

DESIGN DETAILS

1.0 General

- 1.1 Type Designation Siemens Make 3AP1 FG
1.2 Governing Standard IEC 62271-100; IS 13118 (1991)

Gang Operated

2.0 Technical Data

- 2.1 System Parameters
- | | | | |
|----|---------------------------|-----|------------|
| .1 | Rated Voltage | kV | 145 kV |
| .2 | Service Voltage | kV | 132 kV |
| .3 | Frequency | Hz. | 50 |
| .4 | No. of Poles | | Three |
| .5 | Ambient Temperature Range | °C | -30 to +50 |

3.0 Operating Data at rated operating Voltage & rated pressure

- 3.1 Type of Operating Mechanism Spring Energy Stored
3.2 Mechanism is mechanically gang operated Yes

3.3 Operating Data

- | | | | |
|----|--------------|-------|--------|
| .1 | Closing | mSec. | 55 ± 8 |
| .2 | Breaking | mSec. | 60 Max |
| .3 | Opening Time | mSec. | 30 ± 4 |
| .4 | Arcing Time | mSec. | ≤ 25 |

A. PROVED FOR TURNKEY PROJECTS

3.4 Switching Data

- | | | | |
|----|---------------------------------------|-----|-------------|
| .1 | Rated normal current | A | 3150 |
| .2 | Rated short circuit breaking current | kA | 40 |
| .3 | Rated short time current | kA | 40, (3sec.) |
| .4 | Rated short circuit making current | kAp | 100 |
| .5 | First pole to clear factor | | 1.5 |
| .6 | Out-of-phase breaking current | kA | 10 |
| .7 | Rated line charging breaking current | A | 50 |
| .8 | Rated cable charging breaking current | A | 160 |

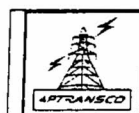
**CHIEF ENGINEER / CONSTRUCTION -1
TRANSCO/VIDYUTH SOUDHA/HYD.**

- 3.5 Rated operating sequence O - 0.3sec - CO - 3min - CO

4.0 Basic Insulation Level

- 4.1 Rated power frequency withstand voltage (1min, 50 Hz)
- | | | | |
|----|-------------------------|----|-----|
| .1 | Phase to earth | kV | 275 |
| .2 | Across the open breaker | kV | 275 |
| .3 | Between phases | kV | 275 |

11/2



Client : APTRANSCO



Standardised Guaranteed Technical Particulars and Drawings
for 132KV Circuit Breaker (Siemens make)

STD/GTP-DWG/Approval No. 215-/- Revision No. 0

Prepared & Approved during May - 2012

				Date:	Description :- 145kV, 40kA, 3150A, SF6 CB	Sh. 1
				Prep : GRB		
				Ckd : GRB	Work :- 3AP1FG	3 Sh.
				Siemens Ltd.		
Issue	Remarks	Date	Name	Aurangabad	Details :- DESIGN DETAILS	
Original/Replacement for/ Replaced by :-					(4) G71AHS-C401-D992	

4.2	Rated lighting impulses withstand voltage (1.2 / 50 micro sec.)		
.1	To earth	kVp	650
.2	Across the open breaker	kVp	650
.3	Between phases	kVp	650
4.3	Creepage distance		
.1	To earth	mm	3625 Min
.2	Across the open breaker	mm	3625 Min
.3	Insulator type		Hollow Porcelain

5.0 Construction

5.1	Clearance		
.1	To earth	mm	1250
.2	Across the open breaker	mm	1200
.3	Phase to phase	mm	1360
.4	Pole to pole center distance	mm	1700
5.2	Arc quenching Medium		
.1	Nominal pressure SF6 (@20°C) (Normal)	bar	6.
.2	Signal loss of SF6 (@20°C) (Alarm)	bar	5.2.
.3	General lockout (@20°C) (Lockout)	bar	5.0.
.4	Quantity of SF6 gas required per breaker	kg	8.1
.5	Qty of gas being supplied per breaker, pre filled in the poles.	kg	1.5 (0.5 Bar pressure at 20°C) Approx.
.6	In addition to pre filled gas, qty of gas being sent to site through cylinder /CB	kg	9
5.3	Installation		Outdoor
5.4	Approx. weight of breaker with support structure	kg	1750 approx.

APPROVED FOR TURNKEY PROJECTS

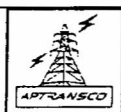
CHIEF ENGINEER /
APTRANSCO/MIDCOTIA SUBSTATION

6.0 Structures, Base Frame

6.1	Material	Mild Steel
6.2	Surface Treatment	Hot Dip Galvanized (86 Micron)

7.0 Control Cubicle

7.1	Construction		
.1	Material of enclosure		CR Sheet Steel
.2	Thickness of sheet steel	mm	2.5
.3	Painting for control cubicle		Epoxy / Polyester paint
.4	External shade		631 as per IS5
.5	Degree of protection of enclosure		IP 55
.6	Padlocking facility for cubicle		Provided
.7	Glass window to see spring status		Provided on control cubicle



Client : APTF

Standardised Guaranteed Technical Particulars and Drawings
for 132KV Circuit Breaker (Siemens make)

STD/GTP-DWG/Approval No. 215-1-2 Revision No. 0

Prepared & Approved during May - 2012

ty: x

				Date:	Description :-145kV,40kA,3150A,SF6 CB	Sh. 2
				Prep : GRB		
				Ckd : GRB	Work :- 3AP1FG	3 Sh.
				Siemens Ltd.		
Issue	Remarks	Date	Name	Aurangabad	Details :- DESIGN DETAILS	
Original/Replacement for/ Replaced by :-					(4) G71AHS-C401-D992	

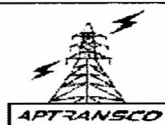
- 7.2 Wiring
- .1 Control wiring
- .1 Size 2.5 mm² flexible copper conductor
- .2 Insulation Grey – DC, Black – AC 1100V Grade
- .2 Earth Wiring
- .1 Size 2.5 mm² flexible copper conductor
- .2 Insulation Yellow/Green 1100V Grade
- 7.3 Control Terminals
- .1 Type PIN Type
- .2 Make Connectwell / Elmex or equivalent
- .3 Size mm² 4
- .4 Spare unwired terminal nos. 24
- 7.4 Auxiliary Supply

Circuit	Rated Voltage	Source	Range
Spring Charging Motor	240V AC	External	85 – 110%
Closing Coil	220V DC	External	85 – 110%
Trip Coil – 1 & 2	220V DC	External	70 – 110%
Space Heater / Socket / Illumination	240V AC	External	-

