JIANGSHAN SCOTECH ELECTRICAL CO.,LTD

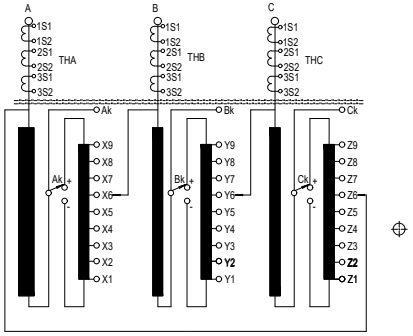
ON-LOAD TAP-CHANGER POWER TRANSFORMER

TYPE	SZ11-15000/66
NUMBER OF PHASES	3
RATED FREQUENCY	50 Hz
RATED POWER	15000 kVA
VOLTAGE COMBINATION	66^{+4}_{-12} X1.25%/11 kV
COOLING TYPE	ONAN
SERVICE LOCATION	OUTDOOR
ALTITUDE	1800m
CONNECTION SYMBOL	Dyn11
INSULATION LEVEL	LI350AC140
	LI95AC38
IMPEDANCE VOLTAGE	%
NO-LOAD CURRENT	%
NO-LOAD LOSS	kw
LOAD LOSS(10MVA)	kw
TANK AND ACCESSORIES	11800 KG
TRANSFORMER ACTIVE PART	15000 KG
TOTAL OIL WEIGHT	9700 KG
TRANSPORTATION WEIGHT	28400 KG
TOTAL WEIGHT	36500 KG
EX-WORKS SERIAL NO.	
DATE OF MANUFACTURE	
STANDARD No.	IEC60076

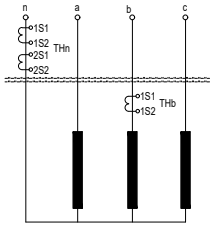
TAP POSITION	CONVERTER SELECTOR CONNECTION	TAPPING SELECTOR CONNECTION	H.V. WINDING TAPPING VOLTAGE (V)	H.V. WINDING TAPPING CURRENT (A)	L.V. WINDING VOLTAGE (V)	L.V. WINDING CURRENT (A)
1	Ak-A+ Bk-B+ Ck-C+	X1-Y1-Z1	69300	125.0	11000	787.3
2		X2-Y2-Z2	68475	126.5		
3		X3-Y3-Z3	67650	128.0		
4		X4-Y4-Z4	66825	129.6		
5		X5-Y5-Z5	66000	131.2		
6		X6-Y6-Z6	65175	132.9		
7		X7-Y7-Z7	64350	134.6		
8		X8-Y8-Z8	63525	136.3		
9a		X9-Y9-Z9	62700	138.1		
9b		Ak-Bk-Ck	62700	138.1		
9c	Ak-A- Bk-B- Ck-C-	X1-Y1-Z1	62700	138.1		
10		X2-Y2-Z2	61875	140.0		
11		X3-Y3-Z3	61050	141.9		
12		X4-Y4-Z4	60225	143.8		
13		X5-Y5-Z5	59400	145.8		
14		X6-Y6-Z6	58575	147.8		
15		X7-Y7-Z7	57750	150.0		
16		X8-Y8-Z8	56925	152.1		
17		X9-Y9-Z9	56100	154.4		

DATA OF BUSHING CURRENT TRANSFORMER

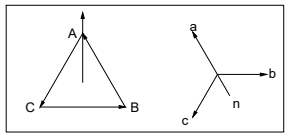
SITE	TYPE	CANT.	CURRENT RATIO	ACCURACY CLASS AND BURDEN (VA)	CONNECTION OF TERMINALS
A,B,C (66000v)	TPS-66	3	1/300T	Vkp>300V,Im<330mA,Rs<1.2ohm	1S1-1S2
A,B,C (66000v)	TPS-66	3	1/300T	Vkp>300V,Im<330mA,Rs<1.2ohm	2S1-2S2
A,B,C (66000v)	LRB-66	3	300/1	10P10,10VA	3S1-3S2
n (11000v)	TPS-11	1	1/800T	EAL>600V,IAL<125mA,RCE<3.2Ω	1S1-1S2
n (11000v)	LRB-11	1	200/1	10P10,10VA	2S1-2S2
b (11000v)	LR-11	1	150/5	0.5,10VA	1S1-1S2



