USED ON: V5506C

FILE NAME:
DRG. NO. V6Q12983 REV 01

IF IN DOUBT, ASK

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EQUPMENTS	
SYMBOL	DESCRIPTION
M	VACCUM CIRCUIT BREAKER MOTOR OPERATED SPRING CHARGED
	- DRAWOUT DEVICE
1	PT:- 3PH, 5 LIMB DRAWOUT TYPE POTENTIAL XMER WITH DUAL SECONDARY WDGS (NO. INDICATES QUANTITY)
3	CT:- CURRENT TRANSFORMER (NO. INDICATES QUANTITY)
1	CBCT:- CORE BALANCE CURRENT TRANFORMER (NO. INDICATES QUANTITY)
	HT HRC FUSE
	MCB
L R	LOCAL/REMOTE SELECTOR SWITCH (STAY-PUT TYPE)
T N C	TRIP,NEUTRAL,CLOSE SELECTOR SWITCH PISTOL GRIP TYPE
	6 WINDOW ANNUNCIATOR
	12 WINDOW ANNUNCIATOR
H	ELECTRONIC HOOTER
TT	TEST TERMINAL BLOCK FOR CTS AND PTS
MFR	MULTI FUNCTION RELAY

EQUPMENTS	
SYMBOL	DESCRIPTION
A 1	ANALOG AMMETER 144 SQ.MM- FOR ALL FEEDERS (NO. INDICATES QUANTITY)
V	ANALOG VOLTMETER 144 SQ.MM- FOR ALL FEEDERS
VSS	VOLTMETER SELECTOR SWITCH (4 POSITION SWITCH)
MFM	MULTIFUNCTION METER COMMUNICABLE ON MODBUS PROTOCOL

INDICATING LAMPS	
SYMBOL	DESCRIPTION
R	INDICATION LAMP FOR BREAKER ON (RED)
W	INDICATION LAMP FOR TRIP CIRCUIT HEALTHY (WHITE)
G	INDICATION LAMP FOR BREAKER OFF (GREEN)
A	INDICATION LAMP FOR AUTO TRIP (AMBER)
B	INDICATION LAMP FOR BREAKER SPRING CHARGED (BLUE)
SP	INDICATION LAMP FOR BKR IN SERVICE (GREEN)
TP	INDICATION LAMP FOR BKR IN TEST (RED)
RTC	INDICATION LAMP FOR BKR READY TO CLOSE (GREEN)
RP	INDICATION LAMP FOR R-PH VOLTAGE PRESENCE
YP	INDICATION LAMP FOR Y-PH VOLTAGE PRESENCE
BP	INDICATION LAMP FOR B-PH VOLTAGE PRESENCE
SPARE	SPARE INDICATION LAMP (GREEN)

EQUPMENTS	
SYMBOL	DESCRIPTION
27	UNDER VOLTAGE RELAY
59N	NEUTRAL DISPLACEMENT RELAY
df/dt	RATE OF CHANGE OF FREQUENCY RELAY
97	PT FUSE FAILURE RELAY
50 51 95	COMPREHENSIVE O/C & E/F RELAY WITH INBUILT TRIP CIRCUIT SUPERVISION FACILITY
86	MASTER TRIP RELAY
85	NUMERICAL PILOT WIRE DIFFRENTIAL RELAY

EQUPMENTS	
SYMBOL	DESCRIPTION
MFR	MULTI FUNCTION RELAY
ADF	AC/DC FAILURE SCHEME
DC C/O	DC CHANGE OVER SCHEME
AC C/O	AC CHANGE OVER SCHEME
I	INSTRUMENTS
R	RELAYS
VCB	VACCUM CIRCUIT BREAKER
ES	ETHERNET SWITCH

NOTES:-

1) AC AND DC CHANGE OVER SCHEME SHALL BE PROVIDED ON INCOMER LINE PT PANEL.
2) AC AND DC FAILURE SCHEME SHALL BE PROVIDED ON INCOMER LINE PT PANEL.
3) MFR RELAY, PILOT WIRE DIFFRENTIAL RELAY SHALL BE BASED ON IEC 61850 COMMUNICATION PROTOCOL.
4) ALL THE METERS USED SHALL BE MICROPROCESSOR BASED MULTIFUNCTION TYPE WITH COMMUNICABLE ON MODBUS PROTOCOL.
5) 240 VAC AND 220V DC SUPPLY SHALL BE IN TEIL SCOPE.
6) MANAGEBLE ETHERNET SWITCH SHALL BE PROVIDED ON INCOMER LINE PT PANEL.
7) TEIL/CLIENT TO FURNISH THE CABLE SIZES FOR CBCT DESIGN.

