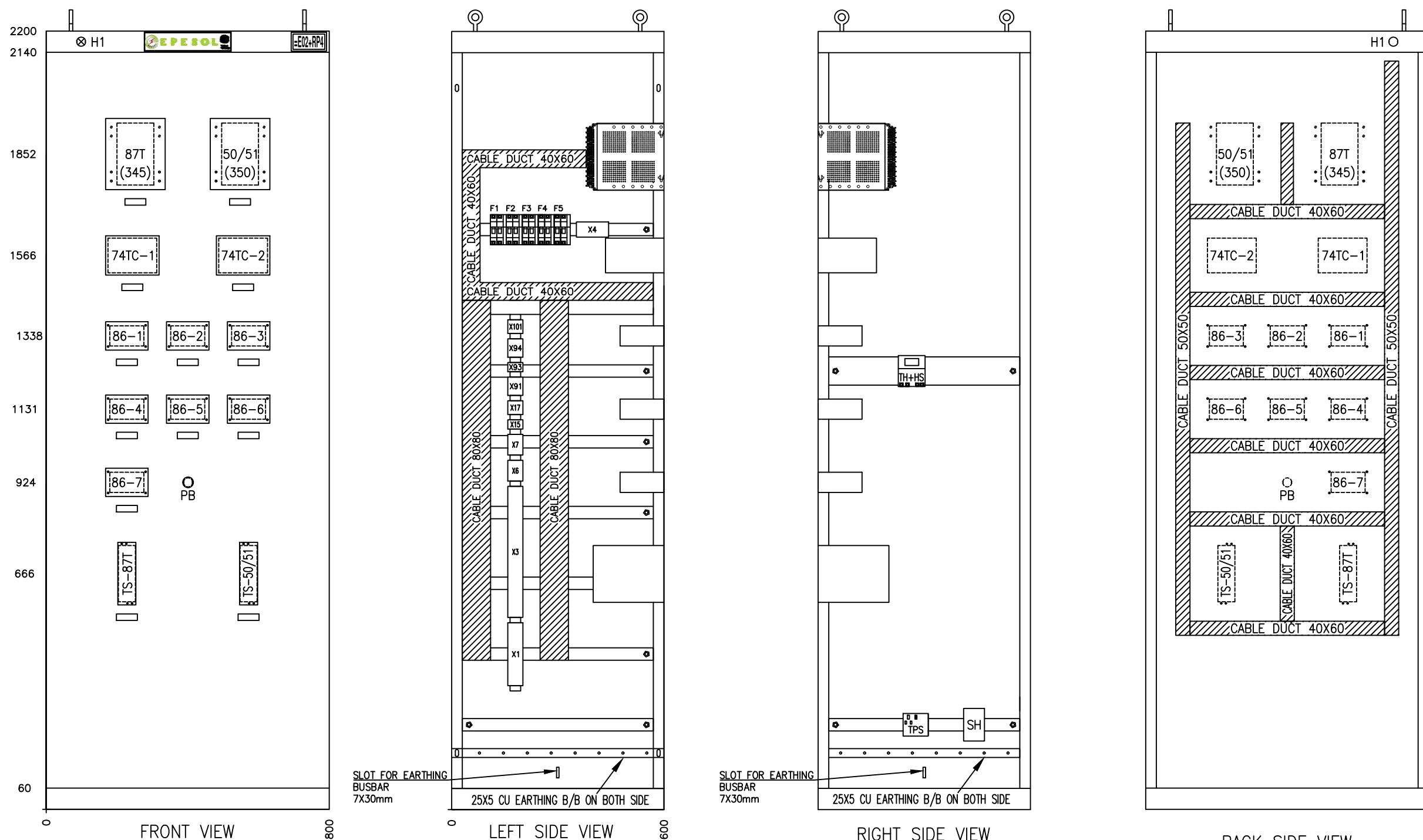


LAYOUT DRAWING

132/11kV TRANSFORMER PROTECTION PANEL

TYPE RP4

APPROVED	CHECKED	DRAWN	PROJECT:  DESCN PO#45000100989 DATED 06.03.2018 PROCUREMENT OF 132kV RELAY, CONTROL PANELS	TITLE: COVER SHEET 132/11kV TRANSFORMER PROTECTION PANEL TYPE RP4	 EPESOL Pvt Ltd. 71-B Garden Block, New Garden Town, Lahore, Pakistan	DWG# EPE/ENU-18/P1431	SHT: 01 OF 03
NAH	MFT	MUR				DATE:15.02.2019	AS BUILT

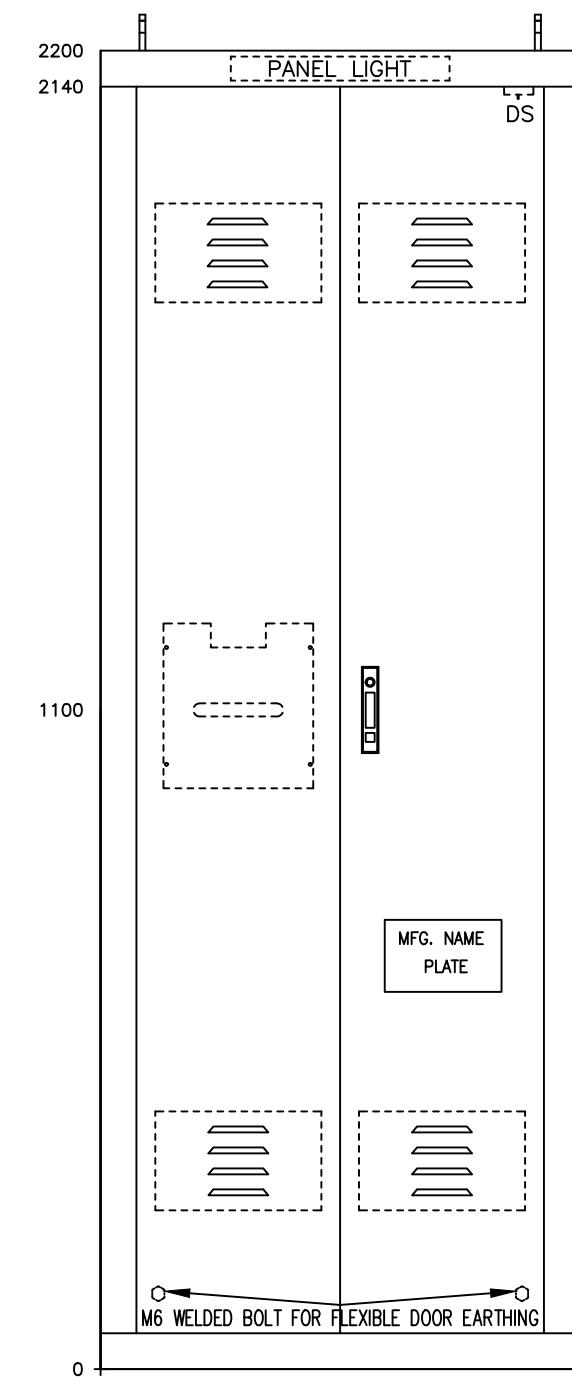


BACK SIDE VIEW
(WITH DOOR REMOVED)
FOR FIXING OF CABLE DUCT

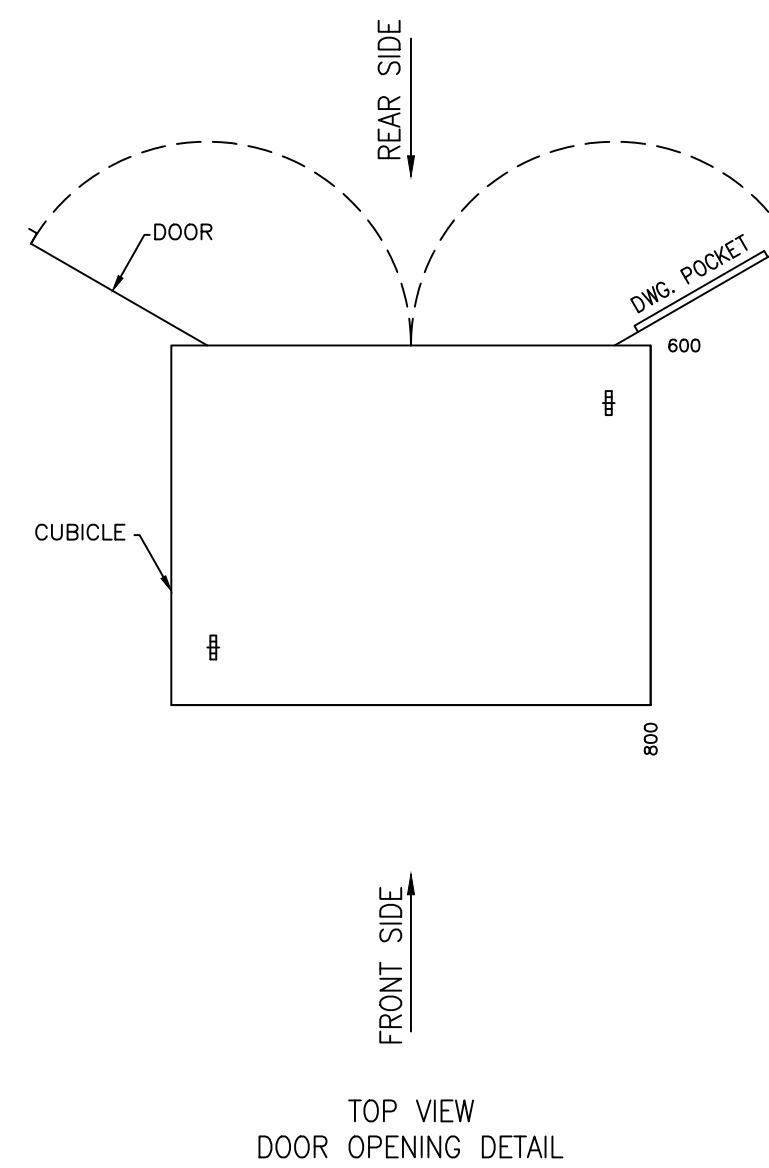
NOTES

1. RELAY PANEL: 800x600x2200 mm
2. FACE SHEET: 800x2200 mm²
3. EARTHING STRIP 25x5 mm²
4. EARTHING STRAP 16mm²
5. COLOR: RAL7032
6. PROTECTION CLASS: IP51
7. APPLICABLE SPECS: P-151:2008

APPROVED	CHECKED	DRAWN	PROJECT: DESCON PO#45000100989 DATED 06.03.2018 PROCUREMENT OF 132kV RELAY, CONTROL PANELS	TITLE: LAYOUT DIAGRAM 132/11kV TRANSFORMER PROTECTION PANEL TYPE RP4	EPE SOL Pvt Ltd 71-B Garden Block, New Garden Town, Lahore, Pakistan	DWG# EPE/ENU-18/P1431	SHT: 02 OF 03
NAH	MFT	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: LAYOUT DIAGRAM 132/11kV TRANSFORMER PROTECTION PANEL TYPE RP4	EPE SOL Pvt Ltd 71-B Garden Block, New Garden Town, Lahore, Pakistan	DWG# EPE/ENU-18/P1431	SHT: 03 OF 03
NAH	MFT	MUR				DATE:15.02.2019	AS BUILT

LIST OF APPARATUS

132/11kV TRANSFORMER PROTECTION PANEL

TYPE RP4

APPROVED	CHECKED	DRAWN	PROJECT: DESCON PO#45000100989 DATED 06.03.2018 PROCUREMENT OF 132kV RELAY, CONTROL PANELS	TITLE: COVER SHEET 132/11kV TRANSFORMER PROTECTION PANEL TYPE RP4	DWG# EPE/ENU-18/P1432 71-B Garden Block, New Garden Town, Lahore, Pakistan	SHT: 01 OF 03
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	1	87T	TRANSFORMER DIFFERENTIAL PROTECTION RELAY FOR 2 WINDINGS POWER TRANSFORMER				1	345	GE	SPAIN	345-L-P5-G5-H-E-S-N-N-3E-D-N	17
	2	50/51	OVER CURRENT & EARTH FAULT PROTECTION RELAY				1	350	GE	SPAIN	350-E-P5-G5-H-E-E-N-N-3E-D-N	18
B	3	86-1, 86-2, 86-3, 86-4, 86-5, 86-6, 86-7	TRIP RELAY, LOCKOUT TYPE, ELECTRICAL & HAND RESET WITH 8 C/O CONTACTS, 110 VDC, WITH BASE				7	BJ-8RP	ARTECHE	SPAIN	BJ8RP-HB-110VDC	7,8
	4	TS-87T, TS-50/51	TEST BLOCK (14 FINGER)				2	saTECH-TSB14	ARTECHE	SPAIN	TSB14-11111AAABAAAB-V	20
	5	F1, F2	DC MCB, 2 POLE, 10A, WITH ONE C/O CONTACT, 10KA				2	EP100	GE	HUNGARY	EP102UCC10	07
	6	F3, F4	AC MCB, 2 POLE, 10A, WITH ONE C/O CONTACT, 6KA				2	G60	GE	HUNGARY	G62C10	15
c	7	F5	AC ELCB, 2POLE, 16A, 30mA, WITH ONE C/O CONTACT				1	DM100	GE	HUNGRY	DM100C16/030+(CAH1)	15
	8	74TC-1, 74TC-2	TRIP CIRCUIT SUPERVISION RELAY				2	TS101	E-LABS	PAKISTAN	TS101	19
	9	TH+HS	HUMIDSTAT & THERMOSTAT				1	ELH-220	E-LABS	PAKISTAN		15
D	10	SH	SPACE HEATER				1	ELH-220	E-LABS	PAKISTAN		15
	11	DS	DOOR SWITCH COVER				1	YSP+YSMS	YONGSUNG	SOUTH KOREA	YSP3315 GWB + YSMS-C	15
	12	IL	CUBICLE LIGHTING, 5W, 260 VAC				1	YST8	YONGSUNG	SOUTH KOREA	YST8-30-5W	15
	13	TPS	240 VAC, 16A, THREE PIN SOCKET OUTLET				1		LEAR	CHINA		15
	14	H1	INDICATION LAMP RED				1	YSPL	YONGSUNG	SOUTH KOREA	YSPL2-DL12 RW	08
	15	PB	RESET PUSH BUTTON				1	YSAP1	YONGSUNG	SOUTH KOREA	YSAP12-40YDW	08
E	16	X1	DISCONNECTING TERMINAL BLOCK (SCREW TYPE) FOR CT WITH SHORTENING ARRANGEMENT				21	SCB-6	CABUR	ITALY		
	17	X3	TERMINAL BLOCKS FOR CONTROL FUNCTION				62	CBD-4	CABUR	ITALY		
	18	X6	TERMINAL BLOCKS FOR TRIP CIRCUIT-1				9	CBD-4	CABUR	ITALY		
	19	X7	TERMINAL BLOCKS FOR TRIP CIRCUIT-2				9	CBD-4	CABUR	ITALY		
	20	X15	TERMINAL BLOCKS FOR RS485 COMMUNICATION				4	CBD-4	CABUR	ITALY		
F	21	X17	TERMINAL BLOCKS FOR AC SUPPLY DISTRIBUTION				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 132/11kV TRANSFORMER PROTECTION PANEL TYPE RP4	 EPESOL Pvt. Ltd. 71-B Garden Block, New Garden Town, Lahore, Pakistan				DWG# EPE/ENU-18/P1432	SHT: 02 OF 03	
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	22	X91	TERMINAL BLOCKS FOR ANNUNCIATOR ALARMS		9	CBD-4	CABUR	ITALY		A
	23	X93	TERMINAL BLOCKS FOR ANNUNCIATOR ALARMS		9	CBD-4	CABUR	ITALY		
	24	X94	TERMINAL BLOCKS FOR ANNUNCIATION ALARMS		11	CBD-4	CABUR	ITALY		
B	25	X101	TERMINAL BLOCKS FOR DC SUPPLY DISTRIBUTION		8	CBD-4	CABUR	ITALY		B
	26	X4	SPARE TERMINAL BLOCKS		14	CBD-4	CABUR	ITALY		
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 132/11kV TRANSFORMER PROTECTION PANEL TYPE RP4	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/P1432	SHT: 03 OF 03			
NAH	RAA	MUR				DATE:15.02.2019	AS BUILT	REV: 0		

