

CONFIDERNCE GROUP FIRST(or SECOND) 113MW SUBSTATION
132/11kv TRANS. PROTECTION PANEL

VER	DATE
A	2017/11/20

CUSTOMER FOR	
STATION	
REFERENCE	
Confidence Group First(or Second) 113MW Subst	
© Schneider Electric Shanghai Power Automation Co.,Ltd	
No.833 Kangqiao Road, Pudong, Shanghai 201315, China.	
Cover	
--- 132/11kV Transformer Protection Panel	
RG	PCW-172018-MT01
SHEET	1
ENG	Checked
TOTAL 31	



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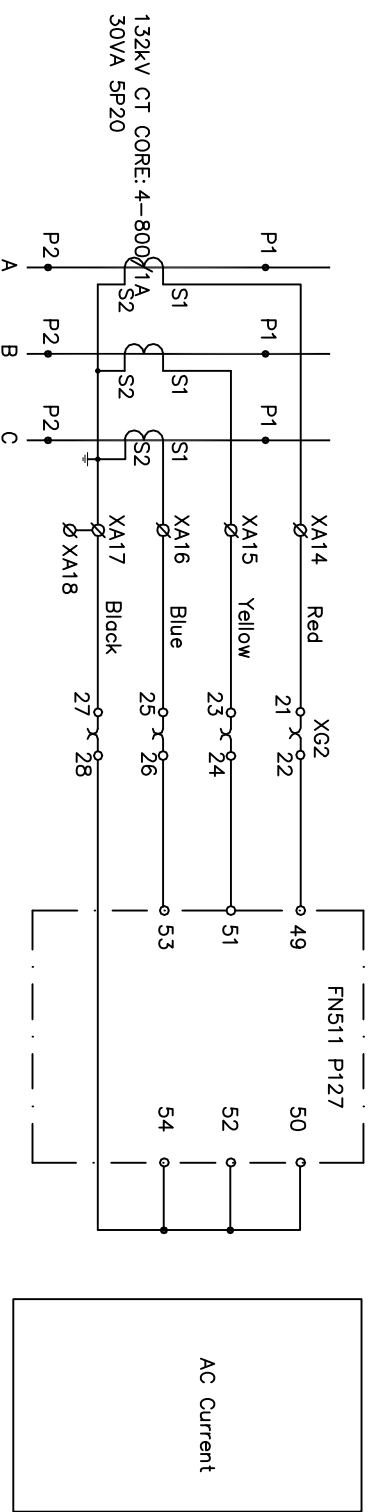
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-- 132/11kV Transformer Protection Panel	
Sheet Index	
REG	PCW-172018-MT01
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ENGR	Checked
Schneider Electric	

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GENERAL DATA				OTHER DATA											
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type="checkbox"/> REAR<div><input type="checkbox"/> FRONT</div></div><div>CLOSING DOOR<div><input checked="" type="checkbox"/> KEY (MS864-4-3D Lock)<div><input type="checkbox"/> WITHOUT KEY</div></div></div></div><div><div>PROTECTION DEGREE (IP)<div><input checked="" type="checkbox"/> 31<div><input type="checkbox"/> 52<div><input type="checkbox"/> OTHER</div></div><div>THICKNESS OF PLATE<div><input type="checkbox"/> 1.2mm<div><input checked="" type="checkbox"/> 2mm</div></div><div>SURFACE<div><input checked="" type="checkbox"/> PAINTING<div><input type="checkbox"/> PAINTING LACQUER</div></div><div>COLOR<div><input checked="" type="checkbox"/> RAL7032<div><input type="checkbox"/> OTHERS</div></div><div>CUBICLE VENTILATION<div><input type="checkbox"/> WITH<div><input checked="" type="checkbox"/> WITHOUT</div></div><div>LIGHTING<div><input checked="" type="checkbox"/> THE FLUORESCENT LAMP ON THE TOP<div><input type="checkbox"/> INCANDESCENT LAMP ON THE TOP<div><input type="checkbox"/> WITHOUT</div></div></div></div><div><div>ENVIRONMENT CONDITION<div><input type="checkbox"/> ANT-CORROSION<div><input type="checkbox"/> BLAST<div><input checked="" type="checkbox"/> GENERAL</div></div><div>NAME PLATE FOR PANEL<div><div>MATERIAL<div><input checked="" type="checkbox"/> STAINLESS STEEL</div><div>COLOR<div><input checked="" type="checkbox"/> BLACK LETTER</div><div>FIXING METHOD<div><input checked="" type="checkbox"/> SCREW TYPE</div></div></div><div>INSTRUMENTS LABELE<div><div>MATERIAL<div><input checked="" type="checkbox"/> LAMINATED PLASTIC</div><div>COLOR<div><input checked="" type="checkbox"/> BLACK LETTER</div><div>FIXING METHOD<div><input checked="" type="checkbox"/> DOUBLED SIDED TAP (3M) AND SCREW TYPE.</div></div></div></div><div><div>GLAND PLATE MATERIAL<div><input checked="" type="checkbox"/> ZINC PLATED</div><div>GLAND PLATE THICKNESS<div><input checked="" type="checkbox"/> 2mm</div><div>CABLE ENTRY<div><input checked="" type="checkbox"/> BOTTOM OF THE PANEL<div><input type="checkbox"/> TOP OF THE PANEL</div></div></div></div></div></div></div><div><div><div>RATED VALUE<div><div>CT SECONDARY<div><input checked="" type="checkbox"/> 1A<div><input type="checkbox"/> 110V</div></div><div>VT SECONDARY<div><input checked="" type="checkbox"/> DC110V<div><input type="checkbox"/> AC230V</div></div></div><div>POWER SUPPLY</div></div><div><div>EARTHING COPPER BAR<div><div>CROSS SECTION<div><input checked="" type="checkbox"/> 4*25 mm<div><input type="checkbox"/> OTHER</div></div><div>SURFACE TREATMENT<div><input checked="" type="checkbox"/> TIN<div><input type="checkbox"/> OTHER</div></div></div></div><div><div>WIRING<div><div>DIAMETER<div><div>230VAC POWER CIRCUIT<div><input checked="" type="checkbox"/> 2.5mm²<div><input type="checkbox"/> 1.5mm²<div><input type="checkbox"/> OTHER</div></div><div>110VDC POWER CIRCUIT<div><input checked="" type="checkbox"/> 2.5mm²<div><input type="checkbox"/> 1.5mm²<div><input type="checkbox"/> 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VER A	DATE 2017/11/20														

Sn	Symbol	Name & Style	Manufacture	Remark
1	FNB/1	Trans. Differential prot.	P64Z311A3M0B1BL	Schneider 1 DC:110VAC;110V/1A,80L80,EC103
2	FNB/1	Backup protection	P1Z/AA1Z312FE0	Schneider 1 DC:110VAC;110V/1A,120L80,EC103
3	KF861~2	Lockout Relay+Socket	REL91283+REL91360	Schneider 2 DC:110V,8 Contacts
4	XC1	test block	ELB-14-AAABAB1111AA8888	Schneider 1
5	XC2	test block	ELB-14-2222211111AA8888	Schneider 1
6	KF/41,KF/42	ICS Relay+Socket	REL91323+REL91337	Schneider 2 DC:110V
7	KF1~29	Signal Relay+Socket	REL91323+REL91337	Schneider 2 DC:110V,4C/0
8	SF31	Button	ZB4BAZ+ZB4BZ10T+67ZB5GBneider	1 DC:110V
9	FC101	MCB	IC65N-C16A/3P+10F+10B	Schneider 1
10	FC102	MCB	IC65N-C1A/3P+10F+10F	Schneider 1
11	FC201~FC204	MCB	C65H-DC2C06A+0F+0F	Schneider 4
12		Knife terminal	UK5-MIK-P/P	Phoenix 6
13		Current terminal	URIK/S	Phoenix 24
14		Other terminal	UK5N	Phoenix 26
15		Light	Uring	Uring 9
16	SF41	Light switch	China	China 1
17	EA101	socket	China	China 1 AC:230V,15A
18	ED101	Temperature	China	China 1 AC:230V,15A
19	KF101	Humidity	China	China 1 AC:230V,15A
20	EB101	Auto Contr	China	China 1 AC:230V,15A
21		Heater	China	China 1 AC:230V,15A
22		Ty Rack	China	China 1 AC:230V,15A
23		Blanking plate(Size 2)	China	China 1 AC:230V,15A
24		Door Lock	MS864-4-JD	Shengliu 2 front & Rear Door

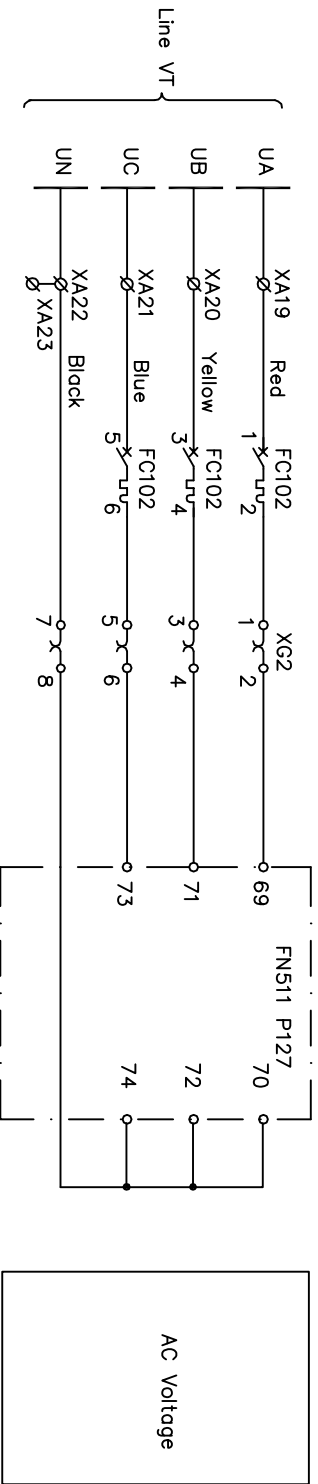


AC Current

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STATION	
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No.833 Kangqiao Road, Pudong, Shanghai 201315, China.	
AC Current Circuit (2)	
--- 132/11kV Transformer Protection Panel	
RG	PCW-172018-MT01
SHEET	9
ENG	Checked





