

BY Registered post with Ack Due:



TRANSMISSION CORPORATION OF TELANGANA LIMITED

Website: www.TGTransco.in GST No. 36AAFCT0166J1Z9 CIN No. U40102TG2014SGC094248

From
Chief Engineer/P&MM,
TGTransco, Vidyut Soudha,
Hyderabad- 500 082

To
M/s. Labcon Scientific Instruments Pvt.Ltd,
110, Malwa, Patanwala Estate,
L.B.S Marg, Ghatkopar (W),
Mumbai-400 086

SAP PO.No.4500003357/Web PO No.1003/CE (P&MM)/SE (P&MM)/DE23/TGPMM23-17/2024/D.No.47 /2025, dt:29-07-2025.

Sirs,

Sub:Tender Specification No. TGPMM23-17/2024- Supply, installation, commissioning, training of fully automatic Pensky-Martens Closed Cup Flash Point Tester including all accessories -Purchase Order-Issued-Reg.

Ref:1. Tender Specification No. TGPMM23-17/2024.

2. Your bid on e-procurement platform.

3. LOI.Lr.No.CE(P&MM)/SE(P&MM)/DE-23/TSPMM23-17/2024/D.No.40/2025,
dt.05-07-2025.

4. LOI Acknowledgement Lr.Ref.No.LSIPL/TSL/TGTransco/25-26,
Dt:22.07.2025.

-X-X-X-X-X-

I, acting for and on behalf of and by the order and direction of TRANSMISSION CORPORATION OF TELANGANA LTD., (herein after called the "TGTransco" or "the Purchaser"), accept your offer under ref.(2) cited against the Tender Specification under ref. (1) cited, for supply, installation, commissioning, training of fully automatic Pensky-Martens Closed Cup Flash Point Tester including all accessories detailed under clause (2) below, with the terms and conditions as per Tender Specification (1) and set out in this order. This detailed order is issued further to your acceptance letter under reference (4) cited to the Letter of Intent issued vide ref (3) cited.

1. SCOPE OF CONTRACT:

This contract relates to the supply, installation, commissioning, training of fully automatic Pensky-Martens Closed Cup Flash Point Tester including all accessories detailed under clause (2) below and covers design, manufacture, testing and delivery FADS.

2. SCHEDULE OF MATERIALS AND PRICES:

2.1 Prices:

All Financial Figures are in Rs.

Sl. No.	Description	Amount in Rs.
1	Ex-Works Price	16,10,000.00
2	Packing & Forwarding	0
3	Freight	0
4	Insurance	0
5	Taxable Unit Price	0
6	GST @18% on Ex-Works+Freight+Insurance	2,89,800.00
7	Unit Land Cost	18,99,800.00
8	Quantity (Nos)	1
9	Total Amount	18,99,800.00

2.2 The prices indicated above are **firm**, inclusive of Packing & Forwarding, Freight & Insurance and GST @ 18%.

2.3 It is supplier's responsibility to arrange for insurance, transportation and delivery including unloading of the material at destination Stores/site Stores.

2.4 Any variation up or down in statutory taxes, levy or new levies introduced after Tender calling date will be to the account of TGTRANSCO provided that in cases where delivery schedule is not adhered to by the supplier and there are upward variation/revision after the agreed delivery date the supplier will bear the impact of such levies and if there is downward variation/revision the TGTRANSCO will be given credit to that extent.

2.5 The purchaser reserves the right to vary the ordered quantity by +/-50% during the execution of the contract.

2.6 The price is inclusive of all incidental charges such as Packing & Forwarding, Freight and Insurance, handling, unloading and other incidentals.

2.7 Documentary proof of Freight and Insurance shall be furnished.

2.8 TCS @ 0.1% on sale amount is applicable, if company's aggregate sales consideration during the relevant financial year exceeds rupees Fifty Lakhs and total sales, gross receipts or total turnover including GST if any exceeds Rupees Ten Crores in the financial year immediately preceding the financial year of subject sales. The Payment of TCS shall be subjected to furnishing of necessary documents by the seller, which is to be verified by DDOs while processing the bills.

