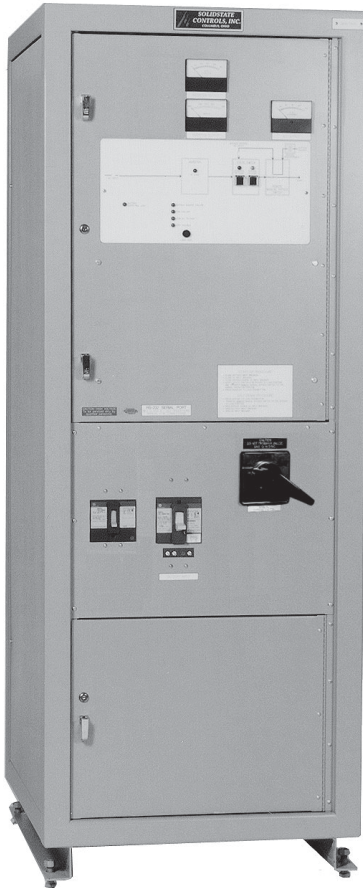


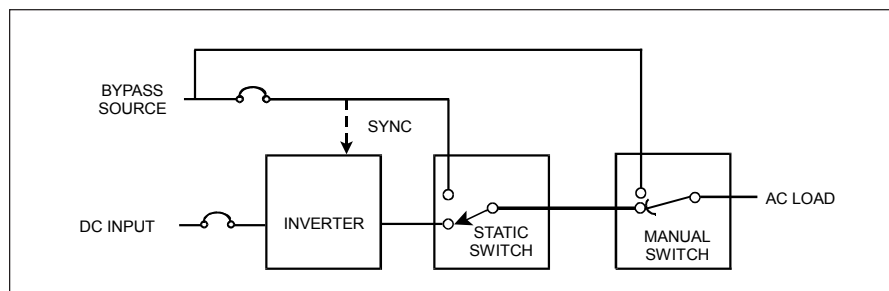
Static Inverter 3-50 kVA Single Phase



- ◆ High reliability—exceeds 140,000 hrs. (16 yrs.) MTBF
 - ◆ Industrial grade – built to operate in extreme environments, (VPI) vacuum impregnated magnetics with 200°C epoxy insulation
 - ◆ Low audible noise
 - ◆ High efficiency transistor bridge
 - ◆ Long life LED indicators, front panel accessibility
 - ◆ Harmonic filtering for Distributed Control Systems
 - ◆ Unique crest factor circuitry provides full capacity for non-linear loads
 - ◆ Optional remote status panel
- All components are front accessible-no side or back clearance required
- Integral system event recording for diagnostics (logs last 100 events)
- ◆ Lighted Mimic Panel Display
 - ◆ Microprocessor based alarms
- RS232 Communications Interface accessible through door front

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.



On-Line UPS Block Diagram Float System

GENERAL SPECIFICATIONS SS *Plus*

Circuit Breakers:

DC Input
Bypass Source Input

Meters:

AC Inverter Output Voltmeter
AC Output Ammeter
Inverter Output Frequency Meter

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)

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:

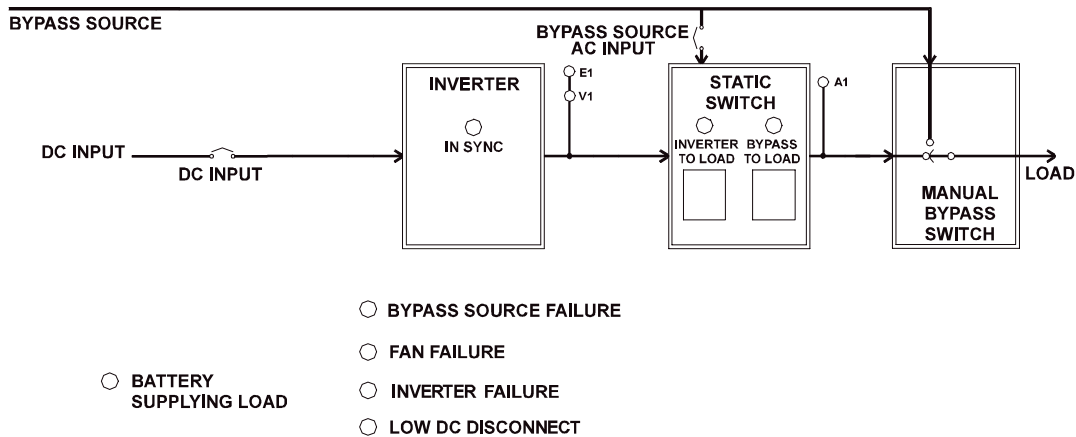
Top-Mounted Dripshield (IP-31)
Fungus/Moisture Spray

Circuit Breakers:

Inverter Output (Non-automatic)
AC Output (Static Switch)

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

Consult factory for additional options.