- FOR LEGENDS & SYMBOLS REF. V6Q0017

1 9 DEC 2013

No	NZ	REVISION	DATE
3			
2		AS PER COMMENT 02	GHT 01.09.13
1		AS PER COMMENT 01	GHT 24.08.13

CUSTOMER- TRIVENI TURBINE LIMITED

W.O.NO. V5506C

	SIGN	NAME	DATE
DRN.		GHT	17.08.2013
APPD.		RGS	17.08.2013

SHEET 1 OF 4

THIRD ANGLE PROJECTION

SINGLE LINE DIAGRAM FOR 6.6KV RESERVE SUPPLY DISTRIBUTION SCHEME

Crompton Greaves Ltd
MV Switchgear Division
Ambad, Nashik, India

ALL DIMENSIONS ARE IN mm | SCALE- NTS | DRG. NO. V6Q12983 | REV 01

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USED ON : V5506C

FILE NAME:
DRG. NO. V6Q12983
REV 01

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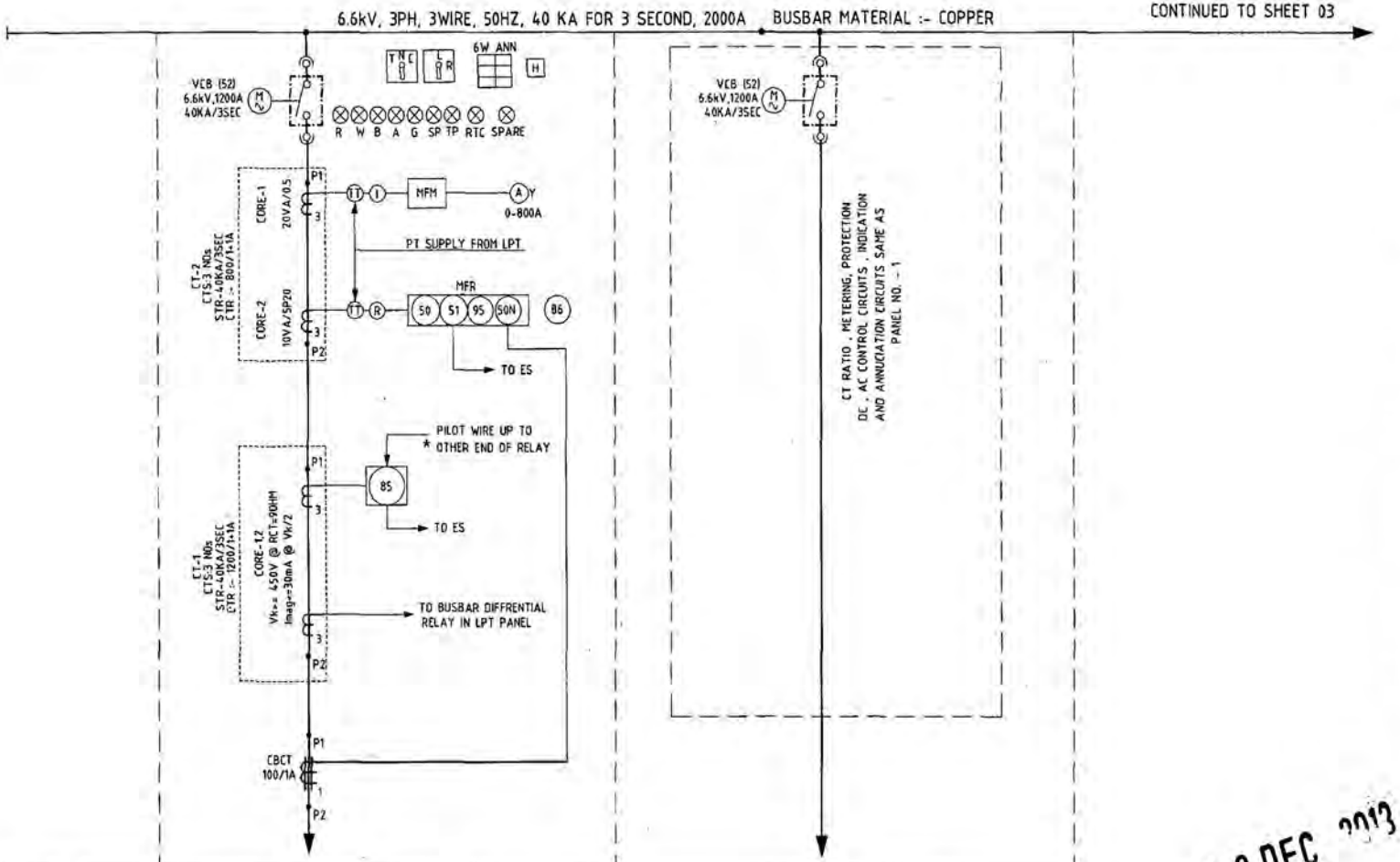

