

ANNEXURE-VOL-3.5
TECHNICAL SPECIFICATIONS FOR 100/5A & 200/5A RING TYPE TAPE
WOUND CURRENT TRANSFORMER

1.	SCOPE	This specification covers design, manufacture and testing of 100/5A & 200/5A ratio Current Transformers of Ring type.
2.	APPLICABLE STANDARDS	IS 2705: 1992 with latest amendment.
3.	CURRENT RATIO	a. 100/5Amp. b. 200/5Amp.
4.	BURDEN	5 VA
5.	ACCURACY CLASS	Class 0.5s
6.	HIGHEST SYSTEM VOLTAGE	660 V AC, 50 Hz.
7.	INSTRUMENT SECURITY FACTOR.	Less than 5.
8.	RATED CONTINUOUS THERMAL CURRENT	1.2 Times Continuous.
9.	a. RATED SHORT TIME THERMAL CURRENT b. RATED DYNAMIC PEAK CURRENT	3 kA r.m.s. for 1 Second. 2.5 Times the rated Short Time Thermal Current
10.	POWER FREQUENCY WITHSTAND VOLTAGE	3 kV
11.	TEMPERATURE RISE	70 Deg C Maximum.
12.	INSULATION CLASS	Class E
13.	NUMBER OF TURNS	Primary – Single Secondary – For 100/5A Ratio 20 T For 200/5A Ratio 40 T

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(B) CONSTRUCTION

CORE MATERIAL	Low loss, CRGO M4 or better grade. (Core Losses should not exceed 0.8 Watts / Kg. At 1.5 Tesla).
COPPER WIRE MATERIAL	Enameled wire as per IS 4800 Part IX.
TEST CERTIFICATE	To be Submitted.
CURRENT DENSITY AT RATED CURRENT	Minimum 1.5Amp/mm ²
OUTER INSULATION	Suitable for class E or better insulation Resin. Cast Resin CT shall be processed by hot curing method under controlled vacuum condition.
INNER DIAMETER OF CT	a. For ratio 100/5A – 30 mm Minimum. b. For ratio 200/5A – 30 mm Minimum.
POLARITY & TERMINAL MARKING	Clear Embossed / Engraved marking as P1, P2, S1 & S2
SECONDARY TERMINALS	Winding wires to be bought out with 45 cm ± 2 cm lead length. S1 lead to be provided with Red, Yellow & Blue colored PVC sleeves in one set of three CTs. S2 should be with black colored sleeve in all CTs. Secondary leads to be terminated by tinned copper crimping pins.
DIMENSION TOLERANCE	Dimension should be as per attached drawing in annexure-I. However, Party has to submit drawing for CT along with tender offer. Overall dimension tolerance to be within <u>± 10 %</u> .
NAME PLATE	Metal plate (Aluminium / Brass) with following details. Embosses or printed on it:- <ol style="list-style-type: none"> 1. Ratio, burden, system voltage, & frequency 2. Accuracy Class 3. Applicable Standard 4. B.I.L. & insulation class 5. Batch No. & Sr. No. of CT 6. Manufactures Name & manufacturing year 7. Words “PROPERTY OF PGVCL” 8. A/T Number Name plate should fixed on CT in such a way that it should not removed/ replaced.
DRAWING APPROVAL	Party must get final drawing approval from PGVCL before commencement of supply. No separate period for Drawing approval will be given.

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(C) TESTS

A. TYPE TEST REPORTS:-

Type test report as per IS 2705, 1992 must be submitted along with offer with dully certified drawings bearing all details of winding size, turns & dimensions with tolerances. All the Type Tests must be carried out on same sample unit. Type test report must not be older than 7 years from date of tender.

B. ROUTINE TESTS:-

The party has to submit following routine test certificates along with inspection call in the form of CD. This is special requirement of PGVCL.

1. Test for Verification of terminal marking and Polarity
2. Ratio Error and Phase angle test as per table 1C of IS 2705:1992 part-1

C. ACCEPTANCE TESTS:-

Party has to offer lot for inspection to PGVCL. 5% random samples shall be selected from the lot. Following acceptance tests shall be carried out on selected samples.

1. Test for Verification of terminal marking and Polarity
2. Ratio Error and Phase angle test as per table 1C of IS 2705:1992 part-1
3. Over Voltage Inter turn test
4. Verification of ISF

On successful passing of all the tests, clearance will be given to dispatch the material by the Board. From each lot of CTS offered, one set of CT shall be selected, sealed & signed & handed over to supply for onward deposit to ERDA for type testing. The testing charges shall be borne by the supplier. (bidder)

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<u>(D) TESTING FACILITIES</u>
The firm should have following Testing Facilities
<ul style="list-style-type: none">• Automatic test set up (Class 0.1 or higher accuracy) for ratio Error & Phase Angle Error Measurement with facility of Printer interface.• Standard CT of class 0.2 or higher accuracy.• Burden Box having Full & Quarter Burden at 0.8 P.F.• High Voltage Tester.• Test Facility for over Voltage Inter Turn testing. <p>All the test equipments and standard CT must be calibrated at the third party government approved/ NABL Accredited laboratory. At the stage of tender offer and along with call, Copy of the Calibration certificates must be submitted.</p>
A. List of Plant & Machinery and Test Equipments with relevant details like make, capacity, accuracy, model must be submitted along with tender offer.
<u>(E) QUALITY ASSURANCE PLAN</u>
Party must submit Quality Assurance Plan for the checks carried out at various stage from Raw material to finish goods. Documents for the checks out may be verified by inspector at the time of inspection.
<u>(F) GUARANTEE</u>
The party should guarantee for free replacement / rectification for the CT under the guarantee period of 12 months from the date of installation or 18 months from the date of supply.
<u>(G) PACKING</u>
A set of 3 CTs shall be packet in a box / carton marking serial number on each box. Serial no. of CT of one set should be as xxxxxx-R for R phase, xxxxxx-Y for Y phase and xxxxxx-B for B phase as per colored sleeve.
The material supplied shall be conforming to Indian Standard Specification and also with ISI marking and even after inspection of the lot, if the material received at site is found without ISI marking , the lot shall be rejected and no further correspondence shall be entertained in this regard.

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