

**Government of India
Bhabha Atomic Research Centre
Multidisciplinary Research Group
Applied Physics Division**

Ref: APD/CB/MF/21/AC/397/17713

25/10/2021

Sub:- **Design, development, fabrication, testing, inspection and safe delivery of High Voltage (HV) Control Unit and associated accessories**

Due Date: 3rd NOVEMBER, 2021

Dear Sirs,

1. Quotations are invited for the minor fabrication job, as per the enclosed specifications and drawings.
2. Bidder shall quote for fabrication of these components with material.
3. Bidder shall take out an insurance policy in favor of BARC for any free issue material supplied.
4. Taxes shall be quoted separately. Form H shall be provided where necessary.
5. The quotations must reach Head, Applied Physics Division on or before the due date referred.
6. The bidders must quote in a two part tendering system, which means that they will mention the technical specifications and financial terms in separate sealed envelopes, clearly mentioning which is which. These two separate envelopes viz. technical and financial will be enclosed in a bigger sealed envelope super scribed with the above reference number and due date.
6. The address on the envelope should read:

The Head,
Applied Physics Division, PURNIMA LABS,
Bhabha Atomic Research Centre
Trombay, Mumbai - 400 085.
Attn: Mr. Ankur Chowdhury

7. The fabrication work shall be subject to inspection by our representative. The finished components shall not be dispatched prior to approval by our representative at the bidder's works. Necessary inspection facilities should be provided to our engineers during fabrication at bidder's premises.
8. The bidder shall deliver the finished components after approval by our representative, within 45 days from the date of the firm purchase order issued to the bidder. The finished components shall be delivered by the bidder at **Applied Physics Division, Purnima Laboratory, (Near Plutonium Plant), Bhabha Atomic Research Centre, Trombay, Mumbai-400 085.**
9. Head, Applied Physics Division, BARC, reserves the right to accept/reject any or all quotations without assigning any reason.
10. Payment will be made by cheque only after satisfactory completion of work on production of bill, delivery challan and advance stamped receipt. It may be noted that IT @ 2% and surcharge on tax at 15% shall be deducted from your bills.
11. Job will be guaranteed against material and manufacturing defects for 1 year from the date of supply.

(Mr. Ankur Chowdhury)
For and on behalf of
Head, Applied Physics Division

SPECIFICATIONS

This job involves the design, development, fabrication, testing, inspection and safe delivery of compact High Voltage (HV) Control Unit and associated accessories. The unit is to be enclosed in U3:19 inch rack with provisions for two separate optically and electrically isolated 30 kV DC output for operation of Electro-spinning, Detector arrays or HV Capacitor banks loads at a preset charging current. The high voltage output i.e. 30 kV must be generated using one or more 5-30 kV HV power supplies. The unit must provide high voltage supplies that adhere to the following specifications:

Sl. No.	Parameter	Value
1.	Output Voltage	5-30 kV
2.	Voltage Adjust	100 %
3.	Output Current	≥ 12 mA
4.	Input Voltage (max.)	24 V DC
5.	Input voltage variation (max.)	10%
6.	Input current (not exceeding)	4 A
	Dimensions (not exceeding)	225 mm X 125 mm X 75 mm (height)

Documents required during quotation: **Documentary proof/ Work Order copies of High voltage work done in BARC or other government organizations to be provided.**

The fabricator is required to prepare a detailed design for the unit and get it approved by the divisional representative. Based on his approval, he is supposed to fabricate, procure and assemble various constituent components of the required unit. Approval of the fabricated HV Control unit can be obtained after inspection and testing carried out by divisional representative at the fabricator's place. The various specifications for the design and development of the given unit are summed up in the following points:

1. The circuit design of each section, placement of the sections inside the circuit and the electrical as well as mechanical drawing of circuits in the unit must be carried out by the fabricator. Those drawings need to be approved by the divisional representative before proceeding towards fabrication. Non compliance with any of the fabrication and output requirements will lead to rejection of the job.
2. All components required during fabrication should be procured by the fabricator.
3. During inspection, detector array loads and capacitor loads up to 30 kV must be provided by fabricator.
4. The constituent parts should be mounted on a 19" 3-U rack, which is properly insulated to handle the high voltages associated with these applications.

