007, RATED MAXIMUM VOLTAGE 350VDC, RATED BREAK DOWN VOLTAGE 430VDC				11	DAS.4/6	CABUR	ITALY		
42	X4	SPARE TERMINAL BLOCKS				36	CBD-4	CABUR	ITALY		
c	43	K11, K12	COIL VOITAGE 110VDC 4 C/O CONTACTS			02	PRC	GE	HUNGRY	PRC4M40CTL	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 BUSCOUPLER CONTROL PANEL TYPE CP40	 EPESOL Pvt Ltd. 71-B Garden Block, New Garden Town, Lahore, Pakistan				DWG# EPE/ENU-18/P1416	SHT: 04 OF 04	
NAH	ABW	ASJ							DATE:15.02.2019	AS BUILT	REV: 0

SCHEMATIC DIAGRAMS

132kV BUSCOUPLER CONTROL PANEL

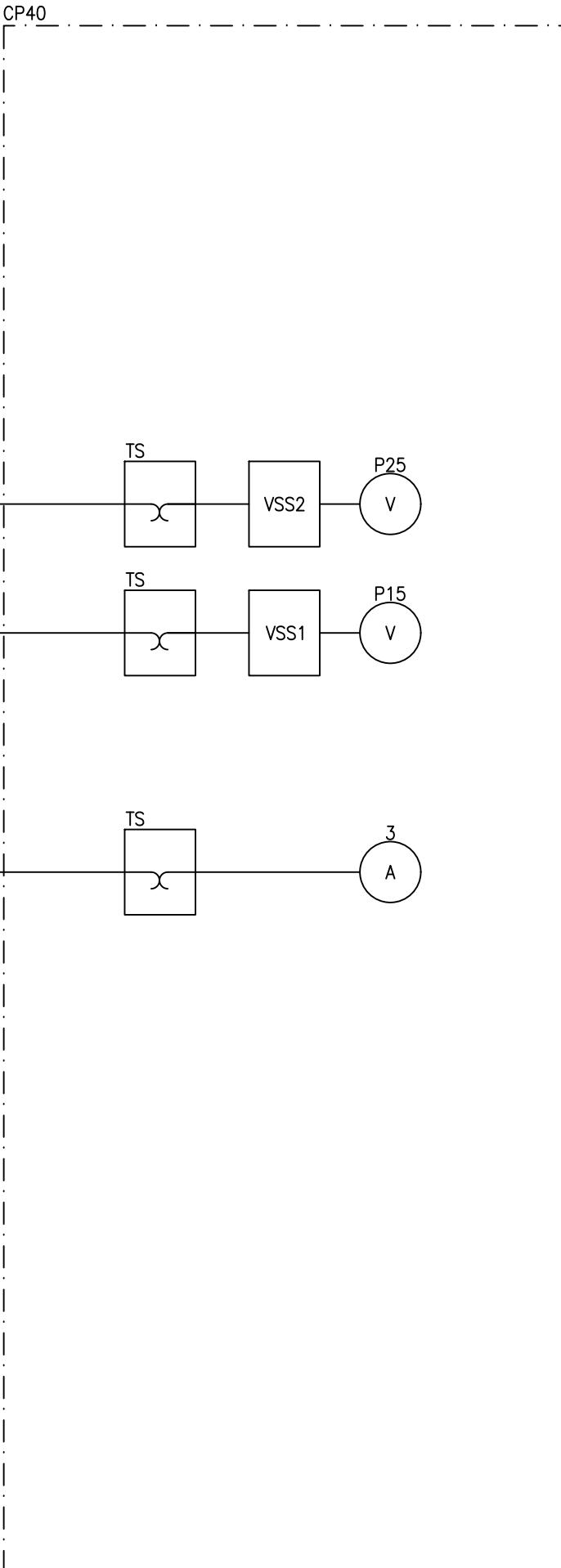
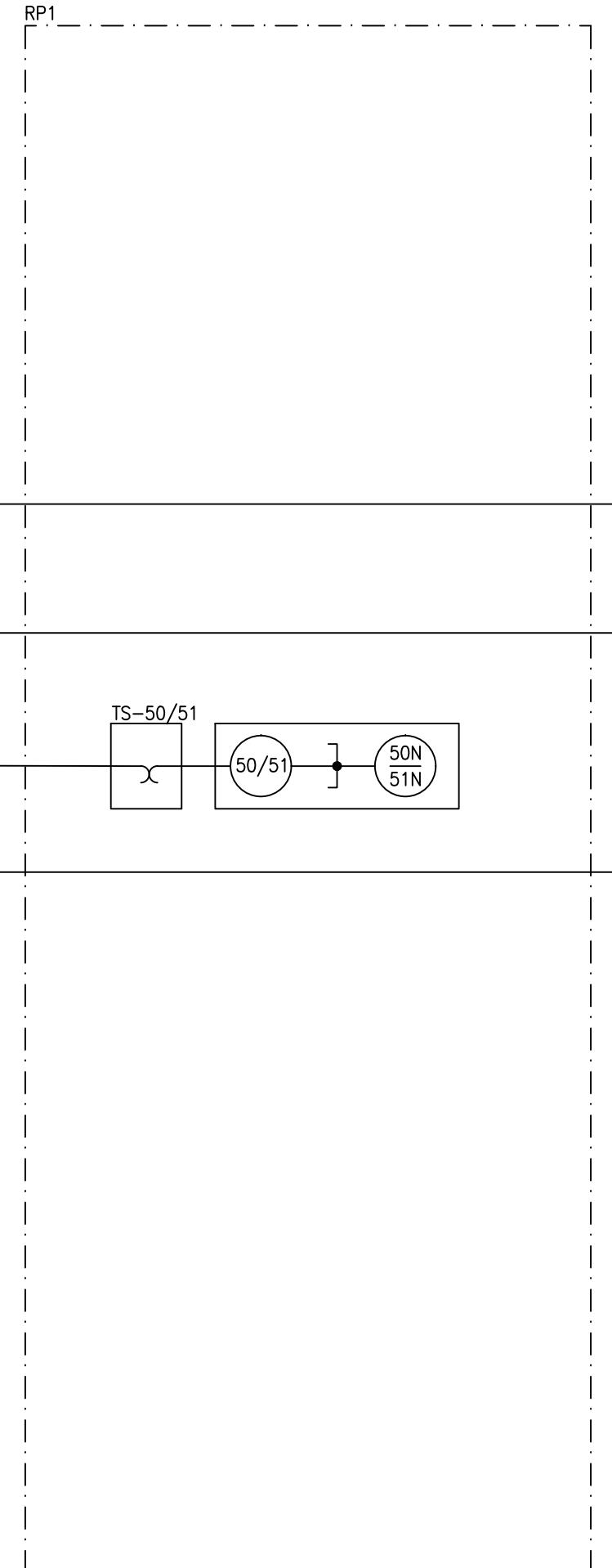
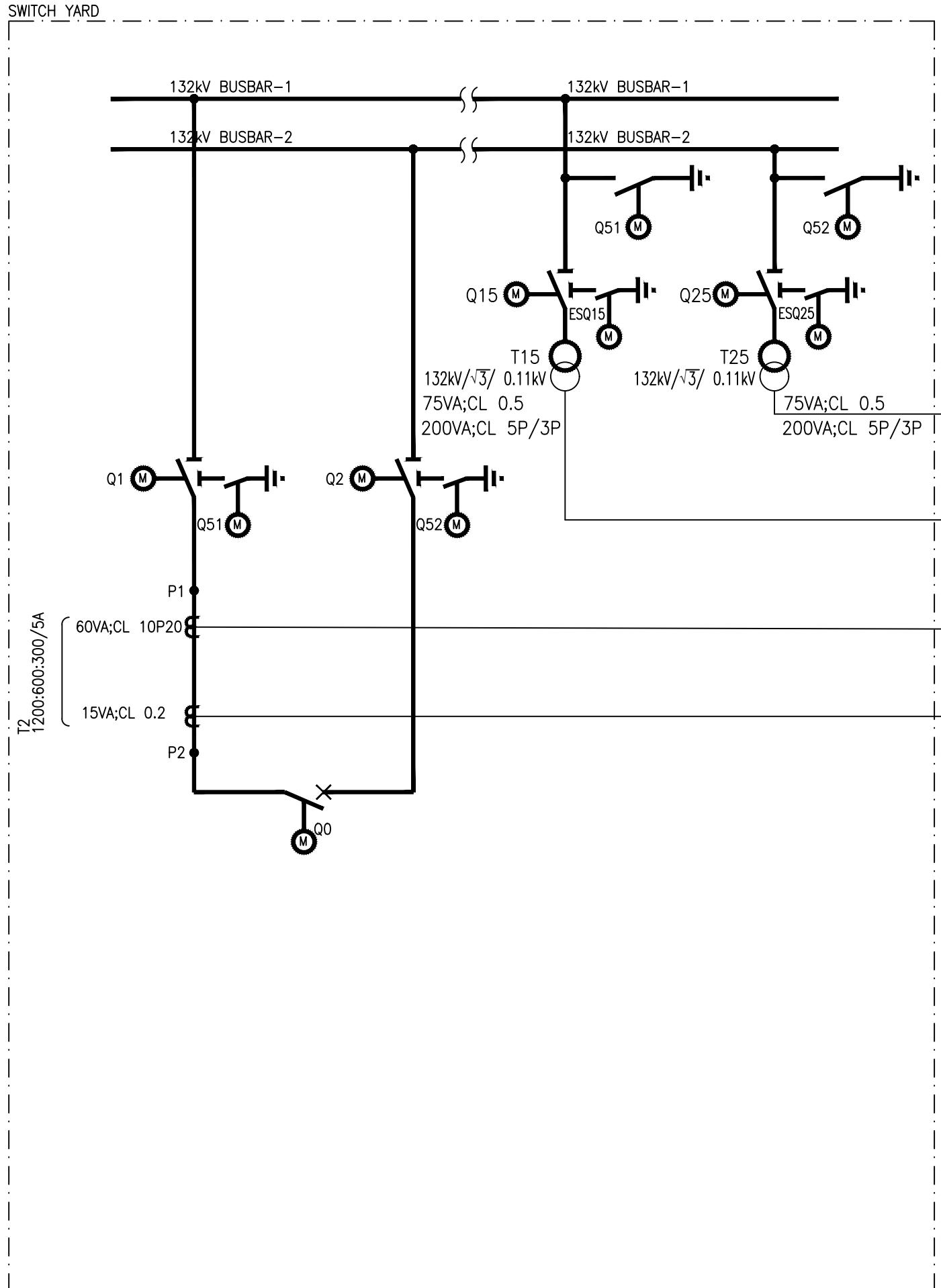
TYPE CP40

APPROVED	CHECKED	DRAWN	PROJECT: DESCON PO#45000100989 DATED 06.03.2018 PROCUREMENT OF 132kV RELAY, CONTROL PANELS	TITLE: COVER SHEET 132kV BUSCOUPLER CONTROL PANEL TYPE CP40	E P E S O L P v t L t d . 71-B Garden Block, New Garden Town, Lahore, Pakistan	DWG# EPE/ENU-18/P1417 DATE:15.02.2019 AS BUILT	SHT: 01 OF 17 REV: 0
NAH	ABW	ASJ					

