



राष्ट्रीय प्रौद्योगिकी संस्थान मणिपुर
NATIONAL INSTITUTE OF TECHNOLOGY MANIPUR

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An Autonomous Institute under MHRD, Govt. of India.

No. NITM.1/(226-Estt)/SERB/Dushyant/2017-108

Date: 05.05.2017

To,

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Subject: Enquiry for supply of Water Flow Controller, DC Power Supply and Data Acquisition System for DST-SERB project at the Deptt. of ME, NIT Manipur.

Sir,

Please provide sealed rate quotation for supply of the following items:

| Sl. | Description | Qty. |
|---|--|--|
| WATER FLOW CONTROLLER | | |
| 01 | Type of fluid | Water |
| | Water Flow Rate | 10 ml per min to 5 lpm |
| | Accuracy And Repeatability | Under $\pm 2\%$ |
| | Operating Temperature Range | -10° to 60° C |
| | Warm-Up Time | Less than a second |
| | Response Time | Less than 0.1 second |
| | Output | Simultaneous display of flow temperature and pressure |
| | Display and control panel and connections | Display and control panel in front and others at the periphery |
| | Warranty | 36 months Onsite with calibration certificate |
| | Drivers and Software are required to control the equipment through a windows 7 OS. | |
| <i>Excise Duty certificates will be provided by the NIT Manipur</i> | | |
| DC POWER SUPPLY | | |
| 02 | Power output | 7.2 KW |
| | Voltage output | 0-30 Volt |
| | Current output | 0-240 Amp |
| | AC input Voltage | 300 to 457V AC, 45 to 63Hz, 3 phase, 4 Wire |
| | Input power factor | 0.99 typical @ full Load, nominal line Voltage & current programming inputs through 0-5V (default), 0-10V or 0-4.85K for 0 to 100% output voltage & current change |
| | Remote analog programming | Isolated voltage & current monitoring outputs 0-5V (default), 0-10V |
| | Remote analog monitoring | 19"(W), 6 U (H), 450 mm, 20 Kg or less than these values with trolley mechanism |
| | Dimensions & Weight | |


05/05/17

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|--|---|
| Dimensions & Weight | 19"(W), 6 U (H), 450 mm, 20 Kg or less than these values with trolley mechanism |
| Conforming standards | CE mark: meets EN55022, class A, safety standard EN60950 |
| Interface | RS 232 |
| 3 year Onsite Warranty | |
| <i>In case excise certificate is required will be provided by NIT Manipur.</i> | |

DATA ACQUISITION SYSTEM

| | | | |
|-------------------------|---|----|---|
| 03 | USB connected for housing DAQ cards with four general-purpose 32-bit counter/timers built into chassis (access through digital module) | 01 | |
| | Should be able to accommodate at least 8 DAQ cards and support LabVIEW software. | | |
| | Analog Input Timing Accuracy | | 50ppm of sample rate |
| | Timing resolution | | 12.5ns |
| | Input voltage range | | 9 to 30 V |
| | Maximum required input power | | 6 to 15 W |
| | Power input connector | | 2 positions 3.5 mm pitch pluggable screw terminal with screw locks similar to Sauro CTMH020F8-0N001 |
| | Power input mating connector | | Sauro CTF020V8, Phoenix Contact 1714977, or equivalent |
| | Power consumption from USB | | 500 μ A maximum, 4.10 to 5.25 V |
| | USB specification | | USB 2.0 Hi-Speed |
| | High-performance data streams | | 7 |
| | Data stream types available | | Analog input, analog output, digital input, digital output, counter/timer input, counter/timer output |
| | Operating Temperature | | -20 ° C to 55 ° C |
| | Storage Temperature | | -40 ° C to 85 ° C |
| | Operational shock | | 30 g peak, half-sine, 11 ms pulse |
| | Random vibration | | operating 5 to 500 Hz, 0.3 grms Non-operating 5 to 500 Hz, 2.4 grms |
| | Specifications of manuals total of 48 channels for temperature measurement | | |
| | Must be compatible to Data Acquisition Chassis mentioned above | | |
| | <ul style="list-style-type: none"> - Up to 0.02 °C measurement sensitivity at 25 ° C - Compatible with J, K T, E, N, B, R and S thermocouple types (all of them). - ADC resolution- 24 bits - Type of ADC- Delta Sigma - Number of channels- 16 channels, 1 internal Cold Junction Compensations channel. - Voltage measurement range- \pm78.125 mV - Overvoltage protection- \pm30 V between any two inputs | | |
| | Operational Vibration | | 5g RMS, 10 Hz to 500 Hz; |
| Operation Shock | 30g; | | |
| Operational Temperature | -40 ° C to 70 ° C | | |
| Storage Temperature | -40 ° C to 85 ° C | | |
| Signal Conditioning | Open thermocouple, Cold-Junction compensation | | |
| Sampling mode | Scanned | | |

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| | |
|---|--|
| Sampling rate | At least 75S/s for high speed mode For high resolution mode, at least 1 S/s |
| Differential Input Impedance | 78 MΩ |
| High-resolution noise rejection (at 50 Hz and 60 Hz) | 60dB |
| Warranty | 36 Months Onsite |
| Excise Duty certificates will be provided by the NIT Manipur | |

Yours sincerely,



(R.K. Lalit Singh)
Registrar, NIT Manipur

Terms & Conditions:

1. Quotation should reach Registrar, NIT Manipur, Langol on 25.05.2017 at 3:00 P.M.
2. The envelope should be superscribed as “**Quotation for supply of Water Flow Controller, DC Power supply and Data Acquisition System for DST-SERB project at Deptt. of ME, NIT Manipur**”.
3. Prices must be including taxes.
4. Price must be F.O.R NIT Manipur Stores, Langol, Imphal.

Copy to:

1. Member, Purchase Committee
2. Technical Officer, NIT Manipur for uploading in the website.
3. CF/GF