

TENDER SPECIFICATION
NO. CLM/ES/ T - 27
WITH SKETCH NOS.
CLM/ES/SK-1/T - 27
CLM/ES/SK-2/T - 27
(TOTAL 12 SHEETS)

SPECIFICATION FOR
CURRENT TRANSFORMER
FOR
OVERLOAD TRIPPING RELAYS
FOR USE IN 25 KV, SINGLE PHASE , 50 CYCLES AC LOCOS
TYPE WANA/WAG 5A & B /WAF/WAG7.

OFFICE OF THE DY. C.E.E. (DES & DEV)
CHITTARANJAN LOCOMOTIVE WORKS
CHITTARANJAN
WEST BENGAL
INDIA

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SPECIFICATION FOR
CURRENT TRANSFORMER

चितरंजन लोकोटिक कारखाना
वी.ए.ए.ए.ए.ए.ए.
CHITTARANJAN LOCOMOTIVE WORKS
WEST BENGAL INDIA

डि. सी. ई. (डी.)
DY. CEE. (D)

क्रमांक/NO. CLM/ES/T - 27
Refn/DATE : Aug. 2000.

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SPECIFICATION FOR
CURRENT TRANSFORMER.


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CHITTARANJAN LOCOMOTIVE WORKS
WEST BENGAL INDIA
क्रमांक/NO. CLM/ES/T-27
दिनांक/DATE : Aug. 2000.

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1.0 Scope of the contract.

1.1 This specification covers the manufacture and supply of current transformers described in para 8 for installation on the 25 KV, Single phase, 50 C/S, A.C. Electric Locomotives of the Indian Railways.

2.0 Service Conditions.

2.1 As the current transformers covered by the specification are mounted on locomotives, they will be subject to considerable vibrational and buffing shocks during service.

2.2 The current transformer shall be suitable for working satisfactorily in an ambient temperature varying from 0°C to 60°C maximum relative humidity of 100%. The Locomotive shall be working in an altitude upto a maximum of 1000 metre above mean sea level.

3.0 Submission of Tender Quotation.

3.1 All tender quotations must be submitted in duplicate.

3.2 The tenderer shall ~~interalia~~ furnish the following along with the quotation.

3. 1) Technical literature in duplicate and drawing in six copies.
- ii) Full technical particulars as per data given in Annexure- I enclosed.

4.0 Approval of samples.

4.1 The supplier shall make available prototypes for inspection and tests at his works and advise the Dy. Chief Electrical Engineer (Design), Chittaranjan as and when he is ready with the prototypes unit and necessary testing and measuring apparatus and facilities for carrying out the tests.

4.2 After the above tests, if it is considered necessary by the Dy. Chief Electrical Engineer (Design) or his authorised representative to carry out any further tests or trials of the prototypes at Chittaranjan, the supplier will arrange for the same by the quickest means.

4.3 Any short comings or defects in the design and workmanship shall be pointed out after the tests, to enable the manufacturer to incorporate the necessary improvement before bulk manufacture is commenced, without affecting the guaranteed deliveries or guaranteed performance.

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SPECIFICATION FOR
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 CHITTARANJAN LOCOMOTIVE WORKS
 WEST BENGAL INDIA

संश्लि/NO. CLW/ES/T-27
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- 4.4 Any testing and approval by the purchaser of the design, working drawing and prototype shall in no way absolve the supplier of his responsibilities under the terms of the contract for the equipment supplied.
- 4.5 The supplier shall not offer any consignment of series production to the Inspector authorised under the contract until the prototype has been finally approved.

5. Conditions of contract.

- 5.1 The standard I.R.S. conditions of contract will be applicable for the supply of the current transformers.
- 5.2 Technical Documents and Drawings etc. to be supplied by the supplier as part of the contract.
- 5.3 The following drawings and documents shall be supplied by the supplier.

I. TYPE TEST REPORT OR CERTIFICATE

This shall be supplied in standard 'A4' size of sheets with punched holes for filing. It shall be suitably enclosed in a cover. Type test reports shall have to be signed both by the suppliers engineers and CLW's engineers or the Director of Inspection as the case may be. 6 copies of the type test report shall be supplied.

II. ROUTINE TEST CERTIFICATE.

This shall be supplied in standard 'A4' size of sheets with punched holes for filing. Routine test certificates shall be submitted along with individual C.T. in 6 copies.

