

 <b>बी एच ई एल</b> <b>BHEL</b> CBU-BHEL	<b>PURCHASE SPECIFICATION</b> <b>UPS -250 KVA 3 Ph, 415V with 30 min</b> <b>Backup</b>	Spec. No	EP:PVM:EQS:08
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**TECHNICAL SPECIFICATION**  
**FOR**  
**UPS -250 KVA 3 Ph, 415V with 30 min Backup**

**ELECTROPORCELAINS DIVISION,**  
**BHARAT HEAVY ELECTRICALS LTD.,**  
**IISc POST, BANGALORE, INDIA 560012**

<b>REVISION DETAILS: (00)</b>	<b>PREPARED</b>		<b>DATE</b>
	<b>APPROVED</b>	<b>ISSUED</b>	
			<b>30.11.2015</b>

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## **QUANTITY REQUIRED : 2 Nos.**

### **TECHNICAL SPECIFICATION OF 250 KVA UPS**

1. RATING OF UPS : 250 KVA
2. TECHNOLOGY : Online UPS double conversion with advanced IGBT/PWM  
Technology and digital microprocessor controls in all  
Aspects i.e., both in charger and inverter
3. INPUT : 380 to 480 VOLTS, 50 Hz
4. CHARGER : Constant voltage, Current controller, Power walk in  
Circuit to be provided, ripple should be < 2%
5. OUTPUT :

415 V  $\pm$  1%, 3 PHASE, 4 WIRE + GROUND

Voltage Transient response:  $\pm$  5% (10 – 100 % linear load)

Transient recovery time: Less than 5 milliseconds

Wave form: Pure Sine wave

Rated Power Factor: 0.9 to Unity

Ratio of Output current peak value to RMS value: 3 : 1

Frequency Sync. Range: 50 Hz

Frequency Regulation (Battery Mode) :  $\pm$  0.1%

Frequency Slew Rate: Less than 1 Hz/S

Transfer Time (Normal Mode): 15 milliseconds


Insulation Resistance: 5 M ohms (500 volts DC)

Dielectric Strength: Input to Earth is 1500 volts AC for 1 Min

6. OVERLOAD CAPACITY : 150% for 1 Minute in Normal operation  
125% for 10 Minutes in Normal operation
7. ENCLOSURE : Sheet Thickness/Material  
Front Door: 2 mm  
Side Door : 1.6 mm  
Top Cover : 1.2 mm
8. Degree of Protection : IP 20
9. Cooling : Forced air cooling
10. Battery Back up : 30 mins minimum
11. Scope of work : Supply, Installation, testing and commissioning of UPS
12. Warranty : 3 years

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13. OUTPUT HARMONIC DISTORTION (Ph/N) :

3% THD maximum and 1% any single Harmonic for 100% linear Load

5% THD maximum and 100% non linear Load

14. CREST FACTOR : 3:1 Minimum

15. EMERGENCY POWER OFF (EPO) : To be provided

16. BACK FEED PROTECTION : To be provided ( The back feed protection device prevents any current that could cause an electric shock from back feeding to incoming power supply connections)

17. DISPLAY:

Metered parameters (LCD Display)


- a. Input Voltage
- b. Input Current
- c. Input Frequency
- d. Battery Voltage
- e. Battery Current (Recharge or Discharge)
- f. Bypass Voltage
- g. Output Voltage
- h. Output Frequency
- i. Output current
- j. Output Power
- k. Output Peak Current
- l. Bypass input voltage
- m. Bypass output voltage
- n. No. of Hours of operation in bypass mode on inverter mode
- o. No. of complete discharges
- p. Temperature of system
- q. Temperature of Rectifier
- r. Temperature of Inverter
- s. DC voltage at Inverter input
- t. AC voltage at Inverter output

18. EVENT LOG: Display a log of status and alarm errors to be provided for upto 120 events or more on the front panel display

19. GENERATOR COMPATIBILITY : To be compatible for 3 phase, 4 wire, 415 volts, 50 Hz, DG supply

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20. Software features :

Communication Software:

Sequential and prioritized shutdown

Events scheduling

Graphical Display of UPS status and data

Automatic saving of the event log

Programming the UPS commands

21. EFFICIENCY : Min 93 % - Supplier to indicate their design, efficiency in the techno commercial bid

22. CABLE ENTRY : Bottom

23. BATTERY SPECIFICATION : Batteries to provide 30 mins backup at 250kVA load,

Make : Exide / Amaron / Amco / Standard

Supplier to provide the Battery Back up calculations

Supplier to provide suitable battery stand with acid resistant painting.

24. TECHNO COMMERCIAL OFFER TO INDICATE :

a. Overall Size ( H x W x D) in mm

b. Supplier to indicate the type, make and rating of batteries

c. Supplier to provide panel dimensional drawing, single line diagram, battery rack arrangement of the drawing

d. Supplier to provide bill of materials for switch gears

e. Supplier to provide 3 years warranty for UPS

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**Pre-Qualification Criteria:**

1. Offer shall be for new equipment and not for any refurbished or used equipment.
2. Vendor should either be an OEM (Original Equipment Manufacturer) or an Authorized Dealers/ Service Provider of the OEM. Authorized Dealers / Service providers to submit the authorization and competency certificate issued from OEM in executing UPS commissioning work of rating 250 KVA and above and details of such works executed through OEM's in the last three years in their technical bid.
3. Vendors should have supplied and commissioned 250 kVA or above rating UPS for minimum of 10 numbers to a minimum of 3 customers in the past three years (01.12.2012 to 30.11.2015). Relevant Purchase / Work orders issued from their for customers and the performance certificate with details of the time frame taken for the execution and completion of work with relevant commissioning certificates and documents issued by the customer should be submitted along with the techno-commercial bid. BHEL reserves the right for independent verification of the references provided.
4. Vendor should confirm compliance to all statutory conditions as per factories act and its relevant amendments for the Installation & Commissioning activity within the premises of BHEL. The workman of vendor should possess ESI, PF for executing the work at BHEL-EPD.
5. Vendor should provide 24x7 basis service support, with an office / service center and experienced personnel to provide support locally.

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