



MADHYA GUJARAT VIJ COMPANY LTD.
Corporate Office : Sardar Patel Vidyut Bhavan,
5th Floor, Race Course, Vadodara - 390 007
Phone No. 0265 - 2327481 / 2310583-86/2350783(D)
Fax No.: 0265 - 2337918/2338164
e-mail :acepro.mgvcl@gebmail.com
CIN No. U40102GJ2003SGC042907



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 STANDADRD	IS 16227 (Part-I & II) with latest version available of the standard.
3.	CURRENT RATIO	a. 100/5Amp. b. 200/5Amp.
4.	BURDEN	5 VA
5.	ACCURACY CLASS	Class 0.5s
6.	SYSTEM VOL TAGE	440 V AC, 50 Hz.
	Highest SYSTEM VOL TAGE	660 V AC, 50 Hz.
7.	INSTRUMENT SECURITY FACTOR.	Less than 5.
8.	RATED CONTINUOS THERMAL Current	1.2 Times
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.	HIGH VOLTAGE POWER FREQUENCY TEST	3 kV for 1 Minute.
11.	TEMPERATURE RISE TEST	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

(B) CONSTRUCTION

CORE MATERIAL	Low loss, CRGO M4 or better grade. (Core Losses should not exceed 0.8 Watts / Kg. At 1.5 Tesla). Core construction using new and high quality CRGO core with heat resistant insulating coating. CRGO Stampings/ laminations/ cores of Ring CT (with winding/ without winding) shall be made from BIS Standard marked Grain Oriented Electrical Steel Sheet and strip conforming to IS 3024:2015.
CORE CONSTRUCTION	Core is supporting steel and insulation shall be such that harmful changes in electrical and physical properties shall not occur during the life time of the



MADHYA GUJARAT VIJ COMPANY LTD.
Corporate Office : Sardar Patel Vidyut Bhavan,
5th Floor, Race Course, Vadodara - 390 007
Phone No. 0265 - 2327481 / 2310583-86/2350783(D)
Fax No.: 0265 - 2337918/2338164
e-mail :acepro.mgvcl@gebmail.com
CIN No. U40102GJ2003SGC042907



	Ring CT. The Tenderer shall provide toroidal core only. It should be same as given in type tested unit.
COPPER WIRE MATERIAL	Enameled wire as per IS 4800 Part IX.
TEST CERTIFICATE	To be Submitted.
CROSS SECTION AREA	Minimum 1.6 mm ² .
CURRENT DENSITY AT RATED CURRENT	Minimum 1.5 Amp/ mm ² .
OUTER INSULATION	Suitable for class E or better insulation class, Electrical Insulation grade tape.
INNER DIAMETER OF CT	a. For ratio 100/5A – 30 mm Minimum. b. For ratio 200/5A – 30 mm Minimum.
POLARITY & TERMINAL MARKING	Clear marking as P1, P2, S1 & S2 with PVC Sticker.
SECONDARY TERMINALS	Winding wires to be bought out with 45 cm ± 2 cm lead length. S1 lead to be provided with Red, Yellow & Blue coloured 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	Party has to submit drawing for CT along with tender offer. Overall dimension tolerance to be within +10 %.(No negative Tolerance)
NAME PLATE	Metal plate (Aluminum / Brass) with following details. Embosses or printed on it:- <ol style="list-style-type: none">1. Ratio, burden, system voltage, & frequency2. Accuracy Class3. Applicable Standard4. B.I.L. & insulation class5. Batch No. & Sr. No. of CT6. Manufactures Name & manufacturing year7. Words "PROPERTY OF M.G.V.C.L"8. A/T Number9. Guarantee Period Name plate should be fixed on CT in such a way that it can not be removed/replaced.
DRAWING APPROVAL	Party must get final drawing approval from M.G.V.C.L before commencement of supply. No separate period for Drawing approval will be given. Sample submitted with bid will be sent for test at ERDA/Any NABL Laboratory and shall be considered for lot supply. No further change in dimension or drawing shall be allowed in lot supply.