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REFERENCE		Schneider Electric Shanghai Power Automation Co., Ltd		No.833 Kangqiao Road, Pudong, Shanghai 201315, China.	
AC Voltage Circuit		--- 132/11kV Transformer Protection Panel			
R&G		PCW-172018-MT01			
SHEET 10		TOTAL 31			
ENGR		Checked			
VER A		DATE 2018/08/28			

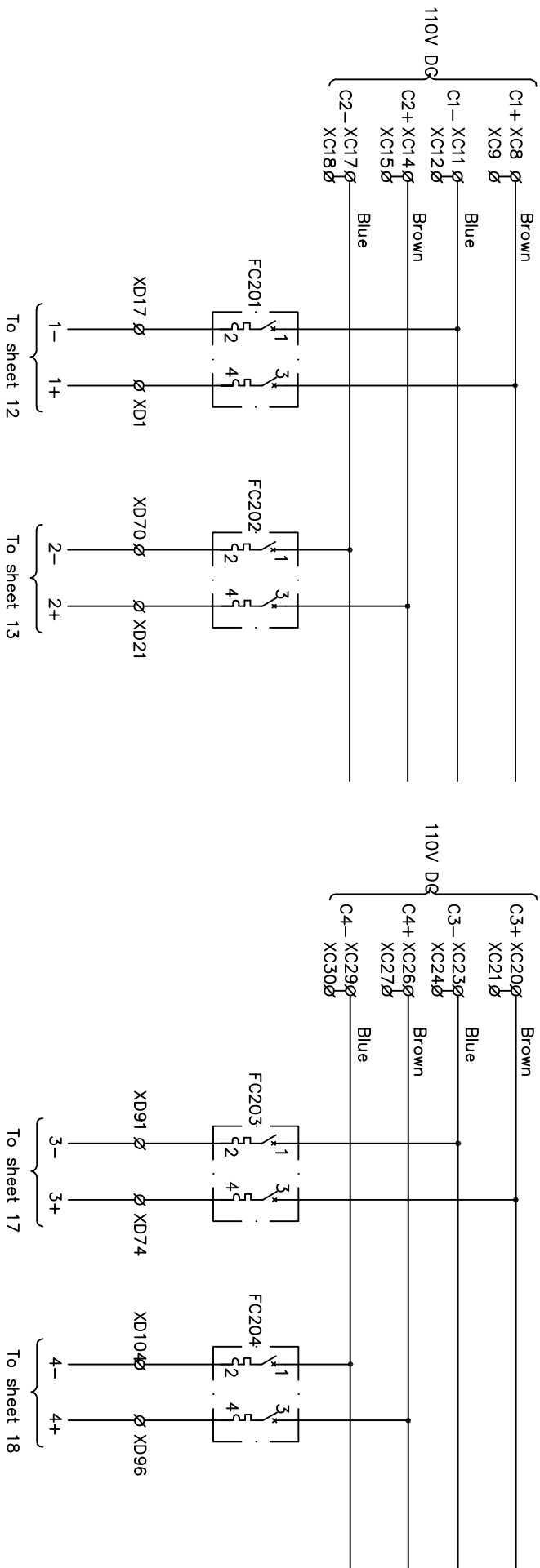


FN87T P642 DC Supply

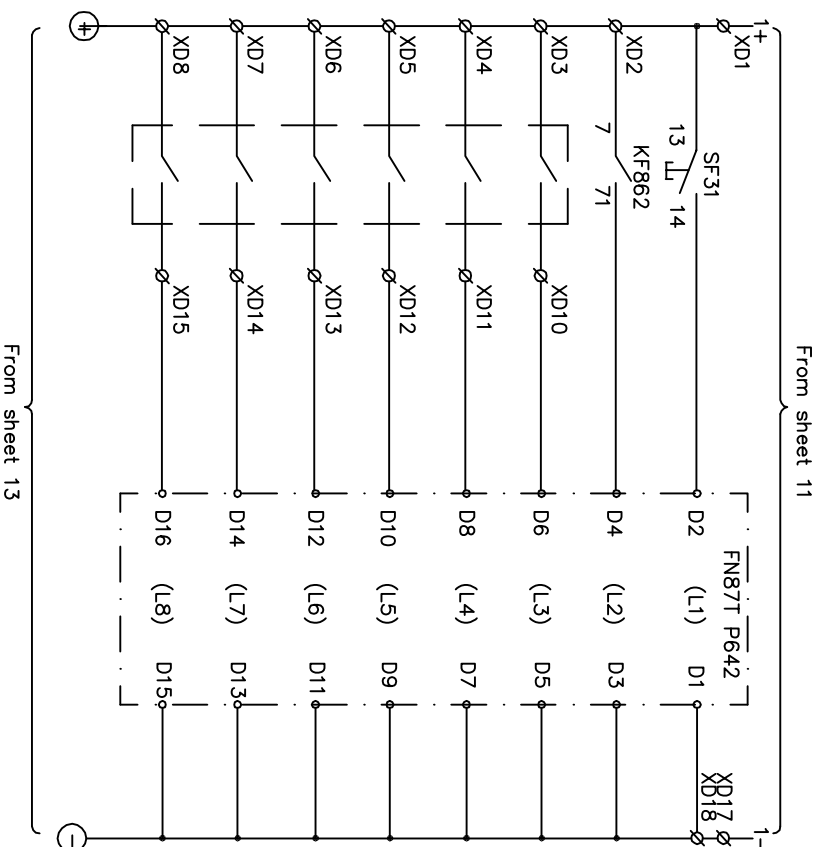
FN511 P127 and
Mechanical Protection DC Supply

Trip Coil 1 DC Supply


Trip Coil 2 DC Supply



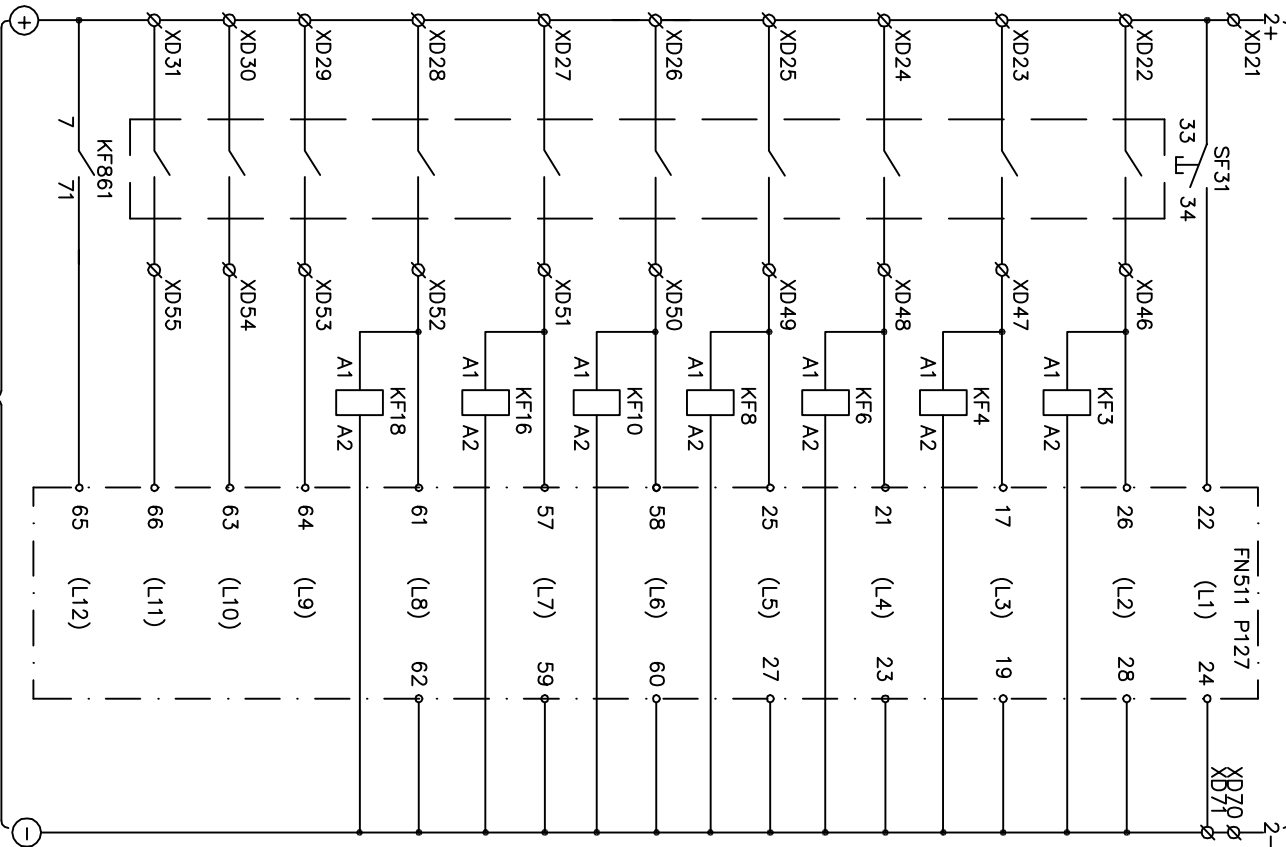
Socket,Lighting
and Temperature
Humidit controller
Circuit



