

S/6160/2017/6409A

220 V DC Power Supply System as per scope of supply and work mentioned below:

1. Float Cum Boost charger with 220 Volts: Qty: (01 No.)

(A) Float charger:

- | | | |
|-----|-----------------------|---|
| 1.0 | Input Power Supply | : 415 Volts $\pm 10\%$ 3 Phase, 50HZ |
| 2.0 | Output Voltage | : 220 volt (2.15 Volt per Cell) |
| 3.0 | Output Current | : 30 Amps. DC Continuous |
| 4.0 | Mode of Operation | : Automatic / Manual |
| 5.0 | Output Ripple | : Within 2% rms at full load of 235 Volts DC without battery connected. |
| 6.0 | Output Regulation | : Within $\pm 1\%$ for $\pm 10\%$ supply voltage fluctuation and 100% load variation. |
| 7.0 | Control Configuration | : 3 Phase full wave thyristor /IGBT bridge fed through three phase transformer and controlled by constant current controller unit with load limiting feature. |

(B) Float cum boost charger:

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|-----|-----------------------|---|
| 1.0 | Input Power Supply | : 415 Volts $\pm 10\%$ 3 Phase, 50HZ. |
| 2.0 | Output Current | : 30 Amp. DC Continuous |
| 3.0 | Boost Mode | |
| a) | Input Power Supply | : 415 Volts $\pm 10\%$ 3 Phase, 50HZ. |
| b) | Output Current | : 60 Amp. DC Continuous |
| c) | Starting rate | : 28 Amps up to 2.35 Volt per cell |
| d) | Finishing rate | : 14 Amps up to 2.75 Volt per cell |
| 4.0 | Mode of Operation | : Automatic / Manual |
| 5.0 | Output Ripple | : Within 2% rms at full load of 235 Volts DC without battery connected. |
| 6.0 | Control Configuration | : 3 Phase full wave thyristor /IGBT bridge fed through three phase transformer and controlled by constant current controller unit with load limiting feature. |

7.0 **Ammeter:** Output Current

8.0 **Voltmeter:** Main Supply Voltage & Out-put Voltage (Float, Boost, Load & Battery).

9.0 **Alarm Module:** Alarm for all abnormal conditions in the system.

10.0 The Float charger mentioned at '1(A)' above and the Float cum Boost charger mentioned at '1(B)' above, shall act as redundant to each other. In case of failure of one unit, the other shall change over automatically. The faulty charger shall display 'Alarm' condition, in this case.

11.0 Both the chargers mentioned at '1A' and '1B' above shall have integrated digital status indicator, showing Battery Voltage and Discharge current of the battery bank.

12.0 Voltage Regulation

a) The float charger shall have both auto and manual voltage regulation arrangements with provision of selector switch. Output DC voltage shall not vary beyond $\pm 1\%$ of the set value when controlled through AVR with load varying from no load to full load simultaneously with specified fluctuations in input voltage and frequency.

(C) The battery charger shall also have the following features: 1. Indications : Input supply ON, Float ON, Boost ON, DC Over Current, Charger Failure, Input & Output Fuse Fail, Filter capacitor fuse fail and DC Under & Over Voltage.

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8

MPR No: 20171084

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(D) Integrated DCDB comprising:

1. Incoming Feeder	: 200 Amps, 2 pole MCCB	--- 01 no.
2. Outgoing Feeders	(a) 100 Amp, 2 Pole MCB/MCCB	--- 01 no.
	(b) 63 Amp, 2 Pole MCB	--- 04 no.
	(c) 32 Amp, 2 Pole MCB	--- 03 no.
	(d) 20 Amp, 2 Pole MCB	--- 03 no.
	(e) 16 Amp, 2 Pole MCB	--- 01 no.

(E) Cabinet : Freestanding Cabinet; Floor Mounting Type, Sheet Steel Construction; Easy for Installation and Maintenance; Components are accessible from Front & Rear; Cable entry at Bottom of the Cabinet

(Make: HBL/Amara raja/Chhabi/ Servilink/Statcon/Chloride /Danish/ibas/Signotron/Ascon Control/Raychem-RPG/Su-Kam).

2. Battery: 220V/200AH LEAD ACID

(Make: Exide, Amara Raja, HBL, Su-Kam, Luminous, Okaya)

Battery Type	Lead Acid
No. of Cells	110
Voltages	220

3. Installation, Testing & commissioning:

Vendor shall Install, Test & Commission the supplied 220 V DC Power Supply System/equipment at BHEL Premises Haridwar.

4. Warranty:

Warranty of the items for a period of 12 months from the date of installation & commissioning or 18 months from the date of dispatch, whichever ends earlier.

5. Documents:

Vendor shall submit three sets of relevant documents for supplied 220 V DC Power Supply System.

- 5.1. List of spares along with name and address of the manufacturers.
- 5.2. Electrical circuit diagram of the supplied 220 V DC Power Supply System.
- 5.3 Battery Log Book.

6. Connecting cables between Charger & Battery Bank ,Lugs, Battery trays/racks, Cell Connectors, Electrolyte for initial filling of batteries & any other spares required for installation, commissioning and proper functioning of 220 V DC power supply system shall be in scope of vendor.