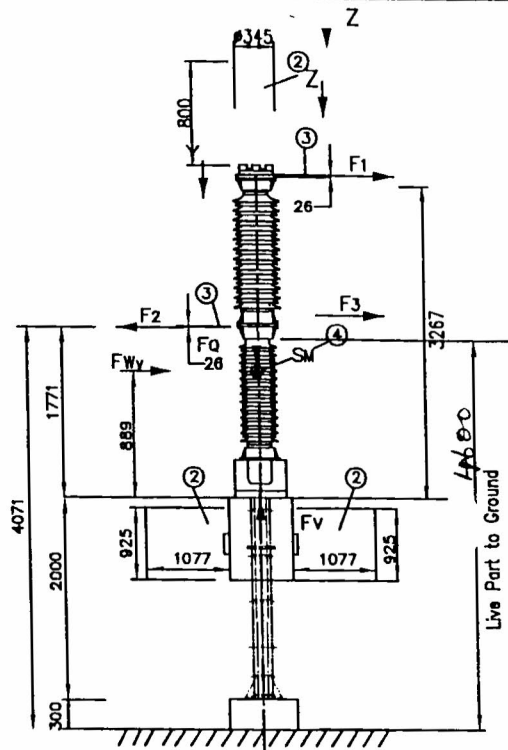
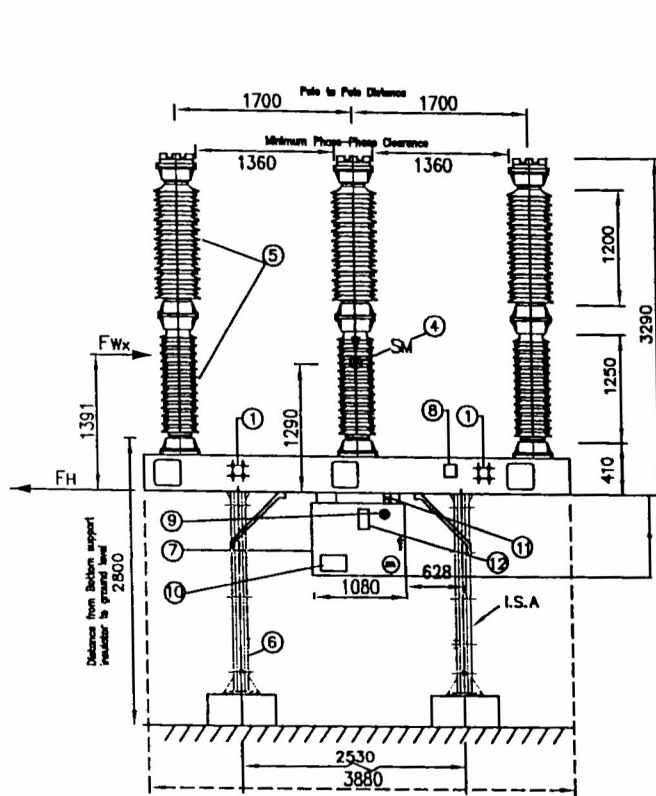
APPROVED FOR TURNKEY PROJECTS

[Signature]
 CHIEF ENGINEER / CONSTRUCTION-1
 APTRANSCO/VIDYUTH SOUDHA/HYD.

12/2

	Standardised Guaranteed Technical Particulars and Drawings for 132KV Circuit Breaker (Siemens make)
	STD/GTP-DWG/Approval No. 215-1-3 Revision No. 0
	Prepared & Approved during May - 2012

 Client : APTRANSCO					Sales Ref:	
					Item No:	Qty: x
				Date:	Description :-145kV,40kA,3150A,SF6 CB	Sh. 3
				Prep : GRB		
				Ckd : GRB		
				Siemens Ltd.	Work :- 3AP1FG	3 Sh.
Issue	Remarks	Date	Name	Aurangabad		
Original/Replacement for/ Replaced by :-					Details :- DESIGN DETAILS	
					(4) G71AHS-C401-D992	



1	HOLES FOR EARTHING TERMINALS
2	CLEARANCE REQUIRED FOR CHECKING AND DISMANTLING
3	ALUMINIUM TERMINAL PLATES WITH 4 HOLES, (THICKNESS 26MM)
4	CENTRE OF GRAVITY
5	BIRLA NGK/MODERN/IEC/Prathamesh/Fushun Hitech MAKE INSULATORS (Chamber & support) WITH CREEPAGE DISTANCE TO EARTH 3625mm
6	SUPPORTS OF GALVANISED M.S (HDG Thickness: 86 Micron).
7	CONTROL AND OPERATING MECHANISM CUBICLE WITH DEGREE OF PROTECTION IP 55 & paint shade 631 as per ISS
8	MECHANICAL "ON/OFF" INDICATION
9	PRESSURE GAUGE
10	SPRING CHARGING INDICATION
11	Density Monitor
12	RATING PLATE(Aluminium)



Standardised Guaranteed Technical Particulars and Drawings for 132KV Circuit Breaker (Siemens make)

STD/GTP-DWG/Approval No. **2152-1** Revision No. **0**

Prepared & Approved during **May - 2012**

WEIGHT OF THE CB WITHOUT STRUCTURE = 1500 kg approx.
 WEIGHT OF INDIVIDUAL POLE = 330 kg approx.
 WEIGHT OF BASEFRAME = 250 kg approx.
 WEIGHT OF CONTROL CUBICLE = 250 kg approx.
 WEIGHT OF SUPPORT STRUCTURE (1SET = 2NOS.) = 220 kg approx.