SCHEMATIC DIAGRAMS

132/11kV TRANSFORMER PROTECTION PANEL

TYPE RP4

APPROVED	CHECKED	DRAWN	PROJECT: DESCON PO#45000100989 DATED 06.03.2018 PROCUREMENT OF 132kV RELAY, CONTROL PANELS	TITLE: COVER SHEET 132/11kV TRANSFORMER PROTECTION PANEL TYPE RP4	DWG# EPE/ENU-18/P1433 71-B Garden Block, New Garden Town, Lahore, Pakistan	SHT: 01 OF 20 DATE:15.02.2019 AS BUILT REV: 0
NAH	RAA	MUR				

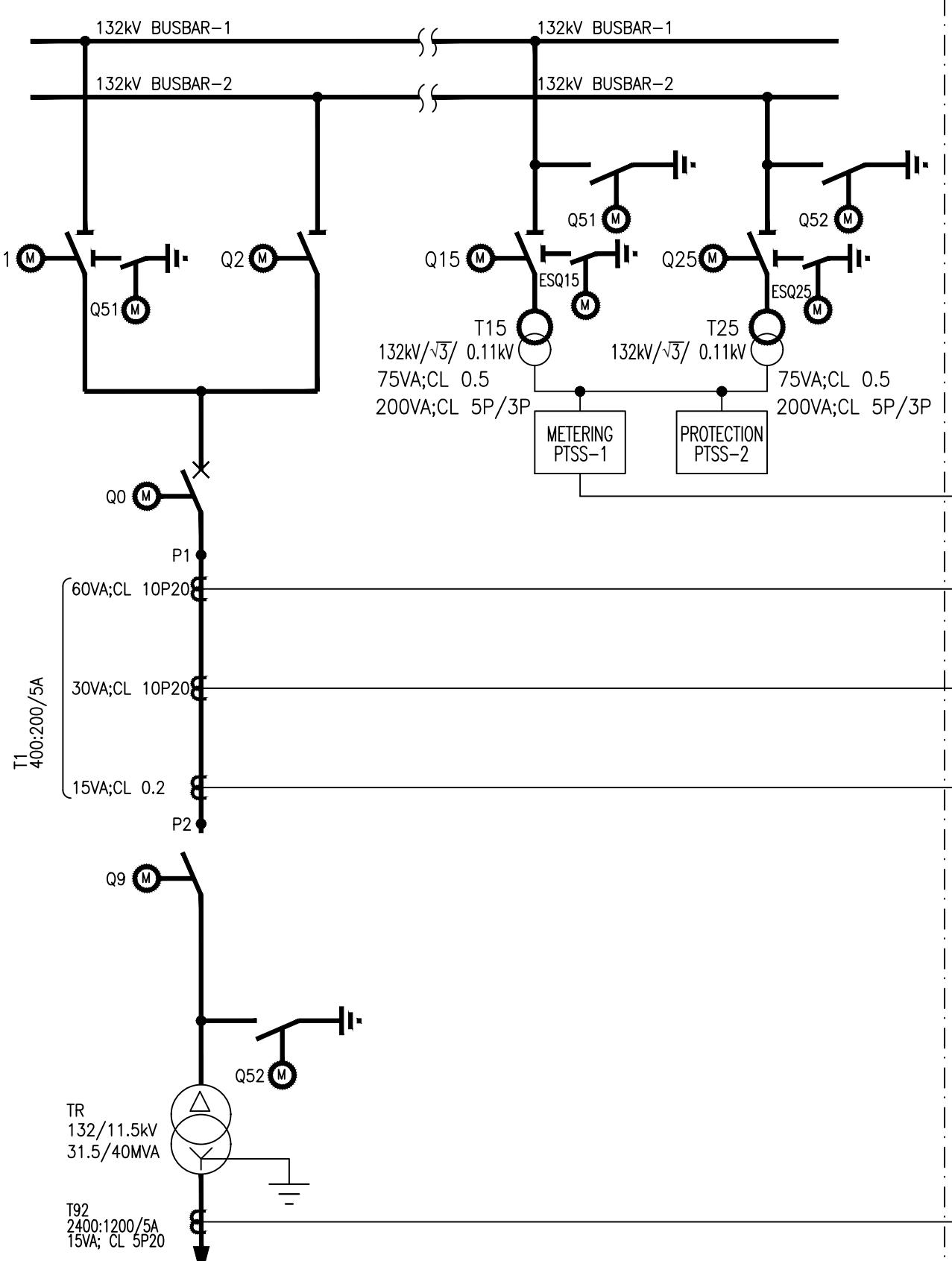
DESCRIPTION	SHEET NO
COVER SHEET	01
LIST OF CONTENTS	02
LIST OF SYMBOLS	03
SINGLE LINE DIAGRAM	04
AC SCHEMATIC DIAGRAM	05
AC SCHEMATIC DIAGRAM	06
LOCKOUT RELAY INITIATION	07
LOCKOUT RELAY INITIATION	08
HV CB TRIP CIRCUIT-1	09
HV CB TRIP CIRCUIT-2	10
HV CB CLOSE BLOCK & LV CB TRIP	11
PROTECTION ALARMS	12
PROTECTION ALARMS	13
87-T & 50/51 SPARE IOs	14
AC SUPPLY DISTRIBUTION	15
RS485 COMMUNICATION	16
87T RELAY TYPE 345 DETAILS	17
50/51 RELAY TYPE 350 DETAILS	18
TRIP CIRCUIT SUPERVISION RELAY TYPE TS101 DETAILS	19
TEST BLOCK TYPE TSB-14 DETAILS	20

LIST OF SYMBOLS

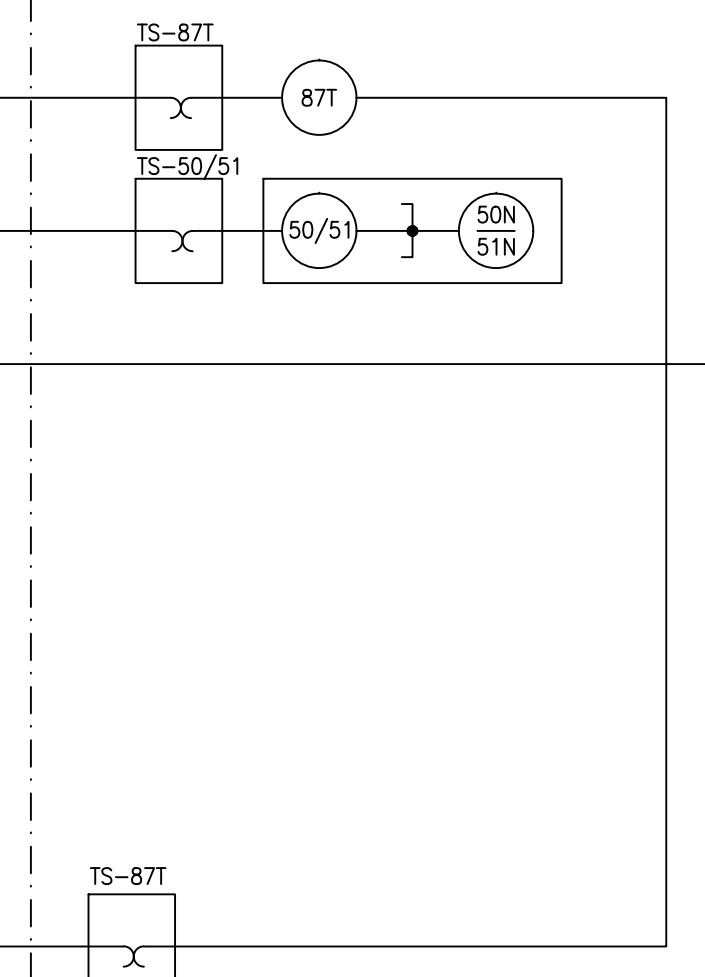
	HV DISCONNECTOR		EQUIPMENT WITHIN PANEL
	HV CIRCUIT BREAKER		INDEPENDENT PANEL
	CURRENT TRANSFORMER		INDEPENDENT PANEL
	132/11 KV POWER TRANSFORMER	87T	TRANSFORMER DIFFERENTIAL PROTECTION RELAY
	RELAY PANEL TERMINAL BLOCK	50/51	OVER CURRENT & EARTH FAULT PROTECTION RELAY
	CONTROL PANEL TERMINAL BLOCK	TS	TEST BLOCK
	EARTH CONNECTION	86	LOCKOUT RELAY
	TEST BLOCK TERMINAL	74TC	TRIP CIRCUIT SUPERVISION RELAY
	PUSH BUTTON		DISCONNECTING TERMINAL BLOCK (SCREW TYPE) WITH SLIDING LINK, FOR CT CIRCUIT WITH SHORTENING ARRANGEMENT
	NORMALLY CLOSED CONTACT	X	TERMINAL BLOCK
	NORMALLY OPEN CONTACT		
	CHANGE OVER CONTACT		
	MINIATURE CIRCUIT BREAKER		
	INDICATING BULB/LED/CUBICLE LIGHT		
	220V SOCKET		
	SPACE HEATER		
	DIODE		
	COIL		

1 2 3 4 5 6 7 8

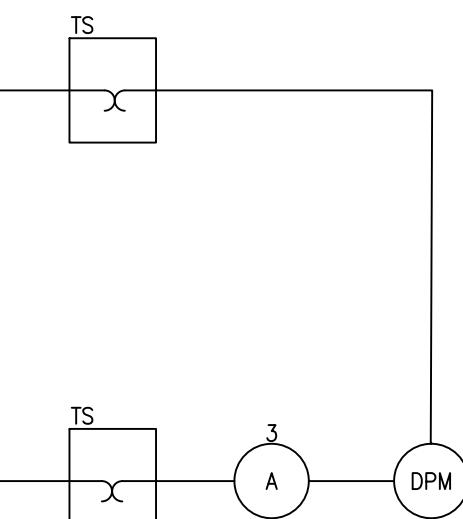
SWITCH YARD



RP4



CP51



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

NOTE:

