

This document is the exclusive property of Schneider Electric and shall not be used, copied or communicated to third parties without prior authorization.

1

2

3

4

5

6

7

8

A

B

C

D

E

F

11KV GENERATOR PROTECTION PANEL

LIST OF DOCUMENTS

DRAWING	DESCRIPTION.	REVISION	DATE	ISSUE
3269PN491-GL-01	GENERAL ARRANGEMENT & LEGEND	B	3/31/2012	For Approval
3269PN491-S-01	SCHEMATIC DIAGRAM OF GENERATOR PROTECTION PANEL	B	3/31/2012	For Approval

LIST OF REFERENCE DOCUMENTS

1) SLD: 1-561-01-31581, REV-02
2) TRIP LOGIC DIAGRAM: 1-561-01-31582, REV-01

Schneider Electric Infrastructure Ltd

CHENNAI , INDIA

PANEL TYPES : +R1

CUSTOMER: BHARAT HEAVY ELECTRICALS LTD.
HYDERABAD

CLIENT: ROHIT FERRO TECH LTD, JAJPUR, ORISSA.

CONSULTANT: DEVELOPMENT CONSULTANTS
PVT LTD.

PROJECT: ROHIT FERRO TECH LTD.
67.5MW CAPTIVE POWER PLANT, JAJPUR

C117A00076 DATED:16-01-2012

1

2

3

4

5

6

7

8

1		2		3		4		5		6		7		8	
A														A	
B														B	
C														C	
D														D	
E														E	
F														F	

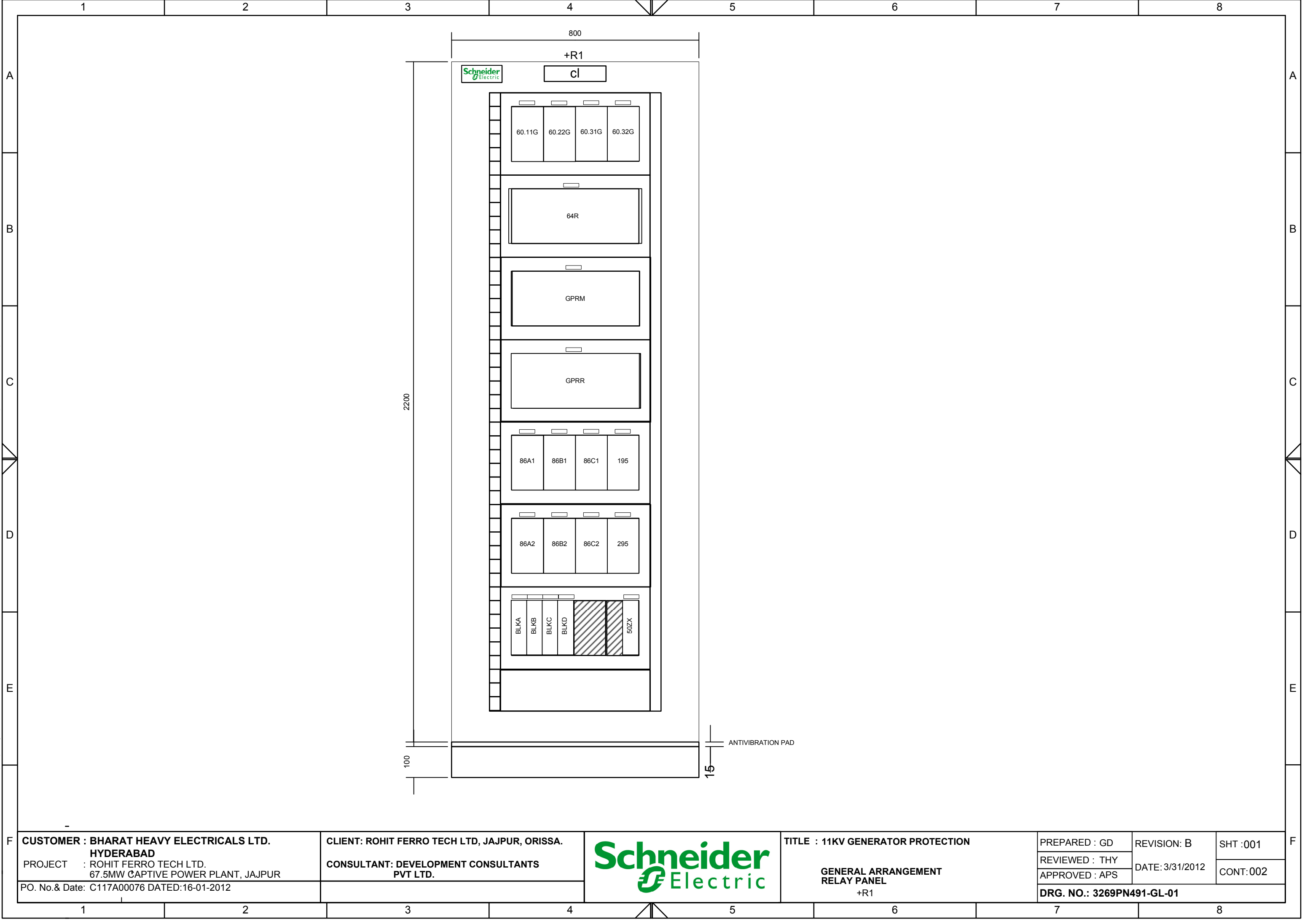
SHEET		DESCRIPTION	
000		INDEX SHEET	
001		GENERAL ARRANGEMENT	
002		BILL OF MATERIALS RELAY PANEL: +R1	
003		BILL OF MATERIALS RELAY PANEL: +R1	
004		BILL OF MATERIALS RELAY PANEL: +R1	
005		BILL OF MATERIALS RELAY PANEL: +R1	
006		BILL OF MATERIALS RELAY PANEL: +R1	

CUSTOMER : BHARAT HEAVY ELECTRICALS LTD. HYDERABAD		CLIENT: ROHIT FERRO TECH LTD, JAJPUR, ORISSA.				TITLE : 11KV GENERATOR PROTECTION		PREPARED : GD		REVISION: B		SHT :000			
PROJECT : ROHIT FERRO TECH LTD. 67.5MW CAPTIVE POWER PLANT, JAJPUR		CONSULTANT: DEVELOPMENT CONSULTANTS PVT LTD.				INDEX SHEET		REVIEWED : THY		DATE: 3/31/2012		CONT:001			
PO. No.& Date: C117A00076 DATED:16-01-2012								APPROVED : APS							
												DRG. NO.: 3269PN491-GL-01			
1		2		3		4		5		6		7		8	

SHEET	DESCRIPTION
000	INDEX SHEET
001	GENERAL ARRANGEMENT
002	BILL OF MATERIALS RELAY PANEL: +R1
003	BILL OF MATERIALS RELAY PANEL: +R1
004	BILL OF MATERIALS RELAY PANEL: +R1
005	BILL OF MATERIALS RELAY PANEL: +R1
006	BILL OF MATERIALS RELAY PANEL: +R1

This document is the exclusive property of Schneider Electric and shall not be used, copied or communicated to third parties without prior authorization.

This document is the exclusive property of Schneider Electric and shall not be used, copied or communicated to third parties without prior authorization.



CUSTOMER : BHARAT HEAVY ELECTRICALS LTD.
HYDERABAD
PROJECT : ROHIT FERRO TECH LTD.
67.5MW CAPTIVE POWER PLANT, JAJPUR
PO. No.& Date: C117A00076 DATED:16-01-2012

CLIENT: ROHIT FERRO TECH LTD, JAJPUR, ORISSA.
CONSULTANT: DEVELOPMENT CONSULTANTS
PVT LTD.



TITLE : 11KV GENERATOR PROTECTION
**GENERAL ARRANGEMENT
RELAY PANEL**
+R1

PREPARED : GD	REVISION: B	SHT :001
REVIEWED : THY	DATE:3/31/2012	CONT:002
APPROVED : APS		
DRG. NO.: 3269PN491-GL-01		

This document is the exclusive property of Schneider Electric and shall not be used, copied or communicated to third parties without prior authorization.

	1	2	3	4	5	6	7	8
A	FRONT VIEW EQUIPMENTS:							
	Designation	Manufacturer	Material	Description	Comment			
A	60.11G	ALSTOM	MVAPM32D1AA2001A	VOLTAGE BALANCING RELAY , 110V 50 HZ : FLAG-YES : 2M 2C SR :110-125/220-250V DC WD:F1MVAPM32001	FOR PT-1,2,3(CORE-2)			
	60.22G	ALSTOM	MVAPM32D1AA2001A	VOLTAGE BALANCING RELAY , 110V 50 HZ : FLAG-YES : 2M 2C SR :110-125/220-250V DC WD:F1MVAPM32001	FOR PT-4,5,6(CORE-2)			
B	60.31G	ALSTOM	MVAPM32D1AA2001A	VOLTAGE BALANCING RELAY , 110V 50 HZ : FLAG-YES : 2M 2C SR :110-125/220-250V DC WD:F1MVAPM32001	FOR PT-7,8,9(CORE-1)			
	60.32G	ALSTOM	MVAPM32D1AA2001A	VOLTAGE BALANCING RELAY , 110V 50 HZ : FLAG-YES : 2M 2C SR :110-125/220-250V DC WD:F1MVAPM32001	FOR PT-7,8,9(CORE-2)			
B	64R		P39191P00A	ROTOR E/F INJECTION UINT, AUX VOTL: 60-250V DC/100-240V AC, CASE: 80TE(SPECIAL), MOUNTING: PANEL				
	86A1	EASUN	TR241-220V-16M4B-HRER-E4	HIGH SPEED TRIP RELAY, HI BURDEN : FLAG-YES : 220V DC(50 TO 120%) : 16M 4B ER/HR CONTACT CONFIG: CASE SIZE:E4 :WIRING DIAGRAM No: 8112W0084.				
C	86A2	EASUN	TR241-220V-16M4B-HRER-E4	HIGH SPEED TRIP RELAY, HI BURDEN : FLAG-YES : 220V DC(50 TO 120%) : 16M 4B ER/HR CONTACT CONFIG: CASE SIZE:E4 :WIRING DIAGRAM No: 8112W0084.				
	86B1	EASUN	TR241-220V-16M4B-HRER-E4	HIGH SPEED TRIP RELAY, HI BURDEN : FLAG-YES : 220V DC(50 TO 120%) : 16M 4B ER/HR CONTACT CONFIG: CASE SIZE:E4 :WIRING DIAGRAM No: 8112W0084.				
C	86B2	EASUN	TR241-220V-16M4B-HRER-E4	HIGH SPEED TRIP RELAY, HI BURDEN : FLAG-YES : 220V DC(50 TO 120%) : 16M 4B ER/HR CONTACT CONFIG: CASE SIZE:E4 :WIRING DIAGRAM No: 8112W0084.				
	86C1	EASUN	TR241-220V-16M4B-HRER-E4	HIGH SPEED TRIP RELAY, HI BURDEN : FLAG-YES : 220V DC(50 TO 120%) : 16M 4B ER/HR CONTACT CONFIG: CASE SIZE:E4 :WIRING DIAGRAM No: 8112W0084.				
D	86C2	EASUN	TR241-220V-16M4B-HRER-E4	HIGH SPEED TRIP RELAY, HI BURDEN : FLAG-YES : 220V DC(50 TO 120%) : 16M 4B ER/HR CONTACT CONFIG: CASE SIZE:E4 :WIRING DIAGRAM No: 8112W0084.				
	195	EASUN	XR351-220V-2M2B-SR-E4	TRIP COIL SUPERVISION RELAY, 2M 2B SR : FLAG-REV : 220V DC(80 TO 120%); 400ms RESET DELAY :WIRING DIAGRAM No: 8112W00132				
D	295	EASUN	XR351-220V-2M2B-SR-E4	TRIP COIL SUPERVISION RELAY, 2M 2B SR : FLAG-REV : 220V DC(80 TO 120%); 400ms RESET DELAY :WIRING DIAGRAM No: 8112W00132				
	BLKA	SWITRON	ERMLG 01	TEST BLOCK				
E	BLKB	SWITRON	ERMLG 01	TEST BLOCK				
	BLKC	SWITRON	ERMLG 01	TEST BLOCK				
E	BLKD	SWITRON	ERMLG 01	TEST BLOCK				
	GPRM	SCHNEIDER ELECTRIC	P343316Q6M0368K	GEN PROTN. RELAY, AUX VOTL: 110-250V DC/100-240V AC, INOM:1A/5A, VNOM:100-120V AC, OPTO I/P: 16, O/P CONTACT: 32, RTD I/P: 10, CLIO I/P: 4, CLIO O/P: 4, PROTOCOL: MODBUS, CASE: 80TE, MOUNTING: PANEL	MAIN-1 PROTN			
F	GPRR	SCHNEIDER ELECTRIC	P343316Q6M0368K	GEN PROTN. RELAY, AUX VOTL: 110-250V DC/100-240V AC, INOM:1A/5A, VNOM:100-120V AC, OPTO I/P: 16, O/P CONTACT: 32, RTD I/P: 10, CLIO I/P: 4, CLIO O/P: 4, PROTOCOL: MODBUS, CASE: 80TE, MOUNTING: PANEL	MAIN-2 PROTN			
F								
F								
F								
F	CUSTOMER : BHARAT HEAVY ELECTRICALS LTD. HYDERABAD		CLIENT: ROHIT FERRO TECH LTD, JAJPUR, ORISSA.		TITLE : 11KV GENERATOR PROTECTION		PREPARED : GD	REVISION: B
	PROJECT : ROHIT FERRO TECH LTD. 67.5MW CAPTIVE POWER PLANT, JAJPUR		CONSULTANT: DEVELOPMENT CONSULTANTS PVT LTD.		BILL OF MATERIALS RELAY PANEL: +R1		REVIEWED : THY	DATE: 3/31/2012
PO. No.& Date: C117A00076 DATED:16-01-2012				Schneider Electric		APPROVED : APS		SHT :002
				PANEL TYPE : +R1		DRG. NO.: 3269PN491-GL-01		
	1	2	3	4	5	6	7	8

This document is the exclusive property of Schneider Electric and shall not be used, copied or communicated to third parties without prior authorization.

1		2		3		4		5		6		7		8	
REAR VIEW EQUIPMENTS:															
A	Designation	Manufacturer	Material	Description								Comment			
	30A	RELPOL	GBR42014231125WT	MINIATURE AUXILIARY RELAY;MODEL:R4 ;4 CHANGE OVER;AUX SUPPLY: 220V DC											
	30B	RELPOL	GBR42014231125WT	MINIATURE AUXILIARY RELAY;MODEL:R4 ;4 CHANGE OVER;AUX SUPPLY: 220V DC											
	30C	RELPOL	GBR42014231125WT	MINIATURE AUXILIARY RELAY;MODEL:R4 ;4 CHANGE OVER;AUX SUPPLY: 220V DC											
B	30D	RELPOL	GBR42014231125WT	MINIATURE AUXILIARY RELAY;MODEL:R4 ;4 CHANGE OVER;AUX SUPPLY: 220V DC											
	CIL	IMTECH/WIPRO/PHILIPS	CIL-11W-230VAC	COMPACT FLOURESCENT LAMP - 11W 230V AC											
	E1	COOPER BUSSMANN/GE	-	LINK											
	E2	COOPER BUSSMANN/GE	-	LINK											
C	E3	COOPER BUSSMANN/GE	-	LINK											
	E4	COOPER BUSSMANN/GE	-	LINK											
	E5	COOPER BUSSMANN/GE	-	LINK											
	E6	COOPER BUSSMANN/GE	-	LINK											
D	E7	COOPER BUSSMANN/GE	-	LINK											
	E8	COOPER BUSSMANN/GE	-	LINK											
	E8	COOPER BUSSMANN/GE	-	LINK											
	E9	COOPER BUSSMANN/GE	-	LINK											
E	E9	COOPER BUSSMANN/GE	-	LINK											
	E10	COOPER BUSSMANN/GE	-	LINK											
	FS1	COOPER BUSSMANN/GE	-	FUSE - 10A, DC											
	FS2	COOPER BUSSMANN/GE	-	FUSE - 10A, DC											
F	FS3	COOPER BUSSMANN/GE	-	FUSE - 10A, DC											
	FS4	COOPER BUSSMANN/GE	-	FUSE - 10A, DC											
	FS5	COOPER BUSSMANN/GE	-	FUSE - 6A, DC											
	FS6	COOPER BUSSMANN/GE	-	FUSE - 6A, DC											
F	FS7	COOPER BUSSMANN/GE	-	FUSE - 4A, DC											
	FS8	COOPER BUSSMANN/GE	-	FUSE - 4A, DC											
CUSTOMER : BHARAT HEAVY ELECTRICALS LTD. HYDERABAD PROJECT : ROHIT FERRO TECH LTD. 67.5MW CAPTIVE POWER PLANT, JAJPUR PO. No.& Date: C117A00076 DATED:16-01-2012			CLIENT: ROHIT FERRO TECH LTD, JAJPUR, ORISSA. CONSULTANT: DEVELOPMENT CONSULTANTS PVT LTD.			Schneider Electric			TITLE : 11KV GENERATOR PROTECTION BILL OF MATERIALS RELAY PANEL: +R1 PANEL TYPE : +R1			PREPARED : GD REVIEWED : THY APPROVED : APS DRG. NO.: 3269PN491-GL-01		REVISION: B DATE: 3/31/2012 SHT :003 CONT:004	
1		2		3		4		5		6		7		8	

This document is the exclusive property of Schneider Electric and shall not be used, copied or communicated to third parties without prior authorization.

	1	2	3	4	5	6	7	8
A	REAR VIEW EQUIPMENTS:							
	Designation	Manufacturer	Material	Description	Comment			
	FS9	COOPER BUSSMANN/GE	-	FUSE - 4A, DC				
	FS10	COOPER BUSSMANN/GE	-	FUSE - 4A, DC				
	FS11	COOPER BUSSMANN/GE	-	FUSE - 6A, DC				
B	FS12	COOPER BUSSMANN/GE	-	FUSE - 6A, DC				
	FS13	COOPER BUSSMANN/GE	-	FUSE - 4A, DC				
	FS14	COOPER BUSSMANN/GE	-	FUSE - 4A, DC				
	FS15	COOPER BUSSMANN/GE	-	FUSE - 4A, DC				
	FS16	COOPER BUSSMANN/GE	-	FUSE - 4A, DC				
	FS17	COOPER BUSSMANN/GE	-	FUSE - 4A, DC				
C	FS18	COOPER BUSSMANN/GE	-	FUSE - 4A, DC				
	FS19	COOPER BUSSMANN/GE	-	FUSE - 4A, DC				
	FS20	COOPER BUSSMANN/GE	-	FUSE - 4A, DC				
	FS21	COOPER BUSSMANN/GE	-	FUSE - 4A, DC				
	FS22	COOPER BUSSMANN/GE	-	FUSE - 4A, DC				
	FS23	COOPER BUSSMANN/GE	-	FUSE - 4A, DC				
D	FS24	COOPER BUSSMANN/GE	-	FUSE - 4A, DC				
	FS25	COOPER BUSSMANN/GE	-	FUSE - 4A, DC				
	FS26	COOPER BUSSMANN/GE	-	FUSE - 4A, DC				
	FS91	COOPER BUSSMANN/GE	-	FUSE - 16A, AC				
	FS111	COOPER BUSSMANN/GE	-	FUSE - 2A, AC				
E	FS131	COOPER BUSSMANN/GE	-	FUSE - 2A, AC				
	FS151	COOPER BUSSMANN/GE	-	FUSE - 2A, AC				
	FS211	COOPER BUSSMANN/GE	-	FUSE - 2A, AC				
	FS213	COOPER BUSSMANN/GE	-	FUSE - 2A, AC				
	FS231	COOPER BUSSMANN/GE	-	FUSE - 2A, AC				
F	CUSTOMER : BHARAT HEAVY ELECTRICALS LTD. HYDERABAD PROJECT : ROHIT FERRO TECH LTD. 67.5MW CAPTIVE POWER PLANT, JAJPUR PO. No.& Date: C117A00076 DATED:16-01-2012		CLIENT: ROHIT FERRO TECH LTD, JAJPUR, ORISSA. CONSULTANT: DEVELOPMENT CONSULTANTS PVT LTD.		TITLE : 11KV GENERATOR PROTECTION BILL OF MATERIALS RELAY PANEL: +R1 PANEL TYPE : +R1		PREPARED : GD REVIEWED : THY APPROVED : APS	REVISION: B DATE:3/31/2012 DRG. NO.: 3269PN491-GL-01
	1	2	3	4	5	6	7	8



This document is the exclusive property of Schneider Electric and shall not be used, copied or communicated to third parties without prior authorization.

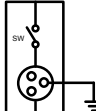
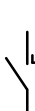
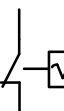
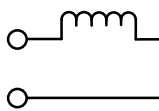
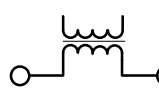
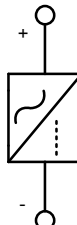
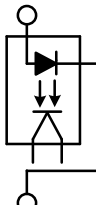
1		2		3		4		5		6		7		8	
REAR VIEW EQUIPMENTS:															
A	Designation	Manufacturer	Material	Description	Comment										
	FS233	COOPER BUSSMANN/GE	-	FUSE - 2A, AC											
	FS251	COOPER BUSSMANN/GE	-	FUSE - 2A, AC											
	FS253	COOPER BUSSMANN/GE	-	FUSE - 2A, AC											
	FS311	COOPER BUSSMANN/GE	-	FUSE - 2A, AC											
B	FS331	COOPER BUSSMANN/GE	-	FUSE - 2A, AC											
	FS351	COOPER BUSSMANN/GE	-	FUSE - 2A, AC											
	FS411	COOPER BUSSMANN/GE	-	FUSE - 2A, AC											
	FS431	COOPER BUSSMANN/GE	-	FUSE - 2A, AC											
	FS451	COOPER BUSSMANN/GE	-	FUSE - 2A, AC											
C	FS511	COOPER BUSSMANN/GE	-	FUSE - 2A, AC											
	FS531	COOPER BUSSMANN/GE	-	FUSE - 2A, AC											
	FS551	COOPER BUSSMANN/GE	-	FUSE - 2A, AC											
	FS611	COOPER BUSSMANN/GE	-	FUSE - 2A, AC											
	FS631	COOPER BUSSMANN/GE	-	FUSE - 2A, AC											
D	FS651	COOPER BUSSMANN/GE	-	FUSE - 2A, AC											
	HS	SWITRON	HS-230VAC	HEATER SWITCH											
	HT	SOFIA/TELELEC	HT-60W-230AC	HEATER 230V AC 50HZ, 60W											
	LK91	COOPER BUSSMANN/GE	-	LINK											
	LK171	COOPER BUSSMANN/GE	-	LINK											
E	LK271	COOPER BUSSMANN/GE	-	LINK											
	LK371	COOPER BUSSMANN/GE	-	LINK											
	LK471	COOPER BUSSMANN/GE	-	LINK											
	LK571	COOPER BUSSMANN/GE	-	LINK											
	LK671	COOPER BUSSMANN/GE	-	LINK											
CUSTOMER : BHARAT HEAVY ELECTRICALS LTD. HYDERABAD		CLIENT: ROHIT FERRO TECH LTD, JAJPUR, ORISSA.				TITLE : 11KV GENERATOR PROTECTION		PREPARED : GD	REVISION: B	SHT :005					
PROJECT : ROHIT FERRO TECH LTD. 67.5MW CAPTIVE POWER PLANT, JAJPUR		CONSULTANT: DEVELOPMENT CONSULTANTS PVT LTD.				BILL OF MATERIALS RELAY PANEL: +R1		REVIEWED : THY	DATE: 3/31/2012	CONT:006					
PO. No.& Date: C117A00076 DATED:16-01-2012						PANEL TYPE : +R1		DRG. NO.: 3269PN491-GL-01							
1		2		3		4		5		6		7		8	

This document is the exclusive property of Schneider Electric and shall not be used, copied or communicated to third parties without prior authorization.

	1	2	3	4	5	6	7	8
A	REAR VIEW EQUIPMENTS:							
	Designation	Manufacturer	Material	Description	Comment			
	PS	ANCHOR	PS-5-15A-230VAC	POWER SOCKET 5/15A WITH SWITCH + 3PIN PLUG, 230V AC				
	R1	-	-	RESISTOR, 3.3K-OHMS, 30W				
	R2	-	-	RESISTOR, 3.3K-OHMS, 30W				
	R3	-	-	RESISTOR, 3.3K-OHMS, 30W				
	R4	-	-	RESISTOR, 3.3K-OHMS, 30W				
B	R5	-	-	RESISTOR, 3.3K-OHMS, 30W				
	R6	-	-	RESISTOR, 3.3K-OHMS, 30W				
	RR	-	-	CLIO REPEATER FOR INJECTION KIT				
	TS	MAVIS/ APT CTRLS/TELELEC	TS-30-90DEG-230VAC	THERMOSTAT 230V AC, 30-90 DEG				
	X1	CONNECTWELL	STH4	NON DISCONNECTING TERMINAL BLOCK				
C	X2	CONNECTWELL	STH4DTSH	DISCONNECTING TERMINAL BLOCK				
	X3	CONNECTWELL	STH4DT	DISCONNECTING TERMINAL BLOCK				
	X4	CONNECTWELL	STH4	NON DISCONNECTING TERMINAL BLOCK				
	X5	CONNECTWELL	STH4	NON DISCONNECTING TERMINAL BLOCK				
	X7	CONNECTWELL	STH4	NON DISCONNECTING TERMINAL BLOCK				
D	X8	CONNECTWELL	STH4	NON DISCONNECTING TERMINAL BLOCK				
	X100	CONNECTWELL	STH4	NON DISCONNECTING TERMINAL BLOCK				
	X101	CONNECTWELL	STH4	NON DISCONNECTING TERMINAL BLOCK				
	X200	CONNECTWELL	STH4	NON DISCONNECTING TERMINAL BLOCK				
	X201	CONNECTWELL	STH4	NON DISCONNECTING TERMINAL BLOCK				
E								
F	CUSTOMER : BHARAT HEAVY ELECTRICALS LTD. HYDERABAD PROJECT : ROHIT FERRO TECH LTD. 67.5MW CAPTIVE POWER PLANT, JAJPUR PO. No.& Date: C117A00076 DATED:16-01-2012		CLIENT: ROHIT FERRO TECH LTD, JAJPUR, ORISSA. CONSULTANT: DEVELOPMENT CONSULTANTS PVT LTD.		Schneider Electric		TITLE : 11KV GENERATOR PROTECTION BILL OF MATERIALS RELAY PANEL: +R1 PANEL TYPE : +R1	
							PREPARED : GD REVIEWED : THY APPROVED : APS	
							REVISION: B DATE: 3/31/2012	
							SHT :006 CONT: NIL	
							DRG. NO.: 3269PN491-GL-01	
	1	2	3	4	5	6	7	8

This document is the exclusive property of Schneider Electric and shall not be used, copied or communicated to third parties without prior authorization.