III. DRAWINGS

The supplier shall submit at least 10 (ten) copies of drawings for each type of current transformer ordered on him within two weeks from the date of receipt of purchase order to Dy. Chief Electrical Engineer (Des. & Dev.) for approval. Any discrepancy/correction considered necessary will be indicated on the drawings and supplier shall take due note of them and effect supplies accordingly.

IV. MAINTENANCE INSTRUCTIONS

The supplier shall prepare separate maintenance instruction booklets in standard A-4 size of papers for the CT/C.Ts ordered on him. Beside maintenance instructions these books

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WEST BENGAL INDIA
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must include full technical particulars, Detailed dimensional drawing and description of any component (such as secondary screws) which may require replacement. Six (6) copies of such maintenance instructions booklets shall be furnished by the supplier to Dy. Chief Electrical Engineer (Des & Dev) alongwith the supply of first consignment of current transformer.

7.0 Guarantee.

7.1 The supplier shall give a guarantee of clear 24 months on all C.T.s. from the date of despatch of the C.T.s. Any damage or defect noticed during this period due to defective material or workmanship, will be replaced by the supplier free of cost.

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CHITTARANJAN LOCOMOTIVE WORKS
WEST BENGAL INDIA
क्रमांक/NO. CLM/ES/T-27
दिनांक/DATE: Aug, 2000

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8.0 Technical specification.

8.1 The current transformers covered by this technical specification are of the bar primary type meant to operate protective overload relays in the locomotives.

8.2 The current transformers shall be of the moulded resin type where the secondary winding is ~~en~~-capsulated in Epoxy resin (Class H insulation).

8.3 The technical particulars of the current transformers are indicated in Annexure-I

8.4 Marking

8.4.1 Rating Plate

The rating plate of the current transformers shall have the following particulars indelibly marked on it or on a label permanently secured to it in accordance with Para-5 of IS:2705/Pt.I-1992 and Para-7 of IS:2705/Pt.III-1992.

- a) A reference to ISS:2705 (Part III) - 1992
- b) Manufacturer's Name and Country of Origin/ permanent identification marks.
- c) Manufacturer's Serial number and/or type designation/ Month and year of manufacture.
- d) Rated transformation ratio.
- e) Rated frequency.
- f) Highest system voltage.
- g) Insulation level.
- h) Class of insulation.
- i) Rated accuracy limit factor following the corresponding output and accuracy class.

8.5 Terminal Marking.

The current transformers covered under this specification are single ratio transformers and terminal markings shall

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CLW/ES/T-27
Date/NO. Aug 2000

- d) Overvoltage interturn test (as per Cl. 6.5 of IS: 2705/Part-I, 1992).
- e) Determination of current error, phase displacement and composite error as per Cl. 8.2 of IS:2705/Part-III 1992.

11.3 Routine Tests.

- a) Verification of terminal markings and polarity (as per Cl. 6.1 of IS:2705 Part-I/ 1992)
- b) High voltage power frequency test on secondary winding under the conditions prescribed in Annexure-I.
- c) High voltage power frequency test on secondary winding under the conditions prescribed in Annexure-I
- d) Overvoltage interturn test (as per Cl. 6.5 of IS:2705/Part-I, 1964)
- e) Determination of current error, phase displacement and composite error as per Cl. 8.3 of IS:2705/Part-III 1992).

11.4 Special Condition

Once a prototype is approved contractor, shall not change his source of supply or sub-contractor for purchased components and sub-assemblies without CLW's approval.

11.5 CLW RESERVE THE RIGHT TO PROCURE MATERIALS ONLY FROM ISO CERTIFIED FIRMS

SPECIFICATION FOR
CURRENT TRANSFORMER.

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CHITTARANJAN LOCOMOTIVE WORKS
WEST BENGAL, INDIA
क्रमांक/NO. CLW/ES/T-27
दिनांक/DATE: Aug, 2000