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

LIST OF SYMBOLS

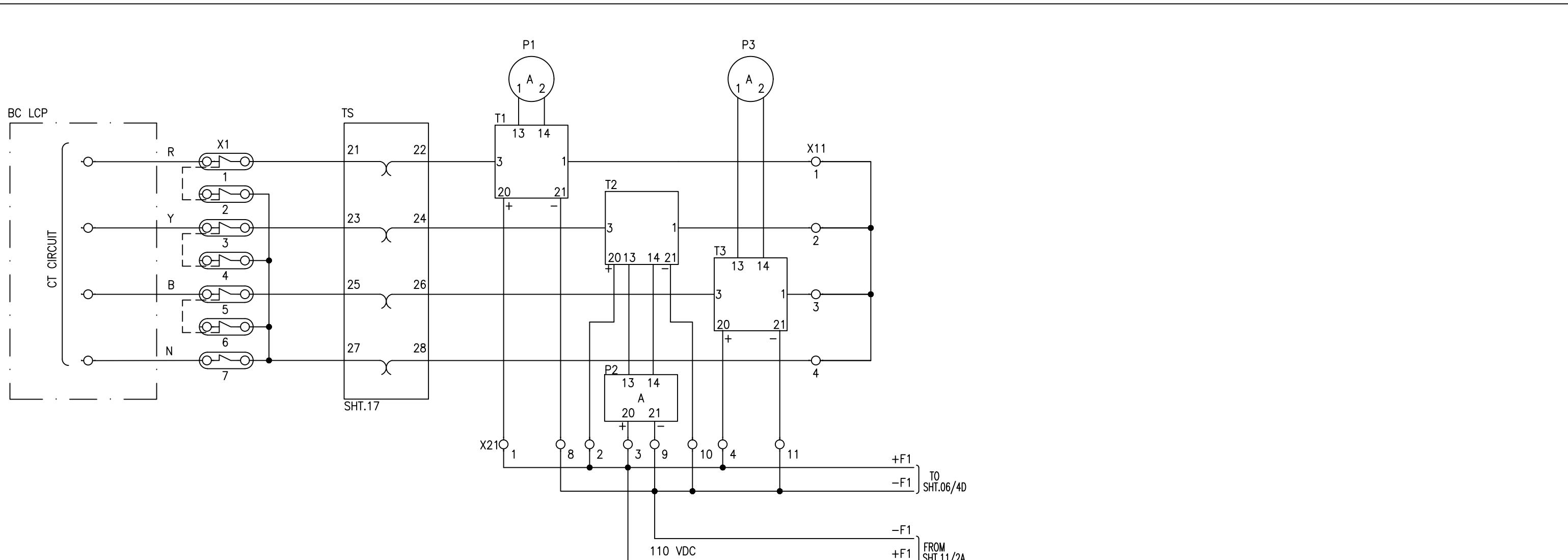
A		HV DISCONNECTOR		EQUIPMENT WITHIN PANEL	A
B		HV CIRCUIT BREAKER		INDEPENDENT PANEL	B
C		CURRENT TRANSFORMER		INDEPENDENT PANEL	C
D		POWER TRANSFORMER	87T	TRANSFORMER DIFFERENTIAL RELAY	D
E		RELAY PANEL TERMINAL BLOCK	50/51	OVER CURRENT & EARTH FAULT RELAY	E
F		CONTROL PANEL TERMINAL BLOCK	TS	TEST BLOCK	F
		EARTH CONNECTION	74DC-1/2	DC SUPPLY SUPERVISION RELAY	
		TEST BLOCK TERMINAL	X	TERMINAL BLOCK	
		NORMALLY CLOSED CONTACT		ENERGY METER	
		NORMALLY OPEN CONTACT		VOLT METER	
		CHANGE OVER CONTACT			
		MINIATURE CIRCUIT BREAKER			
		INDICATING BULB/LED			
		240 VAC SOCKET			
		SPACE HEATER			
		VOLTAGE SELECTOR SWITCH			
		COIL			
		AMPERE METER			



NOTE: THE SWITCH YARD AND THE RELAY PANEL PART OF THE DRAWING HAS BEEN INCLUDED ONLY FOR CONCEPTUAL UNDERSTANDING OF AC SCHEME.

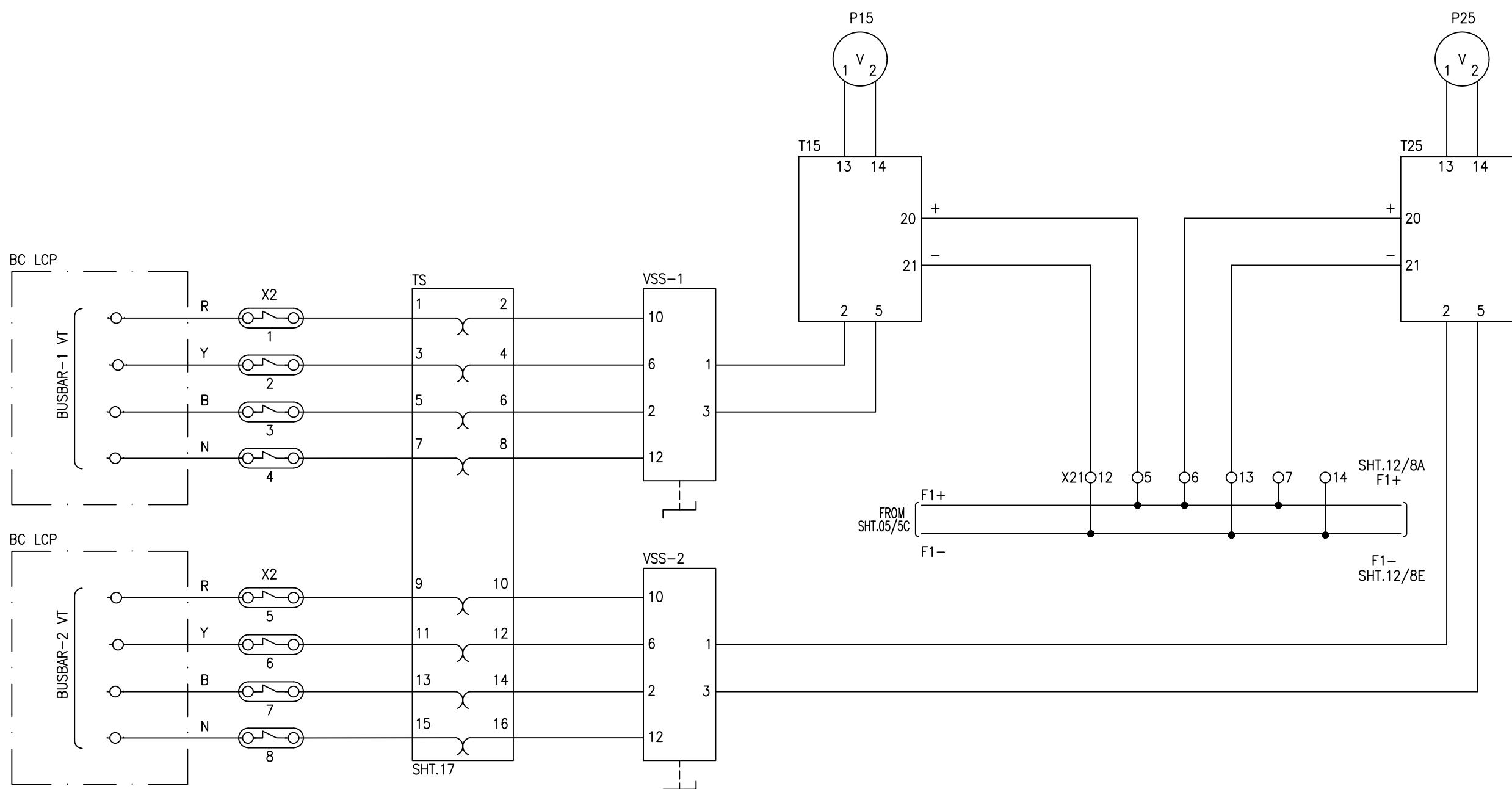
NOTE:

APPROVED	CHECKED	DRAWN	PROJECT: DESCON PO#45000100989 DATED 06.03.2018 PROCUREMENT OF 132kV RELAY, CONTROL PANELS	TITLE: SINGLE LINE DIAGRAM 132kV BUSCOUPLER CONTROL PANEL TYPE CP40	EPE SOL Pvt Ltd. 71-B Garden Block, New Garden Town, Lahore, Pakistan	DWG# EPE/ENU-18/P1417 DATE:15.02.2019 AS BUILT	SHT: 04 OF 17 REV: 0
NAH	ABW	ASJ					

ANALOGUE
AMMETER DIGITAL
AMMETER ANALOGUE
AMMETERLEGEND

DES.	DESCRIPTION	TYPE	MAKE
TS	TEST BLOCK	TSB14	ARTECHE
P1+T1, P3+T3	ANALOGUE AMMETER WITH TRANSDUCER	A96MMA+MC0EAQ	FRER
P2+T2	DIGITAL AMMETER WITH TRANSDUCER	D96MMA+MC0EAQ	FRER

NOTE:1. CT CIRCUIT WIRE SIZE IS 4mm² (COLOURED RED, YELLOW, BLUE AND BLACK).

BUS-1 ANALOGUE
VOLT METERBUS-2 ANALOGUE
VOLT METERLEGEND

DES.	DESCRIPTION	TYPE	MAKE
TS	TEST BLOCK	TSB14	ARTECHE
P15+T15,P25+T25	ANALOGUE VOLT METER WITH TRANSDUCER	A96MMA+MCOEVQ	FRER
VSS1, VSS2	VOLT METER SELECTOR SWITCH	PO	GIOVENZANA

NOTE:

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

APPROVED	CHECKED	DRAWN
NAH	ABW	ASJ

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

TITLE:
AC SCHEMATIC DIAGRAM
132kV BUSCOUPLER CONTROL PANEL TYPE CP40



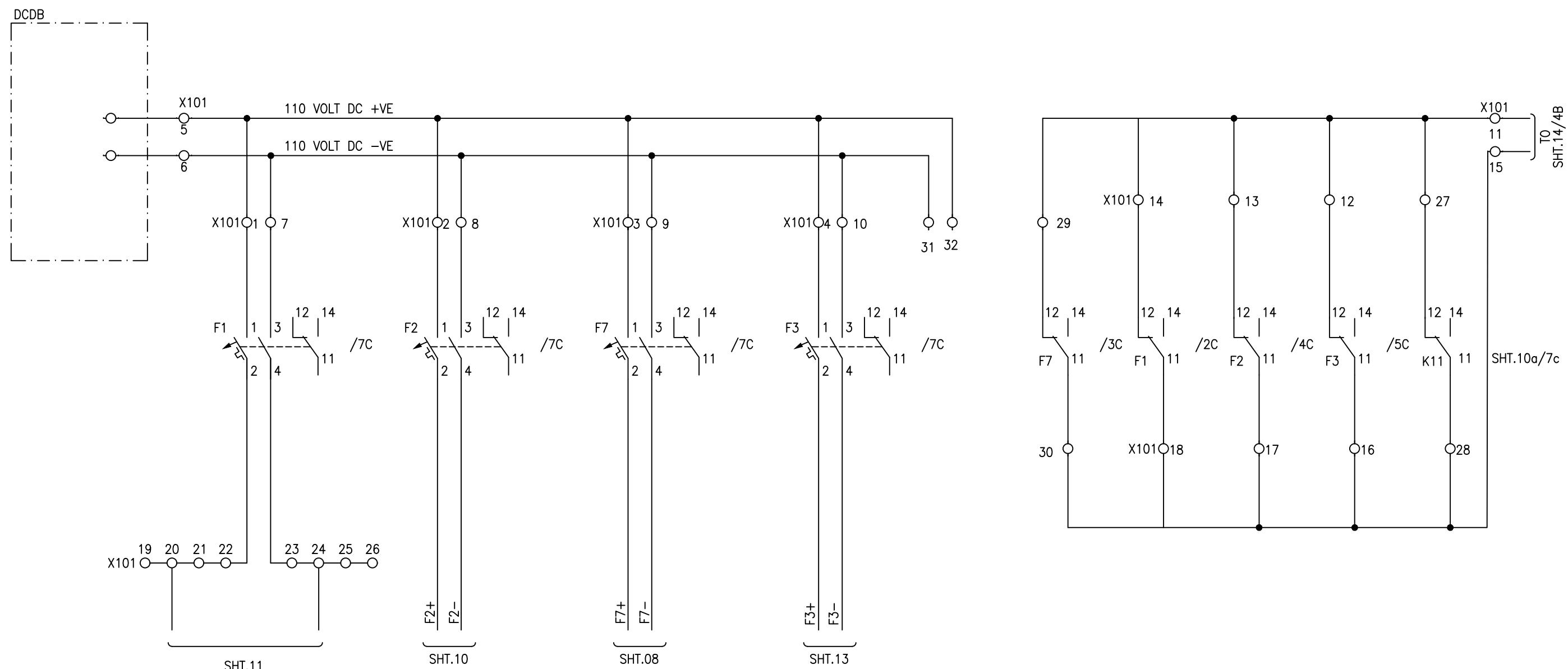
DWG# EPE/ENU-18/P1417 SHT: 06 OF 17
DATE:15.02.2019 AS BUILT REV: 0