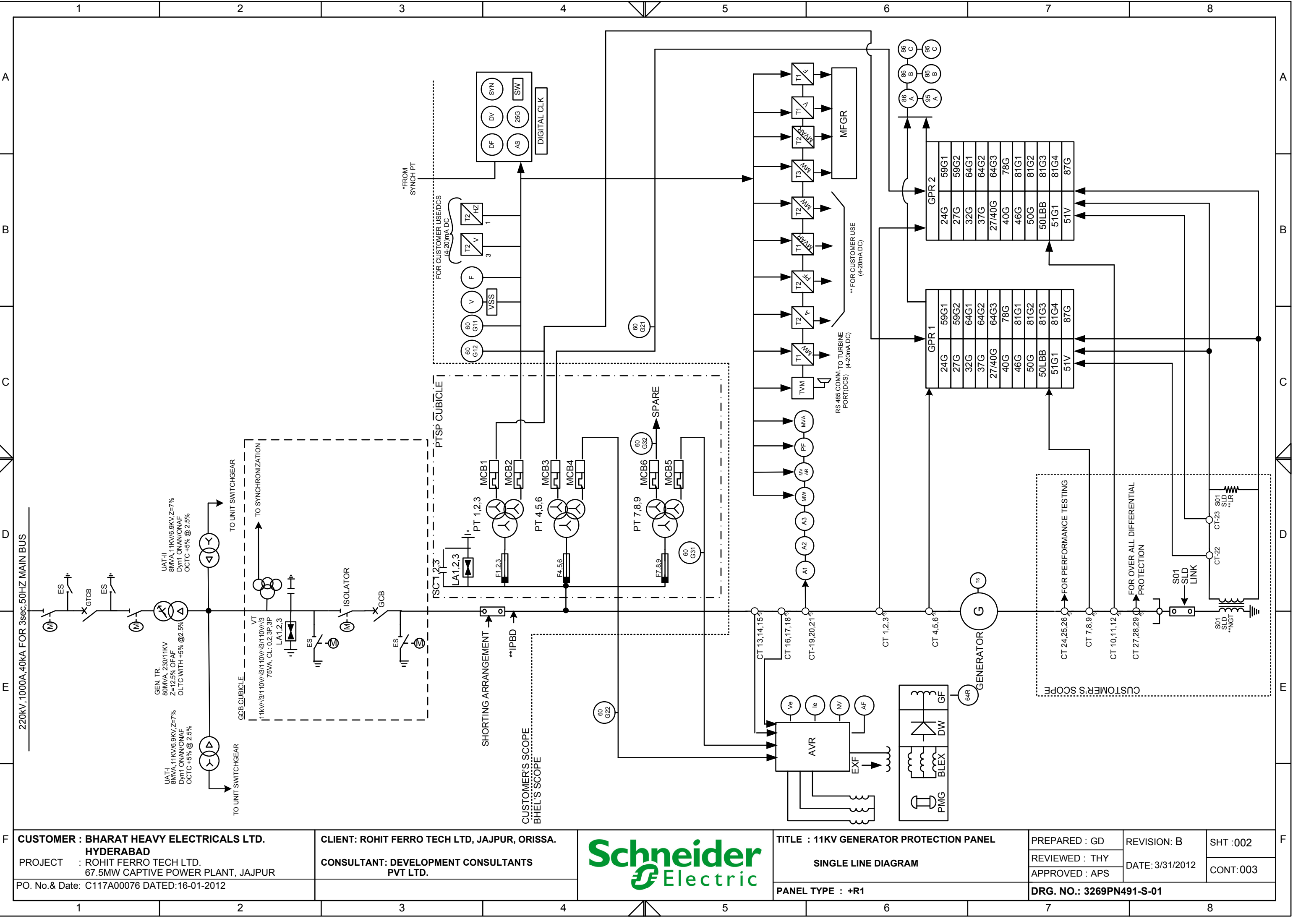
1		2		3		4		5		6		7		8								
A			SHEET	DESCRIPTION		SHEET		DESCRIPTION														
			000	INDEX SHEET		046		RELAY LED CONFIGURATION														
			001	LIST OF SYMBOLS		047		TERMINAL BLOCK REFERENCE														
			002	SINGLE LINE DIAGRAM		NO_S...																
			003	SINGLE LINE DIAGRAM																		
			004	GROUP-1 OUTRIP LOGIC DIAGRAM																		
			005	GROUP-2 TRIP LOGIC DIAGRAM																		
			006	AC DISTRIBUTION																		
			007	DC DISTRIBUTION																		
			008	DC DISTRIBUTION																		
B			009	VT DISTRIBUTION																		
			010	VT DISTRIBUTION																		
			011	VT DISTRIBUTION																		
			012	VOLTAGE BALANACE																		
			013	GEN PROTN-GPRM CT CIRCUIT																		
			014	GEN PROTN GPRM-PT CKT																		
			015	GEN PROTN-GPRM OPTO CKT																		
			016	GEN PROTN-GPRM OPTO CKT																		
			017	GEN PROTN-GPRM CLIO CKT																		
			018	GEN PROTN-GPRR CT CIRCUIT																		
C			019	GEN PROTN GPRR-PT CKT																		
			020	GEN PROTN-GPRR OPTO CKT																		
			021	GEN PROTN-GPRR OPTO CKT																		
			022	GEN PROTN-GPRR CLIO CKT																		
			023	ROTOR E/F CKT																		
			024	CONTACT MULTIPLICATION CKT.																		
			025	UNIT LOCKOUT RELAY-86A1																		
			026	TURBINE LOCKOUT RELAY-86B1																		
			027	GENERATOR LOCKOUT RELAY-86C1																		
			028	UNIT LOCKOUT RELAY-86A2																		
D			029	TURBINE LOCKOUT RELAY-86B2																		
			030	GENERATOR LOCKOUT RELAY-86C2																		
			031	GCB-52G CLOSING&TRIP COIL-1																		
			032	GCB-52G TRIP COIL-2																		
			033	GEN FIELD CB & AVR TRIP																		
			034	TURBINE CB TRIP & AUTO TRIP																		
			035	ANNUNCIATION CONTACT DISTRIBUTION																		
			036	ANNUNCIATION CONTACT DISTRIBUTION																		
			037	ANNUNCIATION CONTACT DISTRIBUTION																		
			038	ANNUNCIATION CONTACT DISTRIBUTION																		
E			039	ANNUNCIATION CONTACT DISTRIBUTION																		
			040	ANNUNCIATION CONTACT DISTRIBUTION																		
			041	SPARE CONTACT DISTRIBUTION																		
			042	SPARE CONTACT DISTRIBUTION																		
			043	TEST BLOCK DISTRIBUTION																		
			044	RELAY CONTACT DISTRIBUTION																		
			045	RELAY CONTACT DISTRIBUTION																		
								</														

	1	2	3	4	5	6	7	8	
A B C D E	LIST OF STANDARD SYMBOLS								
	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	
		COMPACT FLOURESCENT LAMP		RESISTOR		NORMALLY OPEN CONTACT SELF RESET		NON-DISCONNECTING TB FOR INTER PANEL BUS WIRING	
		DOOR/HEATER SWITCH		CONTROL / SELECTOR SWITCH		NORMALLY CLOSE CONTACT SELF RESET		NON-DISCONNECTING TB FOR SCADA/BCU	
		HEATER		TEST BLOCK		CHANGEOVER CONTACT SELF RESET		NON-DISCONNECTING TB	
		POWER SOCKET WITH SWITCH		POTENTIO METER		NORMALLY OPEN CONTACT HAND RESET		TB PRIMARY EQUIPMENTS	
		THERMOSTAT		POTENTIAL TRANSFORMER		NORMALLY CLOSE CONTACT HAND RESET		DIODE	
		FUSE		CURRENT TRANSFORMER		CHANGEOVER CONTACT HAND RESET		SEMAPHORE	
		LINK		POWER SUPPLY		DIGITAL OPTO INPUT		BUS WIRE REPRESENTATION SOURCE / TARGET	
		MCB						NORMAL WIRE REPRESENTATION SOURCE / TARGET	
		INDICATING LAMPS		SELF-RESET COIL WITH/ WITHOUT FLAG		SELT-RESET SLOW OPERAING COIL WITH REVERSE/ FORWARD FLAG			
		PUSH BUTTON NC CONTACT							
		PUSH BUTTON NO CONTACT		HAND-RESET COIL WITH/ WITHOUT FLAG		ANNUNCIATOR WINDOW INPUT			
		METROSIL				DISCONNECTING TB			
	NOTE: RELAY CONTACTS SHOWN WITH CONTACT DE ENERGIZED CONDITION.								
	F	CUSTOMER : BHARAT HEAVY ELECTRICALS LTD. HYDERABAD PROJECT : ROHIT FERRO TECH LTD. 67.5MW CAPTIVE POWER PLANT, JAJPUR PO. No.& Date: C117A00076 DATED:16-01-2012		CLIENT: ROHIT FERRO TECH LTD, JAJPUR, ORISSA. CONSULTANT: DEVELOPMENT CONSULTANTS PVT LTD.					TITLE : 11KV GENERATOR PROTECTION PANEL LIST OF SYMBOLS PANEL TYPE : +R1
								PREPARED : GD REVIEWED : THY APPROVED : APS	REVISION: B DATE: 3/31/2012
								SHT :001 CONT:002	
							DRG. NO.: 3269PN491-S-01		
	1	2	3	4	5	6	7	8	

TERMINAL GROUP STANDARDS	
TB REF	FUNCTION
X1	AC/DC CIRCUITS
X2	CT CIRCUITS
X3	PT CIRCUITS
X4	CONTROL INPUTS (TO OPTO/CONT MUL. RELAY)
X5	CONTROL OUTPUTS (TO CB CONTROL)
X6	CONTROL OUTPUTS (TO ISOL./ESW. CONTROL)
X7	SPARE OUTPUTS
X8	TEMP SCANNER/SCADA/RTU/DCS CKTS
X9	INDICATION/ANNUNCIATON CKTS
X9-DI-SLOT	BCU DI INPUTS
X9-DO-SLOT	BCU DO INPUTS
X9-AI-SLOT	BCU AI INPUTS
X10	FOR INTER PANEL CABLES
X100	BUS WIRING CT/PT CKTS (INTRA-BAY)
X101-X109	BUS WIRING CONTROL CKTS (INTRA-BAY)
X200	BUS WIRING CT/PT CKTS (INTER-BAY)
X201-X209	BUS WIRING CONTROL CKTS (INTER-BAY)

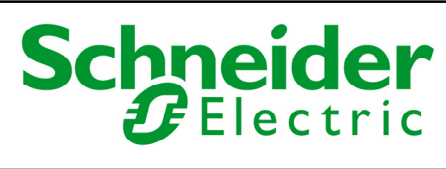
FERRULE NUMBERING STANDARDS	
FERRULE	CIRCUIT
"A"	CT CIRCUIT-MAIN PROTECTION
"B"	CT CIRCUIT-BUSBAR PROTECTION
"C"	CT CIRCUIT-BACKUP PROTECTION
"D"	CT CIRCUIT-METERING
"E"	VT CIRCUIT-PROTECTION/METERING
"G"	VT CIRCUIT-SYNCHRONISING
"H"	AUXILARY AC CIRCUIT
"J"	AUXILARY DC CIRCUIT
"K"	CONTROL CIRCUIT
"L"	INDICATION & ALARM CIRCUITS
"P"	DC CIRCUIT- BUSBAR PROTECTION CIRCUIT
"S"	SCADA/EVENT LOGGER/DAS CIRCUITS
"U"	SPARE CONTACTS

This document is the exclusive property of Schneider Electric and shall not be used, copied or communicated to third parties without prior authorization.



CUSTOMER : BHARAT HEAVY ELECTRICALS LTD.
HYDERABAD
PROJECT : ROHIT FERRO TECH LTD.
67.5MW CAPTIVE POWER PLANT, JAJPUR
PO. No. & Date: C117A00076 DATED:16-01-2012

CLIENT: ROHIT FERRO TECH LTD, JAJPUR, ORISSA.
CONSULTANT: DEVELOPMENT CONSULTANTS PVT LTD.



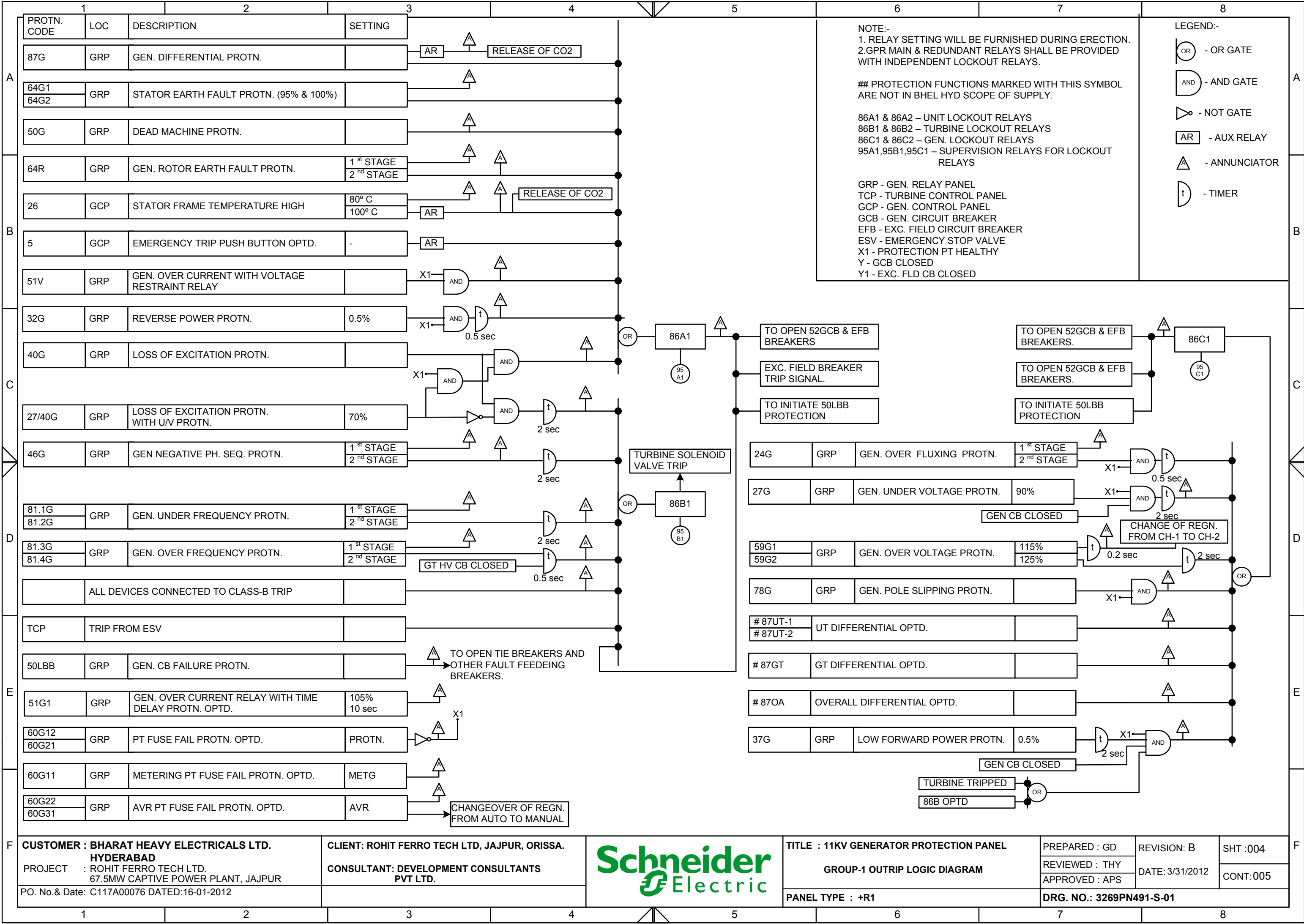
TITLE : 11KV GENERATOR PROTECTION PANEL
SINGLE LINE DIAGRAM
PANEL TYPE : +R1

PREPARED : GD	REVISION: B	SHT :002
REVIEWED : THY	DATE:3/31/2012	CONT:003
APPROVED : APS		
DRG. NO.: 3269PN491-S-01		

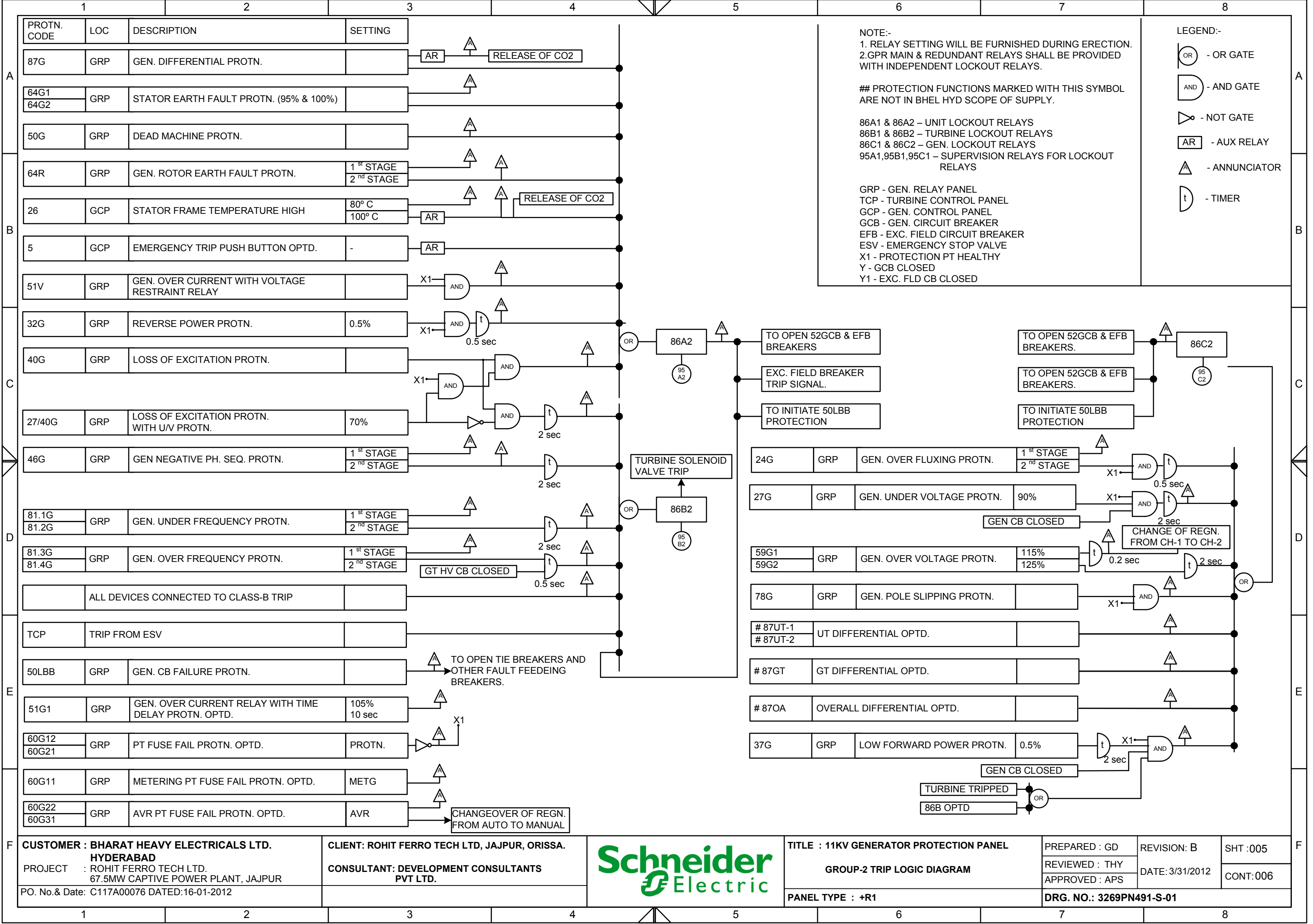
This document is the exclusive property of Schneider Electric and shall not be used, copied or communicated to third parties without prior authorization.