LED Reset
KF862 Operated
Input 1
Input 2
Input 3
Input 4
Input 5
Input 6

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STATION REFERENCE	Confidence Group First(or Second) 113MW Subst		
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FN87T P642 DC Circuit (1) -- 132/11kV Transformer Protection Panel			
PRG NO	PCW-172018-MTO1		
SHEET	12	TOTAL	31
ENGR	Checked		
			

From sheet 10



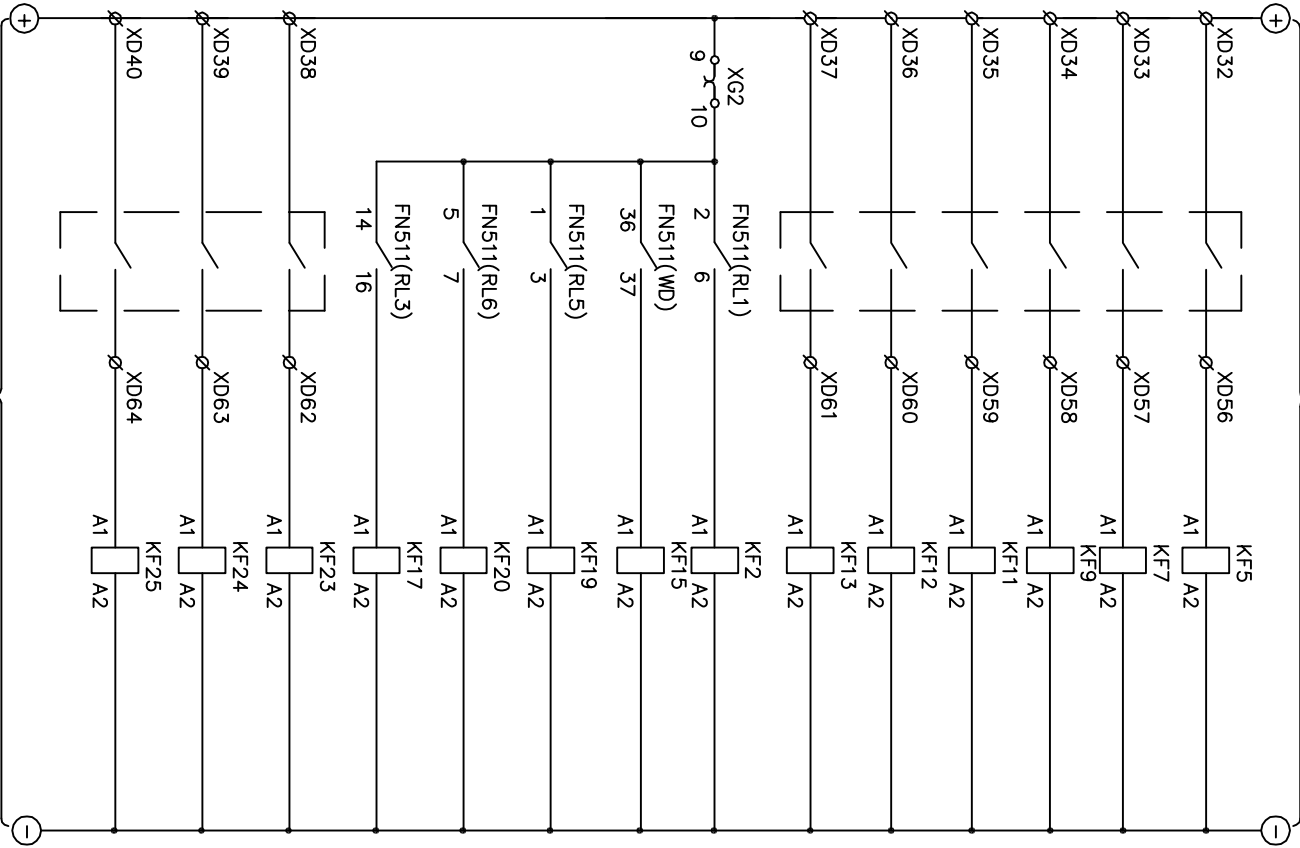
LED Reset
Main Transformer Pressure Trip
MT Buchholtz Relay Trip
OLTC Buchholtz Relay Trip
Winding Temperature Too High Trip
Oil Temperature Too High Trip
OLTC Pressure Trip
OLTC Oil Level Low Alarm
From MDT Tripping Signal
Input 1
Input 2
KF861 Operated

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--- FN511 P127 DC Circuit (1)
RG PCW-172018-MT01
SHEET 14 TOTAL 31
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From sheet 14



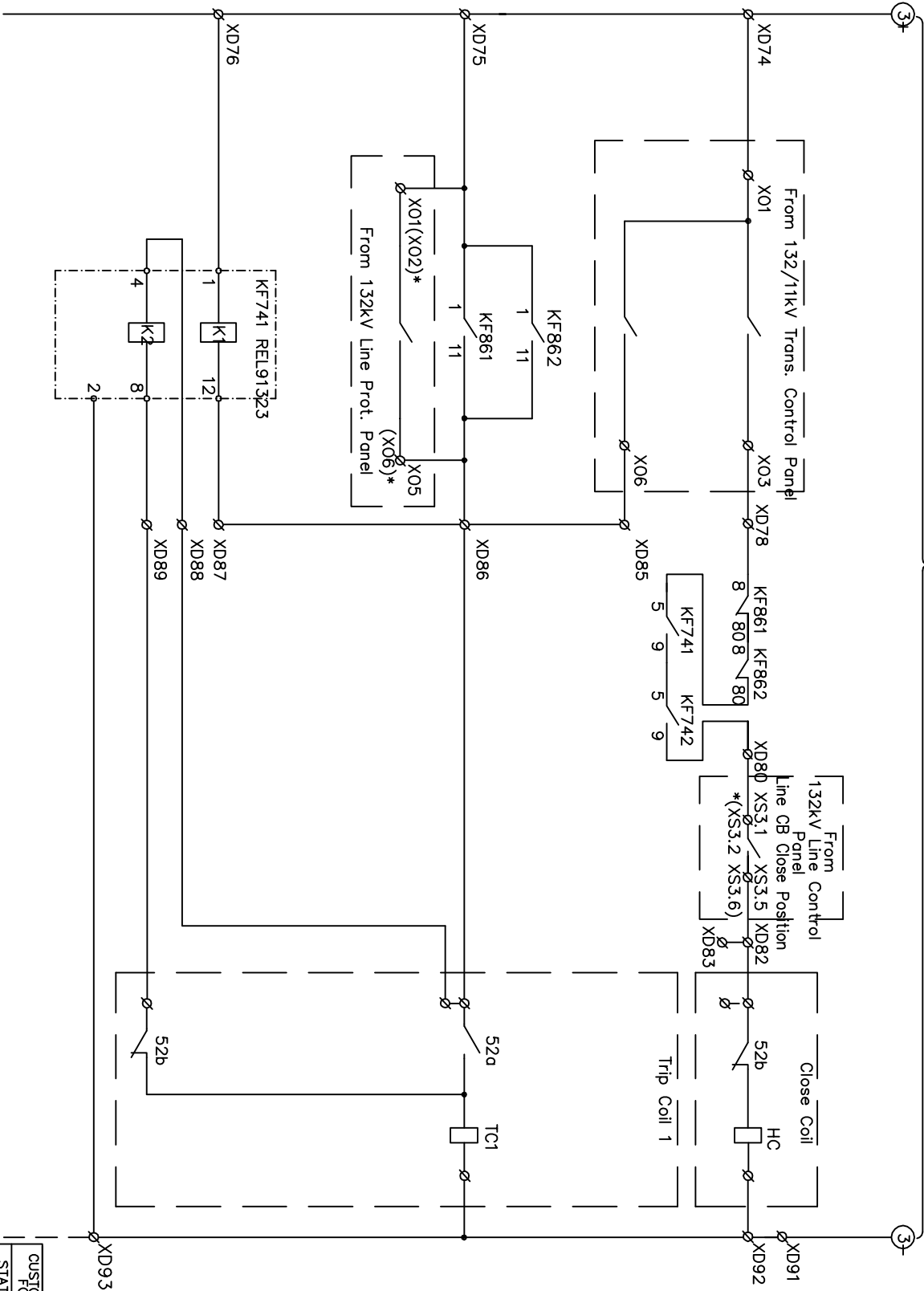
MT Buchholtz Relay Alarm
OLTC Buchholtz Relay Alarm
Winding Temperature High Alarm
Oil Temperature High Alarm
Main Tank Oil Level Low Alarm
Main Tank Oil Level High Alarm
P127 Protection Trip Signal
P127 Device Fault/Loss Power Signal
P127 3I> (50/51) protection – Trip
P127 Io> (50/51IN) protection – Trip
Over Voltage Protection Alarm
OLTC Control Switch Remote
Fan Group 1 not start
Fan Group 2 not start

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FNS11 P127 DC Circuit (2)	
--- 132/11kV Transformer Protection Panel	
R&G	PCW-172018-MT01
SHEET 15	TOTAL 31
ENGR	Checked



From Sheet 11



Local/Remote Close Close Coil	
Local/Remote Open	
KF861.KF862 Trip	
Line Prot. Intertrip	
Trip Circuit Supervision	