PERMISSIBLE TERMINAL LOADS SHOULD NOT BE MORE THAN F1, F2, F3 AS MENTIONED BELOW:

$$F_1 \leq F_2 \leq F_1 \times 2.0; F_1 + F_3 \times 0.49 < F$$

F1 - Terminal Load at TOP
 F2 - Terminal Load at Bottom - Opposite F1
 F3 - Terminal Load at Bottom - Same Direction of F1
 F - GCB Limiting Load values for Static & Dynamic Condition (as per table)

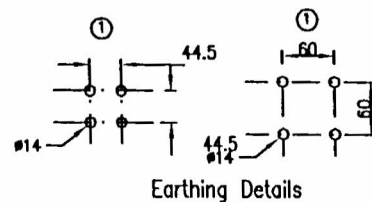
PERMISSIBLE LOADS ON THE TERMINALS	
Horizontal load (Longitudinal)	1250 N
Horizontal load (Transverse)	750 N
Vertical force	1000 N
DESIGN WIND LOADS	
Wind Load @ 39 m/s FWx	2.5kN
Wind Load @ 39 m/s FWy	3.7kN
OPERATING LOADS	
Operating loads per pillar Fv (Upward)	15000 N
Operating loads per pillar Fv (Downward)	20000 N
Operating load Fh (Horizontal)	4000 N

FOUNDATION DETAILS

ALUMINIUM TERMINAL PAD Details
 Thickness - 26mm

Top Terminal PAD

Bottom Terminal PAD



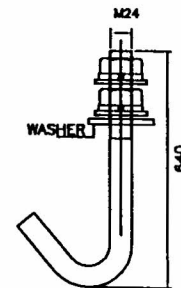
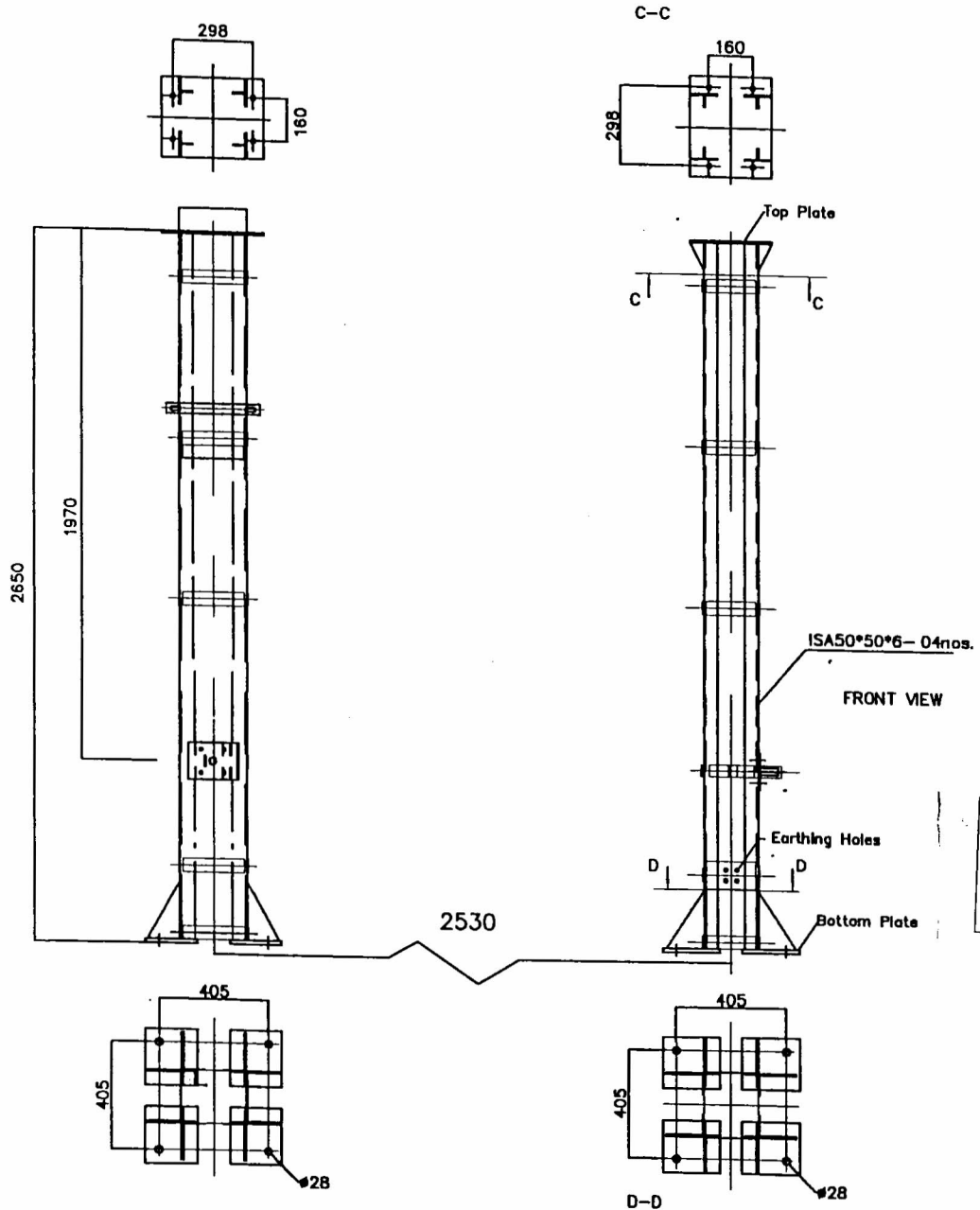
Earthing Details

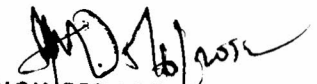
APPROVED FOR TURNKEY PROJECTS

CHIEF ENGINEER / CONSTRUCTION
 APTRANSCO/VIDYUTH SOUDHA/HYD.

Remarks	Date	Name	Norm	Original/Replacement for/Replaced by :-	Client : APTRANSCO	Siemens Ltd. AURANGABAD	Descr : 145KV, 40KA, 3150A, SF6 CB Work : 3AP1FG Details : GA DRAWING	Sales Ref. : Item No. : Qty. : x	NOT TO SCALE All dimensions are in MM
								Drg. No. : (4) G71AHS-CA401-Z992-	Sh. 1 2 Sh.

The purchaser undertakes to ensure that the design of the structure is not modified without the written consent of the manufacturer. The manufacturer shall be responsible for the design of the structure and shall retain the right to modify the design without notice. The purchaser shall be responsible for the design of the structure and shall retain the right to modify the design without notice.



APPROVED FOR TURNKEY PROJECTS

 CHIEF ENGINEER / CONSTRUCTION
 A TRANSCO/VIDYUTH SOUDHA/HYD.