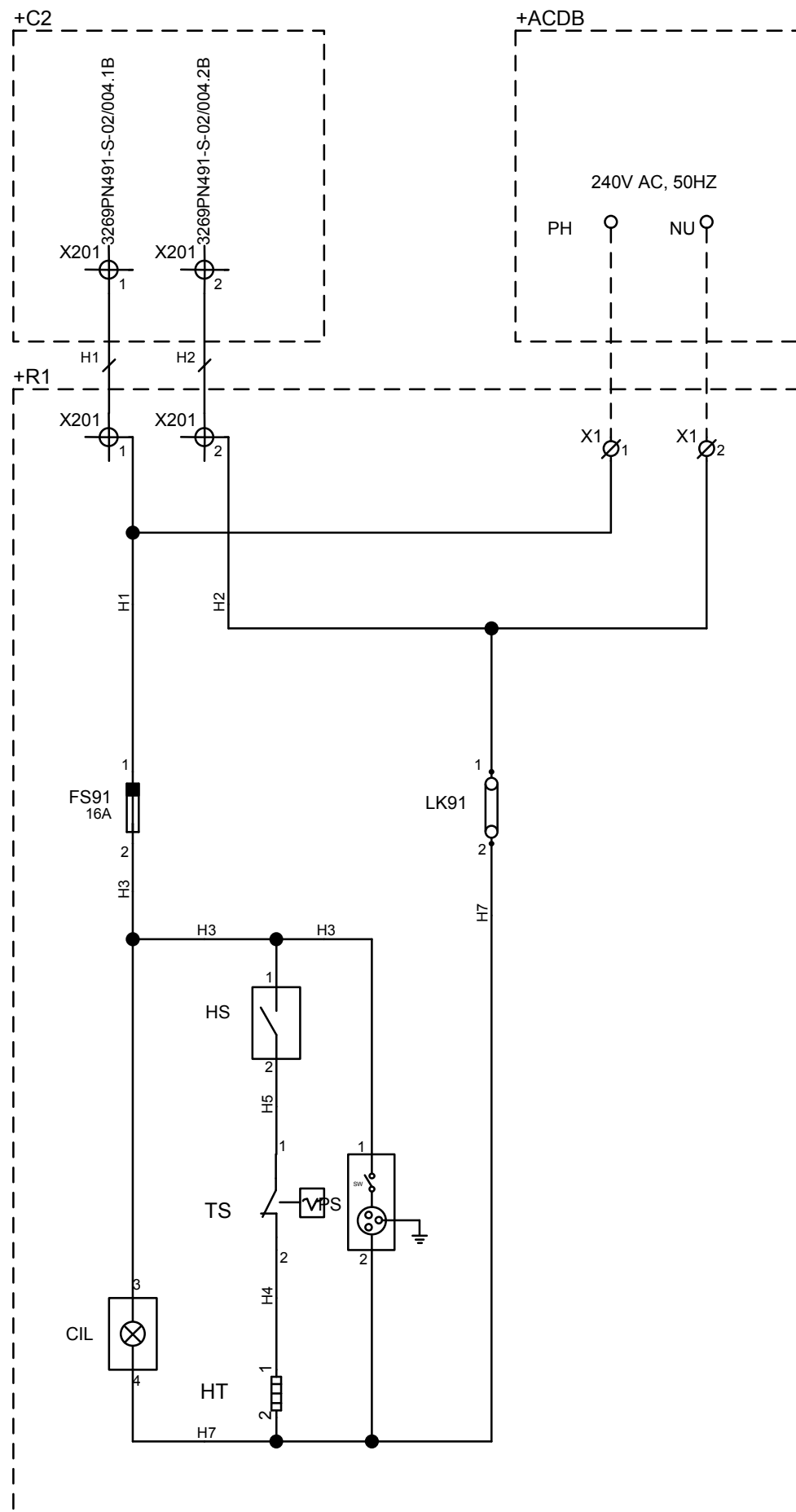
1	2	3	4	5	6	7	8																																																																																																																																						
A	LEGEND: <table><tr><td>G</td><td>GENERATOR 70MW, 11KV, 3000RPM, 0.8PF</td></tr><tr><td>AVR</td><td>AUTOMATIC VOLTAGE REGULATOR</td></tr><tr><td>PMG</td><td>PERMANENT MAGNET GENERATOR</td></tr><tr><td>BLEX</td><td>BRUSHLESS EXCITER</td></tr><tr><td>DW</td><td>DIODE WHEEL</td></tr><tr><td>EXF</td><td>GENERATOR EXCITER FIELD</td></tr><tr><td>GF</td><td>GENERATOR FIELD</td></tr><tr><td>TS</td><td>32 POINT GENERATOR TEMPERATURE SCANNER</td></tr><tr><td>A1,A2,A3</td><td>AMMETER FOR GENERATOR STATOR CURRENT (5000A)</td></tr><tr><td>AF</td><td>GENERATOR FIELD AMMETER (0-1200A)</td></tr><tr><td>MW</td><td>MEGAWATT METER (0-100MW)</td></tr><tr><td>MVAR</td><td>MEGA VAR METER (100MVAR LEAD-0-100MVAR LAG)</td></tr><tr><td>MVA</td><td>MEGA VOLTAMPS METER (0-100MVA)</td></tr><tr><td>TVM</td><td>TRIVECTOR METER FOR GENERATOR</td></tr><tr><td>PF</td><td>POWER FACTOR METER (0.5 LAG - 1 - 0.5 LEAD)</td></tr><tr><td>V</td><td>GENERATOR VOLTMETER (0-15KV)</td></tr><tr><td>F</td><td>FREQUENCYMETER (45-55 HZ)</td></tr><tr><td>DF</td><td>DUAL FREQUENCY METER FOR SYNCH. (45-55 HZ)</td></tr><tr><td>DV</td><td>DUAL VOLTMETER FOR SYNCH</td></tr><tr><td>Ie</td><td>EXCITER FIELD AMMETER (0-20A)</td></tr><tr><td>Ve</td><td>EXCITER FIELD VOLTMETER (0-150V)</td></tr><tr><td>NV</td><td>NULL VOLTMETER [(+15)-0-(-15V)]</td></tr><tr><td>F1-F9</td><td>PT FUSES</td></tr><tr><td>MFGR</td><td>PAPERLESS MULTI FUNCTION GRAPHIC RECORDER</td></tr><tr><td>VSS</td><td>VOLTAGE SELECTOR SWITCH</td></tr><tr><td>T1,T2,T3/MW</td><td>MEGAWATT TRANSDUCER RANGE 0 TO 100MW</td></tr><tr><td>T1,T2/MVAR</td><td>MVAR TRANSDUCER, RANGE 100MVAR LAG TO 100MVAR LEAD</td></tr><tr><td>T2/PF</td><td>POWER FACTOR TRANSDUCER, RANGE 0.5 LAG TO 0.5 LEAD</td></tr><tr><td>T1,T2/HZ</td><td>FREQUENCY TRANSDUCER, RANGE 45 TO 55HZ</td></tr><tr><td>T1,T2/V</td><td>VOLTAGE TRANSDUCERS, RANGE 0 TO 15KV</td></tr><tr><td>T2/A</td><td>CURRENT TRANSDUCER, RANGE 0 – 5000A</td></tr><tr><td>SC</td><td>SURGE CAPACITOR, 0.25 MICRO FARAD, 18Kv</td></tr><tr><td>AS</td><td>AUTO SYNCHRONISER</td></tr><tr><td>LA</td><td>LIGHTINING ARRESTER</td></tr><tr><td>NGT</td><td>NEUTRAL GROUNDING TRANSFORMER</td></tr><tr><td>52</td><td>11KV GEN. CIRCUIT BREAKER</td></tr><tr><td>MCB1 TO 6</td><td>MINATURE CIRCUIT BREAKERS</td></tr><tr><td>SYN</td><td>SYNCHROSCOPE</td></tr><tr><td>LR</td><td>LOADING RESISTOR</td></tr><tr><td>SW</td><td>SYNCHROSCOPE CUT OFF SWITCH</td></tr><tr><td>GPR</td><td>GENERATOR PROTECTION RELAY</td></tr><tr><td>25G</td><td>CHECK SYNC RELAY</td></tr><tr><td>IPB</td><td>ISOLATED PHASE BUS DUCT</td></tr></table> <tr><td rowspan="3">B</td><td colspan="7"> PROTECTIVE RELAYS <table><tr><td>24G</td><td>V/HZ PROTECTION (GEN. OVER FLUXING)</td></tr><tr><td>27G, 27/40G</td><td>UNDER VOLTAGE RELAYS</td></tr><tr><td>32G,37G</td><td>REVERSE & LOW FORWARD POWER RELAY</td></tr><tr><td>40G</td><td>LOSS OF EXCITATION RELAY</td></tr><tr><td>46G</td><td>NEGATIVE PHASE SEQUENCE CURRENT RELAY</td></tr><tr><td>50G</td><td>DEAD MACHINE PROTECTION</td></tr><tr><td>50LBB</td><td>BREAKER FAILURE PROTECTION</td></tr><tr><td>51G1</td><td>DEFINITE TIME OVER CURRENT RELAY</td></tr><tr><td>51V</td><td>VOLTAGE RESTRAINT OVER CURRENT RELAY</td></tr><tr><td>59G1,59G2</td><td>OVER VOLTAGE PROTECTION STAGE-1 & 2</td></tr><tr><td>60-G11,G12,G21 60-G22,G31,G32</td><td>PT FUSE MONITERING RELAYS</td></tr><tr><td>64R</td><td>ROTOR E/F PROTECTION-2 STAGES (PART OF GPR)</td></tr><tr><td>64G1, 64G2</td><td>GENERATOR STATOR E/F RELAY (95&100%)</td></tr><tr><td>64G3</td><td>STATOR STAND BY E/F PROTECTION</td></tr><tr><td>78G</td><td>POLE SLIPPING PROTECTION OF GENERATOR</td></tr><tr><td>81G1,81G2</td><td>UNDER FREQUENCY PROTECTION STAGE-1&2</td></tr><tr><td>81G3,81G4</td><td>OVER FREQUENCY PROTECTION STAGE-1&2</td></tr><tr><td>86A,86B,86C</td><td>LOCKOUT RELAYS (GROUP 1&2)</td></tr><tr><td>87G</td><td>DIFFERENTIAL RELAY (PART OF GPR -1 &2)</td></tr><tr><td>95A,95B,95C</td><td>SUPERVISION RELAYS FOR LOCKOUT RELAYS</td></tr></table></td></tr>							G	GENERATOR 70MW, 11KV, 3000RPM, 0.8PF	AVR	AUTOMATIC VOLTAGE REGULATOR	PMG	PERMANENT MAGNET GENERATOR	BLEX	BRUSHLESS EXCITER	DW	DIODE WHEEL	EXF	GENERATOR EXCITER FIELD	GF	GENERATOR FIELD	TS	32 POINT GENERATOR TEMPERATURE SCANNER	A1,A2,A3	AMMETER FOR GENERATOR STATOR CURRENT (5000A)	AF	GENERATOR FIELD AMMETER (0-1200A)	MW	MEGAWATT METER (0-100MW)	MVAR	MEGA VAR METER (100MVAR LEAD-0-100MVAR LAG)	MVA	MEGA VOLTAMPS METER (0-100MVA)	TVM	TRIVECTOR METER FOR GENERATOR	PF	POWER FACTOR METER (0.5 LAG - 1 - 0.5 LEAD)	V	GENERATOR VOLTMETER (0-15KV)	F	FREQUENCYMETER (45-55 HZ)	DF	DUAL FREQUENCY METER FOR SYNCH. (45-55 HZ)	DV	DUAL VOLTMETER FOR SYNCH	Ie	EXCITER FIELD AMMETER (0-20A)	Ve	EXCITER FIELD VOLTMETER (0-150V)	NV	NULL VOLTMETER [(+15)-0-(-15V)]	F1-F9	PT FUSES	MFGR	PAPERLESS MULTI FUNCTION GRAPHIC RECORDER	VSS	VOLTAGE SELECTOR SWITCH	T1,T2,T3/MW	MEGAWATT TRANSDUCER RANGE 0 TO 100MW	T1,T2/MVAR	MVAR TRANSDUCER, RANGE 100MVAR LAG TO 100MVAR LEAD	T2/PF	POWER FACTOR TRANSDUCER, RANGE 0.5 LAG TO 0.5 LEAD	T1,T2/HZ	FREQUENCY TRANSDUCER, RANGE 45 TO 55HZ	T1,T2/V	VOLTAGE TRANSDUCERS, RANGE 0 TO 15KV	T2/A	CURRENT TRANSDUCER, RANGE 0 – 5000A	SC	SURGE CAPACITOR, 0.25 MICRO FARAD, 18Kv	AS	AUTO SYNCHRONISER	LA	LIGHTINING ARRESTER	NGT	NEUTRAL GROUNDING TRANSFORMER	52	11KV GEN. CIRCUIT BREAKER	MCB1 TO 6	MINATURE CIRCUIT BREAKERS	SYN	SYNCHROSCOPE	LR	LOADING RESISTOR	SW	SYNCHROSCOPE CUT OFF SWITCH	GPR	GENERATOR PROTECTION RELAY	25G	CHECK SYNC RELAY	IPB	ISOLATED PHASE BUS DUCT	B	PROTECTIVE RELAYS <table><tr><td>24G</td><td>V/HZ PROTECTION (GEN. OVER FLUXING)</td></tr><tr><td>27G, 27/40G</td><td>UNDER VOLTAGE RELAYS</td></tr><tr><td>32G,37G</td><td>REVERSE & LOW FORWARD POWER RELAY</td></tr><tr><td>40G</td><td>LOSS OF EXCITATION RELAY</td></tr><tr><td>46G</td><td>NEGATIVE PHASE SEQUENCE CURRENT RELAY</td></tr><tr><td>50G</td><td>DEAD MACHINE PROTECTION</td></tr><tr><td>50LBB</td><td>BREAKER FAILURE PROTECTION</td></tr><tr><td>51G1</td><td>DEFINITE TIME OVER CURRENT RELAY</td></tr><tr><td>51V</td><td>VOLTAGE RESTRAINT OVER CURRENT RELAY</td></tr><tr><td>59G1,59G2</td><td>OVER VOLTAGE PROTECTION STAGE-1 & 2</td></tr><tr><td>60-G11,G12,G21 60-G22,G31,G32</td><td>PT FUSE MONITERING RELAYS</td></tr><tr><td>64R</td><td>ROTOR E/F PROTECTION-2 STAGES (PART OF GPR)</td></tr><tr><td>64G1, 64G2</td><td>GENERATOR STATOR E/F RELAY (95&100%)</td></tr><tr><td>64G3</td><td>STATOR STAND BY E/F PROTECTION</td></tr><tr><td>78G</td><td>POLE SLIPPING PROTECTION OF GENERATOR</td></tr><tr><td>81G1,81G2</td><td>UNDER FREQUENCY PROTECTION STAGE-1&2</td></tr><tr><td>81G3,81G4</td><td>OVER FREQUENCY PROTECTION STAGE-1&2</td></tr><tr><td>86A,86B,86C</td><td>LOCKOUT RELAYS (GROUP 1&2)</td></tr><tr><td>87G</td><td>DIFFERENTIAL RELAY (PART OF GPR -1 &2)</td></tr><tr><td>95A,95B,95C</td><td>SUPERVISION RELAYS FOR LOCKOUT RELAYS</td></tr></table>							24G	V/HZ PROTECTION (GEN. OVER FLUXING)	27G, 27/40G	UNDER VOLTAGE RELAYS	32G,37G	REVERSE & LOW FORWARD POWER RELAY	40G	LOSS OF EXCITATION RELAY	46G	NEGATIVE PHASE SEQUENCE CURRENT RELAY	50G	DEAD MACHINE PROTECTION	50LBB	BREAKER FAILURE PROTECTION	51G1	DEFINITE TIME OVER CURRENT RELAY	51V	VOLTAGE RESTRAINT OVER CURRENT RELAY	59G1,59G2	OVER VOLTAGE PROTECTION STAGE-1 & 2	60-G11,G12,G21 60-G22,G31,G32	PT FUSE MONITERING RELAYS	64R	ROTOR E/F PROTECTION-2 STAGES (PART OF GPR)	64G1, 64G2	GENERATOR STATOR E/F RELAY (95&100%)	64G3	STATOR STAND BY E/F PROTECTION	78G	POLE SLIPPING PROTECTION OF GENERATOR	81G1,81G2	UNDER FREQUENCY PROTECTION STAGE-1&2	81G3,81G4	OVER FREQUENCY PROTECTION STAGE-1&2	86A,86B,86C	LOCKOUT RELAYS (GROUP 1&2)	87G	DIFFERENTIAL RELAY (PART OF GPR -1 &2)	95A,95B,95C	SUPERVISION RELAYS FOR LOCKOUT RELAYS
	G	GENERATOR 70MW, 11KV, 3000RPM, 0.8PF																																																																																																																																											
	AVR	AUTOMATIC VOLTAGE REGULATOR																																																																																																																																											
PMG	PERMANENT MAGNET GENERATOR																																																																																																																																												
BLEX	BRUSHLESS EXCITER																																																																																																																																												
DW	DIODE WHEEL																																																																																																																																												
EXF	GENERATOR EXCITER FIELD																																																																																																																																												
GF	GENERATOR FIELD																																																																																																																																												
TS	32 POINT GENERATOR TEMPERATURE SCANNER																																																																																																																																												
A1,A2,A3	AMMETER FOR GENERATOR STATOR CURRENT (5000A)																																																																																																																																												
AF	GENERATOR FIELD AMMETER (0-1200A)																																																																																																																																												
MW	MEGAWATT METER (0-100MW)																																																																																																																																												
MVAR	MEGA VAR METER (100MVAR LEAD-0-100MVAR LAG)																																																																																																																																												
MVA	MEGA VOLTAMPS METER (0-100MVA)																																																																																																																																												
TVM	TRIVECTOR METER FOR GENERATOR																																																																																																																																												
PF	POWER FACTOR METER (0.5 LAG - 1 - 0.5 LEAD)																																																																																																																																												
V	GENERATOR VOLTMETER (0-15KV)																																																																																																																																												
F	FREQUENCYMETER (45-55 HZ)																																																																																																																																												
DF	DUAL FREQUENCY METER FOR SYNCH. (45-55 HZ)																																																																																																																																												
DV	DUAL VOLTMETER FOR SYNCH																																																																																																																																												
Ie	EXCITER FIELD AMMETER (0-20A)																																																																																																																																												
Ve	EXCITER FIELD VOLTMETER (0-150V)																																																																																																																																												
NV	NULL VOLTMETER [(+15)-0-(-15V)]																																																																																																																																												
F1-F9	PT FUSES																																																																																																																																												
MFGR	PAPERLESS MULTI FUNCTION GRAPHIC RECORDER																																																																																																																																												
VSS	VOLTAGE SELECTOR SWITCH																																																																																																																																												
T1,T2,T3/MW	MEGAWATT TRANSDUCER RANGE 0 TO 100MW																																																																																																																																												
T1,T2/MVAR	MVAR TRANSDUCER, RANGE 100MVAR LAG TO 100MVAR LEAD																																																																																																																																												
T2/PF	POWER FACTOR TRANSDUCER, RANGE 0.5 LAG TO 0.5 LEAD																																																																																																																																												
T1,T2/HZ	FREQUENCY TRANSDUCER, RANGE 45 TO 55HZ																																																																																																																																												
T1,T2/V	VOLTAGE TRANSDUCERS, RANGE 0 TO 15KV																																																																																																																																												
T2/A	CURRENT TRANSDUCER, RANGE 0 – 5000A																																																																																																																																												
SC	SURGE CAPACITOR, 0.25 MICRO FARAD, 18Kv																																																																																																																																												
AS	AUTO SYNCHRONISER																																																																																																																																												
LA	LIGHTINING ARRESTER																																																																																																																																												
NGT	NEUTRAL GROUNDING TRANSFORMER																																																																																																																																												
52	11KV GEN. CIRCUIT BREAKER																																																																																																																																												
MCB1 TO 6	MINATURE CIRCUIT BREAKERS																																																																																																																																												
SYN	SYNCHROSCOPE																																																																																																																																												
LR	LOADING RESISTOR																																																																																																																																												
SW	SYNCHROSCOPE CUT OFF SWITCH																																																																																																																																												
GPR	GENERATOR PROTECTION RELAY																																																																																																																																												
25G	CHECK SYNC RELAY																																																																																																																																												
IPB	ISOLATED PHASE BUS DUCT																																																																																																																																												
B	PROTECTIVE RELAYS <table><tr><td>24G</td><td>V/HZ PROTECTION (GEN. OVER FLUXING)</td></tr><tr><td>27G, 27/40G</td><td>UNDER VOLTAGE RELAYS</td></tr><tr><td>32G,37G</td><td>REVERSE & LOW FORWARD POWER RELAY</td></tr><tr><td>40G</td><td>LOSS OF EXCITATION RELAY</td></tr><tr><td>46G</td><td>NEGATIVE PHASE SEQUENCE CURRENT RELAY</td></tr><tr><td>50G</td><td>DEAD MACHINE PROTECTION</td></tr><tr><td>50LBB</td><td>BREAKER FAILURE PROTECTION</td></tr><tr><td>51G1</td><td>DEFINITE TIME OVER CURRENT RELAY</td></tr><tr><td>51V</td><td>VOLTAGE RESTRAINT OVER CURRENT RELAY</td></tr><tr><td>59G1,59G2</td><td>OVER VOLTAGE PROTECTION STAGE-1 & 2</td></tr><tr><td>60-G11,G12,G21 60-G22,G31,G32</td><td>PT FUSE MONITERING RELAYS</td></tr><tr><td>64R</td><td>ROTOR E/F PROTECTION-2 STAGES (PART OF GPR)</td></tr><tr><td>64G1, 64G2</td><td>GENERATOR STATOR E/F RELAY (95&100%)</td></tr><tr><td>64G3</td><td>STATOR STAND BY E/F PROTECTION</td></tr><tr><td>78G</td><td>POLE SLIPPING PROTECTION OF GENERATOR</td></tr><tr><td>81G1,81G2</td><td>UNDER FREQUENCY PROTECTION STAGE-1&2</td></tr><tr><td>81G3,81G4</td><td>OVER FREQUENCY PROTECTION STAGE-1&2</td></tr><tr><td>86A,86B,86C</td><td>LOCKOUT RELAYS (GROUP 1&2)</td></tr><tr><td>87G</td><td>DIFFERENTIAL RELAY (PART OF GPR -1 &2)</td></tr><tr><td>95A,95B,95C</td><td>SUPERVISION RELAYS FOR LOCKOUT RELAYS</td></tr></table>							24G	V/HZ PROTECTION (GEN. OVER FLUXING)	27G, 27/40G	UNDER VOLTAGE RELAYS	32G,37G	REVERSE & LOW FORWARD POWER RELAY	40G	LOSS OF EXCITATION RELAY	46G	NEGATIVE PHASE SEQUENCE CURRENT RELAY	50G	DEAD MACHINE PROTECTION	50LBB	BREAKER FAILURE PROTECTION	51G1	DEFINITE TIME OVER CURRENT RELAY	51V	VOLTAGE RESTRAINT OVER CURRENT RELAY	59G1,59G2	OVER VOLTAGE PROTECTION STAGE-1 & 2	60-G11,G12,G21 60-G22,G31,G32	PT FUSE MONITERING RELAYS	64R	ROTOR E/F PROTECTION-2 STAGES (PART OF GPR)	64G1, 64G2	GENERATOR STATOR E/F RELAY (95&100%)	64G3	STATOR STAND BY E/F PROTECTION	78G	POLE SLIPPING PROTECTION OF GENERATOR	81G1,81G2	UNDER FREQUENCY PROTECTION STAGE-1&2	81G3,81G4	OVER FREQUENCY PROTECTION STAGE-1&2	86A,86B,86C	LOCKOUT RELAYS (GROUP 1&2)	87G	DIFFERENTIAL RELAY (PART OF GPR -1 &2)	95A,95B,95C	SUPERVISION RELAYS FOR LOCKOUT RELAYS																																																																																														
	24G	V/HZ PROTECTION (GEN. OVER FLUXING)																																																																																																																																											
	27G, 27/40G	UNDER VOLTAGE RELAYS																																																																																																																																											
32G,37G	REVERSE & LOW FORWARD POWER RELAY																																																																																																																																												
40G	LOSS OF EXCITATION RELAY																																																																																																																																												
46G	NEGATIVE PHASE SEQUENCE CURRENT RELAY																																																																																																																																												
50G	DEAD MACHINE PROTECTION																																																																																																																																												
50LBB	BREAKER FAILURE PROTECTION																																																																																																																																												
51G1	DEFINITE TIME OVER CURRENT RELAY																																																																																																																																												
51V	VOLTAGE RESTRAINT OVER CURRENT RELAY																																																																																																																																												
59G1,59G2	OVER VOLTAGE PROTECTION STAGE-1 & 2																																																																																																																																												
60-G11,G12,G21 60-G22,G31,G32	PT FUSE MONITERING RELAYS																																																																																																																																												
64R	ROTOR E/F PROTECTION-2 STAGES (PART OF GPR)																																																																																																																																												
64G1, 64G2	GENERATOR STATOR E/F RELAY (95&100%)																																																																																																																																												
64G3	STATOR STAND BY E/F PROTECTION																																																																																																																																												
78G	POLE SLIPPING PROTECTION OF GENERATOR																																																																																																																																												
81G1,81G2	UNDER FREQUENCY PROTECTION STAGE-1&2																																																																																																																																												
81G3,81G4	OVER FREQUENCY PROTECTION STAGE-1&2																																																																																																																																												
86A,86B,86C	LOCKOUT RELAYS (GROUP 1&2)																																																																																																																																												
87G	DIFFERENTIAL RELAY (PART OF GPR -1 &2)																																																																																																																																												
95A,95B,95C	SUPERVISION RELAYS FOR LOCKOUT RELAYS																																																																																																																																												

This document is the exclusive property of Schneider Electric and shall not be used, copied or communicated to third parties without prior authorization.



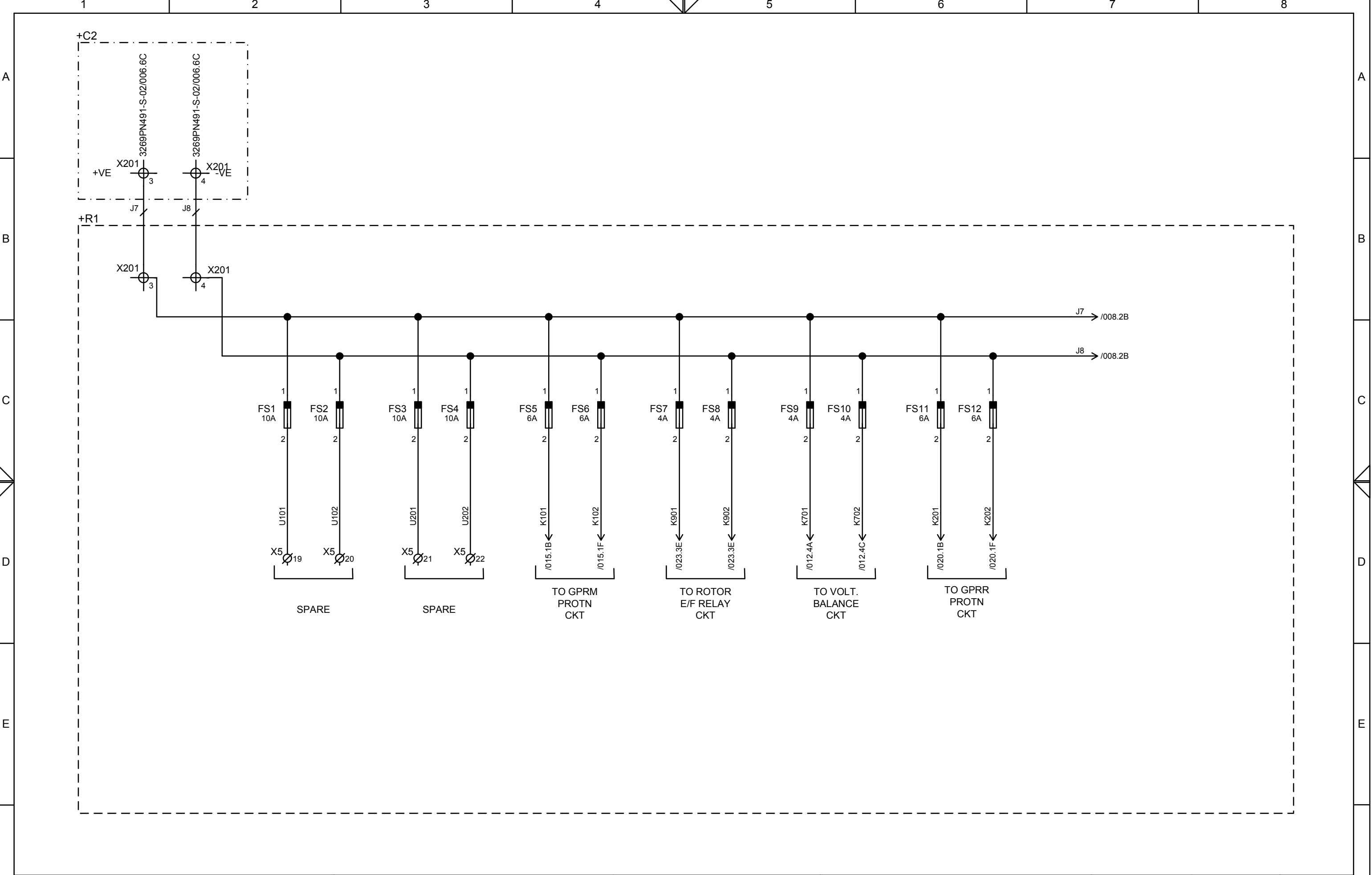
This document is the exclusive property of Schneider Electric and shall not be used, copied or communicated to third parties without prior authorization.



[illegible]

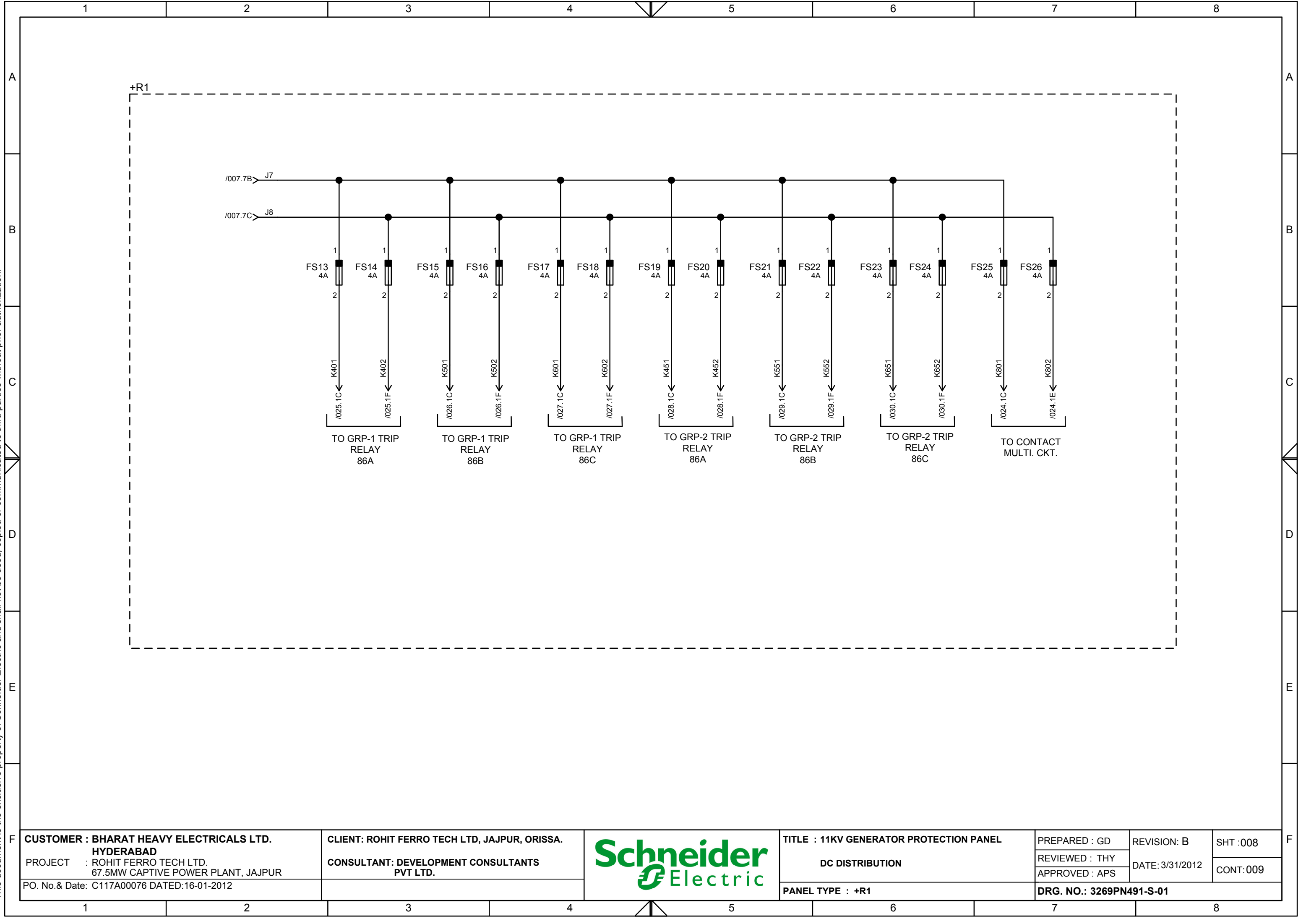
CUSTOMER : BHARAT HEAVY ELECTRICALS LTD. HYDERABAD PROJECT : ROHIT FERRO TECH LTD. 67.5MW CAPTIVE POWER PLANT, JAJPUR	CLIENT: ROHIT FERRO TECH LTD, JAJPUR, ORISSA. CONSULTANT: DEVELOPMENT CONSULTANTS PVT LTD.		TITLE : 11KV GENERATOR PROTECTION PANEL	PREPARED : GD	REVISION: B DATE: 3/31/2012	SHT :006
			AC DISTRIBUTION	REVIEWED : THY APPROVED : APS		CONT:007
PO. No.& Date: C117A00076 DATED:16-01-2012			PANEL TYPE : +R1	DRG. NO.: 3269PN491-S-01		

This document is the exclusive property of Schneider Electric and shall not be used, copied or communicated to third parties without prior authorization.



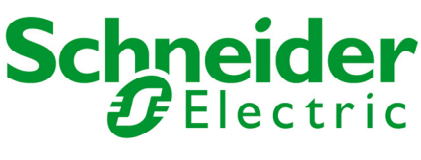
F	CUSTOMER : BHARAT HEAVY ELECTRICALS LTD. HYDERABAD		CLIENT: ROHIT FERRO TECH LTD, JAJPUR, ORISSA.		TITLE : 11KV GENERATOR PROTECTION PANEL	PREPARED : GD	REVISION: B	SHT :007	F
	PROJECT : ROHIT FERRO TECH LTD. 67.5MW CAPTIVE POWER PLANT, JAJPUR	CONSULTANT: DEVELOPMENT CONSULTANTS PVT LTD.	DC DISTRIBUTION		REVIEWED : THY	DATE:3/31/2012	CONT:008		
	PO. No.& Date: C117A00076 DATED:16-01-2012		PANEL TYPE : +R1		APPROVED : APS				
					DRG. NO.: 3269PN491-S-01				

This document is the exclusive property of Schneider Electric and shall not be used, copied or communicated to third parties without prior authorization.



