### **Indian Institute of Technology Delhi**

Department of Physics, Hauz Khas, New Delhi-110016 (India)

#### **NOTICE INVITING QUOTATION**

Date: 07-02-2017

### NIQ Ref. No.:

# Mass flow controller/s and meter/s for gases like CO<sub>2</sub>, CO, H<sub>2</sub>, N<sub>2</sub>, Ar, Methane, etc.

## **TECHNICAL SPECIFICATIONS for Mass Flow Controllers:**

- 1. Flow range: 0 100 SCCM.
- 2. Maximum inlet pressure: 150 psig.
- 3. Pressure coefficient: +0.01% of full scale per psi or better.
- 4. One time calibration: At least for 10 standard gases including nitrogen, argon, oxygen, carbon dioxide, carbon monoxide, methane, hydrogen, etc.
- 5. Control range: 2-100 % of full scale flow. Auto shut off at lower levels.
- 6. Accuracy:  $\pm 1$  % of F.S.
- 7. Repeatability:  $\pm 0.2$  % of Reading or better.
- 8. Operating range: 1% to 100 % full scale measure and control.
- 9. Operating temperature range:  $0^{\circ}$ C to  $50^{\circ}$ C.
- 10. Temperature coefficient: + 0.025 % of full scale per  $\mathring{F}$  or better.
- 11. Valve: Normally closed.
- 12. Input supply voltage: 220 Volts/50 Hz.
- 13. Fittings: Swagelok tube or similar.
- 14. Wetted material: 316 stainless steel or equivalent.
- 15. Warm-up time:  $\leq 30$  sec.
- 16. Leak integrity:  $5 \times 10^{-9}$  atm cc/sec of helium or better.
- 17. Digital communications: RS232.
- 18. Required number of cables should also be supplied.
- 19. Seals: Viton or metal, whichever is appropriate.
- 20. Must include 24VDC Universal Power Adaptor.

## **TERMS and CONDITIONS:**

- 1. The quotation, in sealed envelope marked as "Ref: IITD/...../MFC" should reach the undersigned on or before 5 pm on .....
- 2. The prices quoted must be on FOB basis.
- 3. The quotation should be provided in a sealed envelope to the undersigned.
- 4. Institute reserves the right to accept/reject all/ any quotation without assigning any reason thereof.
- 5. The delivery period should be clearly indicated in the quotation.
- 6. Submitted quotations should clearly mention the validity period, preferably for a minimum of 03 months.
- 7. Incomplete and conditional submitted tenders would be summarily rejected.
- 8. The mode of payment should be clearly indicated.
- 9. Necessary certificate should be enclosed by the vendor in case of proprietary nature of the quoted items.

- 10. In case the quotation is being submitted by authorized agent of the principal manufacturing company, the AUTHORISED SALES AGENCYSHIP certificate from the PRINCIPALS should be furnished along with the quotation. Quotations without this authorization certificate will be rejected.
- 11. The quotation should include comprehensive warranty for at least 1 year.
- 12. Special discount/rebate wherever admissible keeping in view that items are being procured for educational purpose in respect of Public Institution of national importance may please be indicated.

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