The SS Plus Series Inverters are true on-line ferroresonant transformer-based designs intended for use in UPS systems or in stand-alone applications.

The inverter’s basic function is to convert DC power from a rectifier/charger or battery to an extremely accurate, regulated AC output for powering the critical AC load. Each inverter includes a static transfer switch and manual bypass switch.
Circuit Breakers:
- DC Input
- Bypass Source Input

Optional Features

Indicators & Alarms*:
(Not to exceed 12)
- High DC Voltage
- High DC Disconnect
- Negative/Positive to Ground (counts as 2)
- Latching Alarms
- Lamp Test Pushbutton
- Over Temperature
- Bypass Source Low Voltage
- Bypass Source High Voltage
- Low AC Output
- High AC Output
- Summary
- Out of Sync
- Fuse Blown Alarm
- Audible Alarm
- MBS Position Indicator (counts as 2)

Meters:
- System Output Voltmeter
- Bypass Source Input Voltmeter
- Bypass Frequency Meter
- DC Input Voltmeter
- DC Input Ammeter

Cabinet Options:
- Top-Mounted Dripshield (IP-31)
- Fungus/Moisture Spray

Circuit Breakers:
- Inverter Output (Non-automatic)
- AC Output (Static Switch)

*Cabinet:
- NEMA-1 (IP-20)

Cabinet Options:
- Top-Mounted Dripshield (IP-31)
- Fungus/Moisture Spray

Circuit Breakers:
- DC Input
- Bypass Source Input

Indicators & Alarms*:
- Battery Supplying Load
- Bypass Source Failure
- In Sync (Pilot Light)
- Fan Failure
- Low DC Disconnect
- Static Switch Transfer (Alarm)
- Inverter Failure

Cabinet:
- NEMA-1 (IP-20)

Meters:
- AC Inverter Output Voltmeter
- AC Output Ammeter
- Inverter Output Frequency Meter

*Note: Alarms supplied with one SPDT contact rated for 3 Amps at 120VAC. Consult factory for additional options.

Lighted Mimic Panel Block Diagram
The **Inverter** uses Insulated Gate Bi-polar Transistors (IGBT’s) to produce an alternating current square wave at a frequency determined by a crystal controlled oscillator. The output is filtered by a ferroresonant regulator, which creates a low distortion sine wave output from the square wave input and regulates with a minimum amount of components. In addition, it has a built-in current limiting feature for inverter protection.

The **Static Switch** is isolated using high voltage reed relays and automatically transfers a critical load from the output of a failed or overloaded inverter to a bypass source of power without interruption.

The **Manual Bypass Switch** is a two-position manual make-before-break switch used to bypass the inverter and static transfer switch for maintenance purposes.

### Controls
- **Inverter to Load Pushbutton**
- **Bypass to Load Pushbutton**
- **Precharge Pushbutton**

### Conversion Efficiency
- **Inverter DC–AC:**
  - 130VDC: 83-88%
  - 260VDC: 84-88%

### Static Switch
- **Normal Source:** Inverter Output
- **Alternate Source:** Bypass Supply
- **Voltage:** Bypass Supply voltage must match the inverter output voltage
- **Transfer Time:** Zero (make-before-break in both directions)
- **Transfer Criteria:**
  1. Inverter Bridge Failure (from inverter to bypass)
  2. Load Overcurrent
  3. Low Inverter Voltage

### Manual Bypass Switch
- **Retransfer Criteria:**
  1. Inverter in Sync (from bypass to inverter)
  2. Auto Retransfer Defeat Switch Off
- **Overcurrent Transfer:** 120%
- **Overload Capacity:** 1000% for 1 cycle

### Cable Entry
- Bottom front via removable gland plate (one plate per bay)
- Consult factory for top/side cable entry

*Internal Manual Bypass Switch is normally removed when a Remote Bypass Switch is selected*
### 110, 130 VDC LINK