CB CONTROL
METER SUPPLY

POSITION INDICATION
DEVICE
SUPPLY

CB COUNTER
SUPPLY

ANNUNCIATION
SUPPLY

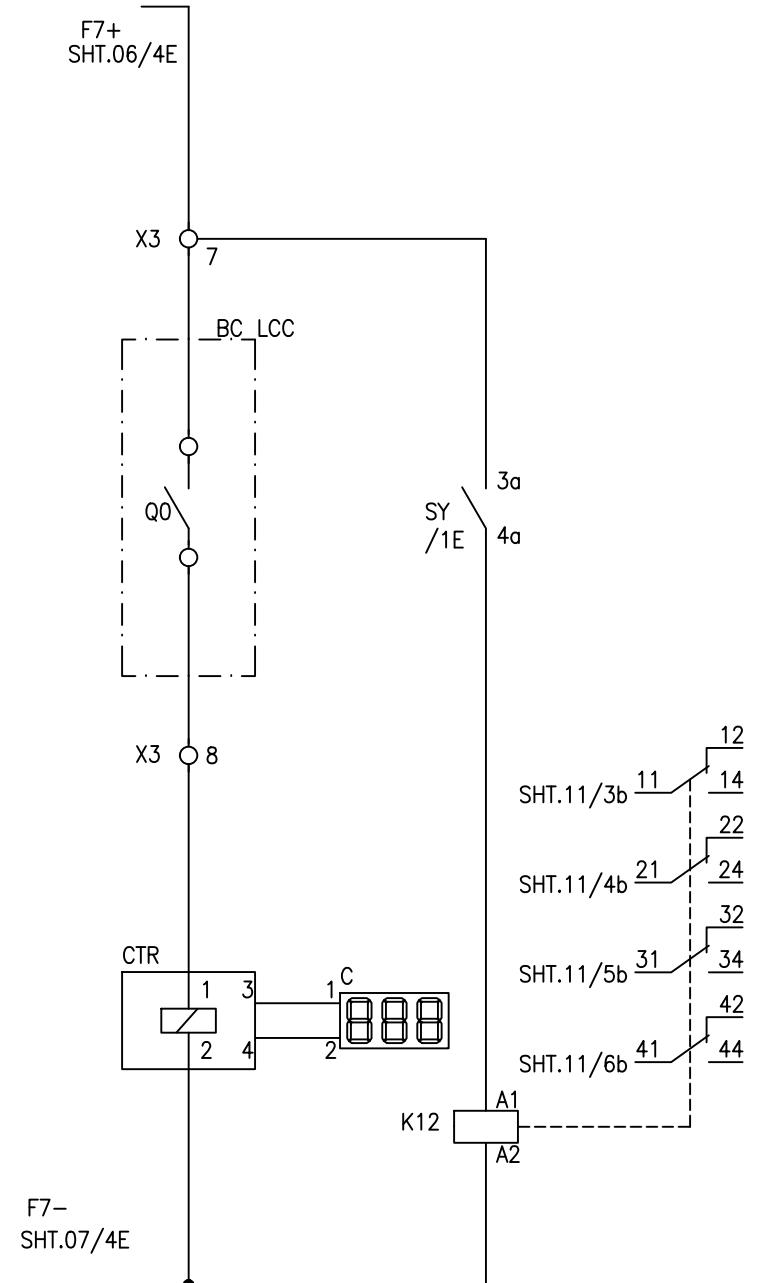
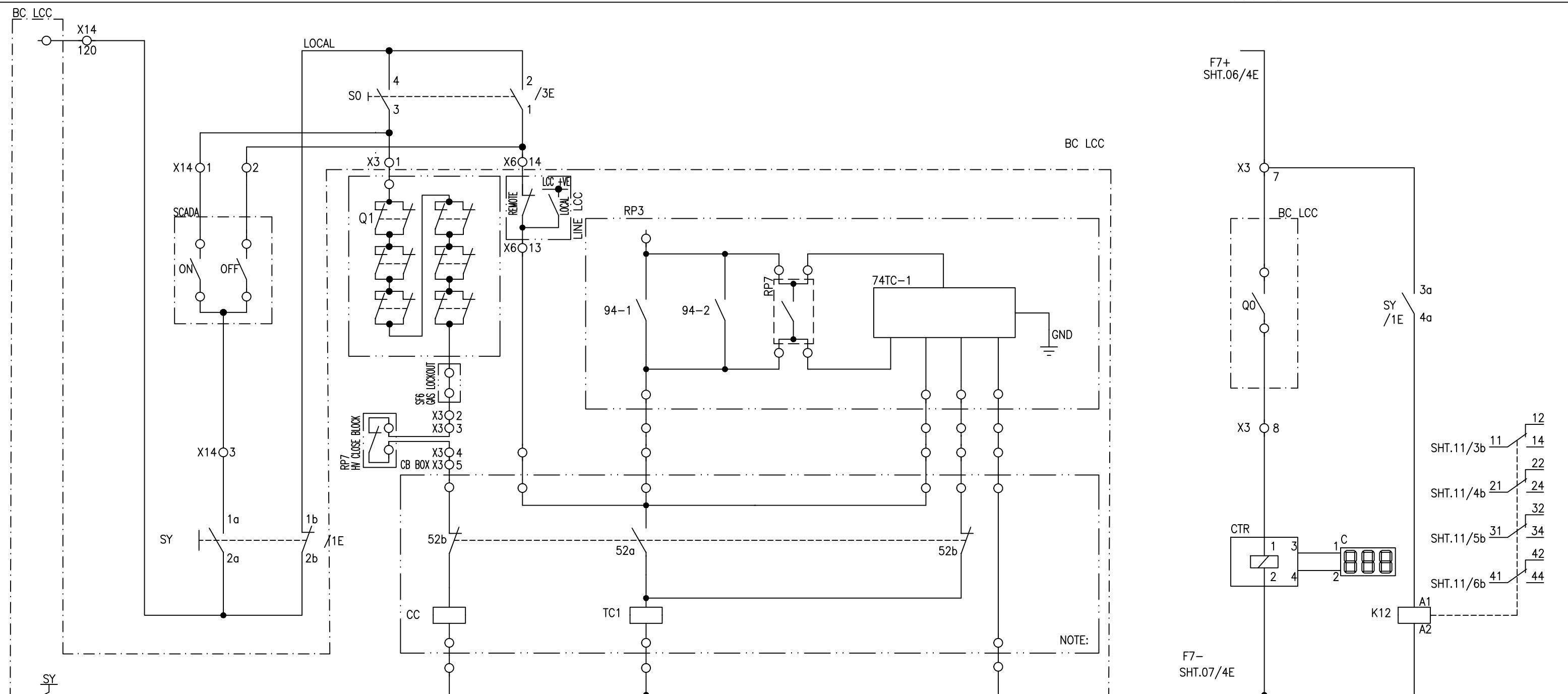


LEGEND

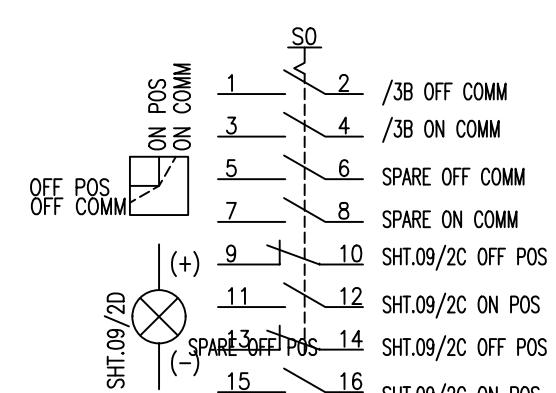
DES:	DESCRIPTION	TYPE	MAKE
F1,F2, F3,F7	DC MCB, 2P, 10A	EP-100	GE
K10	FLASHER RELAY	F101	E-LABS

C.B Q0
ON OFF

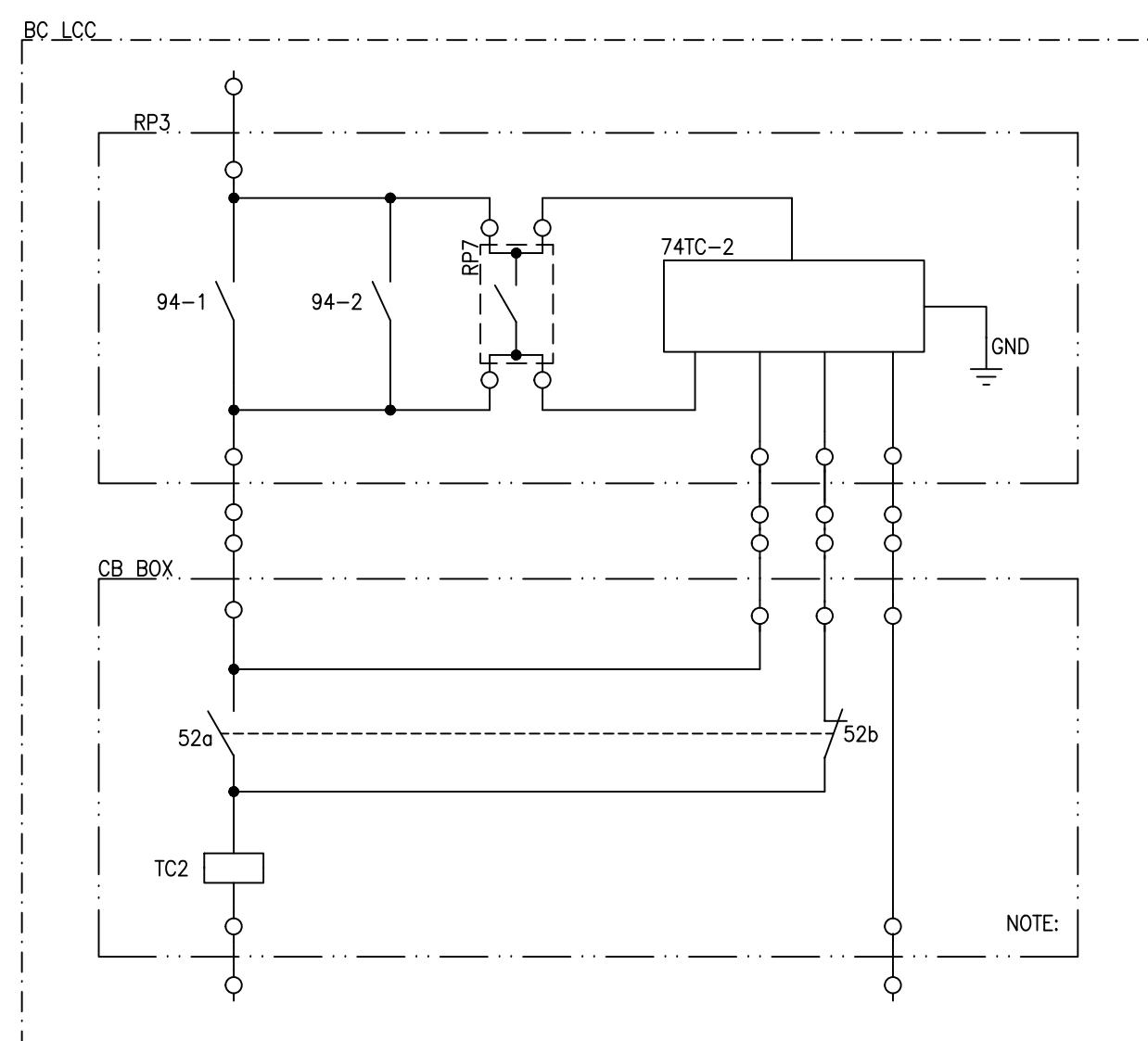
PROTECTION TRIPPINGS

TRIP CIRCUIT-1
SUPERVISIONCB OPERATION
COUNTERLEGEND

DES.	DESCRIPTION	TYPE	MAKE
SO	CONTROL & DESCRIPTOR SWITCH	YS-IC-4456	YONGSUNG
CTR	COUNTER	-	ELABS
SY	KEY OPERATED SWITCH FOR LOCAL/REMOTE	YSAK	YONSUNG



