The WVC Series Micro Inverter delivers increased energy harvest and reduces investors' unit cost on each watt generates. It has built-in high performance Maximum Power Point Tracking (MPPT) function; precisely track changes in solar luminosity, control varied output power, and effectively collect sun energy. The inverter output power can provide load priority and transfer extra electricity to the grid. It has 2 communication modes: power line carrier communication signals between the inverter and collector; and RS232 serial port / WIFI communication between collector and a PC or other communication devices. With WVC monitoring systems, the inverter can collect real-time data and master start up, shut down and power regulation easily.

**WVC300** Using IP65 waterproof streamline design, Can effectively prevent rainwater on the surface erosion, Built-in high-performance Maximum Power Point Tracking (MPPT) Function, Better able to track changes in the solar luminosity and control different output power, Effectively capture and collect sunlight. AC electric power transmission using the reverse transmission technology, Is one of our patented technology, The inverter output power can provide load priority use, Extra electricity to the grid, Efficient use of the inverter to the power emitted, Electricity transmission rate of up to 99%.

Communication using two modes, Between the inverter and Collector Using power line carrier communication signals, Collector with a PC or other devices to communicate Using RS232 serial port/ WIFI wireless communication. Intelligent monitoring systems, The inverter can collect real-time data, Inverter can be controlled startup / shutdown / power regulation.

**Features:**
- High performance maximum power point tracking (MPPT)
- Reverse power transmission
- Intelligent monitoring management
- Input/output is fully isolated to protect the electrical safety
- Multiple parallel stacking
- Digital control system
### MICROINVERTERS

#### WVC300

- Simplify maintenance (user serviceable)
- Operation and maintenance costs low
- Flexible installation

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**WVC300 Parameters**

<table>
<thead>
<tr>
<th>Input Data</th>
<th>WVC300-120VAC/230VAC</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Recommended input power</strong></td>
<td>300Watt</td>
</tr>
<tr>
<td><strong>Recommended use of PV modules</strong></td>
<td>≥30W/Vmp&gt;34V/Voc&lt;50V</td>
</tr>
<tr>
<td><strong>Maximum input DC voltage</strong></td>
<td>50V</td>
</tr>
<tr>
<td><strong>Peak power tracking voltage</strong></td>
<td>22-50V</td>
</tr>
<tr>
<td><strong>Operating Voltage Range</strong></td>
<td>17-50V</td>
</tr>
<tr>
<td><strong>Min / Max start voltage</strong></td>
<td>22-50V</td>
</tr>
<tr>
<td><strong>Maximum DC short current</strong></td>
<td>15A</td>
</tr>
<tr>
<td><strong>Maximum Input Current</strong></td>
<td>9.8A</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Output Data</th>
<th>@120VAC</th>
<th>@230VAC</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Peak power output</strong></td>
<td>260Watt</td>
<td>260Watt</td>
</tr>
<tr>
<td><strong>Rated output power</strong></td>
<td>250Watt</td>
<td>250Watt</td>
</tr>
<tr>
<td><strong>Rated output current</strong></td>
<td>2.08A</td>
<td>0.92A</td>
</tr>
<tr>
<td><strong>Rated voltage range</strong></td>
<td>80-160VAC</td>
<td>180-260VAC</td>
</tr>
<tr>
<td><strong>Rated frequency range</strong></td>
<td>57-62.5Hz</td>
<td>47-52.5Hz</td>
</tr>
<tr>
<td><strong>Power factor</strong></td>
<td>&gt;96%</td>
<td>&gt;96%</td>
</tr>
<tr>
<td><strong>Maximum units per branch circuit</strong></td>
<td>15PCS (Single-phase)</td>
<td>30PCS (Single-phase)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Output Efficiency</th>
<th>@120VAC</th>
<th>@230VAC</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Static MPPT efficiency</strong></td>
<td>99.5%</td>
<td>99.5%</td>
</tr>
<tr>
<td><strong>Maximum output efficiency</strong></td>
<td>94.6%</td>
<td>94.6%</td>
</tr>
<tr>
<td><strong>Night time power consumption</strong></td>
<td>≤50mW Max</td>
<td>≤70mW Max</td>
</tr>
<tr>
<td><strong>THD</strong></td>
<td>≤5%</td>
<td>≤5%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Exterior</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Ambient temperature</strong></td>
<td>-40°C to +60°C</td>
</tr>
<tr>
<td><strong>Operating temperature range (inverter inside)</strong></td>
<td>-40°C to +82°C</td>
</tr>
<tr>
<td><strong>Dimensions (WxHxD)</strong></td>
<td>191mm x 130mm x 38mm</td>
</tr>
<tr>
<td><strong>Weight</strong></td>
<td>0.83kg</td>
</tr>
<tr>
<td><strong>Waterproof Rating</strong></td>
<td>IP65</td>
</tr>
<tr>
<td><strong>Cooling</strong></td>
<td>Self-cooling</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Feature</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Communication Mode</strong></td>
<td>Power Line</td>
</tr>
<tr>
<td><strong>Power transmission mode</strong></td>
<td>Reverse transfer, load priority</td>
</tr>
<tr>
<td><strong>Monitoring System</strong></td>
<td>Lifetime free</td>
</tr>
<tr>
<td><strong>Electromagnetic compatibility</strong></td>
<td>EN50081.part1, EN50082.part1</td>
</tr>
<tr>
<td><strong>Grid disturbance</strong></td>
<td>EN61000-3-2 Safety, EN62109</td>
</tr>
<tr>
<td><strong>Grid detection</strong></td>
<td>DIN VDE 1026 UL1741</td>
</tr>
<tr>
<td><strong>Certificate</strong></td>
<td>CEC, CE, National patent technology</td>
</tr>
</tbody>
</table>

