Guaranteed Technical Particulars

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		Title : Guaranteed Technical Particulars		Doc.No.: S3GTP-200S	Rev.4
		Equipment : SF6 Gas Circuit Breaker		Spring-Spring Type: 200-SFM-40S	
1		GENERAL	Unit		
	a)	Name of the Manufacturer		Crompton Greaves Ltd	
	b)	Country of Manufacture		India	
	c)	Type of Circuit Breaker		SF6 Gas Insulated	
	d)	Manufacturer's type designation		200-SFM-40S	
	e)	Standard applicable		IEC-62271-100 / IS 13118	
	f)	Rated Voltage	kV (rms)	245	
	g)	Rated Current			
	i.	under normal condition at 40 degree C ambient	A	Upto 3150	
	ii.	under site condition at 50 degree C ambient	A	Upto 3150	
	h)	Rated Frequency	Hz	50	
	i)	Number of poles	No.	3	
	j)	Whether gang operated			
	i.	Electrically		Yes	
	ii.	Mechanically		No	
	k)	Whether dead tank or live tank		Live tank	
	l)	Type of installation		Outddor	
	m)	Number of breaks per pole	No	1	
	n)	Latching current	kAp	100	
2		GUARANTEED RATINGS			
	a)	Rated short circuit breaking currents			
	i.	Symmetrical component at rated voltage	kA	40	
	ii.	DC component	%	46.00%	
	iii.	Asymmetrical breaking current at rated voltage	kA	47.7	
	iv.	Rated symmetrical breaking capacity	MVA	16974	
	v.	Rated asymmetrical breaking capacity	MVA	20249	
	b)	Rated short circuit making current OR Short circuit peak withstand current			
	i.	at higher rated voltage	kA (peak)	100	
	ii.	at lower rated voltage	kA (peak)	100	
	c)	Break time			
	i.	Rated Break time	ms	</=60	
	ii.	Maximum total break time under any duty condition for any current up to rated breaking current with limiting conditions of voltage and pressure	ms	</=60	
	d)	Rated Closing time	ms	</=150	
	e)	Rated Opening time	ms	</=30	
	f)	Rated maximum Opening time under any condition with limiting voltage and pressure	ms	</=40	
	g)	Rated Arcing time	ms	</=30	
	h)	First pole to clear factor		1.3	
	i)	Rated Close open time	ms	</=40 ms	
	j)	Rated Short-time withstand current			
	i.	1 second	kA	40	
	ii.	3 second	kA	40	
	k)	Rated operating duty		O-0.3s-CO-3min-CO	

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Standardised Guaranteed Technical Particulars and Drawings for **220KV Circuit Breaker (CGL make)**

STD/GTP-DWG/Approval No. 218-I- 1 Revision No. 0

Prepared & Approved during **October - 2011**

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	l)	Maximum breaking capacity under kilometric faults and rated TRV characterstics		L90 & L75 As per IEC-62271-100			
	m)	Rated out-of-phase breaking current OR Rated breaking capacity under asynchronous condition	kA	10			
	n)	Rated line charging breaking current	A	125			
		Rated cable charging breaking current	A	250			
	p)	Rated single capacitor bank breaking current	A	400			
	q)	Corresponding over voltage during breaking capacitive current	p.u.	< 2.3			
	r)	Rated shunt reactor breaking current	A	315			
	s)	Maximum arc duration and corresponding breaking current under lockout pressure	ms, kA	30, 40			
	t)	Rated Small fault current breaking capacity	kA	4			
	u)	Maximum temperature rise for main contacts over an ambient temperature of 50 degree C	^{o}C	< 55 degree C			
	v)	Rated supply voltage and pick up range for					
	i.	Trip coil	V DC	220,(70 to 110%)			
	ii.	Close coil	V DC	220, (85 to 110%)			
	w)	Normal power consumption at rated supply voltage of					
	i.	Trip Coil	W	3 x 2 x 538 W at 220 VDC			
	ii.	Close Coil	W	3 x 663 W at 220 VDC			
	x)	Rated pressure and limits of operation for extinguishing medium at 20 deg.C	(kg/cm^2)	7; 6 to 7			
	y)	Minimum dead time for					
	i.	Three phase reclosing	ms	NA			
	ii.	Single phase reclosing	ms	300			
	z)	Data on Restriking voltage					
	i.	Rated Breaking currents	%	100%	60%	30%	10%
	ii.	TRV Peak	kV (peak)	364	390	450	459
	iii.	Amplitude factor		1.4	1.5	1.5	1.5
	iv.	First pole to clear factor		1.3	1.3	1.5	1.5
	v.	Rate of rise of restriking voltage	kV/µS	2	3	5	7
	aa)	No. of breaker operations before maintenance					
	i.	at rated interrupting capacity		10			
	ii.	at 50% of rated interrupting capacity		20			
	iii.	at rated normal current		1000			
	iv.	at 50% of rated normal current		3000			
	bb)	Maximum pole descrepancy during					
	i.	Opening	ms	</=3.3			
	ii.	Closing	ms	</=5			
	cc)	Minimum time interval between each make / break operations	ms	Suitable for Operating seq. O-0.3sec-CO 3min-CO			
3		**DIELECTRIC WITHSTANDS OF COMPLETE BREAKER**					
	a)	One minute dry and wet power withstand voltage					