PANEL NO.	1	2
FEEDER DESCRIPTION	6.6KV FEEDER TO CWPH	SPARE OUTGOING FEEDER
FEEDER TYPE	OG-1	OG-2

19 DEC 2013

* NOTE:- THE FO CABLE & MODEM (IF REQ) BETWEEN 85 RELAYS IS IN TEIL SCOPE OF SUPPLY

- FOR LEGENDS & SYMBOLS REF. V6Q0017

No	NZ	REVISION	DATE
3			
2		AS PER COMMENT 02	GHT 01.09.13
1		AS PER COMMENT 01	GHT 24.08.13

CUSTOMER- TRIVENI TURBINE LIMITED

W.O.NO. V5506C

	SIGN	NAME	DATE
DRN.		GHT	17.08.2013
APPD.		RGS	17.08.2013

SHEET 2 OF 4

ALL DIMENSIONS ARE IN mm

SCALE- NTS

THIRD ANGLE PROJECTION

SINGLE LINE DIAGRAM
FOR 6.6KV RESERVE SUPPLY
DISTRIBUTION SCHEME

Crompton Greaves Ltd
MV Switchgear Division
Ambad, Nashik, India

DRG. NO. V6Q12983 REV 01

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FILE NAME:
DRG. NO. V6Q12983 REV 01

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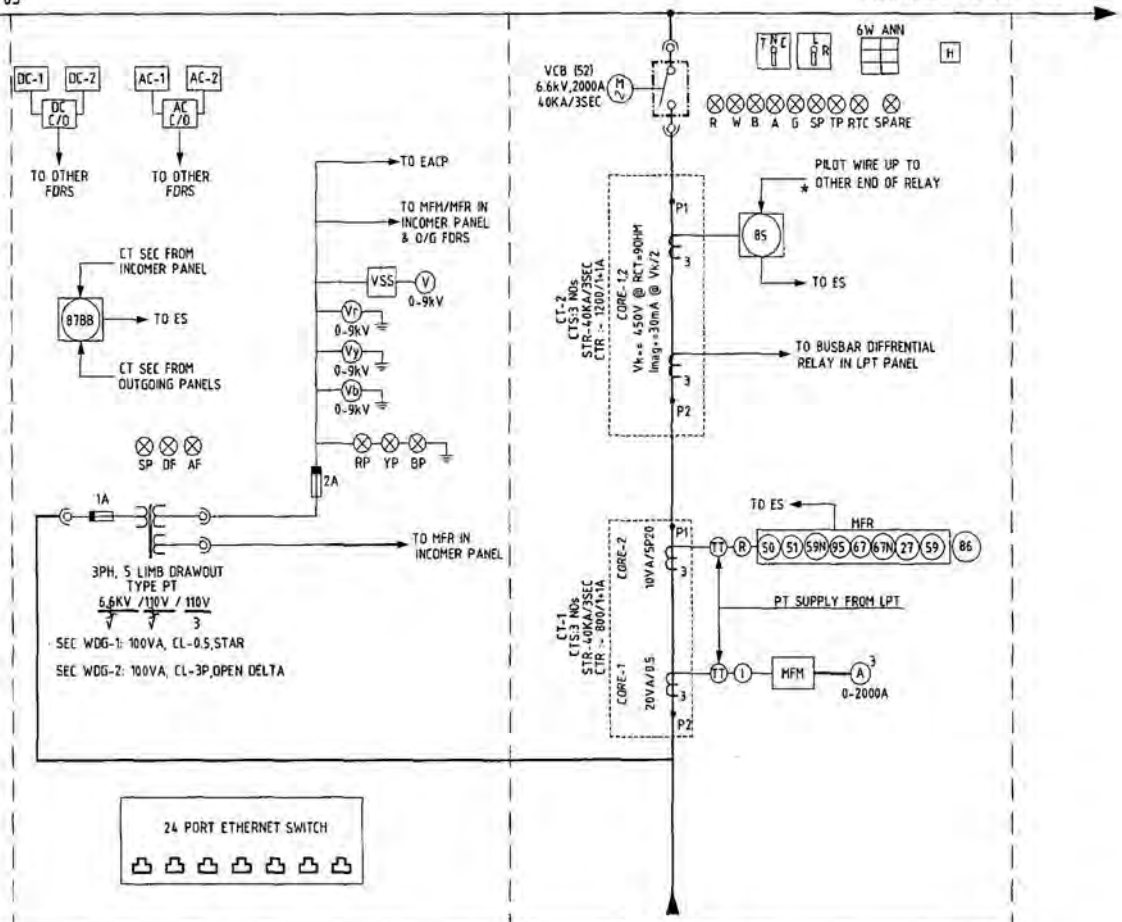
CONTINUED FROM SHEET 03

