Solar Pump Inverter
It rises with the new century concept of sustainable development, which is highly respected by governments, to benefit the global areas lack of electricity and water. Solar pumps are the most attractive water supply method in the sunny areas today, especially in remote areas without electricity. Using the inexhaustible solar energy, the system automatically works at sunrise and stops at sunset and has no need of personal care, which is a perfect green energy system with economy, reliability and environmental benefits.

Shenzhen Veichi Electric Co., Ltd. is a high-tech enterprise that is professionally engaged in the development, manufacturing and marketing of industrial automation control products, and committed to becoming a global leading provider of industrial automation control products and system solutions.

The company owns powerful R&D team, relatively perfect production system, independent intellectual property and manufacturing bases in Shenzhen and Suzhou. To improve our R&D strength, we keep on introducing advanced overseas technology and broadening our partnerships with first-class universities and research institutions.

The main products of Veichi Electric include a variety of Variable Frequency Drive (VFD), Servo Drive System, Photovoltaic Inverter, PLC, HMI, automation equipment, etc, which are widely used in industries such as oil & gas, chemical industry, ceramic, crane & hoist, metallurgy, electrical cable and wire, plastic, print and package, textile, metal work and cable, coal mining and municipal engineering. Suitable solutions and products are always ready to meet the demands and improve comprehensive competitiveness of users.

With the spirit of "Innovation is the lifefood of Veichi", we're committed to becoming one of the leading providers of electric drives, industrial control and green energy products. Veichi has set up more than 40 branch offices in China and dozens of partners in Asia, Europe and Africa. Veichi has been named Chinese Electric Industry’s Top Ten National Brands, Chinese Electric Industry Top Ten Satisfying Brands and Top Ten National Brands of Inverter Industry. Veichi products have become the first choice of many enterprises.
Solar pump IOT monitoring system

The global cumulative online volume of more than 100000 units
Real-time monitoring, remote expert consultation, large data automatic calculation of the power generation and pumping capacity and other energy-saving status, PC support, mobile APP query.

Solar pump inverter introduction

SI20 series solar pump inverter
- **Clean energy**: inexhaustible energy supply, non-pollution, zero carbon dioxide emissions, actively contribute to curbing global warming.
- **Economic and affordable**: One-time investment to get long-term returns, and enjoy government subsidies.
- **Safe and reliable**: unattended, work at sunrise and stop at sunset.
- **Simple operation**: One key operation
- **Smart Internet of Things**: powerful GPRS Internet of Things, and users could master the system state at anytime and anywhere.
- **Personal customized**: special model supports ultra low input voltage of 30-300VDC with a specialized sine wave filter.
- **International standards**: in line with national standards, and access to CE certification.

SI20-D0-1R5G special type of solar pump inverter
- **Ultra low voltage**: With the incredible ultra low input voltage of 30VDC, 300W three-phase AC pumps could be driven perfectly, “a panel, a pump, will no longer be a dream.”
- **Super Compatibility**: Can drive three-phase AC AM and PMSM pumps.
- **Ingenious design**: powerful Boost function and specialized sine wave output filter.
- **Electrical parameters**: input power of 30-300V DC or 1 * 90-240V AC; maximum output power of 1.5kW, maximum output current of 10A, output voltage of 3 * 90-230V AC

Four features of solar pump inverter

- AC110V/220V/400V
- AM and PMSM pumps
- Smart GPRS
- MPPT > 99%
Model Analysis of three - phase AC PMSM pump drive

<table>
<thead>
<tr>
<th>Product Model</th>
<th>Voltage Level</th>
<th>Input Power</th>
<th>Power Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>SI20-D5-xxG</td>
<td>110V</td>
<td>30-300VDC</td>
<td>Single Phase, 110VAC</td>
</tr>
<tr>
<td>SI20-D1-xxG</td>
<td>90-400VDC</td>
<td>50-300VDC</td>
<td>Three Phase, 110VAC</td>
</tr>
<tr>
<td>SI20-D3-xxG</td>
<td>150-450VDC</td>
<td>250-380VDC</td>
<td>Three Phase, 220VAC</td>
</tr>
<tr>
<td>SI20-D5-xxG</td>
<td>380V</td>
<td>250-780VDC</td>
<td>Three Phase, 380VAC</td>
</tr>
<tr>
<td>SI20-T3-xxG</td>
<td>380V</td>
<td>350-780VDC</td>
<td>Three Phase, 380VAC</td>
</tr>
</tbody>
</table>