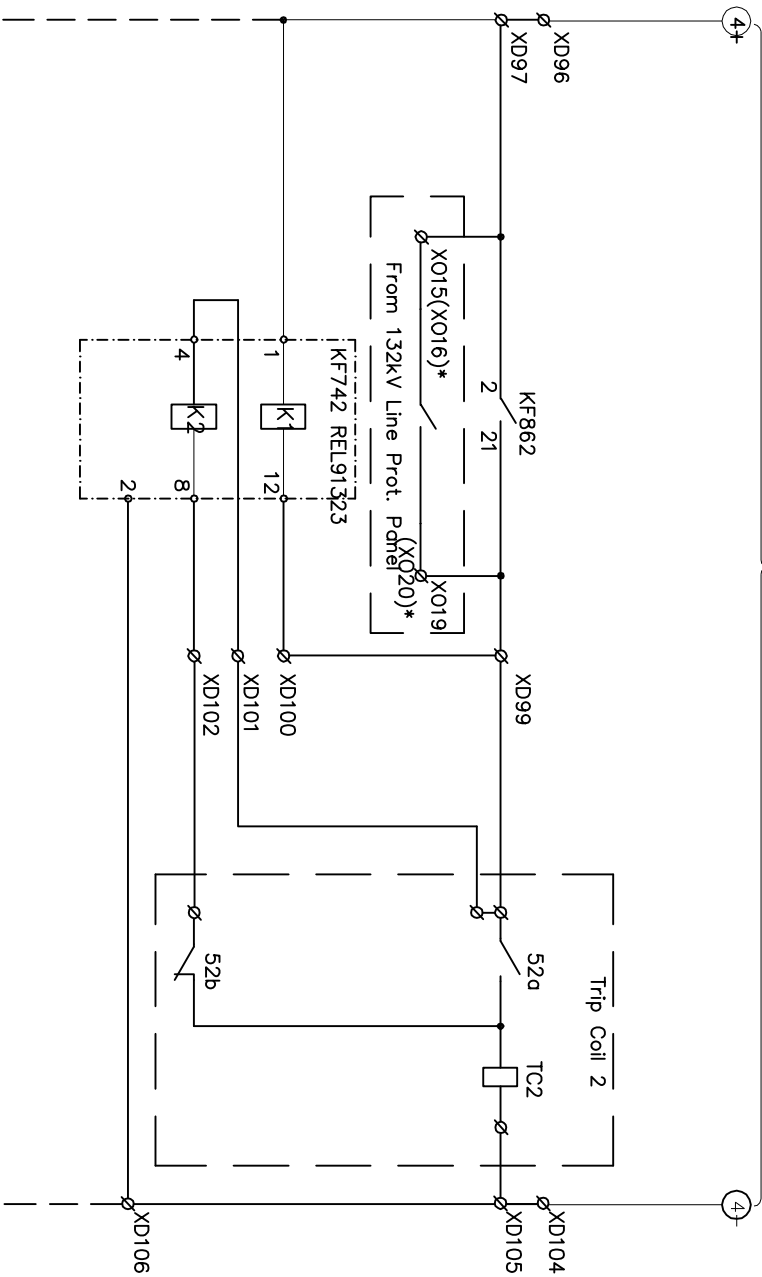
* The terminal in bracket for MTO2.

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Close Circuit and Trip Coil 1 Circuit	
--- 132/11kV Transformer Protection Panel	
RGC	PCW-172018-MTO1
SHEET	17 TOTAL 31
ENGR	Checked



From Sheet 11



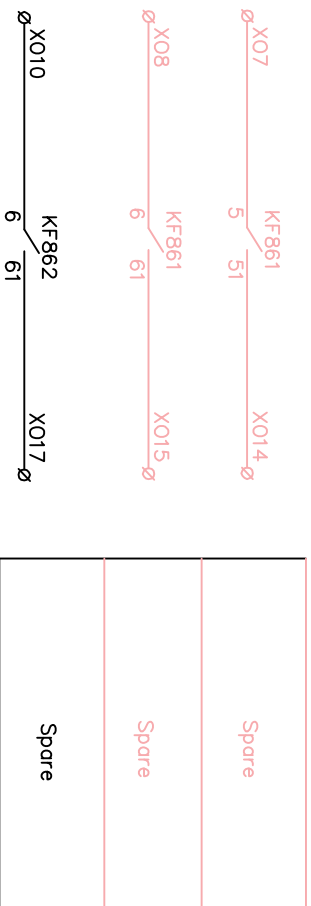
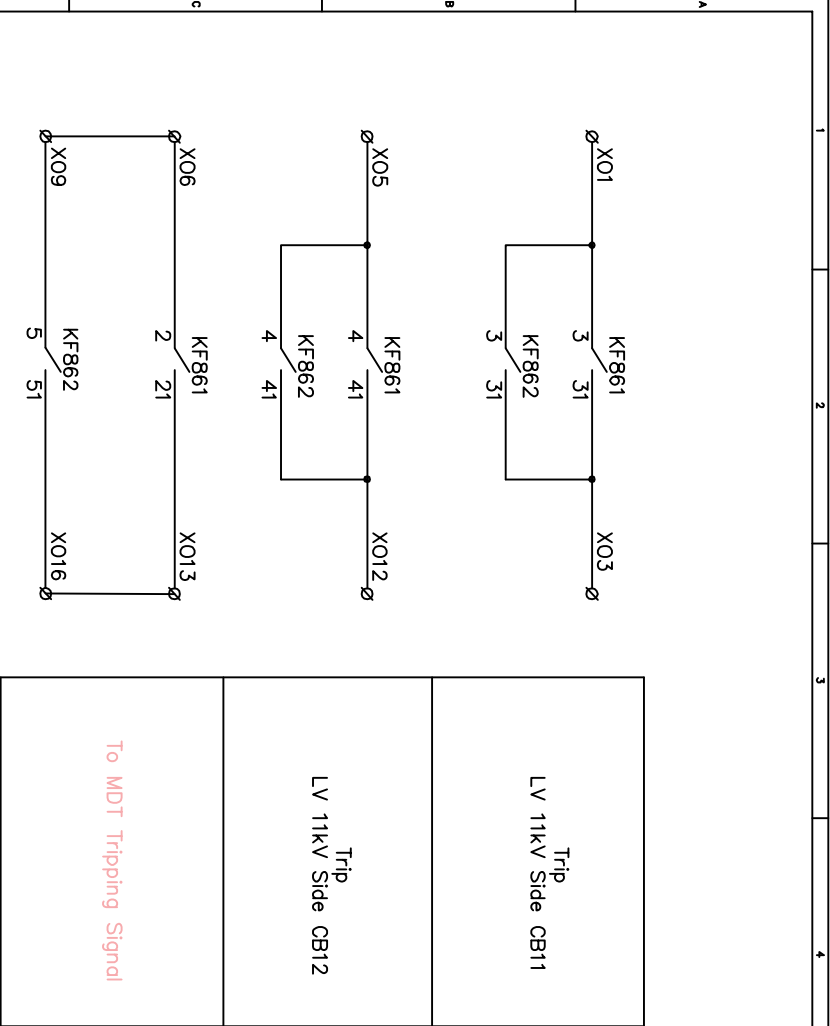
KF862 Trip	Trip 132kV Side CB Coil 2
Trip Circuit Supervision	

* The terminal in bracket for MT02.

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Trip Coil 2 Circuit	
--- 132/11kV Transformer Protection Panel	
REG	PCW-172018-MT01
SHEET	18 TOTAL 31
ENGR	Checked