H.V SIDE

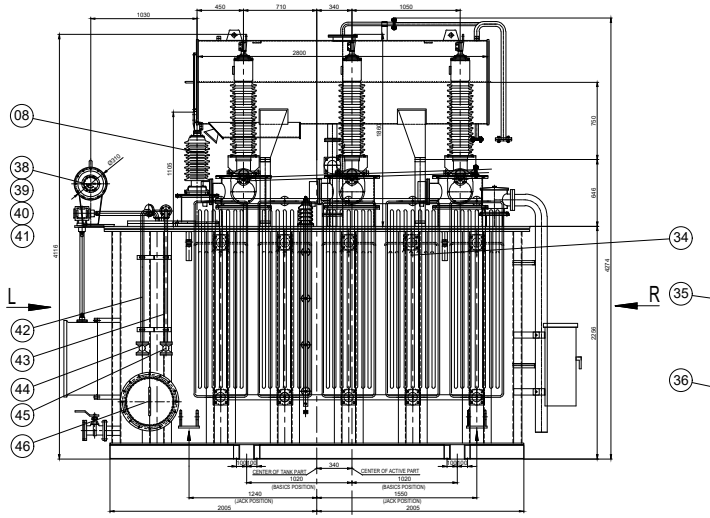


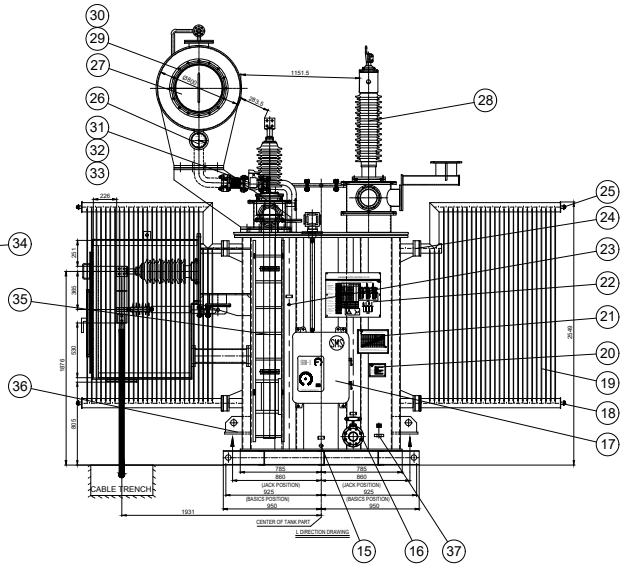
L.V SIDE

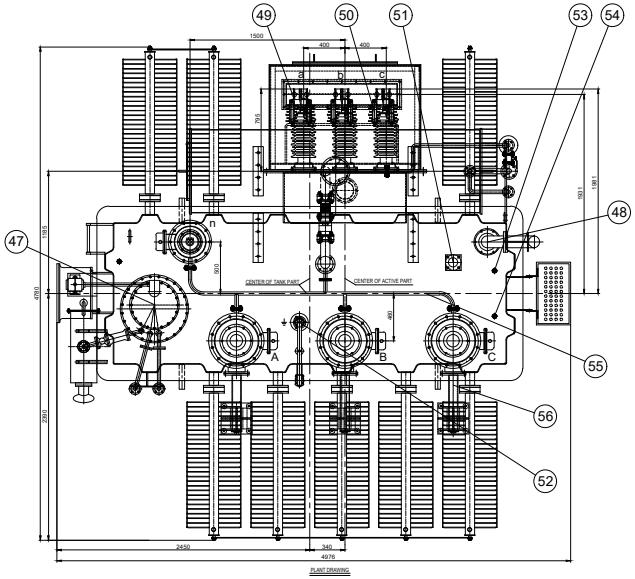


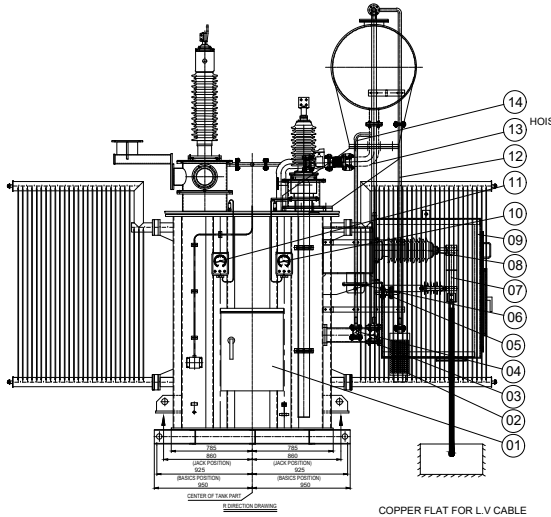
CONNECTION SYMBOL
Dyn11

Customer:					
			SCOTECH ELECTRICAL	SZ11-15000/66 66^{+4}_{-12} X1.25%KV/11KV	
DESIGNER	WBXu	TECHNOLOGIST	JWang	N° Drawing	Size
CHECKER	RCWu	APPROVER	SLLi	8SD.002.11206	A3
VERIFIER	XYZhou	DATE	2014-10-21	Denomination: NAME PLATE	

