

JAIPUR VIDYUT VITRAN NIGAM LIMITED
OFFICE OF THE SUPERINTENDING ENGINEER (MM)
OLD POWER HOUSE PREMISES, BANI PARK, JAIPUR.
 TELEPHONE: 0141-2202607 / FAX:- 0141-2202025

SPECIFICATION NO.JPD/SE/MM/TN-2132 (Single Part Bid)

L.T. CURRENT TRANSFORMERS

Last date for receipt of tenders	29.03.2011 upto 2:30 PM
Date & time of tender opening	29.03.2011 at 3:00 PM
Cost of Specification	Rs. 2,500.00 per set
Validity of tenders required upto	120 days after the date of opening of tender.
Earnest money to be deposited	Rs. One Lac / Exemption Certificate or vendor registration of appropriate category.

FOR SUPERINTENDING ENGINEER(MM)

IMPORTANT NOTE :

1. Earnest Money as per clause No. 1.03 of section-I of this specification or vendor's registration with JAIPUR DISCOM under appropriate category or above as per clause 1.5.3 of GCC and cost of Bid document as per clause No. 1.02.9 of section –I **"Instructions to Bidders"**.
2. The Central and State Govt. undertaking shall be exempted from furnishing of earnest money deposit provided that they furnish a certificate / documentary evidence in support of their being Govt. (Central/State) undertaking.
3. **The tender enclosing all schedules III to IX duly completed should be furnished as per section-I "Instructions to Bidders" of this specification.**
4. The technical deviations including GTP and commercial deviations, if any, shall invariably be stated in Schedule-VI (A & B) Departure from specifications attached with this specification. **Mentioning of such deviations elsewhere will not be considered. The standard printed conditions of sales and other if any attached with the tender will not be considered.**
5. The prices offered against this specification shall be FIRM.

SCHEDULE-III

TECHNICAL SPECIFICATION FOR L.T. CURRENT TRANSFORMERS AGAINST TN-2132

3.01 SCOPE

This specification covers the design, manufacturer, testing at manufacturer's works before dispatch and delivery of single phase, 50 Hz. LT CTs at F.O.R. destination anywhere in Rajasthan.

3.02 SCHEDULE OF REQUIREMENT

The following is the requirement for LT CTs of various ratios:-

S.No.	Ratio	Quantity in Nos.
1.	100/5 Amp.	8250

The quantity mentioned above is tentative and may be increased/decreased to any extent at the time of placement of order.

3.03 APPLICABLE STANDARDS

Unless otherwise modified in this specification the LT CTs shall comply with the Indian Standard Specification IS: 2705/1992 and the latest version thereof. Equipments conforming to other internationally accepted standards, which ensure equal or better quality than the standard mentioned above, will also be acceptable and in such case the copy of standards (English Version) adopted should be enclosed with the tender. LT CTs having BIS certification shall be preferred.

3.04 CLIMATIC CONDITIONS

The equipments shall be suitable for operation under climatic conditions as mentioned in "General Conditions Of Contract" Section-2 of this specification.

3.05 TECHNICAL PARAMETERS OF L.T.CURRENT TRANSFORMERS

S.No.	Particulars	Value
i)	Nominal system voltage	415 Volts
ii)	Highest system voltage	660 Volts
iii)	Insulation level(HVPF test voltage for 1 minute)	3 KV
iv)	Frequency	50 Hz.
v)	Transformation ratios	100 /5 Amp.
vi)	Rated output	10VA
vii)	Class of accuracy	0.5S
viii)	Short time thermal current	Minimum 5KA for one second.
ix)	Rated continuous thermal current	120% of the rated primary current
x)	Instrument security factor	Shall not exceed 5
xi)	Ratio(current)error max	Shall not exceed the values prescribed in IS:2705/1992.
xii)	Phase angle error max.	Shall not exceed the values prescribed in IS:2705/1992.
xiii)	Temperature rise over an ambient temperature of 50 degree C at rated continuous thermal current(1.2 Ip).	Shall not exceed the values prescribed in IS:2705/1992.
xiv)	Current Density (max.)	1.6A / Sq.mm.