MADHYA GUJARAT VIJ COMPANY LTD.
Corporate Office : Sardar Patel Vidyut Bhavan,
5th Floor, Race Course, Vadodara - 390 007
Phone No. 0265 - 2327481 / 2310583-86/2350783(D)
Fax No.: 0265 - 2337918/2338164
e-mail :acepro.mgvcl@gebmail.com
CIN No. U40102GJ2003SGC042907



(C) TESTS

A. SUBMISSION OF TEST CERTIFICATES:-

The Bidder has to submit the test certificates of following tests as per **IS 16227 (Part-I & II)** & latest amendments if any from any NABL Laboratory with duly certified drawings bearing all details of winding size, turns & dimensions with tolerance along with the bid. All the Tests must be carried out on same sample unit. Test report must not be older than 7 years from date of tender.[This is Mandatory]

1. Verification of Terminal marking & Polarity **[Clause No.6.13.201 IS 16227(Part1 and 2)]**
2. Determination of errors according to the requirements of the appropriate accuracy class **[Clause No.5.6.201.3 of IS 16227(Part-2):2016]**
3. Measurement of Instrument Security Factor **[Clause No.7.5.2 IS 16227(Part-2)]**
4. Power Frequency dry withstand test on Primary Winding **[Clause No.7.3.1 IS 16227(Part-1 &2)]**
5. Power Frequency voltage withstand test on Secondary Winding **[Clause No.7.3.4 IS 16227(Part-1)]**
6. Inter turn Over Voltage test **[Clause No.7.3.204 IS 16227(Part-2)]**
7. Short time Current test **[Clause No.7.2.201 IS 16227(Part-2)]**
8. Temperature Rise test **[Clause No.7.2.2 IS 16227(Part-1)]**

Over & above additional tests due to amendment in IS, if any should also be carried out.

B. ROUTINE TESTS:-

The party has to submit following routine test certificates along with inspection call in the form of CD/DVD.

1. Verification of Terminal marking & Polarity **[Clause No.6.13.201 IS 16227(Part1 and 2)]**
2. Ratio Error and Phase angle test as per table **[table 202 of IS 16227 (Part 2) :2016 amended up to date]**
3. Power Frequency voltage withstand test on Primary Winding **[Clause No.7.3.1 IS 16227(Part-1 &2)]**
4. Power Frequency voltage withstand test on Secondary Winding **[Clause No.7.3.4 IS 16227(Part-1)]**
5. Inter turn Over Voltage test **[Clause No.7.3.204 IS 16227(Part-2)]**



MADHYA GUJARAT VIJ COMPANY LTD.
Corporate Office : Sardar Patel Vidyut Bhavan,
5th Floor, Race Course, Vadodara - 390 007
Phone No. 0265 - 2327481 / 2310583-86/2350783(D)
Fax No.: 0265 - 2337918/2338164
e-mail :acepro.mgvcl@gebmail.com
CIN No. U40102GJ2003SGC042907



C. ACCEPTANCE TESTS/ TEST DURING INSPECTION:-

Party has to offer lot for inspection to MGVCL, 5% random samples shall be selected from the lot and following acceptance tests as per IS 2705 : 1992 & latest amendment shall be carried out during on selected samples.

1. Verification of Terminal marking & Polarity [**Clause No.6.13.201 IS 16227(Part1 and 2)**]
2. Ratio Error and Phase angle test as per table **202 of IS 16227 (Part 2) :2016 amended up to date]**
3. Power Frequency voltage withstand test on Primary Winding [**Clause No.7.3.1 IS 16227(Part-1 &2)**]
4. Power Frequency voltage withstand test on Secondary Winding [**Clause No.7.3.4 IS 16227(Part-1)**]
6. Inter turn Over Voltage test [**Clause No.7.3.204 IS 16227(Part-2)**]
7. Verification of ISF [**as per cl. 7.5.2 of IS 16227 (Part-2)**]

Over & above additional tests due to amendment in IS, if any should also be carried out.

Note : From each lot of CTs offered, one set of CT shall be selected, sealed & signed & handed over to supplier for onward deposit to ERDA/any NABL Laboratory for carried out following tests. The testing charges shall be borne by the supplier (bidder).