2.9 Further, the following also may be noted:

- i. e-invoicing (INR) is mandatory for aggregate turnover exceeds 5 crores in a financial year.
- ii. A declaration for turnover shall be submitted in case of non applicability of e-invoicing.
- iii. Copy of the GST payment challan and proof of filing GST return (the latest bill Copies of previous bill copies) shall be submitted along with the bills/invoices.

Submission of the above documents may be ensured by DDO/UO while processing the bills.

3. GUARANTEED TECHNICAL PARTICULARS:

Guaranteed Technical Particulars are as per the Annexure.

- 4. DELIVERY:** Delivery (supply, installation, testing and commissioning certificate issued by CTI/TGTransco) with observation period of the equipment shall be completed within 4 (Four) months from the date of Letter Of Intent.

5. SUPERVISION OF TESTING & COMMISSIONING:

You shall provide services of qualified personnel for the supervision of installation, testing and commissioning of equipment at site.

6. PERFORMANCE SECURITY:

- i. The supplier shall furnish to the Purchaser, the performance security for an amount equal to 10% of the total contract value i.e. Rs.1,89,980/- (Rupees One Lakh Eighty Nine Thousand Nine Hundred and Eighty Only) for proper fulfillment of the contract, which will include the warranty period and completion of performance obligations including warranty obligations. The performance security will cover 60 days beyond the date of completion of performance obligations including warranty obligations.
- ii. In the event of any correction of defects or replacement of defective material during the warranty period, the warranty for the corrected / replaced material will be extended to further period of one year over and above the warranty period and the Performance Bank Guarantee for proportional value will be extended 60 days over and above the extended warranty period. The proceeds of the performance security shall be payable to the Purchaser as compensation for any loss resulting from the Supplier's failure to fulfill its obligations under the Contract.
- iii. The performance security will be..

A bank guarantee issued by State Bank of India or its associated Banks /Nationalized Banks acceptable to the Purchaser i.e., in the name of Chief Engineer(P&MM), TGTransco, Vidyut Soudha, Hyderabad-500082, in the form provided in the bidding documents.

(OR)

A banker's cheque or crossed DD or Pay Order payable at the Head quarter of the Purchaser in favour of "Pay Officer, TGTransco" drawn in any scheduled banks payable at Hyderabad.

7. TERMS OF PAYMENT:

7

100% payment to the supplier may be arranged within 45 days reckoned from the check measurement date in Form-13 i.e. material received in good condition & installation, commissioning, testing & training in all aspect, duly transferring the said amount to the bank account of the supplier by the purchaser bank. The supplier will have to predefine the Bank Account details after receipt of LOI and before entering into contract for electronic transfer of payment.

However payment in advance may be considered by TGTransco after availing a rebate/ discount @ 0.3% per week or part thereof for the advancement depending on the availability of funds provided Xerox copies of the invoices are submitted to the purchaser along with requisition for availing advance payment soon on submission of the documents to the unit officer.

No interest will be payable in case payment is delayed for whatever reason.

- i. For Real Time Gross Settlement(RTGS), the details of your Bank Account are as follows:

ii.

1	Name of the Bank	State Bank Of India
2	Name of the Branch	Ghatkopar West Branch
3	City	Mumbai
4	Branch Code	1131
5	Account No.	10843695158
6	MICR Code	400002027
7	IFSC Code	SBIN0001131
8	Account Type	Current A/C
9	PAN No.	AAACL0870G

The Bank details as above are final and shall not be revoked under any circumstances.