DETAILS OF FOUNDATION BOLT

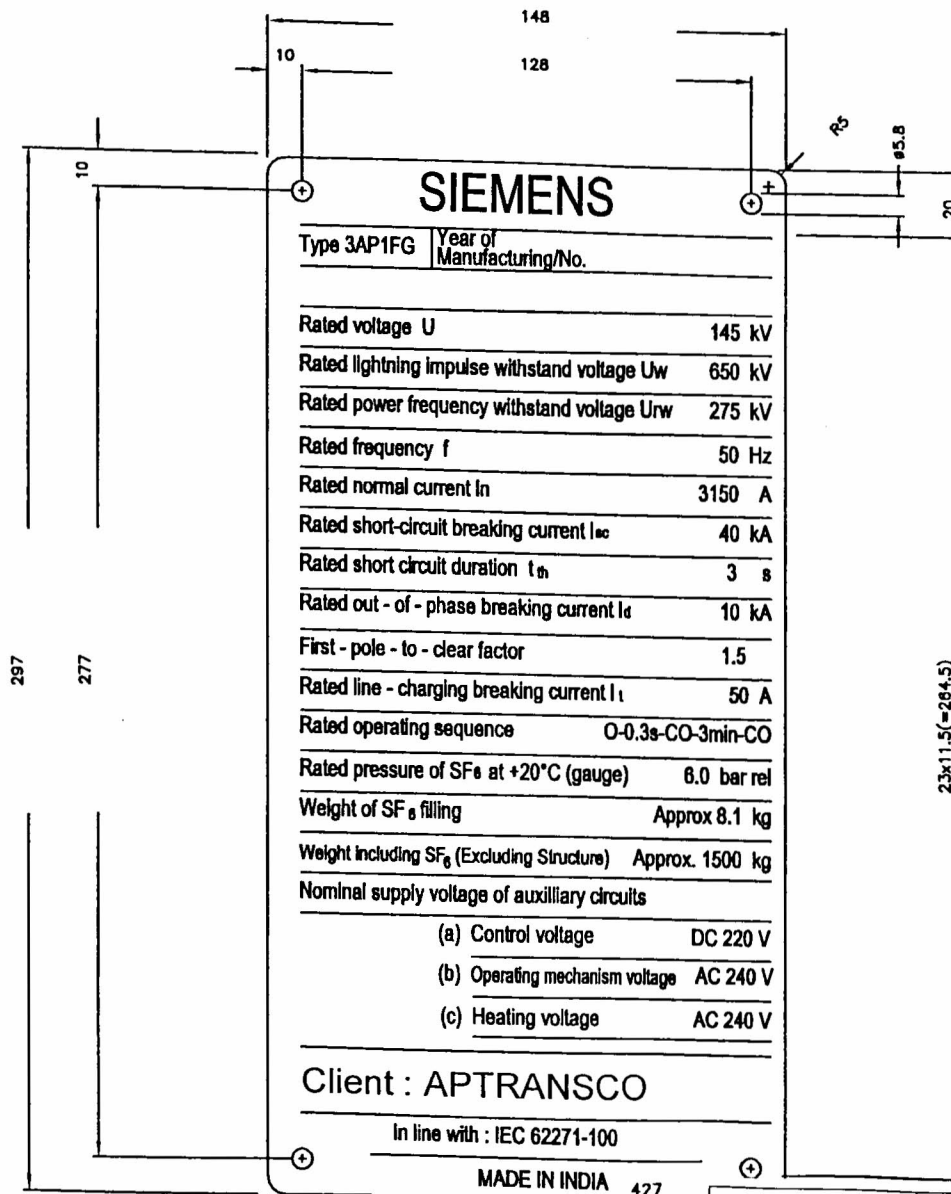


Standardised Guaranteed Technical Particulars and Drawings
 for **132KV Circuit Breaker (Siemens make)**
 STD/GTP-DWG/Approval No. **215-2-2** Revision No. **0**
 Prepared & Approved during **May - 2012**

THIS STRUCTURE IS SUITABLE FOR
 44m/s WIND SPEED

- NOTES:-**
- 1) ALL STEEL AS PER IS-2062.
 - 2) SURFACE COATING -HOT DIP GALVANISED MIN. 86 MICRONS THICK.
 - 3) WELDING RODS TO BE OF ISI MAKE.

			Date		 Client : APTRANSCO	Siemens Ltd. AURANGABAD	Descr : 145KV,31.5KA(3S),3150A,SF6 CB Work : 3APIFG Details : GA DRAWING	Sales Ref. :		NOT TO SCALE						
			Prep.	GRB				Item No.:		Qty. : x		All dimensions are in MM				
			Ckd.	GRB												
Remarks	Date	Name	Norm		Original/Replacement for/Replaced by :-					Drg. No:- (4)G71AHS-CA401-Z992-		Sh. 2 2 Sh.				
G		G1			G2		G3		G4		G5		G6		G7	



APPROVED FOR TURNKEY PROJECTS

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

Standardised Guaranteed Technical Particulars and Drawings
for 132KV Circuit Breaker (Siemens make)
STD/GTP-DWG/Approval No. 215-2-3 Revision No. 0
Prepared & Approved during **May - 2012**

NOTE :- NAME PLATE MADE UP OF ALUMINIUM.
LETTERS ARE IN BLACK COLOR



Remarks	Date	Name	Norm	Original/Replacement for/Replaced by :-	Client : APTRANSCO	Siemens Ltd.	Descr : 145KV, 40KA, 3150A SF6 CB	Sales Ref. :	Qty. : x	Sh. 1
						AURANGABAD	Work : 3AP1FG	Item No. :		Sh.
							Details : NAME PLATE			
								Drg. No. :-	(4) G71AHS-CA401-N992	

EQUIPMENT LAYOUT-FRONT

Limit switch/Auxiliary switch for motor

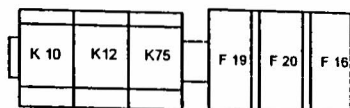
-S16

-E2

ILLumination Lamp

Pressure Gauge

Drive



E2: Illumination Lamp
K10: Density Monitor Contacts Multiplier
K12: DC Failure Monitor
K75: Anti-pumping Contactor
F19: DC MCB
F20: AC MCB
F11: On/Off Switch for Illuminating Lamp
F16: MCB for Spring Charging Motor

Spring Discharge

Spring Charged

Operation counter

-P1

CONTROL TERMINALS

Plug Socket with Switch

X 20

THERMOSTAT

B1

F 11

Capacitor Discharge

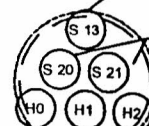
Capacitor Tripping Device

S22

C

Local/remote switch

ON/OFF PUSH Button (Elect)



Space heater

APPROVED FOR TURNKEY PROJECTS

CHIEF ENGINEER / CONSTRUCTION
APTRANSCO/VIDYUTH SOUDHA/HYD.

17/2

Provision for earthing



Standardised Guaranteed Technical Particulars and Drawings
for 132KV Circuit Breaker (Siemens make)

STD/GTP-DWG/Approval No. 215-2-4 Revision No. 0

Prepared & Approved during May - 2012

CONTROL TERMINALS ARE PIN TYPE.