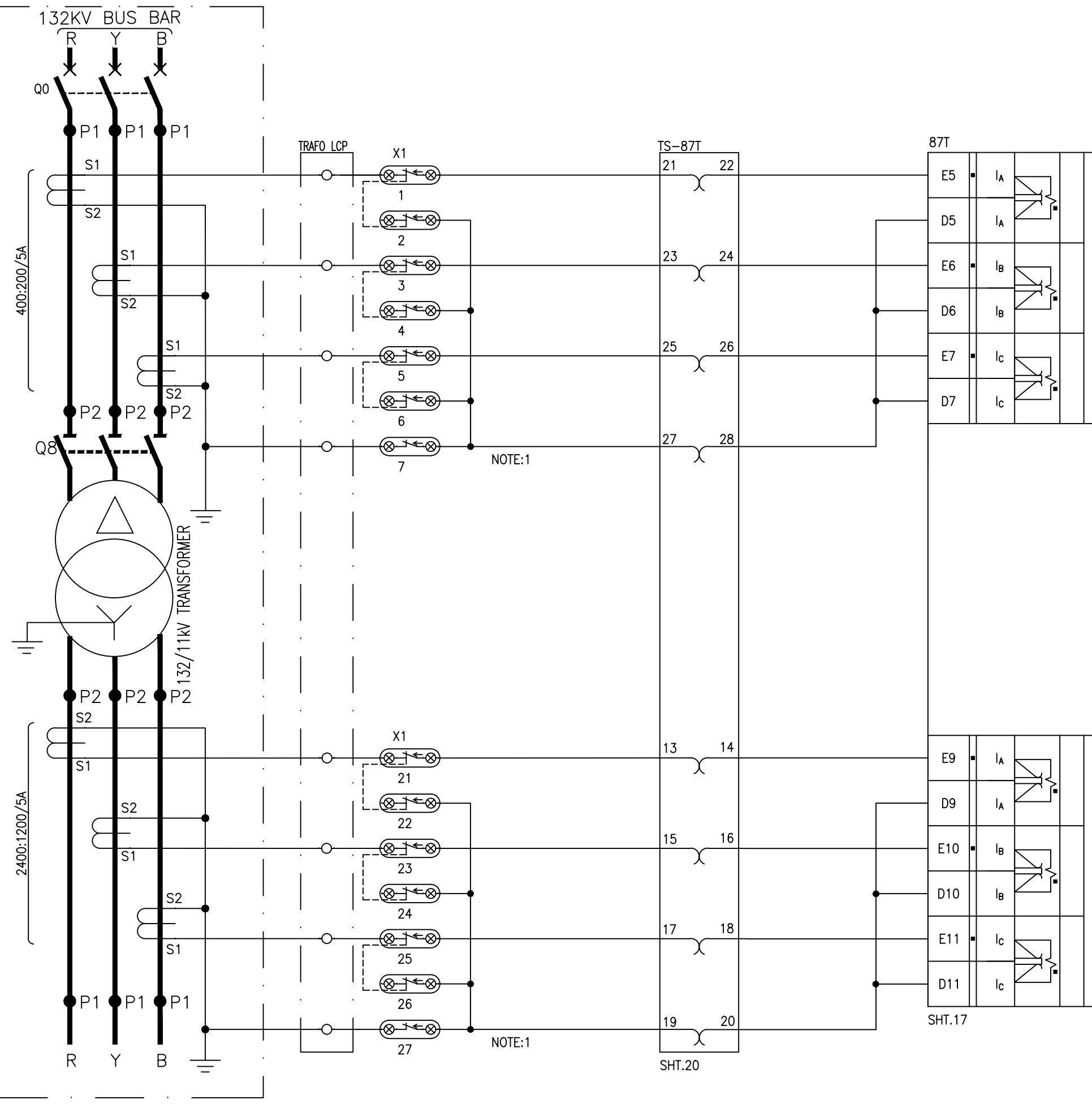
APPROVED	CHECKED	DRAWN	PROJECT: DESCON PO#45000100989 DATED 06.03.2018 PROCUREMENT OF 132kV RELAY, CONTROL PANELS	TITLE: SINGLE LINE DIAGRAM 132/11kV TRANSFORMER PROTECTION PANEL TYPE RP4	DWG# EPE/ENU-18/P1433	SHT: 04 OF 20
NAH	RAA	MUR			EPESOL Pvt. Ltd. 71-B Garden Block, New Garden Town, Lahore, Pakistan	DATE:15.02.2019 AS BUILT REV: 0



EPESOL Pvt. Ltd.
71-B Garden Block, New Garden Town, Lahore, Pakistan

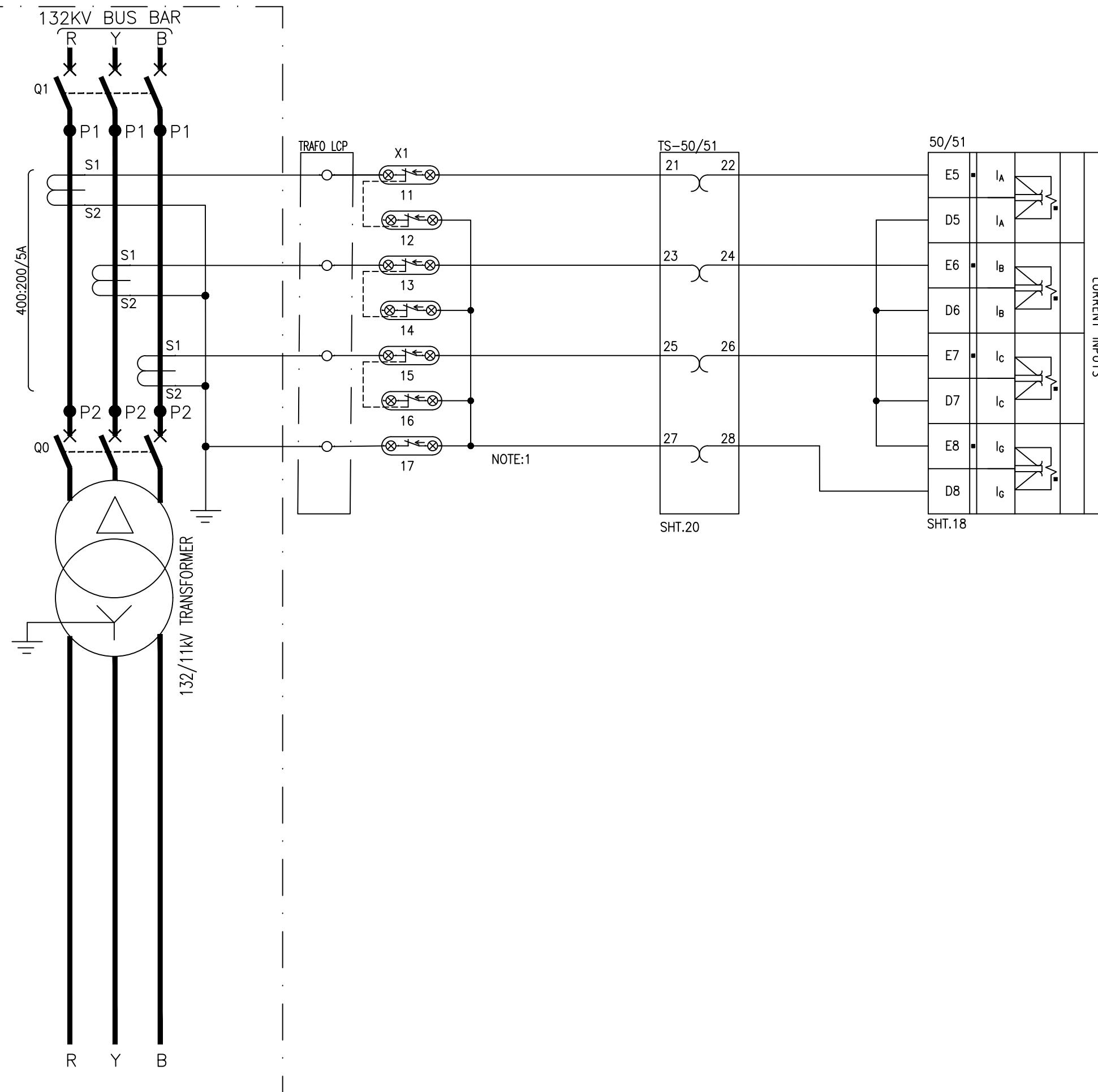
NOTE:

1. ALL CT WIRING SHALL BE OF 4mm² SIZE.
2. THE SWITCH YARD PART IS INCLUDED FOR CONCEPTUAL UNDERSTANDING OF AC SCHEME ONLY.



LEGEND

DES:	DESCRIPTION	TYPE	MAKE
TS-87T	TEST BLOCK	saTECH	ARTECHE
87T	TRANSFORMER DIFFERENTIAL RELAY	345	GE

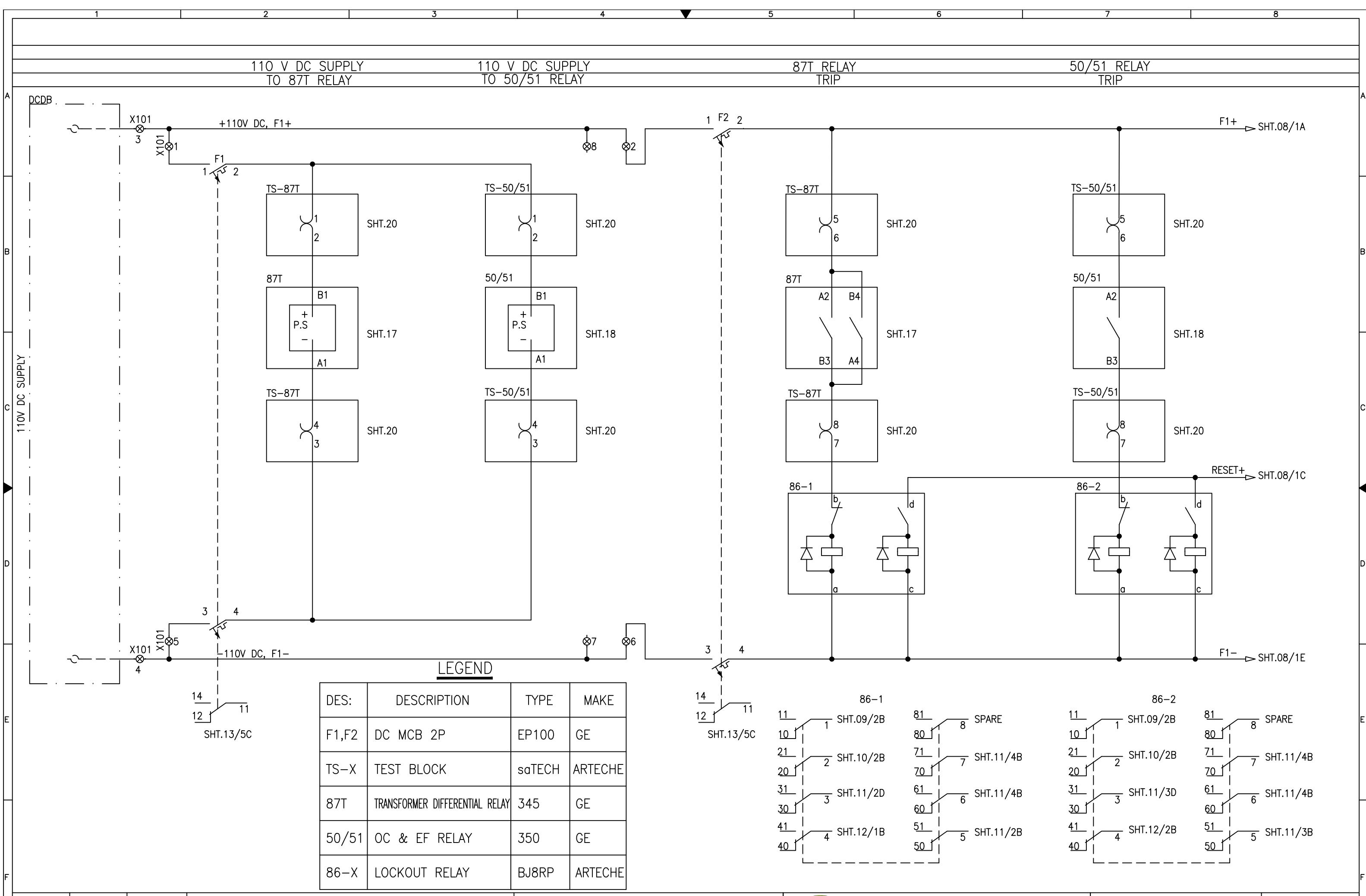


NOTE:

- ALL CT WIRING SHALL BE OF 4mm^2 SIZE.
- THE SWITCH YARD PART IS INCLUDED FOR CONCEPTUAL UNDERSTANDING OF AC SCHEME ONLY.

LEGEND

DES:	DESCRIPTION	TYPE	MAKE
TS-50/51	TEST BLOCK	saTECH	ARTECHE
50/51	OC & EF RELAY	350	GE



APPROVED	CHECKED	DRAWN	PROJECT: DESCON PO#45000100989 DATED 06.03.2018 PROCUREMENT OF 132kV RELAY, CONTROL PANELS	TITLE: LOCKOUT RELAY INITIATION 132/11KV TRANSFORMER PROTECTION PANEL TYPE RP4	 EPESOL Pvt. Ltd. 71-B Garden Block, New Garden Town, Lahore, Pakistan	DWG# EPE/ENU-18/P1433	SHT: 07 OF 20	
NAH	RAA	MUR				DATE:15.02.2019	AS BUILT	REV: 0