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	i.	Between live terminal	kV (rms)	460
	ii.	Between terminal with breaker contacts open & ground	kV (rms)	460
	b)	1.2/50 micro second impulse withstand voltage		
	i.	Between live terminal	kV (peak)	1050 (Avaliable in 1200kVP with extra cost)
	ii.	Between terminal with breaker contacts open & ground	kV (peak)	1050(Avaliable in 1200kVP with extra cost)
	c)	Creeapage distance		
	i.	To earth	mm	6125
	ii.	Across interruptor	mm	6125
	d)	Maximum radio interference voltage (micro V) at 1.1 Ur /root 3	µV	</=1000 @ 156 kV
	e)	Visible Corona discharge voltage	kV (rms)	156 kV rms
4		OPERATING MECHANISM		
	4.1	SPRING CHARGNING MECHANISM		
	a)	Type of operating mechanism		Motorised Spring charged mechanism
	i.	Closing		Spring
	ii.	Opening		Spring
	b)	Type Designation		BM
	c)	No. of operations possible with stored energy		O-C-O
	4.2	DETAILS OF SPRING CHARGNING MOTOR		
	a)	Type of Motor		Universal
	b)	Type of Mounting		Neck Mounted
	c)	Direction of rotation as viewed from non-driving end		Clockwise
	d)	Rated supply voltage and operating range	V AC	1 Ph, 240, 85-110%
	e)	Motor Wattage	W	650
	f)	Rated speed at rated voltage and frequency on no load	rpm	850
	g)	Full load current at rated voltage and frequency	A	3.6 at 240V, 50Hz AC
	h)	Efficiency of motor at rated voltage and frequency	%	50
	'i)	Starting current		< 600% at full load current
	j)	Stator winding insulation class		B
	k)	Weight	kg	3 approx.
	l)	Maximum time for charging the spring	sec.	15
	m)	Whether indication of spring charged condition provided in control cabinet		Yes
	n)	Make of Motor		KPT
5		DATA ON SF6 GAS		
	a)	Quantity of SF6 per pole	kg	7
	b)	Guaranteed maximum leakage rate	%/annum	Less than 1% per annum
	c)	Rated pressure of SF6 gas in operating chamber at 20°C	kg/cm²	7
	d)	Operating pressure range	kg/cm²	6.0 - 7.0
	f)	Capacity of SF6 gas cylinder	kg	25/37
	g)	Spare gas provided		20%

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Standardised Guaranteed Technical Particulars and Drawings for **220KV Circuit Breaker (CGL make)**

STD/GTP-DWG/Approval No. 218-1-3 Revision No. 0

Prepared & Approved during **October - 2011**

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	h)	Whether breakers are dispatched filled with gas		Partially filled to 0.5 to 1 kg/cm^2 dispatched filled with gas for transportation & storage to be topped at site
	i)	Parameters of SF6 gas		As per IEC-600376
	j)	Gas pressure settings at 20^{O}C)		
	i.	Low pressure alarm at	kg/cm^2	6.5 $^{+/- 0.3}$
	ii.	Lockout pressure for		
		a) Opening	kg/cm^2	6 $^{+/- 0.3}$
		b) Closing	kg/cm^2	6 $^{+/- 0.3}$
6		GENERAL DIMENSIONS		
	a)	Over all Dimensions		
	i.	Length	mm	10500
	ii.	Width	mm	900
	iii.	Height	mm	7262
	b)	Weight of complete breaker for for foundation	kg	3750
	c)	Weight of each pole	kg	650
	d)	Weight of Mechanism + Housing	kg	600
	e)	Weight of the heaviest part of the breaker	kg	650
	f)	Impact loading for foundation design		
	i.	Downwords	kg	5000
	ii.	Upwords	kg	3500
	g)			
	i.	Cantilver strength - Horizontal	kg	125
	ii.	Cantilver strength - Vertical	kg	125
	h)	Seismic level	g	0.5
	i)	Minimum clearance in air		
	i.	Between live parts	mm	4020
	ii.	Between phases (Centre to Centre)	mm	4500
	iii.	Live parts to earth	mm	2300
	iv.	Live parts to ground level including plinth of 300 mm	mm	4600
	j)	Noise level distance of		
	i.	0M from the breaker	db	< 140
	ii.	50 M from the breaker	db	< 140
	iii.	100M from the breaker	db	< 140
	iv.	150M from the breaker	db	< 140
	k)	Packing Dimensions		
	i.	Pole Unit Assy (2 nos in one case)	mm	5660 x 1150 x 900 (H)
	ii.	Pole Unit Assy (1 no in one case)	mm	5660 x 650 x 900 (H)
	iii.	Mechanism Housing Assy.(1 no in one case)	mm	1050 x 1065 x 2470 (H)
	iv.	Marshalling box (Total 1 no)	mm	1000 x 900 x 1950 (H)
7		CONSTRUCTIONAL DETAILS		
	a)	Weight of absorbant per pole	gm	600
	b)	Whether arcing contacts are provided		Yes
	c)	Type and material of arcing contacts		Tulip, Copper-Tungsten
	d)	Type and Material of main contacts		Finger, Copper-Chromium
	e)	Whether main contacts are silver plated / Silver plating thickness		Yes / 25 microns
	f)	Contact pressure on main contacts	kg/mm	0.3
	g)	Length of contact separation	mm	195

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Standardised Guaranteed Technical Particulars and Drawings for **220KV Circuit Breaker (CGL make)**