Lighted Mimic Panel Block Diagram

GENERAL SPECIFICATIONS

SS Plus

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.

Inverter

DC Input

Range: -19% – +8%

AC Output

Sizes: 3 – 50kVA

Voltages: 120, 220VAC, 1-phase, 2-wire*

Regulation: $\pm 2\%$

Frequency: 50 or 60Hz $\pm 0.1\%$

Load Power Factor: 0.8 to 1.0 (Harmonic Power Factor)

Harmonic Distortion: < 5% THD

Overload Capacity: 500% for 1 cycle, 120% continuous

Crest Factor: 3:1 at full load

Environmental

Ambient Temperature: 0°C to 40°C (50°C optional)

Relative Humidity: 0-95% non-condensing

Operating Altitude: 0 to 2500 meters (8200 ft.)

Audible Noise: 65-72 dB(A) at 1.5 meters typical

Addition of drip shield may increase the noise by 1-3dB (A)

Cable Entry

Bottom front via removable gland plate (one plate per bay)

Consult factory for top/side cable entry

*110/220 & 120/240 VAC 3 wire output are available
Consult Factory

Controls (Pushbutton & Indicator)

Inverter to Load Pushbutton
Bypass to Load Pushbutton
Precharge Pushbutton
(20kVA and above)

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:
(from inverter to bypass)

1. Inverter Bridge Failure
2. Load Overcurrent
3. Low Inverter Voltage
4. Manual Pushbutton Operation

Retransfer Criteria:
(from bypass to inverter)

1. Inverter in Sync
2. Auto Retransfer Defeat Switch Off

Overcurrent Transfer:

120%

Overload Capacity:

1000% for 1 cycle

Manual Bypass Switch

(Optional Remote Bypass Switch Available)*

Switch Style:

600VAC, rotary drum, make-before-break switching

Transfer Time:

Zero

Transfer Criteria:

The inverter must be in sync with the bypass

*Internal Manual Bypass Switch is normally removed when a Remote Bypass Switch is selected

GENERAL SPECIFICATIONS SS *Plus*

110,130 VDC LINK

Model	kVA	kW	DC-AC % Efficiency	Cabinet Style	Heat Loss (Watts)	Nom DC Volts	Circuit Breaker Ampacity			Weight ¹	
							DC Input	Bypass Input		Lbs.	(Kg)
								120/60	220/50		
SS12030U**	3	3	83	E	614	110	50	35	20	850	386
						130	50				
SS12050U**	5	5	85	E	882	110	100	60	30	900	409
						130	70				
SS12075U**	7.5	7.5	85	E	1324	110	125	80	45	1000	455
						130	100				
SS12100U**	10	10	85	E	1696	110	175	125	60	1050	477
						130	125				
SS12150U**	15	15	86	E	2442	110	250	175	90	1225	567
						130	200				
SS12200U**	20	20	86	E	3121	110	350	225	125	1325	602
						130	250				
SS12300U**	30	30	87	K	4483	110	500	350	175	2150	977
						130	400				
SS12400U**	40	40	88	H	5455	110	600	450	250	2550	1159
						130	500				
SS12500U**	50	50	88	H	6818	110	600	600	300	3050	1386
						130	600				

220,260 VDC LINK

SS25030U**	3	3	83	E	572	220	35	35	20	850	386
						260	25				
SS25050U**	5	5	85	E	747	220	40	60	30	900	409
						260	40				
SS25075U**	7.5	7.5	85	E	1023	220	70	80	45	1000	455
						260	50				
SS25100U**	10	10	85	E	1364	220	80	125	60	1050	477
						260	70				
SS25150U**	15	15	86	E	2045	220	125	175	90	1225	567
						260	100				
SS25200U**	20	20	86	E	2727	220	175	225	125	1325	602
						260	125				
SS25300U**	30	30	87	K	4090	220	225	350	175	2150	977
						260	200				
SS25400U**	40	40	88	H	5455	220	350	450	225	2550	1159
						260	250				
SS25500U**	50	50	88	H	6818	220	400	600	300	3050	1386
						260	350				

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.

¹ Weight of 60Hz units, 50Hz 7% more

Model Number: SS12100U - YY-ZZ-AA

where: YY=DC Bus Voltage
ZZ=AC Output Voltage
AA=System Frequency

DC Bus Volts	Code	AC Output Volts	Code	Freq	Code
130	13	120	12	60Hz	60
260	26	120/240 **	24	50Hz	50
110	11	220	22		
220	22				

Cabinet Style	Inches (mm)				
	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)

** 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.

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

Specifications subject to change without notice



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