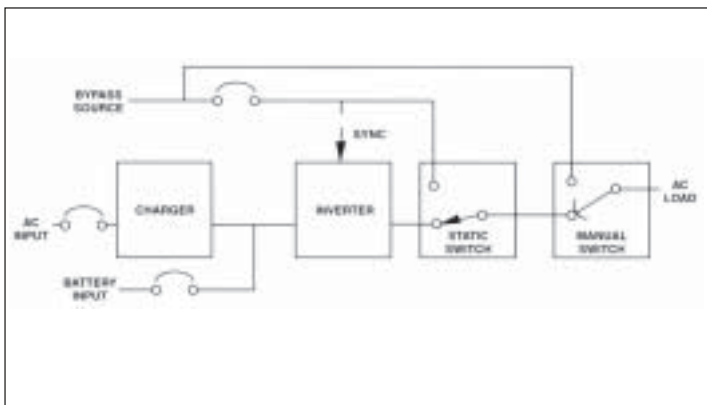


Total UPS System 3-50 kVA Single Phase Output

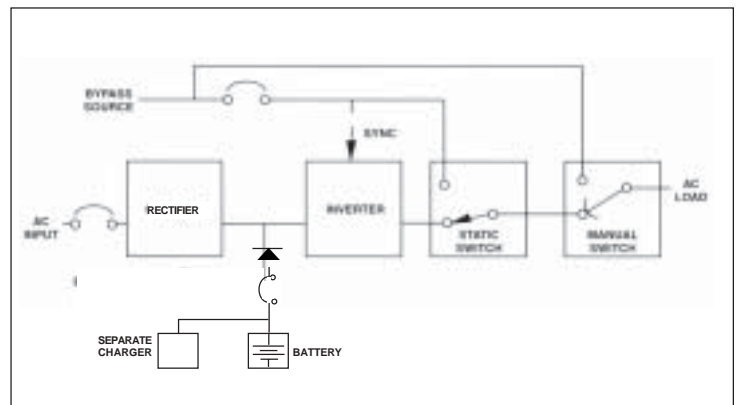


- ◆ High reliability—exceeds 140,000 hrs. (16 yrs.) MTBF
- ◆ Industrial grade – built to operate in extreme environments, (VPI) vacuum impregnated magnetics with 200°C epoxy insulation
- ◆ Low audible noise
- ◆ High efficiency transistor bridge
- ◆ Long life LED indicators, front panel accessibility
- ◆ 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
- ◆ Optional Rectifier blocking diode to use the SE *Plus* with existing station battery and battery charger

The SE *Plus* UPS Systems are true on-line ferroresonant systems which provide regulated, clean, continuous power for critical AC loads. Each system integrates the Battery Charger, Inverter, Static Switch, and a Manual Bypass Switch in a single package.



**On-Line UPS Block Diagram
Float System**



**On-Line UPS Block Diagram
Optional Rectifier System**

Circuit Breakers:

- AC Input
- Battery Input
- Bypass Source Input

Meters:

- AC Inverter Output Voltmeter
- AC Output Ammeter
- Inverter Output Frequency Meter
- DC Output Ammeter
- DC Output Voltmeter

Indicators & Alarms*:

- Battery Supplying Load
- Bypass Source Failure
- In Sync (Pilot Light)
- Fan Failure
- Low DC Voltage
- Static Switch Transfer (Alarm)
- Battery Breaker Open

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
- AC Available to Charger
- Charger Failure
- Bypass Source Low Voltage
- Bypass Source High Voltage
- Low AC Output
- High AC Output
- UPS Summary
- AC Power Failure
- Out of Sync
- Fuse Blown Alarms
- Audible Alarm
- Inverter Failure
- Low DC Disconnect
- MBS Position Indicator (counts as 2)

Meters: (Not to exceed 5)

- AC Input Voltmeter (qty.-2)
- System Output Voltmeter
- Bypass Input Voltmeter
- Battery Input Voltmeter
- Battery Zero Center Ammeter

Cabinet Options:

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

Circuit Breakers:

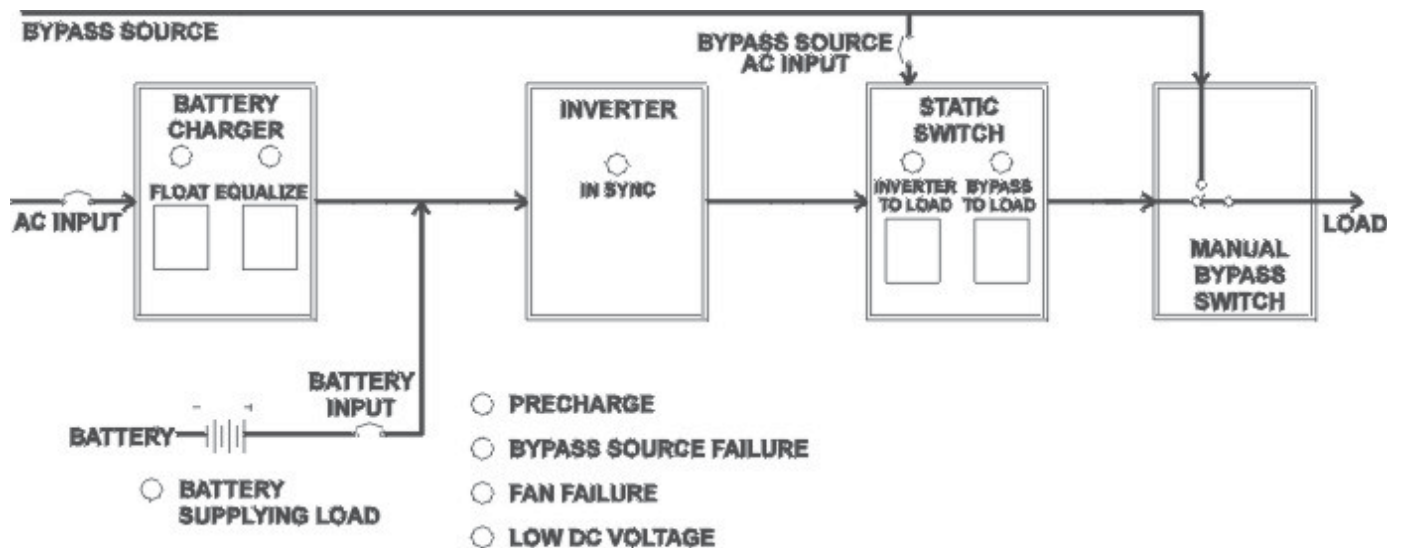
- Inverter Output (Non-automatic)
- AC Output (Static Switch)
- DC Output (Charger)

Rectifier System:

- Blocking Diode Added
- Float & Equalizer Controls & Lights Removed
- Equalize Timer Removed
- DC Voltage set at 2.33 volts per battery cell

* Note : Alarm supplied with one SPDT contact rated for 3 Amps at 120 VAC/28VDC

Consult factory for additional options.



Lighted Mimic Panel Block Diagram

Battery Charger

AC Input

Voltages:	208, 220, 240, 380, 415 & 480 VAC/3-phase, 3 wire
Range:	+10, -10% (+10, -15% without discharging batteries)
Frequency:	50 or 60 Hz $\pm 5\%$

DC Output

Float Voltage:	110 VDC, 220 VDC nominal 130 VDC, 260 VDC nominal $\pm 5\%$ adjustment
Equalize Voltage:	140 VDC, 280 VDC $\pm 5\%$ adjustment
Regulation:	$\pm 0.5\%$ float $\pm 0.7\%$ equalize ($\pm 10\%$ AC Input)
Ripple Voltage:	<2% RMS with batteries
Equalize Timer:	0-100 hours, manual start, auto-reset
Capacity:	Sized to Recharge the battery in 8-10 times the discharge rate

Inverter

DC Input

Range:	-19% - +8%
--------	------------

AC Output

Sizes:	3-50kVA (at 1.0 PF)
Voltages:	120, 220 VAC, 1-phase, 2 wire*
Regulation:	$\pm 2\%$
Frequency:	50 or 60 Hz $\pm 0.1\%$
Sync Range:	± 0.5 HZ
Load Power Factor:	0.8 to 1.0
Harmonic Distortion:	<5% THD
Overload Capacity:	500% for 1 cycle, 120% continuous
Crest Factor:	3:1 at full load

Conversion Efficiencies

Charger AC-DC:	110/130VDC: 91-94%
	220/260VDC: 91-94%
Inverter DC-AC:	110/130VDC: 83-88%
	220/260VDC: 84-88%

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

Environmental

Ambient Temp.:	0°C to 40°C (50°C optional)
Relative Humidity:	0-95% non-condensing
Operating Altitude:	0 to 2500 meters (8200 ft.)
Audible Noise:	<67 dB(A) at 1.5 meters

Cable Entry

Bottom (front) via removable plate (one per bay)
Top or side entry, consult factory

Controls (Push-button & Indicator)

Inverter to Load Push-button
Bypass to Load Push-button
Float Voltage Potentiometer
Equalize Potentiometer
Precharge Push-button (20 kVA and above)