STD/GTP-DWG/Approval No. 218-1-4 Revision No. 0

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	h)	Length of contact travel	mm	230 (+2,-3)
	i)	Rate of contact travel		
	i.	Opening	m/s	6.8 - 7.6
	ii.	Closing	m/s	1.9 - 2.4
	j)	Main contact resistance	μΩ	< 45
	k)	Wheather the making & breaking contacts are hermatically sealed		Yes
	l)	No. of spare auxiliary contacts provided for Owner's use		
	i.	Normally Open when breaker is open		8/9/10
	ii.	Normally Closed when breaker is open		8/9/10
	m)	Rated voltage of auxiliary contacts	V DC	250
	n)	Type of auxiliary contacts		Rotary
	o)	Continuous Current Carrying Capacity	A	20
	p)	DC breaking current with 20 ms time constant	A	7.5 A at 264 VDC
	q)	Whether auxiliary contacts are sliver plated		Yes
	r)	Finish of exposed ferrous parts		Hardware are HDG/SS
	s)	Finish paint		As per customer requirement
	i.	Offered to Domestic Customer's		Shade 631 of IS 5
	ii.	Offered to International Customer's		Shade RAL 7032
	t)	Finish for Support Structure OR Columns		Hot Dip Galvanised
	u)	Make of support porcelains		MODERN/ABIL/IEC ARGILON-GERMANY/ARVANA(SIL)/LIAONING SHUANGLING/FUSHUN HIGH TECH ELECTRIC/ LILING HUAXIN/ LILING PUKOU INSULATORS/PRATHMESH CERAMICS
8		**REFERENCE DRAWINGS**		
	i)	General Arrangement		CG-245SPR-GA
	ii)	Schematic Diagram		CG-245SPR-SCH1,2,3
	iii)	Bill Of Material		CG-245SPR-BOM 1,2
9		**VALIDATED OPERATING CONDITIONS**		
	a)	Maximum ambient air temperature	°C	50
	b)	Minimum ambient air temperature	°C	-10
	c)	Maximum relative humidity	%	100%
	d)	Wind load / Wind velocity	kg/cm²/m/sec.	260/80
	e)	Seismic Level	g	0.5
	f)	Altitude	m	1600
	g)	Maximum annual rain fall	mm	3000
	h)	Average thunder storms days per year	No.	80
	i)	Maximum DC supply voltage variation		
	i.	Closing	%	+/-20
	ii.	Opening	%	-30, +20
	j)	Maximum AC supply voltage variation	%	+/-10
	k)	Degree of pollution as per IEC 815		CL-III, Heavily polluted
	l)	Wheather breaker is suitable for tripping at 50% of DC supply voltage		Yes
	m)	Wheather breaker is suitable to work under hot humid climate, chemically polluted atomsphere, fumes, fungus and salt spray conductive rust.		Yes

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Standardised Guaranteed Technical Particulars and Drawings for **220KV Circuit Breaker (CGL make)**

