



Government of India  
Bhabha Atomic Research Centre  
Electromagnetic application and instrumentation division



Ref: BARC/EmA&ID/VT/2022/42897

Date: 02/05/22

Sub: Supply, design, development, fabrication of high stability voltage and current control DC power supply for heavy metal ion beam experiment as per technical specification TSP/VT/22/503

Dear Sir/Madam,

1. Quotations are invited for the execution of subject work.
2. Taxes and Excise Duties shall be quoted separately. Form AF / H whichever is applicable shall be provided, if required.

The quotations must reach the undermentioned address on or before 06 / 05 / 22 and must be sent in a sealed envelope super scribed with the reference number & the due date only through either registered post under India Post. Any other mode of transmission shall entitle the purchaser to reject the bids.

3. The address on the envelop should read:

The Head,  
Electromagnetic application and Instrumentation division  
RCnD Bldg., North Site  
BARC, Trombay, Mumbai - 400 085  
**(Kind Attn: Vikas Tiwari)**

4. The bidder shall complete the job within **6 months** from the date of firm work order issued to the bidder.
5. Head, Electromagnetic application and instrumentation division reserves the rights to accept / reject any or all quotations without assigning any reason.
6. Quotation must also indicate the validity of offer. Quotation must also indicate the GST No and PAN number of the supplier.
7. The quotation has to be signed by authorized person with company seal.
8. Payment will be made by EFT only after satisfactory completion of work on production of bill, delivery challan and advance stamped receipt. Income tax as applicable will be collected at the time of payment.
9. In case of any technical clarifications, the supplier may kindly contact us vide email ID: vikast@barc.gov.in, Tel No: 022 25596899

Encl.: Technical Specification Sheet no: BARC/EmA&ID/VT/22/503

(Vikas Tiwari)  
Technical Officer(C), EmA&ID, B.A.R.C  
For and On behalf of the President of India  
(The Purchaser)

## Technical specification

Tender Enquiry No BARC/EmA&ID/VT/22/42897

Date: 02/05/22

Document no.	Revision no.	Date of Issue	No of pages
TSP/VT/22/503	0	15.04.2022	3

### 1.0 SCOPE

Supply, design, development, fabrication of high stability voltage and current control DC power supply for heavy metal ion beam experiment as per technical specification TSP/VT/22/503 (Quantity: 1 Set).

The complete job shall be carried out strictly as per requirements, specifications and its compliance standards. In this specification, the supplier shall be referred to as the “supplier” and Bhabha Atomic research Centre shall be referred to as the “buyer”.

Supplier shall provide complete raw material to carry out the above jobs. The supplier shall be qualified as per Para 5.0 of this document. The brief description of contents of the tender specification document is as described below.

### 2.0 DETAILED JOB DESCRIPTION

2.1 Supply, design, development, fabrication of high stability voltage and current control DC power supply for heavy metal ion beam experiment as per technical specification TSP/VT/22/503.

Supplier shall fabricate high stability constant current DC power supply as per the following specifications 1.0 Technical Specification

S No.	Specification	Value
1.	AC input supply voltage	400V, 3phase, 50Hz; power factor > 0.99
2	Operation mode	Constant Voltage /Constant Current
3	DC output current	0-340A <sub>DC</sub>
4	DC Output voltage	0-40Vdc
5	Load regulation	<0.06% of rated value
6	Line regulation	<0.025% of rated value
7	Over-voltage protection	Adjustable 0-100%(rated value)
8	DC power	13.6Kw (max.)
9	Protection	Over-temperature, short-circuit protection, input phase failure
10	Interface	Local:Current control: 0-340A, in steps of 0.1A (a) Voltage control: 0-40V, in steps of 0.01V Remote:

		(a) USB communication, Ethernet based
11	Cooling	Air cooled
12	Operating temperature	0-50°C
13	Humidity	<80%, non-condensing
14	Parallel operation	Possible
15	Design topology	2-3 power boards cascaded for better redundancy
16	RMS Voltage ripple	< 30mVwith resistive load

Table-1.0-technical

## 2.0 List of documents:

2.1) In addition to other mandatory tender documents for bidding, supplier has to furnish technical catalog of the product offered indicating the expected values under para 1.0.

2.2) during supply, contractor has to furnish material test certificate for the supplied product.

2.3) No post supply inspection will be permitted at purchaser's premises.