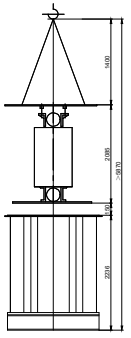




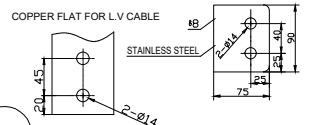




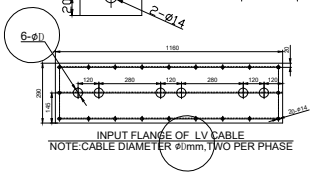
HOISTING SCHEMATIC DRAWING



EARTHING TERMINAL

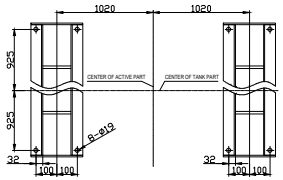


COPPER FLAT FOR L.V CABLE

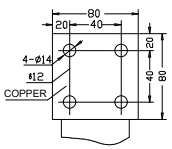


INPUT FLANGE OF L.V CABLE
NOTE:CABLE DIAMETER Ø/mm,TWO PER PHASE

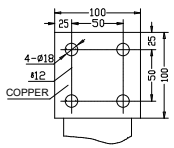
SCHEMATIC DIAGRAM OF THE INSTALLATION POSITION



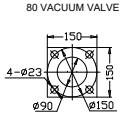
H.V. BUSHING TERMINALS



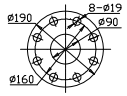
L.V.& L.V. NEUTRALBUSHING TERMINALS



80 VACUUM VALVE



DN80 BOTTOM DRAINING AND FILLING VALVE

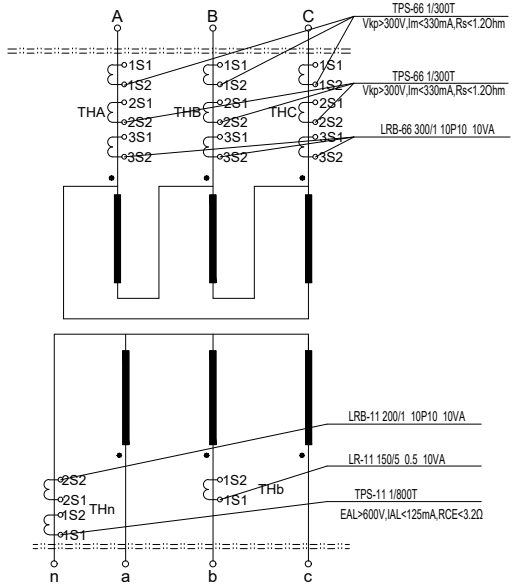


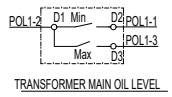
No.	Code	Qty	Name
56		03	SUPPORT OF SURGE ARRESTERS
55		01	VENT-PIPE
54		01	POCKET FOR OTI ELEMENT
53		01	POCKET FOR WTI ELEMENT
52	BIL-100/10	01	CORE GROUNDING BUSHING
51	Ø80	01	UPPER FILTERING VALVE
50		06	POST INSULATOR
49		06	GLAND
48	YSF8-55KPa/130KJ	01	PRESSURE RELIEF DEVICE WITH CONTACT
47	CVIII-350D/72.5-10193W	01	ON LOAD TAP CHANGER
46		01	MANDHOLE
45	Ø25	01	FILLING PIPE OF OLTC CONSERVATOR
44	Ø25	01	FILLING VALVE OF OLTC CONSERVATOR
43	Ø25	01	DRAINING PIPE OF OLTC CONSERVATOR
42	Ø25	01	DRAINING VALVE OF OLTC CONSERVATOR
41	0.5KG	01	AIR BREATHER OF OLTC CONSERVATOR
40	QJ4-25	01	RELE BUCHHOLZ OF OLTC CONSERVATOR
39	YZF3-140	01	OIL LEVEL INDICTOR FOR OLTC CONSERVATOR
38	Ø310x550	01	CONSERVATOR OF OLTC
37		02	EARTHING TERMINAL
36		04	JACKING PAD
35		01	LADDER WITH SAFETY GUARD
34		04	LIFTING LUGS OF COMPLETE TRANSFORMER
33	QJ4-80A	01	RELE BUCHHOLZ
32	F(D)-0.25	01	Ø80 FLEXIBLE PIPE
31	DF-80-3.00	02	IOSLATING VALVE OF MAIN CONSERVATOR
30	Ø800x2800	01	CONSERVATOR
29	Ø810x2810	01	RUBER BAG FOR CONSERVATOR
28	BRDLW-72.5/630-4	03	H.V BUSHING
27		01	MANDHOLE
26	UZF2-175	01	OIL LEVEL INDICATOR WITH CONTACT FOR CONSERVATOR
25		04	FLAT OF RADIATORS
24	Ø80	16	RADIATOR VALVE
23		02	OIL SAMPLING DEVICE (UPPER / LOWER)
22		01	NAMEPLATE
21		01	OIL TEMPERTURE CURVE BRAND
20		01	OIL OF POWER TRANSFORMER NAME PLATE
19	PCJ1900(1500)-25(3)/520	08	COOLING RADIATOR
18		16	EXHAUST STOPPER OF COOLING RADIATOR
17	SHM-I	01	MOTOR DRIVE UNIT
16	Ø80	01	BOTTOM DRAINING AND FILLING VALVE
15		01	BOTTOM DRAINING PLUG
14	Ø25	01	DRAINING AND FILLING PIPE OF MAIN CONSERVATOR
13	Ø40	01	VACUUM PIPE FOR CONSERVATOR TANK
12	Ø25	01	AIR BREATHER PIPE OF CONSERVATOR
11	BWY-803A	01	OIL TEMPERATURE INDICTOR WITH CONTACT
10	BWR-04	01	WINDING TEM.INDICATOR SECONDARY WITH CONTACT
09		01	SECONDARY CABLE BOX
08	BFWC-40.5/1250-4L	04	L.V. BUSHING & L.V. NEUTRAL BUSHING
07		06	FLEXIBLE CABLES
06	BCT4-15a	04	SECONDARY CT TERMINAL BOX
05	Ø25	01	DRAINING AND FILLING VALVE OF MAIN CONSERVATOR
04	Ø25	01	DRAINING AND FILLING VALVE OF MAIN CONSERVATOR
03	Ø50	01	VACUUM VALVE FOR CONSERVATOR TANK
02	3Kg	01	AIR BREATHER OF MAIN CONSERVATOR
01		01	MARSHALLING BOX