3.06 GENERAL TECHNICAL DESCRIPTION OF L.T. CURRENT TRANSFORMERS:

i) The primary of L.T. CTs may be either wound or bar type but no preference in prices shall be given one over the other. The current transformers other than 10VA burden and 0.5s accuracy class shall not be accepted. The material of primary conductor shall be copper only. Complete details of primary & secondary windings i.e. the size, number of turns, current density etc. should be furnished separately. The terminals should be complete with connecting screws, nuts and washers. The terminals of LT CTs shall be high grade copper and tin plated (with maximum current density of 1.6 Amp./ Sq.mm.)

ii) The current transformers shall be of 'Epoxy / Resin' cast type. The L.T. current transformers shall be complete with fixing arrangement and transparent terminal cover on secondary terminals with proper sealing arrangement independently. The necessary bolts, nuts, chuck nuts, washers

required for fixing arrangement and making connections at primary & secondary terminals shall be supplied in adequate size and Nos. along with each C.T. The fixing nut, bolts & washers shall be included in the scope of supply.

- i) The colour of 100 /5 Amp. shall be Red.
- ii) The size of primary strips shall be of minimum 40 mm long (from body of CT) with cross-section area of 75 sq mm for 100/5 A LT CT.

3.07 GUARANTEED TECHNICAL PARTICULARS AND DRAWINGS :

Guaranteed technical particulars in the proforma enclosed at Schedule 'V' with the specification shall be furnished along with the detailed general arrangement dimensional drawing showing fixing arrangements, connection diagrams etc., with the tender. Particulars which are subject to guarantee shall be clearly marked. The offers without complete guaranteed technical particulars and detailed drawings shall not be considered.

3.08 DRAWINGS AND INSTRUCTIONS MANUALS :

The following drawings of the type tested offered equipments covered by this specification shall be furnished by the tenderers alongwith their tenders.

- i) Outline general arrangement and sectional drawing showing all dimension and weight of each item and foundation details.
- ii) Drawings showing inside details
- iii) Name / rating plate diagram

The successful tenderers shall have to supply ten sets of operating and maintenance instruction manuals alongwith the erection manuals and requisite sets of drawings of the equipments, covered by this specification, if required. One set of above manuals and drawing shall also be sent alongwith each consignment.

3.09 TESTS :

3.09.1 Each equipment shall comply with and shall be subjected to all routine tests prescribed in relevant IS:2705/1992.

3.09.2 Certified copies of test reports of all tests with drawings duly verified obtained from any Govt./ Govt. recognized testing laboratory on similar equipment as per relevant standard in respect of various

equipments included in this specification shall be furnished along with the tender. The type test report shall not be older than 3 years from date of opening of tender.

3.09.3 In case short time current test reports on similar equipments as offered is not furnished with the offer, the tenderer shall furnish the type test report preferably for the lowest/lower ratio(s) CTs and they will have to furnish the necessary calculations on the basis of type test reports furnished to show that the offered L.T. CTs of various CT ratios are capable to withstand short circuit level as required.

3.10. INSPECTION AND TESTING :

(i) This shall be governed by clause No. 1.27 entitle INSPECTION & TESTING of General Condition of Contract (Sec.-ii) to which following is added as under :-

a) In case material/equipment is not found ready by the representative of the purchaser deputed for inspection to the extent of the quantity indicated in the inspection call with tolerance of (-) 10% or if the inspection is not got carried out `by any reasons on account of the supplier, an amount of Rs. 3,000.00 for the supplier works located in Rajasthan and Rs. 10,000.00 for the supplier works located outside Rajasthan will become payable by the supplier on this account to the Accounts Officer (MM), Jaipur Discom, Jaipur.

b) The routine tests as mentioned in IS shall be conducted (as acceptance tests) on a minimum 10% of offered quantity of each ratio of LT CTs offered for inspection subject to condition that our inspecting officer at his discretion, if he feels so, conduct routine tests on higher percentage of sample as may be deemed appropriate by him, depending on the situation.

c) The current (ratio) error and phase displacement tests for Accuracy Test (as acceptance test) shall also be conducted in presence of the purchaser's representative at your works on one sample of LT CT against each offered lot at all the four current ratings i.e. 1%, 5%, 20%, 100% & 120% specified for type test.