CONTINUED TO SHEET 04



PANEL NO.	3	4
FEEDER DESCRIPTION	INCOMER LINE PT PANEL	RESERVE SUPPLY FROM MSDS-1
FEEDER TYPE	LPT	IC

19 DEC 2013

** NOTE:- SIGNALS LOCATION FOR PILOT WIRE PROTECTION SHALL BE FROM MSDS-1 TO RSSB INCOMER AT 25MW STG

- FOR LEGENDS & SYMBOLS REF. V6Q0017

No	NZ	REVISION	DATE
3			
2		AS PER COMMENT 02	GHT 01.09.13
1		AS PER COMMENT 01	GHT 24.08.13

CUSTOMER- TRIVENI TURBINE LIMITED

W.O.NO. V5506C

	SIGN	NAME	DATE
DRN.		GHT	17.08.2013
APPD.		RGS	17.08.2013

SHEET 3 OF 4

THIRD ANGLE PROJECTION

SINGLE LINE DIAGRAM FOR 6.6KV RESERVE SUPPLY DISTRIBUTION SCHEME

Crompton Greaves Ltd
MV Switchgear Division
Ambad, Nashik, India

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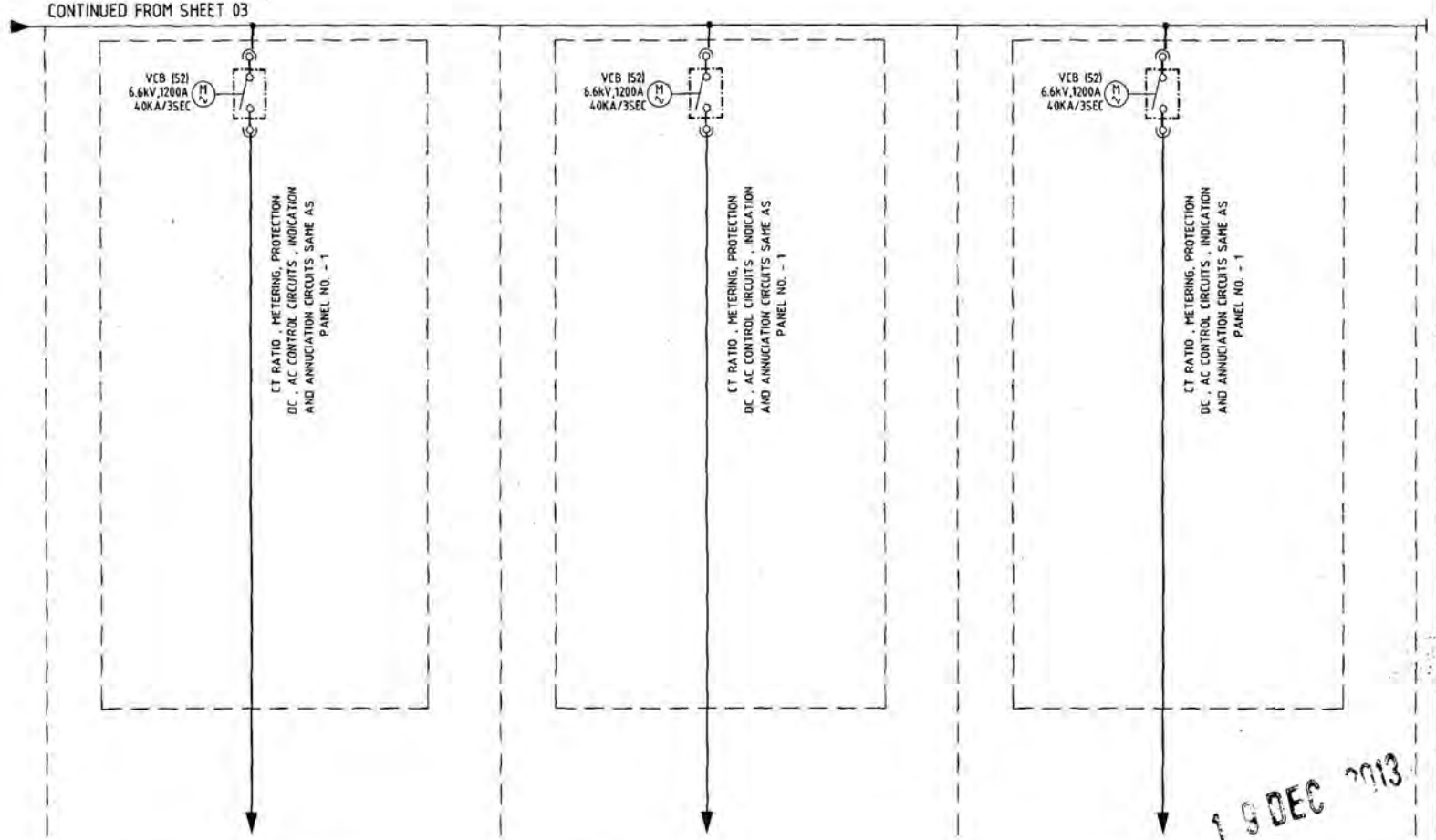
USED ON : V5506C