Client : APTRANSCO

Siemens Ltd.
AURANGABAD

Descr : 145KV, 40KA, 3150A, SF6-CB
Work : 3AP1FG
Details : Equipment Layout
Front

Sales Ref. :
Item No. :

Qty. : x

Dwg. No. : (4) G71AHS-CA401-L992-

Sh. 1
2 Sh.

Remarks

Date Name Norm

Original/Replacement for/Replaced by :-

G

G1

G2

G3

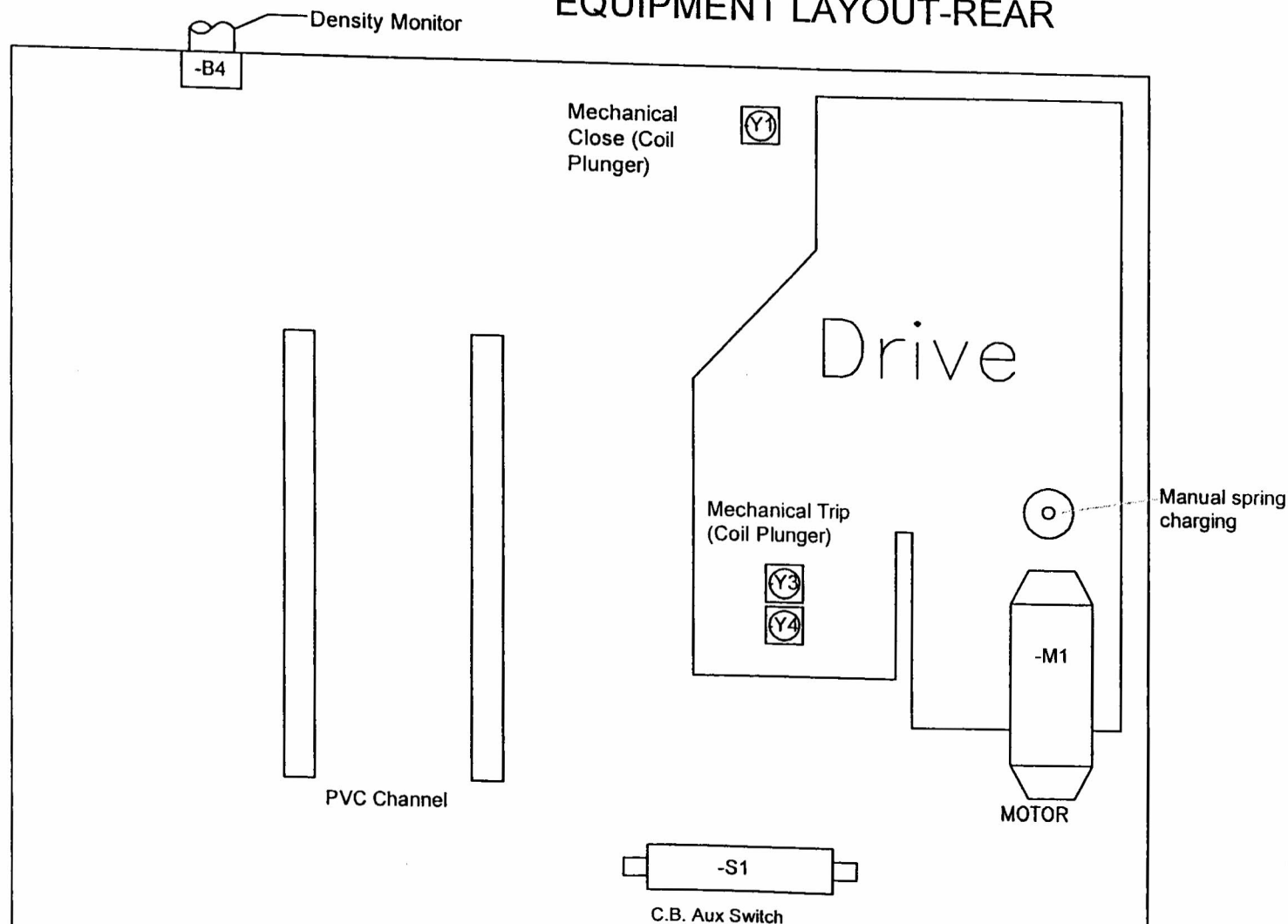
G4

G5

G6

G7

EQUIPMENT LAYOUT-REAR



APPROVED FOR TURNKEY PROJECTS

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

12/2/2

Y1: Mechanical Closing PB/Coil
Y3/Y4: Mechanical Trip PB/Coil
M1: Spring Charging Motor
S1: Breaker Aux Switch

CONTROL TERMINALS ARE PIN TYPE

Standardised Guaranteed Technical Particulars and Drawings
for **132KV Circuit Breaker (Siemens make)**

STD/GTP-DWG/Approval No. 215-2-5 Revision No. 0

Prepared & Approved during **May - 2012**

Client : APTRANSCO				Siemens Ltd.		Desor : 145KV, 40KA, 3150A, SF6-CB		Sales Ref. :			
				AURANGABAD		Work : JAPIFG		Item No.:		Qty. : x	
						Details : Equipment Layout-Rear					
Original/Replacement for/Replaced by :-								Org. No:- (4) G71AHS-CA401-L992-		Sh. 2	
										2 Sh.	