<table>
<thead>
<tr>
<th>Model</th>
<th>kVA</th>
<th>kW</th>
<th>DC, AC Efficiency</th>
<th>Cabinet Style</th>
<th>Heat Loss (Watts)</th>
<th>Nom DC Volts</th>
<th>Circuit Breaker Ampacity</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>SS12030U**</td>
<td>3</td>
<td>3</td>
<td>83</td>
<td>E</td>
<td>614</td>
<td>110</td>
<td>50</td>
<td>850</td>
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<tr>
<td>SS12200U**</td>
<td>20</td>
<td>20</td>
<td>86</td>
<td>E</td>
<td>3121</td>
<td>110</td>
<td>350</td>
<td>1325</td>
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<tr>
<td>SS12050U**</td>
<td>5</td>
<td>5</td>
<td>85</td>
<td>E</td>
<td>882</td>
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<td>100</td>
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<tr>
<td>SS12075U**</td>
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<td>7.5</td>
<td>85</td>
<td>E</td>
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<td>125</td>
<td>1000</td>
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<td>SS12100U**</td>
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<td>10</td>
<td>85</td>
<td>E</td>
<td>1696</td>
<td>110</td>
<td>175</td>
<td>125</td>
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<tr>
<td>SS12150U**</td>
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<td>15</td>
<td>86</td>
<td>E</td>
<td>2442</td>
<td>110</td>
<td>250</td>
<td>175</td>
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<tr>
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<td>20</td>
<td>86</td>
<td>E</td>
<td>3121</td>
<td>110</td>
<td>350</td>
<td>225</td>
</tr>
<tr>
<td>SS12300U**</td>
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<td>30</td>
<td>87</td>
<td>K</td>
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<td>500</td>
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<td>88</td>
<td>H</td>
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<td>130</td>
<td>600</td>
<td>125</td>
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<tr>
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<td>50</td>
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<td>H</td>
<td>6818</td>
<td>110</td>
<td>600</td>
<td>150</td>
</tr>
</tbody>
</table>

**Note:** For 120/240 volt output, also place a “2” before the “SS”.

### 220, 260 VDC LINK

<table>
<thead>
<tr>
<th>Model</th>
<th>kVA</th>
<th>kW</th>
<th>DC, AC Efficiency</th>
<th>Cabinet Style</th>
<th>Heat Loss (Watts)</th>
<th>Nom DC Volts</th>
<th>Circuit Breaker Ampacity</th>
<th>Weight</th>
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<tbody>
<tr>
<td>SS25030U**</td>
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<td>3</td>
<td>83</td>
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<td>K</td>
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<td>88</td>
<td>H</td>
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<td>450</td>
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<td>SS25500U**</td>
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<td>H</td>
<td>6818</td>
<td>220</td>
<td>400</td>
<td>600</td>
</tr>
</tbody>
</table>

### Specifications

A complete inverter model number includes the DC bus (link) voltage, AC output voltage, and system frequency. To “build” a model number, use the “code” in the matrix shown below.

Model Number: SS12100U - YY-ZZ-AA

where:

- YY = DC Bus Voltage
- ZZ = AC Output Voltage
- AA = System Frequency

<table>
<thead>
<tr>
<th>DC Bus Volts Code</th>
<th>AC Output Volts Code</th>
<th>Freq Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>130 13</td>
<td>120 12</td>
<td>60Hz 60</td>
</tr>
<tr>
<td>260 26</td>
<td>120/240 24</td>
<td>50Hz 50</td>
</tr>
<tr>
<td>110 11</td>
<td>220 22</td>
<td></td>
</tr>
</tbody>
</table>

**Note:** For 120/240 volt output, also place a “2” before the “SS”.

Example: A 30 kVA Inverter with 260 VDC bus, 220 VAC output voltage, 50 Hz: Model No. SS12300U-26-22-50. If voltage code is not listed…place a “C” after the “U”. Example: Model No. SS12300UC.

Consult your local Solidstate Controls representative or the factory if you have any questions.

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**GENERAL SPECIFICATIONS SS Plus**

**Model:** SS12100U - YY-ZZ-AA

**Where:**
- YY = DC Bus Voltage
- ZZ = AC Output Voltage
- AA = System Frequency

**Specifications:**

- **Cabinet Specifications:**
  - **Cabinet Dimensions:**
    - **H** x **W** x **D**
      - **E:** 78 x 29 x 32 (1981 x 737 x 813)
      - **H:** 85 x 56 x 36 (2159 x 1422 x 914)
      - **K:** 85 x 56 x 32 (2159 x 1422 x 813)

- **Certain optional features and/or combinations may require larger cabinets. Contact factory.**

**Consult your local Solidstate Controls representative or the factory if you have any questions.**

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**Weight:**

- **Weight of 60Hz units, 50Hz 7% more**

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**Contact:**

- **Solidstate Controls**
  - **World Headquarters:**
    - 875 Dawes Road - Columbus, OH 43285
    - Phone: 1-800-535-7300
    - Fax: 1-814-885-3960
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    - Olivar 1554 2900 Buenos Aires, Argentina
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