INDIAN INSTITUTE OF TECHNOLOGY KANPUR

Enquiry No: SB/PHY/NC/05232017

Tender Enquiry for Cryogenic temperature

Separate Technical and financial quotes for cryogenic temperature controller is invited from suppliers. **The technical and financial bids have to be supplied in two separate sealed envelopes.**

The liquid cryogenic temperature controller should be able to sense temperatures down 1.2 K. It should be able to independently control either two or 4 sensor inputs and independently control upto 4 sensor outputs. Desirable to have two PID control loops with two heater power settings. Ability to energize and measure a wide range of sensor. Ability to program PID settings for different temperature zones of control. GPIB compatible and 230 V, 50 Hz compatible. Should be able to offer reliable and high resolution temperature control. The control electronics should be suitably shielded out of noise.

You can offer either more than one model which will comply with the above. Please provide the best competitive price quote for each model you offered.

Important: For each model you offer please enter the specifications of that model in the format given below. **Please fill up the columns exactly in the same sequence which is shown below. Do not change the order. You need to reproduce the table shown below by filling up the table parameters for the model offered. Failure to comply with above may lead to disqualification.**

For a soft copy of the table shown below you may write to amitjash@iitk.ac.in

Model name	
How many sensor input (2 or 4)	
How many control outputs (2 or 4)	
We require measuring and controlling temperature control from 1.2 K to 400 K. Specify range for your system.	
How many **Independent** low noise heater outputs available.	
What is power of each heater output.	

How many heater power ranges exist in the controller.	
How much is the rms noise from each heater output.	
What are the different selectable power ranges to say a 25 Ω and a 50 Ω heater wire	
How many independent PID control loops available.	
How many bit A/D used at each sensor input channel in the controller.	
What is the resolution of the A/D used above	
Does each channel have its own separate current source for measurements.	
Are thermal EMF errors eliminated in the measurements.	
Are sensors isolated from other parts of circuits to reduce noise. If so how, specify.	
Does temperature controlled have automatic ability to control the excitation current sent to sensors at	

different temperatures especially sensors with negative thermal coefficient RTD's at low T. Give some specifications in this regard about your instrument.	
Does your instrument have automatic ability to select the appropriate excitation current and other parameters for a wide variety of sensors automatically through built in functions within the controller.	
Mention which sensors which can be handled. Also if there are some sensors your model cannot handle then specify which of they it cannot handle.	
How many curves can be uploaded upto into the system	
How many point calibration curve can be uploaded.	
Does system have autotune PID capability.	
After Autotune, can manual PID	

be set for better control?	
How many zones for each channel can PID parameters be fed for control	
Is there a possibility of manual heater output, viz., at a given range of heater power setting, a constant value heater output can also be manually set (which doesn't depend on PID).	
Can the system automatically switch between different sensors as the temperature measurement range changes.	
Model 220 – 240 V input ac power at 50 Hz, compliant ?	
Is there temperature ramp features possible. If so What at the ramp rates possible	
Is there a possibility to set temperature as well as heater power limit settings.	
How many channels can be displayed on the front panel	

Can the system be fully controlled by labview even if the front panel display stops working	
Are labview drivers provided or available.	
GPIB and USB control possible ?	
Apart from sensor resistance, can other quantities like capacitance, inductances etc also be read by the instrument	
Indicate here what specific feature of your instrument sets it apart from others.	

Any disclosure of price in the technical bid will lead to disqualification of the bid.

Reputed firms with and firms who are the primary suppliers will be considered favorably. Those who give a proper technical justification in the columns above will be given preference.

Terms and Condition:
* Financial bid should show price break up.
*All the taxes need to be clearly specified in the quotation
*Transportation conditions such as FOR/Ex-works/To & Fro charges should be clearly mentioned in the quotation
*Delivery period should be clearly mentioned
*Price Quotation should be valid upto 31st August 2017

Since we are an academic institution, your offer must consider Institutional/Educational discount. Please send sealed offers latest by 30th June 2017 in favour of Prof. Satyajit Banerjee, Department of Physics, IIT Kanpur. Kanpur – 208016, Uttar Pradesh.

Please mention the tender number and the item being quoted for on the top of the envelope.