CONTINUED FROM SHEET 03



19 DEC 2013

PANEL NO.	5	6	7
FEEDER DESCRIPTION	TO BOILER-7 IC-2,PKG 011-01A	TO ASG FEEDER-1 IC-2,PKG 011-01A	TO ASG FEEDER-2 IC-2,PKG 011-01A
FEEDER TYPE	OG-3	OG-4	OG-5

- FOR LEGENDS & SYMBOLS REF. V6Q0017

No	NZ	REVISION	DATE
3			
2		AS PER COMMENT 02	GHT 01.09.13
1		AS PER COMMENT 01	GHT 24.08.13

CUSTOMER- TRIVENI TURBINE LIMITED

W.O.NO. V5506C

	SIGN	NAME	DATE
DRN.		GHT	17.08.2013
APPD.		RGS	17.08.2013

SHEET 4 OF4

THIRD ANGLE PROJECTION

SINGLE LINE DIAGRAM
FOR 6.6KV RESERVE SUPPLY
DISTRIBUTION SCHEME

Crompton Greaves Ltd
MV Switchgear Division
Ambad, Nashik, India

ALL DIMENSIONS ARE IN mm | SCALE- NTS | DRG. NO. V6Q12983 | REV 01

FILE NAME: | DRG. NO. V6Q12983 | REV 01

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USED ON: | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | SHEET 1 OF 1

ANSI CODE, TAG, SYMBOL DESCRIPTIONS

ANSI CODE	PROTECTIVE FUNCTIONS
21	DISTANCE PROTECTION RELAY
25	CHECK SYNCHRONIZING RELAY
27	UNDER VOLTAGE RELAY
32	DIRECTIONAL POWER RELAY
37	UNDER CURRENT/POWER RELAY
46	NEGATIVE SEQUENCE VOLTAGE RELAY
47	NEGATIVE SEQUENCE CURRENT RELAY
49	THERMAL RELAY
50	HIGHSET OPERATED OC/EF RELAY
50N	SENSITIVE EF RELAY
51	IDMTL OPERATED OC/EF RELAY
51N	DEFINITE TIME EF RELAY
51G	IDMTL EF RELAY
55	POWER FACTOR RELAY
59	OVER VOLTAGE RELAY
59N	VOLTAGE BALANCE RELAY (NDR)
61	CURRENT BALANCE RELAY (NDR)
63R	TRANSFORMER FAULT RELAY
64R	REF RELAY
64H	GROUND FAULT RELAY
67	AC DIRECTIONAL CURRENT RELAY
79	AUTO RECLOSING RELAY
80	DC SUPPLY SUPERVISION RELAY
81U	UNDER FREQUENCY RELAY
81O	OVER FREQUENCY RELAY
85	PILOT WIRE RECEIVER RELAY
86	MASTER TRIP(LOCK OUT) RELAY
87B	BUS BAR DIFFERENTIAL RELAY
87M	MOTOR DIFFERENTIAL RELAY
87T	TRANSFORMER DIFFERENTIAL RELAY
94	ANTI PUMPING RELAY
95	TRIP CKT. SUPERVISION RELAY
96	FUSE FAILURE RELAY
98	CONTACTOR
99	MOTOR PROTECTION RELAY

SYMBOL	DESCRIPTION
	REMOTE TERMINAL
	BUSWIRE, INTER PANEL WIRE
	HRC FUSE
	LINK
	PLUG AND SOCKET
	NORMALLY OPEN CONTACT
	NORMALLY CLOSED CONTACT
	HAND RESET CONTACT
	AUDIBLE ALARM
	NORMALLY OPEN PUSH BUTTON

SYMBOL	DESCRIPTION
	NORMALLY CLOSED PUSH BUTTON
	MOTOR
	CURRENT TRANSFORMER
	VOLTAGE TRANSFORMER
	THERMOSTAT
	BUZZER/HOOTER
	LAMP
	SWITCH(TNC,LR,AUTO MANUAL)
	TOGGLE SWITCH
	COIL
	CURRENT COIL OF METER
	PRESSURE COIL OF METER
	(52a)VCB OPERATED NO CONTACT
	(52b)VCB OPERATED NC CONTACT
	3PIN SOCKET