1 2 3 4 ▼ 5 6 7 8

TRANSFORMER MECHANICAL PROTECTION

MAIN BUCHHOLZ
TRIP

TAP CHANGER BUCHHOLZ
TRIP

OIL TEMP.
TRIP

WINDING TEMP.
TRIP

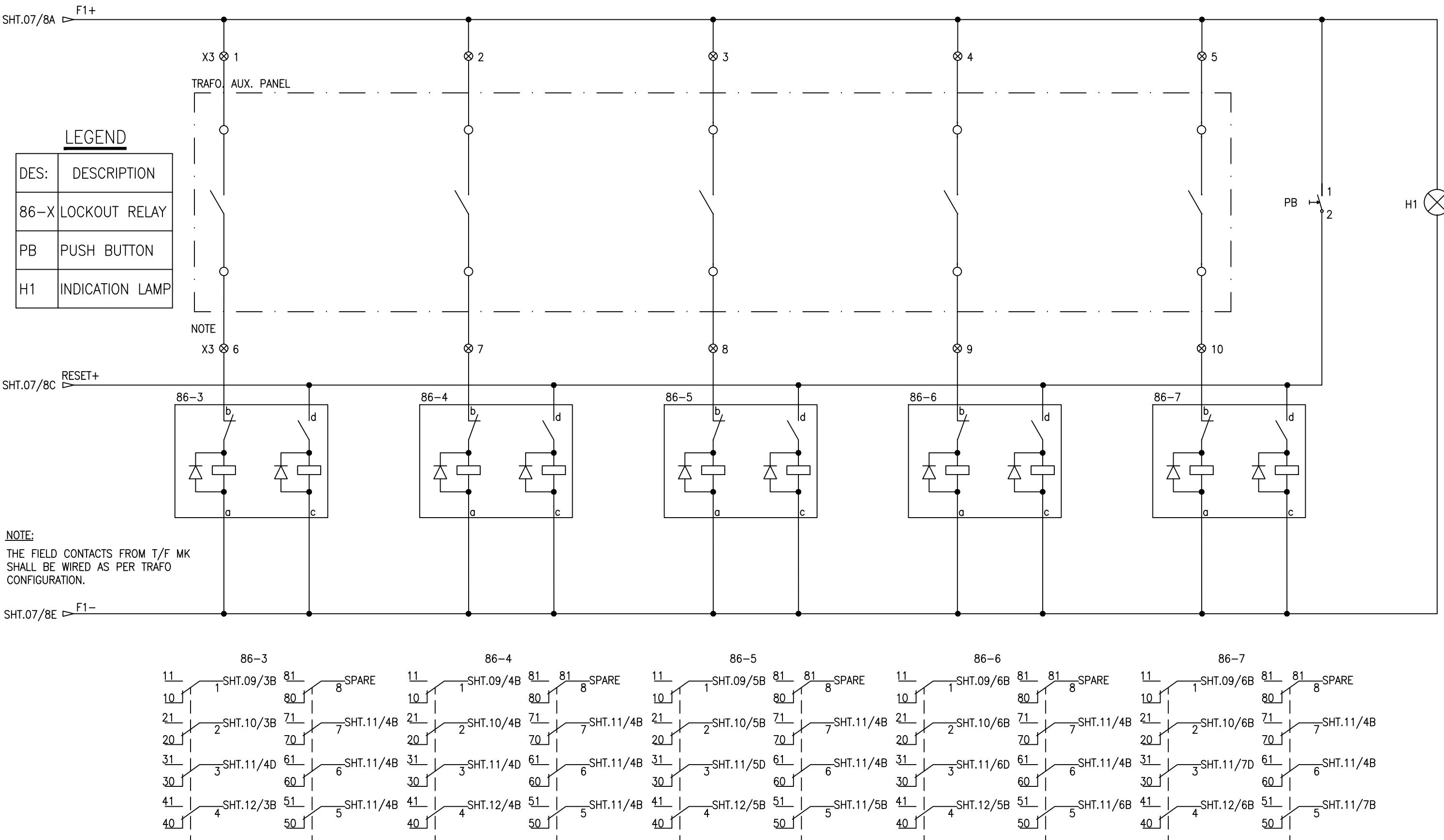
PRESSURE RELIEF
DEVICE TRIP

PUSH BUTTON
FOR LOCKOUT

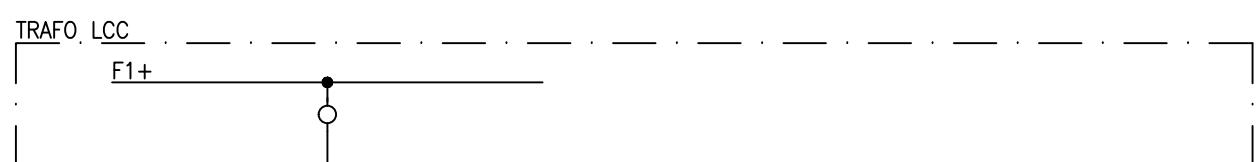
INDICATION
LAMP

RELAY RESET

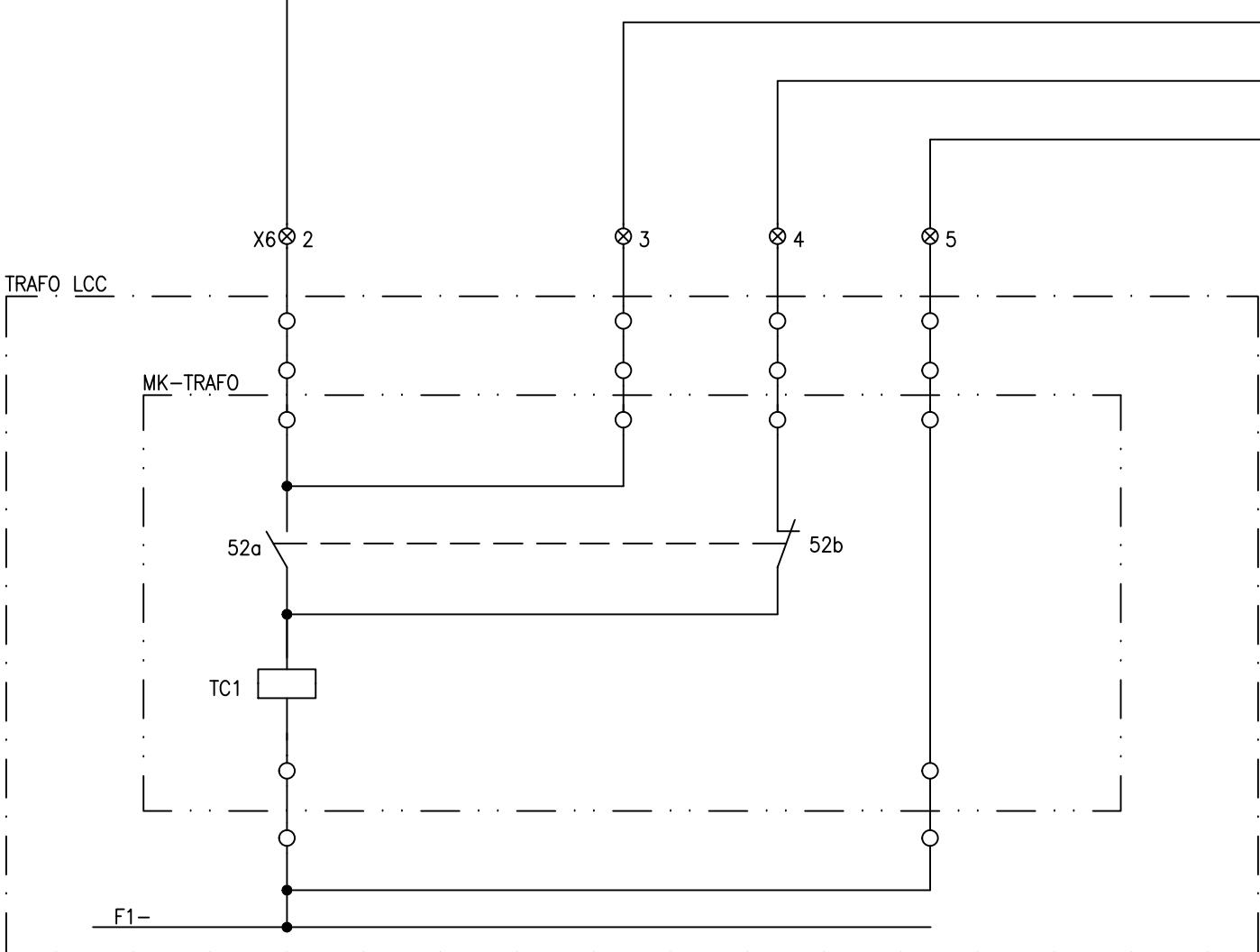
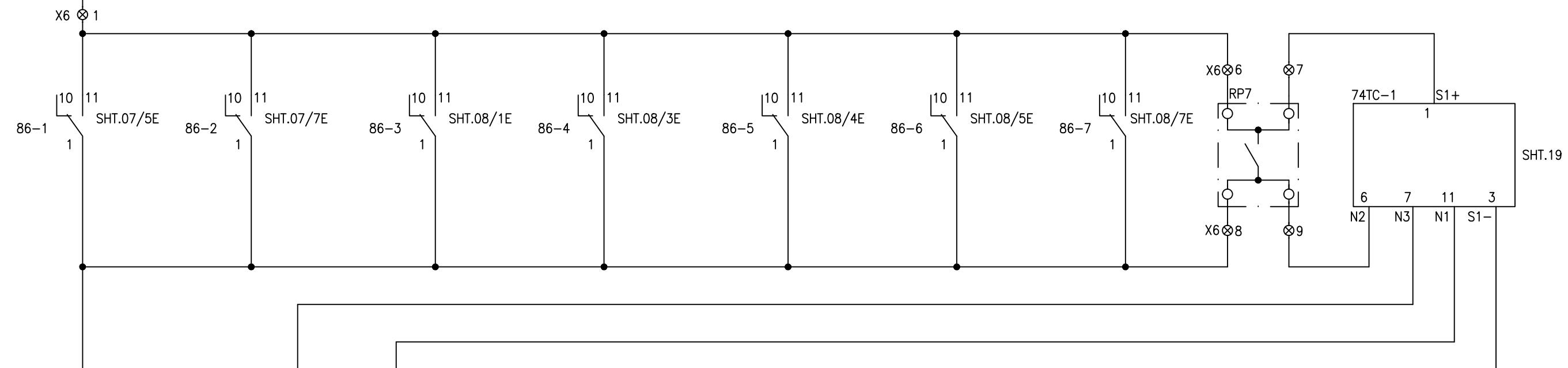
FOR DC HEALTHY



87T RELAY TRIP	50/51 RELAY TRIP	T/F MAIN BUCHHOLZ TRIP	T/F TAP CHANGER BUCHHOLZ TRIP	T/F OIL TEMP. TRIP	T/F WINDING TEMP. TRIP	T/F PRESSURE RELIEF DEVICE TRIP	BB/BF	TRIP CIRCUIT-1 SUPERVISION RELAY
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NOTE:

CONTROL PANEL & MK CONNECTIONS ARE SHOWN FOR THE CONCEPTUAL UNDERSTANDING OF THE TRIP CIRCUIT SUPERVISION SCHEME.

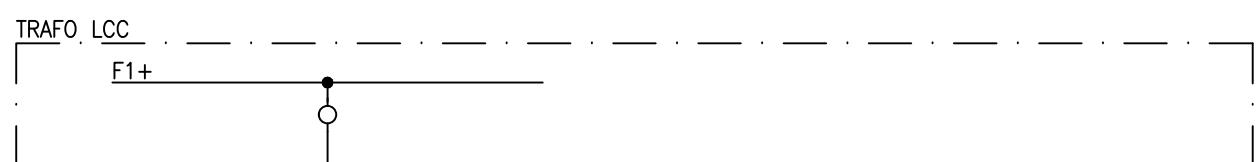


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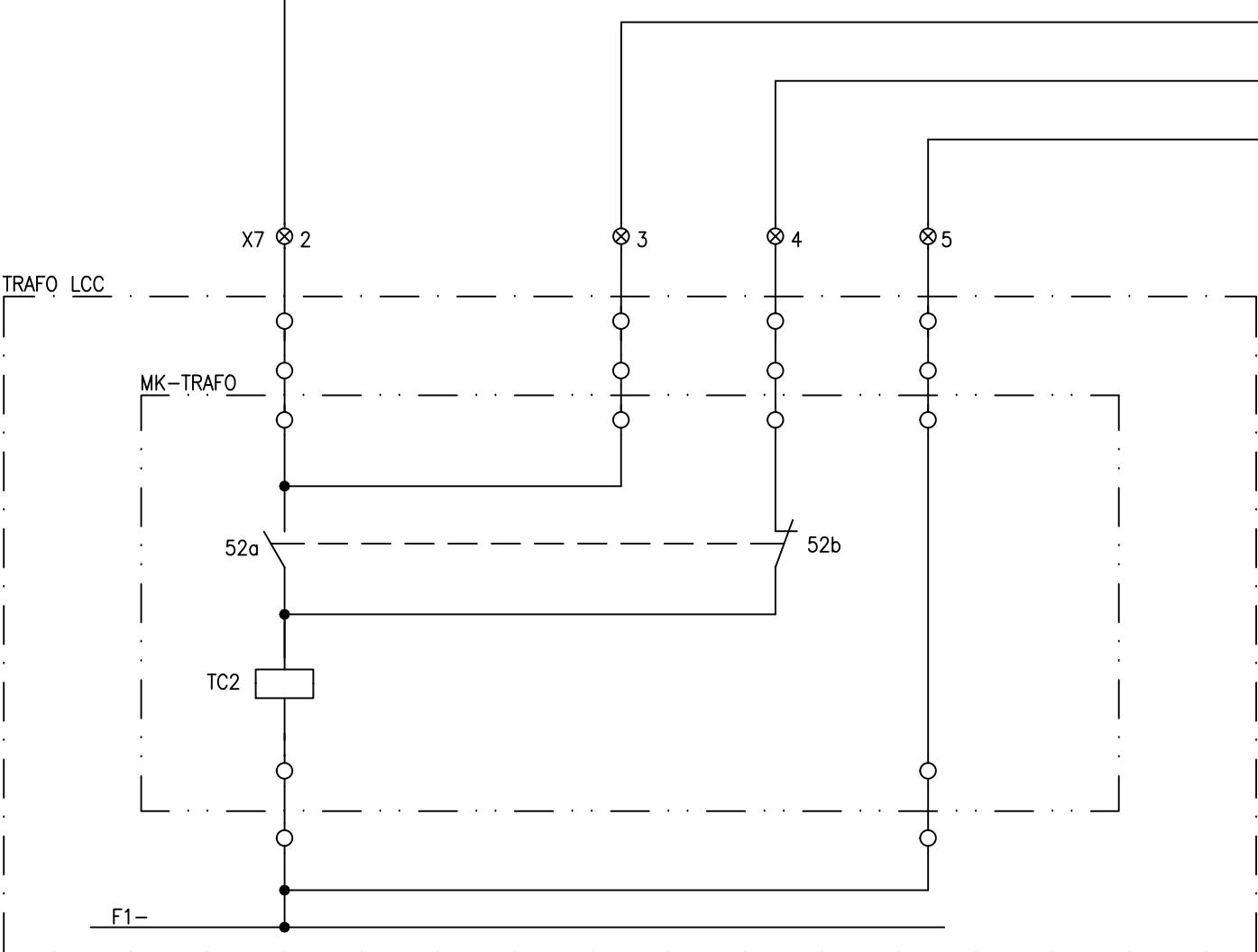
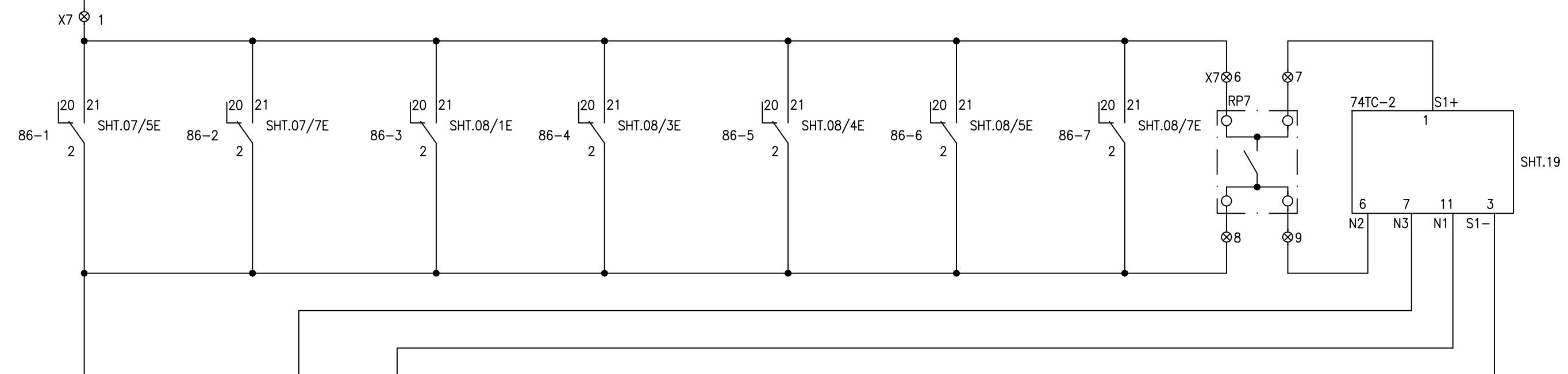
LEGEND

DES:	DESCRIPTION	TYPE	MAKE
86-X	LOCKOUT RELAY	BJ8RP	ARTECHE
74TC-1	TRIP CIRCUIT SUPERVISION RELAY	TS101	ELABS

87T RELAY TRIP	50/51 RELAY TRIP	T/F MAIN BUCHHOLZ TRIP	T/F TAP CHANGER BUCHHOLZ TRIP	T/F OIL TEMP. TRIP	T/F WINDING TEMP. TRIP	T/F PRESSURE RELIEF DEVICE TRIP	BB/BF	TRIP CIRCUIT-2 SUPERVISION RELAY
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NOTE:

CONTROL PANEL & MK CONNECTIONS ARE SHOWN FOR THE CONCEPTUAL UNDERSTANDING OF THE TRIP CIRCUIT SUPERVISION SCHEME.