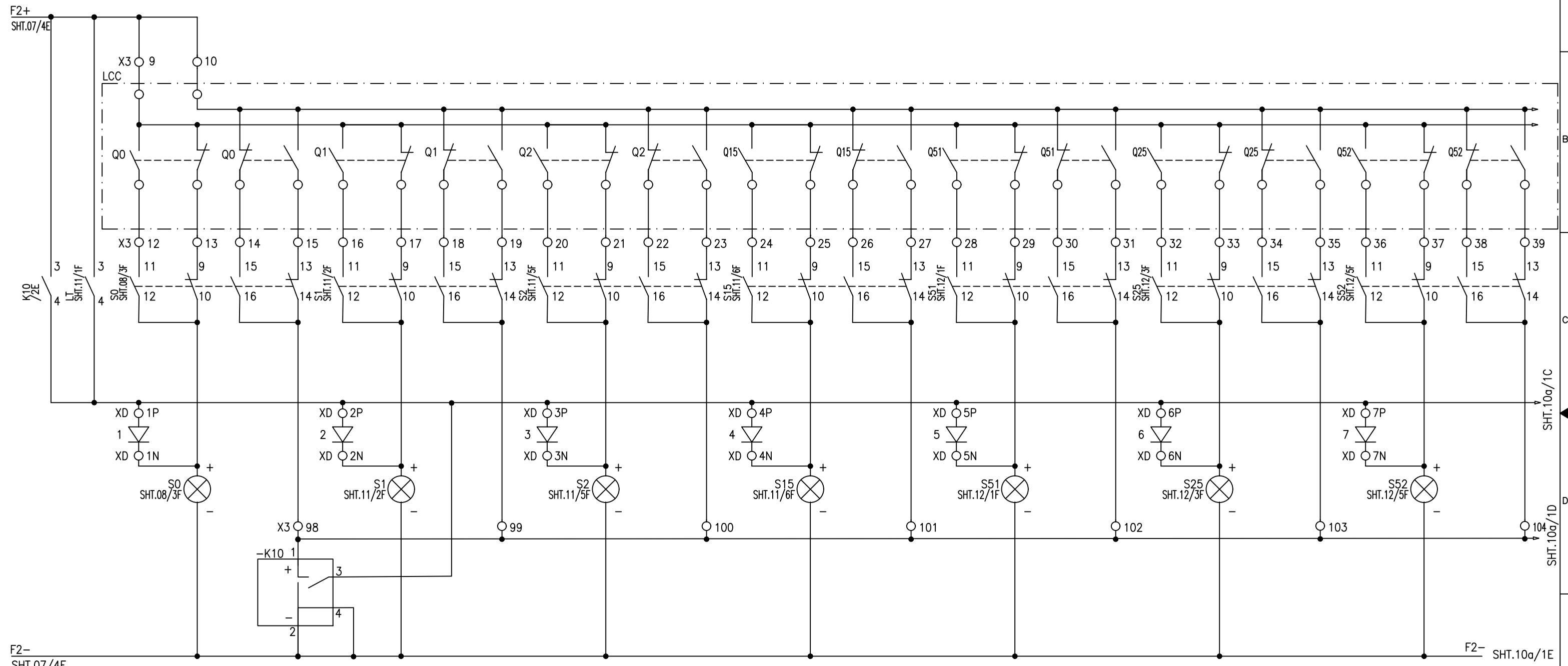
PROTECTION TRIPPINGS

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.

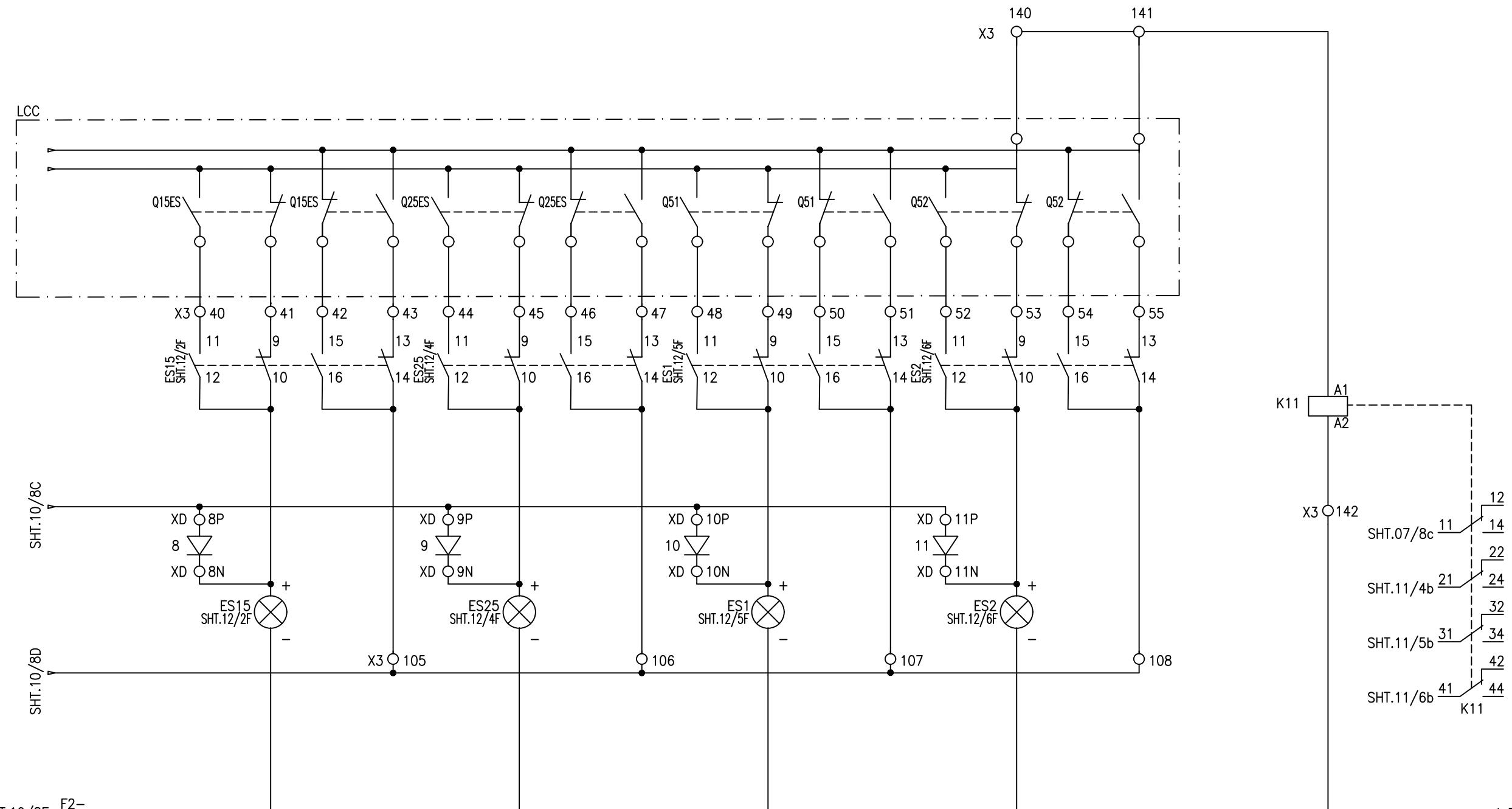
APPROVED	CHECKED	DRAWN	PROJECT: DESCON PO#45000100989 DATED 06.03.2018 PROCUREMENT OF 132kV RELAY, CONTROL PANELS	TITLE: CB TRIP CIRCUIT-2 132kV BUSCOUPLER CONTROL PANEL TYPE CP40	EPE SOL Pvt Ltd 71-B Garden Block, New Garden Town, Lahore, Pakistan	DWG# EPE/ENU-18/P1417 DATE:15.02.2019 AS BUILT	SHT: 09 OF 17 REV: 0
NAH	ABW	ASJ					

DISCREPENCY INITIATION CIRCUIT BREAKER Q0		DISCREPENCY INITIATION BUS-1 ISOLATOR Q1		DISCREPENCY INITIATION BUS-2 ISOLATOR Q2		DISCREPENCY INITIATION BUS-1 VT ISOLATOR Q15		DISCREPENCY INITIATION BUS-1 EARTHING SWITCH Q51		DISCREPENCY INITIATION BUS-2 VT ISOLATOR Q25		DISCREPENCY INITIATION BUS-2 EARTHING SWITCH Q52	
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LEGEND

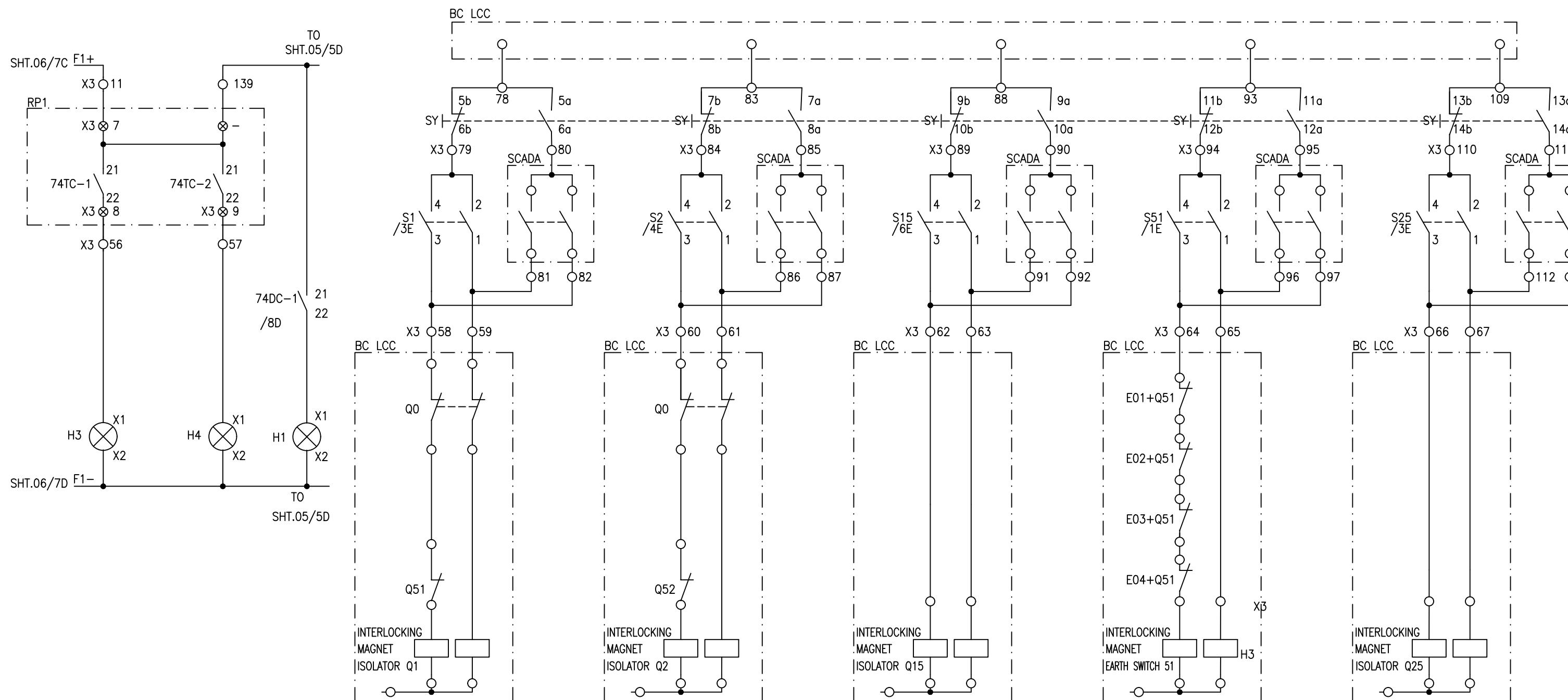
DES.	DESCRIPTION	TYPE	MAKE
S0	CONTROL & DISCREPANCY SWITCH, SQUARE TYPE	YS-IC-4456	YONGSUNG
S1,S2,S25 S15,S52,S51	CONTROL & DISCREPANCY SWITCH, ROUND TYPE	YS-IC-4456	YONGSUNG