STD/GTP-DWG/Approval No. **218-2-1** Revision No. **0**

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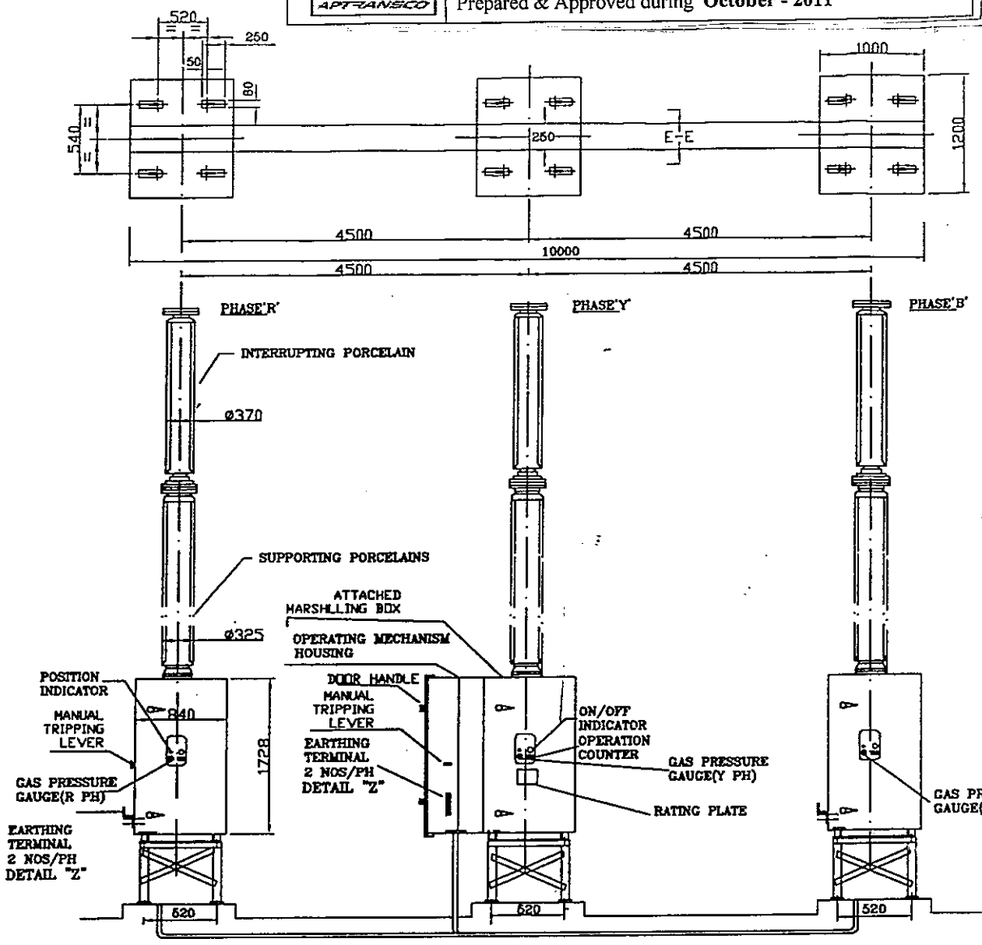
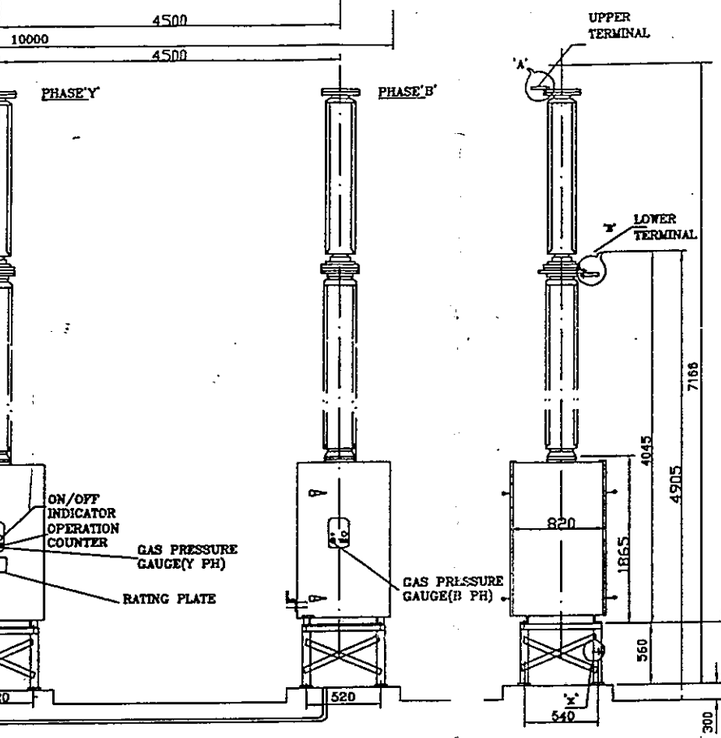
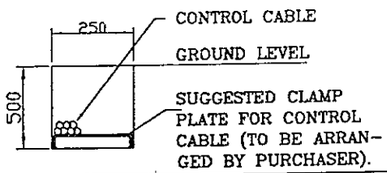
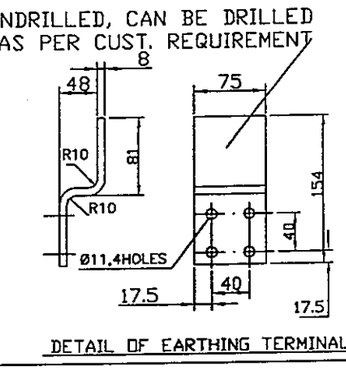




SECTION 'E'–'E'



DETAILS – 'Z'

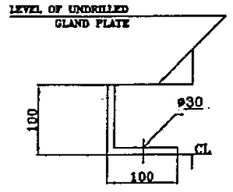


DETAIL OF EARTHING TERMINAL.

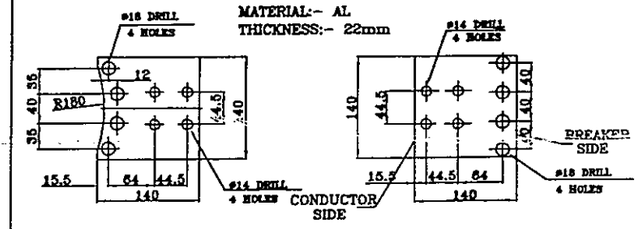
NOTE :–

1) TOTAL WEIGHT:–3900 Kg.(APPROX.) .
2) TOTAL GAS WEIGHT :–21 Kg. (APPROX.) .
3)IMPACT LOADING FOR FOUNDATION DESIGN INCUDING DEAD WEIGHT PLUS IMPACT VALUE IN OPENING AT MAXIMUM INTERRUPTING RATING EXPRESSED IN TERMS OF EQUIVALENT STATIC LOAD IN Kg 5000/PHASE DOWNWARD, 3500 Kg/PHASE UPWARD.
4) FINISH :– ALL EXPOSED FERROUS PARTS ARE PAINTED WITH SHADE 631 OF IS 5
5) CREEPAGE DISTANCE TO GROUND–6125mm(min).
6) HARDWARES EXPOSED TO ATMOSPHERE ARE H.D.G./S.S.
7) UN DRILLED EARTHING TERMINAL SHALL BE SUPPLIED
8) SUPPLY OF INTER PHASE WIRING IS IN OUR SCOPE
9) CABLE GLANDS & ANCHOR BOLTS ARE IN OUR SCOPE OF SUPPLY.
10)THE MECHANISM HOUSING IS WITH IP55 PROTECCION
11) MAKE OF INSULATOR :–

HOLLOW PORCELAIN BIRLA–NGK/ MODERN/JSI/IEC/LIAONING SHUANGLING PROCELAIN/FUSHUN HIGH TECH ELETRIC/LILING HUAXIN PORCELAIN INSULATOR & ELECTRIC APPARATUS CO LTD/ SARVANA/INSULATORS (SIL)/M/s LILING THRU M/s DALIAN CERAMIC TECHNIC–CHINA/EQ. PRATHEMESH INSULATORS