CUSTOMER : BHARAT HEAVY ELECTRICALS LTD.
HYDERABAD
PROJECT : ROHIT FERRO TECH LTD.
67.5MW CAPTIVE POWER PLANT, JAJPUR
PO. No.& Date: C117A00076 DATED:16-01-2012

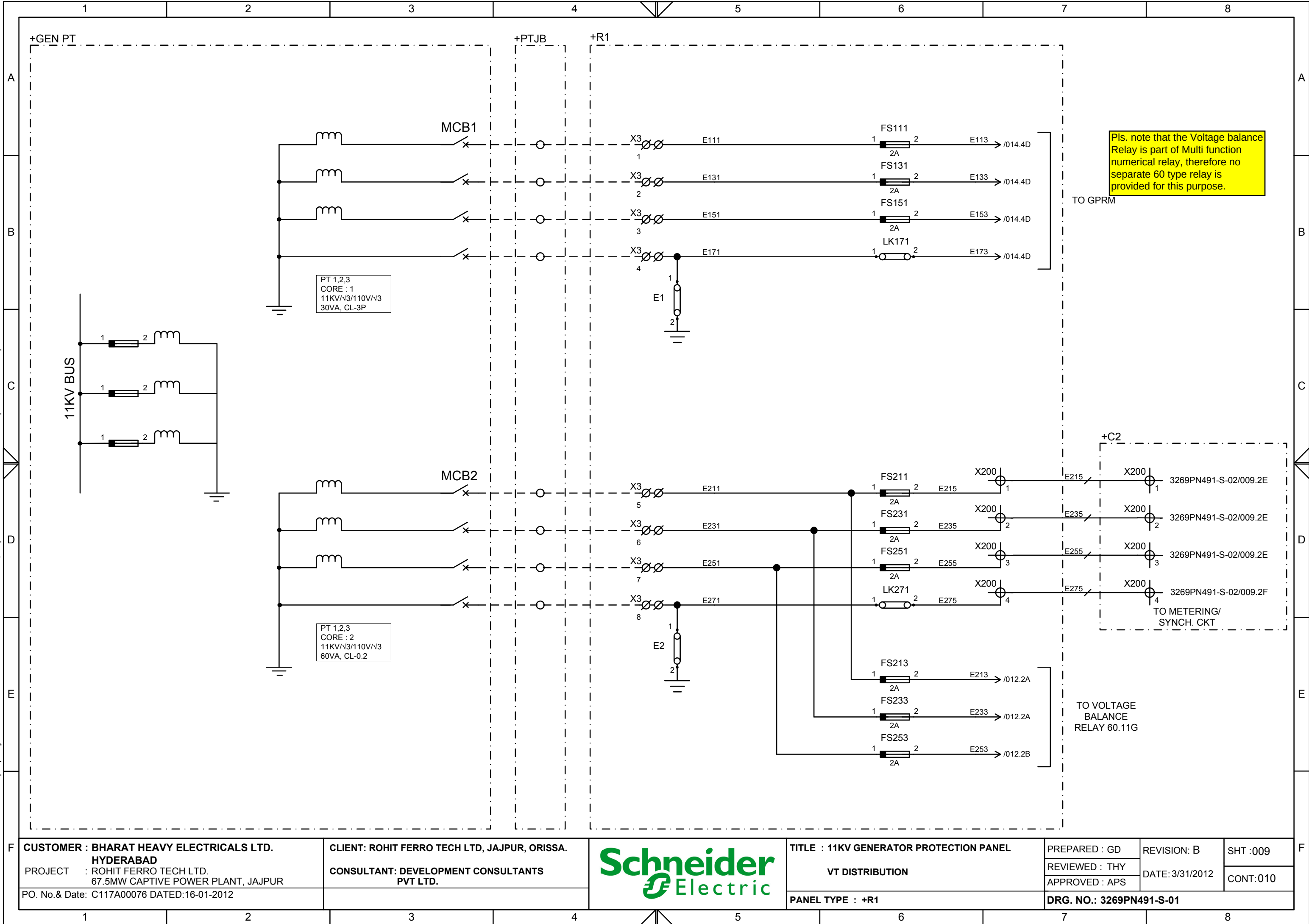
CLIENT: ROHIT FERRO TECH LTD, JAJPUR, ORISSA.
CONSULTANT: DEVELOPMENT CONSULTANTS
PVT LTD.



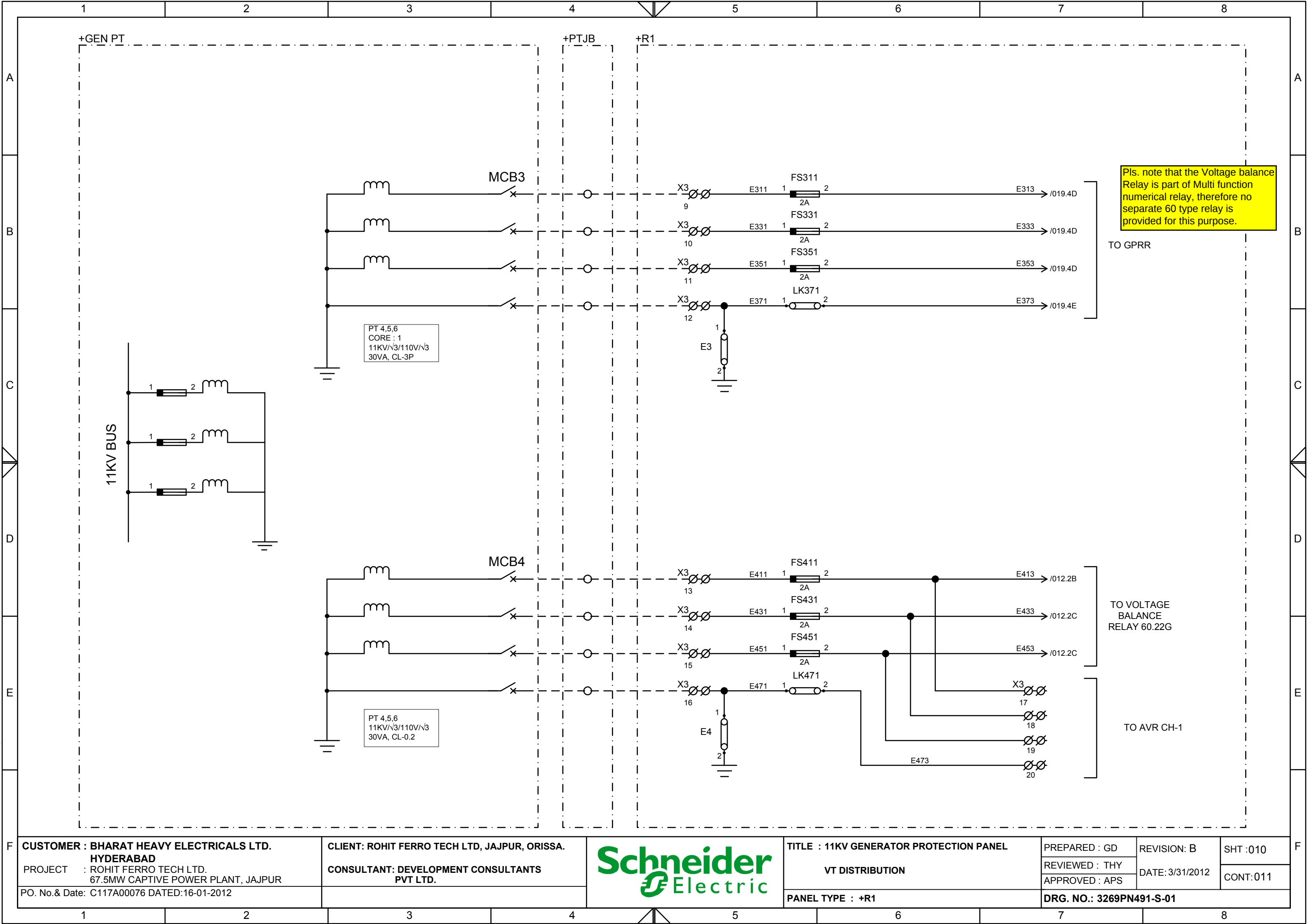
TITLE : 11KV GENERATOR PROTECTION PANEL
DC DISTRIBUTION
PANEL TYPE : +R1

PREPARED : GD	REVISION: B	SHT :008
REVIEWED : THY	DATE:3/31/2012	CONT:009
APPROVED : APS	DRG. NO.: 3269PN491-S-01	

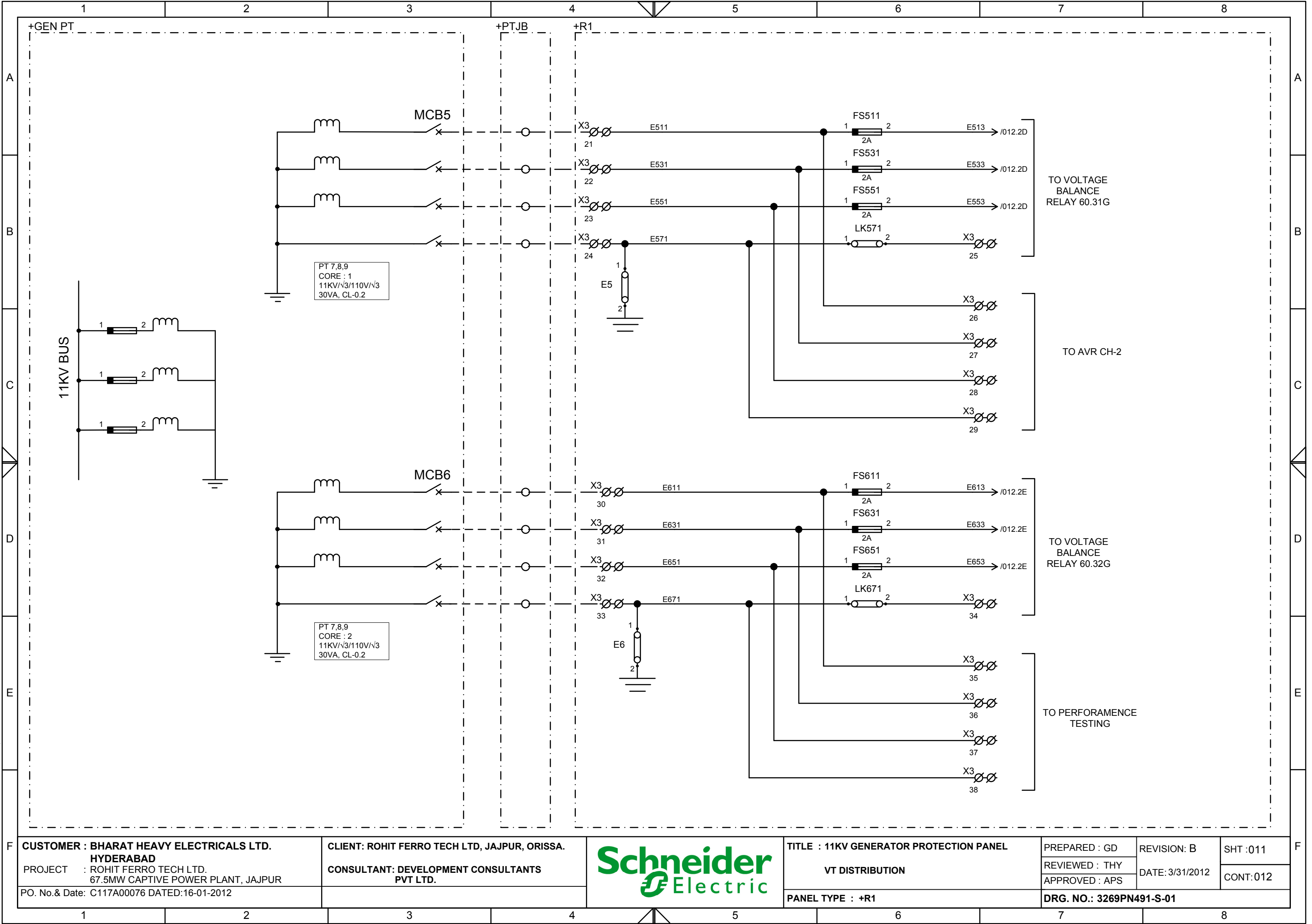
This document is the exclusive property of Schneider Electric and shall not be used, copied or communicated to third parties without prior authorization.



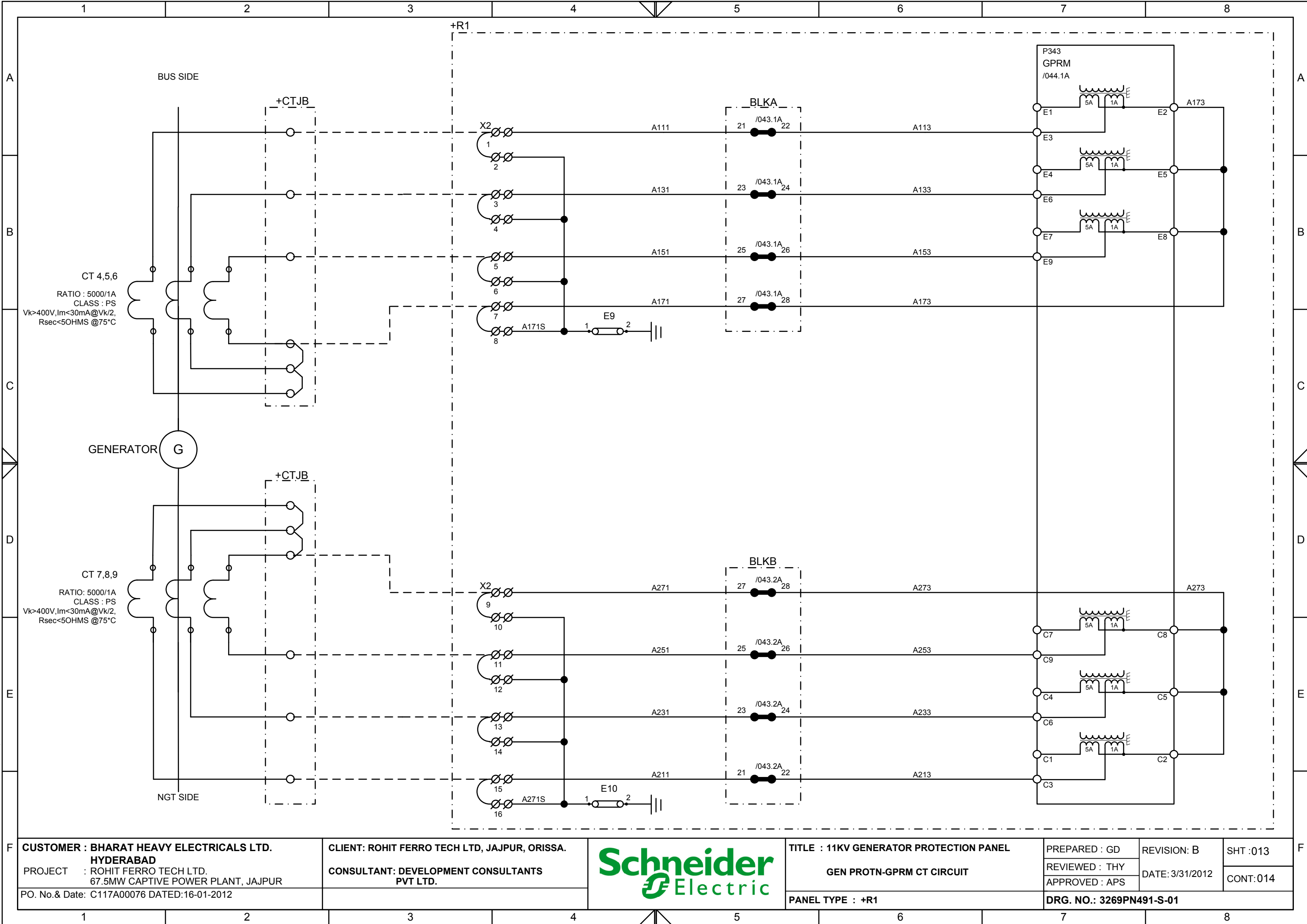
This document is the exclusive property of Schneider Electric and shall not be used, copied or communicated to third parties without prior authorization.



This document is the exclusive property of Schneider Electric and shall not be used, copied or communicated to third parties without prior authorization.



This document is the exclusive property of Schneider Electric and shall not be used, copied or communicated to third parties without prior authorization.



CUSTOMER : BHARAT HEAVY ELECTRICALS LTD.
HYDERABAD

PROJECT : ROHIT FERRO TECH LTD.
67.5MW CAPTIVE POWER PLANT, JAJPUR

PO. No. & Date: C117A00076 DATED:16-01-2012

CLIENT: ROHIT FERRO TECH LTD, JAJPUR, ORISSA.

CONSULTANT: DEVELOPMENT CONSULTANTS
PVT LTD.



TITLE : 11KV GENERATOR PROTECTION PANEL

GEN PROTN-GPRM CT CIRCUIT

PANEL TYPE : +R1

PREPARED : GD

REVIEWED : THY

APPROVED : APS

REVISION: B

DATE: 3/31/2012

SHT : 013

CONT: 014

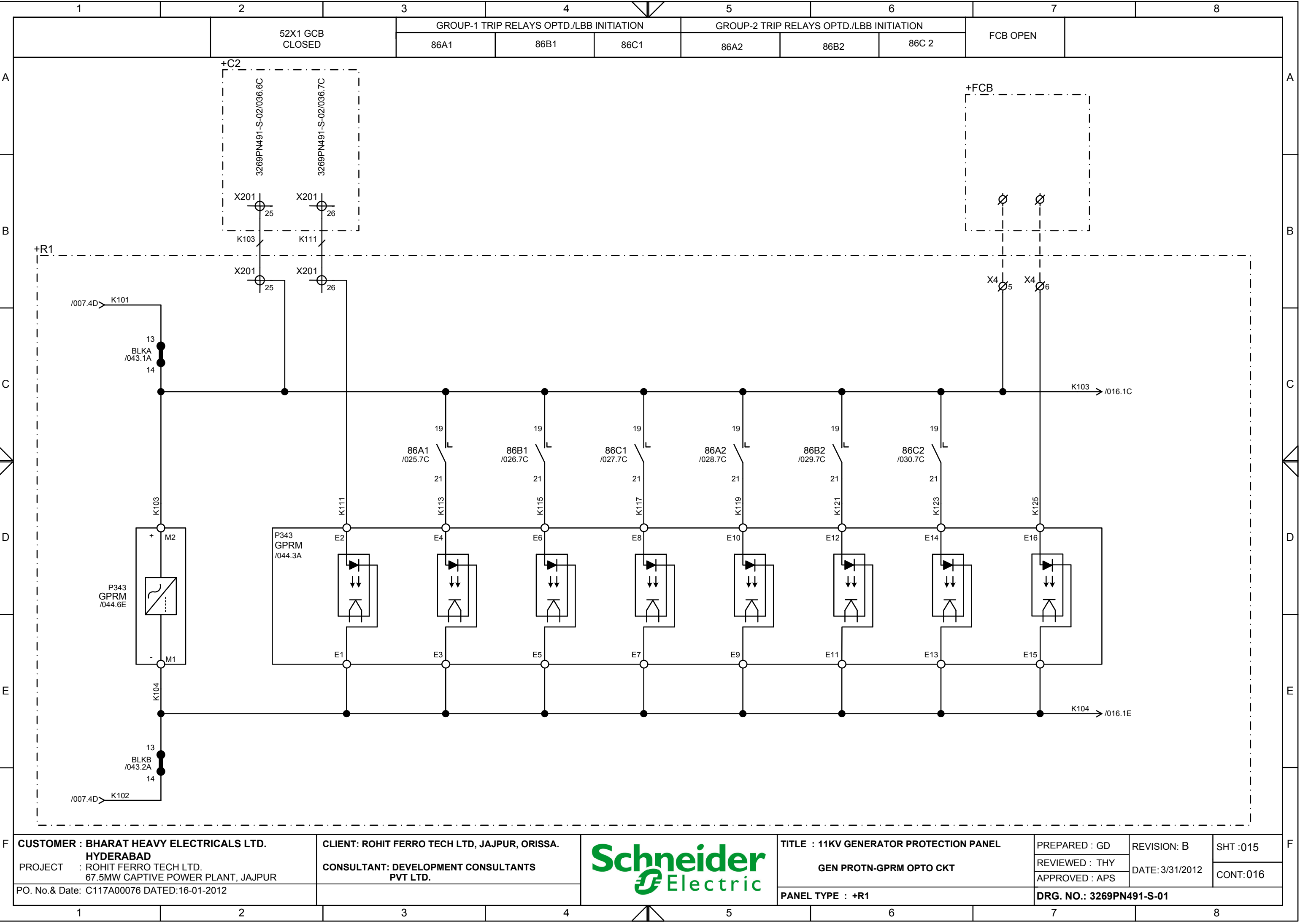
DRG. NO.: 3269PN491-S-01

CUSTOMER : BHARAT HEAVY ELECTRICALS LTD. HYDERABAD PROJECT : ROHIT FERRO TECH LTD. 67.5MW CAPTIVE POWER PLANT, JAJPUR PO. No.& Date: C117A00076 DATED:16-01-2012		CLIENT: ROHIT FERRO TECH LTD, JAJPUR, ORISSA. CONSULTANT: DEVELOPMENT CONSULTANTS PVT LTD.				TITLE : 11KV GENERATOR PROTECTION PANEL GEN PROTN GPRM-PT CKT PANEL TYPE : +R1		PREPARED : GD REVIEWED : THY APPROVED : APS		REVISION: B DATE: 3/31/2012		SHT :014 CONT:015	
						DRG. NO.: 3269PN491-S-01							



CUSTOMER : BHARAT HEAVY ELECTRICALS LTD. HYDERABAD		CLIENT: ROHIT FERRO TECH LTD, JAJPUR, ORISSA.			TITLE : 11KV GENERATOR PROTECTION PANEL		PREPARED : GD	REVISION: B	SHT :014
PROJECT : ROHIT FERRO TECH LTD. 67.5MW CAPTIVE POWER PLANT, JAJPUR		CONSULTANT: DEVELOPMENT CONSULTANTS PVT LTD.			GEN PROTN GPRM-PT CKT		REVIEWED : THY	DATE: 3/31/2012	CONT:015
PO. No.& Date: C117A00076 DATED:16-01-2012					PANEL TYPE : +R1		APPROVED : APS		
						DRG. NO.: 3269PN491-S-01			

This document is the exclusive property of Schneider Electric and shall not be used, copied or communicated to third parties without prior authorization.



+FCB

X4 5

X4 6

CUSTOMER : BHARAT HEAVY ELECTRICALS LTD. HYDERABAD	CLIENT: ROHIT FERRO TECH LTD, JAJPUR, ORISSA.		TITLE : 11KV GENERATOR PROTECTION PANEL	PREPARED : GD	REVISION: B	SHT :015
PROJECT : ROHIT FERRO TECH LTD. 67.5MW CAPTIVE POWER PLANT, JAJPUR	CONSULTANT: DEVELOPMENT CONSULTANTS PVT LTD.		GEN PROTN-GPRM OPTO CKT	REVIEWED : THY	DATE:3/31/2012	CONT:016
PO. No.& Date: C117A00076 DATED:16-01-2012				APPROVED : APS		
				PANEL TYPE : +R1	DRG. NO.: 3269PN491-S-01	

1		2		3		4		5		6		7		8		
		GTCB CLOSED		GROUP-1 TRIP RELAYS SUPERVISION			SPARE		SPARE		SPARE		SPARE			
				95A1		95B1		95C1								

A

B

C

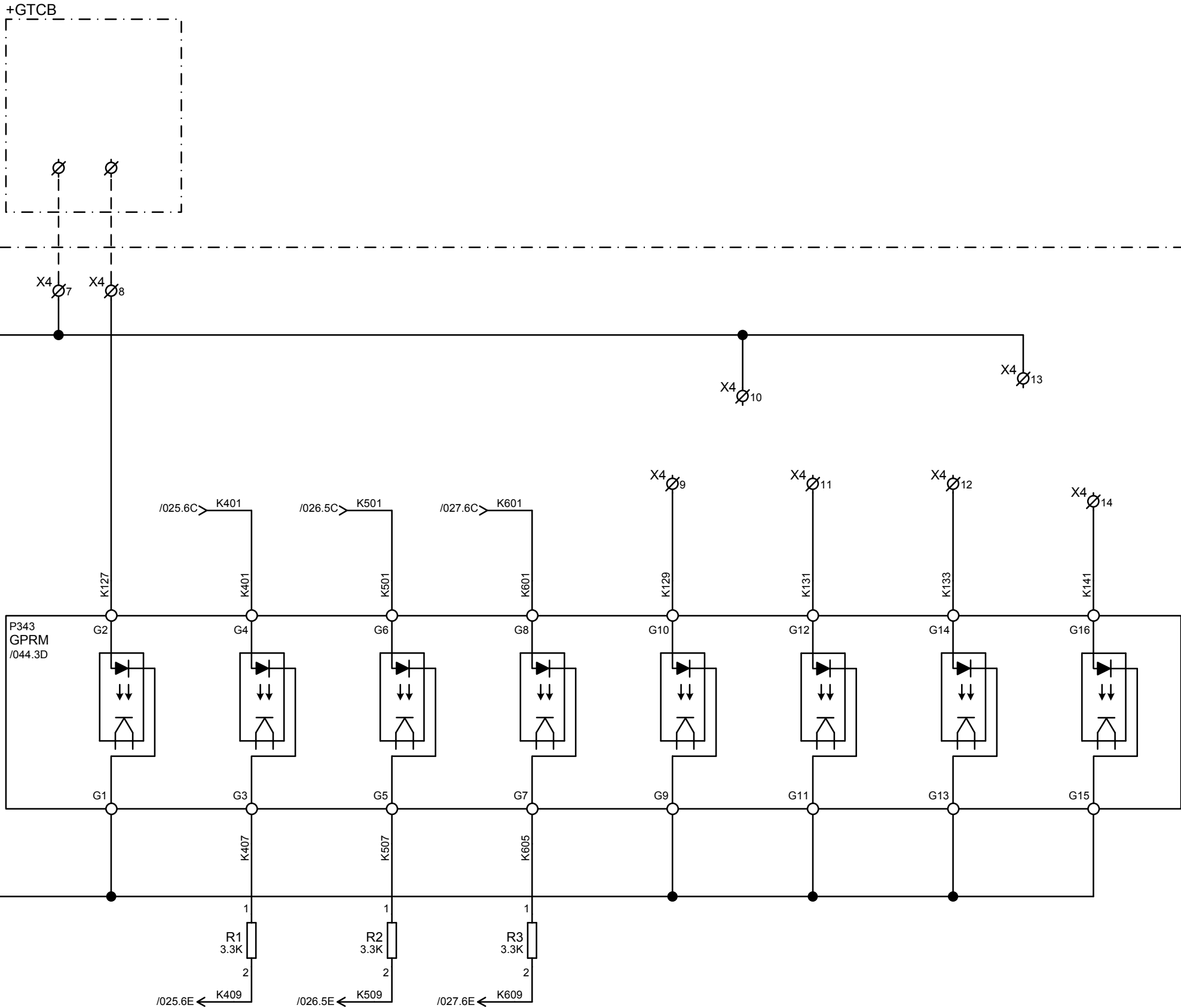
D

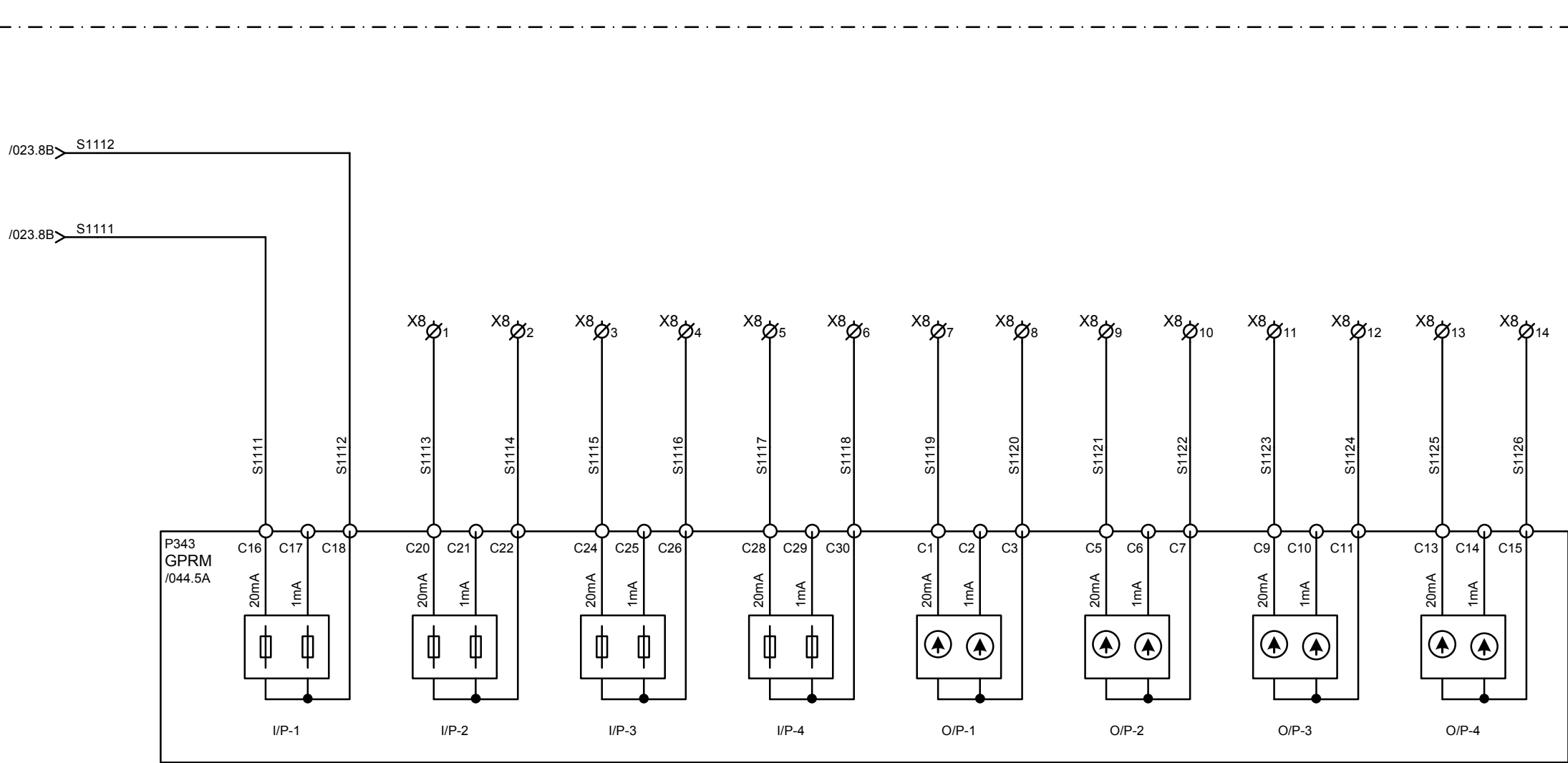
E

F

The diagram illustrates the internal wiring of a 11KV Generator Protection Panel (GPRM). It features a central horizontal busbar with eight terminal points labeled G2 through G16. Below this busbar, there are eight vertical branches, each containing a relay unit (K401 to K141) and a terminal block (X4 7 to X4 14). The relay units are connected to a common horizontal busbar at the bottom, which is labeled G1 through G15. The terminal blocks are connected to a common horizontal busbar at the top, which is labeled +R1. The diagram also shows various contactors (K103, K104, K409, K509, K609) and resistors (R1, R2, R3) connected to the busbars. The entire panel is enclosed in a dashed rectangular boundary.

