



GUARANTEED TECHNICAL PARTICULARS for 22 kVGIS

Customer Name: ABB LTD. PA- Metals

Doc. No:YN1V300013-GTP

Project: Hongsa Mines Waste Line

Rev : C

ABB Ref No.: 5000021824

Product : ZX2,DBB,22 kV, 2500A,25kA/3Sec. @ 40° C

Line No.	DESCRIPTION	UNITS	Technical Data
1.00	SITE CONDITIONS		
1.01	Altitude	meters	<1000 m
2.00	SYSTEM PARAMETERS		
2.01	Voltage	kV	22
2.02	Phases		3
2.03	Frequency	Hz	50
2.04	Short Time Rating for 3 Sec	kA	25
2.05	Rated peak withstand current	kA	63
2.06	Rated Short Circuit PF withstand Voltage	kV RMS	50
2.07	Rated Lightning impulse withstand Voltage	kV peak	125
3.00	General Data for 22 kV Switchgear		
3.01	Type of 22 kV Switchgear		GIS type ZX2
3.02	Type of Breaker		Vacuum Circuit Breaker
3.03	Type of Insulation		SF6 Gas
3.04	Ref. IEC standard		IEC62271-200
3.05	Operating Voltage of Switchgear	kV	22
3.06	Voltage Variation (of 22kV)	%	+/-10%
3.07	Rating of Main Busbar @ Design Ambient temp 40deg cel	A	2500
3.08	Rated Frequency	Hz	50
3.10	SF6 Gas Leakage rate per annum	%	less than 0.1% per year
3.11	Type of Pressure Relief		Rupture diaphragm
3.12	Gas filling Arrangement		Yes
3.13	Gas Monitoring Arrangement for Busbar / Breaker / Disconnecter Compartment		Via Pressure sensors mounted in compartment
3.14	Separate compartment for Busbars/Disconnectors, Breaker and Cable compartment		Yes
3.15	Uniform Dimension for all Feeders in terms of Width/Depth/Height	mm	As per GA drawing
3.16	Mechanical Switch Position Indication for CB, Disconnecter and Earthing S/W		YES
3.17	Control cable Accomodation		Bottom entry inside LVC
4.00	ENCLOSURE TYPE		
4.01	LVC Cubical, Top PRD, Rear Cover, Cable compartment		Aluzinc
4.02	LVC Door and end covers		CRCA Powder Coated
4.03	Powder Coating thickness(Wherever Applicable)		>60 microns
4.04	Indoor / Outdoor		Indoor
4.05	Tamperproof Category		YES
4.06	Material and Thickness of SF6 Gas enclosure		Stainless Steel of 3mm thickness
4.07	Enclosure Ingress Protection Class		IP65 for SF6 gas enclosure & IP4X for Low voltage compartment & cable compartment.

<input checked="" type="checkbox"/> No Exception Noted	<input type="checkbox"/> Returned for Correction
<input type="checkbox"/> Exception Noted	<input type="checkbox"/> Received for Information
As to general design and controlling dimensions. This review does not relieve the Contractor of any part of his obligation to meet all the requirements of the Contract Documents or of the responsibility for correctness of his designs and drawings.	
Signed..... <i>Road</i>Date...23 AUGUST 2013....	
ELECTRICITY GENERATING AUTHORITY OF THAILAND	