The arrangement of various sections in the HV Control unit needs to be done as per Fig. 1

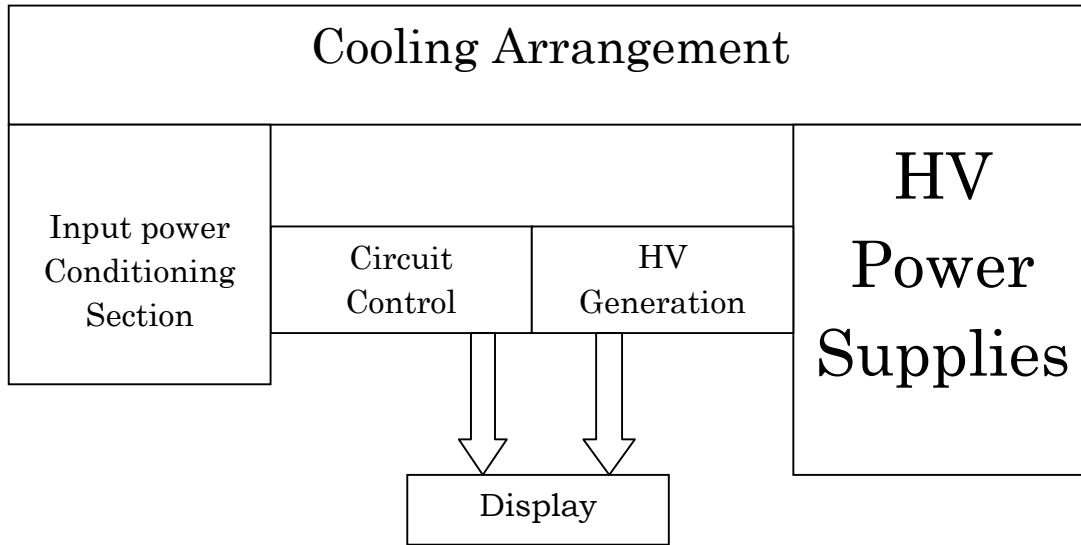
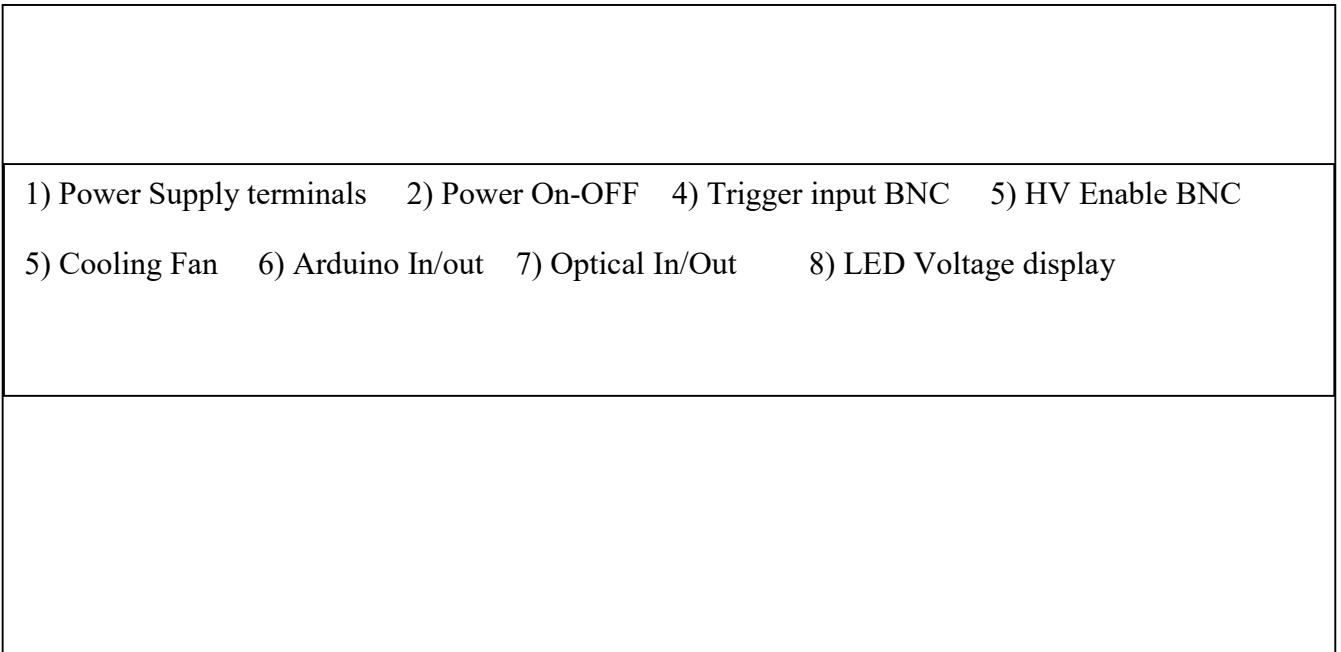


Fig. 1

5. Panel drawing:

- Front Panel:



- Back Panel:

1) Output 1(+) 2) Output 1(-) 3) Output 2(+) 4) Output 2(-)