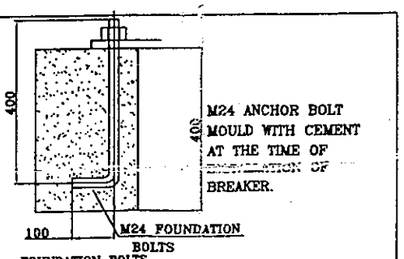


DETAILS OF 'X'



DETAILS 'B' LOWER TERMINAL PADS

DETAILS 'A' UPPER TERMINAL PADS



FOUNDATION BOLTS

5					NAME	CUSTOMER: APTRANSCO	TITLE: GENERAL ARRANGEMENT	THIRD ANGLE PROJECTION
4				DRN	NPK	LOI/ P.O. NO. & DT.: AS APPLICABLE		Crompton Greaves Ltd. SWITCHGEAR DIVISION S3 AMBAD, NASHIK.
3				CHD	NVM		FOR: 245KV, 40KA, SP–SPR	
2				APPD	PDG		GCB TYPE: 200–SFM–40S	
1				SCALE: N.T.S.				
NO	REVISION	NAME	DATE	DATE: 6.9.11			ALL DIMENSIONS ARE IN mm	DRG.NO EGL–245SPR–GA–AP 1/1 RO

IF IN DOUBT ASK!

DRG.NO.CGL-245SPR-BOM-AP 1/1 R0

MARK	DESCRIPTION	QTY	RATINGS
52C(R~B)	CLOSING COIL	3	220 VDC ,90 ohms
52T1/T2	TRIPPING COILS(R~B)	3+3	220 VDC ,73 ohms
63GA(R~B)	LOW GAS PRESSURE ALARM SWITCH	3	RATING 0.05A AT 220VDC, ON- 6.5 Kg/sq.cm. OFF-7.0Kg/sq.cm. AT 20°C.
63GL(R~B)	LOW GAS PRESSURE LOCKOUT SWITCH	3	RATING 0.05A AT 220VDC, ON-6.5 Kg/ sq.cm, OFF-6.0 Kg/sq.cm. AT 20°C.
63AGX	CONTACTOR FOR 63GL	1	220, Ith=10A, DC BREAK CAP 1A AT 220 VDC.
M(R~B)	MOTOR	3	240 VAC, 650 W INPUT.
88M1(R~B)	CONTACTOR FOR MOTOR	3	220 VDC, Ith 20A.
52Y(R~B)	ANTIPUMPING CONTACTOR	3	220 VDC, Ith 10A, DC BREAK CAP 1A AT 220 VDC.
47T	POLE DISCREPANCY TIMER	1	220 DC, 0.1sec - 1200 Hr
47TX	CONTACTOR FOR 47T	1	220V DC, ITH, 10A, DC BREAKING CAPACITY 1A AT 220 VDC.
3PT	PUSH BUTTON	1	220V DC, 5A 1NO
11-52	TRIP NEUTRAL CLOSE SWITCH	1	250 VDC, 16A, 3 POSITION, 45 deg ANGLE, 2T+2C, SPRING RETURN.
43LR	LOCAL REMOTE CHANGEOVER SWITCH .	1	250 VDC, 16A, 2 POSITION, 90 deg. ANGLE, 7L+7R, STAYPUT TYPE.
8D1/8D2	MCB.FOR CONTROL CKT.	2	220 VDC, 15A, 9KA.
8SH	MCB.FOR HEATER & LAMP CKT.	1	240 VAC, 16A, 6KA.
8A	MCB.FOR MOTOR CKT.	1	240 VAC, 15A, 6KA.
23SH(R~B)	THERMOSTAT	3	240 VAC, 15A, (30°C TO 80°C)
SH(R~B)	SPACE HEATER	3	240 VAC, 320 W
SO	SWITCH SOCKET UNIT	1	240 VAC, 15A.
52a/52b	AUXILIARY SWITCH (5NO+5NC=1 SWITCH.)	1	250 VDC, 15A.
IL(R~B)	ILLUMINATION LAMP.	3	240 VAC,60W.
SW(R~B)	SWITCH FOR HEATER CKT.	3	240 V AC, 5 A.
LS	LIMIT SWITCH FOR 88M1	3	220 VDC, 1A (1NO+1NC)
52a/52b	HYBRID AUXILIARY SWITCH	2	250 VDC, 2A.
SW.(R~B)	PIANO SWITCH FOR IL LAMP	3	240 V AC, 5 A.
SW.(MF) SW.(MR)	PIANO SWITCH FOR IL LAMP M.BOX	2	240 V AC, 5 A.
IL(MF) IL(MF)	ILLUMINATION LAMP FOR M.BOX.	2	240 VAC,60W.
SH-M	SPACE HEATER FOR M.BOX	1	240 VAC, 80W.
23SH-M	THERMOSTAT FOR M.BOX	1	240 VAC, 15A, (30°C TO 80°C)
SW(M)	SWITCH FOR HEATER CKT.M.BOX	1	240 V AC, 5 A.
RL/GL	BKR.ON/OFF IND.LAMP	1/1	220 VDC, LED.
BL	SPRING CHARGE IND.LAMP	1	220 VDC, LED.
88ACF	AC.SUPPLY FAIL IND.CONTACTOR	1	240 V AC ,1NC.
DCC	DC.SUPPLY FAIL IND.CONTACTOR	1	220 VDC, Ith 10A, DC BREAK CAP 1A AT 220 VDC ,