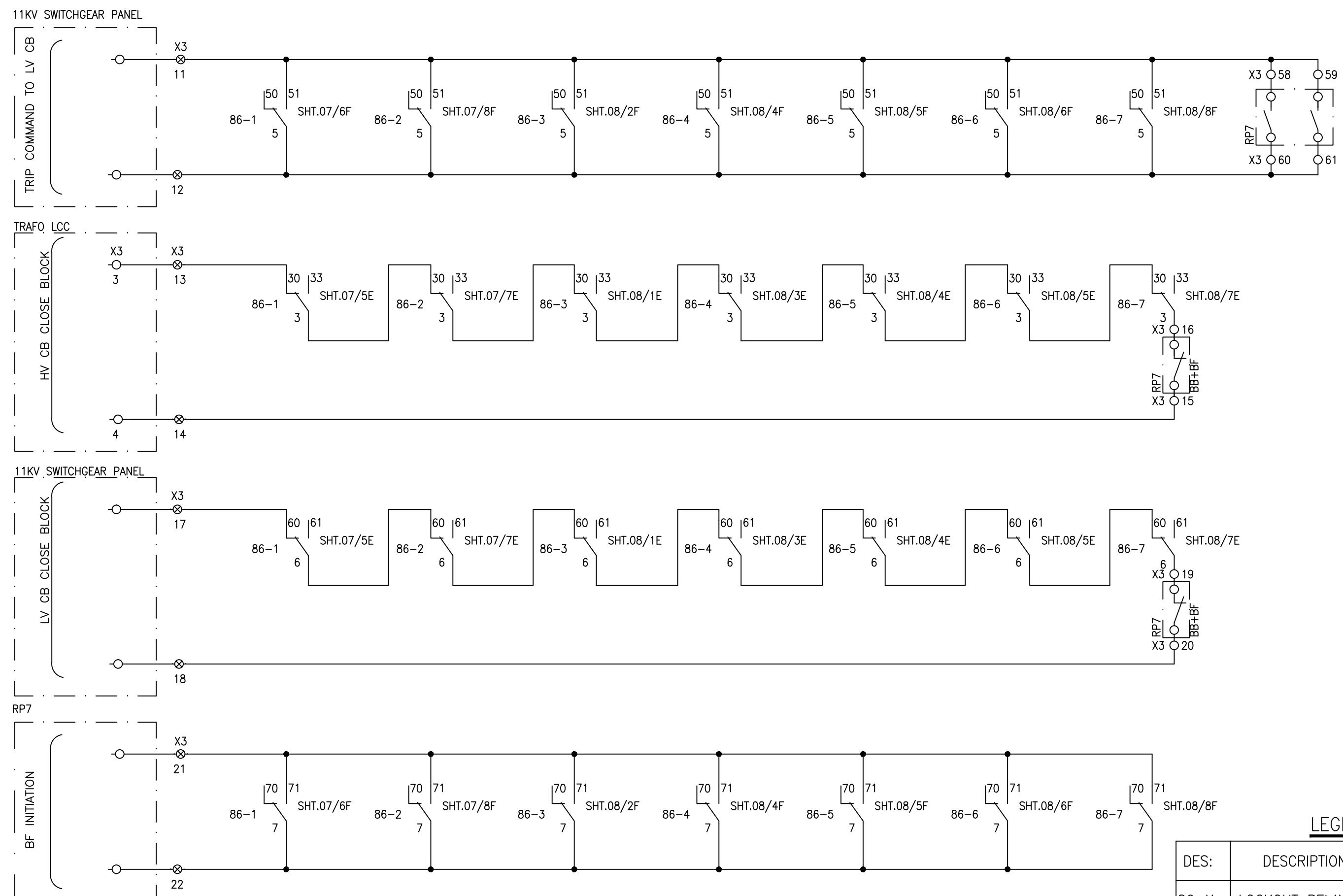
NOTE:

LEGEND

DES:	DESCRIPTION	TYPE	MAKE
86-X	LOCKOUT RELAY	BJ8RP	ARTECHE
74TC-2	TRIP CIRCUIT SUPERVISION RELAY	TS101	ELABS

1 2 3 4 ▼ 5 6 7 8

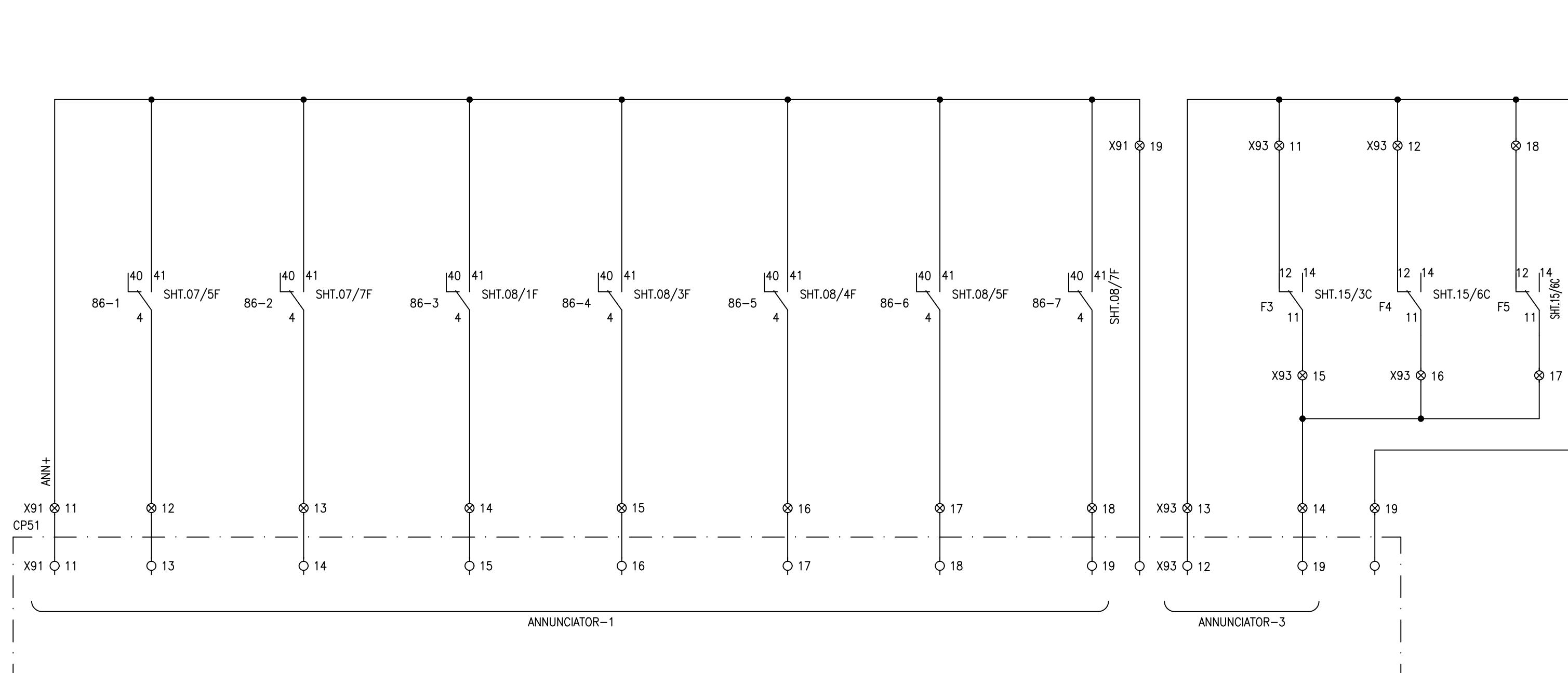
87T RELAY TRIP	50/51 RELAY TRIP	T/F MAIN BUCHHOLZ TRIP	T/F TAP CHANGER BUCHHOLZ TRIP	T/F OIL TEMP. TRIP	T/F WINDING TEMP. TRIP	T/F PRESSURE RELIEF DEVICE TRIP	BUS BF BAR TRIP TRIP
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LEGEND

DES:	DESCRIPTION	TYPE	MAKE
86-X	LOCKOUT RELAY	BJ8RP	ARTECHE

APPROVED	CHECKED	DRAWN	PROJECT:  DESCON PO#45000100989 DATED 06.03.2018 PROCUREMENT OF 132kV RELAY, CONTROL PANELS	TITLE: HV CB CLOSE BLOCK, LV CB TRIP 132/11kV TRANSFORMER PROTECTION PANEL TYPE RP4	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/P1433	SHT: 11 OF 20
NAH	RAA	MUR				DATE:15.02.2019	AS BUILT

87T RELAY TRIP	50/51 RELAY TRIP	T/F MAIN BUCHHOLZ TRIP	T/F TAP CHANGER BUCHHOLZ TRIP	T/F OIL TEMP. TRIP	T/F WINDING TEMP. TRIP	T/F PRESSURE RELIEF DEVICE TRIP	AC SUPPLY FAIL
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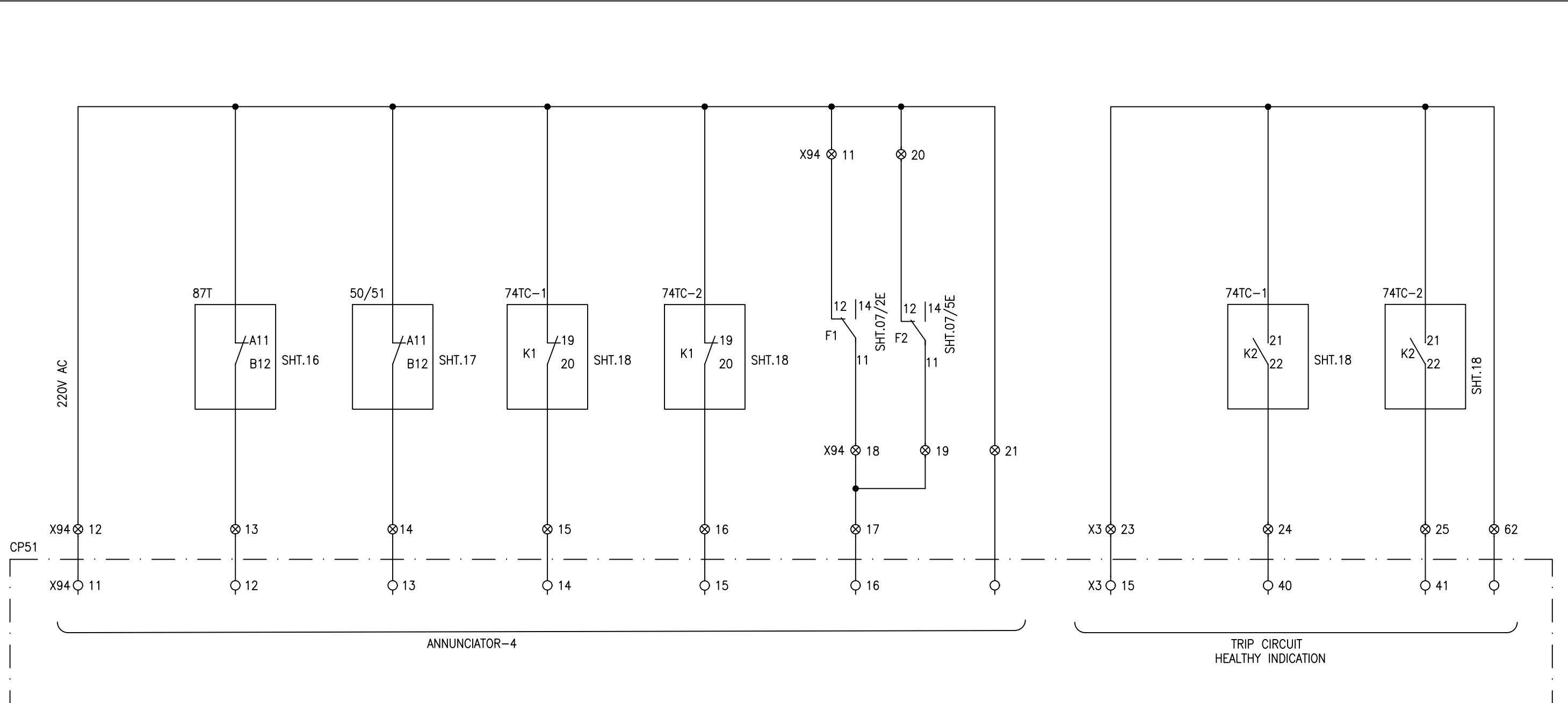
LEGEND