- iii. The 100% payment mentioned above is subject to submission of performance security by the supplier as per the clause-39 of the Tender Specification. The bank charges will be made to the account of the supplier and charges will be recovered from the bill amount per each disbursement on LOA raised by field unit offices.
- iv. The supplier should invariably submit test certificates and other documents, the purchaser specifies as soon as dispatch is made so that they can be checked and approved well in advance.
- v. The performance guarantee to be executed in accordance with this specification will be furnished on a stamp paper of value Rs.100/-. The Bank Guarantee will be extended if required suitably in accordance with the provisions of Clause No.39.
- vi. If the supplier has received any over payments by mistake or if any amounts are due to the TGTransco due to any other reason, when it is not possible to recover such amounts under the contract resulting out of this specification, the TGTransco reserves the right to collect the same from any other amount and / or Bank Guarantees given by the company due to or with the TGTransco.
- vii. When the supplier does not at any time, fulfill his obligations in replacing/ rectifying etc. of the damaged/ defective materials in part or whole promptly to the satisfaction of the TGTransco Officers, the TGTransco reserves the right not to accept the bills against subsequent dispatches made by the supplier and only the supplier will be responsible for any demurrages, wharfages or damage occurring to the consignments so dispatched.
- viii. No payments will be made for the supplies which are not in full shape.
- ix. Freight & Insurance will only be reimbursed on submission of documentary evidence/ proofs, limiting to the documentary proof only.
- x. Any incidental charges such as stamp duty, bank charges, etc shall be to the suppliers account and any charges in relation there to shall be received from the payment due to the supplier.

CURRENCY OF PAYMENT:

All payments will be made in non-convertible Indian Rupees.

8. FREIGHT & TRANSIT INSURANCE: Insurance will be arranged by the supplier to cover transit risks and 45 days storage cover at site. The insurance will be an amount equal to 100% FADS value of equipment on all-risks basis. The policy will have a provision for extension to cover further storage if necessary at destination site at TGTransco cost.

9. RESPONSIBILITY OF THE SUPPLIER FOR LOSS OR DAMAGE:

The supplier is responsible for the safe delivery of the goods in good condition and in full shape without any shortages at the destination. He should acquaint himself of the conditions obtaining for handling and transport of the goods to destination and shall include and provide for security and protective packing of the goods so as to avoid damage in transit. External damages or shortages that are prima-facie the results of rough handling in transit or due to defective packing, will be intimated to you within 15 days of receipt of materials at stores. Internal defects, damages or shortages which cannot ordinarily be detected on superficial visual examination or those arising due to bad handling in transit or defective packing or other reasons, would be intimated to you within two months from the date of receipt of materials at stores/site.

In either case the defective / damaged materials should be replaced and the shortages made good by you free of cost to the TGTransco.

If no steps are taken within 15 days of receipt of intimation of defects or such other reasonable time as the TGTransco may deem proper to afford, the TGTransco may without prejudice to its other rights and remedies cause to be repaired or rectified the defective material or replace the same and recover the expenditure incurred thereof from the deposits such as Bid Security, Performance Security or other monies available with the TGTransco or by resorting to legal action.

For the purpose of any legal construction, the material shall be deemed to pass into TGTransco ownership only at the final destination where they are delivered and accepted.

10. PENALTY FOR DELAY IN SUPPLIES:

The time for and the dates for delivery mentioned in the contract will be deemed to be the essence of the contract. Subject to force majeure clause No.11, if the supplier fails to deliver any or all of the Materials / equipment or fails to perform the Services within the period (s) specified in the Contract, the Purchaser will, without

prejudice to its other remedies under the Contract, deduct from the Contract Price, as liquidated damages, a sum equivalent to 0.5% per week on the undelivered portion subject to a maximum of 5% of the total value of the contract. Once the maximum is reached the Purchaser may consider termination of the contract.

11. FORCE MAJEURE:

The Supplier will not be liable for forfeiture of its performance security, penalty for late delivery, or termination for default if and to the extent that its delay in performance or other failure to perform its obligations under the Contract is the result of an event of Force Majeure.

For purposes of this clause, "Force Majeure" means an event beyond the control of the supplier and not involving the Supplier's fault or negligence and not foreseeable. Such events may include, but are not restricted to, wars or revolutions, fires, floods, epidemics, quarantine restrictions, and freight embargoes.

If a Force Majeure situation arises, the supplier will promptly notify the Purchaser in writing of such condition and the cause thereof. Unless or otherwise directed by the Purchaser in writing, the Supplier will continue to perform its obligations under the Contract as far as is reasonable in practice, and will seek all reasonable alternative means for performance not prevented by the Force Majeure event.