NOTES:-

1) AUXILIARY SWITCHES ARE SHOWN FOR OPEN BREAKER.
2) AUXILIARY CONTACTORS CONTACTS ARE SHOWN IN DE-ENERGISED POSITION.
3) GAS PRESSURE SWITCH IS SHOWN FOR NO GAS PRESSURE.
4) LOCAL REMOTE CHANGEOVER SWITCH IS SHOWN IN REMOTE POSITION.
5) ARE OPEN CONTACTS. ARE CLOSE CONTACTS. CHANGEOVER CONTACT.
6) SIZE OF WIRE =1.5 sq.mm. ANNEALED BARE COPPER CONDUCTOR PVC INSULATED.
7) COLOUR OF WIRE FOR AC CIRCUIT-BLACK, FOR DC CIRCUIT & SPARE CONTACTS-GRAY & FOR EARTHING--GREEN.
8) CLIP ON TYPE (CTS10) TERMINAL BLOCKS ARE PROVIDED .
9) CONTINUOUS CURRENT CARRYING CAPACITY OF TRIP COIL IS 50mA TO CATER FOR TRIP COIL SUPERVISION.
10) 52a CONTACTS ARE OPEN WHEN BREAKER IS OPEN.
11) 52b CONTACTS ARE CLOSE WHEN BREAKER IS OPEN.
12) "ø" TERMINAL ARE WIRED UPTO TERMINAL BLOCKS FOR REMOTE CONTROL PANEL OF CIRCUIT BREAKER.

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Standardised Guaranteed Technical Particulars and Drawings for **220KV Circuit Breaker (CGL make)**
STD/GTP-DWG/Approval No. 218-12 Revision No. 0
Prepared & Approved during **October - 2011**

APPROVED FOR TURNKEY PROJECTS

31/10/2011
CHIEF ENGINEER / CONSTRUCTION-I
APTRANSCO/VIDYUTH SOUDHA/HYD

NO	REVISION	NAME	DATE
5			
4			
3			
2			
1			

	NAME	
DRN	NPK	
CHD	NVM	
APPD	PDG	
SCALE: N.T.S.		
DATE: 6.9.11		

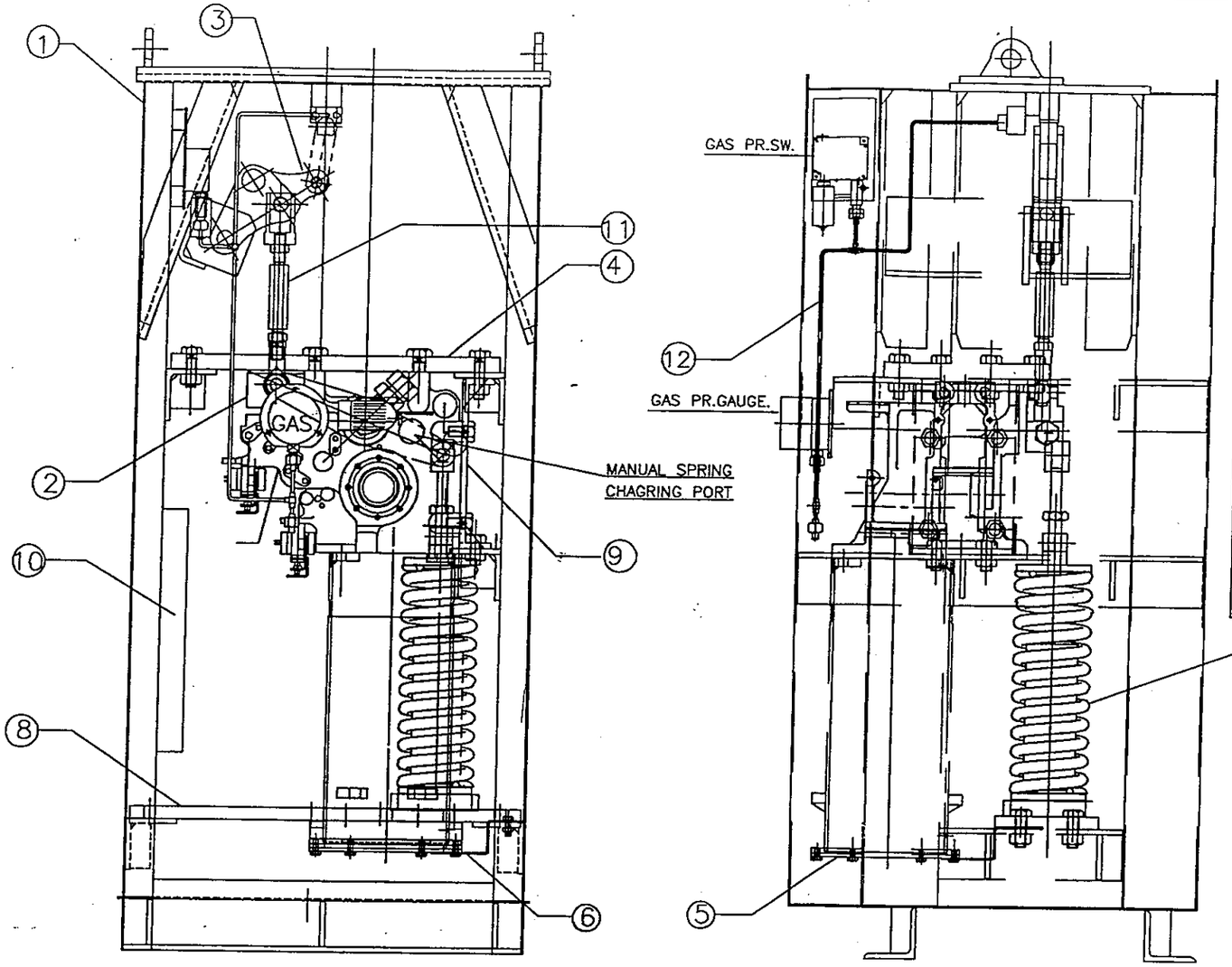
CUSTOMER: APTRANSCO
LOI/ P.O. NO. & DT.: AS APPLICABLE

TITLE: BILL OF MATERIAL
FOR: 245KV, 40KA, SP-SPR
GCB TYPE: 200-SFM-40S
ALL DIMENSIONS ARE IN mm

THIRD ANGLE PROJECTION

Crompton Greaves Ltd.
SWITCHGEAR DIVISION S3
AMBAD, NASHIK.

