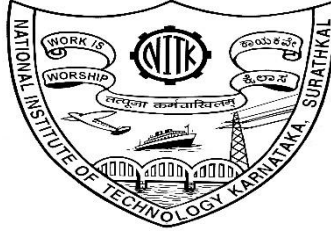


# NATIONAL INSTITUTE OF TECHNOLOGY KARNATAKA, SURATHKAL

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING  
POST SRINIVASNAGAR, MANGALORE – 575 025 (D K)

Phone: (0824) 2474000.  
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## NOTICE INVITING QUOTATION

Notification. No: NITK/EED/1160

Dated: 05/06/2024

Name of Goods	<ul style="list-style-type: none"> <li>• Time Response of Second Order System Kit</li> <li>• PID Trainer System Kit</li> </ul>
Estimated Amount:	Rs. 1,20,000.00
Time for Supply of item after release of Purchase order	10 Days
Document Download / Sale Start Date	25/06/2024
Clarification Start Date	25//06/2024
Clarification End Date	02/07/2024
Bid Submission Start Date	25/06/2024
Last Date for submission of bids	16/07/2024 before 3.00 PM
Bid Opening Date	16/07/2024
Address for Submission of bids	Department of Electrical and Electronics Engineering National Institute of Technology Karnataka, Surathkal Srinivasnagar, Mangalore-575025.Karnataka, India. Abhishek Maruti Pawar <a href="mailto:abhishekpawar4553@gmail.com">abhishekpawar4553@gmail.com</a> 9420681881



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**Notification No: NITK/EED/1160/DOC-4**

**Date:05/06/2024**

**NOTICE INVITING QUOTATION (NIQ)**

The National Institute of Technology Karnataka, Surathkal (in short – NITK, Surathkal) is an Institute Of National Importance Under Ministry of Education Govt of India, imparting Technical Education and engaged in Research Activities. It is proposed to procure the items for the departmental academic/research activities.

Sealed Quotations as per the Price Schedule given in this NIQ are invited for the following items subject to the terms and conditions, from the reputed manufacturers or its authorised dealers so as to reach on or before scheduled date and time. The quotations in the firm's Business letter head should be address to the "Director, NITK, Surathkal". The envelope shall be superscribed with the Quotation Notification Number and the Name of the Goods for which quotation is submitted.

<b>Name of Goods</b>	<ul style="list-style-type: none"><li>• Time Response of Second Order System Kit</li><li>• PID Trainer System Kit</li></ul>
<b>Estimated Amount:</b>	<b>Rs. 1,20,000.00</b>
<b>Time for Supply of item after release of Purchase order</b>	<b>10 Days</b>
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<b>Bid Submission Start Date</b>	<b>25/06/2024</b>
<b>Last Date for submission of bids</b>	<b>16/07/2024 before 3.00 PM</b>
<b>Bid Opening Date</b>	<b>16/07/2024</b>

Sd/-

**[Signature of HOD with Seal]**

Note: Institute shall not be responsible for any postal delay about non-receipt /non-delivery of the bids or due to wrong addressee.

**SECTION-1**  
**Terms and Conditions**

1. The rates should be quoted for preferably FOR destination from supply within India.
2. The bidder shall indicate the excise duty exemption for the goods if applicable.
3. The rate quoted should be on unit basis. Taxes and other charges should be quoted separately, considering exemptions if any. The rate should be quoted in INR only
4. Rate quoted should be inclusive of Testing, commissioning and Installation of equipment and Training.
5. Payment: No advance payment will be made. Payment will be made only after the supply of the item in good and satisfactory condition and receipt of performance security by supplier.
6. Guarantee/Warranty period should be specified for the complete period should be specified in section 3 of this tender document.
7. Period requirement for the supply and installation of item should be specified in section 3 of this tender document.
8. In case of dispute, the matter will be subject to Mangalore Jurisdiction only.
9. **Liquidated Damages**: Timely delivery is the essence of the contract and hence if the Supplier fails to deliver Goods within the original/extended delivery period(s) specified in the contract, the Institute will be entitled to deduct/recover the Liquidated Damages for the delay, unless covered under Force Majeure conditions aforesaid, **@ 1% per week or part of the week of the delayed period** as pre-estimated damages not exceeding 5% of the contract value without any controversy/dispute of any sort whatsoever.