No price variance will be allowed during the period of force majeure.

12. TERMINATION FOR DEFAULT

- a The Purchaser, without prejudice to any other remedy for breach of Contract, by written notice of default sent to the Supplier, may terminate this Contract in whole or in part:
 - i. If the Supplier fails to deliver any or all of the Materials / equipment within the period(s) specified in the Contract, or within any extension thereof granted by the Purchaser.
 - ii. If the Supplier fails to perform any other obligation(s) under the Contract.
 - iii. If the Supplier, in the judgment of the Purchaser has engaged in corrupt or fraudulent practices in competing for or in executing the Contract.
- b In the event the Purchaser terminates the Contract in whole or in part, the Purchaser may procure, upon such terms and in such manner, as it deems

appropriate, Materials/equipment or services similar to those undelivered, and the Supplier will be liable to the Purchaser for any excess costs for such similar Materials / equipment or Services. However, the Supplier will continue performance of the Contract to the extent not terminated.

13. TERMINATION FOR CONVENIENCE

The Purchaser, by written notice sent to the Supplier, may terminate the Contract, in whole or in part, at any time for its convenience. The notice of termination will specify the termination is for the Purchaser's convenience, the extent to which performance of the supplier under the Contract is terminated, and date upon which termination becomes effective.

14. TERMINATION FOR INSOLVENCY

The Purchaser may at any time terminate the Contract by giving written notice to the Supplier if the Supplier becomes bankrupt or otherwise insolvent. In this event, termination will be without compensation to the supplier, provided that such termination will not prejudice or not affect any right of action or remedy, which has accrued or will accrue thereafter to the Purchaser.

15. WARRANTY:

7

8

- i. The supplier will warrant for the satisfactory functioning of the material/equipment as per specification for minimum period 3 years from supply, installation, testing, training (in all aspects), observation period and commissioning certificate issued by CTI/TGTransco.
- ii. The Supplier warrants that the Materials/equipment supplied under the Contract are new, unused, of the most recent or current models, and that they incorporate all recent improvements in design and materials unless provided otherwise in the Contract. The supplier further warrants that all Materials/equipment supplied under this Contract will have no defect, arising from a design and / or materials as required by the Purchaser's specifications or from any act of omission of the Supplier that may develop under normal use of the supplied Materials / equipment.

- iii. All the material will be of the best class and will be capable of satisfactory operation in the tropics under service conditions indicated in clause-23.1(Tender Specification) without distortion or deterioration. No welding filling or plugging of defective parts will be permitted, unless otherwise specified, they will conform to the requirements of the appropriate Indian, British or American Standards. (Where a standard specification covering the material in question has not been published, the standards of the American Society for testing of Materials should be followed).
- iv. The entire designs and construction will be capable of withstanding the severest stresses likely to occur in actual service and of resisting rough handling during transport.
- v. The Purchaser will promptly notify the supplier in writing of any claims arising under this warranty.
- vi. "Upon receipt of such notice, the Supplier will within 30 days repair or replace the defective Materials/ equipment or parts thereof, free of cost at the ultimate destination.

The supplier will take over the replaced parts/ materials/ equipment at the time of their replacement. No claim whatsoever will lie on the Purchaser for the replaced parts/ Materials/ equipment thereafter". In the event of any correction of defects or replacement of defective material during the warranty period, the warranty for the corrected/replaced material will be extended to a further period of 12 months.

- vii. If the Supplier, having been notified, fails to remedy the defect(s) within the above period, the Purchaser may proceed to take such remedial action as may be necessary, at the Supplier's risk and expense duly deducting the expenditure from subsequent bills/ bank guarantee and without prejudice to any other rights which the Purchaser may have against the Supplier under the Contract.

16. DESPATCH INSTRUCTIONS: The material shall be consigned and dispatched as per dispatch instructions to be issued after inspection. You have to dispatch the material to R&D Lab/CTI/TGTransco/Erragadda/Hyderabad, as given in the Dispatch Instructions. The materials shall be dispatched by Road Transport through reliable transport agency with freight prepaid and duly insured. The particulars

regarding destination, consignee and paying authority will be furnished when the materials are ready for dispatch.

