

# Standby Generators

## 150kW - Liquid Cooled Gas Engine

### Standby Power Rating

150 kW 60Hz

#### Includes:

- Naturally Aspirated Gaseous Fueled 4.6L Engine
- Two line LCD tri-lingual digital Nexus™ controller
- Isochronous electronic governor
- Closed coolant recovery system
- Smart battery charger
- UV/Ozone resistant hoses
- $\pm 1\%$  voltage regulation
- Natural gas or LP operation
- 2 year limited warranty
- UL 2200 Listed
- Meets EPA emission regulations

#### Catalog numbers:

- **SGN150RGAE / SGN150RPAE**  
120/240V, 1-phase
- **SGN150CGAE / SGN150CPAE**  
120/208V, 3-phase
- **SGN150JGAE / SGN150JPAE**  
120/240V, 3-phase
- **SGN150IGAE / SGN150IPAE**  
277/480V, 3-phase

Meets 2010 EPA emissions regulations.  
Meets CA/MA emissions requirements with factory-installed catalyst.



#### Features

- **Total commitment** to component testing, reliability testing, environmental testing, destruction and life testing, plus testing to applicable CSA, NEMA, EGSA, and other standards.
- **Test criteria:**
  - Prototype tested
  - NEMA MG1-22 evaluation
  - System torsional tested
  - Motor starting ability tested
- **Solid-state, frequency compensated voltage regulation**  
This state-of-the-art power maximizing regulation system is standard on all Siemens models. It provides optimized fast response to changing load conditions and maximum motor starting capability by electronically torque-matching the surge loads to the engine. An unequalled  $\pm 1\%$  voltage regulation.

Data Sheet

[www.usa.siemens.com/generators](http://www.usa.siemens.com/generators)

**SIEMENS**

## Application & Engineering Data

Generator specifications	
Type	Synchronous
Rotor insulation	Class F or H (see Data Label)
Stator insulation	Class H
Telephone interference factor (TIF)	<50
Alternator output leads 3 phase	6 / 4 wire
Bearings	Sealed Ball
Coupling	Gear drive
Load capacity (standby rating)	150 kW
Excitation system	Brushless

Voltage regulation	
Type	Full Digital
Sensing	Three Phase
Regulation	± 0.25%

Generator features	
Revolving field heavy duty generator	
Directly connected to the engine	
Operating temperature rise 120 °C above a 40 °C ambient	
Insulation is Class F rated at 130 °C rise	
All models are fully prototyped tested	

Enclosure features	
Aluminum weather protective enclosure	Ensures protection against mother nature. Electrostatically applied textured epoxy paint for added durability.
Enclosed critical grade muffler	Quiet, critical grade muffler is mounted inside the unit to prevent injuries.
Small, compact, attractive	Makes for an easy, eye appealing installation.

### Rating definitions

Standby: Applicable for supplying emergency power for the duration of the utility power outage. No overload capability is available for this rating. (All ratings in accordance with BS5514, ISO3046 and DIN6271). (All ratings in accordance with BS5514, ISO3046, ISO8528, SAE J1349 and DIN6271).

Engine specifications	
Make	Generac
Model	V-type
Cylinders	10
Displacement	6.8 Liter
Bore	3.55
Stroke	4.17
Compression ratio	9:1
Intake air system	Naturally Aspirated
Valve seats	Hardened
Lifter type	Hydraulic

Governor specifications	
Type	Electronic
Frequency regulation	Isochronous
Steady state regulation	± 0.25%

Engine lubrication system	
Oil pump	Gear
Oil filter	Full flow spin-on cartridge
Crankcase capacity	5 Quarts

Engine cooling system	
Type	Closed
Water pump	Belt driven
Fan speed	2200
Fan diameter	26 inches
Fan mode	Puller