DISCREPENCY INITIATION BUS-1 VT ISOLATOR Q15 EARTHING SWITCH	DISCREPENCY INITIATION BUS-2 VT ISOLATOR Q25 EARTHING SWITCH	DISCREPENCY INITIATION BUS-1 ISOLATOR Q1 EARTHING SWITCH Q51	DISCREPENCY INITIATION BUS-2 ISOLATOR Q2 EARTHING SWITCH Q52
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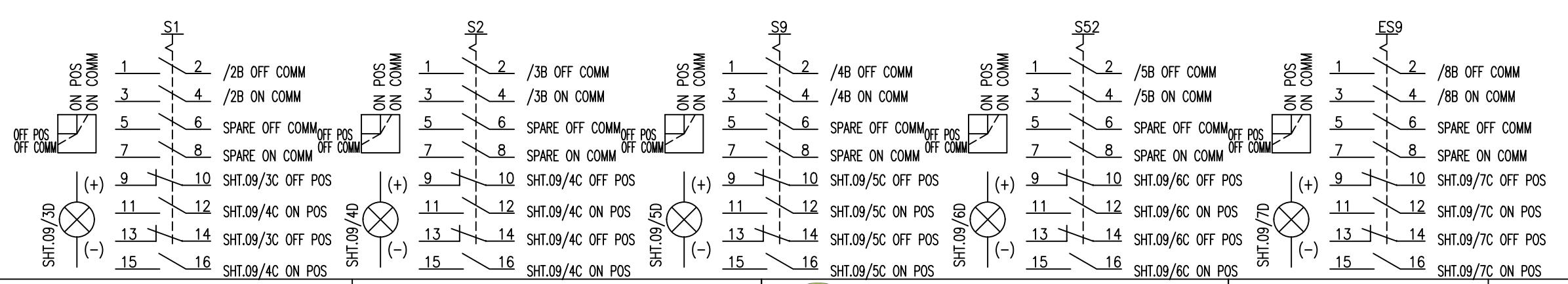
LEGEND

DES.	DESCRIPTION	TYPE	MAKE
ES15, ES25, ES1, ES2	CONTROL & DISCREPANCY SWITCH, ROUND TYPE	YS-IC-4456	YONGSUNG

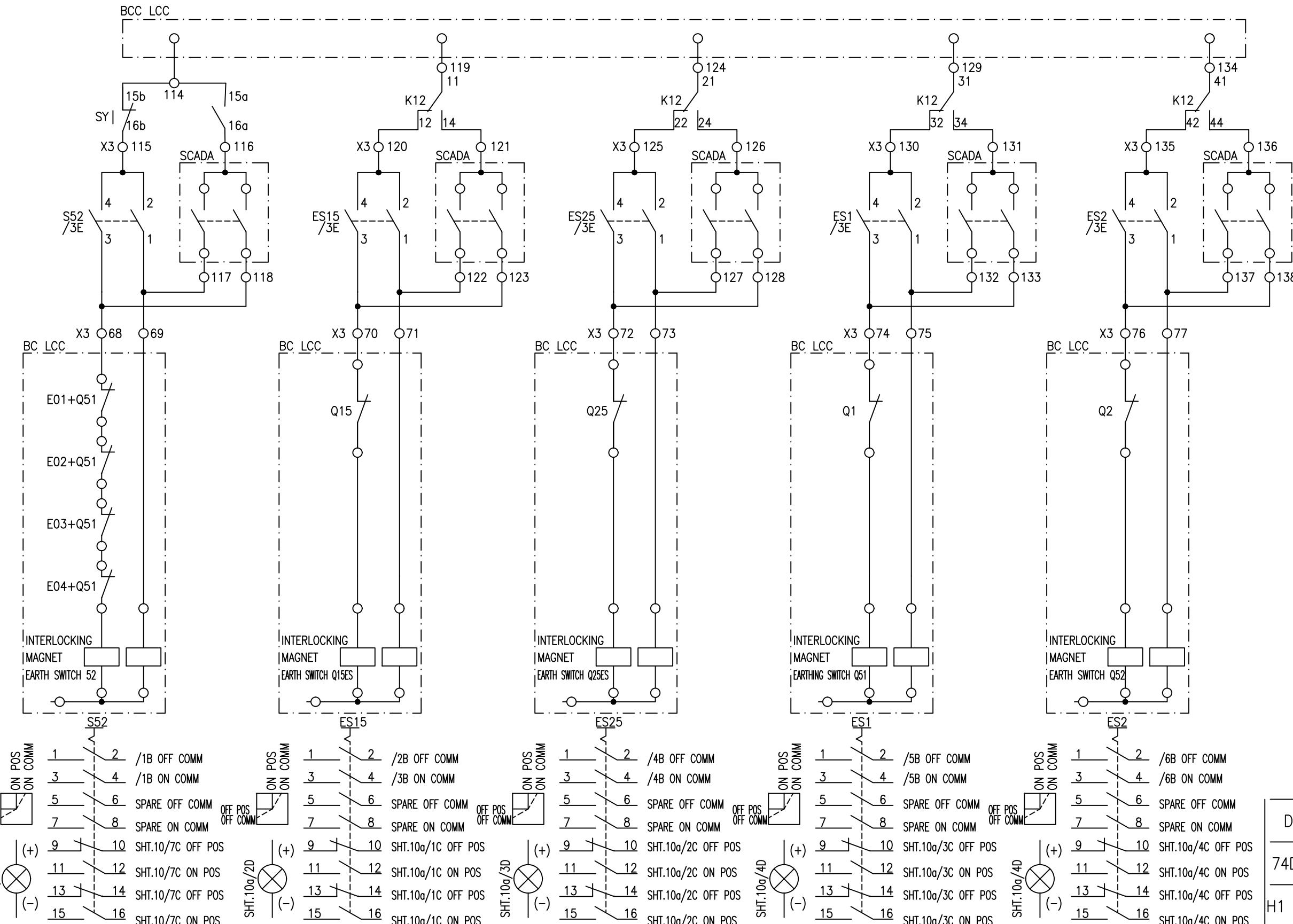
CIRCUIT BREAKER		BUS-I ISOLATOR		BUS-II ISOLATOR		BUS-I VT ISOLATOR		BUS-I EARTHING SWITCH		BUS-II VT ISOLATOR	
TRIP CKT	HEALTHY	INTERLOCKING Q1	ON OFF	INTERLOCKING Q2	ON OFF	INTERLOCKING Q15	ON OFF	INTERLOCKING Q51	ON OFF	INTERLOCKING Q25	ON OFF
A	A	TC-1	TC-2								

LEGEND

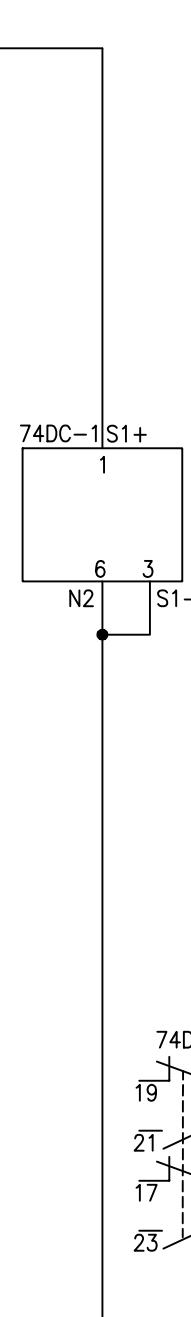
DES.	DESCRIPTION
H3,H4	INDICATION LAMP



BUS-1 EARTHING SWITCH	BUS-1 VT ISOLATOR	BUS-2 VT ISOLATOR	BUS-1 ISOLATOR Q1	BUS-2 ISOLATOR Q2
INTERLOCKING Q52	INTERLOCKING Q15 EARTHING SWITCH	INTERLOCKING Q25 EARTHING SWITCH	INTERLOCKING EARTHING SWITCH Q51	INTERLOCKING EARTHING SWITCH Q52
ON	OFF	ON	OFF	ON



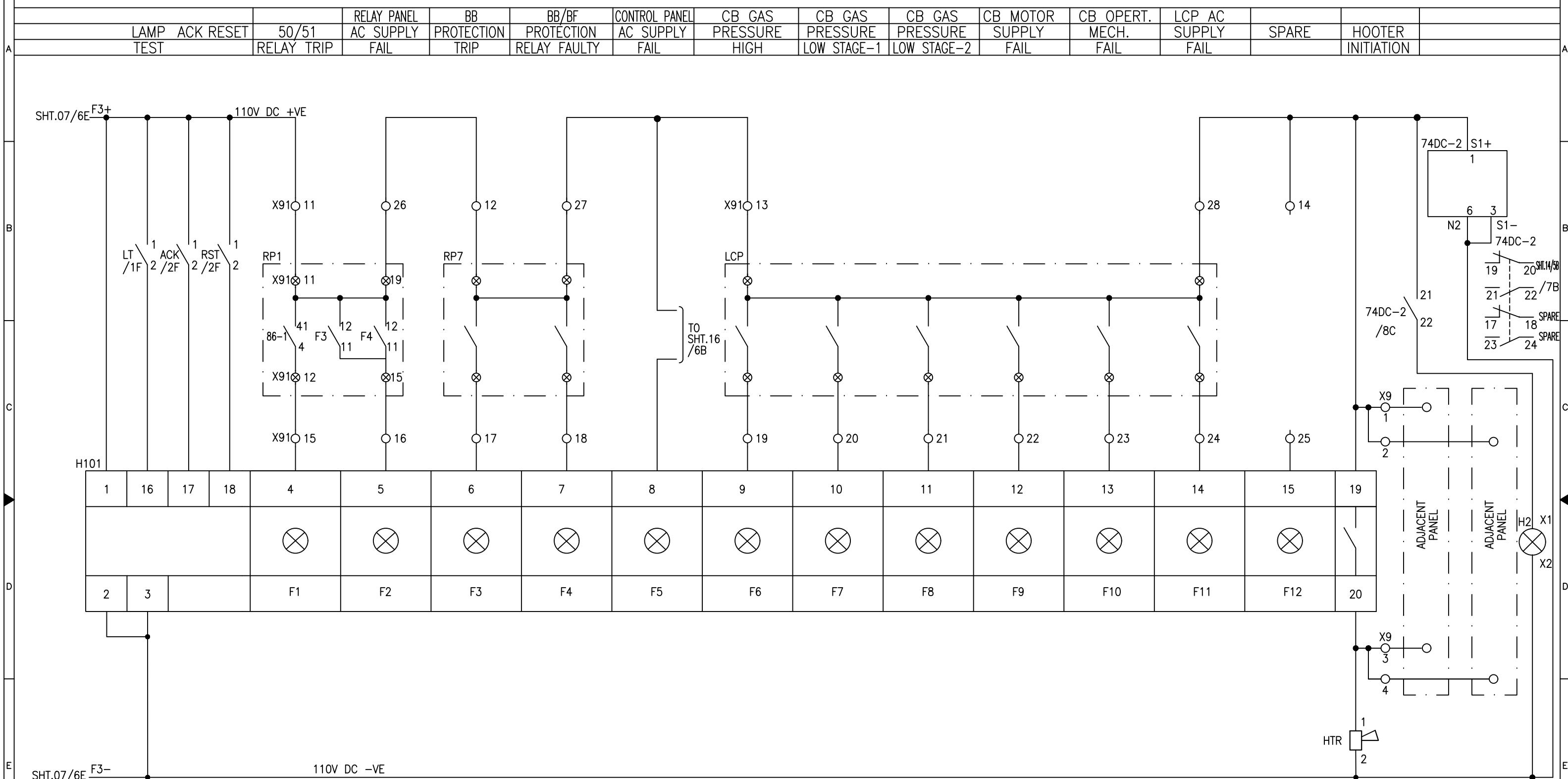
NOTE: THE ISOLATOR INTERLOCKING DETAILS ARE ONLY SHOWN FOR CLARITY OF SCHEME.
THE CONTROL PANEL IS ONLY EQUIPPED WITH TERMINAL BLOCKS FOR THIS PURPOSE.