3.1) Acceptance tests:

(a) Load Test:

(i) The power supply to be tested at 100 % load capacity for 16hr with resistive load (~0.117Ω):  
Recording of continuous voltage ripples (<0.06%)

(ii) The power supply to be tested at 50% load capacity for 16 Hr with resistive load(0.235Ω).Recording of continuous current ripples(<0.06%)

(b) Interlock tests:

All protection interlock to be tested as per S No.9 under technical specification

3.0) Deliverable: Quantity-01 No of power supply

## 4.0 GENERAL REQUIREMENTS

4.1 The supplier shall submit detail design report and its troubleshooting, working manual.

4.2 The part number and the source of all the hardware's shall be cleared mentioned before purchase of the same from the market. They shall be purchased and installed only after prior approval from BARC. Any component of inferior quantity purchased without prior approval will be rejected strictly.

4.3 The Supplier shall indicate in detail the standards adopted for the materials and processes and the quality control procedures followed by them.

4.4 Supplier can suggest the color, aesthetics, and other details as suitable. Supplier must offer best quality/IS certified material only.

4.5 Supplier should have similar work experience and along with the offer, shall submit the details of past experience with documentary proof.

4.6 Materials, tools, manpower etc required for the above work will not be supplied by the user. Supplier has to arrange the above on his own (No free issue material).

4.7 The supplier shall incorporate minor changes in the design as required at the time of execution of work at no extra cost.

- 4.8 The above job shall be done strictly under the supervision of our engineers in test facility at BARC premises.
- 4.9 Working personnel shall observe all the safety precaution during working.
- 4.10 The working personnel shall behave well with other officers and workers inside BARC campus.
- 4.11 The contractor shall be solely responsible, in case of any casualty involving working personnel. However, first aid will be provided by BARC.
- 4.12 General BARC security rules shall apply to all the working personnel.
- 4.13 Entry permit will be issued on weekly basis and contractor shall have valid photo pass with valid Police Verification certificate (PVC) as per the norms of BARC security.
- 4.14 Prior permission will be taken from security if the persons are required to do the job on Saturday, Sunday, Holidays and beyond normal working hours (08:00 to 18:00 hrs).

## 5.0 RAW MATERIAL PROCUREMENT

- 5.1 The raw material, electrical components used by supplier for the manufacturing of these components shall be of brand new and shall not be used previously.
- 5.2 All the material shall strictly confirm to their corresponding IS standards and shall be purchased only after prior approval from the purchaser.

## 6.0 REQUIREMENTS OF SUPPLIER QUALIFICATIONS

- 6.1 The supplier shall be evaluated on the basis of the following criteria
- 6.1.1 The supplier shall have previous experience in carrying out similar such jobs inside BARC and copy /proof of the same shall be attached.
- 6.1.2 The supplier shall submit the details of the welder, fitter and other man power, facility available with the supplier to carry out the job successfully.
- 6.1.3 The supplier shall provide the list of their employees along with their valid PVC certificate, who are intended to work in this job.
- 6.1.4 The supplier shall have minimum experience of 5 years in the development of chiller and proof of document of the same shall be provided.

## 7.0 REQUIREMENTS OF PRICE AND DELIVERY SCHEDULE

- 7.1 The supplier shall give lump sum price for the raw materials and man power to complete this job.
- 7.2 The complete job is expected to be completed in a duration of 06 Months.

## 8.0 CONFIDENTIALITY CLAUSE

- 8.1 No party shall disclose any information to any third party concerning the matters under this Contract generally. In particular, any information identified as "Proprietary" in nature by disclosing party shall be kept strictly confidential by the receiving party and shall not be disclosed to any third party without the prior written consent of the original disclosing party. This clause shall apply to sub-contractors, consultants, advisors or the employees engaged by a party with equal force.
- 8.2 "Restricted information" categories under section 18 of the Atomic Energy Act, 1962 and "Official secrets" under section 5 of the Official Secrets Act, 1923: Any contravention of the above mentioned provisions by any contractor / sub-contractor, consultant, advisor or the employees of the contractor will invite penal consequences under the aforesaid legislation.
- 8.3 Prohibition against the use of BARC's name without permission for publicity purpose. The contractor or sub-contractors, consultants, advisors or the employees engaged by a party shall not use BARC's name for publicity purpose through any public media like: press, radio, TV or Internet without any prior approval of BARC (wide circular ref.: 2/Misc-9/Lgl/2001/92 date 30/04/2001).

(Vikas Tiwari)  
Technical Officer(C), EmA&ID, B.A.R.C  
For and on behalf of the President of India