Remarks	Date	Name	Norm.
		Prep.	GRB
		Ckd.	GRB

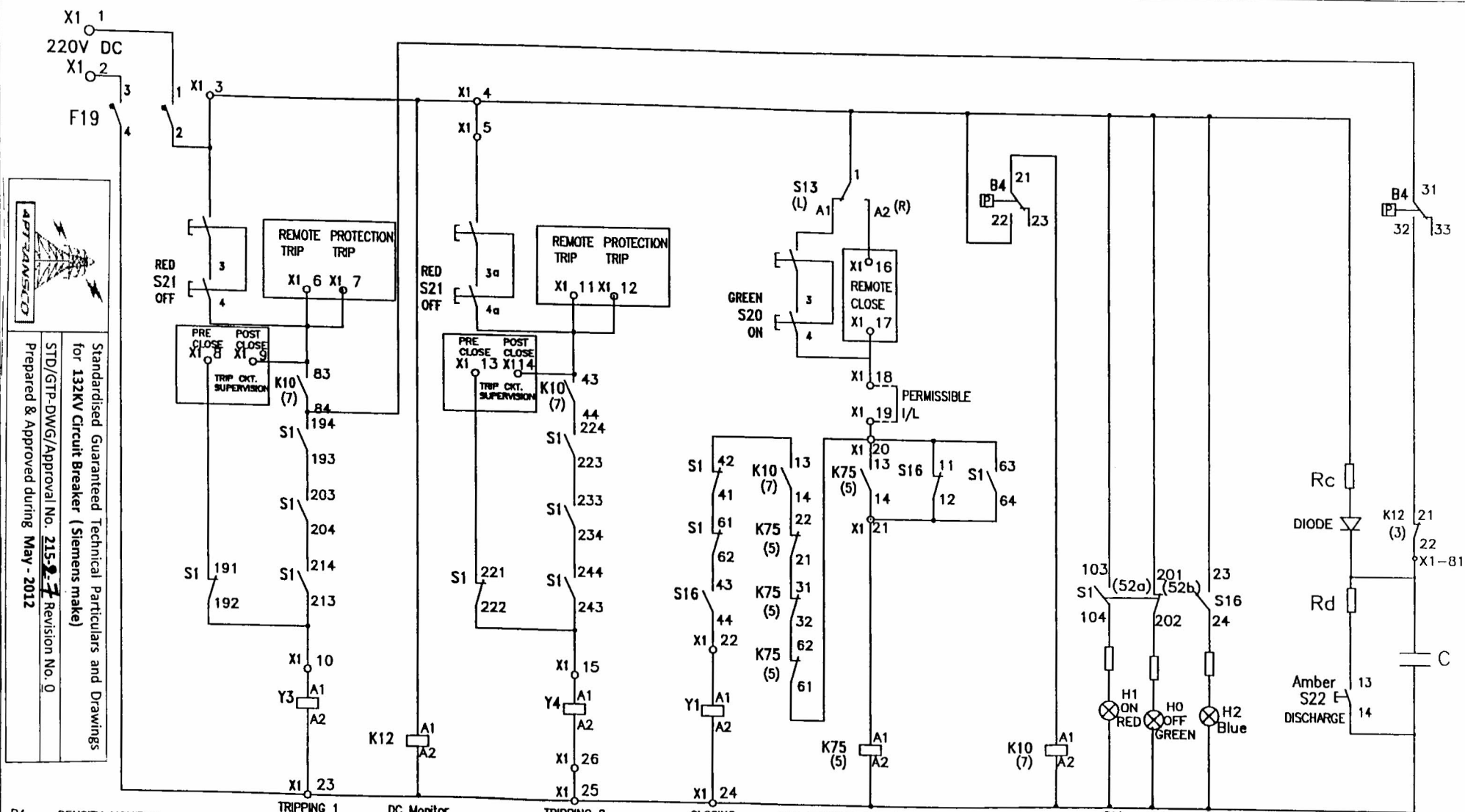
authority offenders will be liable for damages. All rights, including rights reserved by patent grant or registration of a utility model or design, are reserved.

SIEMENS

S.No.	Description	Equipment Details	Quantity Per CB		Tag No.	Remarks
1.0	Space Heater	X'pose/Velico Make, 240v AC,100W	1x		R1	
2.0	Thermostat	X'pose/Velico Make, (Range: 0 - 70+ deg. Centigrade)	1x		B1	
3.0	Auxilliary Contactor	Siemens, Type 3TH 4NO+2NC,220 V DC	1x		K10	General Lockout SF6
3.0	Auxilliary Contactor	Siemens, Type 3TH 2NO+3NC, 220 VDC	1x		K75	Anti-Pumping
4.0	Auxilliary Contactor	Siemens, Type 3TH 2NO+2NC,220 V DC	1x		K12	DC Supply Monitor
5.0	Push Button Assembly	Siemens / Teknic / ESBEE Make 2NO Aux Contacts 1NO Aux Contact	1x 1x 1x		S20 S21 S22	Green Red Amber
5.1	Indicating lamp	Siemens / Teknic /Essen Denky LED Type110V DC	1x 1x 1x		H0 H1 H2	Red (ON) Green (OFF) Blue(Spring Charging)
6.0	MCB	SIEMENS 2Pole,250 V DC,16A	1x		F19	DC Supply
7.0	MCB	SIEMENS 240 V AC,SPN,10A	1x		F20	AC Supply
8.0	MCB	SIEMENS 240 V AC,SPN,10A	1x		F 16	Spring Charging Motor
9.0	On / Off Switch	Anchor /Kanny/Equivalent Make 5A,240 V AC	1x		F11	Illumination
10.0	Local/Remote Selector Switch	Kaycee / Switron / Recom Make 2 Pole-3Way,Non Lockable, 16A	1x		S13	L/R Selector
11.0	Plug Socket with Switch	Anchor /Kanny/Equivalent Make 3PIN, 5A,240 V AC	1x		X 20	
12.0	Illumination Lamp	Philips/Equivalent	1x		E2	
13.0	Mechanical Counter	CE /Equivalent	1x		P1	
14.0	CB Aux. Switch	IMAX/Equivalent Make 3SV 92900-20S/19OE/4W 20 NO+19NC+4WI	1x		S1	CB Auxiliary switch
15.0	Limit Switch for spring charging	IMAX/Equivalent Make 3SV 92933 9OE/3S,3NO+9NC	1x		S16	Motor Auxiliary switch
16.0	Trip Coil	220V DC,max 300W IMAX/Equivalent	1x 1x		Y3 Y4	Trip Coil-1 Trip Coil-2
17.0	Closing Coil	220V DC,max 300W IMAX/Equivalent	1x		Y1	Close Coil
18.0	Spring Charging Motor	240 V AC,Universal,550W max. KPT/AGNI	1x		M1	
19.0	Density Monitor	Trafag/COMDE Setting @20 degC falling Pressure Contacts-11/12/13-5.2 bars Contacts-21/22/23 and 31/32/332 -5.0 bars	1x		B4	SF6 Monitoring
20.0	Capacitor tripping device consisting of : Capacitor-1x Rc: Charging Resistor -1x Rd:Discharge Resistor :1x Diode : 1x	Mounted in Control Cubicle KELTRON/REPUTED 25W 25 W REPUTED MAKE	1x		C,Rc,Rd	Tripping in case of DC failure(local)
21.0	Pressure guage	Brinda/Wika/Equivalent.	1x			
 Client : APTRANSCO			Sales Ref:-			
			Item No:- Qty : x			
			Description:-		145kv,40KA,3150A,SF6 CB	
					Sh. 1/	
			Type Ref:		3AP1FG	
			Details:-		Equipment List	
Index Remarks			Date		Name	
Original/Replacement for/Replaced by:-						
			Drawise No:-		(4) G71AHS-CA401-E992	