Materials, which are not of acceptable quantity or are not conforming to IS/IEC specified in Tender Documents or are not as per approved drawings, would be deemed to be not delivered.

17. INSPECTION:

The accredited representative of the TGTransco have access to you or your sub-contractor's works at any time during the working hours for the purpose of inspecting the materials during manufacture of the plant and equipment and testing, and may select samples from the materials going into the plant and equipment. You shall on such occasions provide proper and adequate facilities for testing the selected samples at any time. The final acceptance tests and routine tests shall be conducted in the presence of TGTransco's representative who will be deputed for the purpose.

The program of inspection is to be intimated to the TGTransco with 15 days prior notice for acceptance tests. The goods shall not be dispatched until such inspection is conducted or waived in writing and followed by dispatch clearance communicated by the purchaser in writing.

No material shall be dispatched from its point of manufacture before it has been satisfactorily inspected and tested, unless the Purchaser in writing waives off the inspection. In the later case also, the material shall be dispatched only after satisfactory testing for all tests specified as per IS/IEC has been completed and Test Certificates are approved by the Purchaser.

The acceptance tests shall be carried out on all the material offered by selecting the samples as per relevant IS/IEC specified, at random. If any sample drawn does not pass the acceptance tests, the sample will be rejected and another sample of the same material from same lot shall be selected at random to repeat the "Acceptance tests". If the second sample also fails in the same Test, the entire material of that item in that lot offered for inspection will be rejected. The acceptance of any quantity of material shall in no way relive the supplier of his responsibility for meeting all the requirements of this specification and shall not prevent subsequent rejection if material is later found to be defective.

For the equipment offered which are manufactured outside India and where testing and inspection is to be done at manufacturers works outside India the purchaser shall bear the cost for inspection and testing including to and fro charges, loading & boarding charges of the inspecting officer/officers of the purchaser.

TGTransco may at its option get the material inspected by the third party if it feels necessary and all inspection charges in this connection will be borne by the supplier.

18. INSTALLATION, OPERATION & MAINTENANCE MANUALS:

You shall submit one set of Installation, Operation & Maintenance manuals along with kit and 3 sets to this office. These Manuals shall cover the Drawings, detailed instructions with illustrations and other literature particulars relating to Operation and maintenance. These manuals shall also contain clear instructions on installation and maintenance of the equipment and recommended schedule of maintenance for the guidance of the operating staff. Any items requiring the special attention of the operation Engineer should be highlighted.

19. COMPLETENESS OF CONTRACT:

All minor accessories that are normally necessary for satisfactory and efficient operation of the equipment shall be supplied by you free of cost to the TGTransco, whether these are specifically mentioned or not in the specification, your tender schedules or in this Purchase Order and the equipment shall be complete in itself.

20. GENERAL CONDITIONS OF CONTRACT:

Except in so far as it is provided otherwise in this contract, you shall abide by the terms and conditions indicated in the specification bearing No.TGPMM23-17/2024 which includes the TGTransco's General Terms and Conditions of Tender Specification (ref 1).

21. RISK:

The risk in the property rest with the supplier till the goods are received in good condition at the destination stores and accepted.

22. PACKING:

- a) The supplier shall provide such packing of the Goods as is required to prevent their damage or deterioration during transit to their final destination. The packing shall be sufficient to withstand without limitation, rough handling

during transit and exposure to extreme temperatures, salt and precipitation during transit and open storage. Packing case size and weights shall take into consideration where appropriate, the remoteness of the Goods final destination and absence of heavy handling facilities at all points in transit.

- b) The packing marking and documentation within and outside the packages shall comply strictly with such special requirements as shall be expressly provided, including additional requirements, if any and in any subsequent instructions ordered by the Purchaser.
- c) Each package will be marked with proper paint/indelible ink with the following:
 - i) Contact No. & Date
 - ii) Quantity allotted to the stores and rate applicable
 - iii) Quantity so far supplied to the stores and the rate applied
 - iv) Quantity now supplied and the rate applied
 - v) Total quantity supplied under the contract with rates applied
 - vi) Programme for supplying the balance quantity to the Stores

23. TESTS & TEST CERTIFICATES:

All routine and acceptance tests are to be conducted strictly as per relevant IS/IEC specified.

