Ref. No.: IISc/CE/Tender/2023/Domestic. Date: 20th September 2023

Tender Notice for Procurement of 6-Axis High-Precision Force-Torque transducers from Domestic Manufacturers.

(Last Date for Submission: 11th October 2023)

(TENDER FROM DOMESTIC VENDORS)

Date: 20 September 2023

Dear Sir/Madam,

This is a Request for Quote (RFQ) from Class I and Class II local suppliers/manufacturers only for the procurement of miniature 6-axis high-precision force-torque transducers for the Department of Chemical Engineering at the Indian Institute of Science (IISc), Bangalore.

Only the Indian Original Equipment Manufacturer (OEM) or their distributor shall submit a response demonstrating their capabilities to produce the requested equipment to the primary point of contact listed below. The quotations should be on FOR-IISc Bangalore basis in INR only.

With respect to this tender, the rules laid out by the Government of India in order No. P45021/2/2017- pp-BE-II issued by the Public Procurement Section, Department or Promotion of Industry and Internal Trade, Ministry of Commerce, and Industry, dated 4th June 2020 will be followed. The bidders must go through the Government of India order stated above and follow all the rules and regulations therein. Relevant definitions as per Government of India order:

Class-I local supplier - A supplier or service provider, whose goods, services or works offered for procurement, has local content equal to or more than 50%.
Class-II local supplier - A supplier or service provider, whose goods, services or works offered for procurement, has local content more than 20% but less than 50%.

Bidders offering imported products will fall under the category of non-local suppliers. They cannot claim themselves as Class-1 local suppliers/Class-2 local suppliers by claiming the services such as transportation, insurance, installation, commissioning, training, and other sales service support like AMC/CMC, etc., as local value addition.

Purchase preference as defined by the recent edits to GFR (within the “margin of purchase preference”) will be given to the Class-1 supplier.

MSMEs can seek an exemption to some qualification criteria. IISc follows GFR2017 for such details.

The tender should be submitted in two separate sealed envelopes: one containing the technical bid and the other containing the commercial bid, both of which should reach us, duly signed on or before 11th October 2023, 5PM. The bids should be addressed to:

The Chairman,
Department of Chemical Engineering
Indian Institute of Science
Bangalore 560012, India.
Kind attention: Dr Prabhu R Nott, Chemical Engineering
Email: chair.ce@iisc.ac.in, prnott@iisc.ac.in

Technical Specifications for miniature High Precision 3-Axis Force and Torque Transducer

- 6-axis semiconductor strain gauge-based force-torque transducer.
- The transducer must be capable of measuring one normal force, two tangential forces and 3 orthogonal torques on the sensing surface.
- The sensing range of the forces must be at least 0 - 17 N for the normal force, 0 - 12 N for the tangential forces and 0 - 0.12 Nm for the torques.
- The transducer must be able to withstand overload of ±250 N in each direction of force and ±1.6 Nm in each direction of torque.
- The resolution must be at least 4×10^{-3} N for the forces and at least 2×10^{-5} Nm for the torques.
- All forces and torques must be simultaneously measurable.
- The transducer must be housed in a monolithic housing of high yield-strength stainless steel. An EDM wire-cut housing is highly preferable.
- The transducer must be temperature compensated for operation in the temperature range 0 - 60°C.
- The transducer must be calibrated and the calibration must be traceable to a known national or international standard.
- The size of the transducer must not be greater than 18 mm diameter and 15 mm length/height.
- A DAQ interface unit that amplifies, filters noise, and conditions the signals from the transducer so that the can be fed to a DAQ board on a PC must be supplied. It must include all required power supplies and cables.
- A software must be provided to convert the 6 voltages to the individual forces and torques.

Terms and conditions:

- **Warranty:** The system should have a minimum warranty of one year from the date of installation and commissioning of equipment.
- **Delivery:** The price should include delivery to the Indian Institute of Science.
  Department of Chemical Engineering
  Indian Institute of Science
  Bangalore - 560012
  Karnataka, India.