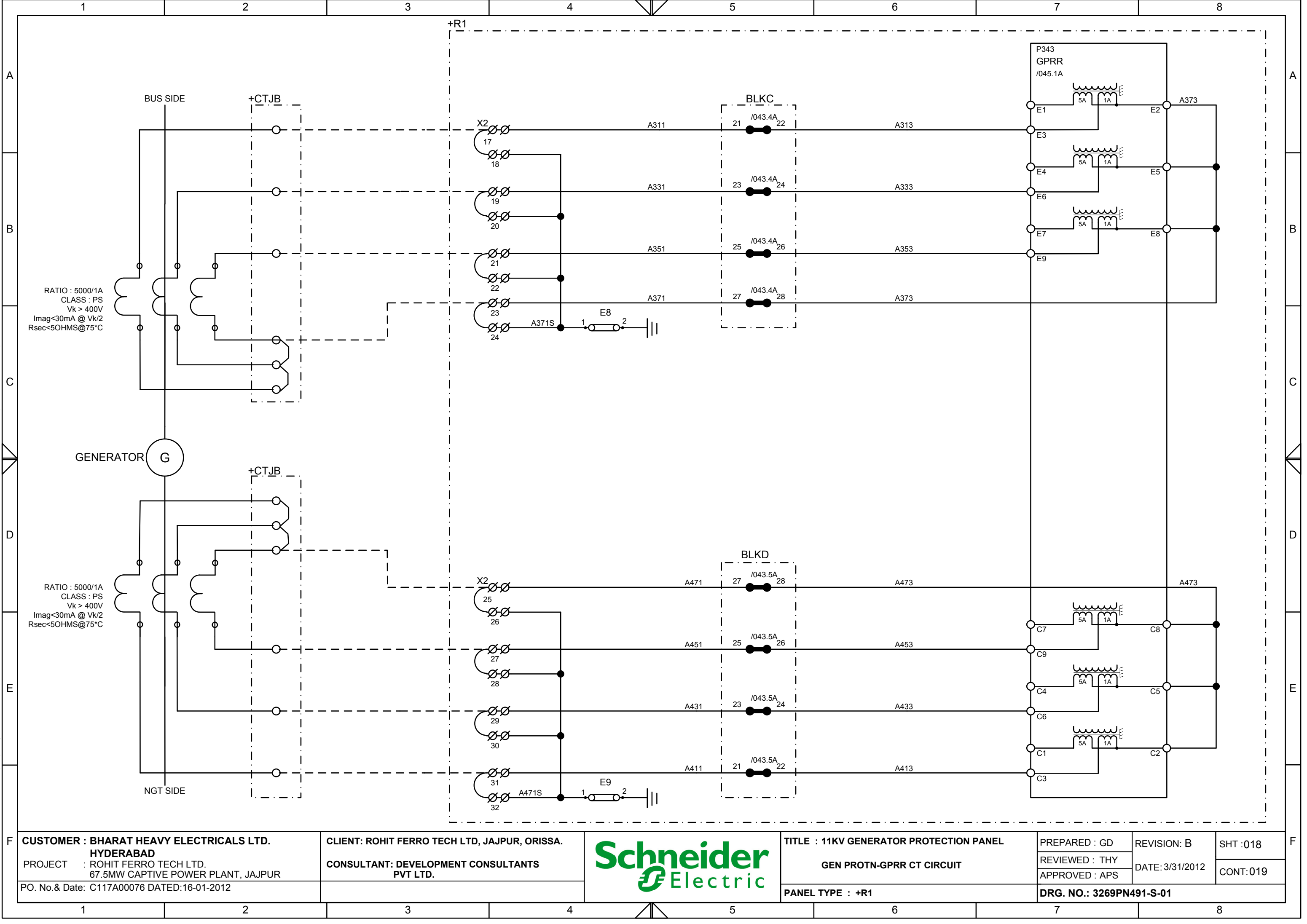
F		CUSTOMER : BHARAT HEAVY ELECTRICALS LTD. HYDERABAD		CLIENT: ROHIT FERRO TECH LTD, JAJPUR, ORISSA.				TITLE : 11KV GENERATOR PROTECTION PANEL		PREPARED : GD		REVISION: B		SHT :016		F	
PROJECT : ROHIT FERRO TECH LTD. 67.5MW CAPTIVE POWER PLANT, JAJPUR		CONSULTANT: DEVELOPMENT CONSULTANTS PVT LTD.		GEN PROTN-GPRM OPTO CKT				REVIEWED : THY		DATE: 3/31/2012		CONT:017					
PO. No.& Date: C117A00076 DATED:16-01-2012				PANEL TYPE : +R1				APPROVED : APS		DRG. NO.: 3269PN491-S-01							
1		2		3		4		5		6		7		8			



[illegible]

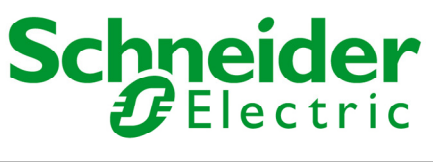
CUSTOMER : BHARAT HEAVY ELECTRICALS LTD. HYDERABAD		CLIENT: ROHIT FERRO TECH LTD, JAJPUR, ORISSA.		TITLE : 11KV GENERATOR PROTECTION PANEL		PREPARED : GD	REVISION: B	SHT:017
PROJECT : ROHIT FERRO TECH LTD. 67.5MW CAPTIVE POWER PLANT, JAJPUR		CONSULTANT: DEVELOPMENT CONSULTANTS PVT LTD.		GEN PROTN-GPRM CLIO CKT		REVIEWED : THY	DATE: 3/31/2012	CONT:018
PO. No.& Date: C117A00076 DATED:16-01-2012				PANEL TYPE : +R1		DRG. NO.: 3269PN491-S-01		

This document is the exclusive property of Schneider Electric and shall not be used, copied or communicated to third parties without prior authorization.



CUSTOMER : BHARAT HEAVY ELECTRICALS LTD.
HYDERABAD
PROJECT : ROHIT FERRO TECH LTD.
67.5MW CAPTIVE POWER PLANT, JAJPUR
PO. No. & Date: C117A00076 DATED:16-01-2012

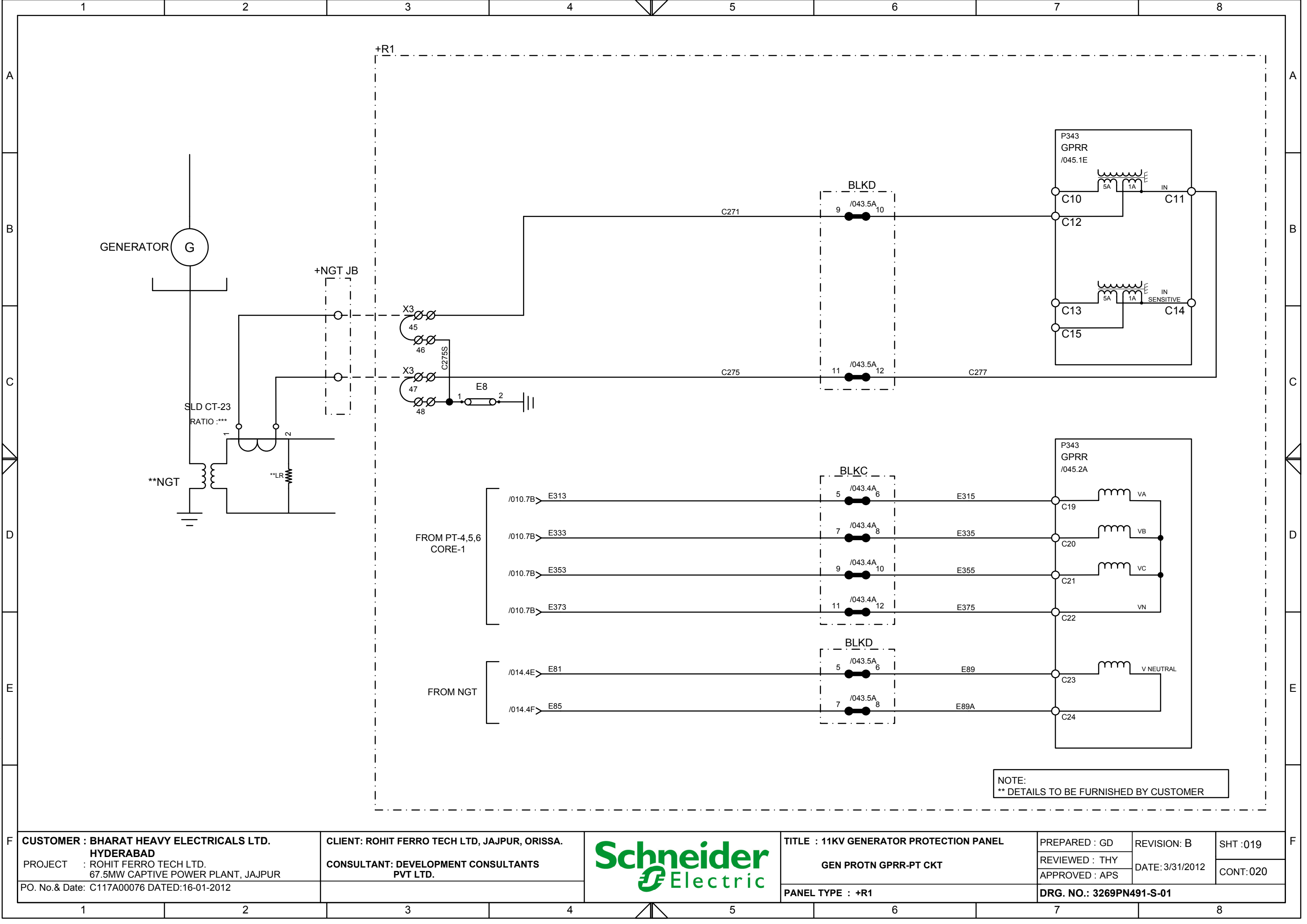
CLIENT: ROHIT FERRO TECH LTD, JAJPUR, ORISSA.
CONSULTANT: DEVELOPMENT CONSULTANTS PVT LTD.



TITLE : 11KV GENERATOR PROTECTION PANEL
GEN PROTN-GPRR CT CIRCUIT
PANEL TYPE : +R1

PREPARED : GD	REVISION: B	SHT :018
REVIEWED : THY	DATE:3/31/2012	CONT:019
APPROVED : APS	DRG. NO.: 3269PN491-S-01	

This document is the exclusive property of Schneider Electric and shall not be used, copied or communicated to third parties without prior authorization.



CUSTOMER : BHARAT HEAVY ELECTRICALS LTD. HYDERABAD	
PROJECT : ROHIT FERRO TECH LTD. 67.5MW CAPTIVE POWER PLANT, JAJPUR	
PO. No.& Date: C117A00076 DATED:16-01-2012	

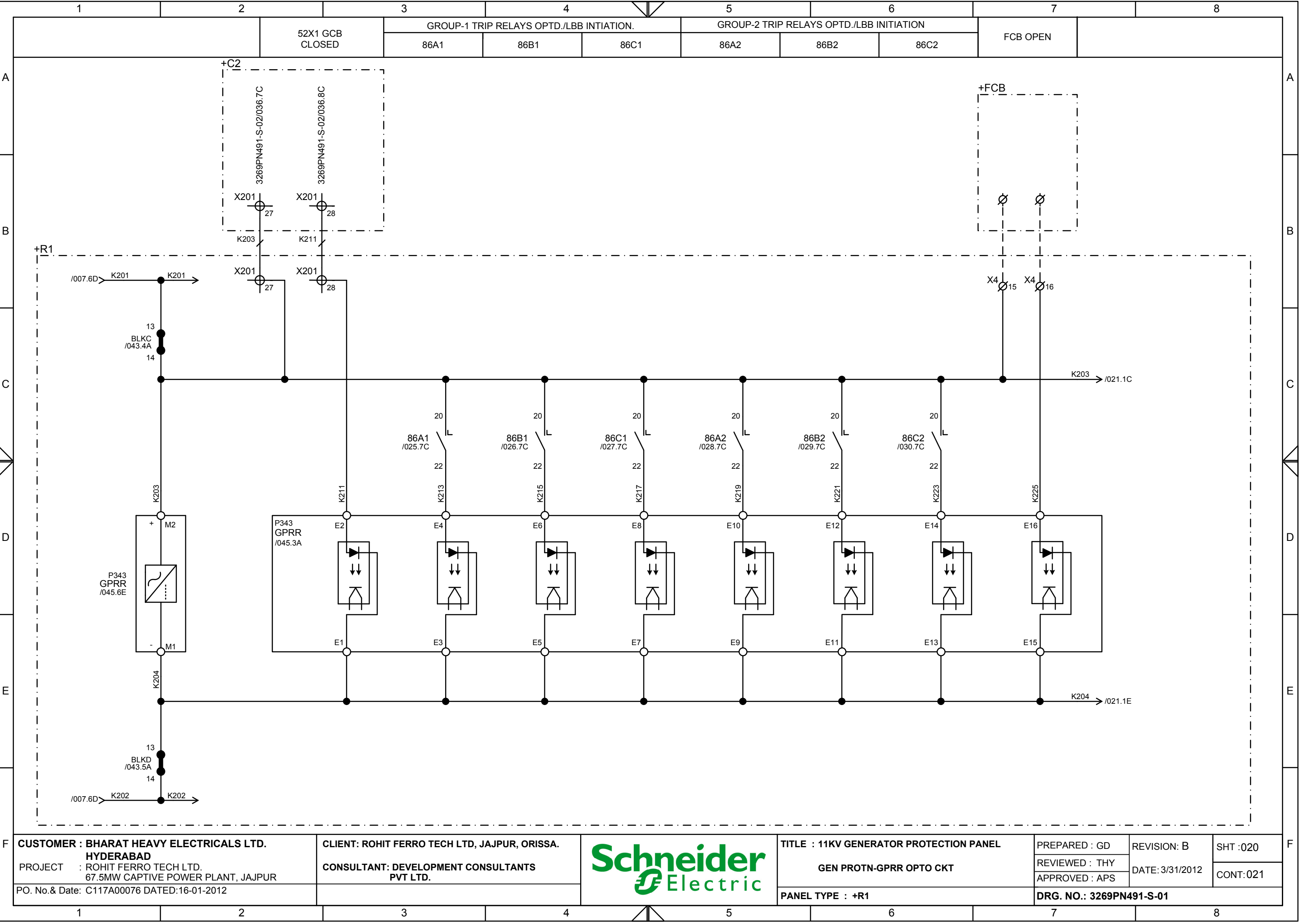
CLIENT: ROHIT FERRO TECH LTD, JAJPUR, ORISSA.	
CONSULTANT: DEVELOPMENT CONSULTANTS PVT LTD.	



TITLE : 11KV GENERATOR PROTECTION PANEL	
GEN PROTN GPRR-PT CKT	
PANEL TYPE : +R1	

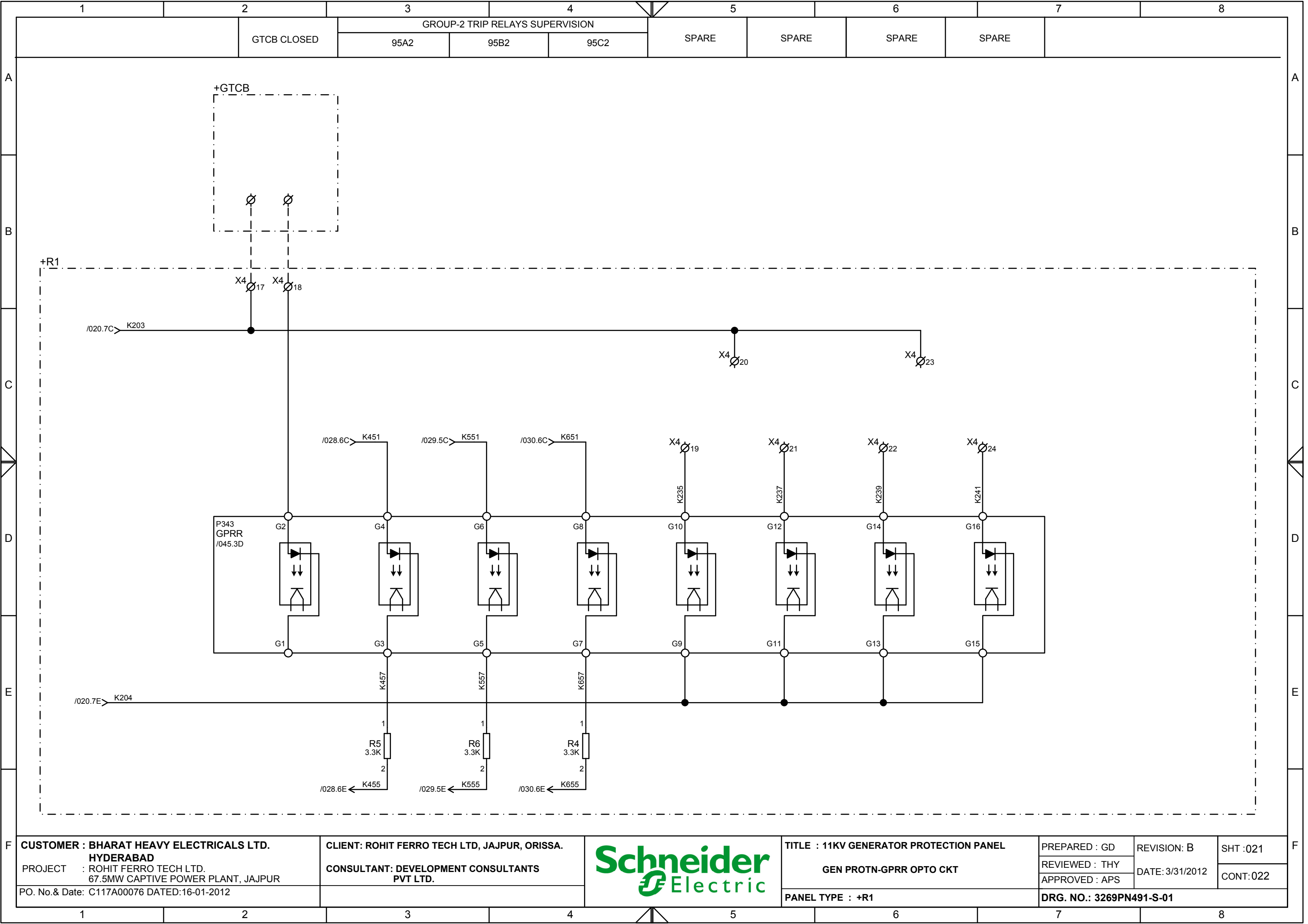
PREPARED : GD	REVISION: B	SHT :019
REVIEWED : THY	DATE:3/31/2012	CONT:020
APPROVED : APS	DRG. NO.: 3269PN491-S-01	

This document is the exclusive property of Schneider Electric and shall not be used, copied or communicated to third parties without prior authorization.



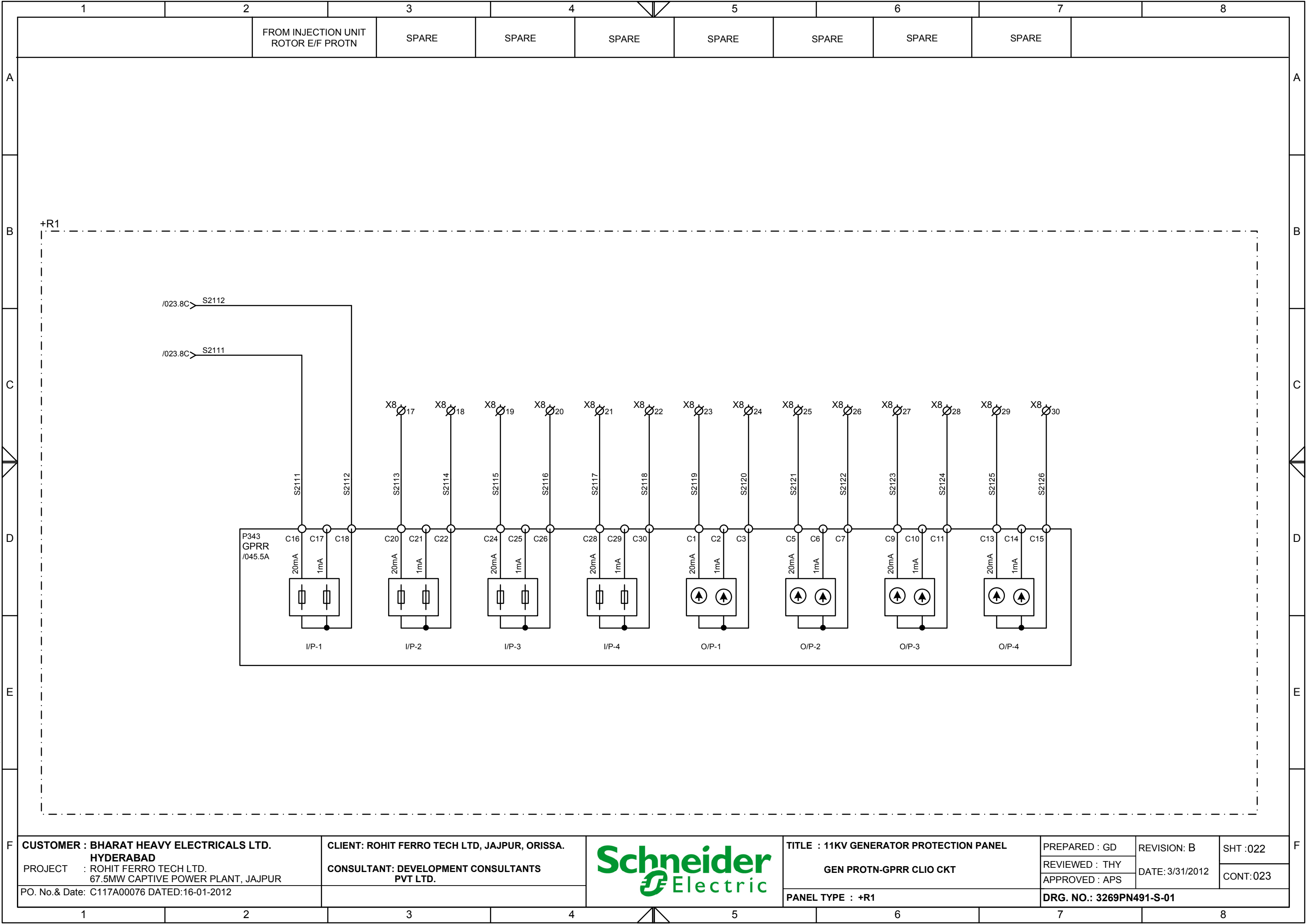
CUSTOMER : BHARAT HEAVY ELECTRICALS LTD. HYDERABAD		CLIENT: ROHIT FERRO TECH LTD, JAJPUR, ORISSA.		TITLE : 11KV GENERATOR PROTECTION PANEL		PREPARED : GD	REVISION: B	SHT :020
PROJECT : ROHIT FERRO TECH LTD. 67.5MW CAPTIVE POWER PLANT, JAJPUR				GEN PROTN-GPRR OPTO CKT		REVIEWED : THY		
PO. No.& Date: C117A00076 DATED:16-01-2012				CONSULTANT: DEVELOPMENT CONSULTANTS PVT LTD.	PANEL TYPE : +R1		APPROVED : APS	DATE:3/31/2012
						DRG. NO.: 3269PN491-S-01		

This document is the exclusive property of Schneider Electric and shall not be used, copied or communicated to third parties without prior authorization.



CUSTOMER : BHARAT HEAVY ELECTRICALS LTD. HYDERABAD		CLIENT: ROHIT FERRO TECH LTD, JAJPUR, ORISSA.			TITLE : 11KV GENERATOR PROTECTION PANEL		PREPARED : GD	REVISION: B	SHT :021
PROJECT : ROHIT FERRO TECH LTD. 67.5MW CAPTIVE POWER PLANT, JAJPUR		CONSULTANT: DEVELOPMENT CONSULTANTS PVT LTD.			GEN PROTN-GPRR OPTO CKT		REVIEWED : THY	DATE:3/31/2012	CONT:022
PO. No.& Date: C117A00076 DATED:16-01-2012							APPROVED : APS		
					PANEL TYPE : +R1		DRG. NO.: 3269PN491-S-01		

This document is the exclusive property of Schneider Electric and shall not be used, copied or communicated to third parties without prior authorization.