DES:	DESCRIPTION	TYPE	MAKE
86-X	LOCKOUT RELAY	BJ8RP	ARTECHE
F3, F4	AC MCB 2P	G60	GE



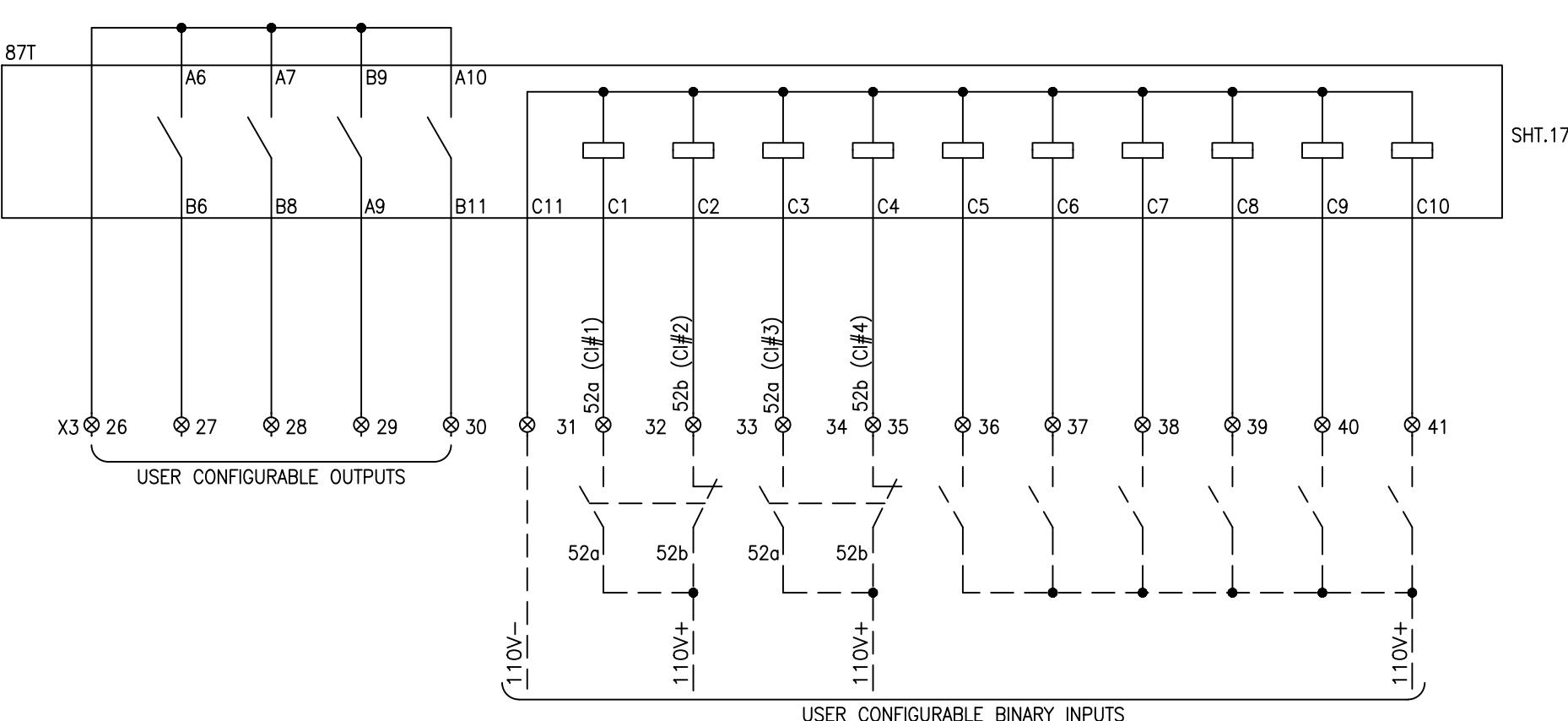
E P E S O L *Pvt. Ltd.*
71-B Garden Block, New Garden Town, Lahore, Pakistan

87T RELAY FAULTY	50/51 RELAY FAULTY	TRIP CIRCUIT-1 FAULTY	TRIP CIRCUIT-2 FAULTY	CONTROL RELAY DC SUPPLY FAULTY	RELAY DC SUPPLY FAULTY	TRIP CIRCUIT-1 HEALTHY	TRIP CIRCUIT-2 HEALTHY
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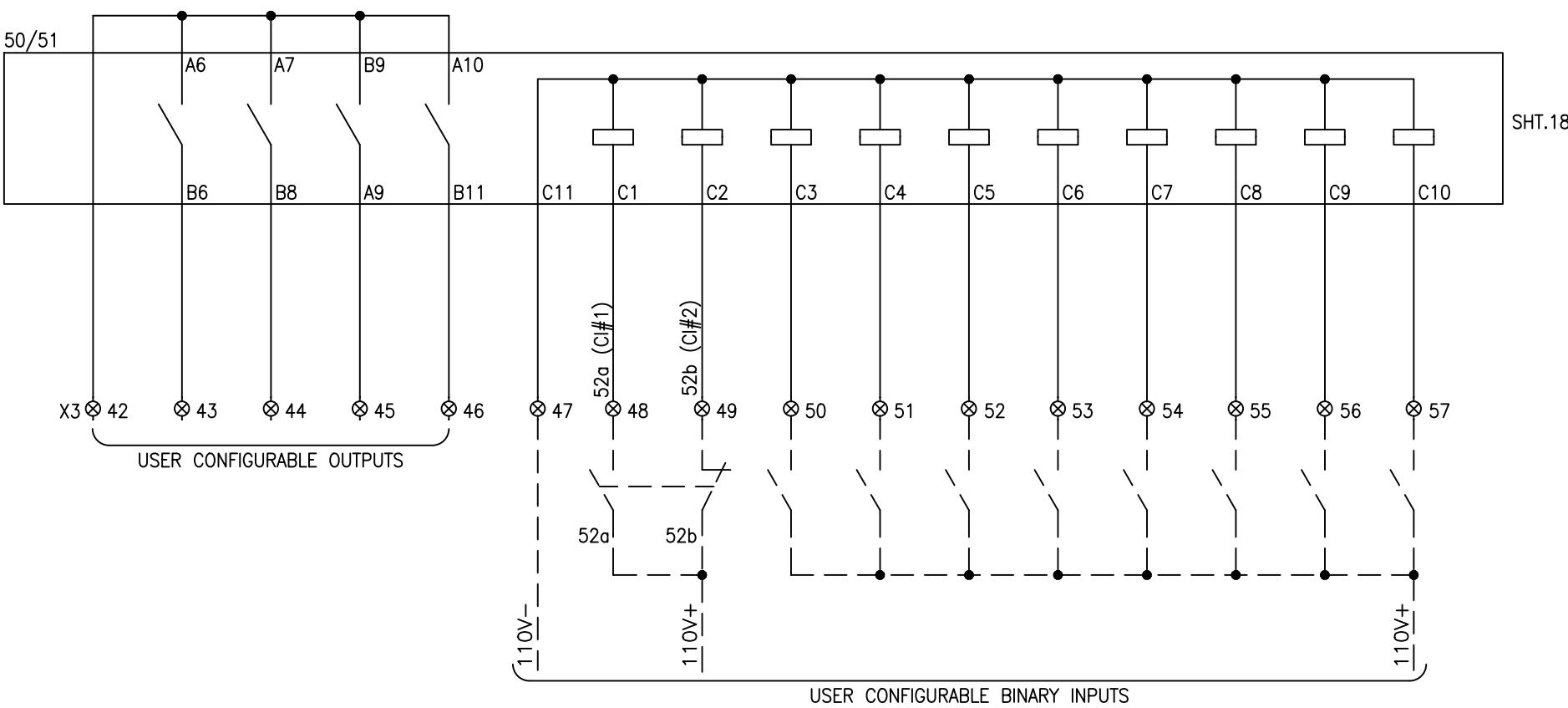
LEGEND

DES:	DESCRIPTION	TYPE	MAKE
74TC-X	TRIP CIRCUIT SUPERV. RELAY	TS101	ELABS
87T	TRANSFORMER DIFFERENTIAL RELAY	345	GE
50/51	OC & EF RELAY	350	GE
F1,F2	DC MCB 2P	EP100	GE

**87T RELAY SPARE BINARY INPUTS & OUTPUTS
USER CONFIGURABLE**



**50/51 RELAY SPARE BINARY INPUTS & OUTPUTS
USER CONFIGURABLE**

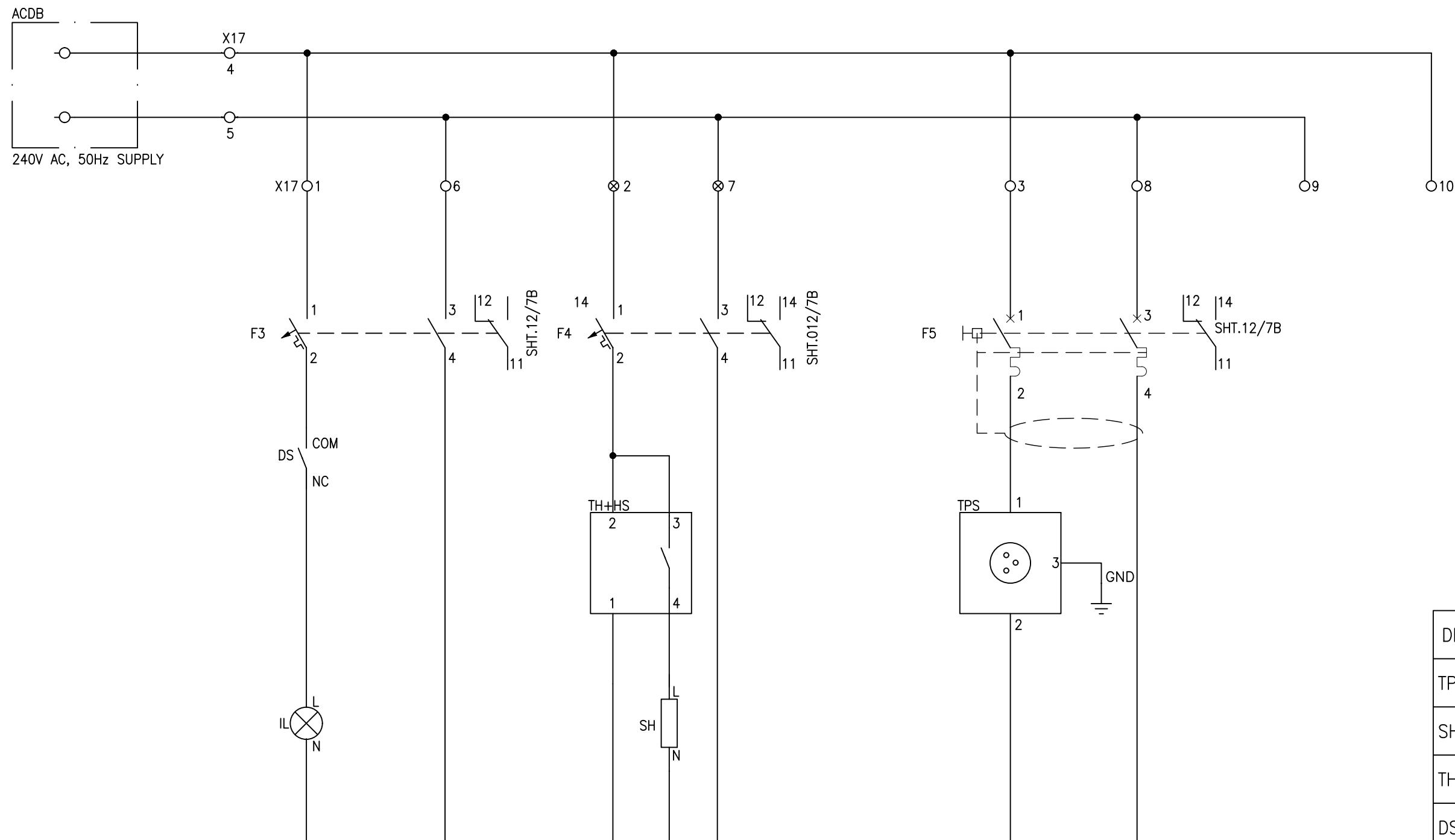


LEGEND

DES:	DESCRIPTION	TYPE	MAKE
87T	TRANSFORMER DIFFERENTIAL RELAY	345	GE
50/51	OC & EF RELAY	350	GE

DOOR SWITCH &
CUBICLE LIGHTSPACE HEATER
THERMOSTAT

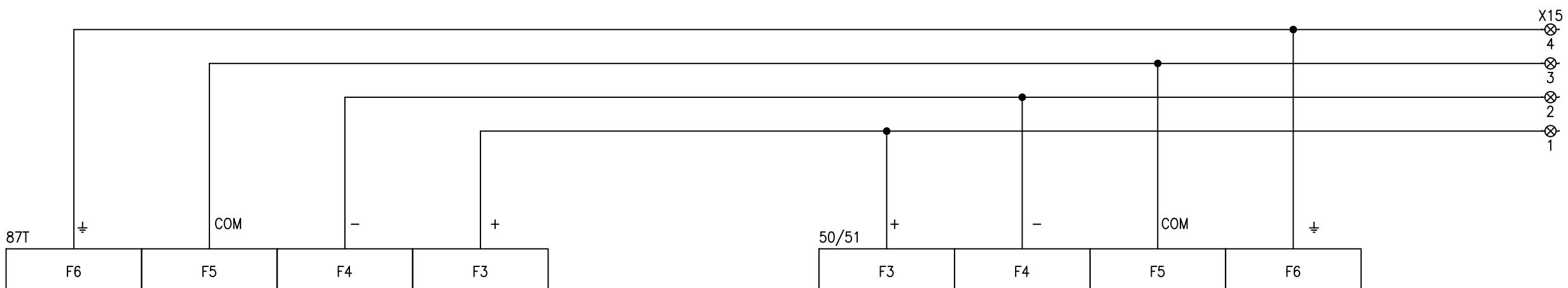
AC SUPPLY DISTRIBUTION

THREE
PIN SOCKETLEGEND

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
F3,F4	AC MCB, 2P, 10A	G60	GE
IL	ILLUMINATION LIGHT	YST8	YONGSUNG
F5	ELCB	DM100	GE