TAG NAME DESCRIPTIONS

TAG	TAG DESCRIPTION
	CIRCUIT BREAKER
52	CIRCUIT BREAKER
52X	CLOSE COIL
52Y	SHUNT TRIP COIL
52S	SERIES TRIP COIL
PL	PLUG & SOCKET
RCB	REAR CABLE BOX
SCB	SIDE CABLE BOX
	INSTRUMENT TRANSFORMERS
CT	CURRENT TRANSFORMER
VT	VOLTAGE TRANSFORMER
CBCT	CORE BALANCED CURRENT.TRANSFORMER
ICT	INTERPOSING CURRENT TRANSFORMER
	INDICATIONS
R	BREAKER ON INDICATION(RED)
G	BREAKER OFF INDICATION(GREEN)
A	AUTO TRIP INDICATION(AMBER)
W	TRIP CKT HEALTHY INDICATION(WHITE)
B	SPRING CHARGED INDICATION (BLUE)
SP	SERVICE POSITION INDICATION (AMBER)
TP	TEST POSITION INDICATION (CLEAR)
DF	DC FAIL INDICATION(CLEAR)
AF	AC FAIL INDICATION(CLEAR)
DH	DC HEALTHY INDICATION(GREEN)
AH	AC HEALTHY INDICATION(GREEN)
GPL	GAS PRESSURE LOW INDICATION(RED)
RP,YP,BP	R/Y/B PHASE ON INDICATION
BF	BREAKER FAIL INDICATION(RED)
SMI	SEMAPHORE INDICATOR

TAG	TAG DESCRIPTION
	PUSH BUTTONS
T	TRIP CKT HEALTHY TEST PUSH BUTTON
DA	DC FAIL ACCEPT PUSH BUTTON
AA	AC FAIL ACCEPT PUSH BUTTON
EPB	EMERGENCY PUSH BUTTON
PA/PR	ACCEPT/RESET PUSH BUTTON
PM/PT	MUTE/TEST PUSH BUTTON
	CONTROL SWITCHES
Z	OPENS WHEN SPRINGS ARE CHARGED
ZZ	CLOSES WHEN SPRINGS ARE CHARGED
LS	CLOSES WHEN VCB IS MECH.FREE TO CLOSE
TNC	BREAKER CONTROL SWITCH
LR	LOCAL REMOTE SWITCH
SS	SYNCHRONIZING SELECT SWITCH
AS/VS	AMMETER/VOLTMETER SELECTOR SWITCH
TSS	TRIP SEL SWITCH(USED IN SYNCHRO.CKT)
BSS	CB SEL SWITCH(USED IN SYNCHRO. CKT)
ACS	AC SOURCE SEL SWITCH
DSS	DC SOURCE SEL SWITCH
LSS	LIMIT SWITCH FOR SERVICE POSITION
LST	LIMIT SWITCH FOR TEST POSITION
HSW/PSW	TOGGLE SWITCH FOR HEATER/PANEL LAMP
SSW	TOGGLE SWITCH FOR SOCKET
DS	DOOR SWITCH
AMS	AUTO MANUAL SELECTOR SWITCH
	METERS
AM	ANALOG/DIGITAL AMMETER
VM	ANALOG/DIGITAL VOLTMETER
HZ	FREQUENCY METER
KW	WATT METER
KVAR	REACTIVE VOLT AMP METER
KVA	VOLT AMP METER
PF	POWER FACTOR METER
KWH	WATTHOUR METER
TVM	TRIVECTOR METER
MDC	MAXIMUM DEMAND CONTROLLER
LM	LOAD MANAGER
MFM	MULTIFUNCTION METER
RH	RUN HOUR METER

TAG	TAG DESCRIPTION
	TEST TERMINAL BLOCKS
MTTB	METERING TEST TERMINAL BLOCK
RTTB	RELAY TEST TERMINAL BLOCK
	DEVICES & ADDITIONAL RELAYS
ADF	AC DC FAIL RELAY (WITH ALARM LOGIC)
DCF	DC FAIL RELAY (WITH ALARM LOGIC)
CAR	COMMON ALARM SCHEME
VSS	VOLTAGE SELECTION SCHEME
	ACCESSORIES
SS	SURGE SUPPRESSOR
LA	LIGHTNING ARRESTOR
LLI	LINE LINE INDICATOR
ANN	ANNUNCIATOR
HCA	HOOTER FOR COMMON ALARM
HAN	HOOTER FOR ANNUNCIATOR
HAF	HOOTER FOR AC FAIL ALARM
HDF	HOOTER FOR DC FAIL ALARM
HET	HOOTER FOR EARTHING TRUCK
HNTA	HOOTER FOR NON TRIP ALARM
PP	POWERPACK
HE	SPACE HEATER
TH	THERMOSTAT
T1,T2..	TIMER
R1,R2..	RESISTOR
	FUSES & MCB
FR/FY/FB	PT SECONDARY(Y SIDE) FUSES
F1,F2	PT SECONDARY(V SIDE) FUSES
FC1,FC2	CLOSING CIRCUIT FUSES
FT1,FT2	TRIPPING CIRCUIT FUSES

