NOTICE INVITING QUOTATIONS

Sub: Continuous flow high accuracy syringe pump

Sealed quotations in separate envelops of technical and commercial bid kept in a one sealed outer envelop are invited for purchase of a Continuous flow high accuracy syringe pump as per specifications given below. Your sealed quotation should reach latest by 5 PM on 21 August, 2012 to Prof. S. Basu, Department of Chemical Engineering, Indian Institute of Technology – Delhi (IIT Delhi), Hauz Khas, New Delhi - 110016. Your quotation should be superscribed “Quotation for Continuous flow high accuracy syringe pump due on 5 September 2012”.

Minimum Specifications: Continuous flow high accuracy syringe pump

- Pulsation free and high precise dosage of fluid streams in the range of nanolitres per second
- Very good reproducibility of test results (high precision syringe pump)
- Universal syringe holder - syringes of different type and size can be used (outer diameter 6 to 30 mm)
- Quick release syringe holder for fast and easy syringe exchange
- 3-2-way valve for automatically generated refill
- Syringe pump supports continuous flow
- Withdrawal and infusion mode
- Modular extensible syringe pump system
- Simple plugging of syringe pump units
- Extensible at every time
- Space saving
- Ease of use (graphical syringe pump software, with a lot of useful features)
- Configurable devices according to required precision

Comprehensive software package

Base Module:
- Power Supply Voltage: 90 – 264 V AC
- Power Supply Frequency: 47 – 63 Hz
- Power Output: 120 W
- Operating Temperature: 0 to 50 °C
- Storage Temperature: -20 to 75 °C
- Operating Humidity: 20% to 80% non condens.
- Storage Humidity: 20% to 80% non condens.

Variety of interfaces:
- USB: 1.1 and 2.0
- CAN: max. 1 Mbit/s
- RS-232: max. 115200 bit/s
Power and USB cables
Documentation in English

**Dosing modules:**
- **Maximum number of flows:** 4
- **Maximum number of simultaneous continuous flows:** 2

**Flow Rates:**
- For 100 µL syringe: 2.8 nL/min to 0.6 mL/min
- For 10 mL syringe: 175 nL/min to 60 mL/min
- For 25 mL syringe: 0.7 µL/min to 150 mL/min

**Power Supply Voltage:** 24 V DC

**Dosing unit current typical at 24 V DC:** 0.3 A

**Dosing unit current peak at 24 V DC:** 0.6 A

**Operating Temperature:** 0 to 45 °C

**Storage Temperature:** -40 to 75 °C

**Operating Humidity:** 20% to 80% non condens.

**Storage Humidity:** 20% to 80% non condens.

**Variety of interfaces:**
- CAN max. 1 Mbit/s
- RS-232 max. 115200 bit/s
- Ethernet

**Valve:**
- **Body material:** PEEK
- **Seal material:** FFPM (EPDM, FPM)
- **Temperature media:** 10 to +40°C
- **Viscosity:** max. 20 mm²/s
- **Internal Volume:** < 13 µl
- **Orifice:** DN 0.6 mm or 1,35 mm
- **Port connection:** Flange, UNF 1/4“-28

**High precision glass syringes:** 60 mm length, Tubing Connector ¼-28 UNF:
- 100 µL: 4 pieces
- 10 mL: 4 pieces
- 25 mL: 2 pieces

**Connection Kit** for iLS-syringes with Tubing Connector contains 4 nuts with 1/4-28UNF-thread, washers and tubes ID 0,8mm, OD 1,6mm: 4 pieces

**User Interface PC Software:**
- **Automatic detection of connected dosing units**
- **Synchronous start** of all dosing units
- **Supports** Windows XP, 2000 and Windows Vista

**Flow profile operating mode:**
- Generation and editing of complex flow profiles
- Generation of dynamic flow profiles based on mathematical functions

**Graphical display and configuration of all parameters:**
- Visualisation of syringe sizes, syringe levels and valve states
- Configurable SI units for volumes and flow rates

**Support of High Pressure modules:**
Measurement and display of pressure
Configurable over-pressure actions (i.e. automatic stop on over pressure)

**Continuous flow operating mode:**

*Generation of continuous flows* over a virtually unlimited period of time

Continuous Flow Wizard for *easy configuration and setup of continuous flow*

Easy and cost saving integration into all Windows development environments that support the use of DLLs - for example:

**Terms & Conditions:**

1. The quotations must have validity of at least three months.
2. Quotation must include insurance and air-freight charges, delivery period of the items addresses to The Indian Institute of Technology, Delhi, India (CIF, New Delhi).
3. The products will be used for educational purposes. Any applicable academic institution discounts should be offered and stated.
4. Detailed Brochures should accompany the offer.
5. If the bidder is an authorized dealer then the authorized Indian dealership certificate from the principles should be enclosed.
6. 2 years warranty desirable.
7. Payment will be through irrevocable letter of Credit.
8. In case the items are proprietary products of the company, a proprietary item certificate stating the same must be provided.
9. Training should be provided free of cost.
10. List of End user should be provided.
11. Institute reserves the right to accept or reject any or all the quotations without assigning reasons thereof.

Chairman, PFC