Item	WEIGHT(Kg)
Tank & accesories	11800
Transformer active part	15000
Total oil weight	9700
Transportation weight	28400
Total weight	36500

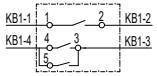
Customer:

				SCOTECH P.R. CHINA	SZ11-15000/66 66 +4 -12 X1.25%KV/11KV
					N° Drawing: 1SD.001.11206 Size: A3
DESIGNER		TECHNOLOGIST			
CHECKER		APPROVER			Denomination: OVERALL DIMENSION AND ACCESORIES
VERIFIER		DATE	2014-10-21		

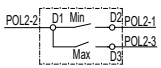




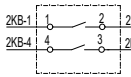
TRANSFORMER MAIN OIL LEVEL



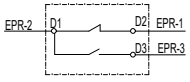
MAIN BUCHHOLZ RELAY



OLTC OIL LEVEL



OLTC BUCHHOLZ RELAY



PRESSURE RELIEF VALVE

JX2		
1	W1	THA-1S1
2		THA-1S2
3		THA-2S1
4		THA-2S2
5		THA-3S1
6		THA-3S2
7	W2	THB-1S1
8		THB-1S2
9		THB-2S1
10		THB-2S2
11		THB-3S1
12		THB-3S2
13	W3	THC-1S1
14		THC-1S2
15		THC-2S1
16		THC-2S2
17		THC-3S1
18		THC-3S2
19	W4	THn-1S1
20		THn-1S2
21		THn-2S1
22		THn-2S2
23	W5	THb-1S1
24		THb-1S2
25		
26		
27		
28		