A

B

C

D

E

F

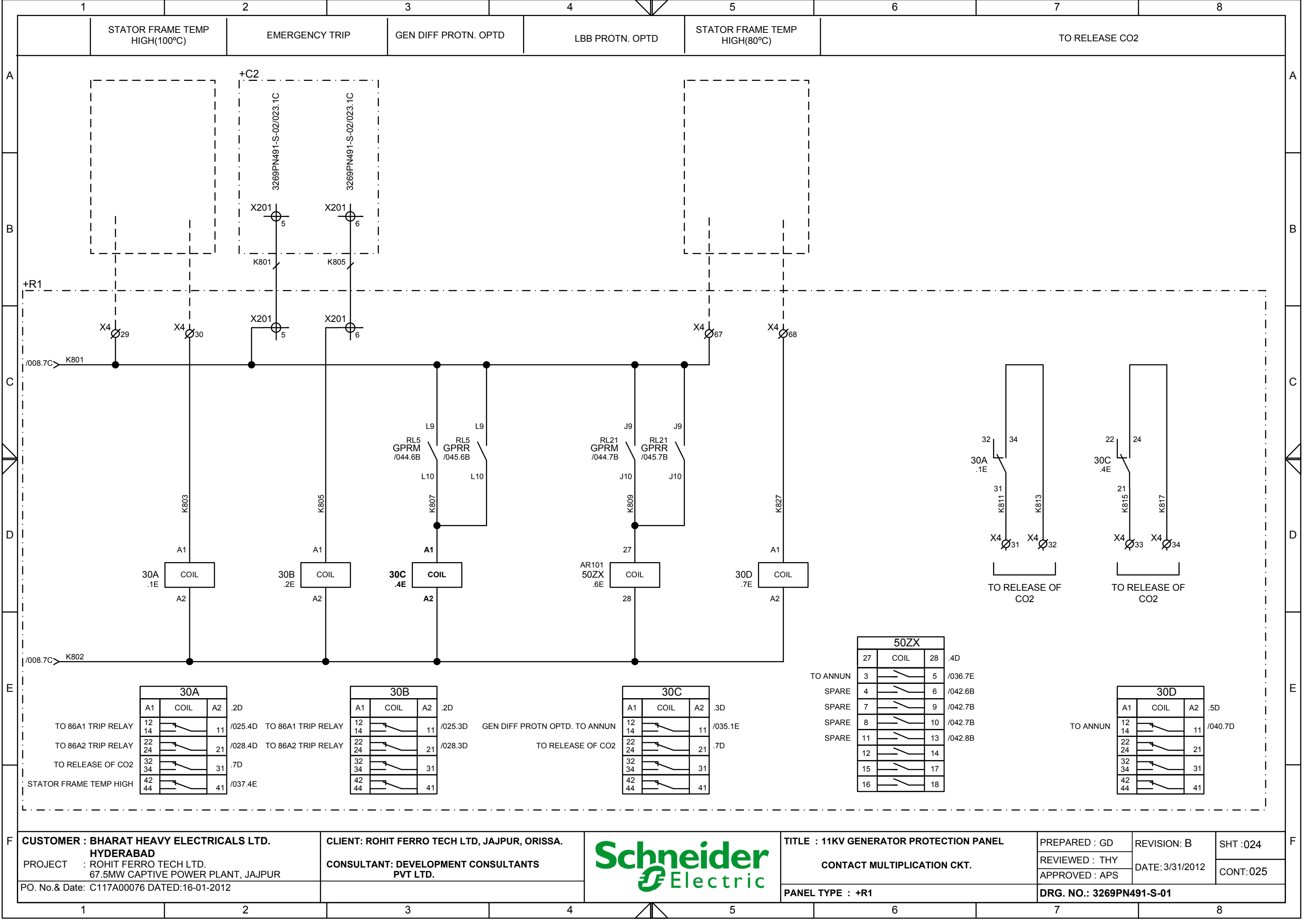
[illegible]

Diagram illustrating the 11KV GENERATOR PROTECTION PANEL (GENERATOR LOCKOUT RELAY-86C1) for the ROHIT FERRO TECH LTD. 67.5MW CAPTIVE POWER PLANT, JAJPUR.

The diagram shows the internal wiring and connections of the 86C1 relay, including the terminal block (86C1) and the associated control circuitry.

Terminal Block (86C1) Connections:

Terminal	Connection
27	OP
28	.2E
55	RE
56	
3	TO GCB CLSG I/L
4	TO FCB CLSG I/L
7	TO GCB TRIP COIL-1
8	TO GCB TRIP COIL-2
11	TO FCB TRIP
12	TO AVR TRIP
15	TO GCB AUTO TRIP INDI.
16	TO FCB AUTO TRIP INDI.
19	LBB INI. TO GPRR
20	LBB INI. TO GPRM
31	TO AVR CLSG I/L
32	SPARE
35	
36	86C1 OPTD TO ANNUN.
39	SPARE
40	SPARE
43	SPARE
44	
47	
48	
5	/031.8C
6	/033.3C
9	/031.6C
10	/032.6C
13	/033.1C
14	/033.6C
17	/034.5C
18	/034.7C
21	/015.4D
22	/020.4D
33	/033.7C
34	/041.6D
37	
38	/037.3E
41	/041.6D
42	/041.7D
45	/041.8D
46	
49	
50	

Panel Details:

Customer	Client	Title	Prepared	Revision	SHT
BHARAT HEAVY ELECTRICALS LTD. HYDERABAD	ROHIT FERRO TECH LTD, JAJPUR, ORISSA.	11KV GENERATOR PROTECTION PANEL	GD	B	:027
PROJECT : ROHIT FERRO TECH LTD. 67.5MW CAPTIVE POWER PLANT, JAJPUR	CONSULTANT: DEVELOPMENT CONSULTANTS PVT LTD.	GENERATOR LOCKOUT RELAY-86C1	THY	DATE: 3/31/2012	CONT:028
PO. No. & Date: C117A00076 DATED:16-01-2012		PANEL TYPE : +R1	DRG. NO.: 3269PN491-S-01		

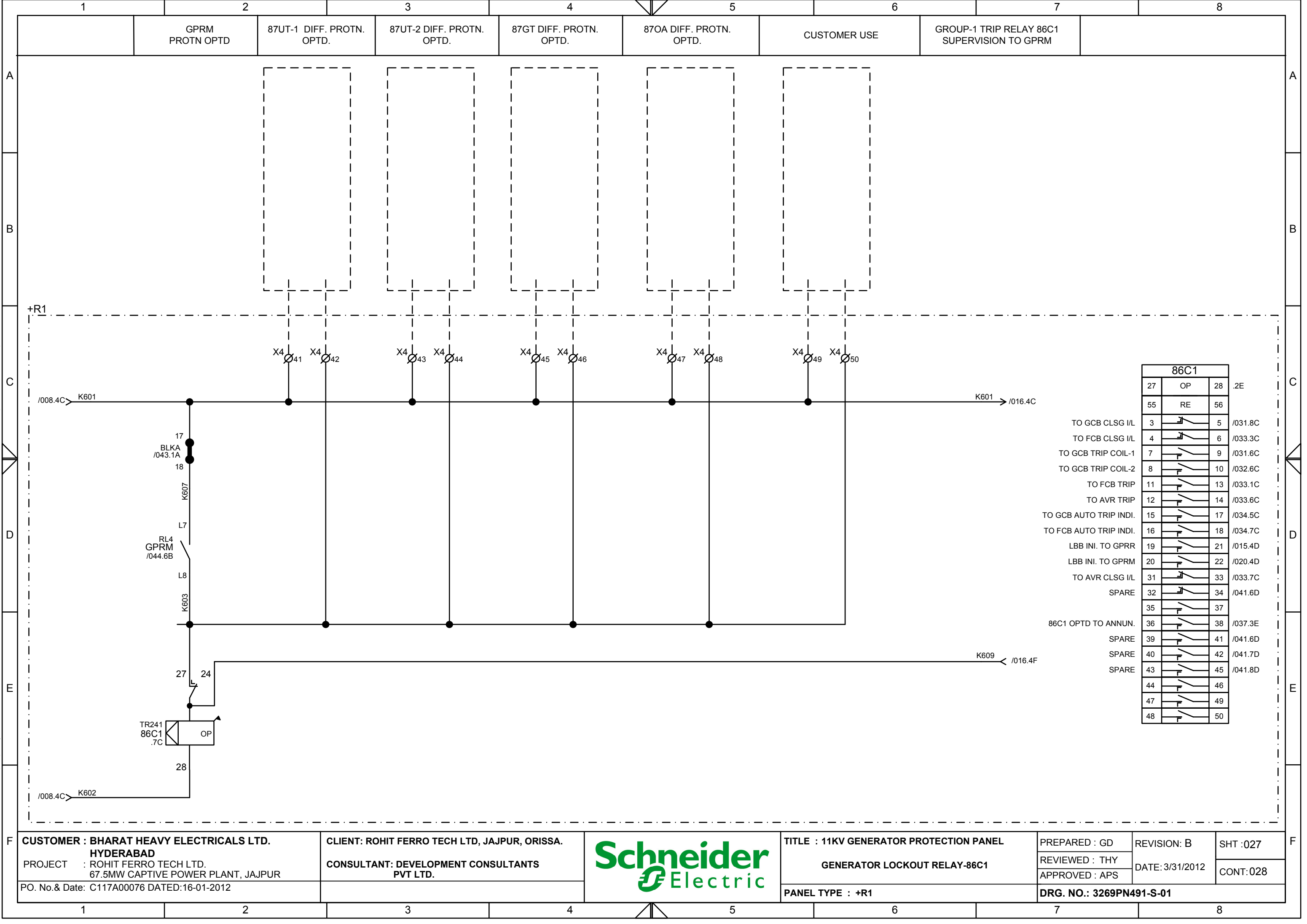


Diagram illustrating the wiring and terminal connections for the 86A2 Unit Lockout Relay (ULR) in a 11KV Generator Protection Panel.

Panel Layout and Connections:

- Terminal Block 1:** GPRR PROTN OPTD
- Terminal Block 2:** EMERGENCY TRIP
- Terminal Block 3:** STATOR TEMP HIGH-100deg C
- Terminal Block 4:** AVR TRIP
- Terminal Block 5:** CUSTOMER USE
- Terminal Block 6:** GROUP-2 TRIP RELAY 86A2 SUPERVISION TO GPRR
- Terminal Block 7:** (Empty)
- Terminal Block 8:** (Empty)

Wiring Details:

- Terminal 1:** BLKC /043.4A
- Terminal 2:** RL1 GPRR /045.6A
- Terminal 22:** 30B /024.2E
- Terminal 24:** 30A /024.1E
- Terminal 27:** TR241 86A2 .7C
- Terminal 28:** OP
- Terminal 31:** X4 /051
- Terminal 32:** X4 /052
- Terminal 33:** X4 /053
- Terminal 34:** X4 /054
- Terminal 35:** K451
- Terminal 36:** K451
- Terminal 37:** K451
- Terminal 38:** K451
- Terminal 39:** K451
- Terminal 40:** K451
- Terminal 41:** K451
- Terminal 42:** K451
- Terminal 43:** K451
- Terminal 44:** K451
- Terminal 45:** K451
- Terminal 46:** K451
- Terminal 47:** K451
- Terminal 48:** K451
- Terminal 49:** K451
- Terminal 50:** K451
- Terminal 51:** K451
- Terminal 52:** K451
- Terminal 53:** K451
- Terminal 54:** K451
- Terminal 55:** K451
- Terminal 56:** K451
- Terminal 57:** K451
- Terminal 58:** K451
- Terminal 59:** K451
- Terminal 60:** K451
- Terminal 61:** K451
- Terminal 62:** K451
- Terminal 63:** K451
- Terminal 64:** K451
- Terminal 65:** K451
- Terminal 66:** K451
- Terminal 67:** K451
- Terminal 68:** K451
- Terminal 69:** K451
- Terminal 70:** K451
- Terminal 71:** K451
- Terminal 72:** K451
- Terminal 73:** K451
- Terminal 74:** K451
- Terminal 75:** K451
- Terminal 76:** K451
- Terminal 77:** K451
- Terminal 78:** K451
- Terminal 79:** K451
- Terminal 80:** K451
- Terminal 81:** K451
- Terminal 82:** K451
- Terminal 83:** K451
- Terminal 84:** K451
- Terminal 85:** K451
- Terminal 86:** K451
- Terminal 87:** K451
- Terminal 88:** K451
- Terminal 89:** K451
- Terminal 90:** K451
- Terminal 91:** K451
- Terminal 92:** K451
- Terminal 93:** K451
- Terminal 94:** K451
- Terminal 95:** K451
- Terminal 96:** K451
- Terminal 97:** K451
- Terminal 98:** K451
- Terminal 99:** K451
- Terminal 100:** K451

Terminal Block 86A2 Connections:

Terminal	Connection
27	OP
28	.2E
55	RE
56	
3	TO GCB CLSG I/L
5	/031.8D
4	TO FCB CLSG I/L
6	/033.3D
7	TO GCB TRIP COIL-1
9	/031.6C
8	TO GCB TRIP COIL-2
10	/032.7C
11	TO FCB TRIP
13	/033.2C
12	TO AVR TRIP
14	/033.6C
15	TO GCB AUTO TRIP INDI.
17	/034.5C
16	TO FCB AUTO TRIP INDI.
18	/034.8C
19	LBB INI. TO GPRR
21	/015.5D
20	LBB INI. TO GPRM
22	/020.5D
31	TO AVR CLSG I/L
33	/033.8D
32	SPARE
34	/041.1E
35	TO 86B2 TRIP RELAY
37	/029.3D
36	86A2 OPTD TO ANNUN.
38	/037.2D
39	SPARE
41	/041.1E
40	SPARE
42	/041.2E
43	SPARE
45	/041.2E
44	
46	
47	
49	
48	
50	

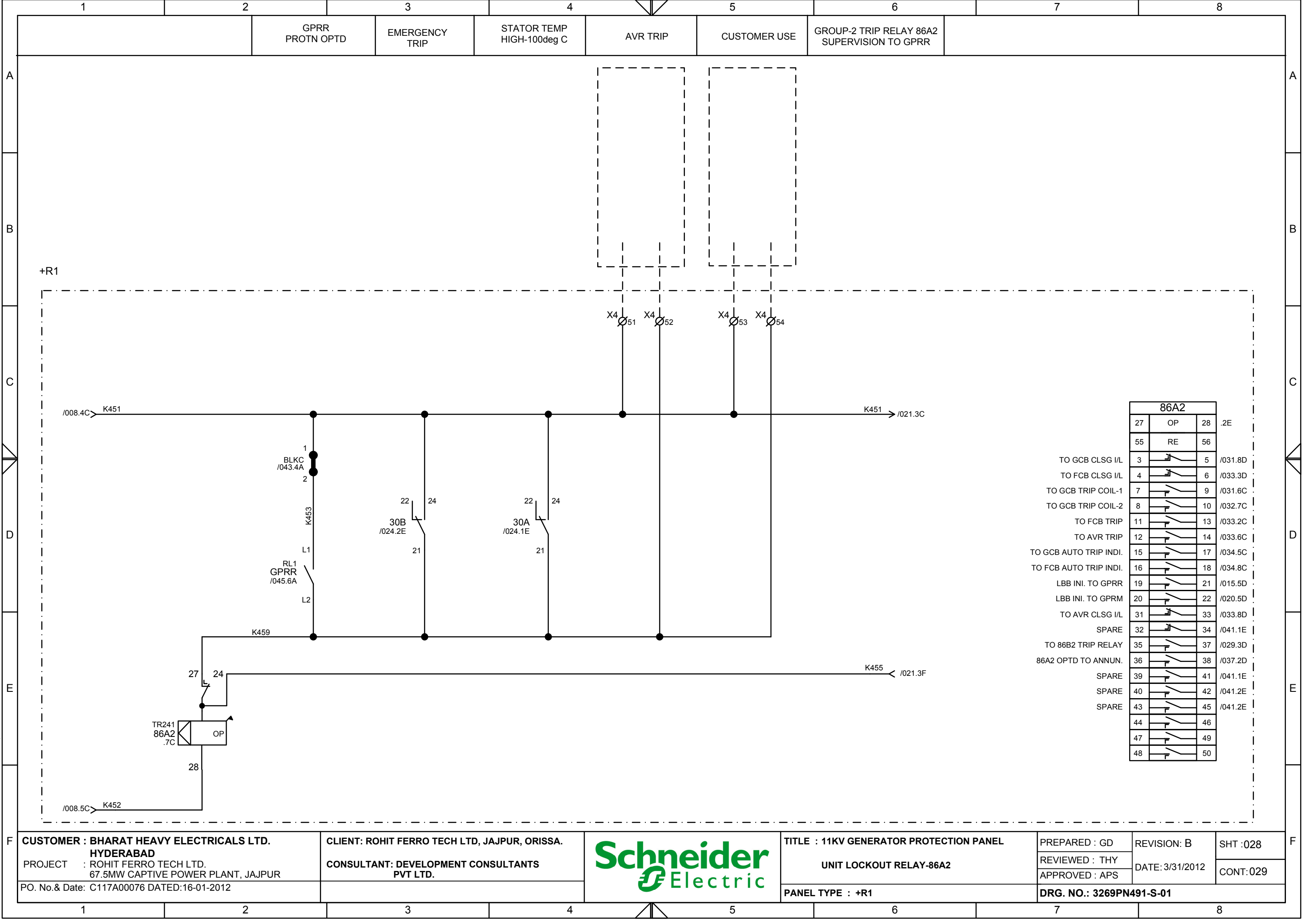


Diagram illustrating the 11KV GENERATOR PROTECTION PANEL (GENERATOR LOCKOUT RELAY-86C2) for the ROHIT FERRO TECH LTD. 67.5MW CAPTIVE POWER PLANT, JAJPUR, ORISSA.

The diagram shows the internal wiring and connections of the 86C2 relay, including the terminal block (86C2) and the associated protection functions.

Terminal Block (86C2) Connections:

Terminal	Function	Terminal	Function
27	OP	28	.2E
55	RE	56	
3	TO GCB CLSG I/L	5	/031.8C
4	TO FCB CLSG I/L	6	/033.3C
7	TO GCB TRIP COIL-1	9	/031.7C
8	TO GCB TRIP COIL-2	10	/032.7C
11	TO FCB TRIP	13	/033.2C
12	TO AVR TRIP	14	/033.6C
15	TO GCB AUTO TRIP INDI.	17	/034.6C
16	TO FCB AUTO TRIP INDI.	18	/034.8C
19	LBB INI. TO GPRR	21	/015.6D
20	LBB INI. TO GPRM	22	/020.6D
31	TO AVR CLSG I/L	33	/033.8C
32	SPARE	34	/041.6E
35		37	
36	86C2 OPTD TO ANNUN.	38	/037.3D
39	SPARE	41	/041.6E
40	SPARE	42	/041.7E
43	SPARE	45	/041.8E
44		46	
47		49	
48		50	

Panel Details:

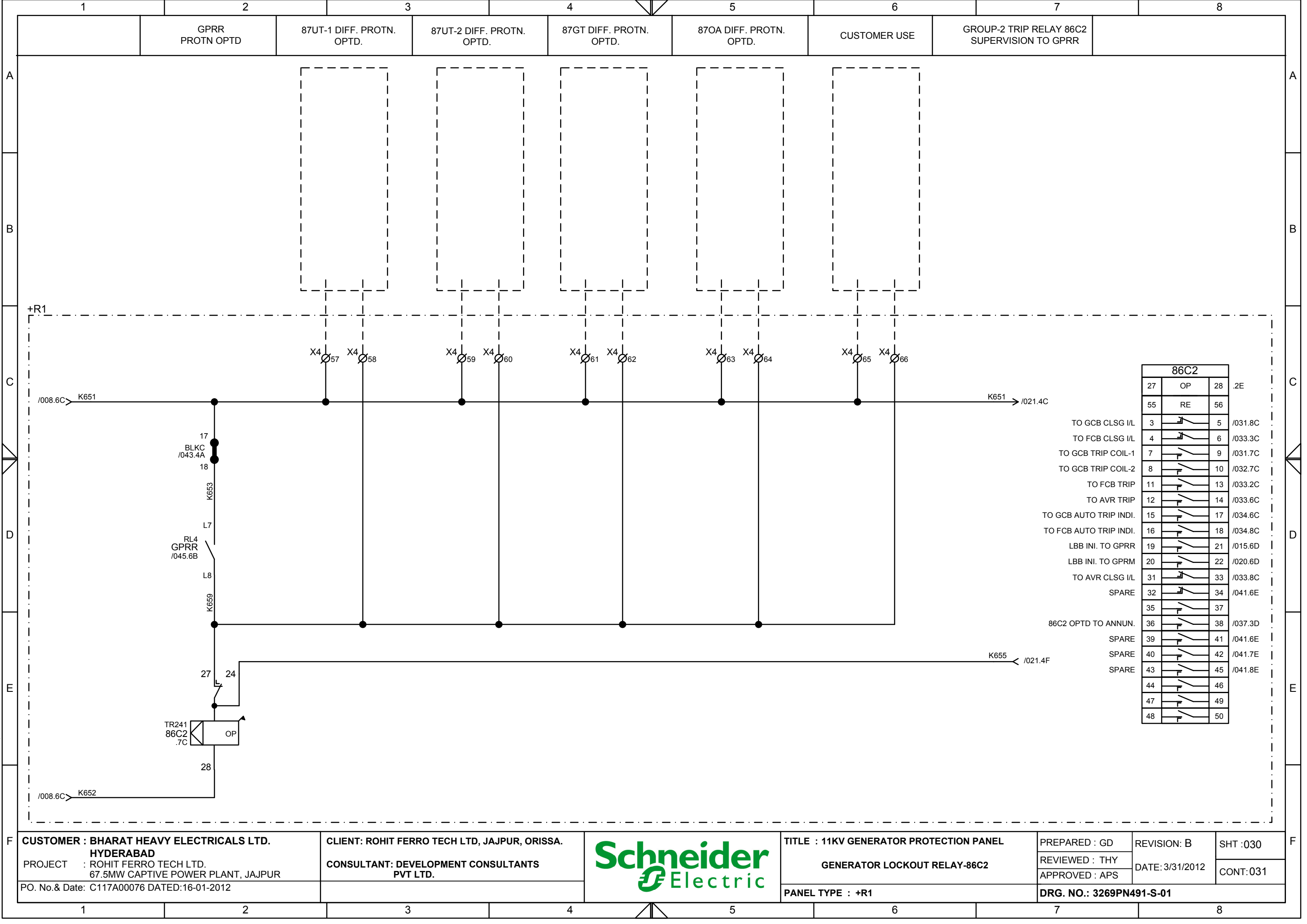
- CUSTOMER :** BHARAT HEAVY ELECTRICALS LTD. HYDERABAD
- CLIENT:** ROHIT FERRO TECH LTD, JAJPUR, ORISSA.
- PROJECT :** ROHIT FERRO TECH LTD. 67.5MW CAPTIVE POWER PLANT, JAJPUR
- CONSULTANT:** DEVELOPMENT CONSULTANTS PVT LTD.
- TITLE :** 11KV GENERATOR PROTECTION PANEL
- GENERATOR LOCKOUT RELAY-86C2**
- PANEL TYPE :** +R1
- DRG. NO.:** 3269PN491-S-01

Prepared: GD
Reviewed: THY
Approved: APS

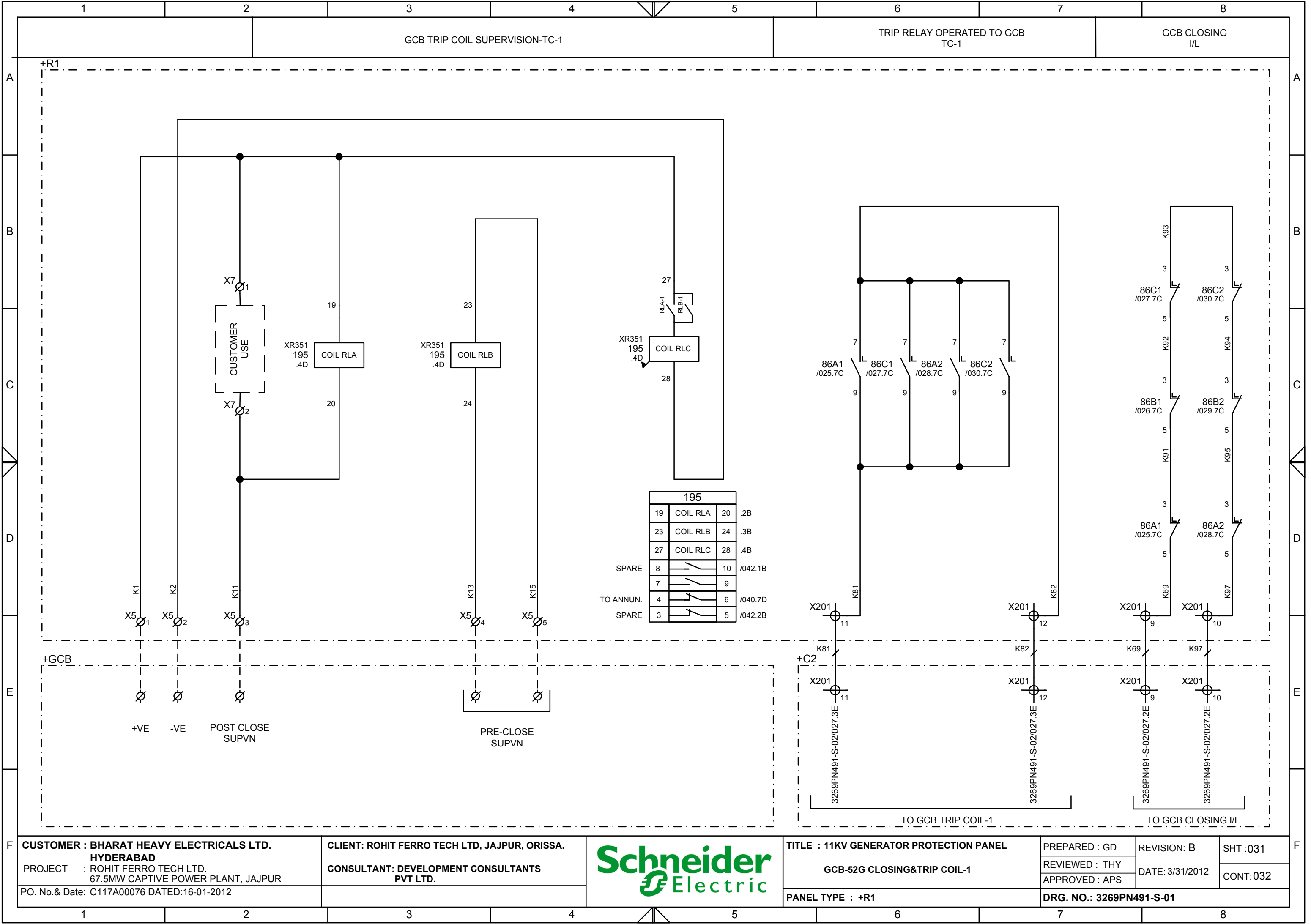
Revision: B
Date: 3/31/2012

SHT : 030
CONT: 031

PO. No. & Date: C117A00076 DATED:16-01-2012

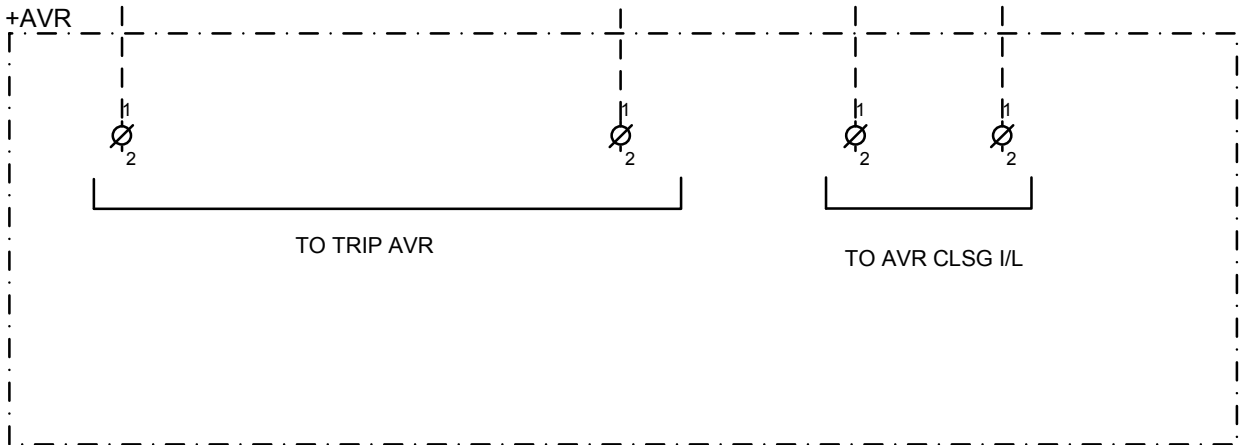
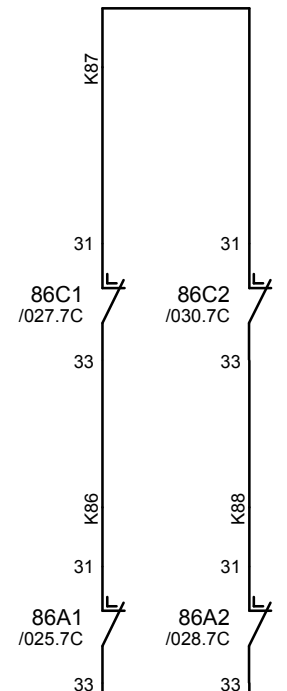
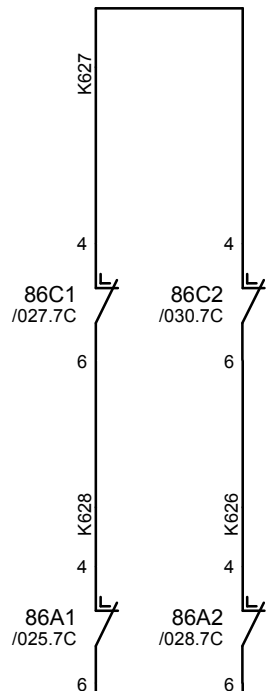


This document is the exclusive property of Schneider Electric and shall not be used, copied or communicated to third parties without prior authorization.



