

| | | | <p>Rated power 2000 W</p> <p>Rated frequency 50 Hz</p> <p>Frequency 48 Hz ... 52 Hz [other values are possible]</p> <p>Night-time power loss 1.3 W</p> <p>Feeding phases single-phase</p> <p>Power factor cos phi 1</p> <p>Distortion factor < 5 % (max. power)</p> <p>Characterization of the operating performance</p> <p>Maximum efficiency 95 %</p> <p>European efficiency 93.3 %</p> <p>MPP efficiency 99 %</p> <p>Power de-rating at full power from 40 °C</p> <p>Switch-on power 1.5 W</p> <p>Standby power 0W</p> <p>Poly Crystalline Module (2000Wp) Two parallel strings of panels with each string having four series connected modules</p> <table border="1"> <thead> <tr> <th>S.No.</th> <th>Parameter</th> <th>Rating</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Power rating</td> <td>250W_p</td> </tr> <tr> <td>2</td> <td>Maximum power voltage</td> <td>36.42V</td> </tr> <tr> <td>3</td> <td>Maximum power current</td> <td>6.9A</td> </tr> <tr> <td>4</td> <td>Open circuit voltage</td> <td>43.78V</td> </tr> <tr> <td>5</td> <td>Short circuit current</td> <td>7.4A</td> </tr> </tbody> </table> | S.No. | Parameter | Rating | 1 | Power rating | 250W _p | 2 | Maximum power voltage | 36.42V | 3 | Maximum power current | 6.9A | 4 | Open circuit voltage | 43.78V | 5 | Short circuit current | 7.4A | | |
|-------|-----------------------|-------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|-----------|--------|---|--------------|-------------------|---|-----------------------|--------|---|-----------------------|------|---|----------------------|--------|---|-----------------------|------|--|--|
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| | | | 6 | No of cells in series | 72 | | |
| | | | 7 | Panel efficiency | 14.87 | | |
| Electrical Engineering | 141 | 2 kW prototype Solar PV Setup | <p>1. Photovoltaic solar panels: 2 kW Polycrystalline panels, Rating: MPP power 200 watts, MPP voltage 90V, 12 V, 24 Watts PV panels .</p> <p>2. DC to DC Bidirectional buck boost converter for charging the battery</p> <p>a. 4 Nos of high speed IGBT or MOSFET semiconductor devices are used</p> <p>b. 4 Nos of isolated high speed driver circuits are used</p> <p>c. 2 Nos of Hall effect Current transducer used for sensing the input and output of the converter current</p> <p>d. 2 Nos of Hall effect voltage transducer used for sensing the input and output of the converter voltage</p> <p>e. In boost mode I/P is 100V and O/P is 300V</p> <p>f. In buck mode I/P is 300V and O/P is 100V</p> <p>g. Power Rating is 2 kW</p> <p>h. dv/dt protection is available for all IGBT (Snubber circuit)</p> <p>j. dsPIC 4011 digital controller is used for generating the gate signal for the IGBT with Over load protection</p> <p>3. Battery 8 Nos of 12V, 200Amps per hour batteries are connected is sensing to get 100V,DC O/P, Battery stand to be provided</p> <p>4. Inverter Module Three Phase IGBT based Power Module Power Circuit Input: 230VAC/300 VDC @ 4 amps Power Circuit Output: Suitable 750 watt RL load</p> <p>5. Sensors</p> <p>i) 3 temperature sensors provided signal conditioning circuits Input: 0-200° C, Output: 0-5 V DC</p> <p>ii) 3 Nos. of Hall effect current transducers with signal conditioning circuits. Input: 0-5 A, Output: 0-3 V</p> <p>iii) 3 Nos. of Hall effect voltage transducers with signal</p> | | | 01 | Prof. B.Subudhi, Coordinator, CoE-RES, Ph:0661-2462416, Email: bidyadhar@nitrkl.ac.in |

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| | | | <p>conditioning circuits, Input: 0-450 V, Output: 0-3 V</p> <p>6. DC to DC Boost Converter Input voltage: 100V DC, Output Voltage: 300V DC Should consists of high speed IGBT/MOSFET, high speed OPTO isolator, PWM driver circuit, Hall effect current transducer with signal conditioning circuit, Hall effect voltage transducer with signal conditioning circuit, Dspic4011 digital controller</p> <p>7. Inverter Control System VPE SPARTAN 3A/3A DSP BOARD * Xilinx 3SD1800A-FG676 FPGA * Memory: 2 Nos of 32MB SDRAM *Interface: i) One isolated RS232 Serial port ii) One isolated Full speed USB port iii) One High speed (480 Mbit/sec) USB port (TMC protocol compatible) iv) On board Jtag programmer * 50 PWM outputs 16 PWM outputs are terminated at our standard 34 pin FRC connector 34 PWM outputs are terminated at a separate connector * 8 capture inputs * 8 digital I/O * Input & output Devices i) 16 User LEDs` ii) 8 Dip switches iii) 2 Limit switches iv) One reset switch v) 16 x 2 alphanumeric LCD * Analog I/O 8 channel 12 bit 2MSPS ADC 4 Channel 14 bit 2MSPS DAC</p> | | |
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| | | | <p>8. Data Acquisition System</p> <p>Base Board Specification</p> <ul style="list-style-type: none"> * USB TMC Standards * True plug and play # USB TMC Class Device 12 bit ADC & 14 bit DAC * Analog Input : 8SE/4DI * No. of ADC : Single Dual Channel ADC * Simultaneous Sampling : 2 Channel * Sampling Rate : 2msps * Range : 0to5v * Analog output : 4 Channel * No.of DAC : 2 * Resolution : 14 bit * Speed : 2msps * Range : 5v * USB based Data Acquisition system <p>* Battery voltage and current, PV panel's voltage and current, Inverter output Voltage and Current displayed in a PC through the Data Acquisition system (DAS)</p> <p>7. Programmable AC source</p> | |
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Nodal Officer (Procurement)
 Nodal Officer (Procurement)
 TEQIP-II
 National Institute of Technology
 Rourkela-769008

FORMAT OF QUOTATION * SUBMISSION
(In letterhead of the supplier with seal)

| Sl. No. | Description of goods (with full Specifications) | Qty. | Unit | Quoted Unit rate in Rs. (Including Ex-Factory price, excise duty, packing and forwarding, transportation, insurance, other local costs incidental to delivery and warranty/ guaranty commitments) | Total Price (A) | Sales tax and other taxes payable | |
|-------------------|-------------------------------------------------|------|------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|-----------------------------------|----------------|
| | | | | | | In % | In figures (B) |
| | | | | | | | |
| Total Cost | | | | | | | |

Gross Total Cost (A+B): Rs. _____

We agree to supply the above goods in accordance with the technical specifications for a total contract price of Rs. _____(Amount in figures) (Rupees _____amount in words) within the period specified in the Invitation for Quotations.

We confirm that the normal commercial warranty/ guarantee of _____ months shall apply to the offered items and we also confirm to agree with terms and conditions as mentioned in the Invitation Letter.

We hereby certify that we have taken steps to ensure that no person acting for us or on our behalf will engage in bribery.

Signature of Supplier

Name: _____

Address: _____

Contact No: _____