TO PRIMARY WTI

To A PHASE

To B PHASE

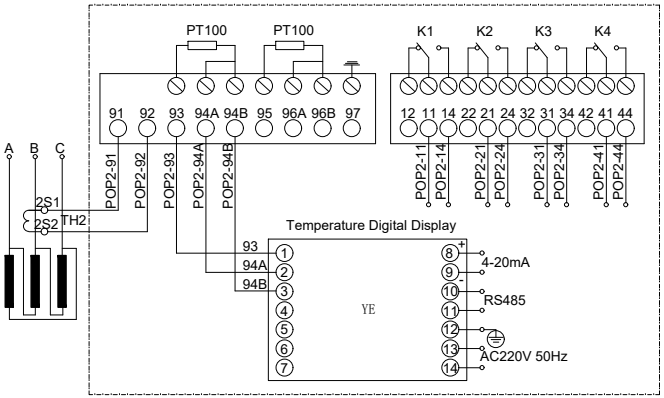
To C PHASE

To n PHASE

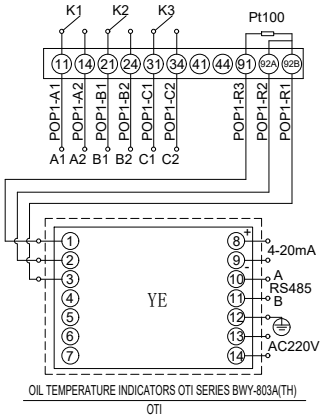
To b PHASE

PARE TERMINAL

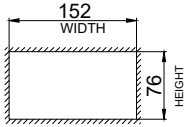
JX1			
1	W1	KB1-1	ALARM SIGN → TO MAIN BUCHHOLZ RELAY (QJ4-80)
2		KB1-2	
3		KB1-3	BREAK SIGN
4		KB1-4	
5	W2	KB2-1	ALARM SIGN → TO OLTC BUCHHOLZ RELAY (QJ4-25)
6		KB2-2	
7		KB2-3	BREAK SIGN
8		KB2-4	
9	W3	POL1-1	MIN OIL ALARM SIGN → TO MAIN TRANSFORMER OIL LEVEL (UZF2-175)
10		POL1-2	MAX OIL ALARM SIGN
11		POL1-3	
12	W4	POL2-1	MIN OIL ALARM SIGN → TO OLTC TRANSFORMER OIL LEVEL (YZF3-140)
13		POL2-2	MAX OIL ALARM SIGN
14		POL2-3	
15	W5	EPR-1	NATURAL SIGN → TO PRESSURE RELIEF VAVLE (YSF-55/80)
16		EPR-2	
17		EPR-3	BREAK SIGN
18	W6	POP1-A1	TO OIL TEMPERATURE INDICATORS BWY-803A/YE(OTI)
19		POP1-A2	
20		POP1-B1	
21		POP1-B2	
22		POP1-C1	
23		POP1-C2	
24		POP1-D1	
25		POP1-D2	
26		POP1-R1	
27		POP1-R2	
28		POP1-R3	
29	W7	POP2-11	TO PRIMARY WTI TEMPERATURE INDICATORS BWR-04/YE(WTI)
30		POP2-14	
31		POP2-21	
32		POP2-24	
33		POP2-31	
34		POP2-34	
35		POP2-41	
36		POP2-44	
37		POP2-91	
38		POP2-92	
39		POP2-93	
40		POP2-94A	
41		POP2-94B	
42			
43			
44			PARE TERMINAL
45			
46			



PRIMAR WINDING TEMPERATURE INDICATORS
WTI-BWR-4/YE (POP2)

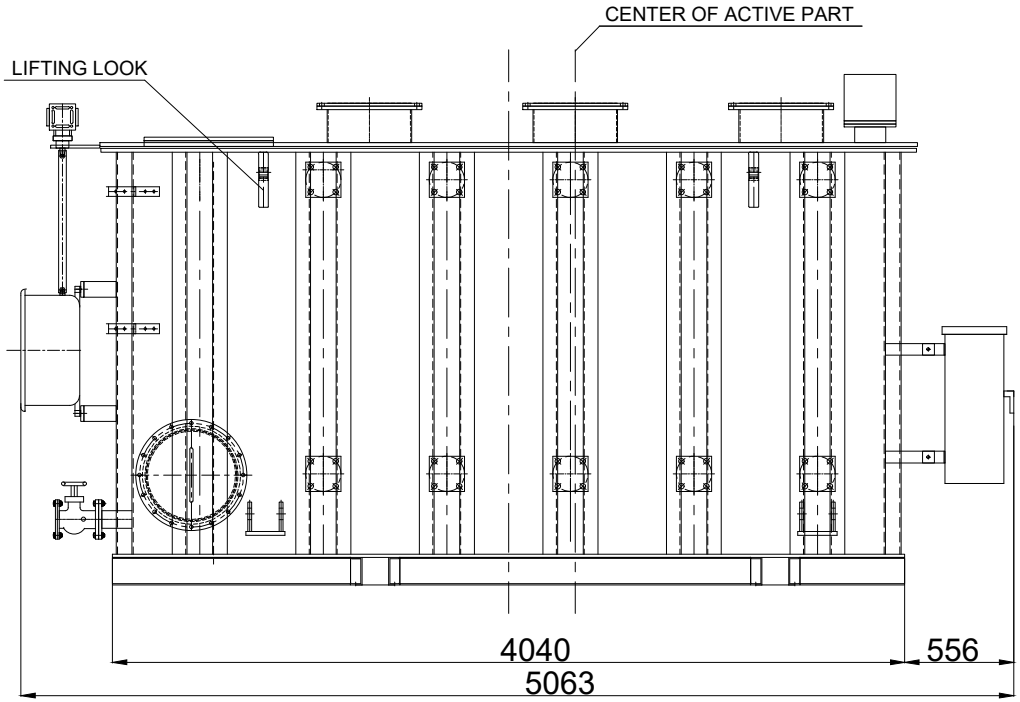


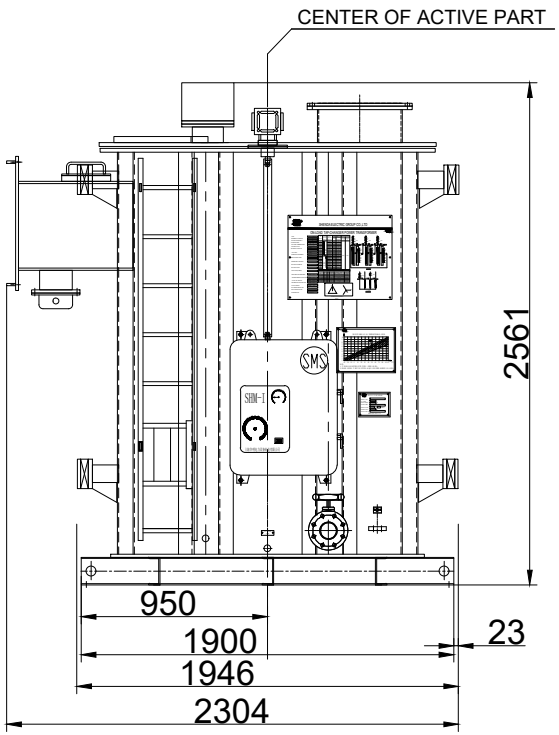
OIL TEMPERATURE INDICATORS OTI SERIES BWY-803A(TH)
OTI



PANEL CUT-OUT

Customer:				15MVA ONAN/ONAF 3Phase-50Hz 66 +4 -12 x1.25%/11 KV	
				N° Drawing	Size
DESIGNER		TECHNOLOGIST		8SD.004.11206	A3
CHECKER		APPROVER		Denomination: TERMINAL BOX	
VERIFIER		DATE	2014-10-21		