DRG.NO CGL-245SPR-BOM-AP 1/1 R0



ITEM.NO	DESCRIPTION
1	HOUSING .
2	SPRING MECHANISM.
3	CONNECTING MECH. ASSY.
4	MECH. MOUNTING PLATE
5	COVER FOR CLOSING SPRING
6	SUPPORT FOR COVER
7	TRIPPING SPRING ASSY.
8	TRIPPING SPRING SUPPORT
9	VERTICAL MTG. PLATE
10	TERMINAL BLOCK ROW
11	LEVER ASSY.
12	GAS PIPE ASSY.

NOTE:-1) THIS DRAWING SHOWS BREAKER CLOSED CONDITION AND TRIPPING SPRING CHARGED.

2) THE MECHANISM HOUSING HAS IP55 PROTECCION.

APPROVED FOR TURNKEY PROJECTS

31/10/2011

CHIEF ENGINEER / CONSTRUCTION-1
APTRANSCO/VIDYUTH SOUDHA/HYD

APTRANSCO

Standardised Guaranteed Technical Particulars and Drawings for **220KV Circuit Breaker (CGL make)**
STD/GTP-DWG/Approval No. **218-2-3** Revision No. **0**
Prepared & Approved during **October - 2011**

NO	REVISION	NAME	DATE
5			
4			
3			
2			
1			

	NAME	CUSTOMER: APTRANSCO
DRN	NPK	LOI/ P.O. NO. & DT.: AS APPLICABLE
CHD	NVM	
APPD	PDG	
SCALE: N.T.S.		
DATE: 6.9.11		

TITLE: MECHNISUM HOUSING

FOR: 245KV, 40KA, SP-SPR

GCB TYPE: 200-SFM-40S

ALL DIMENSIONS ARE IN mm

THIRD ANGLE PROJECTION

Crompton Greaves Ltd.
SWITCHGEAR DIVISION S3
AMBAD, NASHIK.

DRG.NO CGL-245SPR-HSG-AP 1/1 R0

DRG.NO. CGL-245SPR-RP-AP | 1/1 | R0

250

235 ±0.5

ø3.5 DRILL, 4 HOLES

GAS CIRCUIT BREAKER

TYPE : 200-SFM-40S		RATED VOLTAGE	245KV.
RATED LIGHTNING IMPULSE WITHSTAND VOLTAGE	1050kVP	RATED FREQUENCY	50 Hz
		RATED NORMAL CURRENT	3150A
RATED SHORT-CIRCUIT BREAKING CURRENT	40 KA	RATED CLOSING VOLTAGE	220V.DC
		RATED OPENING VOLTAGE	220V.DC
FIRST POLE TO CLEAR FACTOR	1.5	RATED SF6 GAS PRESSURE 7kg/cm^2 (At g 20°C)	
MOTOR VOLTAGE	220V AC	RATED VOLTAGE AND FREQUENCY FOR AUX. CIRCUIT	1 Ø 230 VAC 50Hz
RATED DURATION OF SHORT CIRCUIT CURRENT	40 KA /3 SEC	TOTAL WT.WITH GAS	3900 Kg.
RATED LINE CHARGING BREAKING CURRENT	125A	RATED OPERATING SEQUENCE	0-0.3S-CO-3MIN-CO
GAS WT. 21 Kg.	SR.NO. *	YEAR OF MFG.**	STD.IEC-62271-100
RATED SHORT-CIRCUIT MAKING CURRENT 100KA			

220

235

MATERIAL: S.S 0.5 THK

* SR. NO : AS APPILCABLE

** CURRENT YEAR OF MANUFACTURING

Crompton Greaves Ltd.
SWITCHGEAR DIVISION S3
AMBAD, NASHIK.

APPROVED FOR TURNKEY PROJECTS

31/10/2011

CHIEF ENGINEER / CONSTRUCTION-1
APTRANSCO/VIDYUTH SOUDHA/HYD.

APTRANSCO

Standardised Guaranteed Technical Particulars and Drawings for **220KV Circuit Breaker (CGL make)**
STD/GTP-DWG/Approval No. 218-2-1, Revision No. 0
Prepared & Approved during **October - 2011**

NO	REVISION	NAME	DATE
5			
4			
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2			
1			

DRN: NPK | CHD: NVM | APPD: PDG | SCALE: N.T.S. | DATE: 6.9.11

NAME | CUSTOMER: APTRANSCO
LOI/ P.O. NO. & DT.: AS APPLICABLE

TITLE: RATING PLATE
FOR: 245KV, 40KA, SP-SPR
GCB TYPE: 200-SFM-40S
ALL DIMENSIONS ARE IN mm

THIRD ANGLE PROJECTION

Crompton Greaves Ltd.
SWITCHGEAR DIVISION S3
AMBAD, NASHIK.