Technical Specification

- **Model Analysis**
  - **Technical Specification**
  - **Rated Power (KW)**
  - **Rated Voltage (V)**
  - **Maximum Input Power (kW)**
  - **Maximum Input Voltage (V)**
  - **Total Output Current (A)**
  - **Output Frequency Range (Hz)**

- **Solar Pump Power (KW)**
  - **Pump Input Voltage (V)**
  - **Maximum Input Power (kW)**
  - **Maximum Input Voltage (V)**
  - **Rated Output (V)**
  - **Rated Output Frequency (Hz)**

- **VFD Efficiency**
  - **MPPT efficiency**
  - **Output frequency range**
  - **Overload capacity**
  - **Solar pump protection function**
  - **Basic protection function**
  - **Motor grounding protection function**
  - **Servo control**
  - **Communication network**
  - **Remote monitoring and control function**
  - **Installation site**
  - **Temperature, humidity**
  - **Vibration**
  - **Storage Temperature**
  - **Installation mode**
  - **Ingress Protection**
  - **Cooling Method**
  - **International Certificates**

- **Technical Specification**
  - **Items**
  - **Specification**

- **Input Power Supply**
  - **Voltage, frequency**
  - **Allowable Fluctuations**
  - **VFD Efficiency**

- **Output**
  - **Total Vc range (V)**
  - **Overload capacity**
  - **Motor grounding protection function**
  - **Servo control**
  - **Communication network**
  - **Remote monitoring and control function**
  - **Installation site**
  - **Temperature, humidity**
  - **Vibration**
  - **Storage Temperature**
  - **Installation mode**
  - **Ingress Protection**
  - **Cooling Method**
  - **International Certificates**

- **Other**
  - **Distortion Rate**
  - **Voltage Imbalance Rate**

- **Ingress Protection**
  - **CE**

- **Environmental Conditions**
  - **Vibration**
  - **Storage Temperature**
  - **Installation mode**
  - **Ingress Protection**
  - **Cooling Method**
  - **International Certificates**

- **Technical Information**
  - **Model Analysis**
  - **Technical Specification**
  - **Input Power Supply**
  - **Output**
  - **Environmental Conditions**
  - **Other**
  - **International Certificates**
Solar panels recommended configuration

<table>
<thead>
<tr>
<th>Solar pump inverter model</th>
<th>Solar panel model 1</th>
<th>Solar panel model 2</th>
<th>Solar panel model 3</th>
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<tbody>
<tr>
<td></td>
<td>P±3W</td>
<td>Isc</td>
<td>configuration</td>
</tr>
<tr>
<td>SI20-D1-R75G</td>
<td>300W</td>
<td>2.76A</td>
<td>17°2</td>
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<tr>
<td>SI20-D1-1R5G</td>
<td>500W</td>
<td>4A</td>
<td></td>
</tr>
<tr>
<td>SI20-D3-R75G</td>
<td>500W</td>
<td>5.5A</td>
<td>17°2</td>
</tr>
<tr>
<td>SI20-D3-1R5G</td>
<td>500W</td>
<td>5.5A</td>
<td>17°2</td>
</tr>
<tr>
<td>SI20-D3-004G</td>
<td>300W</td>
<td>5.5A</td>
<td>17°3</td>
</tr>
<tr>
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<td>300W</td>
<td>2.76A</td>
<td>30°1</td>
</tr>
<tr>
<td>SI20-D5-1R5G</td>
<td>300W</td>
<td>3.46A</td>
<td>30°1</td>
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<tr>
<td>SI20-D5-2R2G</td>
<td>900W</td>
<td>5.5A</td>
<td>30°1</td>
</tr>
<tr>
<td>SI20-D5-004G</td>
<td>900W</td>
<td>5.5A</td>
<td>30°1</td>
</tr>
</tbody>
</table>

Note:
The recommended total Vmp of solar panel shall be 1.15 times of inverter bus voltage. For example, in D5 series, the recommended Vmp voltage is 540V*1.15=621V; and in D3 series, the recommended Vmp voltage is 311*1.15=357V; For example, the D1 series recommended Vmp is 155*1.15=178V.

The recommended total power of solar panel should be at least 1.2 times of the inverter power (drive the same power pump); such as the recommend total power of solar panel for 7.5kW water pump system: 7500*1.2=9000W;

The maximum withstand voltage of D1 model products is 400VDC; of D3 model products is 450VDC; and of D5 and T3 model products is 780VDC.