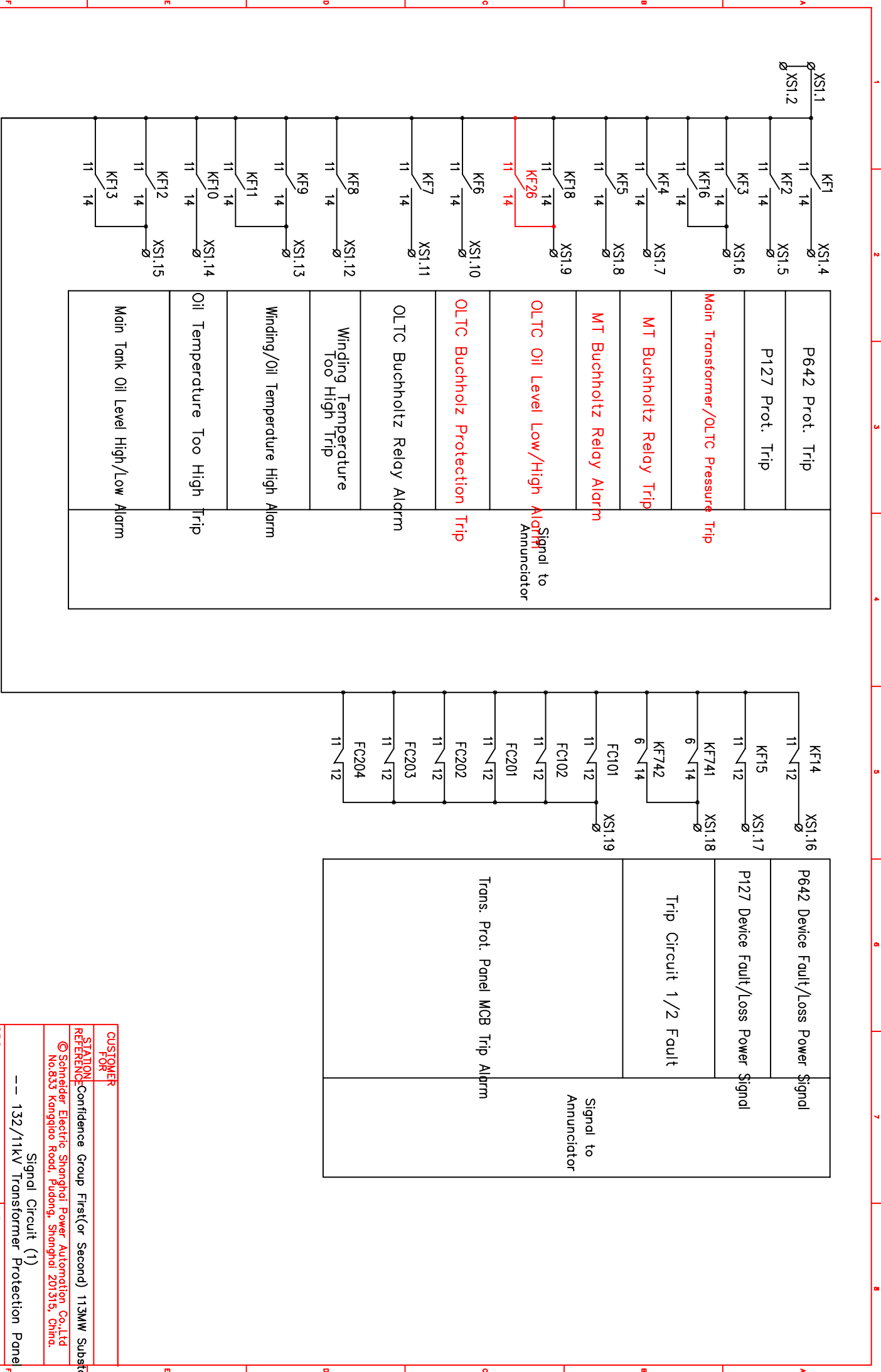




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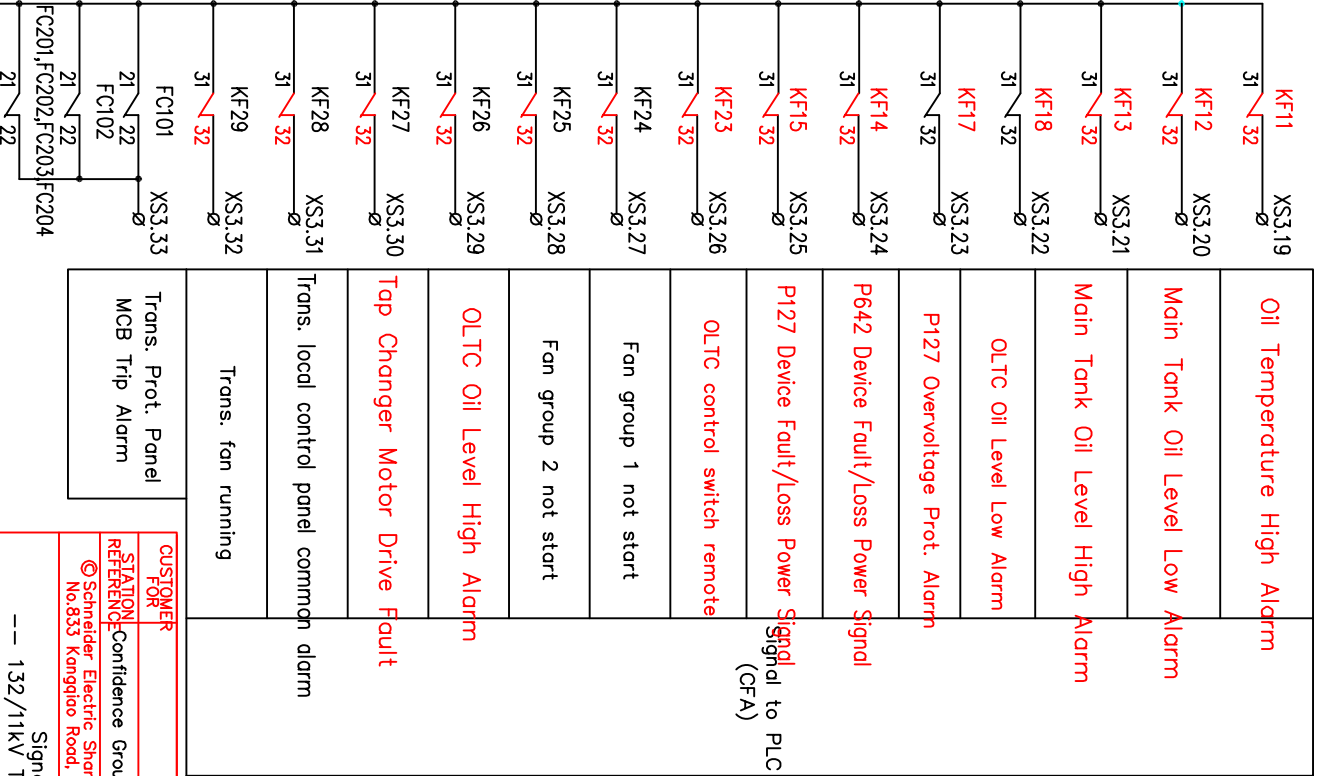
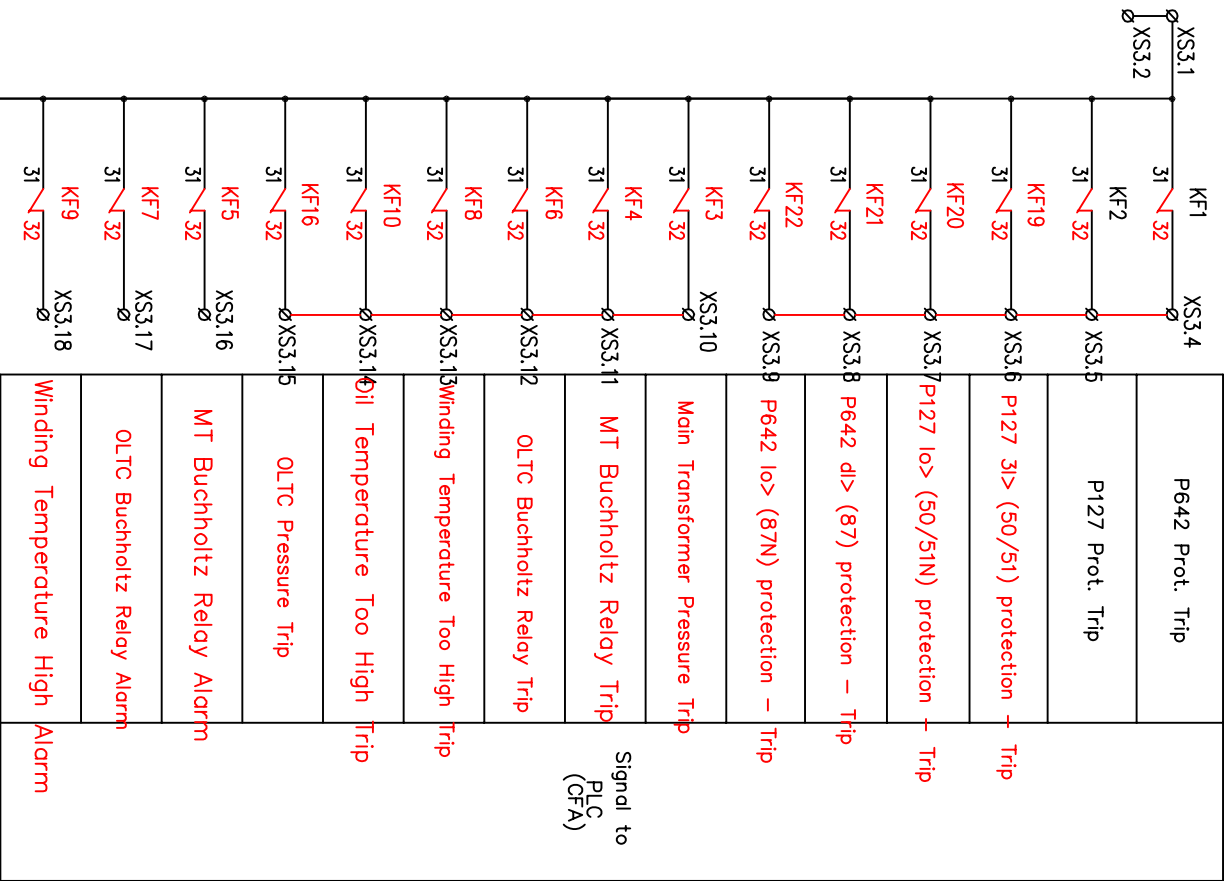
CUSTOMER FOR	
STATION	Confidence Group First(or Second) 113MW Substa
REFERENCE	© Schneider Electric Shanghai Power Automation Co.,Ltd No.833 Kangqiao Road, Pudong, Shanghai 201315, China.
KF861 & KF862 Output Circuit -- 132/11kV Transformer Protection Panel	
RG	PCW-172018-MT01
SHEET 19	TOTAL 31
ENGR	Checked

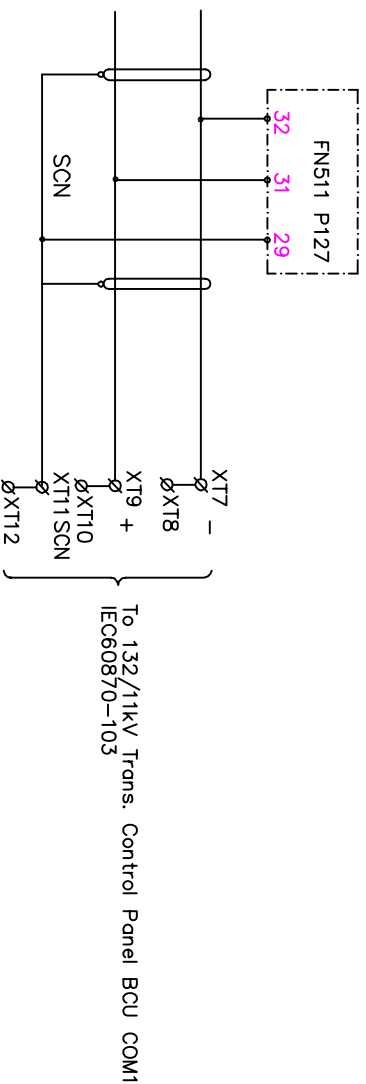
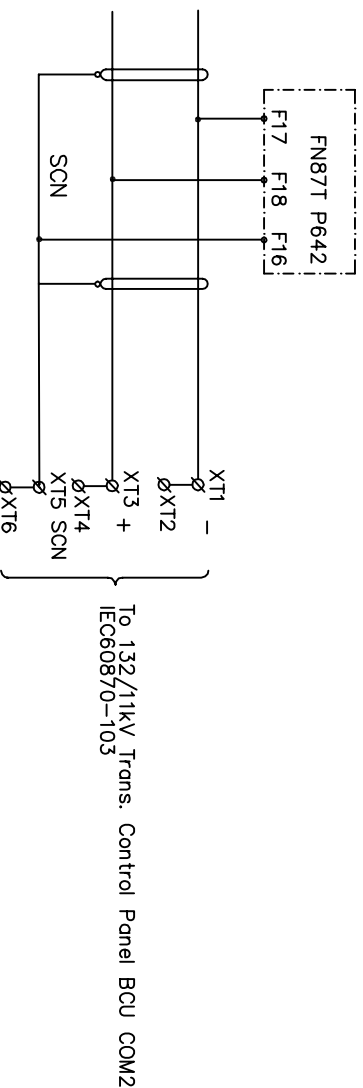


