

Laboratory **ECE Industries Ltd. (Transformer Division), Delhi Road, Sonapat, Haryana**

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

Certificate Number **TC-6922**

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Validity **20.02.2018 to 19.02.2020**

Last Amended on --

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 (Single & Three Phase) Up to 50 MVA, 132 kV	Voltage Ratio	IS 2026 (Part 1): 2011	1 to 100
		Phase Displacement	IEC 60076 (Part 1): 2011	(-) 90° to 90°
		Vector Group	IS 2026 (Part 1): 2011	Qualitative
		Polarity Checks	IEC 60076 (Part 1): 2011	
		Insulation Resistance	IS 2026 (Part 1): 2011 IEC 60076 (Part 1): 2011 CBIP Manual-2013 Pub 317	2 MΩ to 50 GΩ at 500 V to 5 kV
		Winding Resistance	IS 2026 (Part 1): 2011 IEC 60076 (Part 1): 2011	1 mΩ to 1 kΩ at 1 A to 25 A
		No Load Loss	IS 2026 (Part 1): 2011	1 W to 50 kW
		Excitation Current	IEC 60076 (Part 1): 2011	0.0 5A to 50 A
		Short Circuit Impedance	IS 2026 (Part 1): 2011	50 V to 36 kV
		Load Loss	IEC 60076 (Part 1): 2011	24 W to 250 kW
		TAP Changer - On load	IS 2026 (Part 1): 2011 IEC 60076 (Part 1): 2011	Qualitative
		Separate Source AC Withstand Voltage	IS 2026 (Part 3): 2009 IEC 60076 (Part 3): 2013	1 kV to 500 kV
		Induced AC over Voltage	IS 2026 (Part 3): 2009 IEC 60076 (Part 3): 2013 CBIP Manual-2013 Pub 317	500 V to 400 kV
Magnetic Circuit - Isolation	IS 2026 (Part 1): 2011 IEC 60076 (Part 3): 2013 CBIP Manual-2013 Pub 317	1kV to 5 kV		
Magnetic Balance on 3Φ Transformer	CBIP Manual 2013 Pub 317	6 V to 1000 V		
Magnetizing Current at Low Voltage	CBIP Manual 2013 Pub 317	100 V to 415 V 0.05 A to 50 A		
Capacitance	IS 2026-1: 2011 IEC 60076-1: 2011 CBIP Manual 2013 Pub 317	1 pF to 0.26 μF		

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		Dissipation Factor	IS 2026-1: 2011 IEC 60076-1: 2011 CBIP Manual 2013 Pub 317	0.001 % to 10000 %
		Zero Phase Sequence Impedance on 3 Φ Transformer	IS 2026-1: 2011 IEC 60076-1: 2011	10 V to 36 kV
		Harmonics of the No Load Current	IS 2026-1: 2011 IEC 60076-1: 2011 CBIP Manual 2013 Pub 317	1 st to 31 st
		Power Taken by Fans & Oil Pump Motors	IS 2026-1: 2011 IEC 60076-1: 2011 CBIP Manual 2013 Pub 317	1 W to 100 kW
		Acoustic Sound Levels	IS 2026-10: 2009 CBIP Manual 2013 Pub 317 IEC 60076-10: 2001 IEC 60076-10-1: 2005 NEMA TR 1-2013	30 dB to 94 dB
		Temperature Rise	IS 2026-2: 2010 IEC 60076-2: 2011	50 W to 350 kW 10 °C to 110°C
		Lighting Impulse Voltage withstand - Chopped on tail	IS 2026 (Part 3): 2009 IEC 60076 (Part 3): 2013	50 kVp to 1200 kVp