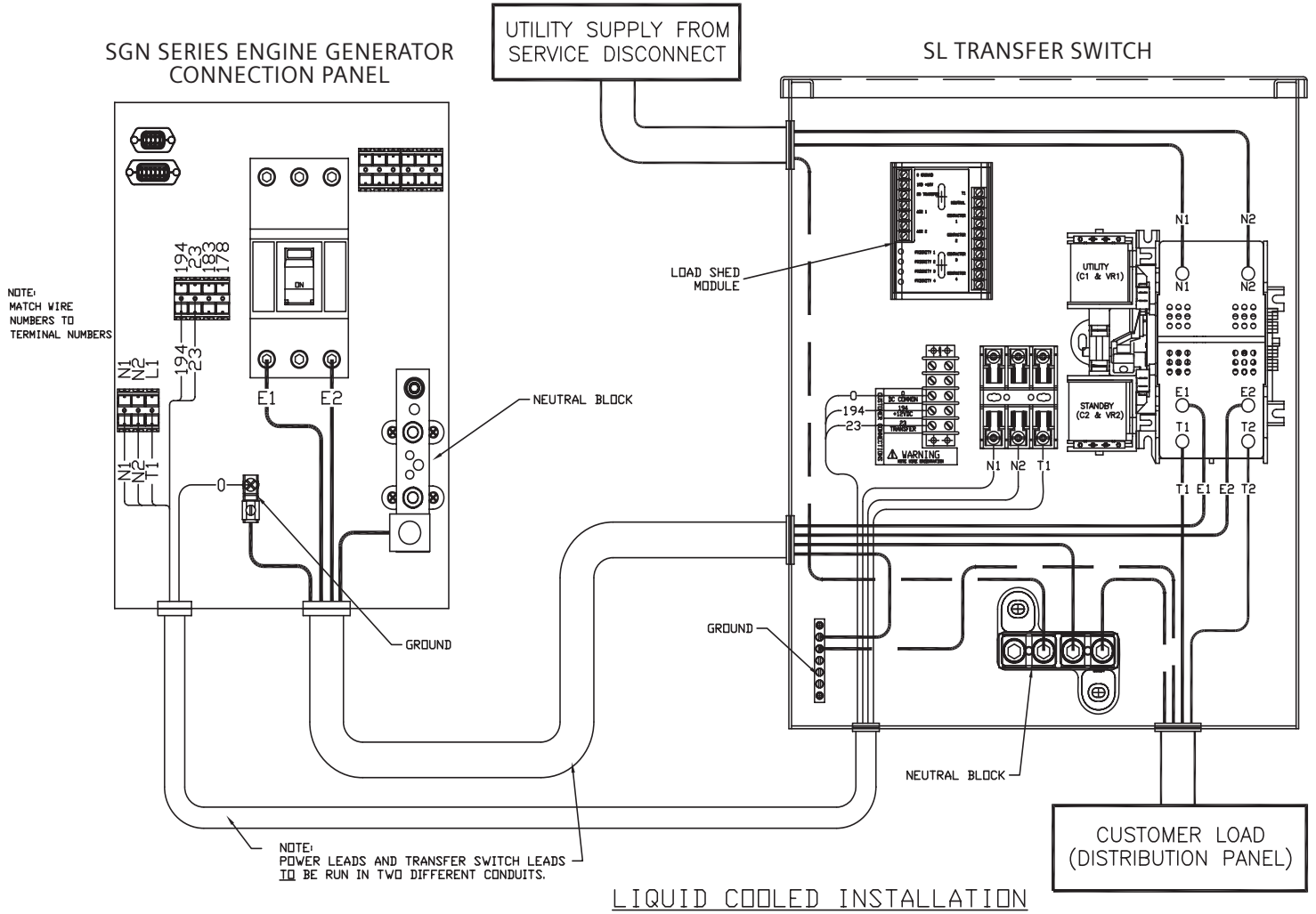
Fuel system	
Fuel type	Natural gas, propane vapor
Carburetor	Down draft
Secondary fuel regulator	Standard
Fuel shut off solenoid	Standard
Operating fuel pressure	11" - 14" H <sub>2</sub> O