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Line No.	DESCRIPTION	UNITS	Technical Data
5.00	BUS INFORMATION		
5.01	Material		Copper
5.02	Main Bus Bar size	MM2	2X 80 X 20
5.03	Earthing Busbar Size	MM2	1 X 40 X10
5.04	Bus Joint Plating		Silver plated
5.05	Busbar Insulation		SF6 Gas
5.06	Rated Continuous Current @ Design Ambient temp. 40 Deg Cel	A	2500
5.07	Short time Withstand Current	A	25kA for 3 Sec
6.00	POWER CABLE AND ACCOMMODATION		
6.01	Power Cable entry, top / bottom		Bottom
6.02	make		Euromould/NKT
6.03	Cable Plug System		Outercone Type
6.04	Qty of power cables per phase per compartment	qty	Pls refer single line Dwg.
7.00	CIRCUIT BREAKER INFORMATION		
7.01	Manufacturer / Model No.		VD4X
7.02	Type of Breaker		Vacuum
7.03	Ref. IEC Standard		IEC62271-100
7.04	Rated/Max. Voltage	kV	22/24
	Rated Current	Amps	As per SLD
7.05	Rated Short-Circuit	kA	25
7.06	Short circuit-Current Withstand Time	sec	3s
7.07	Rated Breaking Current	kA	25
7.08	Rated Maximum Voltage	kV rms	24
7.09	Power Frequency Withstand Voltage	kV rms	50
7.10	Lightning Impulse Withstand Voltage	kV rms	125
7.11	Rated Transient Recovery Voltage at terminal short circuit (TRV)	kV	41
7.12	Closing Time	ms	<=60
7.13	Opening Time	ms	<=45
7.14	Arcing Time	ms	<=15
7.15	Breaking time	ms	<=60
7.16	Dead Time	min.	3 min
7.17	Spring Charged after CO		Yes
7.18	Rated Operating duty cycle		O – 0.3Sec – CO- 3min - CO
7.20	Control Voltage for Trip Coil-1 & 2 and Closing Coil	V dc	220
7.19	Control Power Voltage Range, Trip Coil	%	70% - 110%
7.20	Control Power Voltage Range, Closing Coil	%	85% - 110%
7.21	Power Consumption , Trip coil	watts	250 max
7.22	Power Consumption, Closing Coil	watts	250 max
7.23	Auxiliary Contact voltage rating	V dc	220
7.24	Auxiliary Contact current rating	Amps	10
7.25	Control Power Voltage Range, Motor for spring charged mechanism	%	85% - 110%
7.26	Stored Energy Spring Charging Motor	watts	250 W
7.27	Stored Energy Spring Charging Motor Inrush	Amps	<10
7.28	Stored Energy Time to Fully Recharge Spring	seconds	<15
7.29	Number of Close / Open Operation possible without re-charging	No.	1
7.30	Insulation Gas pressure-	bar	1.3
7.31	Method used to relieve internal overpressure due to short circuit		Rupture diaphragm
7.32	Operating pressure of pressure relief device	bar	> 2.0
7.33	Spring Charging Motor Voltage	V DC	220

X	No Exception Noted	Returned for Correction
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Line No.	DESCRIPTION	UNITS	Technical Data
8.00	Three Position Disconnecter		
8.01	Manufacturer / Model No.		UX2TE
8.02	Type of Disconnecter		3 Position Switch
8.03	Insulating Medium		SF6 Gas
8.04	Separate Compartment		Yes
8.05	Manual/Motor Operation		Manual + Motor Operation
8.06	Opening/closing time with motor mechanism	Sec	approx. 20
8.07	Disconnecter position indication		Semaphore Indication
8.08	Type of Interlocking		Mechanical
8.09	Control Power Voltage Range, Motor operated switch	%	85% to 110%
8.10	Auxillary Contacts		5NO+5NC
8.11	Disconnecter motor Voltage	V DC	220
9.00	CONTROL WIRING		
9.01	Type:		PVC
9.02	Control wire Size		1.0 Sq.mm
9.03	CT Wiring wire Size		2.5 Sq.mm
9.03	PT Wiring wire Size		1.5 Sq.mm
9.04	Interpanel Wiring wire Size		1.5 Sq.mm
10.00	CURRENT TRANSFORMERS		
	(For each type of CT, details needs to be furnished)		As per CT-VT data sheet
10.01	Manufacturer/Model Number:		Narayan Power Tech/ Tape wound
10.02	Ratio		As per SLD
10.03	Burden		As per SLD
10.04	Knee point voltage		As per SLD
10.05	Rct		As per SLD
10.06	Excitation current		As per SLD
10.07	Differential CTs:		As per SLD
11.00	VOLTAGE TRANSFORMERS		
11.01	Manufacturer/Model Number:		RITZ
11.02	Line Side VT		
	a)Part of Feeder/Separate Panel		Part of Feeder Panel
	b) Ratio		As per SLD
	c) Primary Fuse Required		No
	d) Secondary Fuse/min-breaker:		MPCB
	e) Burden		As per SLD
	f) Pluggable type		Yes
12.00	Panel Dimensions		
12.01	Incomer (Width x Depth x Height)	mm	Refer GA
12.02	Outgoing (Width x Depth x Height)	mm	Refer GA
12.03	Overall length of Complete board	mm	Refer GA
13.00	PAINTING / FINISHING		
13.01	Colour		RAL 7032

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