87T RS485

50/51 RS485

LEGEND

DES:	DESCRIPTION	TYPE	MAKE
50/51	O/C & E/F RELAY	350	GE
87T	TRAFO. DIFF. RELAY	345	GE

APPROVED	CHECKED	DRAWN	PROJECT:  DESCN PO#45000100989 DATED 06.03.2018 PROCUREMENT OF 132kV RELAY, CONTROL PANELS	TITLE: RS485 COMMUNICATION 132/11kV TRANSFORMER PROTECTION PANEL TYPE RP4	DWG# EPE/ENU-18/P1433 71-B Garden Block, New Garden Town, Lahore, Pakistan	SHT: 16 OF 20 DATE:15.02.2019 AS BUILT REV: 0
NAH	RAA	MUR				

SPARE
DIGITAL INPUTS SHT.14

HV SIDE CT INPUTS SHT.05							
SPARE							
E5	D5	E6	D6	E7	D7	E8	D8
I _a	I _a	I _b	I _b	I _c	I _c	I _b	I _b
C1	52a (C1#1)						
C2	52b (C1#2)						
C3	52a (C1#3)						
C4	52b (C1#4)						
C5	INPUT 5						
C6	INPUT 6						
C7	INPUT 7						
C8	INPUT 8						
C9	INPUT 9						
C10	INPUT 10						
C11	COMMON						
C12	CHASSIS GND						

DIGITAL INPUTS

LV SIDE CT INPUTS SHT.05							
SPARE							
E9	D9	E10	D10	E11	D11	E12	D12
I _a	I _a	I _b	I _b	I _c	I _c	I _b	I _b

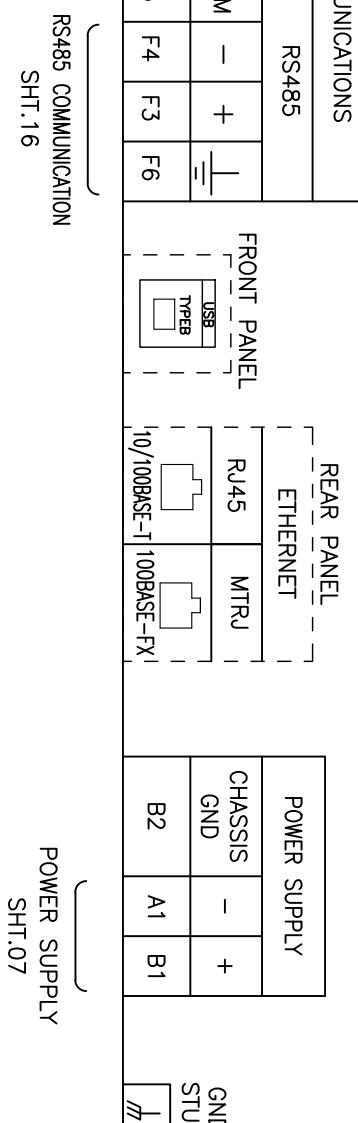
CURRENT INPUTS

87T RELAY TRIP SHT.07							
87T RELAY TRIP SHT.07							
1	TRIP	A2	B3	A3	B4	A4	B5
2	TRIP						
3	AUXILIARY	A5	B6	A6	B7	A7	B8
4	AUXILIARY						
5	AUXILIARY	A9	B8	A8	B9	A9	B10
6	AUXILIARY						
7	Critical Failure Relay	A11	B12	A12	B11	A10	B11

87T RELAY FAULTY SHT.13
SHT.14
SPARE DIGITAL OUTPUTS

OUTPUT RELAYS							
87T RELAY FAULTY SHT.13							
1	TRIP	A2	B3	A3	B4	A4	B5
2	TRIP						
3	AUXILIARY	A5	B6	A6	B7	A7	B8
4	AUXILIARY						
5	AUXILIARY	A9	B8	A8	B9	A9	B10
6	AUXILIARY						
7	Critical Failure Relay	A11	B12	A12	B11	A10	B11

87T

TRANSFORMER DIFFERENTIAL PROTECTION RELAY TYPE 345
345-E-P5-G5-H-E-S-N-N-3E-D-NPROJECT:
DESCON PO#45000100989
DATED 06.03.2018
PROCUREMENT OF 132KV RELAY, CONTROL PANELS
TITLE: 87T RELAY TYPE 345 DETAILS
132/11KV TRANSFORMER PROTECTION PANEL TYPE RP4E P E S O L P v t . L t d .
71-B Garden Block, New Garden Town, Lahore, PakistanDWG# EPE/ENU-18/P1433
SHT: 17 OF 20
DATE:15.02.2019 AS BUILT
REV: 0

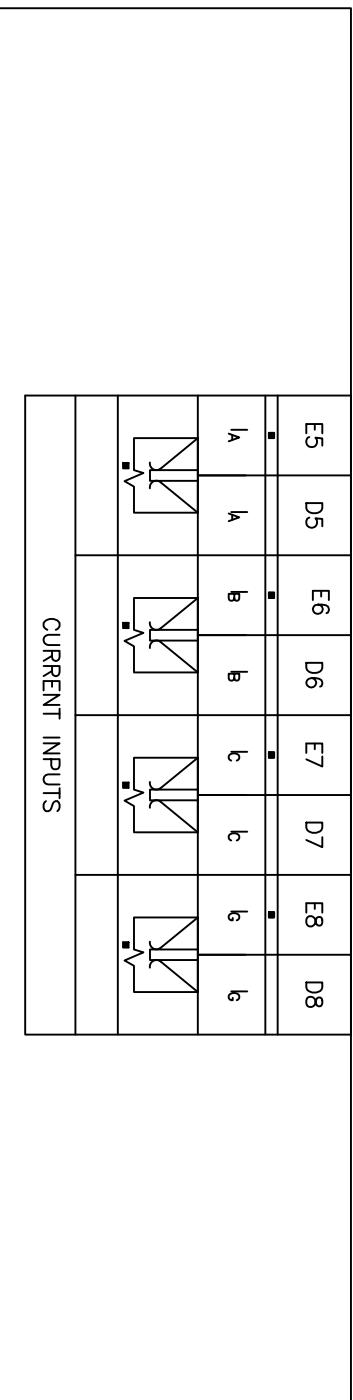
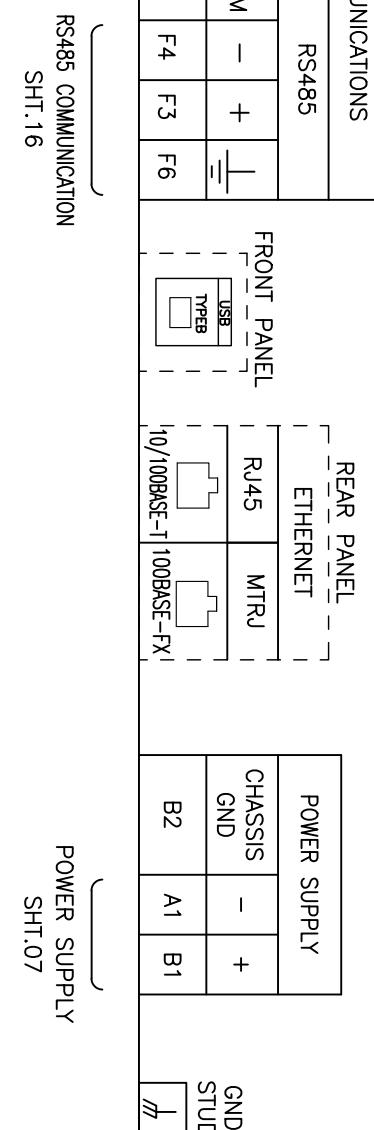
SPARE
DIGITAL INPUTS SHT.14

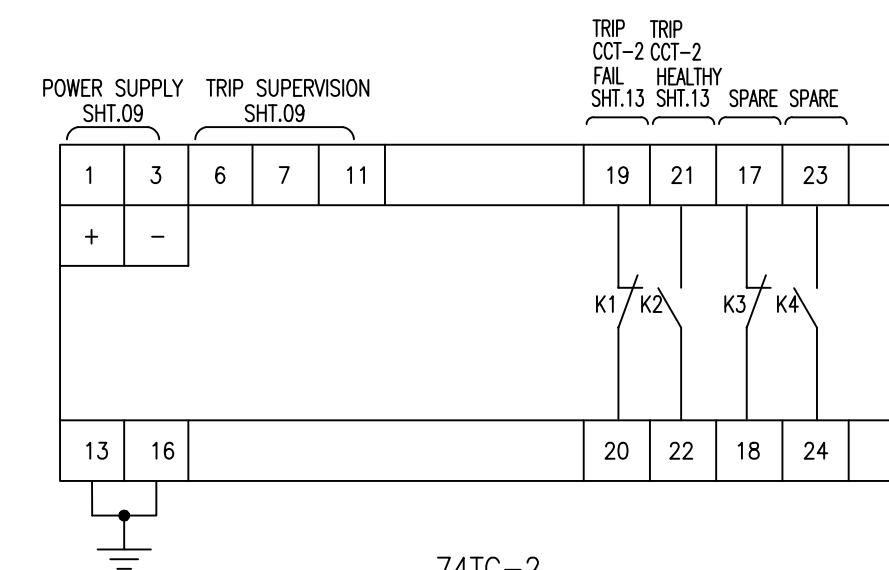
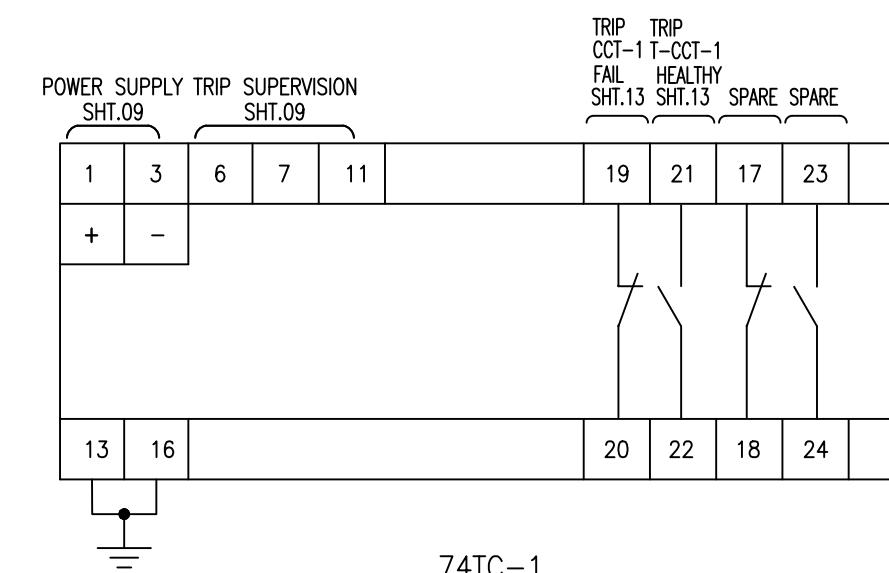
DIGITAL INPUTS							
C1	52a (C1#1)						
C2	52b (C1#2)						
C3	INPUT 3						
C4	INPUT 4						
C5	INPUT 5						
C6	INPUT 6						
C7	INPUT 7						
C8	INPUT 8						
C9	INPUT 9						
C10	INPUT 10						
C11	COMMON						
C12	CHASSIS GND						

GE 350
FEEDER PROTECTION SYSTEM

OUTPUT RELAYS	
1 TRIP	A2 B3
2 CLOSE	B4 B5
3 AUXILIARY	A5 B6
4 AUXILIARY	B7 A6
5 AUXILIARY	B8 A7
6 AUXILIARY	B9 A8
7 CRITICAL FAILURE RELAY	B10 A9
	B11 A10
	A11 B12
	B12 A12

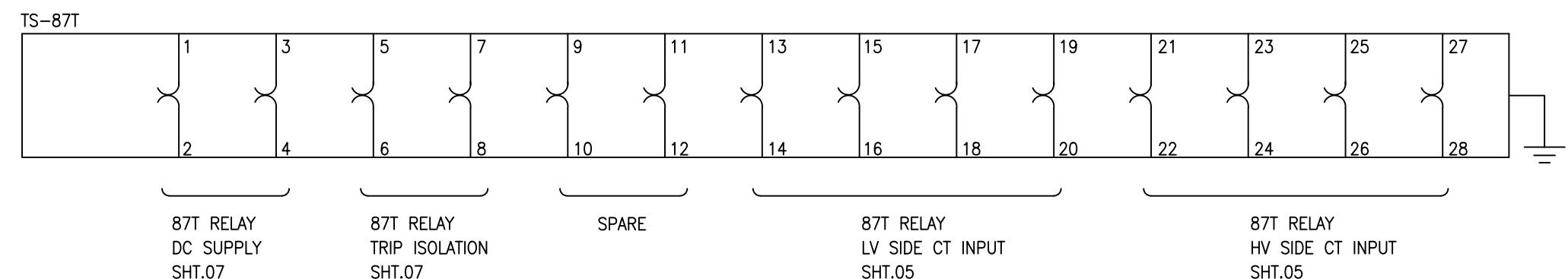
50/51 RELAY TRIP
50/51 RELAY FAULTY
50/51 SPARE DIGITAL OUTPUTS
SPARE DIGITAL OUTPUTS SHT.14
SPARE DIGITAL OUTPUTS SHT.13

OVER CURRENT & EARTH FAULT PROTECTION RELAY TYPE 350
350-E-P5-G5-H-E-E-N-N-3E-D-NRS485 COMMUNICATION
SHT.16POWER SUPPLY
SHT.07PROJECT:
DESCON PO#45000100989
DATED 06.03.2018
PROCUREMENT OF 132kV RELAY, CONTROL PANELS
TITLE:
50/51 RELAY TYPE 350 DETAILS
132/11kV TRANSFORMER PROTECTION PANEL TYPE RP4EPESOL Pvt. Ltd.
71-B Garden Block, New Garden Town, Lahore, PakistanDWG# EPE/ENU-18/P1433
DATE:15.02.2019 AS BUILT
SHT: 18 OF 20
REV: 0