Electrical system	
Battery charge alternator	12V 30 Amp
Static battery charger	12V 2 Amp
Recommended battery	Group 24F, 525CCA
System voltage	12 Volts

Operating data						
KW rating (LP/NG)		150				
Engine size		6.8 Liter, V10				
Catalog numbers	Generator output voltage/kW - 60Hz	LP	AMP	NG	AMP	CB Size
SGN150RGAE/SGN150RPAAE	120/240V, 1-phase, 1.0 pf	144	600	136	567	700
SGN150CGAE/SGN150CPAAE	120/208V, 3-phase, 0.8 pf	150	520	142	493	600
SGN150JGAE/SGN150JPAAE	120/240V, 3-phase, 0.8 pf	150	451	142	427	500
SGN150IGAE/SGN150IPAAE	277/480V, 3-phase, 0.8 pf	150	225	142	214	250
Generator locked rotor KVA available at voltage dip of 35%						
Single phase or 208-240 3-phase		320				
480V 3-phase		350				
Engine fuel consumption (Natural Gas) (Propane)	Natural Gas (ft <sup>3</sup> /hr.)	Propane (gal/hr.)		cu ft/hr		
Exercise cycle	155	1.7		63		
25% of rated load	556	6.09		224		
50% of rated load	1070	11.72		431		
75% of rated load	1491	16.33		600		
100% of rated load	2061	22.57		830		
For Btu content, multiply ft <sup>3</sup> /hr x 2520 (LP) or ft <sup>3</sup> /hr x 1000 (NG)						
Engine cooling						
Air flow (inlet air including alternator and combustion air)	ft <sup>3</sup> /min.	7,800				
System coolant capacity	US gal.	4.5				
Heat rejection to coolant	BTU/hr.	568,000				
Max. operating air temp. on radiator	°C (°F)	60 (150)				
Max. ambient temperature	°C (°F)	50 (140)				
Combustion air requirements						
Flow at rated power 60 Hz	cfm	410				
Sound emissions in DBA						
Exercising at 7 meters		66				
Normal operation at 7 meters		79				
Exhaust						
Exhaust flow at rated output 60 Hz	cfm	1,535				
Exhaust temp. at muffler outlet	°C (°F)	593 (1100)				
Engine parameters						
Rated synchronous RPM	60 Hz	3600				
Power adjustments for ambient conditions						
Temperature deration						
	3% for every 10 °C above - °C	25				
	1.65% for every 10 °F above - °F	77				
Altitude deration						
	1% for every 100 m above - m	182				
	3% for every 1000 ft. above - ft.	600				

RATING: All three phases units are rated at 0.8 power factor. All single phase units are rated at 1.0 power factor. STANDBY RATING: Standby ratings apply to installations served by a reliable utility source. The standby rating is applicable to varying loads for the duration of a power outage. There is no overload capability for this rating. Ratings are in accordance with ISO-3046-1. Design and specifications are subject to change without notice. kW rating is based on LPG Fuel and may derate with natural gas.

Interconnections



Circuit breaker wire and conduit size

kW	Volts	CB Amps	Lug size
150	240 1 Ø	700	(3) 1/0 to 500 mcm
150	240 3 Ø	500	(3) 2/0 to 400 mcm
150	208 3 Ø	600	(3) 2/0 to 400 mcm
150	480 3 Ø	250	(1) 600 mcm to #4 or (2) 250 mcm to 1/0