APPROVED FOR TURNKEY PROJECTS

APPROVED FOR TURNKEY PROJECTS
CHIEF ENGINEER / CONSTRUCTION-1
A. TRANSCO SOUTH AFRICA, 19/12/2012



- B4 - DENSITY MONITOR
K10 - DENSITY MONITOR MULTIPLIER
K12 - DC SUPPLY MONITOR
S1 - CIRCUIT BREAKER AUXILIARY SWITCH
S16 - LIMIT SWITCH FOR SPRING CHARGING MOTOR
K75 - ANTI-PUMPING DEVICE
HO/H1/H2-OFF/ON/SPRING CHARGING

NOTES :-

1. ALL AUXILIARY CONTACTS SHOWN WITH CIRCUIT DE-ENERGISED.
2. ALL CONTACTS OF PR. SWITCH SHOWN WITH THE SWITCH IN LOW PR. POSITION.
3. CONTACTS OF LIMIT SWITCH OF SPRING CHARGING MOTOR SHOWN WITH SPRING DISCHARGED.

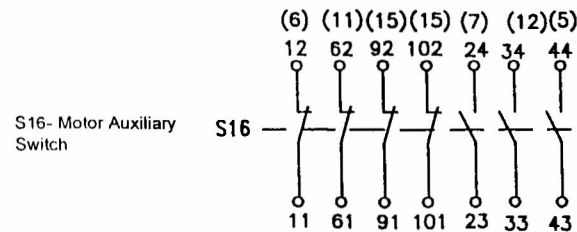
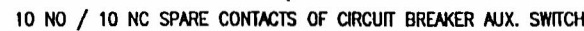
APPROVED FOR TURNKEY PROJECTS

10/5/2014

5.0 BAR	● 20"	- Lock Out
5.2 BAR	● 20"	- Loss of SF6 Alarm

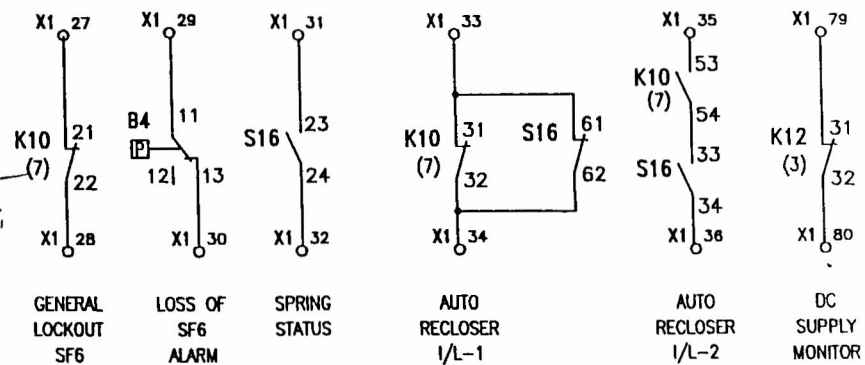
Y1 - CLOSING SOLENOID
Y3,Y4 - OPENING SOLENOID

3. CONTACTS OF LIMIT SWITCH OF SPRING CHARGING MOTOR SHOWN WITH SPRING DISCHARGED.										3.2 BAK - 20 - Loss of SF6 Alarm		Y3,Y4 - OPENING SOLENOID				
		Date			Client :APTRANSCO		Siemens Ltd. AURANGABAD		Descr : 145KV,40KA,3150A-SF6-CB Work : JAPIFG Details : WIRING_DRAWING		Sales Ref. :		=			
		Prep	GRB								Item No.:		Qty.: x		+	
No	Remarks	Date	Name								Ckd.	GRB	W.O.		Drg. No:-	
					Original/Replacement for/Replaced by :-											



APPROVED FOR TURNKEY PROJECTS

CHIEF ENGINEER / CONSTRUCTION-1



K10 - DENSITY MONITOR MULTIPLIER
S1 - CIRCUIT BREAKER AUXILIARY SWITCH
S16 - LIMIT SWITCH FOR SPRING CHARGING MOTOR



Standardised Guaranteed Technical Particulars and Drawings
for **132KV Circuit Breaker (Siemens make)**

STD/GTP-DWG/Approval No. **215-2-8** Revision No. **0**

Prepared & Approved during **May - 2012**

1. ALL AUXILIARY CONTACTS SHOWN WITH CIRCUIT DE-ENERGISED.
2. ALL CONTACTS OF PRESSURE SWITCH SHOWN WITH THE SWITCH IN LOW PRESSURE CONDITION.
3. CONTACTS OF LIMIT SWITCH OF SPRING CHARGING MOTOR SHOWN WITH SPRING DISCHARGED.

