

**Department of Physics, Indian Institute of Technology
IIT.P.O. Madras-600 036**

Ref. No.

Date: 30/10/2014

PHY	2014	022	STORES
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To,

Dear Sir,

Due date: 20 / 11 / 2014

1. Quotation are invited in duplicate for the item specified below/overleaf/ enclosed .
2. The quotations duly sealed and superscribed on the envelope with the Reference No. and due date, should be addressed to the undersigned so as to reach him/her on or before the due date stipulated above.
3. The quotations should be valid for sixty days from the due date and the period of delivery required should also be clearly indicated.
4. If the item is under DGS &D RATE CONTRACT, RC No.and the price must be mentioned. It may be also please be indicated whether the supply can be made direct to us at the Rate Contract price. If so, please send copy of the RC (Please note that we are not Direct Demanding Officers)
5. Relevant literature pertaining to the items quoted with full specifications (and drawing, if any) should be sent along with the Quotations, wherever applicable. Samples if called for, should be submitted free of charges, and collected back at the supplier's expenses.
6. **Local Firms** : Quotations should be for free delivery to this Institute. If Quotations are for Ex-godown . delivery charges should be indicated separately.
7. **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.
8. 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 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.**
9. Goods should be supplied carriage paid and insured.
10. Goods shall not be supplied without an official supply order.
11. Payment: Every attempt will be made to make payment within 30 days from the date of receipt of bill/acceptance of goods, whichever is later.

SPECIFICATION ENCLOSED

Yours Sincerely,

Dr. Jayeeta Bhattacharyya

Head / Co-ordinator

Department of Physics,
Indian Institute of Technology Madras,
Chennai - 600036, India.

Telephone : +91 44 2257 4850

Minimum specification for Lock-in Amplifier (Quantity - 1 unit)

Lock-in amplifier type	Digital Signal Processing and Dual phase
Inputs	Current and voltage BNC inputs, single end and differential
Input impedance	1 M Ω or greater
Reference input	Sine or TTL
Sensitivity range	10 ⁻⁹ to 1V or wider, must have option of selection
Dynamic reserve	Greater than 60 dB
Voltage noise	Less than 10 nV/Hz ^{-1/2}
Operation frequency range	5 Hz to 100kHz or wider
Harmonic detection	Must be able to detect higher harmonics at 2F, 3F, and higher
Auto phase setting	Must be present
Time constant	Adjustable in the range of 10 μ s to 1ks or wider
Internal oscillator	Adjustable in range of at least 5Hz - 100kHz frequency with 1% accuracy or better
Channel outputs	Outputs should be present for reference, and both channels (In-phase and quadrature components)
Display	LED displays should be present for both the channels
Control/selection switches	Preferably on the front panel
Remote control	Should be available, compatible with Labview
Interface options	IEEE-488.2 and RS-232

- **Must provide any accessories, power cables, adaptors and circuit diagram (if available) needed for complete operation and connection**
- **Please provide a clear warranty statement**
- **Please provide separate technical and financial bids in sealed envelopes**
- **Please mark tender number on top of the cover envelope**

Jayeeta Bhattacharyya