Three copies of test certificates containing the results of all tests carried out shall be submitted to the Chief Engineer /P&MM /Vidyut Soudha and got approved before dispatch of materials.

The Supplier shall maintain all test reports of routine and stage tests conducted during manufacture. These shall be produced for verification as and when requested for by the Purchaser.

24. MATERIAL & WORKMANSHIP:

All the materials shall be of the best class and shall be capable of satisfactory operation in the tropics under service conditions without distortion or deterioration. No welding or failing or plugging of defective parts shall be permitted, unless otherwise specified they shall conform to the requirement of the appropriate Indian, British or American standards (where a standard specification covering the material in question has not been published the standards of the American society for testing of materials should be followed).

The entire design and construction shall be capable of withstanding the several stresses likely to occur in actual services and of resisting rough handling during transport.

25. INTERCHANGEABILITY:

All similar equipment and removable parts of similar equipment shall be interchangeable with each other.

26. SPARES:

You shall supply any spares required for the equipment that will be supplied under this order, whenever called upon to do so at fair prices and at the TGTransco's standard terms of payment within a period not exceeding the deliveries accepted therein.

27. DEMONSTRATION:

The equipment shall be demonstrated as per the technical specification. The Divisional Engineer/ T&D will witness the demonstration of the equipment/material and verify the features and other technical requirements mentioned at section-v of the tender specification and GTP.

28. CORRESPONDENCE:

- a) Your acknowledgement of this order and all correspondence of general or technical nature shall be addressed to the Chief Engineer/P&MM, TGTransco, Vidyut Soudha, Hyderabad-82.
- b) All correspondence regarding dispatches, payments and any other field matters shall be addressed to the concerned Paying Officer. Copies of such correspondence shall be marked to the concerned Superintending Engineer and the Chief Engineer/P&MM,, TGTransco, Vidyut Soudha, Hyderabad-82. Copies of the correspondence regarding payments should also be marked to the Pay Officer, TGTransco and to the FA&CCA (Accounts) & CFO, TGTransco, Vidyut Soudha, Hyderabad-82.

29. CONTRACT AMENDMENTS:

No variation in or modification of the terms of the contract will be made except by written amendment by the Purchaser and accepted by the supplier.

30. SETTLEMENT OF DISPUTES:

- a) If any dispute or difference of any kind whatsoever will arise between the Purchaser and the Supplier in connection with or arising out of the Contract, the parties will make every effort to resolve amicably such dispute or difference by mutual consultation.
- b) If, after thirty (30) days the parties have failed to resolve their dispute or difference by such mutual consultation, then either the Purchaser or the Supplier may give notice to the other party of its intention to commence arbitration, as to the matter in dispute, and no arbitration in respect of this matter may be commenced unless such notice is given.
- c) Notwithstanding any reference to arbitration herein,
 - (i) The parties will continue to perform their respective obligations under the Contract unless they otherwise agree; and
 - (ii) The Purchaser will pay the Supplier any monies due to the Supplier.

31. JURISDICTION:

All and any disputes or differences arising out of or touching this order shall be decided by courts or Tribunals situated in Hyderabad & Secunderabad only. No suit or other legal proceedings shall be instituted elsewhere.

32. ACKNOWLEDGEMENT:

Please acknowledge the receipt of this purchase order with your confirmation of its acceptance and the extra copies enclosed may please be returned by signing on each and every page in token of your acceptance.

Yours faithfully,

Sd/-
Chief Engineer (P&MM)

Acting for and on behalf of

T.G.TRANSOCO.

"WE ACCEPT THE TERMS AND CONDITIONS STIPULATED IN THIS P.O."

Signature of the Contractor with seal

Copy to the:

The Chief Engineer (Training)/CTI/TGTransco/Erragadda/Hyderabad.