			Date			Client :APTRANSCO	Siemens Ltd.	Descr : 145KV,40KA,3150A-SF6-CB	Sales Ref. : Item No. :	Qty.: x	=																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
		Prep	GRB																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
		Ckd.	GRB																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
Remarks	Date	Name	Norm	Original/Replacement for/Replaced by :-																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
9			10			11		12		13		14		15		16		17		18		19		20		21		22		23		24		25		26		27		28		29		30		31		32		33		34		35		36		37		38		39		40		41		42		43		44		45		46		47		48		49		50		51		52		53		54		55		56		57		58		59		60		61		62		63		64		65		66		67		68		69		70		71		72		73		74		75		76		77		78		79		80		81		82		83		84		85		86		87		88		89		90		91		92		93		94		95		96		97		98		99		100		101		102		103		104		105		106		107		108		109		110		111		112		113		114		115		116		117		118		119		120		121		122		123		124		125		126		127		128		129		130		131		132		133		134		135		136		137		138		139		140		141		142		143		144		145		146		147		148		149		150		151		152		153		154		155		156		157		158		159		160		161		162		163		164		165		166		167		168		169		170		171		172		173		174		175		176		177		178		179		180		181		182		183		184		185		186		187		188		189		190		191		192		193		194		195		196		197		198		199		200		201		202		203		204		205		206		207		208		209		210		211		212		213		214		215		216		217		218		219		220		221		222		223		224		225		226		227		228		229		230		231		232		233		234		235		236		237		238		239		240		241		242		243		244		245		246		247		248		249		250		251		252		253		254		255		256		257		258		259		260		261		262		263		264		265		266		267		268		269		270		271		272		273		274		275		276		277		278		279		280		281		282		283		284		285		286		287		288		289		290		291		292		293		294		295		296		297		298		299		300		301		302		303		304		305		306		307		308		309		310		311		312		313		314		315		316		317		318		319		320		321		322		323		324		325		326		327		328		329		330		331		332		333		334		335		336		337		338		339		340		341		342		343		344		345		346		347		348		349		350		351		352		353		354		355		356		357		358		359		360		361		362		363		364		365		366		367		368		369		370		371		372		373		374		375		376		377		378		379		380		381		382		383		384		385		386		387		388		389		390		391		392		393		394		395		396		397		398		399		400		401		402		403		404		405		406		407		408		409		410		411		412		413		414		415		416		417		418		419		420		421		422		423		424		425		426		427		428		429		430		431		432		433		434		435		436		437		438		439		440		441		442		443		444		445		446		447		448		449		450		451		452		453		454		455		456		457		458		459		460		461		462		463		464		465		466		467		468		469		470		471		472		473		474		475		476		477		478		479		480		481		482		483		484		485		486		487		488		489		490		491		492		493		494		495		496		497		498		499		500		501		502		503		504		505		506		507		508		509		510		511		512		513		514		515		516		517		518		519		520		521		522		523		524		525		526		527		528		529		530		531		532		533		534		535		536		537		538		539		540		541		542		543		544		545		546		547		548		549		550		551		552		553		554		555		556		557		558		559		560		561		562		563		564		565		566		567		568		569		570		571		572		573		574		575		576		577		578		579		580		581		582		583		584		585		586		587		588		589		590		591		592		593		594		595		596		597		598		599		600		601		602		603		604		605		606		607		608		609		610		611		612		613		614		615		616		617		618		619		620		621		622		623		624		625		626		627		628		629		630		631		632		633		634		635		636		637		638		639		640		641		642		643		644		645		646		647		648		649		650		651		652		653		654		655		656		657		658		659		660		661		662		663		664		665		666		667		668		669		670		671		672		673		674		675		676		677		678		679		680		681		682		683		684		685		686		687		688		689		690		691		692		693		694		695		696		697		698		699		700		701		702		703		704		705		706		707		708		709		710		711		712		713		714		715		716		717		718		719		720		721		722		723		724		725		726		727		728		729		730		731		732		733		734		735		736		737		738		739		740		741		742		743		744		745		746		747		748		749		750		751		752		753		754		755		756		757		758		759		760		761		762		763		764		765		766		767		768		769		770		771		772		773		774		775		776		777		778		779		780		781		782		783		784		785		786		787		788		789		790		791		792		793		794		795		796		797		798		799		800		801		802		803		804		805		806		807		808		809		810		811		812		813		814		815		816		817		818		819		820		821		822		823		824		825		826		827		828		829		830		831		832		833		834		835		836		837		838		839		840		841		842		843		844		845		846		847		848		849		850		851		852		853		854		855		856		857		858		859		860		861		862		863		864		865		866		867		868		869		870		871		872		873		874		875		876		877		878		879		880		881		882		883		884		885		886		887		888		889		890		891		892		893		894		895		896		897		898		899		900		901		902		903		904		905		906		907		908		909		910		911		912		913		914		915		916		917		918		919		920		921		922		923		924		925		926		927		928		929		930		931		932		933		934		935		936		937		938		939		940		941		942		943		944		945		946		947		948		949		950		951		952		953		954		955		956		957		958		959		960		961		962		963		964		965		966		967		968		969		970		971		972		973		974		975		976		977		978		979		980		981		982		983		984		985		986		987		988		989		990		991		992		993		994		995		996		997		998		999		1000		1001		1002		1003		1004		1005		1006		1007		1008		1009		1010		1011		1012		1013		1014		1015		1016		1017		1018		1019		1020		1021		1022		1023		1024	

Terminal No.	Main Sign	Strip Joint	Terminal No.	Main Sign
		X1		
220V DC +		O	1	F19
220V DC -		O	2	F19
S13	1	O	3	F19
S13	3	O	4	
S13	2	O	5	
REMOTE TRIP		O	6	S21
PROTECTION TRIP		O	7	K10
		O	8	S1
		O	9	K10
Y3	A1	O	10	S1
REMOTE TRIP		O	11	S21
PROTECTION TRIP		O	12	K10
		O	13	S1
		O	14	K10
Y4	A1	O	15	S1
		O	16	S13
		O	17	S20
		O	18	
FUTURE I/L		O	19	
		O	20	K75
K75	A1	O	21	K75
		O	22	S16
Y3	A2	O	23	K75
Y1	A2	O	24	
		O	25	K10
Y4	A2	O	26	
		O	27	K10
		O	28	K10
		O	29	B4
		O	30	B4
		O	31	S16
		O	32	S16
		O	33	K10
		O	34	K10
		O	35	K10
		O	36	S16
		O	37	S1
		O	38	S1
		O	39	S1
		O	40	S1

Terminal No.	Main Sign	Strip Joint	Terminal No.	Main Sign
		X1		
		O	41	S1
		O	42	S1
		O	43	S1
		O	44	S1
		O	45	S1
		O	46	S1
		O	47	S1
		O	48	S1
		O	49	S1
		O	50	S1
		O	51	S1
		O	52	S1
		O	53	S1
		O	54	S1
		O	55	S1
		O	56	S1
		O	57	S1
		O	58	S1
		O	59	S1
		O	60	S1
		O	61	S1
		O	62	S1
		O	63	S1
		O	64	S1
		O	65	S1
		O	66	S1
		O	67	S1
		O	68	S1
		O	69	S1
		O	70	S1
		O	71	S1
		O	72	S1
		O	73	S1
		O	74	S1
		O	75	S1
		O	76	S1
		O	77	S1
		O	78	S1
		O	79	K12
		O	80	K12

Terminal No.	Main Sign	Strip Joint	Terminal No.	Main Sign
		X1		
		O	81	K12
		O	82	
		O	83	
		O	84	
		O	85	
		O	86	
		O	87	
		O	88	
		O	89	
		O	90	
		O	91	
		O	92	
		O	93	
		O	94	
		X3		
240V AC PH		O	1	F20
240V AC N		O	2	F20
F16	1	O	3	S16
F16	3	O	4	S16
SPARE		O	5	
SPARE		O	6	
SPARE		O	7	
SPARE		O	8	
SPARE		O	9	
SPARE		O	10	
SPARE		O	11	
SPARE		O	12	
SPARE		O	13	
SPARE		O	14	
SPARE		O	15	



Standardised Guaranteed Technical Particulars and Drawings
for 132KV Circuit Breaker (Siemens make)