TAG	TAG DESCRIPTION
F1,F2	INDICATION CIRCUIT FUSES
FAN1,FAN2	ANNUNCIATION CIRCUIT FUSES
FCA1,FCA2	COMMON ALARM CIRCUIT FUSES
FSY1,FSY2	SYNCHRONIZING CIRCUIT FUSES
FAX1,FAX2	AUXILLARY RELAY CKT FUSES
FM/LIGM	FUSE/LINK FOR MOTOR CIRCUIT
FH/LIGH	FUSE/LINK FOR HEATER CIRCUIT
F3/LIG3	FUSE/LINK FOR SOCKET CIRCUIT
FV1-4	FUSES FOR VOLT SEL SCHEME
MCB	MINIATURE CIRCUIT BREAKER
	AUXILLARY CONTACTOR
TS	CONTACTOR SENSING TEST POSITION
CS	CONTACTOR SENSING SERVICE POSITION
CLS	CONTACTOR SENSING SERVICE /TEST POSITION
86X	AUX CONTACTOR FOR VCBCONTACT MULT.
86U	AUX CONTACTOR FOR 27 RELAY CONT MULT
86M	AUX CONTACTOR FOR 86 RELAY CONT MULT
86S	AUX CONTACTOR FOR SPRING CHARGE STATUS
CA/CB	AUX CONTACTORS USED IN VSS
86D	AUX CONTACTOR FOR DC SUPERVISION
86A	AUX CONTACTOR FOR AC SUPERVISION
86O	AUX CONTACTOR FOR 59 RELAY CONT MULT
	TRANSDUCERS
CTX	CURRENT TRANSDUCER
VTX	VOLTAGE TRANSDUCER
KWX	KW TRANSDUCER
KVARX	KVAR TRANSDUCER
TEMX	TEMPERATURE TRANSDUCER

NOTES

1. THESE ARE THE FREQUENTLY USED ABBREVIATIONS AS PER CGL STANDARD DRAWINGS
2. REFERENCES IEV-440 , IS-5578, IEC-60050

No.	Nz.	REVISION	DATE

FOR INFORMATION ONLY

SHEET- 1 OF 1

	SIGN.	NAME	DATE
		KPS	13/07/10
		RGS	13/07/10

GENERAL TOLERANCES SHALL BE AS PER TI 018 UNLESS OTHERWISE SPECIFIED.

ALL DIMENSIONS IN mm. SCALE: NTS.

THIRD ANGLE PROJECTION

SYMBOL LEGENDS

DEVICE NUMBERS

Crompton Greaves Ltd
MV Switchgear Division
Ambad, Nashik, India

DRG.NO. V6Q0017 REV. 0

REV. 0 DRG. NO. V6Q0017

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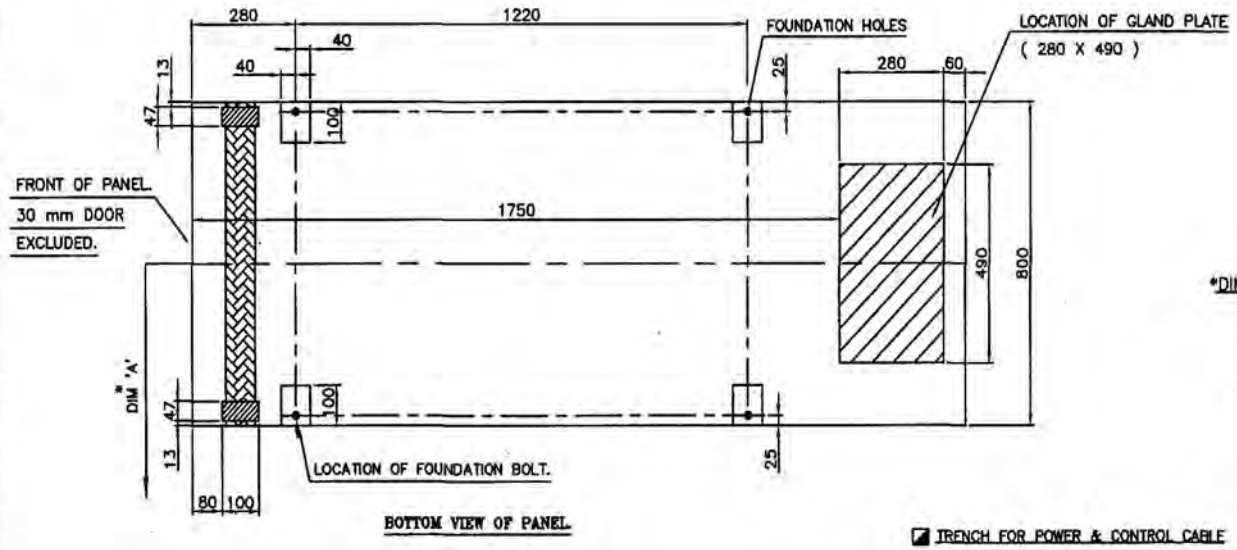
USED ON : JV CALIX – 800W, 2090D	ASSLY.DRG.NO. :		CODE NO. :	Wt.:

