



प्लाज्मा अनुसंधान संस्थान
INSTITUTE FOR PLASMA RESEARCH
परमाणु ऊर्जा विभाग, भारत सरकार का एक सहायता प्राप्त
संस्थान



An Aided Institute of Department of Atomic Energy,
Government of India

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DIST. GANDHINAGAR - 382 428 (INDIA)
Phone: (079) 2396 2020/2021/2028
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ENQUIRY

ENQUIRY NO : IPR/EQL/18-19/063
Date : 31-05-2018

Due on : 21-06-2018 by 1:00 PM IST

Please send your offer in sealed envelope specifying Enquiry No, Date & Due Date, ALONG WITH your credentials for the following items:

Important Note:

Please note that e-mail quotations are not acceptable however you may send your queries (if any) to localpurchase@ipr.res.in

Please ensure your sealed quotation reaches this office not later than above mentioned due date and time.

Kindly go through the following documents properly before quoting which are available on the IPR web portal i.e., http://www.ipr.res.in/documents/tender_terms.html / attached herewith.

- 1) Instructions to the bidders & Terms and conditions (refer Form No: IPR-LP-01.V4)
- 2) Bidding format

GST for Goods and Services (IGST/CGST/SGST TAX BENEFITS): Please refer clause no: 8 of Form No: IPR-LP-01.V4

QUOTATION SHOULD BE ADDRESSED TO PURCHASE OFFICER ONLY

Sr No	Description	Quantity
1	supply, installation and commissioning of Uninterrupted Power Supply (UPS) systems along with battery bank	2.0 Nos.

Note: Please quote with complete technical details (Technical compliance sheet and product data sheet).

Encl: As per attachment.

Sd/-

Mr. D. Ramesh
Purchase Officer-II

Information to Vendors: We are working towards a single platform for our future requirement. Hence, please refer IPR website i.e., <http://www.ipr.res.in/documents/tenderseng.html> for our future requirement.

Technical specification for Online UPS

1. **Scope of Work:** The scope of the work covers the supply, installation, commissioning and configuration of 3-Phases, 20 KVA Uninterrupted Power Supply (UPS) systems along with its batteries and other accessories according to the Specification mentioned in the document.

Purpose: The UPS will be used for providing back-up Power to Controllers and other electronics components.

2. **Standards:** IS 3700, IS:7372, IS:16242, IS 9000, IS 60947, IS 60529, IEC 62040, IEC 60950 or equivalent international standards

3. **General system requirements:**

3.1. detailed specification (for Double conversion online UPS)

Sr.no	Requirements	Description
1.	AC input Voltage and frequency Range	Input Range 380 to 480V AC and 48-52 Hz
2	Output voltage and frequency characteristics	1. 380/400/415 VAC, 50Hz, continuous uninterrupted 3 Phase, pure sine wave output, in 4 wire output configuration. 2. The Output voltage should be settable in steps of 380-400-415VAC; settable and stable within +/- 3% of the set voltage all the time. 3. The output frequency shall be synchronized to the mains all the time and 50+/- 1Hz on battery backup
3	Battery back up	Minimum: 30 Minutes at full load
4	Battery	SMF VRLA batteries
5	Battery bank	The batteries bank should be complete with batteries, connecting cables and connectors and should all be assembled at IPR site.
6	Battery bank rack	Battery racks structure shall be made up of rigid and self-supporting steel structure, duly pretreated and powder coated.
7	Minimum VAH	18500 each UPS system
	UPS efficiency and Power factor	Efficiency Better than 90%; PF better than 0.8
8	Power factor input	Better than 0.8
	THD and crest factor output	THD less than 5% and Crest factor 2-3 suitable for Computer as load.
9	Transient response	The transient overshoot and undershoot shall not exceed the 10%.
10	Static transfer switch and Manual transfer switch (Bypass)	Static and Manual transfer switch shall be inbuilt and should be capable of handling 110% of the rated system capacity. Transferring without any downtime.
11	Over-Load condition	The UPS system should be capable of supplying 20% overload for 10 Min., (better than 120 % for 10 minutes) in case of short circuit and excessive overloading the inverter output should trip.
12	Protections	Protection according to the 1. Output Under/ over voltage. 2. DC Under/ over voltage.