d) The Inspecting officer shall verify the Name Plate & marking , Data to be engraved on LT CTs and Mounting/Fixing as per clause 3.13 & 3.14 respectively.

e) One LT CT of each ratio in each offered lot of 1000 Nos. or part thereof shall be opened for verifying the diameter and cross sectional area of primary conductor including verification of GTP. The cross sectional area

should be 75 sq. mm for 100/5 A LT CT. The inspecting officer shall also verify that the size of primary strip shall be of minimum 40 mm long (from body of CT).

f) Verification of dimensions and weight as per approved drawing/ type tested drawing.

3.11 COMPLETENESS OF EQUIPMENT :

Any fittings, accessories of material which may have not been specifically mentioned in this specification, for LT CTs covered under the scope of this tender enquiry, but which are usual or necessary for the equipment shall be deemed to have been included in this specification. All equipments shall be complete in all respects whether such details are mentioned in the specification or not.

3.12 VERIFICATION OF MATERIAL AT STORES

a) One sample of LT CT shall be selected & sealed from the first lot received in Nigam's stores for getting them type tested as per relevant standard at CPRI / NABL accredited test house/ laboratory. The cost of such type tests shall be borne by the supplier. LT-CTs shall be utilized in field only after successful type test reports. In case of failure in type test(s), the order of entire quantity shall be cancelled.

b) However, purchaser may allow the supplier to re-offer the material after change/modification in the design of LT CTs. The balance material shall be accepted only after successful type testing. The payment shall be released only after receipt of successful type test reports.

c) After receipt of supplies of LT CTs, samples as below of LT CTs shall be selected from every lot received in Nigam's stores and shall be subjected to following tests at Nigam's Central Testing Laboratory (CTL), Jaipur as per relevant standard :-

- i) Instrument Security Factor Test (ISF) (on 3 Nos. samples of each lot)
- ii) High Voltage Test of 3 KV (On 10% of supplied quantity of each ratio)
- iii) One LT CT in each lot of 1000 Nos. or part thereof received in stores shall be opened for verifying the diameter and cross sectional area of primary conductor including verification of GTP.

- iv) In case test facilities for some of the tests are not available in our CTL (ISF & 3KV Test), CE(MM) has discretion to get the test conducted at any NABL accredited independent lab or not.
 - v) Over –Voltage-Inter-turn Test (OVIT test) (on 3 Nos. samples of each lot)
- d) In case the LT CTS do not meet the requirement of above tests as per ISS/Specification , the entire lot shall be rejected and supplier shall lift the rejected lot and shall replace the same at his own cost.
- e) Verification of dimensions and weight as per approved drawing/ type tested drawing.

3.13 NAME PLATE AND MARKING :

The equipment shall have a nameplate, which should be clearly visible and effectively secured against removal having markings as per requirement of ISS.

The CT ratio shall be engraved /embossed on the body of CT. In addition to above name plate of anodized aluminum indicating the necessary details e.g. ratio, name of manufacturer/ monogram & year of manufacturing etc. engraved on it shall be provided in such a manner that the information is clearly visible after mounting.

3.14 MOUNTING/ FIXING

The dimensions of base for fixing of LT CTs shall be as per details shown in the enclosed drawing at Annexure `A`.

3.15 SAMPLES :

Samples of of L.T. CTs offered shall invariably be sent so as to reach this office within 7 days of opening of tenders failing which the tender is liable to be rejected.

3.16 SCHEDULES

1. Any deviation from technical and commercial specification shall be brought out separately on deviation sheets (Schedule-VI-A & B). Deviations indicated at other place of tender shall not be entertained.

2. The delivery and commencement period shall not be linked with the time taken in approval of drawings and arranging type tests etc. Such time shall already be considered in commencement period while quoting delivery.
3. All the schedules as per tender specification shall be returned duly filled and completed.