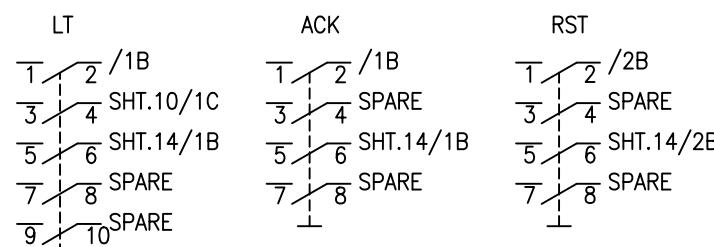
LEGEND

DES.	DESCRIPTION	TYPE	MAKE
74DC-1	DC SUPPLY SUPERVISION RELAY	TS101	ELABS
H1	INDICATION LAMP	YSPL	YONGSUNG

APPROVED	CHECKED	DRAWN	PROJECT:  DESCON PO#45000100989 DATED 06.03.2018 PROCUREMENT OF 132KV RELAY, CONTROL PANELS	TITLE: ISOLATOR & EARTH SWITCH INTERLOCKING 132kV BUSCOUPLER CONTROL PANEL TYPE CP40	 EPESOL Pvt. Ltd 71-B Garden Block, New Garden Town, Lahore, Pakistan	DWG# EPE/ENU-18/P1417	SHT: 12 OF 17	
NAH	ABW	ASJ				DATE:15.02.2019	AS BUILT	REV: 0



H101	1	16	17	18	4	5	6	7	8	9	10	11	12	13	14	15	19
	2	3			F1	F2	F3	F4	F5	F6	F7	F8	F9	F10	F11	F12	20



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

LEGEND

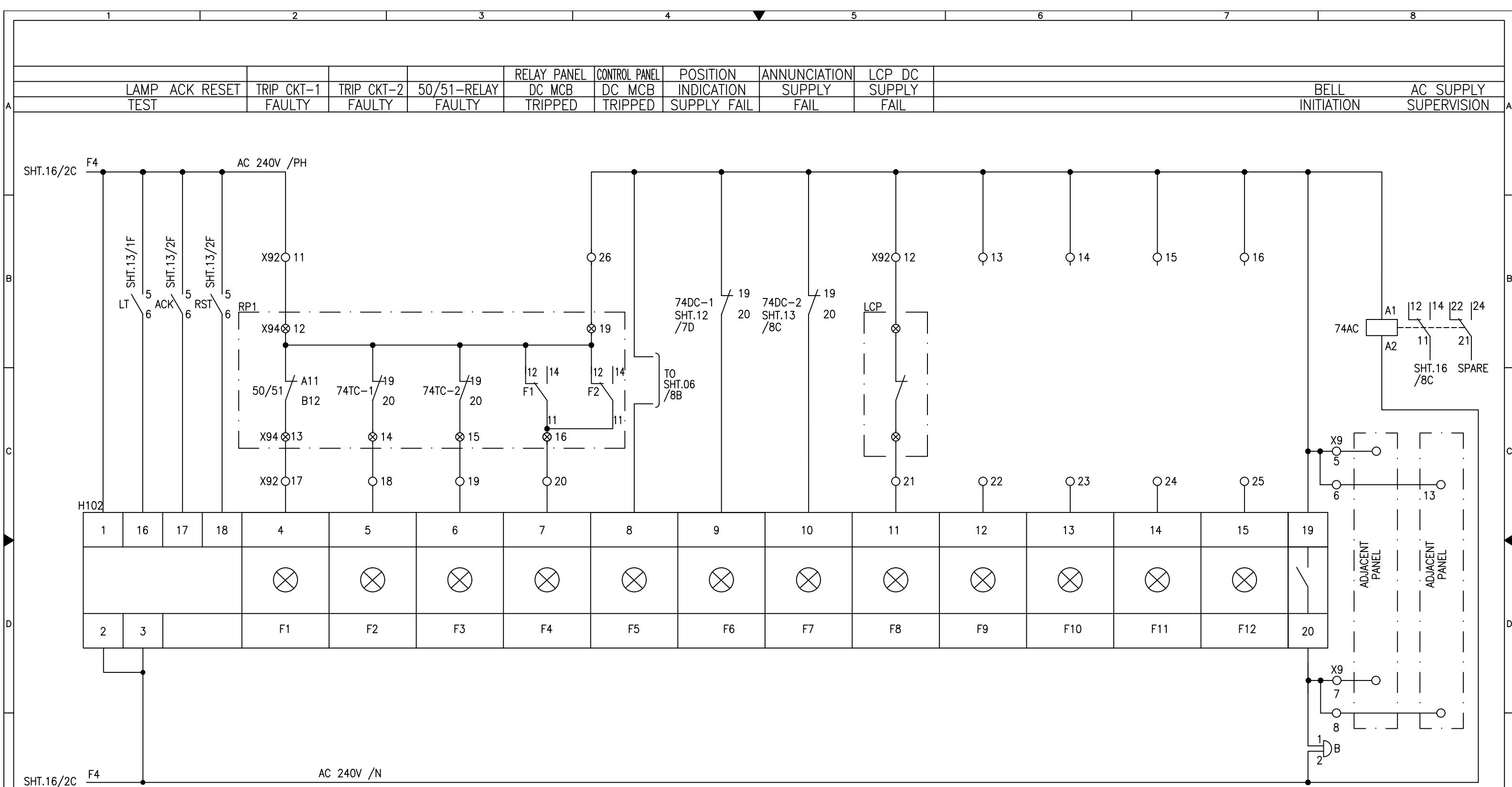
LEGEND

LEGEND

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



LEGEND

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

LEGEND

DES.	DESCRIPTION	TYPE	MAKE
H102	AC ANNUNCIATOR	AM-101	ELABS
74AC	AC SUPPLY SUPERVISION RELAY	MCR	GE

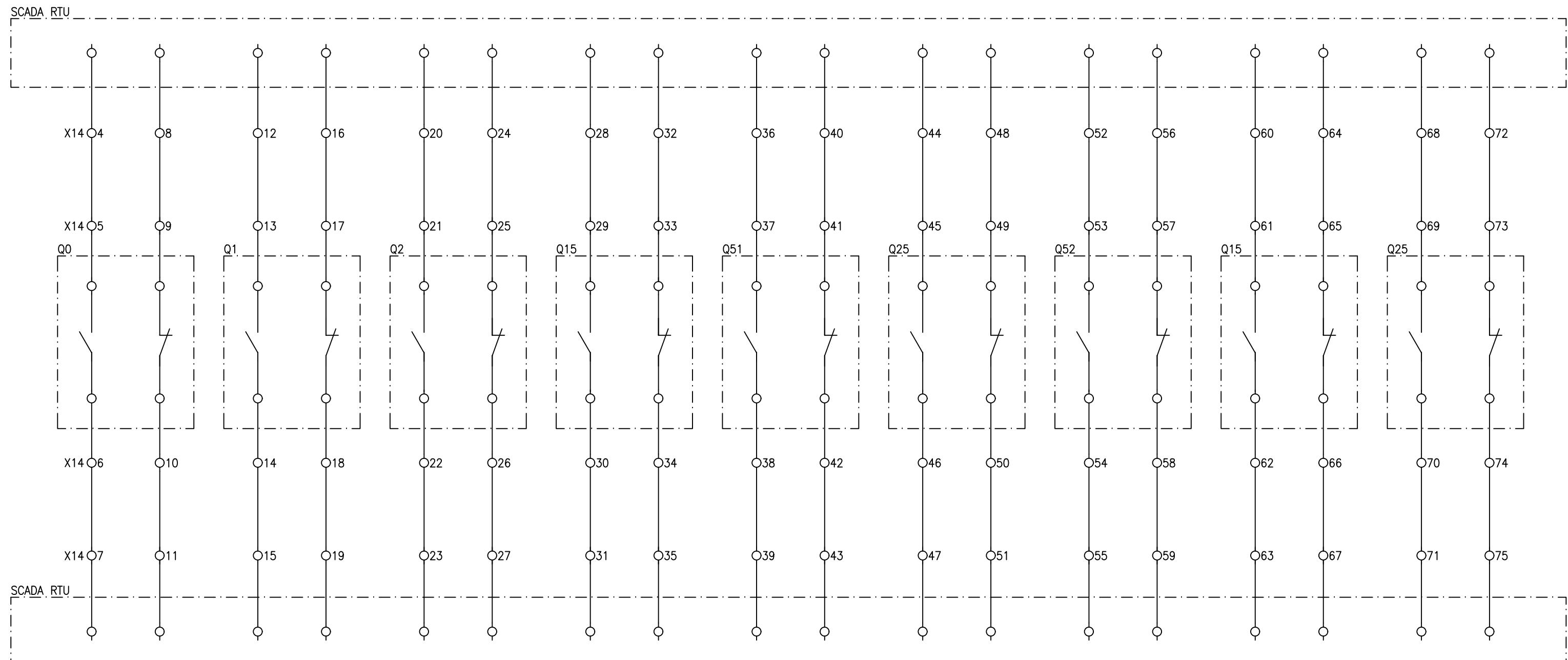
LEGEND

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

APPROVED	CHECKED	DRAWN	PROJECT: DESCON PO#45000100989 DATED 06.03.2018 PROCUREMENT OF 132kV RELAY, CONTROL PANELS	TITLE: ANNUNCIATOR UNIT-2 132kV BUSCOUPLER CONTROL PANEL TYPE CP40	 EPESOL Pvt. Ltd. 71-B Garden Block, New Garden Town, Lahore, Pakistan	DWG# EPE/ENU-18/P1417	SHT: 14 OF 17	
NAH	ABW	ASJ				DATE:15.02.2019	AS BUILT	REV: 0

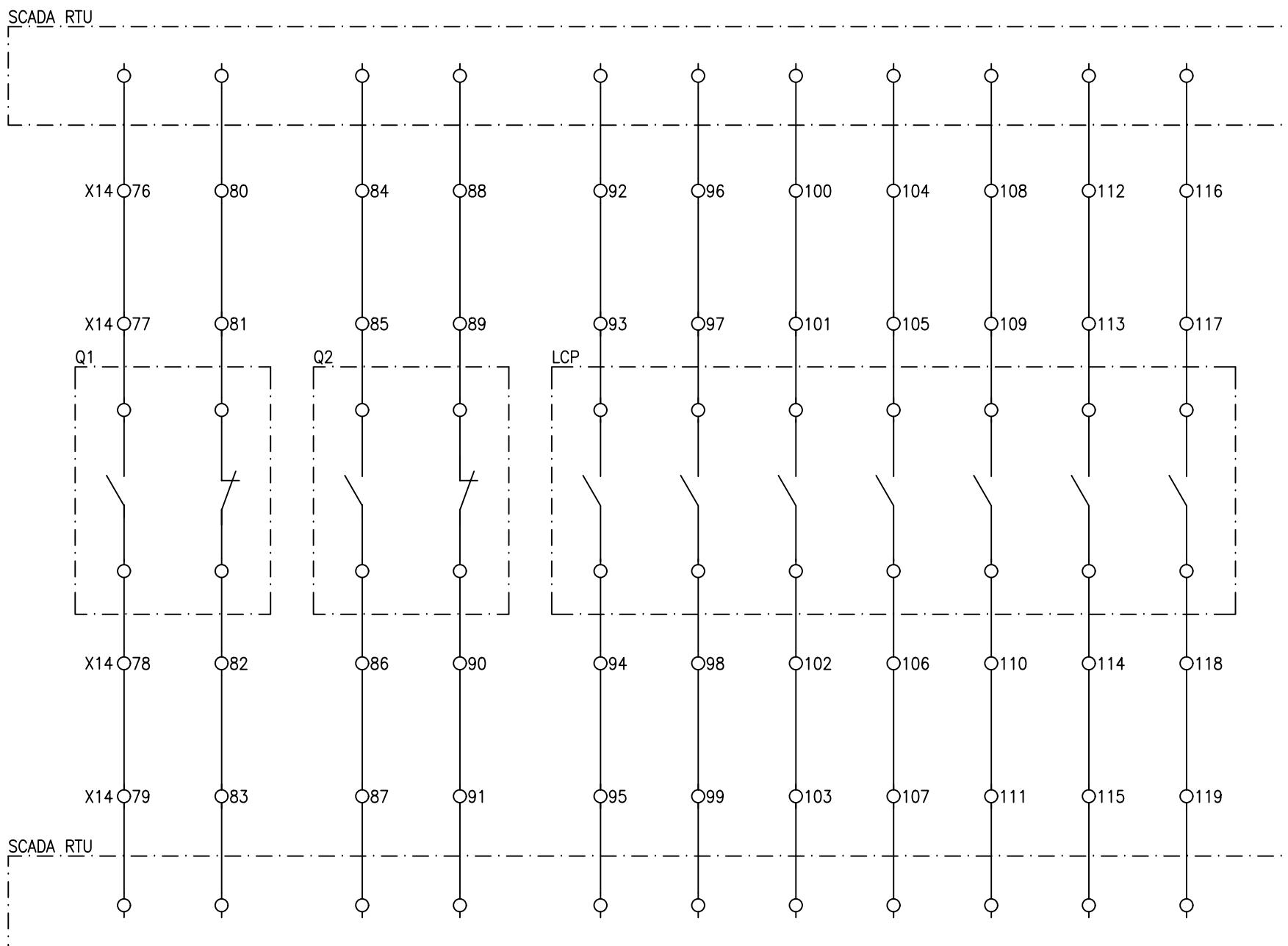
CIRCUIT BREAKER BUS-I ISOLATOR BUS-II ISOLATOR BUS-I VT ISOLATOR BUS-I EARTHING SWITCH BUS-II VT ISOLATOR BUS-II EARTHING SWITCH BUS-I VT ISO. ES BUS-II VT ISO. ES