		3. Short circuit and overloading protection
13	Metering	There shall be provision in UPS to monitor the following: 1. AC mains input voltage. 2. AC Output voltage and current. 3. Output Power frequency. 4. DC voltage to inverter unit. 5. Battery current charging and discharging.
14	Indication and displays	1. Mains available 2. Battery Charging and discharging. 3. Load on inverter. 4. Output overload. 5. Battery voltage low.
15	Alarm indications (Alarms indication should be audible and visible)	1. AC input main fails/ out of range 2. Battery charger fail 3. Battery Low 4. System Overload/ overheated
16	Communication port	RS 485 / RS 232 based 9-pin Port for communication and SNMP card slot shall be available for future use.
17	Earthing	Two Earthing terminals should be provided.
18	UPS body	1. The body of UPS should be IP20 or better ; the body should be fully covered except for the ventilation and cable entries points. 2. Enclosure made of steel sheet having 1.2 mm (minimum) thickness, coated. 3. All the terminals should be electrically isolated, and marked for future references.

3.2. MOSFET/ IGBT can be used as switching devices.

3.3. The UPS system includes: Rectifier unit, Battery charger, Inverter unit, Battery Bank, Bypass switch (automatic and manual), user and communications interface, Digital controller and management system, , Circuit breakers, Fuses and other switches, Isolation transformer etc. and others devices required for safe operation and maintenance.

3.4. Details of the isolation transformer (for isolation of neutral from source) installed in the system shall be furnished; the isolation transformer shall be inbuilt to UPS body or be added to it, without increasing the UPS system foot print.

3.5. Battery preferred make: Amar Raja (Quanta), Exide, Panasonic, Mitsubishi. The batteries to be used in UPS system shall be approved by Indian govt. approved labs or equivalent International lab approval for use in UPS.

3.6. **Optional:** the UPS system supplied may have capability of operating in parallel configuration by using add-on paralleling kit in future.

3.7. The OEM shall be ISO certified.

4. **UPS and battery bank required: Quantity 2 numbers.**

5. **Operating condition.**

1. Operating Ambient Temperature: 0 to 40°C
2. Relative Humidity: 0 to 95% non-condensing.
3. 55 meters above MSL

6. Documents and certificates:

1. Detailed catalogue and manuals explaining the various aspects of operation, Safety measures, trouble shooting and repair.
 2. Procedure and time chart for routine maintenance, preventive maintenance, part replacement guide (Table indicating part number, dimensions and rating), troubleshooting procedures along with flowcharts for various alarm conditions and faults.
 3. Service location and maintenance centers contacts, local service contact in Ahmedabad / Gandhinagar.
 4. **Test certificate:** Test reports are to be submitted along with material.
 1. UPS type test report according IS 16242 / IEC 62040 or equivalent international standard.
 2. UPS Factory Acceptance Test and UPS functionality test Reports.
 3. Battery type test report (from Battery or UPS manufacturer).
7. **Warranty and AMC:** Warranty should be of at least 12 month for the product. and Onsite service support should be extended for 2 Years (AMC) from the date of commissioning of the UPS system.
8. **Delivery and Tests at IPR site:** Scope covers delivery, installation, commissioning and configuration of the UPS. It also includes Demonstration of the various modes of operation, battery back time,

Technical compliance sheet

Sr.no	Particulars	IPR Requirements	Vendor specification
1	Input	Input Range 380 to 480V AC and 48-52 Hz	
2	Output	400VAC, 50Hz, continuous uninterrupted 3 Phase, pure sine wave output, in 4 wire output configuration. The Output voltage should be settable in steps of 380-400-415VAC; settable and stable within +/- 3% of the set voltage, all the time. The output frequency shall be synchronized to the mains all the time and 50+/- 1Hz on battery backup	
3	Efficiency, Power factor and overload	Better than 90%; PF better than 0.8; better than 120 % for 10 minutes	
4	UPS body	UPS shall be free from workmanship defects, sharp edges, nicks, scratches, blurs, etc. All fasteners shall be fixed properly. The equipment shall be complete with all parts and all parts shall be functional Enclosures shall conform to protection requirement of IP20 or better	
5	Switching device	Switching device shall be MOSFET, IGBT and the same shall be declared in the offer, along with switching frequency.	
6	Protection	1. Output Under/ over voltage. 2. DC Under/ over voltage. 3. Short circuit and overloading protection	
7	Indication	1. Mains available 2. Battery Charging and discharging. 3. Load on inverter. 4. Output overload. 5. Battery voltage low	
	Metering	1. AC mains input voltage. 2. AC Output voltage and current. 3. Output Power frequency. 4. DC voltage to inverter unit. 5. Battery current charging and discharging.	
8	Battery and battery bank	Minimum 18500VAH for each UPS. Suppliers shall declare battery AH Capacity, battery voltage, make and model of batteries, minimum VAH rating of the battery bank, The battery bank shall be supplied along with racks, and installed at IPR site.	
9	Communication port	RS232/485 based communication.	

Bidder's Sign with Official Stamp