## Nexus control features

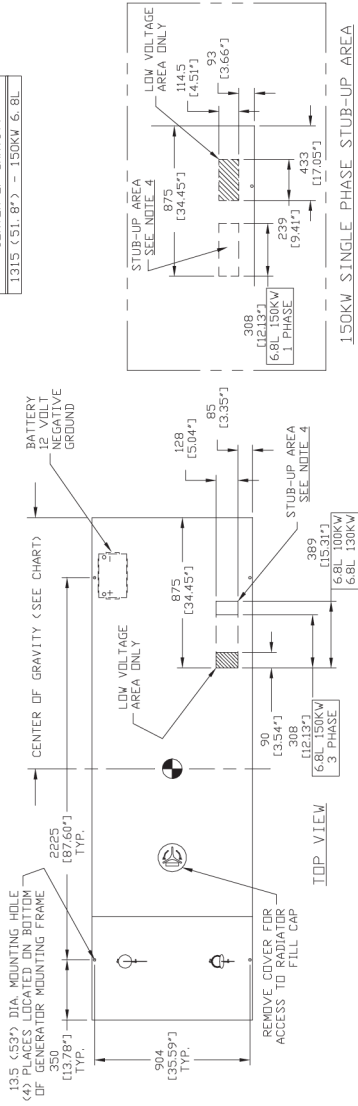
2-line plain text LCD display	Simple user interface for ease of operation
Mode Switch	Automatic start on utility failure. 7 day exerciser
-Auto	
-Off	Stops unit. Power is removed. Control and charger still operate.
-Manual/Test (start)	Start with starter control, unit stays on. If utility fails, transfer to load takes place.
Programmable start delay between 10-30 seconds	Standard
Engine start sequence	Cyclic cranking: 16 sec. on, 7 rest (90 sec. maximum duration)
Engine warm-up	5 seconds
Engine cool-down	1 minute
Starter lock-out	Starter cannot re-engage until 5 sec. after engine has stopped.
Smart battery charger	Standard
Automatic voltage regulation with over and under voltage protection	Standard
Automatic low oil pressure shutdown	Standard
Overspeed shutdown	Standard, 72Hz
High temperature shutdown	Standard
Overcrank protection	Standard
Safety fused	Standard
Failure to transfer protection	Standard
Low battery protection	Standard
50 event run log	Standard
Future set capable exerciser	Standard
Incorrect wiring protection	Standard
Internal fault protection	Standard
Common external fault capability	Standard
Governor failure protection	Standard

\*Single and three phase connections may vary, refer to the owner's manual for specific connection information.

# Installation layout - Liquid Cooled Standby Generator 150kW

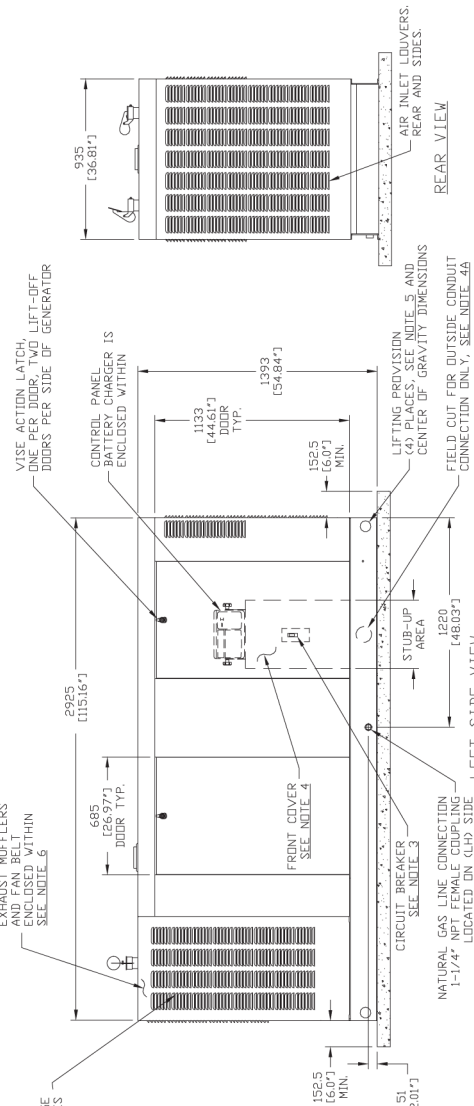
ENGINE/AV	WEIGHT DATA		SUPPLEMENTARY WEIGHT (AS SHOWN SHIPPING AND AS SHOWN)
	ENCLOSURE MATERIAL (KNOX L.B.S.T.)	NET WEIGHT (KNOX L.B.S.T.)	
6.8L 150KW ALUMINUM	1130 [2492]	79 [1725]	1210 [2667]