Q0	Q1	Q2	Q15	Q51	Q25	Q52	Q15	Q25
----	----	----	-----	-----	-----	-----	-----	-----

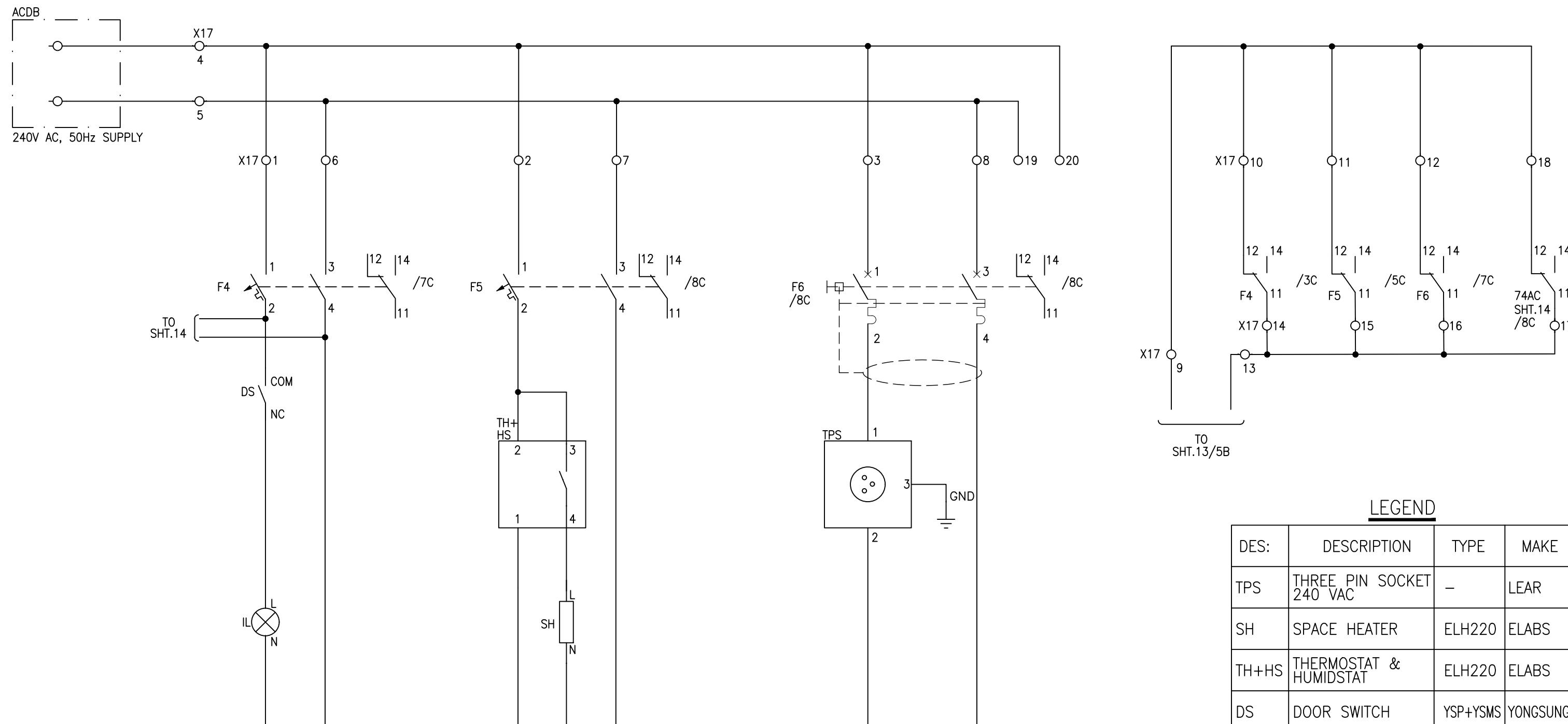


APPROVED	CHECKED	DRAWN	PROJECT:  DESCON PO#45000100989 DATED 06.03.2018 PROCUREMENT OF 132kV RELAY, CONTROL PANELS	TITLE: TERMINAL BLOCKS FOR SCADA/TELECOM 132kV BUSCOUPLER CONTROL PANEL TYPE CP40	 E P E S O L P v t . L t d. 71-B Garden Block, New Garden Town, Lahore, Pakistan	DWG# EPE/ENU-18/P1417	SHT: 15 OF 17
NAH	ABW	ASJ				DATE:15.02.2019	AS BUILT

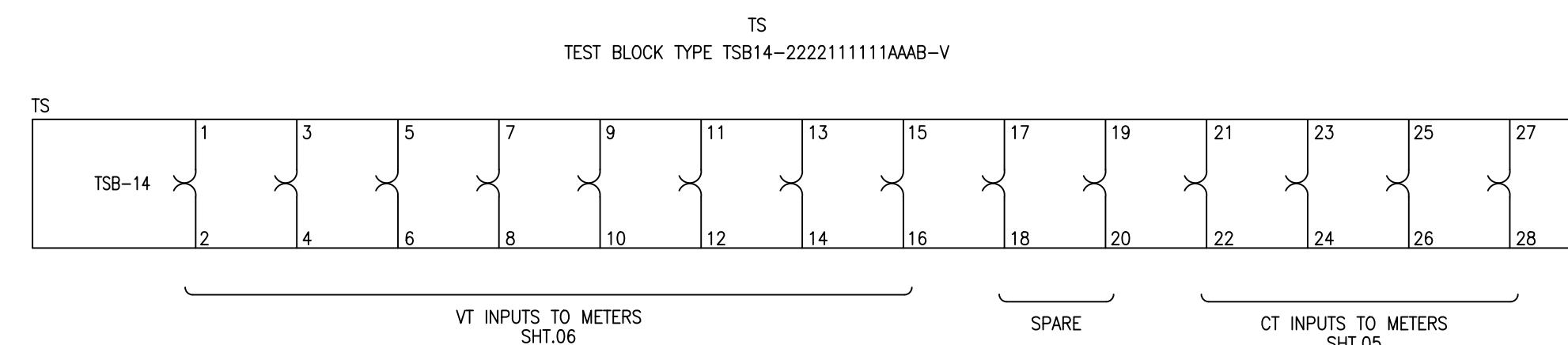
BUS-I ISO. Q1 ES	BUS-II ISO. Q2 ES	CB GAS PRESSURE HIGH	CB GAS PRESSURE LOW	CB GAS PRESSURE LOW	CB MOTOR SUPPLY FAIL	CB MECH. FAIL	LCP AC SUPPLY FAIL	LCP DC SUPPLY FAIL
Q51	Q52							
		STAGE-1		STAGE-2				



AC SUPPLY DISTRIBUTION

DOOR SWITCH &
CUBICLE LIGHTSPACE HEATER
THERMOSTATTHREE
PIN SOCKETAC SUPPLY FAIL
ANNUNCIATION

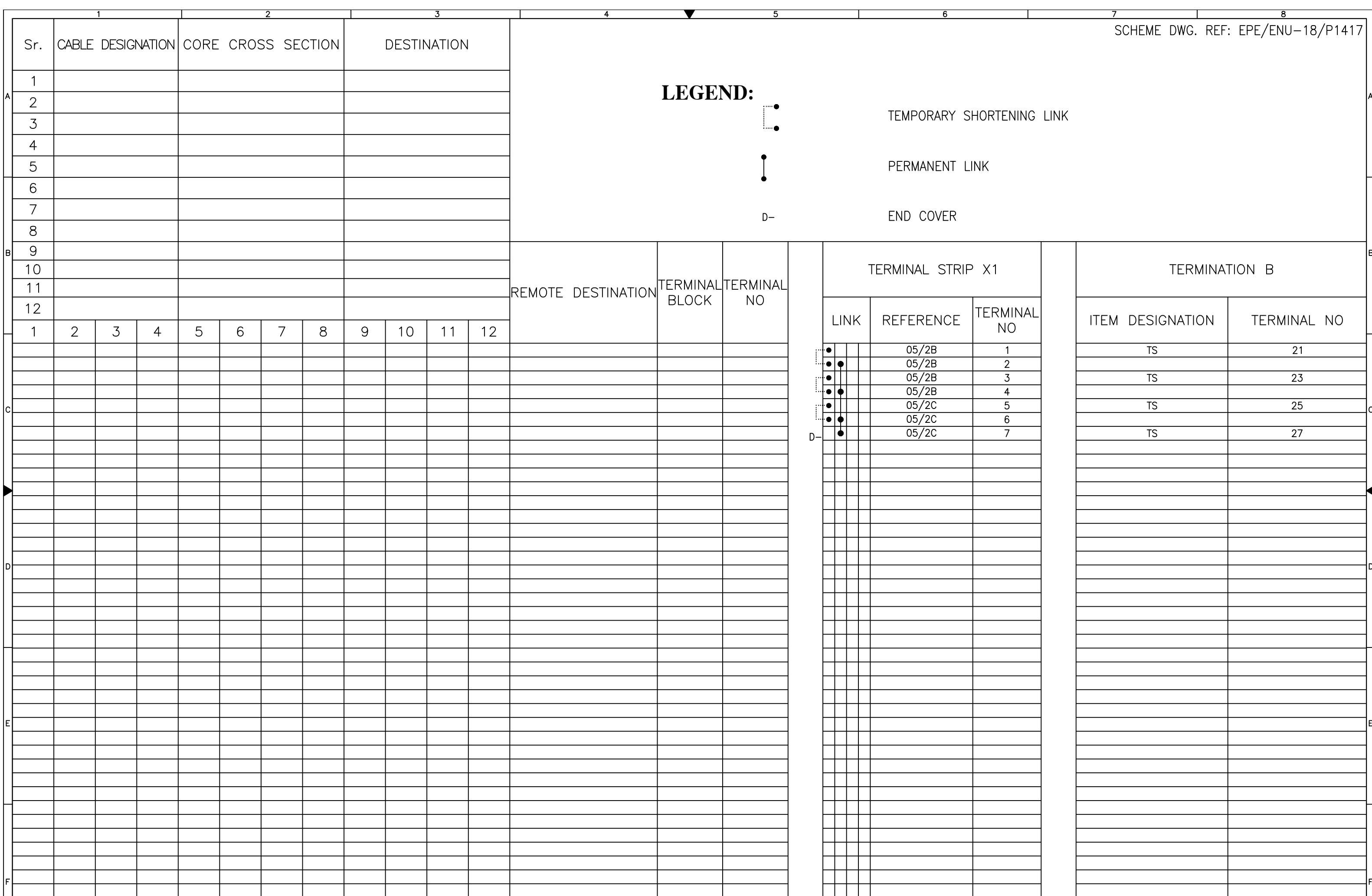
E P E S O L Pvt. Ltd.
71-B Garden Block, New Garden Town, Lahore, Pakistan



LEGEND

DES.	DESCRIPTION	TYPE	MAKE
TS	TEST BLOCK	TSB14	ARTECHE

APPROVED	CHECKED	DRAWN	PROJECT:  DESCN P0#45000100989 DATED 06.03.2018 PROCUREMENT OF 132KV RELAY, CONTROL PANELS	TITLE: TEST BLOCK TYPE TSB14 DETAILS 132KV BUSCOUPLER CONTROL PANEL TYPE CP40	 EPESOL Pvt Ltd 71-B Garden Block, New Garden Town, Lahore, Pakistan	DWG# EPE/ENU-18/P1417 DATE:15.02.2019 AS BUILT	SHT: 17 OF 17 REV: 0
NAH	ABW	ASJ					