Notes:
1.THE TRANSFORMER IS TRANSPORTED FILLED OIL
2.DURING TRANSPORTATION ,THE INCLINATION OF TRANSFORMER OR LOAD SURFACE NOT EXCEED 15°,THE SPEED SHALL NOT EXCEED 20KM/H
3.THE SHIELD ONLY USED FOR SAFEGUARD DURING THE TRANSFORMER TRANSPORT WOULD REMOVE IT BEFORE THE TRANSFORMER RUNNING

WEIGHT OF TRANSPORT :28400Kg

Customer:				SZ11-15000/66 66 $^{+4}_{-12}$ X1.25%KV/11KV	
				N° Drawing	Size
DESIGNER		TECHNOLOGIST	JWang	8SD.003.11206	A3
CHECKER	RCWu	APPROVER	SLLi	Denomination: Transportation drawing	
VERIFIER	XYZhou	DATE			

66/11 kV OLTC POWER TRANSFORMERS					
TECHNICAL GUARANTEES AND PARTICULARS					
REFER ESKOM SPECIFICATION DISSCAAD3 REV 8 JANUARY 2007					
Schedule A : Purchasers requirements					
Schedule B : Suppliers guarantees and technical details					
No.	**DISSCAAD3 Clause**	**Description**	**Unit**	**Schedule A**	**Schedule B**
1		**Delivery and off-loading**			
1.1		Transformer delivered to		Moralane Substation	Moralane Substation
2		**Erection and oil filling**			
2.1		Erection ready for service		Yes	Yes
2.2		Erection completed not later than date		To suit contractors offer	To suit contractors offer
2.3		Place 3 ply Malthoid on plinth		Yes	Yes
3		**Site details**			
3.1		Access to site (refer drawings)		Road	Road
3.2		Distance from off-loading position m		~10m	~10m
3.3		Rise of fall to off-loading position m		<3m	<3m
4	4.18.3	**Operating environment**			
4.1		Corrosion protection: Yes/No		No	No
4.2		Pollution level: Medium/Very Heavy		Medium	Medium
5		**Quantity of units required**		**2**	**2**
6	4.2.1	**Rated power**			
6.1		HV	MVA	15 MVA	15MVA
6.2		LV	MVA	15 MVA	15MVA
7	4.2.3	**Nominal system voltage "U_n" and rated voltage on principal tapping**			
7.1		HV	kV r.m.s.	66	66
7.2		LV	kV r.m.s.	11	11

66/11 kV OLTC POWER TRANSFORMERS TECHNICAL GUARANTEES AND PARTICULARS REFER ESKOM SPECIFICATION DISSCAAD3 REV 8 JANUARY 2007 Schedule A : Purchasers requirements Schedule B : Suppliers guarantees and technical details					
No.	**DISSCAAD3 Clause**	**Description**	**Unit**	**Schedule A**	**Schedule B**
8		**Vector group**			
8.1		Type Ynd1/Ynyn0/Yna0d1/Dyn11		Dyn11	Dyn11
9	4.16.3	**Tap-changers**			
9.1		Type OLTC/OCTS		OLTC	OLTC
10		**Bushings**			
		Type Outdoor/Cable boxes			
10.1		HV PHASE AND NEUTRAL		Outdoor	Outdoor
10.2		LV PHASE		Cable Box	Cable box
10.3		LV NEUTRAL		Outdoor	Outdoor
11		**Special tests required**			
11.1	5.26.10	Acoustic noise level tests on one unit Yes/No		Yes	Yes
11.2		Temperature rise tests on one unit Yes/No		Yes	Yes
11.3		Impulse tests on one unit Yes/No		Yes	Yes
11.4		Are acoustic noise level tests available for an identical transformer Yes/No		*	Yes
11.5		Are temperature rise test available for an identical transformer Yes/No		*	Yes
11.6		Are impulse tests available for an identical transformer Yes/no		*	Yes
13		**Continuous ratings on any tapping with ONAN cooling**			
13.1		HV	MVA	15	15
13.2		LV	MVA	15	15

