



**NATIONAL CENTER FOR COMBUSTION RESEARCH
AND DEVELOPMENT (NCCRD)
INDIAN INSTITUTE OF TECHNOLOGY MADRAS
CHENNAI – 600036, INDIA**

Ref. No. ICS/11-12/013/DSTX/TSUN

Date: 28 July 2016

Due date: 18 August 2016

Item name: CRANK ANGLE ENCODER SET (1 no.)

1. Quotations are invited in duplicate for the items shown overleaf (in Annexure I). The quotations duly sealed and superscribed on the envelope with reference no. and due date, should be addressed to the undersigned so as to reach on or before the due date mentioned above.
2. The quotations should be valid for sixty days from the due date and the period of delivery required should also be clearly indicated.
3. The total cost of the equipment in terms of CIP Chennai should be clearly mentioned.
4. Terms of warranty and guarantee should be explicitly mentioned.
5. Packing and delivery charges, customs and clearance duty should be clearly stated.
6. Goods shall not be supplied without an official supply order.
7. Local firms : Quotations should be for free delivery to this institute. If quotations for ex-godown delivery charges should be indicated separately.
8. Firms outside Chennai: Quotations should be for F.O.R. Chennai. 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.
9. The rate of sales / general taxes and the percentage of such other taxes legally leviable and intended to be claimed should be distinctly shown along with the price quoted. Where this is not done, no claim for sales / general taxes will be admitted at any stage and on any ground whatsoever. The taxes leviable should take into consideration that we are entitled to have Concessional Sales Tax (CST) applicable to non-government educational institutions run with no profit motive for which a concession sales tax certificate will be issued at the time of final settlement of the bill.
10. Payment : Specify the mode of payment and if advanced payment has to be made. Every attempt will be made to make payment within 30 days from the date of receipt of bill / acceptance of goods, whichever is later.
11. IIT Madras is exempt from payment of excise duty and is eligible for concessional rate of customs duty. Necessary certificate will be issued on demand.
12. IIT 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.
13. The sealed quotation may be sent to

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Annexure I

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Specifications for Crank Angle Encoder set (1 no.)

A Crank angle encoder set is required for IC engine crank angle based measurement.

The sensor requirements are as follows.

S.No.	Requirements	Check list	Remarks
1	Sensor type : Optical		
2	Mounting flange adapter and its screw/hardware/tools		
3	Speed Range: 0-12,000 RPM		
4	Selectable output pulses : 3600/1800/720, ... 36 per revolution		
5	Temperature range: -40°C to $+85^{\circ}\text{C}$		
6	Suitable 2m metal shielded cable with BNC end connector.		

NOTE:Please copy the above and mark your compliance with the specifications in the check boxes provided and include this in your quote. This is essential.

Documentation:

Vendor should provide required instruction manuals for using the angle encoder set in English language.

Warranty:

The vendor should provide a warranty for at least 12 months and must clearly mention the terms and conditions involved.



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Note:

The supplier should be the manufacturer of the item or the sole authorized dealer in India with proper service facility. Compliance with this has to be clearly stated in the quote.

The same make and model should have been supplied to at least 10 reputed automotive R&D establishments or reputed research institutions worldwide in the past 3 years for measurement of cylinder pressure on crank angle basis. The vendor should provide the details of organizations where such systems have been supplied. IIT Madras will check/get a feedback from the previous buyer/s on regards of quality of the system and after sales service. Only if the vendor's quality and after sales service is found to be good by IIT Madras, the vendor will qualify

For any technical clarifications, please contact:

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