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

DWG# EPF/ENU-18/P1418 SHT: 02 OF 15

DW011 E1 E1 ENG 10/11/10 SHM: 0201 10

DATE:15.02.2019 AS BUILT REV: 0

APPROVED	CHECKED	DRAWN	P
NAH	ABA	MSC	

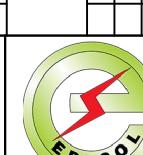
PROJECT:
 DESCON PO#45000100989
DATED 06.03.2018
PROCUREMENT OF 132kV RELAY, CONTROL PANEL

TITLE: TERMINAL DETAIL
LS 132KV BUSCOUPLER CONTROL PANEL TYPE CP40

Sr.	CABLE DESIGNATION	CORE CROSS SECTION		DESTINATION														SCHEME DWG. REF: EPE/ENU-18/P1417		
A	1																			
2	2																			
3	3																			
4	4																			
5	5																			
6	6																			
7	7																			
8	8																			
B	9																	TERMINATION B		
10	10																			
11	11																			
12	12																			
c	1	2	3	4	5	6	7	8	9	10	11	12								
D																				
E																				
F																				
													REMOTE DESTINATION		TERMINAL BLOCK	TERMINAL NO	TERMINAL STRIP X3			
																LINK	REFERENCE	TERMINAL NO	ITEM DESIGNATION	TERMINAL NO
																	08/3B	1	S0	3
																	SPARE	2		
																	SPARE	3		
																	SPARE	4		
																	SPARE	5		
																	SPARE	6		
																	08/7B	7		
																	08/7C	8		
																	10/1B	9	CTR	1
																	10/2B	10	LT	5
																	11/1B	11	S0	11
																	10/1C	12	S0	9
																	10/1C	13	S0	15
																	11/2C	14	S0	13
																	10/2C	15	S1	11
																	10/2C	16	S1	9
																	10/3C	17	S1	15
																	10/3C	18	S1	13
																	10/3C	19	S2	11
																	10/3C	20	S2	9
																	10/4C	21	S2	15
																	10/4C	22	S2	13
																	10/4C	23	S15	11
																	10/4C	24	S15	9
																	10/5C	25	S15	15
																	10/5C	26	S15	13
																	10/5C	27	S15	11
																	10/5C	28	S51	9
																	10/6C	29	S51	15
																	10/6C	30	S51	13
																	10/6C	31	S25	11
																	10/6C	32	S25	9
																	10/7C	33	S25	15
																	10/7C	34	S25	13
																	10/7C	35	S52	11
																	10/8C	36	S52	9
																	10/8C	37	S52	15
																	10/8C	38	S52	13
																	10/8C	39	ES15	11
																	10g/1C	40		

APPROVED	CHECKED	DRAWN	PROJECT: DESCON PO#45000100989 DATED 06.03.2018 PROCUREMENT OF 132kV RELAY, CONTROL PANELS	TITLE: 132kV BUSCOUPLER CONTROL PANEL TYPE CP40	 EPESOL Pvt. Ltd. 71-B Garden Block, New Garden Town, Lahore, Pakistan	100/10	40	EST3	11
NAH	ABA	MSC				DATE:15.02.2019	AS BUILT	REV: 0	

Sr.	CABLE DESIGNATION	CORE CROSS SECTION		DESTINATION														SCHEME DWG. REF: EPE/ENU-18/P1417	
A	1																		
2	2																		
3	3																		
4	4																		
5	5																		
6	6																		
7	7																		
8	8																		
B	9																	TERMINATION B	
10	10																		
11	11																		
12	12																		
c	1	2	3	4	5	6	7	8	9	10	11	12							
D																			
E																			
F																			
													REMOTE DESTINATION		TERMINAL BLOCK	TERMINAL NO	TERMINAL STRIP X3		
													LINK	REFERENCE	TERMINAL NO	ITEM DESIGNATION		TERMINAL NO	
														11/3C	81	S1	3		
														11/3C	82	S1	1		
														11/4B	83	SY	7b		
														11/4B	84	SY	8b		
														11/4B	85	SY	8a		
														11/5C	86	S2	1		
														11/5C	87	S2	3		
														11/6B	88	SY	9b		
														11/5B	89	SY	10b		
														11/6B	90	SY	10a		
														11/6C	91	S15	1		
														11/6C	92	S15	3		
														11/7A	93	SY	11b		
														11/7B	94	SY	12b		
														11/7B	95	SY	12a		
														11/7C	96	S51	1		
														10/2D	97	S51	3		
														10/3D	98				
														10/4D	99				
														10/5D	100				
														10/6D	101				
														10/7D	102				
														10/8D	103				
														10a/2D	104				
														10a/3D	105				
														10a/4D	106				
														10a/5D	107				
														11/8B	108				
														11/8B	109				
														11/8C	110				
														11/8C	111				
														12/2B	112				
														12/2B	113				
														12/2B	114				
														12/2C	115				
														12/2C	116				
														12/2C	117				
														12/3B	118				
														12/3B	119				
														12/3B	120				



E P E S O L Pvt. Ltd.

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

TITLE:

K12 12

DWG# EPE/ENU-18/P1418 SHT:03b OF 15

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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/P1418 SHT: 04 OF 15

DW# E/ENR 10/11/18 SHT: 0401 15

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
LS 132KV BUSCOUPLER CONTROL PANEL TYPE CP40



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

DWC II_EPF/ENU_18/P1418 SUT: 05 OF 15

DWG# EPE/ENU-18/P1418 SHI: 050F 15

DATE:15.02.2019 AS BUILT REV: 0

APPROVED CHECKED DRAWN BY

PROJECT

10

DP

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

S TITLE: TERMINAL DETAIL
132KV BUSCOUPLER CONTROL PANEL TYPE CP400



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

DWG# EPF/ENU-18/P1418 SHT: 06 OF 15

DW011 E1 E1 ENG 10/11/13 SMH: 0001 13

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 BUSCOUPLER CONTROL PANEL TYPE CP40



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

DWC II_EBE /ENCL 18 /P1418 SUT: 070E_15

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
132kV BUSCOUPLER CONTROL PANEL TYPE CP40



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

DWC II / EBE / ENL / 18 / D14118 SUT: 08.05.15

DWG# E/L/ENO-18/11418 SHT. 0801 15

APPROVED	CHECKED	DRAWN
NAH	ABA	MSC

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

TITLE: TERMINAL DETAIL
132W BUSCOUPLER CONTROL PANEL TYPE CP40

LEGEND:



TEMPORARY SHORTENING LINK



PERMANENT LINK

D-

END COVER

REMOTE DESTINATION	TERMINAL BLOCK	TERMINAL NO	TERMINAL STRIP X14			ITEM DESIGNATION	TERMINAL NO
			LINK	REFERENCE	TERMINAL NO		
			●	15/5B	40		
			●	15/5C	41		
			●	15/5D	42		
			●	15/5E	43		
			●	15/6B	44		
			●	15/6C	45		
			●	15/6D	46		
			●	15/6E	47		
			●	15/6B	48		
			●	15/6C	49		
			●	15/6D	50		
			●	15/6E	51		
			●	15/6B	52		
			●	15/6C	53		
			●	15/6D	54		
			●	15/6E	55		
			●	15/6B	56		
			●	15/6C	57		
			●	15/6D	58		
			●	15/6E	59		
			●	15/7B	60		
			●	15/7C	61		
			●	15/7D	62		
			●	15/7E	63		
			●	15/7B	64		
			●	15/7C	65		
			●	15/7D	66		
			●	15/7E	67		
			●	15/8B	68		
			●	15/8C	69		
			●	15/8D	70		
			●	15/8E	71		
			●	15/8B	72		
			●	15/8C	73		
			●	15/8D	74		
			●	15/8E	75		
			●	15a/2B	76		
			●	15a/2C	77		
			●	15a/2D	78		

LEGEND:



TEMPORARY SHORTENING LINK



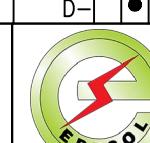
PERMANENT LINK

D-

END COVER

TERMINAL STRIP X14		
LINK	REFERENCE	TERMINAL NO
●	15a/2B	80
●	15a/2C	81
●	15a/2D	82
●	15a/2E	83
●	15a/2B	84
●	15a/2C	85
●	15a/2D	86
●	15a/2E	87
●	15a/2B	88
●	15a/2C	89
●	15a/2D	90
●	15a/2E	91
●	15a/3B	92
●	15a/3C	93
●	15a/3D	94
●	15a/3E	95
●	15a/3B	96
●	15a/3C	97
●	15a/3D	98
●	15a/3E	99
●	15a/3B	100
●	15a/3C	101
●	15a/3D	102
●	15a/3E	103
●	15a/4B	104
●	15a/4C	105
●	15a/4D	106
●	15a/4E	107
●	15a/4B	108
●	15a/4C	109
●	15a/4D	110
●	15a/4E	111
●	15a/4B	112
●	15a/4C	113
●	15a/4D	114
●	15a/4E	115
●	15a/5B	116
●	15a/5C	117
●	15a/5D	118

APPROVED	CHECKED	DRAWN	PROJECT:  DESCON PO#45000100989 DATED 06.03.2018 PROCUREMENT OF 132kV RELAY, CONTROL PANELS	TITLE: TERMINAL DATA 132kV BUSCOUPLER CONTROL P
NAH	ABA	MSC		



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

Table 1. Summary of the main characteristics of the four groups of patients.

DWG# EPE/ENU-18/P1418 SHT:08b OF 15

DATE:15.02.2019 AS BUILT REV: 0

LEGEND:



TEMPORARY SHORTENING LINK



PERMANENT LINK

D-

END COVER

REMOTE DESTINATION	TERMINAL BLOCK	TERMINAL NO	TERMINAL STRIP X17			ITEM DESIGNATION	TERMINAL NO	TERMINATION B	
			LINK	REFERENCE	TERMINAL NO				
D-			●	16/2B	1	F4	1		
			●	16/3B	2	F5	1		
			●	16/5B	3	F6	1		
			●	16/2B	4				
			●	16/2B	5				
			●	16/2B	6	F4	3		
			●	16/4B	7	F5	3		
			●	16/5B	8	F6	3		
			●	16/6C	9				
			●	16/7C	10	F4	12		
			●	16/7C	11	F5	12		
			●	16/8C	12	F6	12		
			●	16/7C	13				
			●	16/7C	14	F4	11		
			●	16/7C	15	F5	11		
			●	16/8B	16	F6	11		
				16/8C	17	74AC	11		
				16/8C	18	74AC	12		
				16/6B	19				
				16/6B	20				



E P E S O L Pvt. Ltd.

APPROVED	CHECKED	DRAWN	PROJECT: DESCON PO#45000100989 DATED 06.03.2018 PROCUREMENT OF 132kV RELAY, CONTROL PANELS	TITLE: TERMINAL DETAIL 132kV BUSCOUPLER CONTROL PANEL TYPE CP40	 EPESOL PVT LTD 71-B Garden Block, New Garden Town, Lahore, Pakistan	DWG# EPE/ENU-18/P1418	SHT: 09 OF 15
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

DWG# EPF/ENU-18/P1418 SHT: 100E 15

DW011 E1 E1, ENG 10/11/10 SMT: 1001 10

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 BUSCOUPLER CONTROL PANEL TYPE CP400



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

DWG# EPE/ENU-18/P1418	SHT: 110F 15	
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

DWC# EPF /ENII-18/P1418 SHT: 120E 15

DWG#	EPL/ENR-18/1 1418	SMH: 1201 15

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
LS 132kV BUSCOUPLER CONTROL PANEL TYPE CP400



E P E S O L Pvt. Ltd.

DWC# EPF /ENLU-18 /P1418 SHT: 13 OF 15

DWG# E/E/ENR-18/11418 SHT. 1501 15

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
LS 132KV BUSCOUPLER CONTROL PANEL TYPE CP400



E P E S O L Pvt. Ltd.

DWG# EPE /ENL 18 /P14118 SHT: 14 OF 15

DWG# E/E/ENR-18/11408 SHT. 1401 15

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

S TITLE: TERMINAL DETAIL
132kV BUSCOUPLER CONTROL PANEL TYPE CP400



E P E S O L Pvt. Ltd.

DWC II_EBE/ENCL 18/P1418 SUT: 15 OF 15

DWG# E1 E/ ENR-18/1 1418 SHT. 1501 15

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 BUSCOUPLER CONTROL PANEL TYPE CP40