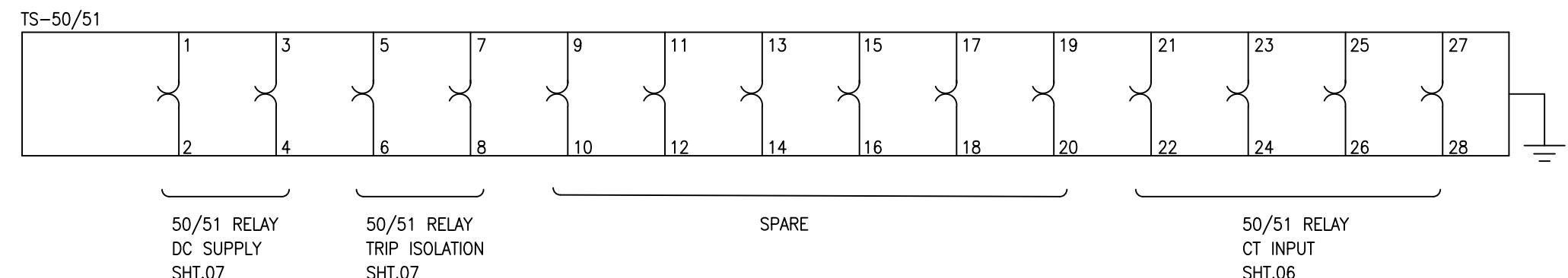


APPROVED	CHECKED	DRAWN	PROJECT:  DESCN PO#45000100989 DATED 06.03.2018 PROCUREMENT OF 132KV RELAY, CONTROL PANELS	TITLE:TRIP CIRCUIT SUPERVISION RELAY TYPE TS101 DETAILS 132/11KV TRANSFORMER PROTECTION PANEL TYPE RRP4	E P E S O L P v t . L t d. 71-B Garden Block, New Garden Town, Lahore, Pakistan	DWG# EPE/ENU-18/P1433	SHT: 19 OF 20
NAH	RAA	MUR				DATE:15.02.2019	AS BUILT

TEST BLOCK TYPE TSB14-111111AAABAAAB

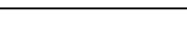


TS-50/51
TEST BLOCK TYPE TSB14-111111111AAAB



LEGEND

LEGEND			
DES.	DESCRIPTION	TYPE	MAKE
TS-X	TEST BLOCK	TSB14	ARTECHE

APPROVED	CHECKED	DRAWN	PROJECT:  DESCON PO#45000100989 DATED 06.03.2018 PROCUREMENT OF 132KV RELAY, CONTROL PANELS	TITLE: TEST BLOCK TYPE TSB14 DETAILS 132/11KV TRANSFORMER PROTECTION PANEL TYPE RP4	 EPESOL Pvt. Ltd 71-B Garden Block, New Garden Town, Lahore, Pakistan	DWG# EPE/ENU-18/P1433	SHT: 20 OF 20
NAH	RAA	MUR				DATE:15.02.2019	AS BUILT

LEGEND:



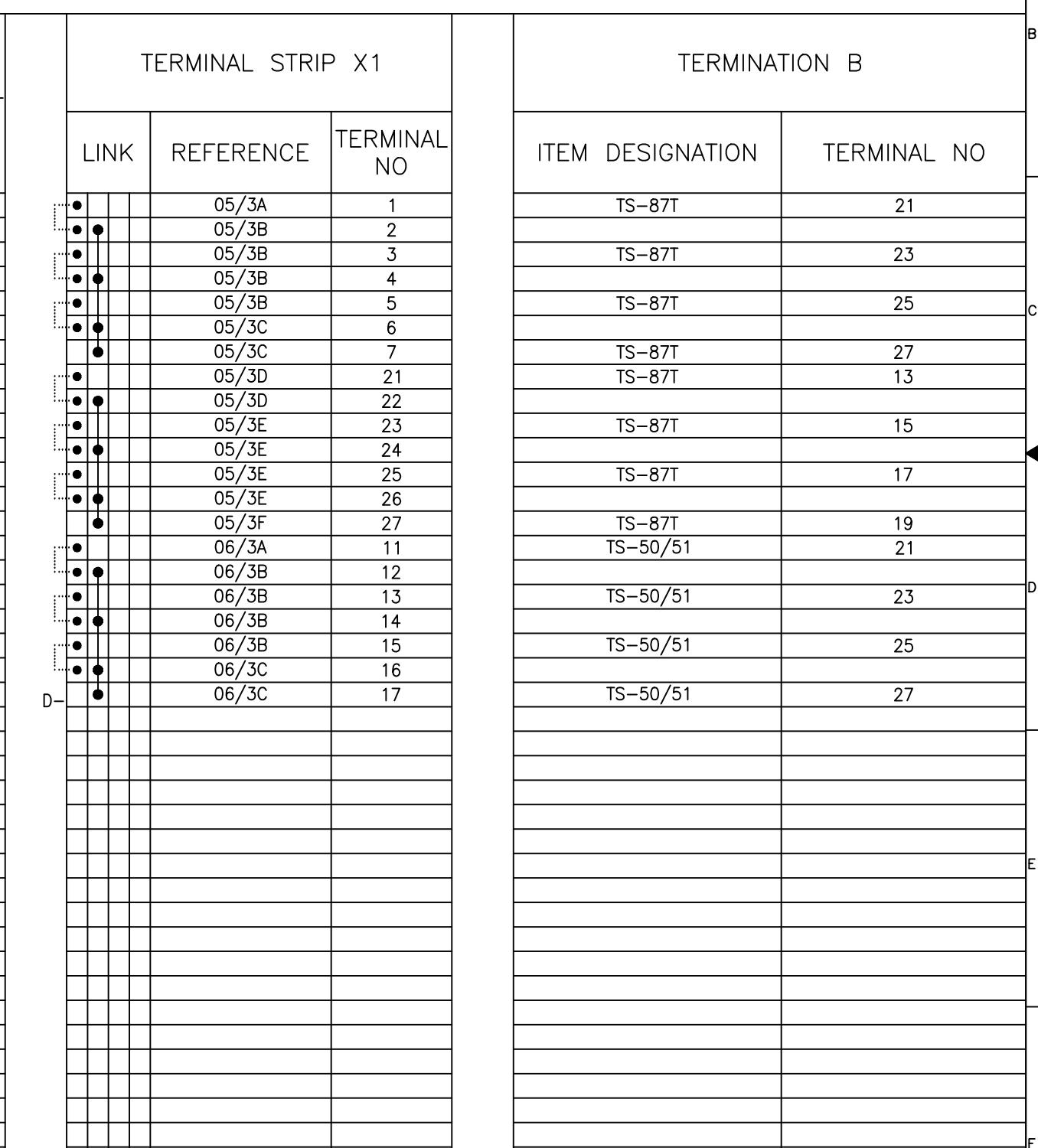
TEMPORARY SHORTENING LINK



PERMANENT LINK

D-

END COVER



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

DWO // EPE /ENH 10 /P143

SLT 21.05.10

DWG# EPE/ENU-18/P1434

SHI: 01 OF 12

DATE:15.02.2019 AS BULL T

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 132/11kV TRANSFORMER PROTECTION PANEL TYPE RP4

Sr.	CABLE DESIGNATION	CORE CROSS SECTION	DESTINATION					
A	1							
B	2							
C	3							
D	4							
E	5							
F	6							
G	7							
H	8							
I	9							
J	10							
K	11							
L	12							
M	1	2	3	4	5	6	7	8
N								
O								
P								
Q								
R								
S								
T								
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V								
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DD								
EE								
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JJ								
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OO								
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XX	</td							

	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



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

DWO // EDE /ENH 10 /D143

SUT 24.05.10

DWG# EPE/ENU-18/P1434

SHI: 04 OF 12

DATE:15.02.2019 AS BULL T

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
132/11KV TRANSFORMER PROTECTION PANEL TYPE RP4

LEGEND:



TEMPORARY SHORTENING LINK



PERMANENT LINE

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END COVER

TERMINAL STRIP X7

LINK	REFERENCE	TERMINA NO
------	-----------	---------------

	10/2B	1
	10/2D	2
	10/3D	3
	10/3D	4
	10/4D	5
●	10/7B	6
	10/7B	7
●	10/7C	8
	10/7C	9

TERMINATION B

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

ITEM DESIGNATION	TERMINAL NO
86-1	21A
86-1	2A
74TC-2	7
74TC-2	11
74TC-2	3
86-7	21A
74TC-2	1
86-7	2A
74TC-2	6

APPROVED	CHECKED	DRAWN
NAH	ABA	MSC

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

TITLE: TERMINAL DETAIL
S 132/11KV TRANSFORMER PROTECTION PANEL TYPE RP4



E P E S O L Pvt. Ltd
Z-8 Garden Block, New Garden Town, Lahore, Pakistan

	DWG# EPE/ENU-18/P1434	SHT: 05 OF 12
an	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

DWG# EPE/ENU-18/P1434	SHT: 07 OF 12
DATE:15.02.2019	AS BUILT



E P E S O L Pvt. Ltd.

DWG# EPF/FNU-18/P1434 SHT: 08 OF 12

DW# E/E/ENG 18/11/1954 S/N: 0001-12

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

L TITLE: TERMINAL DETAIL
LS 132/11kv TRANSFORMER PROTECTION PANEL TYPE RP4

LEGEND:



TEMPORARY SHORTENING LINK



PERMANENT LINK

END COVER



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

DWO # EPE/ENMU-18/P1434 SUT 22-05-18

DWG# EPE/ENU-18/P1434 SH1: 09 OF 12

DATE:15.02.2019 AS BUILT REV: 0

APPROVED	CHECKED	DRAWN	PROJECT:  DESCON PO#45000100989 DATED 06.03.2018 PROCUREMENT OF 132KV RELAY, CONTROL PANELS	TITLE: TERMINAL DETAIL 132/11kV TRANSFORMER PROTECTION PANEL TYPE RP4
NAH	ABA	MSC		



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

DWC // EBE /ENU 18 /D143

SUT: 10.0E_12

DWG# EPE/ENU-18/P145

SHI: 100F 12

DATE:15.02.2019 AS BUILT

REV: 0

LEGEND:



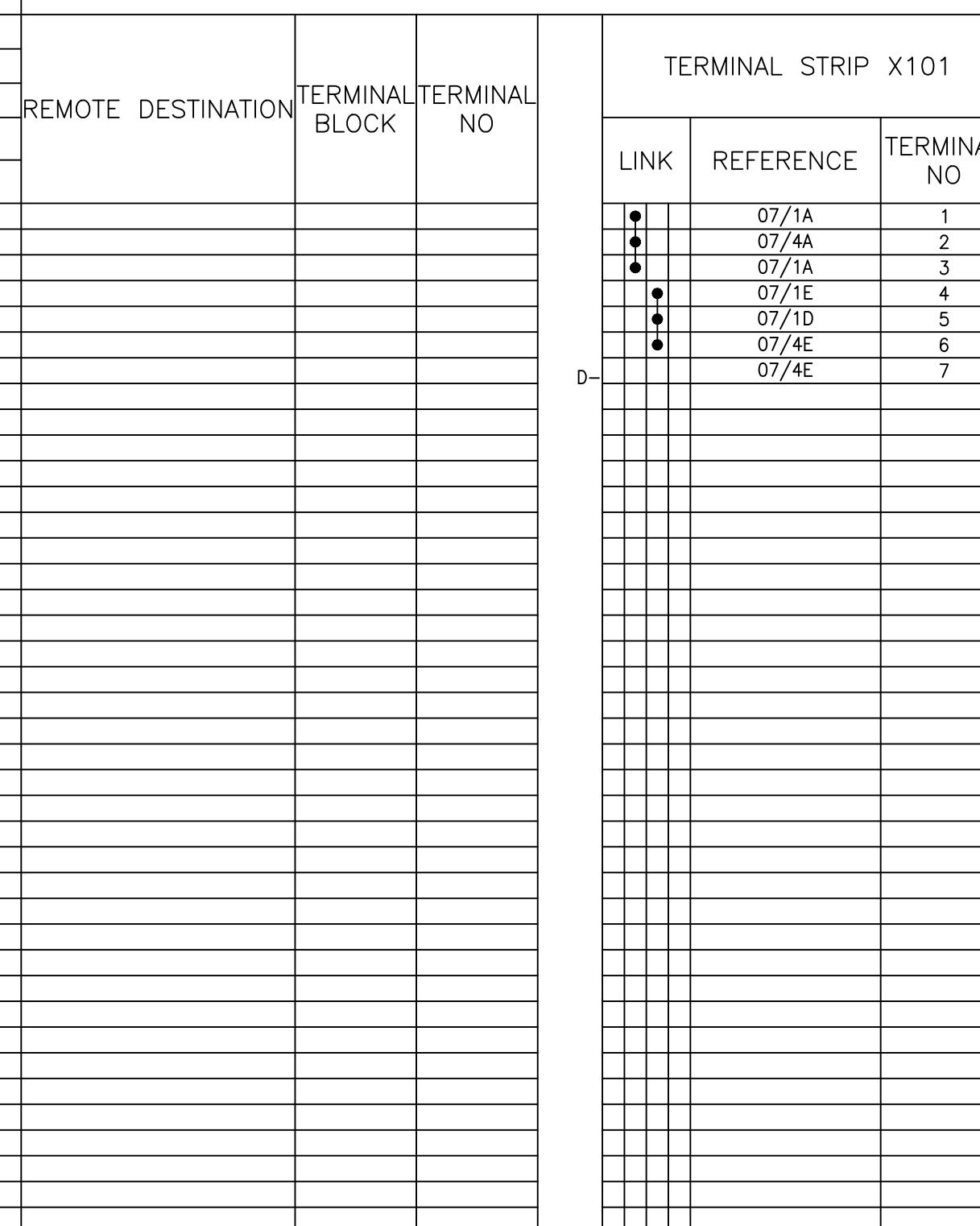
TEMPORARY SHORTENING LINK



PERMANENT LINK

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END COVER



TERMINATION B

APPROVED	CHECKED	DRAWN	P
NAH	ABA	MSC	

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

TITLE: TERMINAL DETAIL
ELS 132/11KV TRANSFORMER PROTECTION PANEL TYPE RP4



E P E S O L Pvt. Ltd.

DWG# EPE/ENU-18/P1434 SHT: 11 OF 12
DATE:15.02.2019 AS BUILT REV: 0

