



Department of Electrical Engineering
Indian Institute of Technology Madras
Chennai – 600 036, India

Prof. Krishna Vasudevan
Electrical Engineering Department

Ref: No. IITM/AMTDC/16-17/RFQ/012

DATE: 10.4.2017

Due date : 25.04.2017

Dear Sir,

1. Quotations are invited in duplicate for the various items shown below/overleaf/enclosed list.
2. The quotations are to be in envelope duly sealed and super scribed with reference number and due date and must be addressed to the undersigned so as to reach him on or before the due date stipulated above.
3. **Fax and Email quotation are not acceptable.**
4. Quotations should be valid for 60 days from the due date and period of delivery required , warranty terms etc. should also be clearly indicated. A minimum of one year warranty is required from the date of commissioning.
5. Imported supplies should be quoted **for CIF Madras.**
6. Local firms to quote for free delivery to this Institute. If quoted for Ex-Godown delivery charges be indicated separately.
7. Relevant literature pertaining to the items quoted with full specifications (and drawing, if any) should be sent along with the Quotations, wherever applicable. Samples / machine/ equipment if called for should be submitted / demonstrated at free of charges, and collected back at the supplier's expenses. Compliancy certificate is to be provided indicating conformity to the technical specifications
8. Sales Tax/General Taxes/ED if applicable and such other taxes legally leviable and intended to be claimed should be distinctly shown along with the price quoted. If this is not indicated no such claim will be admitted at any stage. The taxes leviable should take into consideration that we are entitled to have concessional Sales Tax applicable to Non-Government Educational Institutions run with no profit motive for which a concession is given. Sales Tax Certificate will be issued at the time of final settlement of the bill.
9. Goods should be supplied carriage paid and insured.
10. Goods shall not be supplied without an official supply order.
11. If the item is under DGS&D Rate contract No. and the price must be mentioned. It may also please be indicated whether the supply can be made direct to us at the Rate contract price (Please note that we are not Direct Demanding Officers). If so please send copy of the RC.
12. The Guarantee period of the item may be indicated clearly.
13. In case of LC. Payment, 90% of the payment will be made after completion of the supply. The balance 10% of the payment will be made after satisfactory installation of the equipment.
14. IIT Madras is exempt from payment of Excise Duty and is eligible for concessional rate of custom duty. Necessary certificate will be issued on demand. IIT Madras will make necessary arrangements for the clearance of imported goods at the Airport/Seaport. Hence the price should not include the above charges.
15. **Acceptance and Rejection:-** I.I.T. Madras has the right to accept the whole or any part of the Tender or portion of the quantity offered or reject it in full without assigning any reason.

Yours faithfully,


Prof. Krishna Vasudevan

Items required: Torque Sensor as per specifications enclosed.

Phone Nos.: (044) 2257 4428/ /5419 FAX: (044) 2257 4402, E-mail: krishna@ee.iitm.ac.in



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Dear Sir,

IIT Madras is one of the leading institutes in India imparting high quality technical education to students and extending research in major areas of science and technology.

As part of research and continuous development "Advanced Manufacturing Technology Development Centre" is being started wherein high precision CNC machine tools and innovative manufacturing technologies will be developed. We are looking to buy few torque sensors as per attached datasheet to suit our projects. These will be mounted between a servo motor and the ball screw of a machine tool, and would be used to test advanced servo drives and control systems.

Broad specifications : (Detail Specification enclosed.)

1. Torque sensor type 1 : (Qty: 3 or 4 units)

- A. 50 Nm nominal torque
- B. 4000 rpm max speed
- C. Shafted type on both ends preferred
- D. Frequency of Torque ripple to be measured – 2.5 kHz

2. Torque sensor type 2 : (Qty : 1 unit.) (Detail Specification enclosed.)

- A. 200 Nm nominal torque
- B. 12000 rpm max speed
- C. Shafted type on both ends preferred
- D. Frequency of Torque ripple to be measured – 2.5 kHz

3. Torque sensor type 3 : (Qty : 1 unit.) (Detail Specification enclosed.)

- A. 500 Nm nominal torque
- B. 12000 rpm max speed
- C. Shafted type on both ends preferred
- D. Frequency of Torque ripple to be measured – 2.5 kHz



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Technical Specifications for Torque Sensor :

Parameter	Data		Units
Torque range	0 – 50	0 – 200 0-500	Nm
Shaft size (diameter)	20	30	mm
output signal	Pulse output direct from opto switch (TTL, 5V square wave), output is independent of any analog or digital processing.		
Rotational speed (max)	4000	12000	RPM
Combined non-linearity and hysteresis	±0.25		%FS
Accuracy at 20°C	±0.7		%FS
3dB Bandwidth	2500		Hz
Output voltages	±10		Vdc
Output currents	4-20		mA
Digital Output Connections	CAN Bus		
Configuration	CAN 2.0B, 11bit Message Identifiers		
Baud Rate(s)	1 Mbps, 500 Kbps, 250 Kbps, 100 Kbps		
Output Rate (Note 7)	Up to 10 KHz		
Nominal input voltage	15		V
Ripple withstand ability	0.5		mVp-p
EMC compatibility	EN 61326: 2006		

Note that IIT is exempt of Customs Duty and Excise Duties. No concessional forms for VAT/CST will be issued. Quantities indicated may be increased or decreased depending on project requirements.

Terms :

Payment : Will be released within 2-3 weeks of receipt of invoice and receipted DC at IIT Madras.
Taxes : IIT Madras is exempt from Excise Duty. VAT may be charged extra.

Quotations may be sent by email and/or speed post/courier before 25th April, 2017 and must be addressed to :

Prof. Dr. Krishna Vasudevan
Professor,
Dept of Electrical Engineering,
IIT Madras,
Chennai 600 036.

Thanking you,

Yours Sincerely,
Dr. Krishna Vasudevan
Professor
Dept of Electrical Engg
IIT Madras, Chennai 600036.