DRG.NO CGL-245SPR-RP-AP | 1/1 | R0

DRG.NO.EGL-245SPR-SCH-AP 1/1 R0

BREAKER CONTROL SYSTEM

REMOTE MAIN TRIP (MANUAL)

REMOTE BACK UP TRIP (MANUAL)

* * TERMINALS K21R,K21Y,K21B FOR REMOTE MANUAL TRIP
** TERMINALS K23R,K23Y,K23B FOR PROTECTION TRIP & TRIP SUPERVISION RELAY (POST CLOSING) ,*** TERMINALS K31R,K31Y,K31B FOR FOR PRECLOSING TRIP CIRCUIT SUPERVISION. (FOR REMOTE MAIN TRIP-MANUAL)

* TERMINALS K41R,K41Y,K41B FOR REMOTE MANUAL TRIP
** TERMINALS K43R,K43Y,K43B FOR PROTECTION TRIP & TRIP SUPERVISION RELAY (POST CLOSING) ,*** TERMINALS K49R,K49Y,K49B FOR PRECLOSING TRIP CIRCUIT SUPERVISION. (FOR REMOTE BACKUP TRIP-MANUAL)

REMOTE CLOSE FOR AUTO RECLOSE

BKR ON INDICATION

BKR OFF INDICATION

220 VDC MAIN-II

220 VDC MAIN-I

CLOSING CIRCUIT

ANTIPUMPING CKT.

TRIPPING CIRCUIT-I

TRIPPING CIRCUIT-II

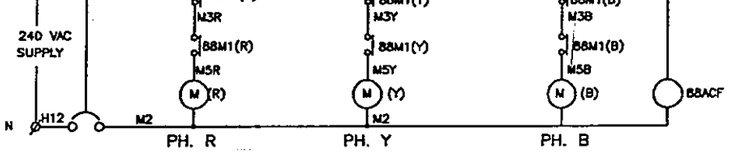
BC CHANGEOVER CKT.

LOCKOUT CIRCUIT

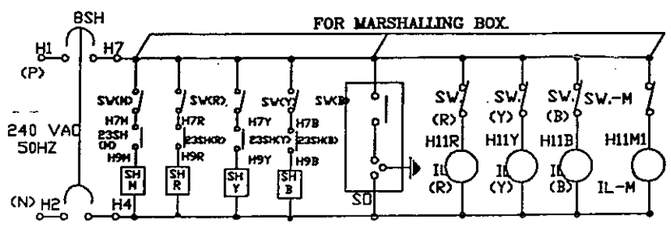
MOTOR CONTROL

POLE DESCREPANCY CKT.

MOTOR CONTROL CIRCUIT



HEATER, ILLUMINATION AND RECEPTACLE CONTROL CIRCUIT



ALARM CONTACTS

63GA LOW GAS PRESS.ALARM	63AGX LOW GAS PR.L/O.	88M1 (SPRING CHARGED IND.)	DCC DC-1 FAIL IND.	88ACF AC FAIL IND.	47T POLE DISCR.
L2R L2Y L2B	L4	L5R L5Y L5B	L8	L10	L12
63GA(R) 63GA(Y) 63GA(B)	63AGX-B	88M1(R) 88M1(Y) 88M1(B)	DCC	88ACF	TIME DELAYED CONTACT.
L1R L1Y L1B	L3	L6R L6Y L6B	L7	L9	L11

SPARE AUX CONTACTS – PH. R (10NO+10NC)

52a: R11 R13 R15 R17 R19 R21 R23 R25 R27 R29 R31 R33 / R12 R14 R16 R18 R20 R22 R24 R26 R28 R30

52b: R41 R43 R45 R47 R49 R51 R53 R55 R57 R59 / R42 R44 R46 R48 R50 R52 R54 R56 R58 R60

SPARE AUX CONTACTS – PH. Y (10NO+10NC)

52a: Y11 Y13 Y15 Y17 Y19 Y21 Y23 Y25 Y27 Y29 / Y12 Y14 Y16 Y18 Y20 Y22 Y24 Y26 Y28 Y30

52b: Y41 Y43 Y45 Y47 Y49 Y31 Y33 Y55 Y57 Y59 / Y42 Y44 Y46 Y48 Y50 Y52 Y54 Y56 Y58 Y60

SPARE AUX CONTACTS – PH. B (10NO+10NC)

52a: B11 B13 B15 B17 B19 B21 B23 B25 B27 B29 / B12 B14 B16 B18 B20 B22 B24 B26 B28 B30

52b: B41 B43 B45 B47 B49 B51 B53 B55 B57 B59 / B42 B44 B46 B48 B50 B52 B54 B56 B58 B60

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31/10/2011

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STD/GTP-DWG/Approval No. 218-2 5 Revision No. 0
Prepared & Approved during **October - 2011**

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DRN	NPK	CUSTOMER: APTRANSCO
CHD	NVM	LOI/ P.O. NO. & DT.: AS APPLICABLE
APPD	PDG	
SCALE: N.T.S.		
DATE: 6.9.11		

TITLE: SCHEMATIC
FOR: 245KV, 40KA, SP-SPR
GCB TYPE: 200-SFM-40S
ALL DIMENSIONS ARE IN mm

THIRD ANGLE PROJECTION

Crompton Greaves Ltd.
SWITCHGEAR DIVISION S3
AMBAD, NASHIK.

DRG.NO EGL-245SPR-SCH-AP 1/1 R0