CENTER OF GRAVITY
1315 (51.8') - 150KW 6.8L



SERVICE ITEM	150KW 6.8L	150KW 6.8L
DIL FILL CAP	THRU RIGHT FRONT DOOR	THRU LEFT FRONT DOOR
OIL DIP STICK	THRU LEFT FRONT DOOR	THRU RIGHT FRONT DOOR
OIL FILTER	THRU LEFT FRONT DOOR	THRU RIGHT FRONT DOOR
OIL DRAIN HOSE	THRU LEFT FRONT DOOR	THRU RIGHT FRONT DOOR
RADIATOR DRAIN HOSE	THRU LEFT FRONT DOOR	THRU RIGHT FRONT DOOR
AIR CLEANER ELEMENT	THRU LEFT FRONT DOOR	THRU RIGHT FRONT DOOR
SPARK PLUGS	THRU LEFT FRONT DOOR	THRU RIGHT FRONT DOOR
MUFFLERS	THRU LEFT FRONT DOOR	THRU RIGHT FRONT DOOR
FAN BELT	THRU LEFT FRONT DOOR	THRU RIGHT FRONT DOOR
BATTERY	THRU LEFT FRONT DOOR	THRU RIGHT FRONT DOOR
GEARBOX FILL & DRAIN	THRU LEFT FRONT DOOR	THRU RIGHT FRONT DOOR

NOTE: EXCLUDING 6.8L 150KW UNITS  
REFERENCE OWNERS MANUAL FOR PERIODIC REPLACEMENT PART LISTINGS



- NOTES:
- MINIMUM RECOMMENDED CONCRETE PAD SIZE: 1240(48.8') WIDE X 3230 (127.2') LONG. REFERENCE INSTALLATION GUIDE SUPPLIED WITH UNIT FOR CONCRETE PAD GUIDELINES.
  - ALLOW SUFFICIENT ROOM ON ALL SIDES OF THE GENERATOR FOR MAINTENANCE AND SERVICING. THIS UNIT MUST BE INSTALLED IN ACCORDANCE WITH CURRENT APPLICABLE CODES FOR MINIMUM DISTANCES FROM OTHER STRUCTURES.
  - CIRCUIT BREAKER INFORMATION: SEE SPECIFICATION SHEET WITHIN OWNERS MANUAL.
  - INSIDE STUB-UP AREA FOR AC LEAD LEAD CONDUIT CONNECTION, NEUTRAL CONNECTION, BATTERY CHARGER 120 VOLT AC (5 AMP MAX.) CONNECTION, AND ACCESS TO TRANSFER SWITCH CONTROL WIRES. REMOVE FRONT COVER FOR ACCESS.
  - FIELD CUT HOLE IS ONLY REQUIRED FOR MOUNTING OF GENERATOR ON AN EXISTING PAD.
  - REFERENCE OWNERS MANUAL FOR LIFTING WARNINGS.
  - REMOVE EITHER LEFT OR RIGHT HAND SIDE PANEL TO ACCESS EXHAUST MUFFLERS AND FAN BELT.

**Warning: Installation drawing for reference only.**  
Liquid cooled units should be installed by an Authorized Siemens Standby Generator Contractor.

Siemens Industry Inc.  
Building Technologies Division  
Standby Power Systems  
Catalog Numbers: SGN150RGAE, SGN150RPAAE,  
SGN150CGAE, SGN150CPAAE, SGN150JGAE,  
SGN150JPAAE, SGN150IGAE, SGN150IPAAE

Notes:

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