ANNEXURE-I

Sl. No.	Description <u>ABBREVIATION</u>	Primary current Transformer <u>TFILH</u>	Current transformer for Aux. protection <u>REALY (Q.A.)-OFFLA</u>	Current transformer for braking excitation <u>ELM</u>
1.	Application Used alongwith- 25 KV Transformer bushing as primary to feed high voltage overload relay.		Used with bar primary to operate overload relay for protection of Aux.circuit.	Used with bar primary to operate overload relay for protection at excitation windings of traction motors during braking.
2.	Highest system Voltage (RMS)	-	660V A.C. (RMS)	2.4 KV (R.H.S.)
3.	Current Ratio	250/5 Amps.	2000/5 A/PS.	1000/5 A/mb.s
4.	Rated frequency.	50 C/s	50 C/s	50 C/s
5.	Rated output.	20 VA	30 VA	30 VA.
6.	Accuracy class	5 Ps.	1+0 5	5 Ps.
7.	Accuracy limit factor.	5	-	5
8.	Power frequency. 1 min. Test Voltage - 1) Between primary & earth, frame & secondary being connected to earth. 1.1) Between secondary & earth the frame being connected to earth.	1) 11 KV	11 KV	11 KV

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SPECIFICATION FOR CURRENT TRANSFORMER.

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CHITTARANJAN LOCOMOTIVE WORKS
WEST BENGAL, INDIA
क्रमांक/NO. **CLW/ES/T-27**
दिनांक/DATE: **Aug. 2000**

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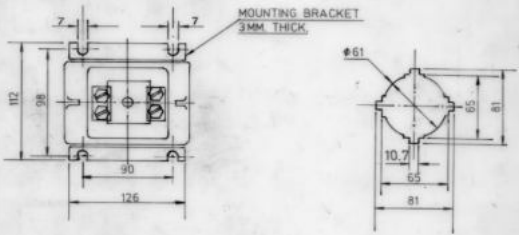
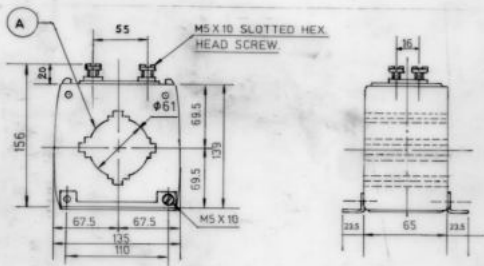
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- | Sl. No. | Description
ABBREVIATION | Primary current Transformer | Current transformer for Aux. Protection | Current transformer for braking excitation. |
|---------|---------------------------------------|------------------------------------|----------------------------------------------|---------------------------------------------|
| 9. | Limiting dimensions & window opening. | TYTIR
As indicated in SK. No. 2 | RELAY (QA) TPIA
As indicated in SK. No. 1 | ELM
As indicated in SK. No. 2 |
| 10. | Temperature Rise. | 100°C | 100°C | 100°C |
| 11. | Weight. | Preferably not to exceed 2 kgs. | Preferably not to exceed 2 kgs. | Preferably not to exceed 2 kgs. |

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क्रमांक/NO. CLW/ES/T-27
दिनांक/DATE :



DETAIL OF A

NOTE:

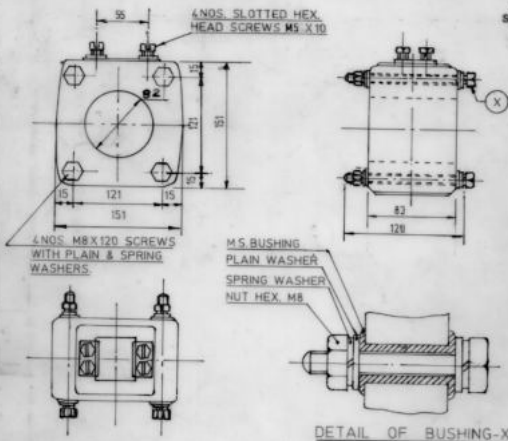
1. ALL DIMENSIONS ARE IN MM.
2. THE CURRENT TRANSFORMERS SHALL BE SUPPLIED WITH MOUNTING BRACKETS.

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**CURRENT TRANSFORMER
FOR BRAKING EXCITA-
TION & AUX PROTECTION
RELAY - QLA. (ELM & TFLA)**


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 क्रमंक/NO. CLW/ES/SK-1/T- 27
 दिनांक/DATE : AUGUST -2000



NOTE :

1. ALL DIMENSIONS ARE IN MM.
2. 4 NOS. M.S. BUSHING CADMIUM PLATED TO BE PROVIDED ON FOUR CORNERS.
3. THE CURRENT TRANSFORMER SHALL HAVE TO BE SUPPLIED WITH FIXING SCREWS AS SHOWN.

....END

**PRIMARY
CURRENT TRANSFORMER
TFILM**

(Signature)
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CHITTARANJAN LOCOMOTIVE WORKS
WEST BENGAL, INDIA
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