Annexure-A**GUARANTEED TECHNICAL PARTICULARS FOR LT CURRENT TRANSFORMERS AGAINST TN-2083.**

S. No.	Particulars	M/s Adhunik Yantra udyog Pvt.Ltd. New-Delhi
1	Manufacturer's name & country of origin.	M/s Adhunik Yantra udyog Pvt.Ltd. B-2 Sara Industriasl Estate, Chakrta Road, Rampur, Dehradun.
2	Type designation.	Resin cast LT CT
3	Type of C.T.s	-
a	Bar or Wound primary	Wound type
b	Resin cast or epoxy housing.	Resin cast
c	Any other type/ details.	-
4a	Nominal System Voltage.	440 Volts
b	Highest System voltage.	660 Volts
5	Inssulation level.	3 KV
6	High Voltage power frequency with stand test voltage on	
a	Primary winding	As per IS:2705/1992
b	Secondary winding	As per IS:2705/1992
7	Frequency.	50 Hz.
8	Transformation ratio (s)	100/5 A
9	Rated output in VA	10 VA
10	Class of accuracy.	0.5 S
11	Short time current rating for 1 Sec.	5 KA for one second
12	Rated continuous thermal current.	1.2 times of rated primary current
13	Instrument security factor.	≤ 5
14	Ratio (current) error (Max.)	As per IS:2705/1992
15	Phase angle error (Max.	As per IS:2705/1992
16	Max. temperature rise of winding over ambient temperature over 50 Deg. C.	As per IS:2705/1992
17	Detail of primary & secondary windings.	
a	Material of Conductor	Copper rope/Super enamelled Copper wire
b	Size of conductor.	75 sq.mm
c	No. of turns.	3 turns in Primary and 60 turns in Secondary.

d	Any other details.	Nil
e	Material of primary terminal	Copper
f	Material of secondary terminal	Tinned Brass
18	Details of fixing arrangement.	MS clamp (2 mm thick) as per approved drawing
19	Details of terminal cover with sealing.	Acrylic transparent Cover with 1 no. MS bolt for sealing
20	Whether type test certificates/ calculations enclosed.	Yes
21	Approx. weight and size.	As per Type Tested sample.
22	Overall dimensions.	102Hx72Wx65D
23a	Class of insulation.	E
b	Insulation material used.	Epoxy resin
24	Knee Point Voltage	-
25	ISI Certificates No. & validity.	CML/8200654

		<u>Annexure-A</u>
GUARANTEED TECHNICAL PARTICULARS FOR LT CURRENT TRANSFORMERS AGAINST TN-2132.		
S. No.	Particulars	To be furnished by bidders.
1	Manufacturer's name & country of origin.	
2	Type designation.	
3	Type of C.T.s	
a	Bar or Wound primary	
b	Resin cast or epoxy housing.	
c	Any other type/ details.	
4a	Nominal System Voltage.	440 Volts
b	Highest System voltage.	660 Volts
5	Insulation level.	3 KV
6	High Voltage power frequency with stand test voltage on	
a	Primary winding	As per IS:2705/1992
b	Secondary winding	As per IS:2705/1992
7	Frequency.	50 Hz.
8	Transformation ratio (s)	100/5 A
9	Rated output in VA	10 VA
10	Class of accuracy.	0.5 S
11	Short time current rating for 1 Sec.	5 KA for one second
12	Rated continuous thermal current.	1.2 times of rated primary current
13	Instrument security factor.	<= 5
14	Ratio (current) error (Max.)	As per IS:2705/1992
15	Phase angle error (Max.	As per IS:2705/1992
16	Max. temperature rise of winding over ambient temperature over 50 Deg. C.	As per IS:2705/1992
17	Detail of primary & secondary windings.	
a	Material of Conductor	Copper rope/Super enamelled Copper wire
b	Size of conductor.	75 sq.mm
c	No. of turns.	
d	Any other details.	Nil
e	Material of primary terminal	Copper
f	Material of secondary terminal	Tinned Brass
18	Details of fixing arrangement.	MS clamp (2 mm thick) as per approved drawing
19	Details of terminal cover with sealing.	
20	Whether type test certificates/ calculations enclosed.	Yes

21	Approx. weight and size.	
22	Overall diamentions.	
23a	Class of insulation.	
b	Insulation material used.	
24	Knee Point Voltage	-
25	ISI Certificates No. & validity.	