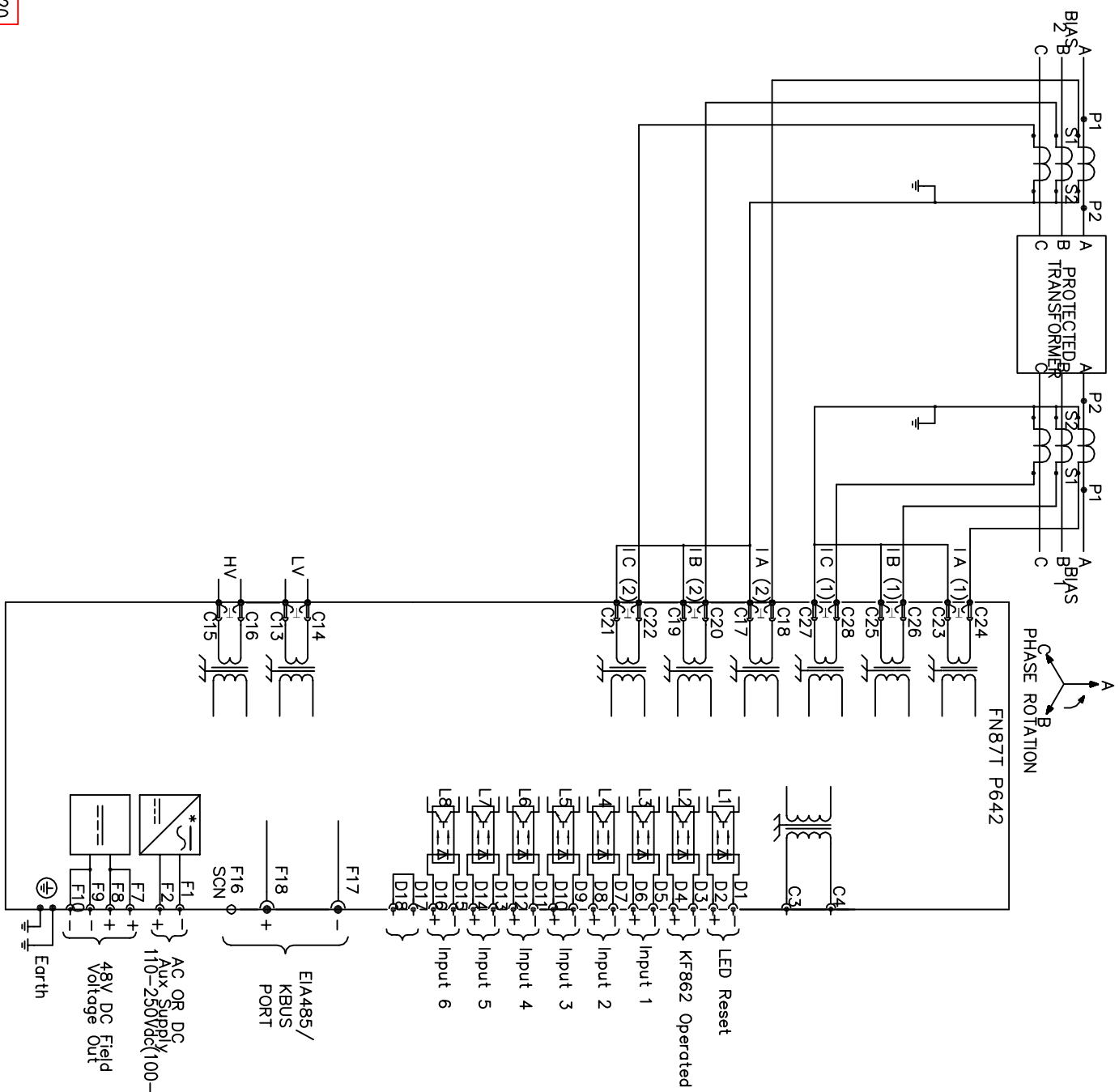


<div><div>XS2.1</div><div>XS2.2</div></div> <div><div>KF1</div><div>21</div><div>24</div></div> <div><div>XS2.4</div><div>Ø</div></div>	P642 Prot. Trip	Signal to RTU
<div><div>KF2</div><div>21</div><div>24</div></div> <div><div>XS2.5</div><div>Ø</div></div>	P127 Prot. Trip	
<div><div>KF3</div><div>21</div><div>24</div></div> <div><div>XS2.6</div><div>Ø</div></div>	Main Transformer Pressure Trip	
<div><div>KF4</div><div>21</div><div>24</div></div> <div><div>XS2.7</div><div>Ø</div></div>	MT Buchholtz Relay Trip	
<div><div>KF5</div><div>21</div><div>24</div></div> <div><div>XS2.8</div><div>Ø</div></div>	MT Buchholtz Relay Alarm	
<div><div>KF6</div><div>21</div><div>24</div></div> <div><div>XS2.9</div><div>Ø</div></div>	OLTC Buchholtz Relay Trip	
<div><div>KF7</div><div>21</div><div>24</div></div> <div><div>XS2.10</div><div>Ø</div></div>	OLTC Buchholtz Relay Alarm	
<div><div>KF8</div><div>21</div><div>24</div></div> <div><div>XS2.11</div><div>Ø</div></div>	Winding Temperature Too High	
<div><div>KF9</div><div>21</div><div>24</div></div> <div><div>XS2.12</div><div>Ø</div></div>	Winding Temperature High Alarm	
<div><div>KF10</div><div>21</div><div>24</div></div> <div><div>XS2.13</div><div>Ø</div></div>	Oil Temperature Too High Trip	
<div><div>KF11</div><div>21</div><div>24</div></div> <div><div>XS2.14</div><div>Ø</div></div>	Oil Temperature High Alarm	
<div><div>KF12</div><div>21</div><div>24</div></div> <div><div>XS2.15</div><div>Ø</div></div>	Main Tank Oil Level Low Alarm	
<div><div>KF13</div><div>21</div><div>24</div></div> <div><div>XS2.16</div><div>Ø</div></div>	Main Tank Oil Level High Alarm	
<div><div>KF16</div><div>21</div><div>24</div></div> <div><div>XS2.17</div><div>Ø</div></div>	OLTC Pressure Trip	
<div><div>KF18</div><div>21</div><div>24</div></div> <div><div>XS2.18</div><div>Ø</div></div>	OLTC Oil Level Low Alarm	

<div><div>KF17</div><div>21</div><div>24</div></div> <div><div>XS2.19</div><div>Ø</div></div>	P127 Overvoltage Prot. Alarm	Signal to RTU
<div><div>KF19</div><div>21</div><div>24</div></div> <div><div>XS2.20</div><div>Ø</div></div>	P127 3I> (50/51) protection – Trip	
<div><div>KF20</div><div>21</div><div>24</div></div> <div><div>XS2.21</div><div>Ø</div></div>	P127 I0> (50/51N) protection – Trip	
<div><div>KF14</div><div>21</div><div>22</div></div> <div><div>XS2.22</div><div>Ø</div></div>	P642 Device Fault/Loss Power Signal	
<div><div>KF15</div><div>21</div><div>22</div></div> <div><div>XS2.23</div><div>Ø</div></div>	F127 Device Fault/Loss Power Signal	
<div><div>KF21</div><div>21</div><div>24</div></div> <div><div>XS2.24</div><div>Ø</div></div>	P642 dI> (87) protection – Trip	
<div><div>KF22</div><div>21</div><div>24</div></div> <div><div>XS2.25</div><div>Ø</div></div>	P642 I0> (87N) protection – Trip	
<div><div>KF23</div><div>21</div><div>24</div></div> <div><div>XS2.26</div><div>Ø</div></div>	OLTC control switch remote	
<div><div>KF24</div><div>21</div><div>24</div></div> <div><div>XS2.27</div><div>Ø</div></div>	Fan group 1 not start	
<div><div>KF25</div><div>21</div><div>24</div></div> <div><div>XS2.28</div><div>Ø</div></div>	Fan group 2 not start	
<div><div>KF26</div><div>21</div><div>24</div></div> <div><div>XS2.29</div><div>Ø</div></div>	OLTC Oil Level High Alarm	Top Changer Motor Drive Fault
<div><div>KF27</div><div>21</div><div>24</div></div> <div><div>XS2.30</div><div>Ø</div></div>		
<div><div>KF28</div><div>21</div><div>24</div></div> <div><div>XS2.31</div><div>Ø</div></div>	Trans. local control panel common alarm	
<div><div>KF29</div><div>21</div><div>24</div></div> <div><div>XS2.32</div><div>Ø</div></div>	Trans. fan running	

