

Laboratory Transformer Testing Lab, Prime Meiden Limited, Multi Product SEZ,
Menakuru Village, Naidupet, SPSR, Nellore, Andhra Pradesh

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number TC-7197 (in lieu of T-2921)

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Validity 05.04.2018 to 04.04.2020

Last Amended on 26.04.2018

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.	TRANSFORMERS & REACTORS			
1.	Power Transformers Above 2.5 MVA, 11 kV to 315MVA / 3Φ, 400kV Class & 90MVA/ 1Φ, 400 kV Class with 3Φ bank capacity of 270MVA	Winding Resistance	IS 2026 (Part 1): 2011 (RA 2016) Cl. No.10.2 IEC 60076 (Part 1): 2011 Cl. No.11.2 GOST 3484 (Part 1): 1988 Cl. No.4	1 mΩ to 100 Ω
		Voltage Ratio	IS 2026 (Part 1): 2011 (RA 2016) Cl. No.10.3 IEC 60076(Part 1): 2011 Cl. No.11.3 GOST 3484 (Part 1): 1988 Cl. No.2	1 to 300
		Voltage Vector Relationship Polarity	IS 2026 (Part 1): 2011 (RA 2016) Cl. No.10.3 IEC 60076 (Part 1): 2011 Cl. No.11.3 GOST 3484 (Part 1): 1988 Cl. No.3	Qualitative All Vector Groups
		Short Circuit Impedance and Load Loss	IS 2026 (Part 1): 2011 (RA 2016) Cl. No.10.4 IEC 60076 (Part 1): 2011 Cl. No.11.4 GOST 3484 (Part 1): 1988 Cl. No.5	4 % to 100 % 1 kW to 1000 kW

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		No Load Loss and Current	IS 2026 (Part 1): 2011 (RA 2016) Cl. No.10.5 IEC 60076 (Part 1): 2011 Cl. No.11.5 GOST 3484 (Part 1): 1988 Cl. No.6	1 kW to 250 kW 100 mA to 100 A
		Insulation Resistance & Polarization Index	IS 2026 (Part 1): 2011 (RA 2016) IEC 60076 (Part 1): 2011 GOST 3484 (Part 3): 1988	10 kΩ to 1 TΩ 500 V to 5 kV
		On Load Tap Changers	IS 2026 (Part 1): 2011 (RA 2016) Cl. No.10.8 IEC 60076 (Part 1): 2011 Cl. No.11.7	500 kVA to 315 MVA 400 kV Class
		Separate Source Voltage withstand Applied Voltage	IS 2026 (Part 3): 2009 Cl. No.11 GOST 22756:1977 IEC 60076 (Part 3): 2013 Cl. No.10	5 kV to 300 kV
		Induced AC Voltage (ACSD & ACLD) - Line terminal AC withstand voltage (LTAC) - Induced Voltage withstand (IVW) - Induced Voltage with PD (IVPD)	IS 2026 (Part 3): 2009 Cl. No.12 GOST 21023:1975 GOST 22756:1977 IEC 60076(Part-3):2013 Cl. No.11 & 12	5 kV to 630 kV 40 Hz to 200 Hz 10 pC to 1000 pC
		Magnetic Balance & Magnetizing Current	CBIP manual Section J-Cl. No.7.3 & 7.6	200 V to 600 V 1 mA to 50 A
		Lightning Impulse along with Chopping on tail	IS 2026 (Part 3): 2009 Cl. No.13 & 14 IS 2071: 2016 IEC 60076 (Part 3): 2013	20 kVp to 2400 kVp

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			Cl. No.13 IEC 60076 (Part 4): 2002 IEC 60060:2010 GOST 22756:1977	
		Switching Impulse	IS 2026 (Part 3): 2009 Cl. No.15/IS 2071:2016 IEC 60076 (Part 3): 2013 Cl. No.14 IEC 60076 (Part 4): 2002 IEC 60060:2010 GOST 22756:1977	20 kVp to 1300 kVp
		Temperature Rise	IS 2026 (Part 2): 2010 (RA 2015) IEC 60076 (Part 2): 2011 GOST 3484 (Part 2): 1988	1 kW to 1000 kW 1 A to 1000 A 15 °C to 120 °C
		Transient Voltage Transfer Characteristics	IS 2026 (Part 1):2011 (RA 2016) IEC 60076 (Part-3):2013 IEC 60076 (Part 3): 2000 Annex B	20 kVp to 400 kVp 100 V to 300 V
		Sound level	IS 2026 (Part 10): 2014 IEC 60076 (Part 10): 2016 GOST 12.2.024:1987	45 dB to 100 dB
		Harmonics of No load Current	IS 2026 (Part 1): 2011 (RA 2016) Cl. No.10.6 IEC 60076 (Part 1): 2011 Cl. No.10.6 GOST 3484 (Part 1): 1988	Fundamental to 50 th Order
		Dissipation Factor of the insulation system Capacitance & Capacitances winding to earth & between windings & for transformer bushings	IS 2026 (Part 1): 2011 (RA 2016) IEC 60076 (Part 1): 2011 GOST 3484 (Part 3): 1988	0.1 % to 2 % 100 pF to 1000 nF

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		Power taken by the Fans and Oil Pumps	IS 2026 (Part 1): 2011 (RA 2016) IEC 60076 (Part 1): 2011 GOST 3484:1988	100 W to 50 kW
		Magnetic Circuit Isolation Check of core-frame, core-tank & frame-tank insulation	CBIP manual Section J-Cl. No.7.1 IEC 60076 (Part 1): 2011	500 V to 12 kV 500 V(DC) to 5 kV(DC)
		Frequency Response (FRA)	CBIP manual Section J-Cl. No.7.5 IEC 60076 (Part 18): 2012	10Hz to 10MHz
		Zero Sequence Impedance on three phase transformer	IS 2026 (Part 1): 2011 (RA 2016) Cl. No.10.7/ CBIP manual Section J-Cl. No.6.4/ IEC 60076 (Part 1): 2011/ Cl. No.11.6	50 % to 100 %
II.	ELECTRICAL MATERIALS LIQUID DIELECTRIC MATERIALS			
1.	New Insulating Oil	Oil moisture content	IS 13567:1992 (RA 2008) IEC 60814:1997	3 ppm to 100 ppm
		Oil BDV	IS 6792:2017 IEC 60156:1995	10 kV to 100 kV
		Dissolved gas Analysis Gases	IEC 60567:2011	
		H ₂		5 ppm to 50000 ppm
		CO		1 ppm to 50000 ppm
		CO ₂		5 ppm to 50000 ppm
		CH ₄		1 ppm to 50000 ppm
		C ₂ H ₂		1 ppm to 50000 ppm
		C ₂ H ₆		1 ppm to 50000 ppm
C ₂ H ₄		1 ppm to 50000 ppm		