Static Switch

Normal Source:	Inverter Output
Alternate Source:	Bypass Supply
Voltage:	Bypass Supply voltage must match the inverter output voltage
Transfer Time: both directions)	Zero (make-before-break in)
Transfer Criteria: (from inverter to bypass)	<ol style="list-style-type: none"> 1. Inverter Bridge Failure 2. Load Overcurrent 3. Low Inverter Voltage 4. Manual Push-button Operation
Retransfer Criteria: (from bypass to inverter)	<ol style="list-style-type: none"> 1. Inverter in Sync 2. Auto Retransfer Defeat Switch Off
Overcurrent Transfer:	120% of rated full load current
Overload Capacity:	1000% for 1 cycle

Manual Bypass Switch

(optional Remote Bypass Switch available)**

Switch Style:	600 VAC, 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

SE Plus

110,130 VDC LINK

Model	kVA	kW	3Ø AC Input/Frequency ¹				Inverter DC-AC Efficiency	UPS Cabinet Style	Heat Loss (Watts)	Circuit Breaker Ampacity							Weight ² Lbs. (Kg)	
			AC Amperes/Phase							Main AC Input				DC Link	Bat-tery	Bypass Input		
			208/60	480/60	380/50	415/50				208/60	480/60	380/50	415/50			120		220
SE3003U-*	3	3	23	10	13	11	83	E	972	30	15	15	15	110	150	35	20	1025 (466)
SE3005U-*	5	5	28	12	16	14	85	E	1464	35	15	20	25	110	100	60	30	1075 (489)
SE3007U-*	7.5	7.5	43	18	23	21	85	E	2196	60	25	40	35	110	125	80	45	1250 (568)
SE3010U-*	10	10	56	24	31	28	85	E	2788	70	30	50	40	110	175	125	60	1450 (659)
SE3015U-*	15	15	84	36	46	42	86	F	3755	125	50	70	70	110	250	175	90	1850 (841)
SE3020U-*	20	20	112	48	61	56	86	F	5006	150	60	90	80	110	350	225	125	2150 (977)
SE3030U-*	30	30	166	72	91	83	87	H	6684	225	90	125	110	110	500	350	175	3300 (1490)
SE3040U-*	40	40	221	96	121	111	88	GH	8356	300	125	175	150	110	600	450	250	4400 (2000)
SE3050U-*	50	50	276	120	151	138	88	GH	10445	400	150	200	175	110	600	600	300	4900 (2227)

220,260 VDC LINK

SE6003U-*	3	3	23	10	12	11	84	E	925	30	15	20	20	220	35	35	20	1025 (466)
SE6005U-*	5	5	34	15	19	17	87	E	1316	50	20	25	20	220	40	60	30	1075 (489)
SE6007U-*	7.5	7.5	46	20	25	23	88	E	1866	60	25	40	35	220	70	80	45	1250 (568)
SE6010U-*	10	10	56	24	31	28	88	E	2352	70	30	50	40	220	80	125	60	1450 (659)
SE6015U-*	15	15	84	36	46	42	88	F	3328	125	50	70	60	220	125	175	90	1850 (841)
SE6020U-*	20	20	112	48	61	56	88	F	4438	150	60	90	80	220	175	225	125	2150 (977)
SE6030U-*	30	30	166	72	91	83	88	H	6267	225	90	125	125	220	225	350	175	3300 (1490)
SE6040U-*	40	40	221	96	121	111	88	GH	8356	300	125	175	175	220	350	450	225	4400 (2000)
SE6050U-*	50	50	276	120	151	138	88	GH	10445	350	150	225	200	220	400	600	300	4900 (2227)

¹At Nominal Line & Current Limit, ² Weight of 60Hz units, 50Hz 7% more

*A complete UPS model number includes the AC input voltage, 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: SE3030U-XX-YY-ZZ-AA

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

AC Input Volts	Code	DC Bus Volts	Code	AC Output Volts	Code	Freq	Code
480	48	130	13	120	12	60Hz	60
220	22	260	26	120/240 **	24	50Hz	50
380	38	110	11	220	22		
415	41	220	22				
208	20						

** Note: For 120/240 volt output, also place a "2" before the "SE".

Example: A 30 kVA UPS with 415 VAC input voltage; 260 VDC bus, 220 VAC output voltage, 50 Hz: Model No. SE3030U-41-26-22-50. If voltage code is not listed...place a "C" after the "U". Example: Model No. SE3030UC.

Cabinet Dimensions***

Cabinet Style	Inches (mm)				
	H	x	W	x	D
E	78 (1981)	x	29 x 737	x	32 x 813
F	78 (1981)	x	56 x 1422	x	32 x 813
G	85 (2159)	x	29 x 1422	x	36 x 914
H	85 (2159)	x	56 x 2159	x	36 x 914
³ GH	85 (2159)	x	85 x 2159	x	36 x 914

³Note: the GH cabinet style is made up of G & H sections

***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.



Specifications subject to change without notice.

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