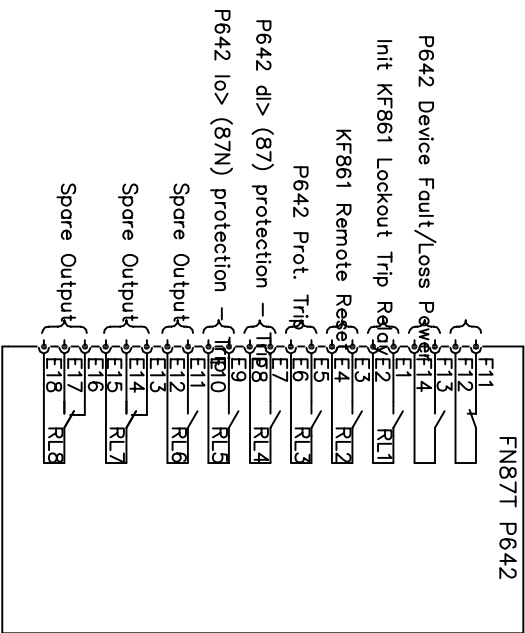


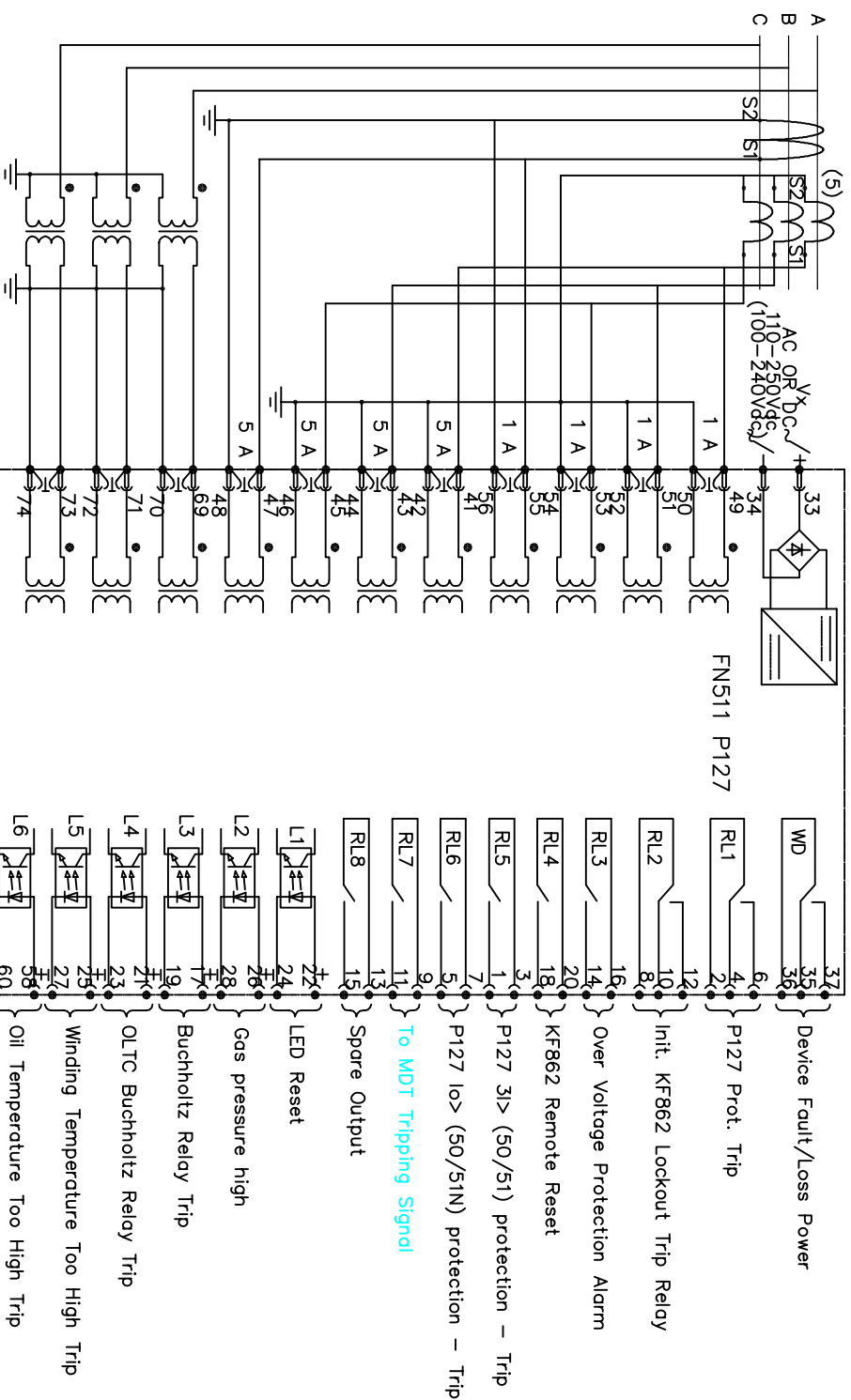




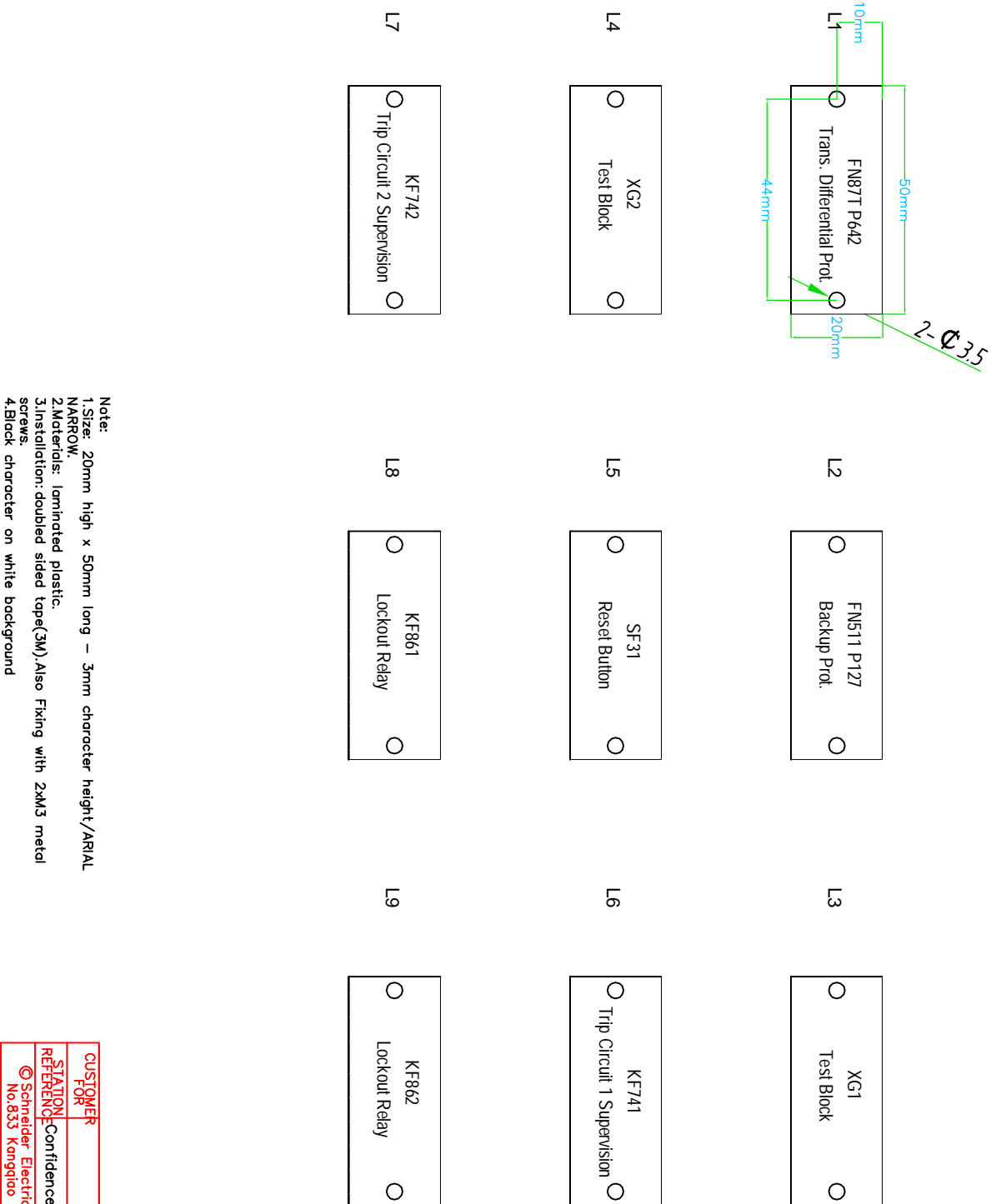
CUSTOMER FOR		Confidence Group First(or Second) 113MW Substation	
STATION REFERENCE		Schneider Electric Shanghai Power Automation Co.,Ltd No.833 Kangqiao Road, Pudong, Shanghai 201315, China.	
RGC		FN87T P642 I/O Diagram (1)	
SHEET 25		TOTAL 31	
ENGR		Checked	





