

Laboratory **Testing Laboratory, Sona Electricals, 82-A, Sector-H, Industrial Area, Govindpura, Bhopal, Madhya Pradesh**

Accreditation Standard **ISO/IEC 17025: 2005**

Certificate Number **TC-6687**

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Validity **03.01.2018 to 02.01.2020**

Last Amended on 30.01.2019

Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
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ELECTRICAL TESTING

I.	TRANSMISSION LINE EQUIPMENTS AND ACCESSORIES			
1.	Current Transformer (CT) up to 33 kV rated Voltage Primary rated current: 1 A to 2000A Secondary rated current: 1A or 5A Measuring Class: 0.1, 0.2, 0.5, 1.0, 3, 0.2S, 0.5S Protection Class: 5P, 10P, 15P Special Purpose Protection Class Class PX (Class PS)	Power frequency dry withstand on primary terminals	IS 2705 (Part-1):1992 (RA 2017) IS 16227 (Part 1) : 2016 IEC 61869-1 : 2007	10 kV to 95 kV
		Power frequency dry withstand on secondary terminals	IS 2705 (Part-1):1992 (RA 2017) IS 16227 (Part 2) : 2016 IEC 61869-2:2012	1 kV to 5 kV
		Secondary winding resistance	IS 2705 (Part 2):1992 (RA 2017) IS 16227 (Part 2) : 2016 IEC 61869-2:2012	50 mΩ to 20 Ω
		Over voltage inter turn test	IS 2705 (Part-1):1992 (RA 2017) IS 16227 (Part 2) : 2016 IEC 61869-2:2012	0.1 V to 750 V 0.01 V to 3.3 kV 1.8 mA to 10 A
		Determination of composite error	IS 16227 (Part 2) : 2016 IEC 61869-2:2012 IS 2705 (Part 3): 1992	0.1 V to 750 V 0.01 V to 3.3 kV 1.8 mA to 10 A
		Instrument security current test	IS 2705 (Part 2):1992 (RA 2017) IS 16227 (Part 2) : 2016 IEC 61869-2:2012	0.1 V to 750 V 0.01 kV to 3.3 kV 1.8 mA to 10 A
		Knee point voltage and exciting current test	IS 16227 (Part 2) : 2016 IEC 61869-2:2012 IS 2705 (Part 4): 1992	0.1 to V 750 V 0.01 kV to 3.3 kV 1.8 mA to 10 A

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		Determination of current (Ratio) error and Phase Displacement	Metering (Measuring) Class:- IS 2705 (Part 2):1992 (RA 2017) IS 16227 (Part 2) : 2016 IEC 61869-2 : 2012 Protection Class:- IS 16227 (Part 2) : 2016 IEC 61869-2 : 2012 IS 2705 (Part 3): 1992	(-) 5% to + 5 % (-) 120 min to 120 min
		Verification of Terminal marking and polarity	IS 2705 (Part-1):1992 (RA 2017) IS 16227 (Part 2) : 2016 IEC 61869-2 : 2012	Qualitative Test
		Turns ratio (Current Error Measurement)	IS 16227 (Part 2) : 2016 IEC 61869-2 :2012 IS 2705 (Part 4): 1992	(-) 5% to + 5 % (-) 120 min to 120 min
2.	Voltage Transformer (VT) Alias Potential Transformer (PT)	Power frequency dry withstand test on primary terminals Subdivisions as under:-		
	Primary Rated Voltage: 6.6kV -11kV- 22kV - 33kV 6.6kV - 11kV - 22kV $\frac{6.6}{\sqrt{3}}$ $\frac{11}{\sqrt{3}}$ $\frac{22}{\sqrt{3}}$ 33kV $\frac{33}{\sqrt{3}}$	Common mode (Separate source) withstand test on primary terminals (a) For Unearthed VT (b) For Earthed VT	(a) For Unearthed VT IS 16227 (Part 3) : 2015 IEC 61869-3 :2011 IS 3156 (Part 1): 1992 (b) For Earthed VT IS 16227 (Part 3) : 2015 IEC 61869-3 : 2011 IS 3156 (Part 1): 1992 (a) For Unearthed VT IS 16227 (Part 3) : 2015 IEC 61869-3 :2011 IS 3156 (Part 1): 1992	10 kV to 95 kV/1kV 1 kV to 5 kV/0.1 kV
	Secondary voltage : 110 V or 63.5 V	Differential mode (Induced) AC voltage		1.81 kV to 95 kV/0.01kV