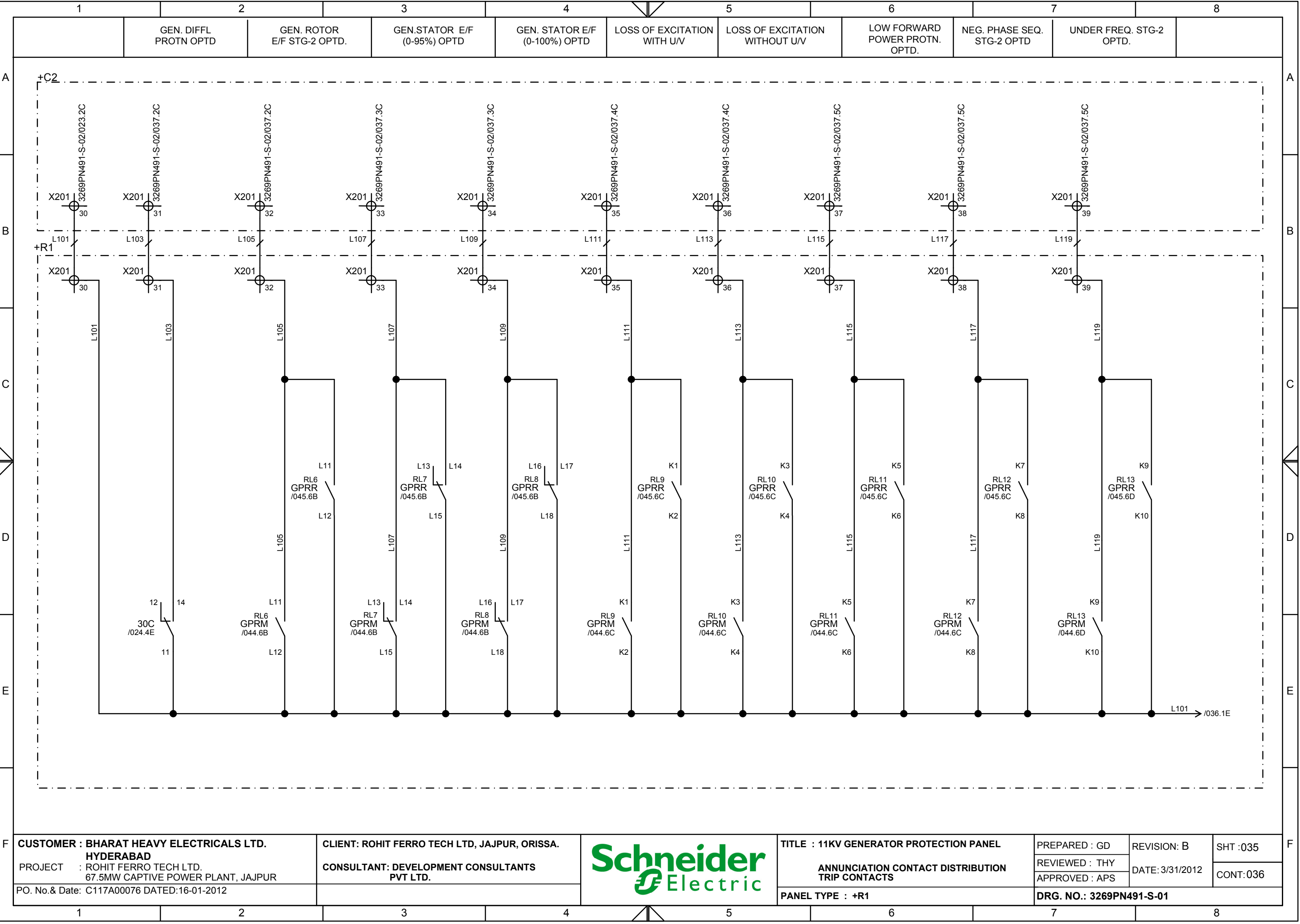
	1	2	3	4	5	6	7	8	
	TRIP RELAY OPTD TO TRIP FCB		FCB CLOSING I/L			TRIP RELAY OPTD TO AVR TRIP		AVR CLOSING I/L	
A									A
B									B
C									C
D									D
E									E
F									F

CUSTOMER : BHARAT HEAVY ELECTRICALS LTD. HYDERABAD		CLIENT: ROHIT FERRO TECH LTD, JAJPUR, ORISSA.			TITLE : 11KV GENERATOR PROTECTION PANEL		PREPARED : GD	REVISION: B	SHT :033
PROJECT : ROHIT FERRO TECH LTD. 67.5MW CAPTIVE POWER PLANT, JAJPUR		CONSULTANT: DEVELOPMENT CONSULTANTS PVT LTD.			GEN FIELD CB & AVR TRIP		REVIEWED : THY	DATE: 3/31/2012	CONT:034
PO. No.& Date: C117A00076 DATED:16-01-2012					PANEL TYPE : +R1		APPROVED : APS		
							DRG. NO.: 3269PN491-S-01		

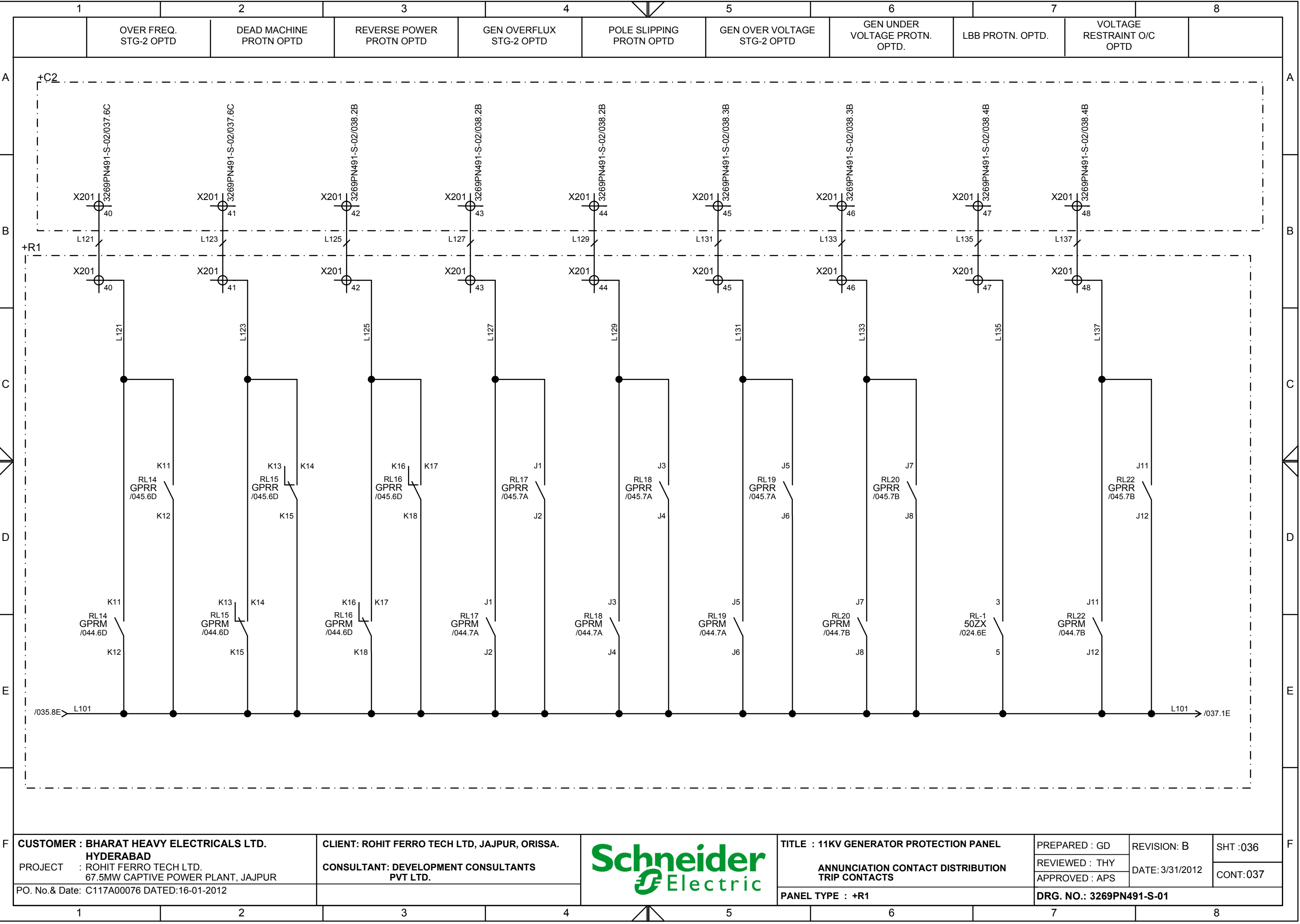


CUSTOMER : BHARAT HEAVY ELECTRICALS LTD. HYDERABAD PROJECT : ROHIT FERRO TECH LTD. 67.5MW CAPTIVE POWER PLANT, JAJPUR PO. No.& Date: C117A00076 DATED:16-01-2012	CLIENT: ROHIT FERRO TECH LTD, JAJPUR, ORISSA. CONSULTANT: DEVELOPMENT CONSULTANTS PVT LTD.		TITLE : 11KV GENERATOR PROTECTION PANEL	PREPARED : GD	REVISION: B	SHT :033
			GEN FIELD CB & AVR TRIP	REVIEWED : THY		
				PANEL TYPE : +R1	APPROVED : APS	

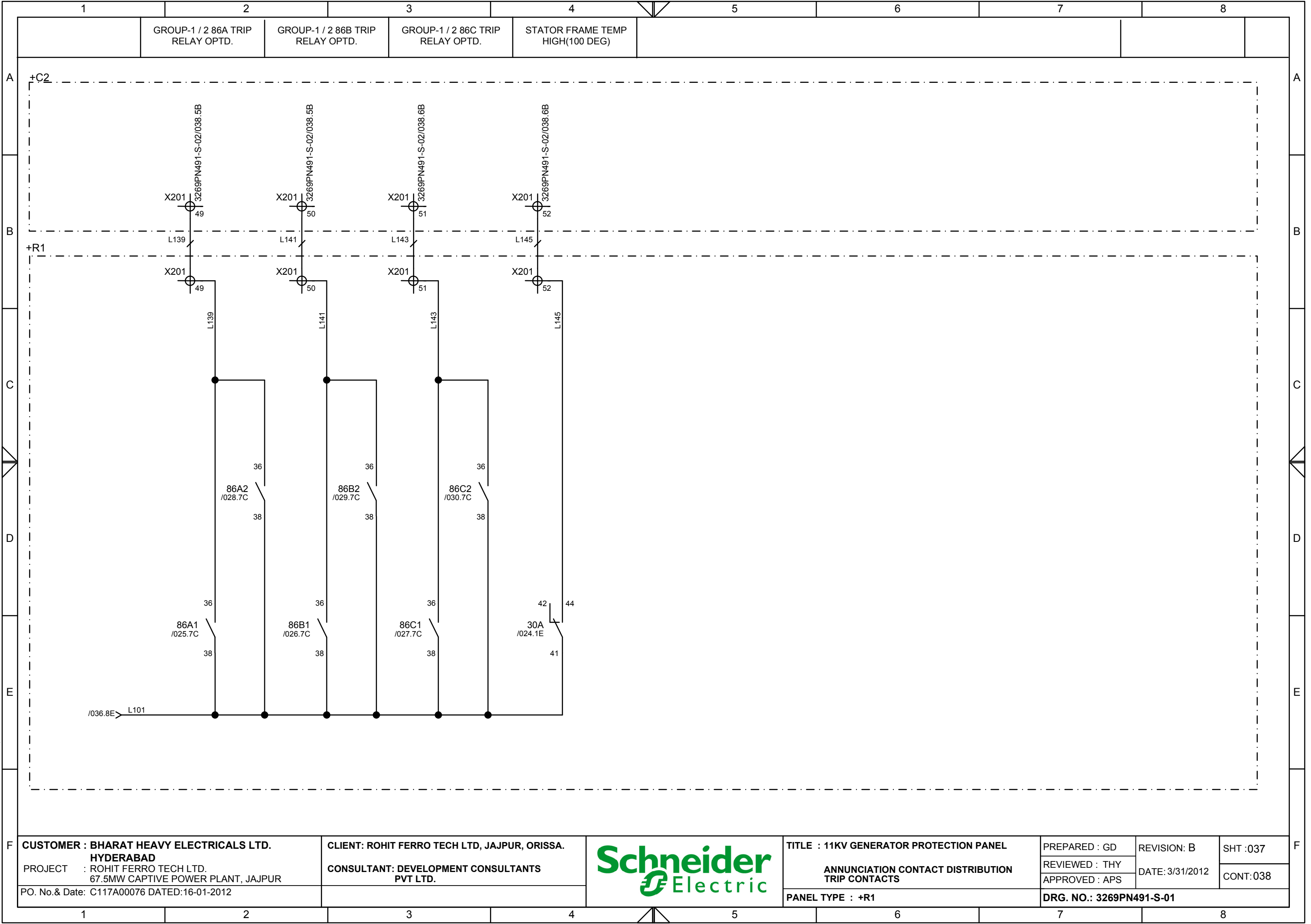
This document is the exclusive property of Schneider Electric and shall not be used, copied or communicated to third parties without prior authorization.



This document is the exclusive property of Schneider Electric and shall not be used, copied or communicated to third parties without prior authorization.

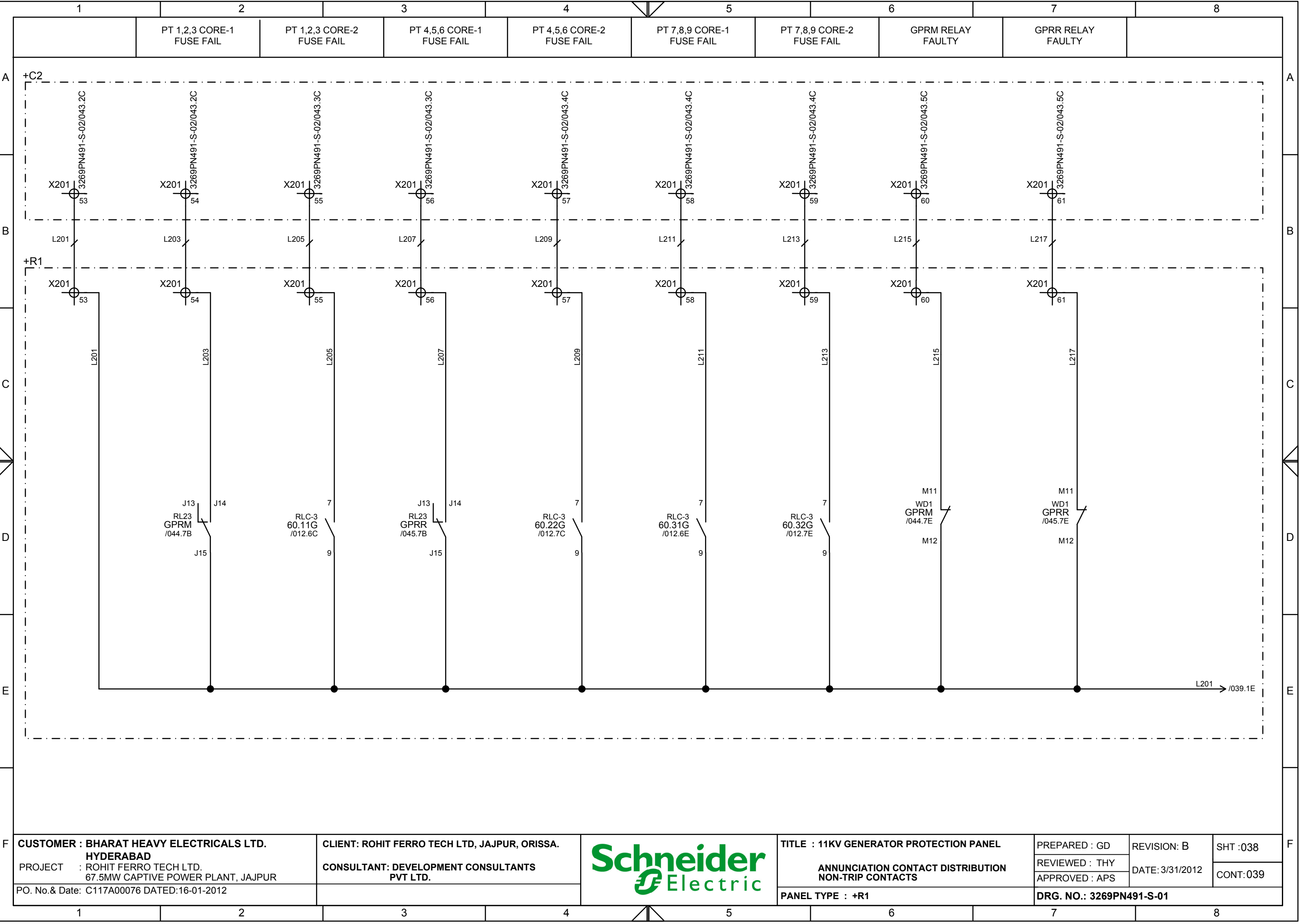


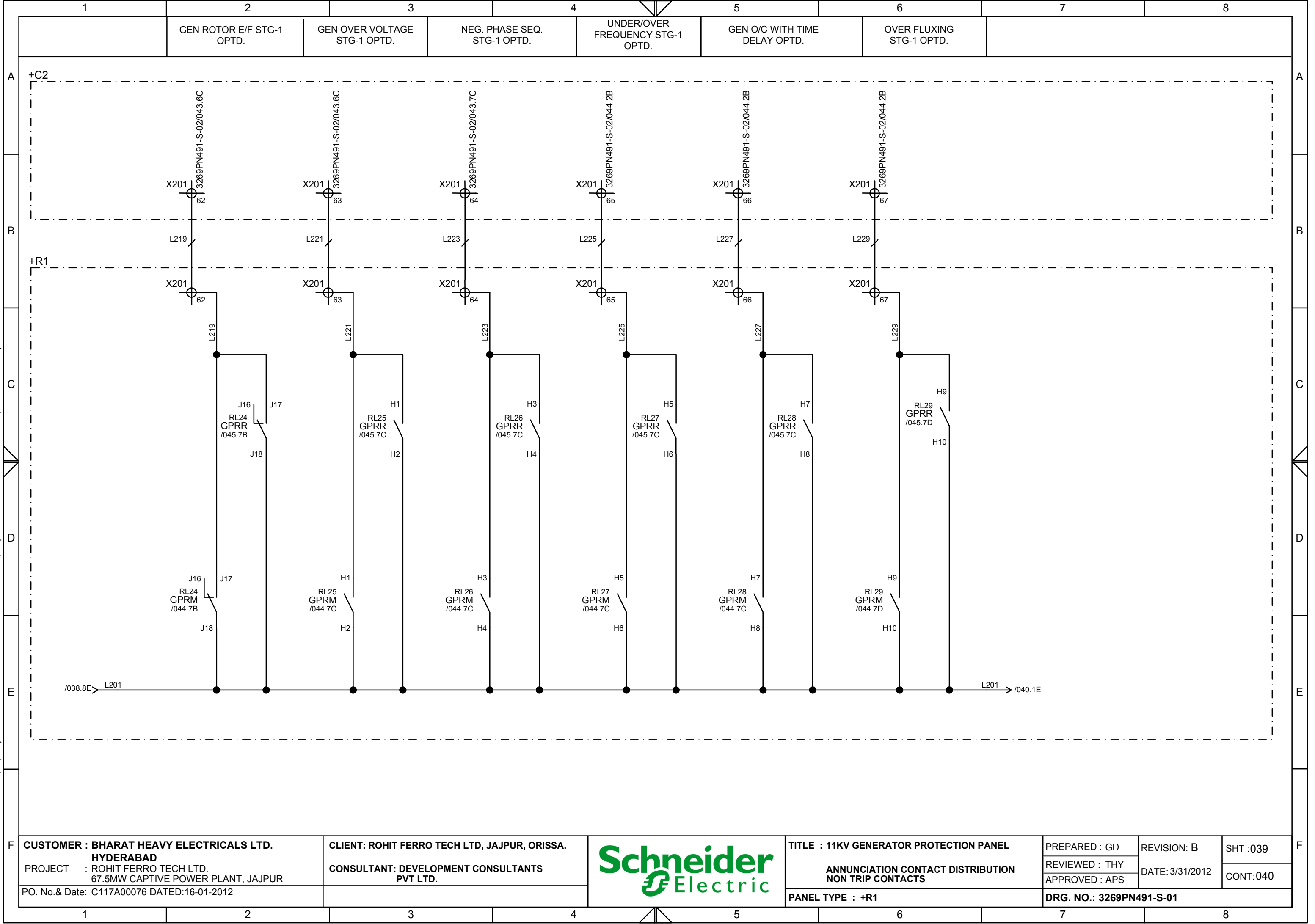
This document is the exclusive property of Schneider Electric and shall not be used, copied or communicated to third parties without prior authorization.



CUSTOMER : BHARAT HEAVY ELECTRICALS LTD. HYDERABAD PROJECT : ROHIT FERRO TECH LTD. 67.5MW CAPTIVE POWER PLANT, JAJPUR PO. No.& Date: C117A00076 DATED:16-01-2012	CLIENT: ROHIT FERRO TECH LTD, JAJPUR, ORISSA. CONSULTANT: DEVELOPMENT CONSULTANTS PVT LTD.		TITLE : 11KV GENERATOR PROTECTION PANEL ANNUNCIATION CONTACT DISTRIBUTION TRIP CONTACTS PANEL TYPE : +R1	PREPARED : GD REVIEWED : THY APPROVED : APS	REVISION: B DATE: 3/31/2012	SHT :037 CONT:038
	DRG. NO.: 3269PN491-S-01					

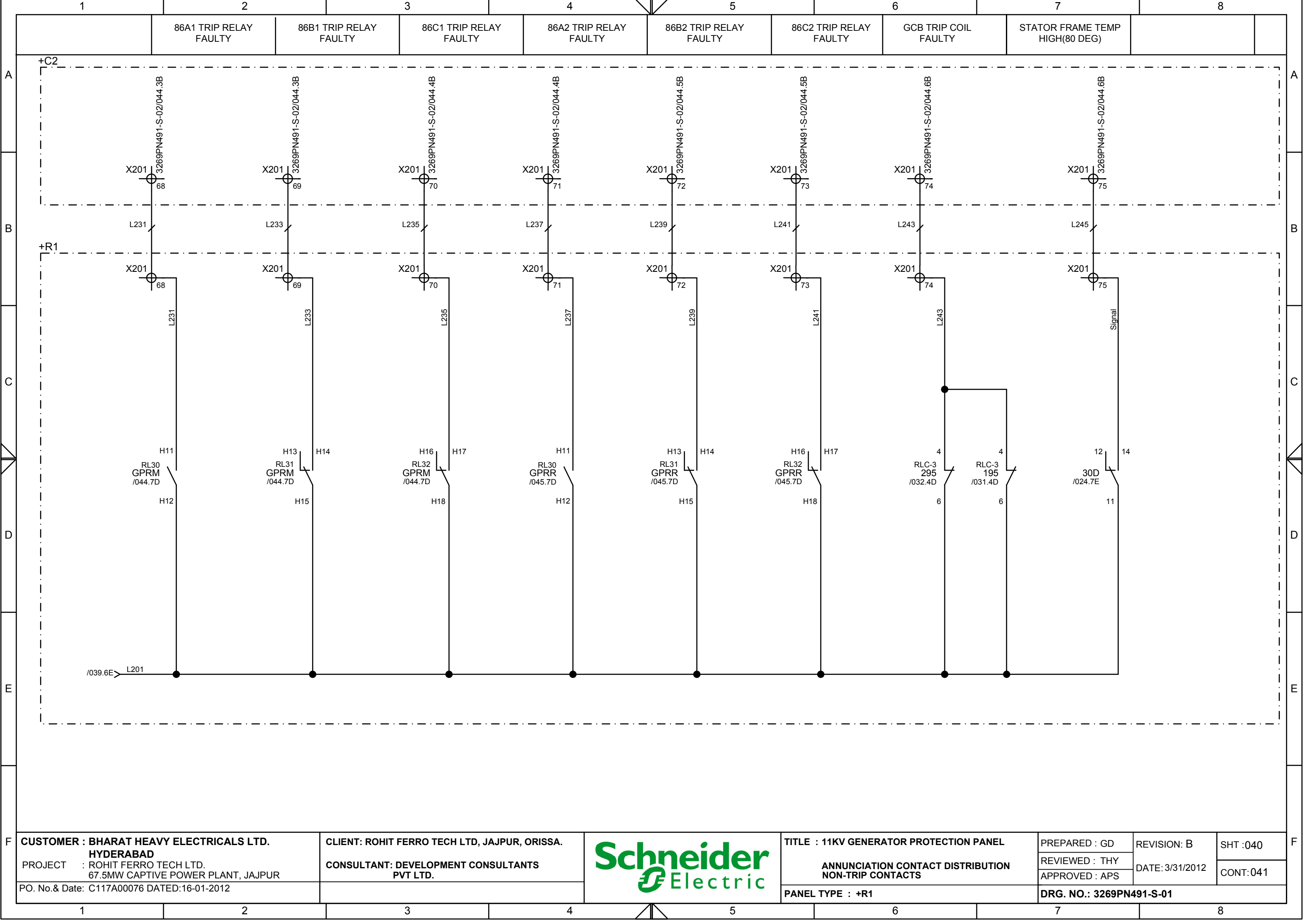
This document is the exclusive property of Schneider Electric and shall not be used, copied or communicated to third parties without prior authorization.