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No.	**DISSCAAD3 Clause**	**Description**	**Unit**	**Schedule A**	**Schedule B**
14		**Maximum current density in windings**			
14.1		HV	A/mm^2	*	2.9
14.2		LV	A/mm^2	*	3.0
16		**Short-circuit current that the transformer is designed to withstand, in per unit of r.m.s. rated current**			
16.1		HV Current	p.u.	*	1.46KA
16.2		HV Time at above current	Seconds	*	2
16.3		LV Current	p.u.	*	8.75KA
16.4		LV Time at above current	Seconds	*	2
17		**No-load loss on principal tapping (Note -No plus tolerance allowed)**			
17.1		at 1,00 Un	kW	*	11
17.2		at 1,10 Um	kW	*	15.4
18		**Core design**			
18.1		Manufacturer of core steel		*	Wuhangangtie
18.2		Grade and thickness of core steel grade/mm	mm	*	0.3
19.4		**The deign flux density at U_n for:**			
19.4.1		Yoke	T	*	1.72
19.4.2		Wound limbs	T	*	1.72
19.4.3		Unwound limbs	T	*	1.72
19.5		**Volts per turn at the above flux densities**		*	63.509V/turn

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No.	**DISSCAAD3 Clause**	**Description**	**Unit**	**Schedule A**	**Schedule B**
19.6		**Magnetizing current, at rated frequency, on principal tapping, in percent of rated current at maximum HV rating**			
19.6.1		at 0,90 U_t	%	*	0.3
19.6.2		at 1,00 U_t	%	*	0.4
19.6.3		at 1,10 U_t	%	*	1.6
19.7		**Load loss (I^2R + stray) at 75 °C and at maximum HV rating with LV fully loaded** (Note - No plus tolerance allowed)			
19.7.1		On principal tapping	kW	*	75
19.7.2		On extreme plus tapping	kW	*	73
19.7.3		On extreme minus tapping	kW	*	90
21		**Positive sequence percentage impedance at 75 °C and rated frequency based on maximum rated power of HV winding.**			
21.1		**HV/LV**			
21.1.1		On principal tapping	%	*	10.0
21.1.2		On extreme plus tapping	%	*	10.3
21.1.3		On extreme minus tapping	%	*	9.8
22		**Temperature rises at altitude of 1800 m**			
22.1		Top oil	°C	*	55
22.2		Windings (by resistance)	°C	*	65
22.3		Hotspot	°C	*	78
22.4		Percentage of total losses that will be supplied	%	*	99.43

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TECHNICAL GUARANTEES AND PARTICULARS					
REFER ESKOM SPECIFICATION DISSCAAD3 REV 8 JANUARY 2007					
Schedule A : Purchasers requirements					
Schedule B : Suppliers guarantees and technical details					
No.	**DISSCAAD3 Clause**	**Description**	**Unit**	**Schedule A**	**Schedule B**
23		**Maximum acoustic noise dB (A)**		*	63
25		**Minimum insulation for windings**			
25.1		**Impulse withstand test voltage for:**			
25.1.1		HV (Fully Insulated)	kV peak	*	350
25.1.2		LV (Fully Insulated)	kV peak	*	95
25.2		**Sixty-second, separate source**			
25.2.1		HV (Fully Insulated)	kV r.m.s	*	140
25.2.2		LV (Fully Insulated)	kV r.m.s	*	38
25.3		**Induced-overvoltage withstand test voltage**			
25.3.1		HV to earth	kV r.m.s	*	140
25.3.2		LV	kV r.m.s	*	38
25.4		**Between line terminals**			
25.4.1		HV	kV r.m.s	*	140
25.4.2		LV	kV r.m.s	*	38
25.4.3		Test frequency	Hz	*	100(Induction)
25.4.4		Test duration	sec	*	60
26		**Main terminal bushings**			
26.1		**Impulse withstand test voltage at** sea level (1,2/50µs			
26.1.1		HV	kV peak	*	380
26.1.2		LV	kV peak	*	200
26.1.4		HV Neutral (Fully Insulated)	kV peak	N/A	N/A

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No.	**DISSCAAD3 Clause**	**Description**	**Unit**	**Schedule A**	**Schedule B**
26.1.5		MV Neutral (Fully Insulated)	kV peak	*	125
26.2		**Sixty-second, power-frequency withstand test voltage to earth**			
26.2.1		HV	kV r.m.s	*	140
26.2.2		LV	kV r.m.s	*	50
26.2.4		HV Neutral (Fully Insulated)	kV r.m.s	N/A	N/A
26.2.5		MV Neutral (Fully Insulated)	kV r.m.s	*	50
26.5		**Type, ratings and dimensions**			
26.5.1		**Service bushings**			
26.5.1.1		HV Make/Type		*	Nanjing zhida/BRDLW
26.5.1.2		LV Make/Type		*	Nanjingzhida/BFW
26.5.1.3		TERTIARY Make/Type		*	N/A
26.5.1.4		HV Neutral Make/Type		*	N/A
26.5.1.5		LV Neutral Make/Type		*	Nanjingzhida/BFW
27		**Transformer general information**			
27.1		Manufacturer		*	Scotech Electrical
27.2		Place of manufacturer		*	China
27.3		Type of transformer core/shell		*	Core
27.4		Number of limbs 2/3/5		*	3
27.5		Type of cooling		*	ONAN
28		**Oil quantities:**			
28.1		Transformer	l	*	8958
28.2		Tap-changer	l	*	118
28.3		Total	l	*	11262

