



**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: 20 June 2016**

**Due date: 11 July 2016**

**Item name: IC ENGINE AIR FLOW METER (1 no.)**

1. Quotations are invited in a **two bid system** for the items shown overleaf (in Annexure I). The offers / bids should be submitted as Technical bid and Financial bid. The Technical bid should consist of all technical details / specifications only. The Financial bid should indicate item-wise price for each item and it should contain all Commercial Terms and Conditions including Taxes, transportation, packing & forwarding, installation, guarantee, payment terms, pricing terms etc. The Technical bid and Financial bid should be put in separate covers and sealed. Both the sealed covers should be put in a bigger cover. The Tender for supply of “ \_\_\_\_\_ ” should be written on the left side of the Outer bigger cover and sealed.
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

**Prof. S. R. Chakravarthy**

**NCCRD Office**

**No. 201, Rarefied Gas Dynamics Lab (Behind Aerospace Engineering Dept.)**

**Chennai – 600036, Ph. (O) +91-44-22575025**



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**Annexure I**

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

Date: 20 June 2016  
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**Technical specifications of IC Engine air mass flow meter capable of metering EURO VI  
Transient Testing (1 no.)**

Operating principle - Hot film or ultrasonic type.

Response time: Capable of measuring in Euro VI transient test cycle measurements

Measurement range: 0-1200 Kg/hr

Line pressure – 1 bar

Measuring medium temperature: -25 to 80 Degree Celsius

Measuring uncertainty: maximum 1% of the measured value.

Influence of pressure: maximum 0.6%/ bar of the measured value

Influence of temperature: 0.3%/K of the measured value

Type of flow - Pulsating flow (to measure the air the air intake into the IC Engine as per EURO VI transient testing). Must be capable of being used in Euro VI transient engine testing.

**Warranty:**

The vendor should provide a warranty for at least 12 months from the date of commissioning of the setup. The vendor should clearly indicate the terms of warranty along with their quote.

The vendor must have supplied atleast five same model of base equipment or higher version of similar equipment in reputed automotive research and development laboratories of government funded institutions or research and development divisions of leading automobile industries worldwide during the past 3 years for transient Euro VI engine testing applications. The vendor should provide the details of organizations (with contact details) where such systems have been supplied. Customer feedback regarding performance and after sales service will be considered in the final scrutiny.

**For technical clarifications, please contact.**

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Please quote your lowest price for the equipment meeting the above requirement.