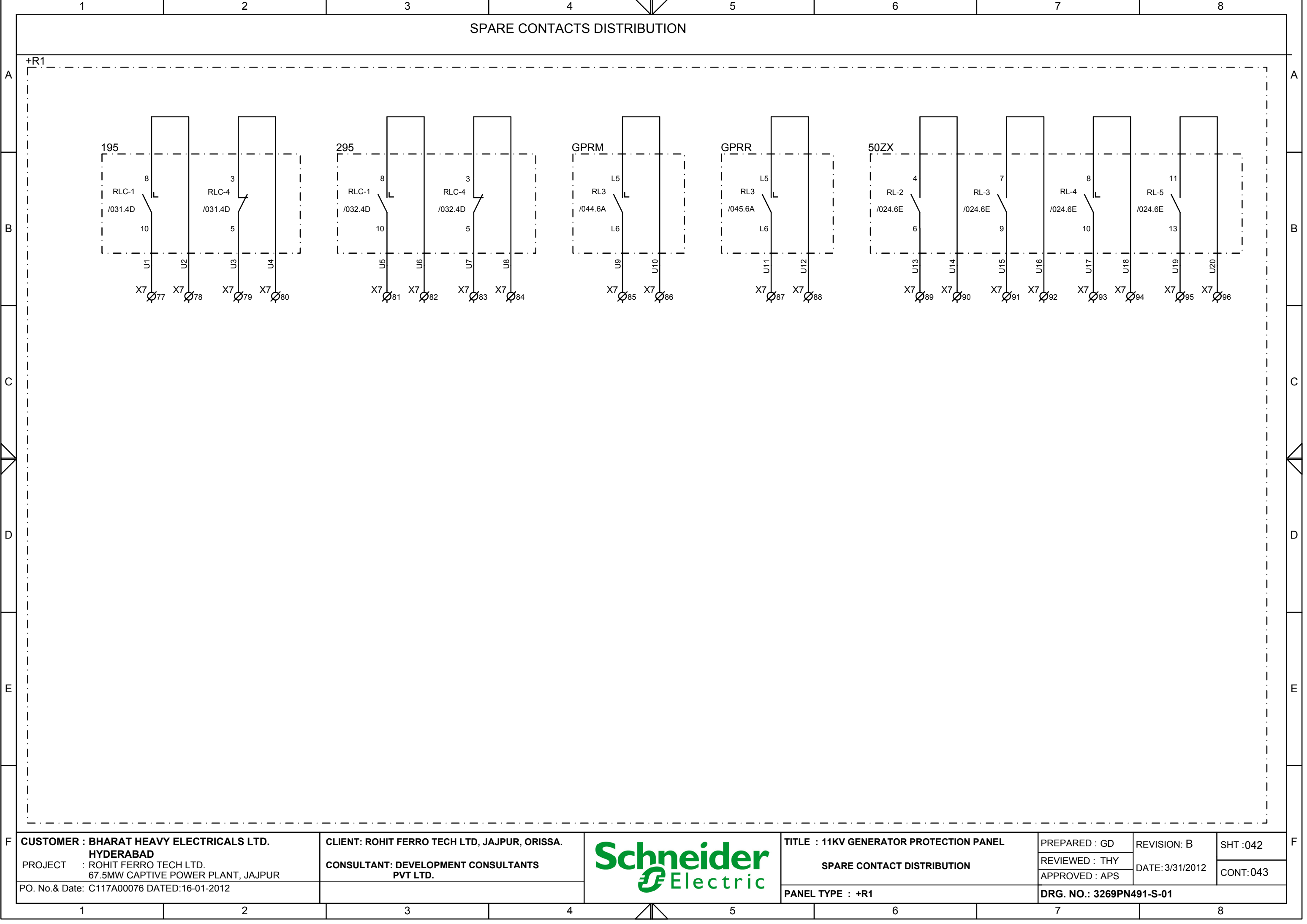




	1	2	3	4	5	6	7	8		
		86A1 TRIP RELAY FAULTY	86B1 TRIP RELAY FAULTY	86C1 TRIP RELAY FAULTY	86A2 TRIP RELAY FAULTY	86B2 TRIP RELAY FAULTY	86C2 TRIP RELAY FAULTY	GCB TRIP COIL FAULTY	STATOR FRAME TEMP HIGH(80 DEG)	
A										A
B										B
C										C
D										D
E										E
F										F

1	2	3	4	5	6	7	8			
CUSTOMER : BHARAT HEAVY ELECTRICALS LTD. HYDERABAD PROJECT : ROHIT FERRO TECH LTD. 67.5MW CAPTIVE POWER PLANT, JAJPUR PO. No.& Date: C117A00076 DATED:16-01-2012		CLIENT: ROHIT FERRO TECH LTD, JAJPUR, ORISSA. CONSULTANT: DEVELOPMENT CONSULTANTS PVT LTD.		Schneider Electric		TITLE : 11KV GENERATOR PROTECTION PANEL ANNUNCIATION CONTACT DISTRIBUTION NON-TRIP CONTACTS PANEL TYPE : +R1		PREPARED : GD REVIEWED : THY APPROVED : APS	REVISION: B DATE: 3/31/2012	SHT :040 CONT:041
DRG. NO.: 3269PN491-S-01										
1	2	3	4	5	6	7	8			





1		2		3		4		5		6		7		8			
+R1																	
BLKA		BLKB		BLKC		BLKD											
1	2	1	2	1	2	1	2										
3	4	3	4	3	4	3	4										
5	6	5	6	5	6	5	6										
7	8	7	8	7	8	7	8										
9	10	9	10	9	10	9	10										
11	12	11	12	11	12	11	12										
13	14	13	14	13	14	13	14										
15	16	15	16	15	16	15	16										
17	18	17	18	17	18	17	18										
19	20	19	20	19	20	19	20										
21	22	21	22	21	22	21	22										
23	24	23	24	23	24	23	24										
25	26	25	26	25	26	25	26										
27	28	27	28	27	28	27	28										
/025.2C		/014.6E		/028.2C		/019.6E											
/026.2C		/014.6E		/029.2C		/019.6E											
/014.6D		/014.6B		/019.6D		/019.6B											
/014.6D		/014.6C		/019.6D		/019.6C											
/014.6D		/015.1E		/020.1C		/020.1E											
/027.2C																	
/013.5A		/013.5F		/018.5A		/018.5F											
/013.5B		/013.5E		/018.5B		/018.5E											
/013.5B		/013.5E		/018.5B		/018.5E											
/013.5B		/013.5D		/018.5B		/018.5D											
F																	
CUSTOMER : BHARAT HEAVY ELECTRICALS LTD. HYDERABAD				CLIENT: ROHIT FERRO TECH LTD, JAJPUR, ORISSA.				TITLE : 11KV GENERATOR PROTECTION PANEL				PREPARED : GD		REVISION: B		SHT :043	
PROJECT : ROHIT FERRO TECH LTD. 67.5MW CAPTIVE POWER PLANT, JAJPUR				CONSULTANT: DEVELOPMENT CONSULTANTS PVT LTD.				TEST BLOCK DISTRIBUTION				REVIEWED : THY		DATE: 3/31/2012		CONT:044	
PO. No.& Date: C117A00076 DATED:16-01-2012								PANEL TYPE : +R1				DRG. NO.: 3269PN491-S-01					
1		2		3		4		5		6		7		8			

BLKB			
1		2	
3		4	
5		6	/014.6E
7		8	/014.6E
9		10	/014.6B
11		12	/014.6C
13		14	/015.1E
15		16	
17		18	
19		20	
21		22	
23		24	/013.5F
25		26	/013.5E
27		28	/013.5E
			/013.5D

BLKD			
1		2	
3		4	
5		6	/019.6E
7		8	/019.6E
9		10	/019.6B
11		12	/019.6C
13		14	/020.1E
15		16	
17		18	
19		20	
21		22	/018.5F
23		24	/018.5E
25		26	/018.5E
27		28	/018.5D

CUSTOMER : BHARAT HEAVY ELECTRICALS LTD. HYDERABAD		CLIENT: ROHIT FERRO TECH LTD, JAJPUR, ORISSA.		TITLE : 11KV GENERATOR PROTECTION PANEL		PREPARED : GD	REVISION: B	SHT :043
PROJECT : ROHIT FERRO TECH LTD. 67.5MW CAPTIVE POWER PLANT, JAJPUR		CONSULTANT: DEVELOPMENT CONSULTANTS PVT LTD.		TEST BLOCK DISTRIBUTION		REVIEWED : THY	DATE: 3/31/2012	CONT:044
PO. No.& Date: C117A00076 DATED:16-01-2012				PANEL TYPE : +R1		DRG. NO.: 3269PN491-S-01		

[illegible]

Diagram illustrating the Relay Contact Distribution for a 11KV Generator Protection Panel, showing various protection relays and their associated contacts.

The diagram is organized into three main sections, each labeled GPRR (Generator Protection Relay Relay):

- Section 1 (Left):** Shows protection relays (E1-E9, C1-C6, C7-C9, C10-C12, C13-C15) and their associated contacts (C16-C24, C25-C30, C31-C36, C37-C42).
- Section 2 (Middle):** Shows protection relays (E1-E16, G1-G16) and their associated contacts (C1-C15, C16-C30, C31-C45, C46-C60).
- Section 3 (Right):** Shows protection relays (L1-L18, K1-K18, H1-H18, M1-M14) and their associated contacts (C1-C15, C16-C30, C31-C45, C46-C60).

Key components and labels include:

- Relays:** E1-E9, C1-C6, C7-C9, C10-C12, C13-C15, E1-E16, G1-G16, L1-L18, K1-K18, H1-H18, M1-M14.
- Contacts:** C16-C24, C25-C30, C31-C36, C37-C42, C1-C15, C16-C30, C31-C45, C46-C60.
- Labels:** /018.7A, /019.7D, /020.2D, /021.2D, /022.2D, /020.1D, /019.7B.
- Legend:** /028.2D TO 86A2 TRIP RELAY, /029.2D TO 86B2 TRIP RELAY, /042.5B (ANY TRIP), /030.2D TO 86C2 TRIP RELAY, /024.3D GEN. DIFFL PROT N OPTD, /035.2D GEN. ROTOR E/F STG-2 OPTD, /035.3D GEN E/F (0-95%) OPTD, /035.4D GEN E/F (0-100%) OPTD, /035.5D LOSS OF EXCITATION WITH U/V, /035.6D LOSS OF EXCITATION WITH U/V, /035.6D LOW FORWARD POWER PROT N, /035.7D NEG. PHASE SEQ STG-2 OPTD, /035.7D UNDER FREQ. STG-2 OPTD, /036.1D OVER FREQ STG-2 OPTD, /036.2D DEAD MACHINE PROT N OPTD, /036.3D REVERSE POWER PROT N OPTD, /036.4D GEN OVERFLUX STG-2 OPTD, /036.4D POLE SLIPPING OPTD, /036.5D OVER VOLTAGE STG-2 OPTD, /036.6D UNDER VOLTAGE PROT N. OPTD, /024.5D LBB PROT N. OPTD, /036.7D VOLTAGE RESTRAINT O/C OPTD, /038.3D PT 4,5,6 CORE-1 FUSE FAIL, /039.2C GEN ROTOR E/F STG-1 OPTD, /039.3C GEN O/V STG-1 OPTD, /039.4C NEG. PHASE SEQ. STG-1 OPTD, /039.4C UNDER/OVER FREQ. STG-1 OPTD, /039.5C GEN O/C WITH TIME DELAY OPTD, /039.6C OVER FLUXING STG-1 OPTD, /040.4D 86A2 TRIP RELAY FAULTY, /040.5D 86B2 TRIP RELAY FAULTY, /040.5D 86C2 TRIP RELAY FAULTY, /038.7D RELAY FAULTY TO ANNUN.

Legend:

- 028.2D TO 86A2 TRIP RELAY
- 029.2D TO 86B2 TRIP RELAY
- 042.5B (ANY TRIP)
- 030.2D TO 86C2 TRIP RELAY
- 024.3D GEN. DIFFL PROT N OPTD
- 035.2D GEN. ROTOR E/F STG-2 OPTD
- 035.3D GEN E/F (0-95%) OPTD
- 035.4D GEN E/F (0-100%) OPTD
- 035.5D LOSS OF EXCITATION WITH U/V
- 035.6D LOSS OF EXCITATION WITH U/V
- 035.6D LOW FORWARD POWER PROT N
- 035.7D NEG. PHASE SEQ STG-2 OPTD
- 035.7D UNDER FREQ. STG-2 OPTD
- 036.1D OVER FREQ STG-2 OPTD
- 036.2D DEAD MACHINE PROT N OPTD
- 036.3D REVERSE POWER PROT N OPTD
- 036.4D GEN OVERFLUX STG-2 OPTD
- 036.4D POLE SLIPPING OPTD
- 036.5D OVER VOLTAGE STG-2 OPTD
- 036.6D UNDER VOLTAGE PROT N. OPTD
- 024.5D LBB PROT N. OPTD
- 036.7D VOLTAGE RESTRAINT O/C OPTD
- 038.3D PT 4,5,6 CORE-1 FUSE FAIL
- 039.2C GEN ROTOR E/F STG-1 OPTD
- 039.3C GEN O/V STG-1 OPTD
- 039.4C NEG. PHASE SEQ. STG-1 OPTD
- 039.4C UNDER/OVER FREQ. STG-1 OPTD
- 039.5C GEN O/C WITH TIME DELAY OPTD
- 039.6C OVER FLUXING STG-1 OPTD
- 040.4D 86A2 TRIP RELAY FAULTY
- 040.5D 86B2 TRIP RELAY FAULTY
- 040.5D 86C2 TRIP RELAY FAULTY
- 038.7D RELAY FAULTY TO ANNUN

Legend:

- 028.2D TO 86A2 TRIP RELAY
- 029.2D TO 86B2 TRIP RELAY
- 042.5B (ANY TRIP)
- 030.2D TO 86C2 TRIP RELAY
- 024.3D GEN. DIFFL PROT N OPTD
- 035.2D GEN. ROTOR E/F STG-2 OPTD
- 035.3D GEN E/F (0-95%) OPTD
- 035.4D GEN E/F (0-100%) OPTD
- 035.5D LOSS OF EXCITATION WITH U/V
- 035.6D LOSS OF EXCITATION WITH U/V
- 035.6D LOW FORWARD POWER PROT N
- 035.7D NEG. PHASE SEQ STG-2 OPTD
- 035.7D UNDER FREQ. STG-2 OPTD
- 036.1D OVER FREQ STG-2 OPTD
- 036.2D DEAD MACHINE PROT N OPTD
- 036.3D REVERSE POWER PROT N OPTD
- 036.4D GEN OVERFLUX STG-2 OPTD
- 036.4D POLE SLIPPING OPTD
- 036.5D OVER VOLTAGE STG-2 OPTD
- 036.6D UNDER VOLTAGE PROT N. OPTD
- 024.5D LBB PROT N. OPTD
- 036.7D VOLTAGE RESTRAINT O/C OPTD
- 038.3D PT 4,5,6 CORE-1 FUSE FAIL
- 039.2C GEN ROTOR E/F STG-1 OPTD
- 039.3C GEN O/V STG-1 OPTD
- 039.4C NEG. PHASE SEQ. STG-1 OPTD
- 039.4C UNDER/OVER FREQ. STG-1 OPTD
- 039.5C GEN O/C WITH TIME DELAY OPTD
- 039.6C OVER FLUXING STG-1 OPTD
- 040.4D 86A2 TRIP RELAY FAULTY
- 040.5D 86B2 TRIP RELAY FAULTY
- 040.5D 86C2 TRIP RELAY FAULTY
- 038.7D RELAY FAULTY TO ANNUN

Legend:

- 028.2D TO 86A2 TRIP RELAY
- 029.2D TO 86B2 TRIP RELAY
- 042.5B (ANY TRIP)
- 030.2D TO 86C2 TRIP RELAY
- 024.3D GEN. DIFFL PROT N OPTD
- 035.2D GEN. ROTOR E/F STG-2 OPTD
- 035.3D GEN E/F (0-95%) OPTD
- 035.4D GEN E/F (0-100%) OPTD
- 035.5D LOSS OF EXCITATION WITH U/V
- 035.6D LOSS OF EXCITATION WITH U/V
- 035.6D LOW FORWARD POWER PROT N
- 035.7D NEG. PHASE SEQ STG-2 OPTD
- 035.7D UNDER FREQ. STG-2 OPTD
- 036.1D OVER FREQ STG-2 OPTD
- 036.2D DEAD MACHINE PROT N OPTD
- 036.3D REVERSE POWER PROT N OPTD
- 036.4D GEN OVERFLUX STG-2 OPTD
- 036.4D POLE SLIPPING OPTD
- 036.5D OVER VOLTAGE STG-2 OPTD
- 036.6D UNDER VOLTAGE PROT N. OPTD
- 024.5D LBB PROT N. OPTD
- 036.7D VOLTAGE RESTRAINT O/C OPTD
- 038.3D PT 4,5,6 CORE-1 FUSE FAIL
- 039.2C GEN ROTOR E/F STG-1 OPTD
- 039.3C GEN O/V STG-1 OPTD
- 039.4C NEG. PHASE SEQ. STG-1 OPTD
- 039.4C UNDER/OVER FREQ. STG-1 OPTD
- 039.5C GEN O/C WITH TIME DELAY OPTD
- 039.6C OVER FLUXING STG-1 OPTD
- 040.4D 86A2 TRIP RELAY FAULTY
- 040.5D 86B2 TRIP RELAY FAULTY
- 040.5D 86C2 TRIP RELAY FAULTY
- 038.7D RELAY FAULTY TO ANNUN

Legend:

- 028.2D TO 86A2 TRIP RELAY
- 029.2D TO 86B2 TRIP RELAY
- 042.5B (ANY TRIP)
- 030.2D TO 86C2 TRIP RELAY
- 024.3D GEN. DIFFL PROT N OPTD
- 035.2D GEN. ROTOR E/F STG-2 OPTD
- 035.3D GEN E/F (0-95%) OPTD
- 035.4D GEN E/F (0-100%) OPTD
- 035.5D LOSS OF EXCITATION WITH U/V
- 035.6D LOSS OF EXCITATION WITH U/V
- 035.6D LOW FORWARD POWER PROT N
- 035.7D NEG. PHASE SEQ STG-2 OPTD
- 035.7D UNDER FREQ. STG-2 OPTD
- 036.1D OVER FREQ STG-2 OPTD
- 036.2D DEAD MACHINE PROT N OPTD
- 036.3D REVERSE POWER PROT N OPTD
- 036.4D GEN OVERFLUX STG-2 OPTD
- 036.4D POLE SLIPPING OPTD
- 036.5D OVER VOLTAGE STG-2 OPTD
- 036.6D UNDER VOLTAGE PROT N. OPTD
- 024.5D LBB PROT N. OPTD
- 036.7D VOLTAGE RESTRAINT O/C OPTD
- 038.3D PT 4,5,6 CORE-1 FUSE FAIL
- 039.2C GEN ROTOR E/F STG-1 OPTD
- 039.3C GEN O/V STG-1 OPTD
- 039.4C NEG. PHASE SEQ. STG-1 OPTD
- 039.4C UNDER/OVER FREQ. STG-1 OPTD
- 039.5C GEN O/C WITH TIME DELAY OPTD
- 039.6C OVER FLUXING STG-1 OPTD
- 040.4D 86A2 TRIP RELAY FAULTY
- 040.5D 86B2 TRIP RELAY FAULTY
- 040.5D 86C2 TRIP RELAY FAULTY
- 038.7D RELAY FAULTY TO ANNUN

Legend:

- 028.2D TO 86A2 TRIP RELAY
- 029.2D TO 86B2 TRIP RELAY
- 042.5B (ANY TRIP)
- 030.2D TO 86C2 TRIP RELAY
- 024.3D GEN. DIFFL PROT N OPTD
- 035.2D GEN. ROTOR E/F STG-2 OPTD
- 035.3D GEN E/F (0-95%) OPTD
- 035.4D GEN E/F (0-100%) OPTD
- 035.5D LOSS OF EXCITATION WITH U/V
- 035.6D LOSS OF EXCITATION WITH U/V
-

	1	2	3	4	5	6	7	8			
A	MICOMP343 LED CONFIGURATION(GPRM) ⊗ GENERATOR DIFF. PROTN ⊗ ROTOR E/F PROTN. ⊗ NEG. PHASE SEQUENCE PROTN ⊗ OVER CURRENT PROTN ⊗ DEAD MACHINE PROTN ⊗ POLE SLIPPING PROTN ⊗ LBB PROTN ⊗ VOLTAGE RESTRAINT O/C PROTN				MICOMP343 LED CONFIGURATION(GPRR) ⊗ REV POWER PROTN ⊗ STATOR E/F PROTN ⊗ UNDER VOLTAGE PROTN ⊗ OVER VOLTAGE PROTN ⊗ OVER FREQUENCY PROTN ⊗ LOSS OF EXCITATION ⊗ UNDER FREQUENCY PROTN ⊗ LOW FORWARD POWER				A		
B									B		
C	INBUILT FUNCTIONS OF GPRM: 1) 87G- GENERATOR DIFFERENTIAL PROTN. 2) 64G- ROTOR E/F PROTN. 3) 64G1/G2-GENERATOR E/F PROTN(0-95% & 0-100%) 4) 37G-LOW FORWARD POWER 5) 40G- LOSS OF EXCITATION PROTN 6) 27/40G- LOSS OF EXCITATION WITH U/V PROTECTION 7) 46G- NEGATIVE PHASE SEQUENCE 8) 81- UNDER FREQUENCY PROTN STG-1&2 9) 81O- OVER FREQUENCY PROTN STG-1&2 10) 50LBB- GEN. CB FAILURE PROTECTION 11) 50G- OVER CURRENT PROTN WITH TIME DELAY 12) 61B- DEAD MACHINE PROTN 13) 32G- REVERSE POWER PROTN 14) 24G- OVER FLUXING PROTN 15) 78G- POLE SLIPPING PROTN 16) 51V- GEN OVERCURRENT WITH VOLTAGE RESTRAINT PROTN 17) 27G- UNDER VOLTAGE PROTN 18) 59G- OVER VOLTAGE PROTN STG-1&2				INBUILT FUNCTIONS OF GPRR: 1) 87G- GENERATOR DIFFERENTIAL PROTN. 2) 64G- ROTOR E/F PROTN. 3) 64G1/G2-GENERATOR E/F PROTN(0-95% & 0-100%) 4) 37G-LOW FORWARD POWER 5) 40G- LOSS OF EXCITATION PROTN 6) 27/40G- LOSS OF EXCITATION WITH U/V PROTECTION 7) 46G- NEGATIVE PHASE SEQUENCE 8) 81- UNDER FREQUENCY PROTN STG-1&2 9) 81O- OVER FREQUENCY PROTN STG-1&2 10) 50LBB- GEN. CB FAILURE PROTECTION 11) 50G- OVER CURRENT PROTN WITH TIME DELAY 12) 61B- DEAD MACHINE PROTN 13) 32G- REVERSE POWER PROTN 14) 24G- OVER FLUXING PROTN 15) 78G- POLE SLIPPING PROTN 16) 51V- GEN OVERCURRENT WITH VOLTAGE RESTRAINT PROTN 17) 27G- UNDER VOLTAGE PROTN 18) 59G- OVER VOLTAGE PROTN STG-1&2				C		
D									D		
E									E		
F	CUSTOMER : BHARAT HEAVY ELECTRICALS LTD. HYDERABAD PROJECT : ROHIT FERRO TECH LTD. 67.5MW CAPTIVE POWER PLANT, JAJPUR PO. No.& Date: C117A00076 DATED:16-01-2012		CLIENT: ROHIT FERRO TECH LTD, JAJPUR, ORISSA. CONSULTANT: DEVELOPMENT CONSULTANTS PVT LTD.		Schneider Electric		TITLE : 11KV GENERATOR PROTECTION PANEL RELAY LED CONFIGURATION PANEL TYPE : +R1	PREPARED : GD REVIEWED : THY APPROVED : APS DRG. NO.: 3269PN491-S-01	REVISION: B DATE: 3/31/2012	SHT :046 CONT:047	F
	1	2	3	4	5	6	7	8			

F

This document is the exclusive property of Schneider Electric and shall not be used, copied or communicated to third parties without prior authorization.

1		2		3		4		5		6		7		8	
+R1															
TAG		REF		TAG		REF		TAG		REF		TAG		REF	
X1:1		/006.3B		X2:1		/013.3A		X3:1		/009.4A		X4:1		/012.4D	
X1:2		/006.4B		X2:2		/013.3B		X3:2		/009.4B		X4:2		/012.4D	
X1:3		SPARE		X2:3		/013.3B		X3:3		/009.4B		X4:3		/012.5D	
				X2:4		/013.3B		X3:4		/009.4B		X4:4		/012.5D	
				X2:5		/013.3B		X3:5		/009.4D		X4:5		/015.7B	
				X2:6		/013.3B		X3:6		/009.4D		X4:6		/015.7B	
				X2:7		/013.3B		X3:7		/009.4D		X4:7		/016.2B	
				X2:8		/013.3C		X3:8		/009.4D		X4:8		/016.2B	
				X2:9		/013.3D		X3:9		/010.5B		X4:9		/016.5C	
				X2:10		/013.3E		X3:10		/010.5B		X4:10		/016.5C	
				X2:11		/013.3E		X3:11		/010.5B		X4:11		/016.5C	
				X2:12		/013.3E		X3:12		/010.5B		X4:12		/016.6C	
				X2:13		/013.3E		X3:13		/010.5D		X4:13		/016.6C	
				X2:14		/013.3E		X3:14		/010.5E		X4:14		/016.6C	
				X2:15		/013.3F		X3:15		/010.5E		X4:15		/020.7B	
				X2:16		/013.3F		X3:16		/010.5E		X4:16		/020.7B	
				X2:17		/018.3A		X3:17		/010.7E		X4:17		/021.2B	
				X2:18		/018.3B		X3:18		/010.7E		X4:18		/021.2B	
				X2:19		/018.3B		X3:19		/010.7E		X4:19		/021.5C	
				X2:20		/018.3B		X3:20		/010.7E		X4:20		/021.5C	
				X2:21		/018.3B		X3:21		/011.4A		X4:21		/021.5C	
				X2:22		/018.3B		X3:22		/011.4B		X4:22		/021.6C	
				X2:23		/018.3B		X3:23		/011.4B		X4:23		/021.6C	
				X2:24		/018.3C		X3:24		/011.4B		X4:24		/021.6C	
				X2:25		/018.3D		X3:25		/011.6B		X4:25		/023.3B	
				X2:26		/018.3E		X3:26		/011.6B		X4:26		/023.3B	
				X2:27		/018.3E		X3:27		/011.6C		X4:27		/023.3C	
				X2:28		/018.3E		X3:28		/011.6C		X4:28		/023.3C	
				X2:29		/018.3E		X3:29		/011.6C		X4:29		/024.1C	
				X2:30		/018.3E		X3:30		/011.4D		X4:30		/024.2C	
				X2:31		/018.3F		X3:31		/011.4D		X4:31		/024.7D	
				X2:32		/018.3F		X3:32		/011.4D		X4:32		/024.7D	
				X2:33		SPARE		X3:33		/011.4D		X4:33		/024.7D	
				X2:34		SPARE		X3:34		/011.6D		X4:34		/024.8D	
				X2:35		SPARE		X3:35		/011.6E		X4:35		/025.4C	
				X2:36		SPARE		X3:36		/011.6E		X4:36		/025.4C	
				X2:37		SPARE		X3:37		/011.6E		X4:37		/025.5C	
				X2:38		SPARE		X3:38		/011.6F		X4:38		/025.5C	
								X3:39		/014.3B		X4:39		/026.4C	
								X3:40		/014.3B		X4:40		/026.4C	
								X3:41		/014.3B		X4:41		/027.2C	
								X3:42		/014.3B		X4:42		/027.2C	
								X3:43		/014.3C		X4:43		/027.3C	
								X3:44		/014.3C		X4:44		/027.3C	
								X3:45		/019.3C		X4:45		/027.4C	
								X3:46		/019.3C		X4:46		/027.4C	
								X3:47		/019.3C		X4:47		/027.4C	
								X3:48		/019.3C		X4:48		/027.5C	
								X3:49		SPARE		X4:49		/027.5C	
								X3:50		SPARE		X4:50		/027.6C	
								X3:51		SPARE					
								X3:52		SPARE					
								X3:53		SPARE					
								X3:54		SPARE					
								X3:55		SPARE					
								X3:56		SPARE					
								X3:57		SPARE					
								X3:58		SPARE					