**SECTION-2**  
**SCHEDULE OF REQUIREMENTS, SPECIFICATIONS AND ALLIED DETAILS**  
[ To be filled up by the Department / Centre of NITK, Surathkal]

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Item(s) Name to be Procured	: <b>Time Response of Second Order System Kit PID Trainer System Kit</b>
Brief Specifications of the Item(s) (Attach Additional Sheet if necessary)	: <b>Additional Sheets Attached</b>
Quantity	: <b>2 Each</b>
Any other details / requirement	: <b>As Per Standards</b>
Warranty Period required	: <b>1 Year</b>
Delivery Schedule expected after placement of Purchase order <b>(In Weeks)</b>	: <b>10 Days</b>

**SECTION 3  
PRICE SCHEDULE**

[ To be used by the bidder for submission of the quotation]

- 
1. Item Name :
  2. Specifications  
(Conforming to Schedule of requirements  
Enclose additional sheets if necessary) :
  3. Currency and Unit Price :
  4. Quantity :
  5. Item Cost (Sl No. 3 \* Sl. No. 4 ) :
  6. Taxes and Other Charges :  
(i) Specify the type of taxes and duties  
in percentages and also in figures.  
(ii) Specify Other Charges in figures.
  7. **Warranty Period** :  
**(Conforming to the Schedule of requirements)**
  8. Delivery Schedule :  
(Conforming to the Schedule of requirements)
  9. Name and address of the Firm for  
placing purchase order :
  10. Name and address of Indian authorized  
agent ( in case of imports only) :

**Signature of the Bidder:** \_\_\_\_\_

**Name and Designation:** \_\_\_\_\_

**Business Address** : \_\_\_\_\_

\_\_\_\_\_

**Place:**

**Date:**

**Seal of the Bidder's Firm**

**SECTION 4**  
**CONTRACT FORM**

[ To be provided by the bidder in the business letter head]

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1. (Name of the Supplier's Firm) hereby abide by the delivery schedule mentioned in this document for supply of the items if the purchase order is awarded.
2. The item will be supplied conforming to the specifications stated in this document without any defect and deviations.
3. Warranty will be given for the period mentioned in this document and service will be rendered to the satisfaction of NITK, Surathkal during this period.

**Signature of the Bidder:** \_\_\_\_\_

**Name** : \_\_\_\_\_

**Business Address** : \_\_\_\_\_

\_\_\_\_\_

**Place :**

**Date :**

**Seal of the Bidder's Firm**

## **Time Response of Second Order System Kit**

Time Response of second order system + validation for Simulink experiments

- \* Single order process four numbers
- \* Provision to study the I<sup>st</sup>, II<sup>nd</sup>, III<sup>rd</sup>, IV<sup>th</sup> order response
- \* Multi color test points provided for various place and mimic diagram
- \* Inbuilt power supply, Necessary patch chords
- \* Metal Front Plate with schematic diagram sticker
- \* Power coated Tapper Metal cabinet (Beading - Handle)

## **Data Acquisition System**

- ADC : 1 channel
- DAC : 1 channel
- Input : (0-5) V
- Output : (0-5) V
- Communication : USB
- Baud Rate : 2400 – 38,400
- Sampling time : 0.15 Second/time
- Software Compatible: MATLAB, VB.net
- Powerful PID Controller
- PV, SP and CV value displayed under windows, having the experimentation, PID Control, Set Point, Online parameter settings, Data Logging, Trend plot, Report generation and printing

## **PID Trainer System Specifications**

- Built-in Function generator (Square Wave)
- Self-contained Power supplies and Power ON/OFF switch
- Full mimic diagrams in the front panel
- The simulated process # Simple integrator of 10ms, 2 lags of the time constant 10ms
- The Simultated PID Controller

# Integral action control scaled in integral action time as per requirement.

# Derivative action control scaled in derivative as per requirement

# Proportional band control scaled in % proportional band as per requirement

- Metal front Plate with schematic diagram sticker
- Powder coated Tapper Metal cabinet (Beading – Handle)

### **SPECIFICATIONS PROCESS:**

- Time constant of simple lags – 10ms (Fast)
- Time constant of Integrators – 10ms (Fast)
- Set value Range – (0-5) V