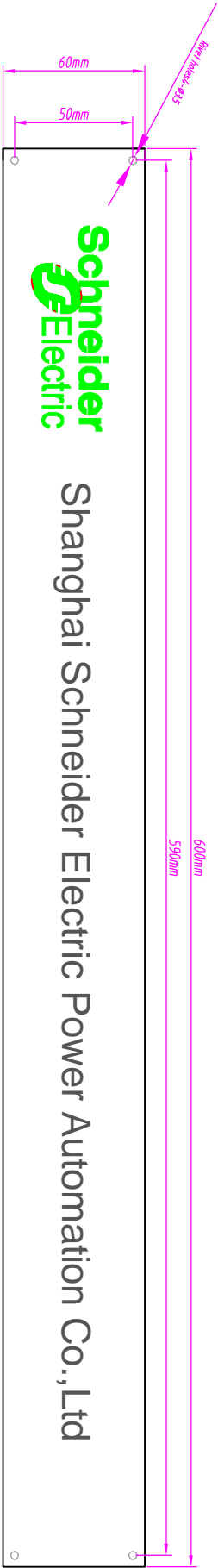
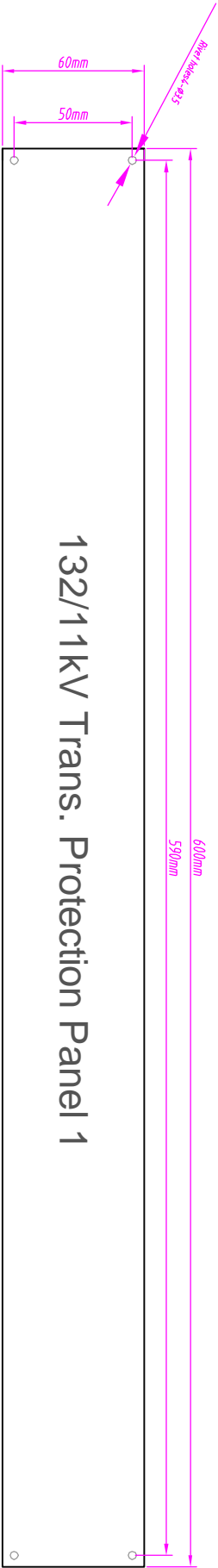


- Device Fault/Loss Power
- P127 Prot. Trip
- Init. KF862 Lockout Trip Relay
- Over Voltage Protection Alarm
- KF862 Remote Reset
- P127 3I> (50/51) protection - Trip
- P127 Io> (50/51N) protection - Trip
- To MDT Tripping Signal
- Spare Output
- LED Reset
- Gas pressure high
- Buchholz Relay Trip
- OLTC Buchholz Relay Trip
- Winding Temperature Too High Trip
- Oil Temperature Too High Trip
- OLTC Gas pressure high OLTC
- OLTC Oil Level Low Trip
- From MDT Tripping Signal
- Input 1
- Input 2
- KF861 Operated



CUSTOMER		FOR	
STATION		Confidence Group First(or Second) 113MW Substation	
REFERENCE		© Schneider Electric, Shanghai Power Automation Co.,Ltd No.833 Kangqiao Road, Pudong, Shanghai 201315, China.	
Name Plate For Instruments		-- 132/11kV Transformer Protection Panel	
REG	PCW-172018-MT01		
SHEET	28	TOTAL	31
ENGR	Checked		





Note :
1.Brow plate & Manufacturer plate use of stainless steel, surface polishing, size is 600 x 60 x 0.8mm.
2.Four weeks rivets holes open, specifications and dimensions see drawing
3.Etching content, font size is 12mm, font is Arial.
4.Black content etching, the etching depth of 0.2mm
5.The Color of the Logo is Green.



XS2		
KF1.21	01	
	02	
	3	
KF1.24	4	
KF2.24	5	
KF3.24	6	
KF4.24	7	
KF5.24	8	
KF6.24	9	
KF7.24	10	
KF8.24	11	
KF9.24	12	
KF10.24	13	
KF11.24	14	
KF12.24	15	
KF13.22	16	
KF16.24	17	
KF18.24	18	
KF17.24	19	
KF19.24	20	
KF20.24	21	
KF14.22	22	
KF15.22	23	
KF21.24	24	
KF22.24	25	
KF23.24	26	
KF24.24	27	
KF25.24	28	
KF26.24	29	
KF27.24	30	
KF28.24	31	
KF29.24	32	

Signal
Circuit

XS1		
KF1.11	01	
	02	
	3	
KF1.14	4	
KF2.14	5	
KF3.14	6	
KF4.14	7	
KF5.14	8	
KF8.14	9	
KF6.14	10	
KF7.14	11	
KF8.14	12	
KF9.14	13	
KF10.14	14	
KF12.14	15	
KF14.12	16	
KF15.12	17	
F741.14	18	
FC101.12	19	
	20	

Signal
Circuit

XO		
KF861.3	1	
	2	
KF861.31	3	
	4	
KF861.4	5	
KF861.2	6	
KF861.5	7	
KF861.6	8	
KF862.5	9	
KF862.6	10	
	11	
KF861.41	12	
KF861.21	13	
KF861.51	14	
KF861.61	15	
KF862.51	16	
KF862.61	17	
	18	
FN871.E12	19	
FN871.E15	20	
FN871.E18	21	
FN511.9	22	
FN511.13	23	
	24	
FN871.E1	25	
FN871.E14	26	
FN871.E17	27	
FN511.11	28	
FN511.15	29	

Output
Circuit

XA		
XG1.1	1	IA
XG1.3	2	IB
XG1.5	3	IC
XG1.7	04	IN
	05	
XG1.21	6	IA
XG1.23	7	IB
XG1.25	8	IC
XG1.27	09	IN
	010	
XG1.9	11	IO
XG1.11	012	IOh
	013	
XG2.21	14	IA
XG2.23	15	IB
XG2.25	16	IC
XG2.27	017	IN
	018	
FC102.1	19	UA
FC102.3	20	UB
FC102.5	21	UC
XG2.7	022	UN
	023	

AC
Circuit

XC		
FC101.1	01	230V AC PH
	02	
	3	
FC101.3	04	230V AC N
	05	
	6	
	7	
FC201.3	08	C1+
	09	
	10	
FC201.1	011	C1-
	012	
	13	
FC202.3	014	C2+
	015	
	16	
FC202.1	017	C2-
	018	
	19	
FC203.3	020	C3+
	021	
	22	
FC203.1	023	C3-
	024	
	25	
FC204.3	026	C4+
	027	
	28	
FC204.1	029	C4-
	030	

230V
AC Supply

110V
DC Supply

XB2		
	1	
	2	
	3	
	4	
	5	
	6	
	7	
	8	
	9	
	10	
	11	
	12	
	13	
	14	
	15	
	16	
	17	
	18	
	19	
	20	

Spare

Note: 1. Terminal XS1.1~2,XS2.1~2,XS3.1~2used UK5-MTK/PCW, PCW-172018-MT01
XA used UKTK/S.Others used UK5N.

XS3		
KF1.31	01	
	02	
	3	
KF1.32	04	
KF2.32	05	
KF19.32	06	
KF20.32	07	
KF21.32	08	
KF22.32	09	
KF3.32	10	
KF4.32	11	
KF6.32	12	
KF8.32	13	
KF10.32	14	
KF16.32	15	
KF5.32	16	
KF7.32	17	
KF9.32	18	
KF11.32	19	
KF12.32	20	
KF13.32	21	
KF18.32	22	
KF17.32	23	
KF14.32	24	
KF15.32	25	
KF23.32	26	
KF24.32	27	
KF25.32	28	
KF26.32	29	
KF27.32	30	
KF28.32	31	
KF29.32	32	
FC101.22	33	

Signal
Circuit

XD		
1+	01	FC201.4
	02	SF31.13
	03	KF862.7
	04	
	05	
	06	
	07	
	08	
	9	
	10	FN871.D6
	11	FN871.D8
	12	FN871.D10
	13	FN871.D12
	14	FN871.D14
	15	FN871.D16
	16	
1-	017	FC201.2
	018	FN871.D1
	19	
	20	
2+	021	FC202.4
	022	SF31.33
	023	KF861.7
	024	
	025	
	026	
	027	
	028	
	029	
	030	
	031	
	032	
	033	
	034	
	035	
	036	
	037	
	038	
	039	
	040	
	041	
	042	
	043	
	044	
	045	
	46	FN511.26
	47	FN511.17

DC Circuit

XD		
	48	FN511.21
	49	FN511.25
	50	FN511.58
	51	FN511.57
	52	FN511.61
	53	FN511.64
	54	FN511.63
	55	FN511.66
	56	KF5.A1
	57	KF7.A1
	58	KF9.A1
	59	KF11.A1
	60	KF12.A1
	61	KF13.A1
	62	KF23.A1
	63	KF24.A1
	64	KF25.A1
	65	KF26.A1
	66	KF27.A1
	67	KF28.A1
	68	KF29.A1
	69	
2-	070	FC202.2
	071	FN511.24
	72	
	73	
3+	074	F203.4
	075	KF861.1
	076	KF741.1
	77	
	78	KF861.8
	79	
	80	KF742.9
	81	
	082	
	083	
	84	
	085	KF861.11
	086	
	087	
	88	KF741.4
	89	KF741.8
	90	
3-	091	F203.2
	092	
	093	KF741.2
	94	
	95	

XD		
4+	096	F204.4
	097	KF862.2
	98	
	099	KF862.21
	0100	
	101	KF742.4
	102	KF742.8
	103	
4-	0104	F204.2
	0105	
	0106	KF742.2

Spore

XB1		
	1	
	2	
	3	
	4	
	5	
	6	
	7	
	8	
	9	
	10	
	11	
	12	
	13	
	14	
	15	
	16	
	17	
	18	
	19	
	20	

XT		
-	01	FN871.F17
	02	
+	03	FN871.F18
	04	
SCN	05	FN871.F16
	06	
-	07	FN511.32
	08	
+	09	FN511.31
	010	
SCN	011	FN511.29
	012	

Communication
Circuit

Note: 1. Terminal XS1.1~2,XS2.1~2,XS3.1~2used UK5-MTK/P/P,
XA used UKTK/S,Others used UK5N.