DRG. NO. TV1022Q REV. 0

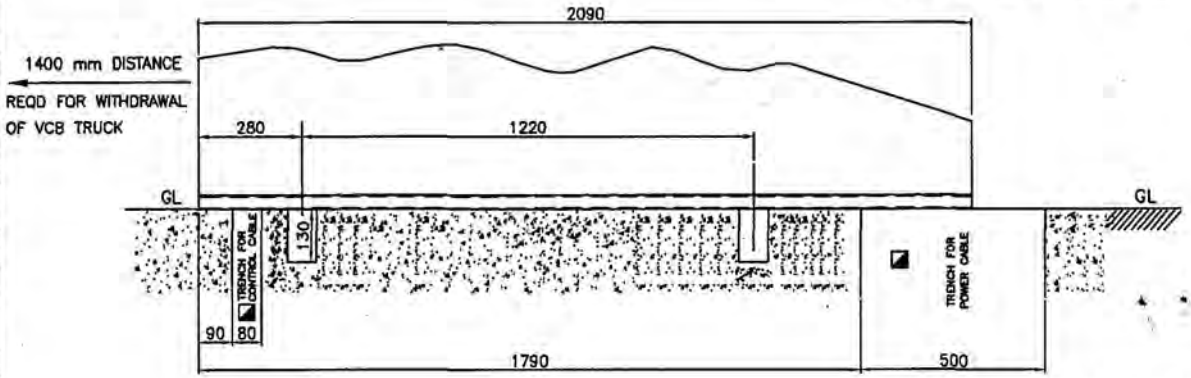


BOTTOM VIEW OF PANEL.

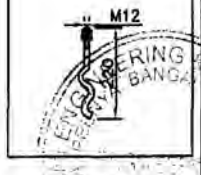
*DIM 'A'=
727 IF ADJUCENT PANEL IS 650 WIDE.
802 IF ADJUCENT PANEL IS 800 WIDE.
WEIGHT OF PANEL 1000KG APPOROX.
DYNAMIC LOADING = STATIC LOADING.

TRENCH FOR POWER & CONTROL CABLE

INDICATES ACTUAL OPENING PROVIDED IN THE BOTTOM FRAME OF SWG. PANEL.



FOUNDATION BOLTS



DEC 2013

NO.	REVISION	DATE
3		
2		
1		

ALL DIMENSIONS IN mm

	SIGN	NAME	DATE
DRN.		YSK	22.01.11
CHD.		RGS	22.01.11
APPD.		RGS	22.01.11

GENERAL TOLERANCES SHALL BE AS PER IS16 UNLESS OTHERWISE SPECIFIED.

SCALE 1:1

SHEET 1 OF 1

THIRD ANGLE PROJECTION

FOUNDATION PLAN FOR 800W, 2090D JV40KA CALIX

Crompton Greaves Ltd
MV Switchgear Division
Ambad, Nashik, India

DRG.NO. TV1022Q REV.0

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REF.DRG.NO. V4Q4461C IF IN DOUBT ASK

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W.O.NO.V5506C **6.6kV HT SWITCHBOARD FOR RSSB**

				25.09.13	13.11.13	
Sr.No.	**Drg No.**	**Drg Description**	**Page No**	**BSP Comment 1**	**CGL Reply 1**	**Remarks**
1	V6Q12983	SLD	2	Revised CTR to 800/1+1A. Add 87BB in LPT panel. CBCT ratio should be 100/1A	Complied	
2	V6Q12983	SLD	3	3No. 1-ph voltmeter shall be provided in LPT & general comments	Complied	
3	V4Q8421	GA	3	Remove Marshalling Panel	Complied	
4	V4Q8421	GA	5	Annunciator shall be dual supply AC/DC. R,Y,B ph indication is not required for I/C, O/G. Add 87BB relay, 3No. 1-ph voltmeter in LPT panel	Complied	
5	V6Q13121	Power circuit	1	general comment	Complied	
6	V6Q13121	Power circuit	2	additional CT core and 87BB relay	Complied	
7	V6Q13121	incomer	3_9	General Comments	Complied	
8	V6Q13123	LPT	2	Add 87BB in LPT panel	Complied	
9	V6Q13123	LPT	3	remove ACDC fail relay	Complied	
10	V6Q13125	Outgoing panel	1_9	General comments same as incomer	Noted	

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W.O.NO.V5506C **6.6kV HT SWITCHBOARD FOR RSSB**

Sr.No.	Drg No.	Drg Description	Page No	Mecon comment 1	CGL Reply 1	Remarks
1	3110	Title Block	1	General Comments	Noted	
2	V4Q8421	GA	5	59/59N/27/60 in LPT Panel	all the protection is inbuilt function of MFR in Incomer	
3	V4Q8401	GA	6	Ammeter for R and B phase is not given for O/G Feeder	As per approved SLD, and MOM with M/s MECON and BSP, only one ammeter is required in middle phase. We request your approval on the same.	
4	V6Q13121	schematic	1_9	General Comments	noted	
5	V6Q13125	schematic	1_9	General Comments	noted	

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