The FA&CCA (Accounts) & CFO/TGTransco/Vidyut Soudha/Hyderabad.

The Superintending Engineer/CTI & Enq./ TGTransco/GTS Colony

/Erragadda/Hyderabad.

The SAO/Pay & accounts/TGTransco/Vidyut Soudha/Hyderabad along with Form-40.
 The Divisional Engineer/T&D/CTI/GTS Colony /Erragadda/Hyderabad.
 The SAO /CTI/TGTransco/GTS Colony /Erragadda/Hyderabad.
 The Assistant Divisional Engineer (R&D)/TGTransco/CTI/GTS
 Colony/Erragadda/Hyd.

(* *) Copy of this PO is available on <http://TGTransco.in/>

* This order is placed against the indent indicated below:

Sl. No.	Indent Reference	TOGA (No.)	Required for
1	(i) Lr.No.CE(Training)/SE(CTI&Enq)/DE(T&D)/ ADE-AEII (R&D)/D.No.60/2024,Dt:28.02.2024. & (ii) Lr.No.CE(Training)/SE(CTI&Enq)/DE(T&D)/ ADE-AEII (R&D) /D.No.77/2024,Dt:15.03.2024.	1	R&D Lab /CTI/ TGTransco/ Hyderabad.

Annexure-II

TECHNICAL SPECIFICATIONS COMPARISON Fully Automatic Pensky-Martens closed cup Flash Point tester

			M/s.Labcon Scientific Instruments Pvt. Ltd., Mumbai.
	Make		Tanaka
	Model		APM-100
1	Scope	Scope includes the supply, installation, commissioning, training of Fully Automatic Pensky-Martens closed cup Flash point tester (apparatus) including all accessories for determination of Flash Point of transformer insulating oil in R&D lab CTI, TGTRANSCO.	Confirmed to the scope of TGTransco which includes the supply, installation, commissioning, training of Fully Automatic Pensky-Martens closed cup Flash point tester (apparatus) including all accessories for determination of Flash Point of transformer insulating oil in R&D lab CTI, TGTRANSCO.
2	Test methods	ASTMD-93 (A,B&C),ISO - 2719(A&B)	Model APM 100 conforms to ASTM D93, ISO 2719 test methods.
3	Temperature Range	Up to 370°C .	Room Temperature to 370°C
4	Stirring speed	0 to 250 RPM	Stirring speed can be set from 10 to 300 rpm. Default value is 105 rpm.
5	Ignition Type	Electrical and Gas.	Gas ignition and Electric ignition.
6	Ignition interval	0.5 to 10 °C	As per test method
7	Cooling	Built in forced air (fan) latest cooling methods.	Model APM 100 has a built in fan for forced air cooling
8	Heating Rate	Selectable. Minimum of 4 different heating rates including fast pre heat mode/according to standard user defined rate.	As per test method
9	Flash Detection	Thermocouple sensor	By CRC Thermocouple
10	Temperature Sensor	PT-100 temperature probe suitable to the temperature range	PT-100
11	Extra parts required	3nos electric igniters , 2nos temperature probes (PT-100) along with calibration certificates and 1No.set sample cup with handle made up of brass	3 Nos-Electric Igniters, 2 Nos-Temperature Sensor (PT 100) along with calibration certificate and 1 No. of Test cup with handle (made of brass) has been included in the quote as per tender request.
12	Key board & printers	User friendly keyboard with touch screen along with in digital display with latest compatible printer.	7-inch touch screen facility in which there is provision for drop down key pad. However, they provide a printer with a provision to printer connection.
13	Interfaces	2Nos USB 2.0 or better as per relevant standards	USB Port x2 Nos, Eathernet x 1 No.
14	Memory	Minimum 1000 test results along with 32 GB pen drive .	More than 1000 test results can be stored in the inbuilt memory. Additional data can be stored in the USB device (32 GB Pendrive) supplied with the equipment
15	Supply voltage	Single phase, 50 Hz, 230 V ± 10%.	AC100-240V 900VA 50/60Hz

