

**TAMCO 11kV SF6 RING MAIN UNIT
SCHEDULE OF TECHNICAL DATA**

Item no.	Description Ratings & Electrical Requirements	Unit	Performance Data*
1	General Details (Ring Main Unit)		
	Manufacturer's Name		TAMCO
	Typical layout and sectional drawing of Switchgear supplied to Australian environment		See item 12
	Ring Main Model No Designation		GR1
	Type		METAL ENCLOSED
2	Applicable Standards		IEC 62271:200
	Enclosure		IEC 62271:200
	Circuit Breaker		IEC 62271:100
	Current Transformers		AS 60044.2
3	General Performance		
	Rated Frequency	Hz	50
	Rated Voltage	kV (RMS)	11
	Highest Voltage	kV	12
	Rated Insulation Level:		
	4.1 One minute power frequency withstand voltage	kV (RMS)	28
	4.2 Impulse withstand	kV (Peak)	95
	Rated Short Time Current	kA	20
	Rated Duration of Short Circuit time	Sec	3
	Internal Arc Fault Performance	kA	20
	Time	Sec	1 (with Bursting Plate and Arc Chutes fitted)
	Standard		IEC 62271:200
	Method of Arc Extinction		Rotating Arc
4	Earth Switches		
	Type		INTEGRAL & COMBINED WITH CIRCUIT SWITCH OR CB
	Rated Short Circuit Making Current	kA	20 FOR 3 SECONDS
	Operation		MANUAL
	Extensible		YES
	Padlockable		YES
5	Busbars and Connectors		
	Rated Normal Current of:	.	
	CB	A	630
	Load Break Ring Switch	A	630
	Busbar	A	630

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6	Enclosure	Behind Closed Door Operation	
	Material		MILD STEEL (STAINLESS STEEL ENCLOSURE OPTIONAL)
	Whether switchgear is extensible		YES
	Degree of Protection		IP54
	Whether Space Heater is provided in the Switchgear		NO
	Paint Finish		CED SYSTEM CODE NO 631 TO BS 381C SEMI GLOSS FINISH
7	Circuit Breakers		
	Type of Circuit Breaker (i.e. whether Vacuum or SF6)		SF6
	Model No		GR1-01
	Type		ROTATING ARC
	Normal Rated current	A	630
	Type of Operation		STORED ENERGY, MANUAL (MOTORISED OPTION AVAILABLE)
	Method of Tripping		VIA CT OR TIME LAG FUSE
	Type of Protection		EITHER: TIME LAG FUSES or SELF POWERED RELAY OC & EF VIA CT or OC & EF RELAY WITH EXTERNAL DC SUPPLY
	Electrical Endurance of Circuit Breaker		E1 TO IEC 62271:100
	Mechanical Endurance of Circuit Breaker		M1 TO IEC 62271:100
	Short Circuit Breaking Current	kA	20 (SYMMETRICAL)
		kA	20 (ASYMMETRICAL)
	Short Circuit Withstand Current	kA	20KA FOR 3 SECONDS
	Total Break time	ms	< 50
	Closing time	ms	< 50
	Rated SF6 Gas filling Pressure (relative to CB)	bar	1.89
	Minimum SF6 Gas filling Pressure for normal operation	bar	1.2
	Whether facilities are provided for Gas pressure monitoring		YES
	Whether Gas pressure monitoring facilities are temperature compensated		YES
	In case of low Gas pressure can Gas be topped up?		YES
	Can Circuit Breaker withstand the system voltage at atmospheric gas pressure?		YES

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	Can Circuit Breaker be operated safely (load make/break) at atmospheric gas pressure?		YES
	Whether Auxiliary contacts are provided for status indication of CB		YES
	Voltage Drop across main contact at rated current	mV	< 10
	Maximum Transformer rating connectable to CB at 11 & 6.6kV	kVA	3,000
	Whether facilities are provided for padlocking		YES
	Partial Discharge level at 1.1Um	PC	< 10
8	Load Break Switch (or Ring Switch)		
	Type or Reference		GRI-10
	Rated Voltage	kV	11
	Rated Frequency	Hz	50
	Rated Normal Current	A	630
	Method of Closing		MANUAL
	Electrical Endurance of Circuit Breaker		E1 TO IEC 62271:100
	Mechanical Endurance of Circuit Breaker		M2 TO IEC 62271:100
	Rated Short Circuit Making Current	kA	20
	Breaking Capacity	kA	20 (SYMMETRICAL) 20 (ASYMMETRICAL)
	Rated short time withstand current & time	kA	20KA FOR 3 SECONDS
	Rated No – load transformer breaking current	kA	20
9	Busbar and Connectors		
	Material of Busbar and Connector		BOLTED COPPER
	Cross-sectional Area of Busbars	mm ²	240
10	Dimensions and Weights		STANDARD DRAWINGS ATTACHED
11	Cable Box		
	Type of Cable Box		AIR INSULATED
	Phase to Phase clearances in Cable Box	mm	147
	Phase to Earth clearances in Cable Box	mm	110
	Phase to Earth Over Insulator Surface (creepage distance)	mm	120
	Type of Cable Termination suited		HEAT SHRINK (RAYCHEM OR EQUIVALENT)



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12	Other Details		
	Various Configurable & Extension options available		YES
	<p>Most common configurations available:</p> <p>(a) 1 Load Break Switch only</p> <p>(b) 1 CB only</p> <p>(c) 2 Load Break Switches & 1 CB</p> <p>(d) 2 Load Break Switches & 2 CBs</p> <p>(e) Other extensible configurations possible using (a), (b) & (c) above and with use of 400mm long section of busbar extension</p> <p>Note: E</p> <p>Note: NE</p>	<p>Model No</p> <p>Model No</p> <p>Model No</p> <p>Model No</p> <p>means</p> <p>means</p>	<p>GR1-10E (DRG NO G0452-01)</p> <p>GR1-01E (DRG NO G0450-01)</p> <p>GR1-21E (DRG NO G0450-01)</p> <p>GR1-22NE (DRG NO G0451-01)</p> <p>YES</p> <p>EXTENSIBLE</p> <p>NON EXTENSIBLE</p>