

Dr. Babasaheb Ambedkar Technological University,

P.O. LONERE - 402 103 , Tal. Mangaon, Dist. Raigad

Our Ref No.: DBATU/STORES/Chem. Engg/Characteristic of P.I.D. Controller and Time Constant of Manometer, Thermometer and Thermocouple/2023-24/ 2869
Date: 26/10/2023

04 NOV 2023

Quotation for Characteristic of P.I.D. Controller and Time Constant of Manometer, Thermometer and Thermocouple
Due On: 20/11/2023

Date of Opening: 21/11/2023

Time: 11:30 a.m.

To,

Sub: QUOTATION FOR THE SUPPLY OF STORES

Dear Sir,

Your quotation for the items listed overleaf, may please be submitted to the under signed, so as to reach this Office not later than. **20/11/2023** up to 11:00 a.m.

While submitting your quotation, the following procedure may please be observed and other points borne in mind.

01. The maker's name must be specified.
02. The "Terms and Conditions" for supply and delivery of stores, should be clearly indicated in the quotation, stating whether rates are, inclusive of all taxes, Packing and forwarding charges Freight charges etc. or not, However rates offered as including all taxes will be more welcome.
03. If packing and forwarding charges are to be charged separately, it should be so clearly stated in your quotation.
04. Please mention clearly whether consignment would be Ex-Godown, Ex-Shop, of F.O.R. dispatching stations. Preferably terms offered as "Delivery of consignment of stores, on F.O.R."
05. Envelope should be clearly marked with our reference No and date of this quotation. It should also be superscripted as per the format given above.
06. The quotation would be opened as per date and timing given above, if desired by you, you may depute an authorized representative with a letter of authority to be present at the time of opening of the quotation at this Office on the aforesaid day, date & time.
07. Your quotation must be valid for a minimum 30 (Thirty) working days from the date of it's opening.
08. Quotation received after the date of opening may not be taken into consideration.
09. Items tendered should confirm to the specification shown in the attached list when and where, full or no specifications are indicated against items in the list. Kindly furnish your full specification in accordance with accepted standards against each item tendered. Where reference to catalogue is made, the relevant catalogues/ Pamphlets/ Literature should accompany the quotation.
10. Your quotation should be for all new items and not for second hand.
11. Please state whether items will be available Ex-Stock. If not the minimum period for delivery, or for supplying the items or stores.
12. It should be clearly stated whether GST Insurance Freight or packing and forwarding charges, or any other taxes and duties etc. leviable.
13. It would be appreciated if illustrated catalogues/Literature etc are furnished with the quotation.

14. Expression to as "Complete with standard Equipment" complete with standard accessories "Equipment to" As good as should be avoided. If at all their use is unavoidable then it should be very specifically indicated as to what exactly they mean and what exactly would be supplied under them. Any ambiguity or vagueness should be avoided.
15. For convenience, kindly adopt while quoting the same serial Nos. as given in the list detailed below.

Thanking You.

Yours faithfully,



Registrar

Dr. Babasaheb Ambedkar Technological University,

List of Items

Sr. No	Description / Specification	Make	Approx. Qty. Req.	Rate per Unit	Remarks
1	<p>Characteristic of P.I.D. Controller:</p> <ol style="list-style-type: none"> 1) PID Controller should be operated on Auto Tune mode in which controller automatically fixes the value of P, I and D. 2) Stirred Tank made of Stainless Steel 304 Grade, Capacity 2 Ltrs should be fixed with Stainless Steel Impeller made 304Grade and shaft coupled with FHP Motor and fitted with Nichrome wire heater. 3) Flow measurement should be done by Glass tube Rota meter, it should be Eureka make 4) Temperature Sensor of RTD PT-100 types should be provided to measure temperature. 5) One ceramic bare sensor must be welded on test directly. There should be no other material in between ceramic sensor and test specimen to avoid any losses. 6) Equipment has to be demonstrated at college site, results should be repeatable within $\pm 5\%$ of the sample calculations provided. 7) The whole set-up should be well designed and arranged on a rigid structure painted with industrial PU Paint. 8) Operating/instruction manual consisting of experimental procedure, block diagram etc. and sample calculations should to be provided along with the documents. 		01		

9) The company should also mention the list of experiments etc. possible with this equipment for the students and it should have proven track record of supplying such equipments to premier institutions. The company can also provide client list with PO copies.

2 Time Constant of Manometer, Thermometer and Thermocouple:

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• **Time constant of manometer**

1) Manometer: Material Borosilicate glass U tube type : Height 1.0m(U tube manometer: 5mm & 22mm).

2) Pressure regulator : 0-2kg/cm²

3) Stopwatch : Electronic

• **Time constant of thermocouple and thermometer**

1) Heat Source: Provided with ceramic insulation.

2) Electrical Coil : Two Coil, at least 3kW

3) Temp. Controller: Digital Temp. Controller(0-199.90 C)

4) ICT Pot : Compatible capacity

5) Beeper : Time setting Range 2 to 10 sec

6) Thermometer : Glass thermometer(-10-1000 C)

7) Thermocouple : K Type thermocouple

8)Equipment has to be demonstrated at college site, results should be repeatable within $\pm 5\%$ of the sample calculations provided.

9)An instruction manual consisting of experimental procedures, block diagram etc. will be provided along with the Apparatus.

10)The whole set-up is well designed and arranged on a rigid structure painted with industrial PU Paint.

11) The company should also mention the list of experiments etc. possible with this equipment for the students and it should have proven track record of supplying such equipments to premier institutions. The company can also provide client list with PO copies.