16	Working Environment conditions	Temperature : 10 °C to 40 °C, humidity : 10 to 90%	<ul style="list-style-type: none"> • Temperature: 10 to 40°C • Humidity: 10 to 90%
17	Safety	Over heat protection , igniter blown and automatic shut off etc, fire extinguishing system.	<ul style="list-style-type: none"> ① Overcut (overheat prevention) • Expected flash point +10°C(No flash) • 370°C(No flash) ② Fault diagnosis • Disconnection of Temperature Sensor • Disconnection of Flash Detector • Disconnection of Igniter etc. ③ CO2 / N2 fire extinguisher
18	Warranty	3 years from the date of successful commissioning of equipment in full shape as certified by the CTI(TGTRANSCO) .	The equipment offered will be guaranteed for a period of 36 months from the date of installation against any manufacturing defects for Temperature Probe, Flash Point Detector, Test Cup, are covered under warranty. The above guarantee would not cover the following :1) Any Mechanical damages/breakages due to wrong usage/improper power supply2) Service or repair by unauthorized personnel.3) O-Ring, Gaskets, Ignitor and CRM which has definite life time are consumables not covered under warranty
19	Accessories	All necessary accessories as per GTP and as per the design pattern shall be provided by the supplier including safety provisions and gas setup kit.	<p>The equipment will be supplied complete with:</p> <p>Main equipment with brass Test Cup assembly with handle, cover with a flash detector and a temperature probe, 2 Ignitors (Electric-1 No and Gas-1 No.), Thermofuse (5 Nos), Gas Hose 9x 16x1500mm with Hose band (1 pce), Wind screen & Instruction manual (English) (1 copy) Additional Accessories: 3 Nos- Electric Ignitors, 2 Nos-Temperature Sensors (PT 100) along with Calibration certificate and 1 No. Test Cup with handle (made of brass)</p>
20	Calibration and Testing	<p>The Test set up shall be calibrated as required and adopted in the latest international standards. Calibration shall be done with CRM (certified reference material).</p> <p>Testing of oil sample which are having flash point range from 300°C to 370°C, shall be performed in the equipment at R&D Lab. The same test for 5 samples shall be repeated.</p>	<p>They will arrange pre-tested samples between the range 300°C to 370°C(3 to 5 Samples) and test it on the installed equipment to establish the ability of the equipment to detect Flash Point of samples between the range of 300°C to 370°C. Alternatively, the Power grid lab also can provide pretested samples in TGTransco lab which can be tested in the unit to establish the capability of the equipment to test samples in that temperature range. 3 bottles of CRM with different temperature range will also be supplied with the equipment for calibration of the equipment. The ignitor power out can be checked and corrected during the calibration stage.</p>
21	Observation period	Observation period treated as testing samples for 100 Nos or 1 month period which is earlier from complete testing, installation and including training. After completion of satisfactory observation period CTI/ TGTRANSCO will issue the necessary commissioning certificate.	During installation the calibration can be performed and proper working can be established with reference standards and customer's pre tested samples. Observation period can be maximum 10 days or 100 samples whichever occurs earlier.
22	Service Support along with accessories	<p>The supplier shall give a certificate that, service support including all necessary spares will be available for next 15 years after expiry of warranty period. The supplier shall enclose the details of EGS etc. along with the tenders document.</p> <p>If the equipment / any component need to be shifted to suppliers works for repairs,</p>	Yes confirmed

		supplier will have to bear the cost of, spares, software, transportation etc of equipment for repair at test lab/works during warranty period.	
23	Training	The supplier shall arrange complete hands on training by an application scientist/Engineer, who acquired technical & academic capacity of the principle company, in the premises of our Laboratory for a period of three working days. The required O&M Manuals either reading materials/CDs in 5Nos shall be arranged by the supplier during supply of equipment.	Yes confirmed
24	Documentation	Supplier shall define the list of materials comes under consumables and spares which covered in warranty period.	1) Temperature Probe, Flash Point Detector, Test Cup are spares covered under warranty 2) O-Ring, Gaskets, Ignitor and CRM which has definite life time are consumables not covered under warranty

Sd/-

Chief Engineer / P&MM