**Note:** The monitoring software can monitor multiple threads simultaneously 6 PCS power line acquisition simultaneously monitor 600 inverters.

1) Each WVC Power Line Modem monitoring 100 inverters
2) Monitoring system simultaneously collect real-time data from 6 WVC power line Modem by 6 threads
**PV micro-inverter system components**

System Block Diagram

![System Block Diagram](image)

In summary, Micro-inverter system is simpler, more convenient installation.

**System Description**

Micro-grid inverter system components

- PV panels
- Micro-inverters
- WVC Data collection
- Monitoring System
- Power Line Filters
High performance maximum power point tracking (MPPT)

Powerful MPPT algorithm. Optimize the power from the solar panels to collect. Accurately capture and lock the maximum output power point. A substantial increase in output power greater than 25% or more.

Power Output: (Reverse power transmission)

Reverse efficient power transmission technology. Patented technology. The inverter power transmission in the reverse direction. Automatic detection circuit load and using priority. Additional power transmitted to the grid. Power transmission rate up to 99.9%. Higher output efficiency in photovoltaic application system manipulation.
Electrical schematics

Single-phase electrical schematics

Three-phase electrical schematics
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WVC300

Solar Micro Inverter System

GRID
- Meter
- Filter
- WVC-Modem

Monitoring System

Special PV AC Main Cable

RS232/WiFi

Home/Business

Solar Generation System
-WVC300

PV Panel 1
WVC300

PV Panel 2
WVC300

PV Panel 3
WVC300

PV Panel n
WVC300

WVC300

WVC300

Shenzhen Sigineer Power CO., LTD.
**WVC300**

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① Ground  
② AC output  
③ PV panel positive input  
④ PV panel positive output  
⑤ Inverter fixed point  
⑥ Inverter label  
⑦ LED Display
**Installation and connection**

WVC300 Series Solar Inverter very easy to install, No need for project professionals can also install. Whether installation or maintenance are very simple, No maintenance.

**Monitoring System**

The Monitoring System KDM is a product designed specifically for WVC.

**Solar UV resistant connector**

Professional PV AC power cable, can effectively prevent ultraviolet radiation, longer life and more durable.
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Data collection

1. AC power input, power line signal input
2. RS232 serial data port
3. Data Send LED Indicator (blue)
4. Data Receive LED Indicator (blue)
5. Power Indicator

**Why is the use of micro-inverter?**

1. The transition from a centralized to a distributed inverter optimizes energy collection.
2. The converter module integrated into the solar panels can reduce installation costs.
3. By reducing the temperature of the converter and remove the fan, you can enhance system reliability from 5 years to 20 years.
MICROINVERTERS

WVC300

4. Soft switch technology to replace hard-switching technology can improve efficiency and reduce heat dissipation.
5. From cottage industry to mass production, standardized design (hardware and software) to improve reliability and reduce costs.
6. Using a special capacitor (due to the high failure rate). Design requires a higher voltage to reduce the current, we use a special electrolytic capacitors.
7. The converter can be connected to the grid to eliminate the need for many battery applications. The high price of batteries, require maintenance, life expectancy is shorter.
8. Work required micro-inverter power increasingly smaller (only a few hundred watts), which can reduce the internal temperature and improve reliability.
9. Micro-inverter solar inverter system needs to deal with a lot of a particular power level, in order to increase production, thereby reducing costs.

Power line signal filter

① N-pole AC output
② N-pole AC input
③ L-pole AC input
④ Output Ground
⑤ L-pole AC output
⑥ Fixed
⑦ Input Ground

Contact Us:
MICROINVERTERS

WVC300