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Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Accuracy Class:- Measuring Class: 11kV, 22kV,33kV PTs: 0.1, 0.2, 0.5, 1.0, 3	test on primary terminals (a) For Unearthed VT (b) For Earthed VT	(b) For Earthed VT IS 16227 (Part 3) : 2015 IEC 61869-3 :2011 IS 3156 (Part 1): 1992)	1.81 kV to 95 kV/0.01kV
	6.6kVPTs: 0.2, 0.5, 1.0, 3	Power frequency dry withstand on secondary terminals	IS 16227 (Part 3) : 2015 IEC 61869-3 :2011 IS 3156 (Part 1): 1992)	1 kV to 5 kV/0.1 kV
	Protection Class: 3P, 6P	Verification of Terminal Marking and Polarity	IS 16227 (Part 3) : 2015 IEC 61869-3 :2011 IS 3156 (Part 1): 1992) IS 3156 (Part 2): 1992 IS 3156 (Part 3): 1992	Qualitative
		Determination of voltage (Ratio) error and Phase displacement	IS 16227 (Part 3) : 2015 IEC 61869-3 :2011 IS 3156 (Part 1): 1992) IS 3156 (Part 2): 1992 IS 3156 (Part 3): 1992	(-) 3 % to 3 % (-) 120 min to 120 min
3.	Combined CTVT Metering Unit Alias Combined CTPT Metering Unit Primary Current : 1 A-2000 A Secondary Current : 1 or 5 A Primary Rated Voltage: 6.6 kV to 33 kV Secondary Rated voltage : 110 V or 63.5 V	Power frequency dry withstand test on primary terminals	IS 2705 (Part-1):1992 (RA 2017) IS 16227 (Part 4) : 2015 IEC61869-4 :2013 IS 3156 (Part 1): 1992)	10 kV-95 kV/1 kV
		Power frequency dry withstand test on secondary terminals	IS 2705 (Part-1):1992 (RA 2017) IS 16227 (Part 4) : 2015 IEC61869-4 :2013 IS 3156 (Part 1): 1992)	1 kV to 5 kV
		Differential mode (Induced) AC voltage test on primary terminals	IS 16227 (Part 4) : 2015 IEC61869-4 :2013 IS 3156 (Part 1): 1992)	1.81 kV to 95 kV/0.01 kV

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	CT Accuracy: 0.1, 0.2, 0.5, 1.0, 3, 0.2S, 0.5S PT Accuracy: 11kV, 22kV, 33kV PTs: 0.1, 0.2, 0.5, 1.0, 3	CT Secondary Winding Resistance Measurement	IS 16227 (Part 2) : 2016 IEC61869-2 : 2012	50 mΩ to 20 Ω
		Over voltage interturn test on CT	IS 2705 (Part-2):1992 (RA 2017) IS 16227 (Part 4) : 2015 IEC61869-4 :2013	0.1-750 V 0.01-3.3 kV 1.8mA-10 A
		Instrument security current test	IS 2705 (Part 2):1992 (RA 2017) IS 16227 (Part 4) : 2015 IEC61869-4 :2013 IS 16227 (Part 2) : 2016 IEC61869-2 :2012	0.1-750 V 0.01-3.3 kV 1.8mA-10 A
		Verification of terminal marking and polarity	IS 2705 (Part-2):1992 (RA 2017) IS 16227 (Part 4) : 2016 IEC61869-4 :2013 IS 3156 (Part 1): 1992) IS 3156 (Part 2): 1992 IS 3156 (Part 3): 1992	Qualitative Test
		Test for Accuracy (Ratio Error & Phase Error) For CT	IS 2705 (Part-2):1992 (RA 2017) IS 16227 (Part 4):2015 IEC 61869-4: 2013 IS 16227 (Part 2):2016 IEC61869-2 :2012	(-) 5 % to 5 % (-) 120 min to 120 min
		Test for Accuracy (Ratio Error & Phase Error) For VT	IS 16227 (Part 4) : 2015 IEC 61869-4: 2013 IS 16227 (Part 3) : 2015 IEC61869-3 :2011 IS 3156 (Part 1): 1992) IS 3156 (Part 2): 1992 IS 3156 (Part 3): 1992	(-) 3 % to 3 % (-) 120 min to 120 min

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Convenor

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