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No.	**DISSCAAD3 Clause**	**Description**	**Unit**	**Schedule A**	**Schedule B**
29		**Masses**			
29.1		Total mass	kg	*	36700
29.2		Greatest transportation mass	kg	*	30500
30		**Filling medium for transport**		*	Oil
36.1		**On-load tap-changer. NB REFER AREA SPECIFICATION PART C SECTION C.4.3**			
36.1.1		Manufacturer and type designation		*	Shanghai huaming/CV II
36.1.2		Precise electrical location of tappings		*	17
36.2		**Tapping range of HV/LV ratio per unit of the ratio on the principal tapping:**			
36.2.1		Max	pu	1.05	1.05
36.2.2		Min	pu	0.85	0.85
36.2.3		Number of steps	No	16	16
36.2.4		Size of steps	%	1.25	1.25
36.2.5		Number of positions (included transition positions)		*	17
36.3		**Nominal 50 Hz ratings of tap-changer:**			
36.3.1		Voltage	kV	*	72.5
36.3.2		Current	A	*	350
36.4		**Insulation levels of tap-changer**			
36.4.1		Lightning impulse level (1,2/50 µs full wave)	kV	*	350
36.4.2		Phase-to-ground	kV peak	*	350
36.4.3		Phase-to-phase	kV peak	*	350
36.5		**Tap-changer 50 Hz withstand**			
36.5.1		Phase-to-ground	kV r.m.s	*	140
36.5.2		Phase-to-phase	kV r.m.s	*	N/A

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No.	**DISSCAAD3 Clause**	**Description**	**Unit**	**Schedule A**	**Schedule B**
36.5.3		Nominal voltage and current rating of tap-changer		*	72.5KV/350A
36.8		**Tap-changer driving motor**			
36.8.1		Type of driving motor	3 phase	*	3 Phase
36.8.2		Voltage	V	*	380
36.8.3		Power	kW	*	0.75
36.8.4		Current	A	*	2.1
40		**Make/model of indicating and protective devices**			
40.1		Winding temperature thermometers		*	Fujian lead/BWR
40.2		Oil temperature thermometer		*	Fujian lead/BWY
40.3		Oil and gas actuated relay		*	Shenyang sixing/QJ4
40.4		Pressure relief device		*	Shenyang sixing/UZF
40.5		Tap-changer protective device (detail)		*	Match up with OLTC
40.6		Dehydrating breathers		*	Changzhou miaoqiao
40.7		Conservator bag if applicable		*	Scotech Electrical
40.8		Oil level indicators main and tapchange		*	Shenyang sixing
41		**Provision for transformer mounted surge divertors**			
41.01		Provision for transformer mounted 66 kV surge divertors on 3 phases and neutral.		*	Yes
41.02		Provision for transformer mounted 11 kV surge divertors on 3 phases		Not Required	Not required
42		**In built current transformers Refer Drawing 1375-03-100**			

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No.	**DISSCAAD3 Clause**	**Description**	**Unit**	**Schedule A**	**Schedule B**
42.01		HV Phases Reference CT1			
		Number of cores		3	3
		Core 1			
		Protection Differential			
		Ratio 1/200T		*	1/300T
		Class TPS		*	TPS
		Im<	500 mA	*	330mA
		Vk>	200 V	*	300V
		Rs<	0.8Ω	*	1.2 ohm
		Core 2			
		Protection BEF			
		Ratio 1/200T		*	1/300T
		Class TPS		*	TPS
		Im<	500 mA	*	330mA
		Vk>	200 V	*	300V
		Rs<	0.8Ω	*	1.2 ohm
		Core 3			
		Protection Overcurrent			
		Ratio 200/1		*	300/1
		Rating 10 VA		*	10VA
		Class 10P10		*	10P10
42.02		LV Phases			
		Number of cores		1	1
		Winding Temperature (one phase only)			
		Ratio		*	150/5
		Rating		*	10VA
		Class		*	0.5

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No.	**DISSCAAD3 Clause**	**Description**	**Unit**	**Schedule A**	**Schedule B**
42.03		LV Neutral Reference CT2			
		Number of cores		2	2
		Core 1			
		Protection REF			
		Ratio 1/800T		*	1/800T
		Class TPS		*	0.5
		Im<	125 mA	*	125mA
		Vk>	600 V	*	600V
		Rs<	3.2Ω	*	3.2Ohm
		Core 2			
		Protection SBEF			
		Ratio 200/1		*	200/1
		Rating 10 VA		*	10VA
		Class 10P10		*	10P10

Notes:

1 * Indicates no pre determined requirement, tenderer to complete Schedule B