

 <p>IIT PALAKKAD</p>	<p>भारतीय प्रौद्योगिकी संस्थान पालक्काड Indian Institute of Technology Palakkad अहलिया एकीकृत कैम्पस, कोज़िपारा Ahalia Integrated Campus, Kozhipara पालक्काड- 678557 Palakkad – 678 557</p>	<p>दूरभाषसंख्या/ Phone no: 04923 – 226300/590/586</p> <p>ईमेल/ Email : purchase@iitpkd.ac.in</p>
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Ref No: IITPKD/MECH/PSM/129/2017

Date: 01.03.2018

Due Date of the tender: 15.03.2018 @ 3 PM

TENDER FOR INVITING QUOTATIONS

Dear Sir,

On Behalf of Indian Institute of Technology Palakkad quotations are invited for “Piezo Electric and Piezo Resistive Sensors” confirming to the specification in the Annexure.

1. **Preparation of Bids:** - The tenders should be submitted **under two-bid system** (i.e.) Technical bid and Financial bid. The technical bid should consist of all technical details along with commercial terms and conditions. No prices should be included in technical bid. Financial Bid should indicate item – wise prices for the items mentioned in the technical bid. The technical and the financial bids should be put in separate cover and sealed. Both sealed covers should be put into a bigger cover.
2. The Quotations duly sealed and superscribed on the envelope **with the reference No. and due date, should be addressed to the undersigned so as to reach him on or before the due date stipulated above. Fax and Email quotation are not acceptable.**
3. The price should be quoted per unit and packing and delivery charges should be indicated separately. The offer/bids should be exclusive of Taxes and Duties, which will be paid by the purchaser as applicable. However the percentage and of taxes and duties as on date should be clearly indicated.
4. The Quotations should be valid for **sixty days** from the due date and the period of delivery required should also be clearly indicated.
5. **Local Firms:** Quotations should be for free delivery to this Institute. If Quotations for Ex-Godown delivery charges should be indicated separately.
6. Outside Palakkad: Quotations should be for **F.O.R. at IIT Palakkad**. If F.O.R. consignor station, freight charges by passenger train / lorry transport must be indicated. If Ex-Godown, packing, forwarding and freight charges must be indicated.
7. Goods shall not be supplied without an official supply order.

8. **Custom Duty:** Custom Duty which will be paid at a concessional rate against duty exemption certificate. The price indicated should be CIF/CIP Kochi.
9. **Concessional GST@ 5% will be paid extra against Government Notification No.47/2017, dated 14.11.2017**
10. **Payment:** Every attempt will be made to make payment within 30 days from the date of receipt of bill / acceptance of goods, whichever is later. No advance payment will be made. The Tenderer have to furnish the bank details along with tender like Account No, Account Name, IFSC Code, Bank address etc.
11. **Submission of Bids:** Quotation should be sent to the following address "**The Registrar, Indian Institute of Technology Palakkad, Ahalia Integrated Campus, Kozhipara, Palakkad -678 557, Kerala**", Phone No: 04923 226 586/590, Email: purchase@iitpkd.ac.in.
12. **Delivery Period:** The quotation should indicate clearly when delivery and installation to be made.
13. **Delay in Supply or Liquidate damages:** If the supplier fails to deliver the stores within the time specified in the purchase order, the purchaser will recover from the supplier as liquidated damages a sum of **one- half of one percent (0.5%) of the P.O value of the undelivered stores for each calendar week of delay. The total liquidated damages shall not exceed five percent (5%) of the P.O price of the unit or units so delayed. Stores will be deemed to have been delivered only when all their component parts are also delivered. If certain components are not delivered in time, the stores will be considered as delayed until such time as the missing parts are delivered.**
14. **Late offer:** The quotation received after due date will not be considered. Please ensure that your offer is sent well in advance to reach the Institute by the due date.
15. **Loading and unloading charges will be borne by the supplier.**
16. **Warranty:** Warranty Clause should be indicated clearly.
17. **Acceptance and Rejection:** IIT Palakkad has the right to accept the whole or any parts of the Tender or portion of the quantity offered or reject it in full without assigning any reason.

Yours faithfully,



Registrar, IIT Palakkad

Encl: Specifications



PIEZO ELECTRIC AND PIEZO RESISTIVE SENSORS

Detailed Specifications

1. 0-250 bar (overload 300 bar) uncooled Piezoelectric sensor capable of flush mounting on the cylinder head for SI and CI engine for in-cylinder pressure measurement having sensitivity of greater than 15 pC/bar, linearity less than 0.3 % FSO, shock resistance greater than 1600 g, operating temperature range of -20 to 350 °C.
2. 0-3000 bar (overload 3500 bar, natural frequency greater than 200kHz) **piezo resistive line pressure sensor** suitable for static and dynamic pressure with robust diaphragm and front seal for injection systems of combustion engines sensitivity of greater than 15 pC/bar, linearity less than 0.3 % FSO, shock resistance greater than 1600 g, **with suitable Amplifier**). Suitable for static and dynamic pressure.

Scope of Supply

- The proposed system shall consist of the following major equipment:
- One Piezoelectric sensor suitable for cylinder pressure measurement on any modern turbocharged automotive SI and CI engine. The vendor should ensure that the offered sensor can be flush mounted on the above mentioned engine's cylinder head. Any special tools needed have to be offered and prices are to be indicated separately.
- One Piezo resistive line pressure sensor with suitable accessories along with proper tools .

Installation, Commissioning and Training:

- a) The installation and commissioning of the equipment at site would be the responsibility of the vendor. Mounting of all sensors to the test engine would be the responsibility of IITPKD.
- b) Training on the complete system including software shall be given by the supplier.

Delivery Schedule

The system should be supplied within 12 weeks from the date of technically and commercially clear Purchase Order.

Warranty

The vendor should provide a warranty for at least 12 months from the date of commissioning of the setup.

Pre-Qualification Requirements:

- The vendor must have supplied at least 20 systems of same model of base equipment which includes the sensors and all relevant electronics and indication system in reputed automotive research and development laboratories of government funded institutions or research and development divisions of leading automobile industries during the past 1 year. The vendor should provide the details of organizations where such systems have been supplied.
- The vendor should be the manufacturer of the system supplied. If the manufacturer is a company outside India then the vendor should be the sole subsidiary of the manufacturer in India and due proof of the same has to be enclosed with the quotation. No agents/representatives will be accepted.
- The vendor should have their Service Centre in India and trained personnel for after-sales service. Vendor has to submit the complete details of the service set up.
- The vendor should clearly indicate the terms of warranty along with their quote.