1. Verification of Terminal marking & Polarity
2. Ratio Error and Phase angle test as per table **202 of IS 16227 (Part 2) :2016 amended up to date]**
3. Power Frequency voltage withstand test on Primary Winding [**Clause No.7.3.1 IS 16227(Part-1 &2)**]
4. Power Frequency voltage withstand test on Secondary Winding [**Clause No.7.3.4 IS 16227(Part-1)**]
5. Inter turn Over Voltage test [**Clause No.7.3.204 IS 16227(Part-2)**]
6. Verification of ISF [**as per cl. 7.5.2 of IS 16227 (Part-2)**]

(D) TESTING FACILITIES

A. The firm should have following Testing Facilities

- 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.
- The secondary burden used for test purposes shall have a power factor of 0.8 lagging except that when the burden is less than 5 VA, a power factor of 1 may be used.
- High Voltage Tester.
- Test Facility for over Voltage Inter Turn testing.



MADHYA GUJARAT VIJ COMPANY LTD.
Corporate Office : Sardar Patel Vidyut Bhavan,
5th Floor, Race Course, Vadodara - 390 007
Phone No. 0265 - 2327481 / 2310583-86/2350783(D)
Fax No.: 0265 - 2337918/2338164
e-mail :acepro.mgvcl@gebmail.com
CIN No. U40102GJ2003SGC042907



All the test equipments and standard CT must be calibrated at the third party government approved /any NABL Laboratory. At the stage of tender offer and along with call,copy of the Calibrations certificates must be submitted.

B. List of Plant & Machinery and Test Equipments with relevant details like make, capacity, accuracy, model must be submitted along with tender offer.

(E) QUALITY ASSURANCE PLAN

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.

The successful bidder shall have to submit the declaration on company letter head regarding utilization of bought out raw materials conforming to relevant IS/IEC and applicable rules & regulations with latest amendments during the inspection as per format attached as **Annexure-I**.

(F) GUARANTEE

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.

(G) PACKING

A set of 3 CTs shall be packet in a box / carton marking serial number on each box. Serial no. of CT of onaset should be as xxxxxx-R for R phase, xxxxxx-Y for Y phase & xxxxxx-B for B phase as per colored sleeve.

(H) TENDER SAMPLE

The bidder has to submit Two sets of CT of each rating (total 6 nos.) along with offer at The Deputy Engineer, Divisional Store Office, MadhyaGujarat Vij Company Ltd., Lal Baug Division office, Opposite PratapnagarRailway Station, Pratapnagar, Vadodara – 390 004. The offer without submission of tender sample shall be out rightly rejected. The tender sample shall be tested for acceptance tests as per **IS 16227(Part-1 &2)**latest amendments if any at ERDA/ any NABL Laboratory.If required the sample shall be further tested for type tests as per **IS 16227(Part-1 &2)]** &M.G.V.C.L specifications. In case of failure of sample in any of the test carried out at ERDA/ any NABL Laboratory, the offer of bidder shall be considered as disqualified.



MADHYA GUJARAT VIJ COMPANY LTD.
Corporate Office : Sardar Patel Vidyut Bhavan,
5th Floor, Race Course, Vadodara - 390 007
Phone No. 0265 - 2327481 / 2310583-86/2350783(D)
Fax No.: 0265 - 2337918/2338164
e-mail :acepro.mgvcl@gebmail.com
CIN No. U40102GJ2003SGC042907



Annexure-I
(ON COMPANY LETTER HEAD)

**DECLARATION REGARDING UTILIZATION OF BOUGHT OUT RAW MATERIALS
CONFORMING TO RELEVANT IS/IEC AND APPLICABLE RULES & REGULATIONS WITH
LATEST AMENDMENTS**

Reference:

- (1) Master LOA no. _____
(2) DISCOM LOA no. _____
(3) AT no. _____
(4) Supplier inspection call letter no. _____

In connection with the above subject and reference I/ We declare & undertake the following.

I / We, _____ the under signed & authorized signatory of the Company have confirmed the technical specification & GTP of the tender no. _____ in all respect during tender process.

Accordingly, I / We hereby declare & undertake that all the bought out raw materials which are utilized in the manufacturing of the distribution transformers supplied against AT and inspection call mentioned under references are conforming to relevant IS/IEC and applicable rules & regulations with latest amendments.

I / We, declare that our supplied material is strictly in line with the tender technical specifications and GTP requirements.

Signature of the Authorized Signatory of the Supplier Seal of the Supplier

Name:

Designation:

Date:

Name of Supplier:

Address of works at which inspection conducted: