

Standby Generators

100kW - Liquid Cooled Gas Engine

Standby Power Rating

100 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:

- **SGN100RGAL / SGN100RPALE**
120/240V, 1-phase
- **SGN100CGAL / SGN100CPALE**
120/208V, 3-phase
- **SGN100JGAL / SGN100JPALE**
120/240V, 3-phase
- **SGN100IGAL / SGN100IPALE**
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

SIEMENS

Application & Engineering Data

Generator specifications	
Type	Synchronous
Rotor insulation	Class H
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)	100 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	1670
Fan diameter	26 inches
Fan mode	Puller

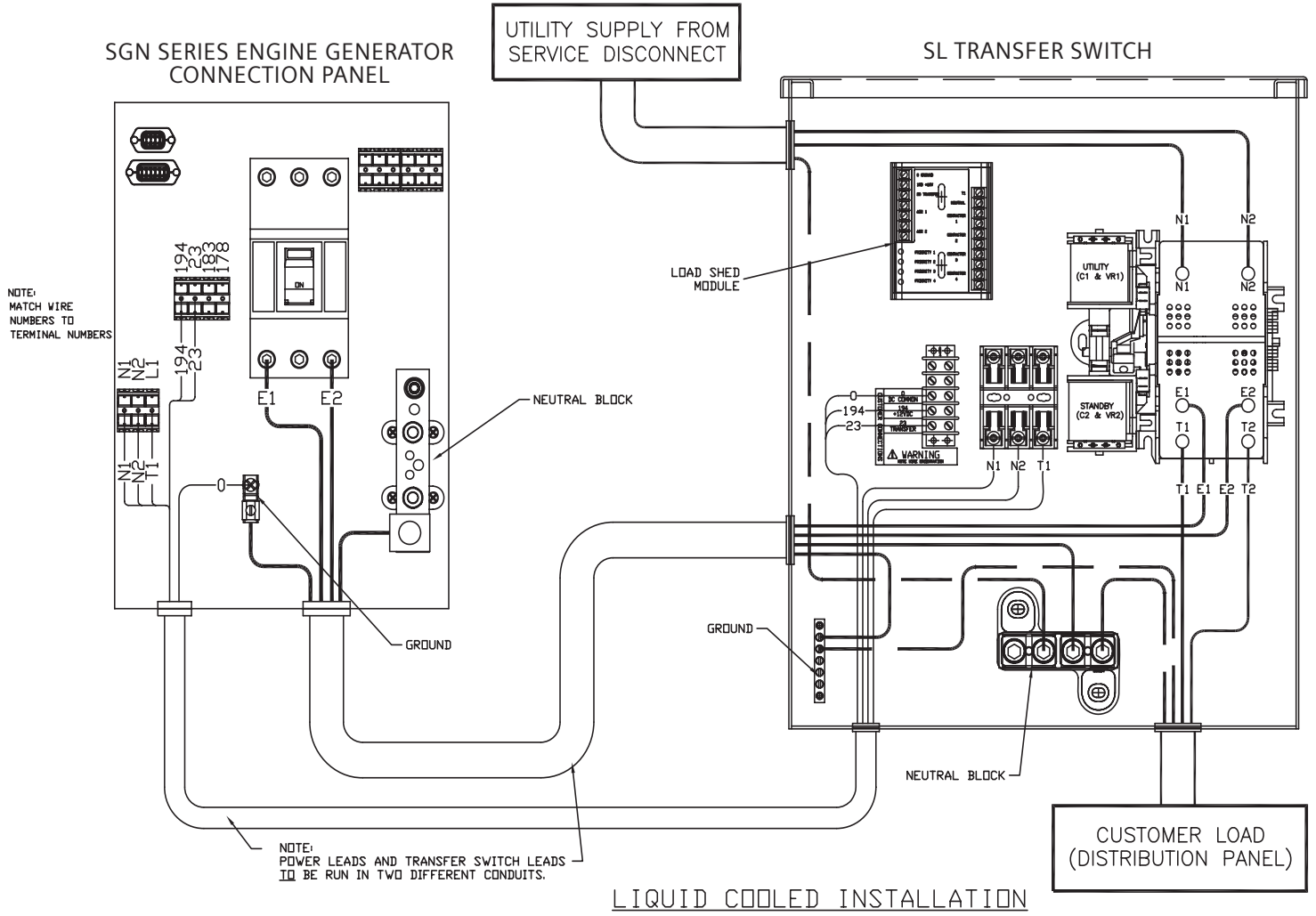
Fuel system	
Fuel type	Natural gas, propane vapor
Carburetor	Down draft
Secondary fuel regulator	Standard
Fuel shut off solenoid	Standard
Operating fuel pressure	11" - 14" H ₂ O

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)			100			
Engine size			6.8 Liter, V10			
Catalog numbers	Generator output voltage/kW - 60Hz	LP	AMP	NG	AMP	CB Size
SGN100RGALE/SGN100RPALE	120/240V, 1-phase, 1.0 pf	100	417	89	371	450
SGN100CGALE/SGN100CPALE	120/208V, 3-phase, 0.8 pf	100	347	94	326	400
SGN100JGALE/SGN100JPALE	120/240V, 3-phase, 0.8 pf	100	301	94	283	350
SGN100IGAILE/SGN100IPALE	277/480V, 3-phase, 0.8 pf	100	150	94	141	175
Engine fuel consumption (Natural Gas) (Propane)	Natural Gas (ft ³ /hr.)	Propane (gal/hr.)		cu ft/hr		
Exercise cycle	130	1.4		52		
25% of rated load	371	4.1		149		
50% of rated load	713	7.9		281		
75% of rated load	991	11		400		
100% of rated load	1260	13.9		507		
For Btu content, multiply ft3/hr x 2520 (LP) or ft3/hr x 1000 (NG)						
Engine cooling						
Air flow (inlet air including alternator and combustion air)	ft ³ /min.	5,500				
System coolant capacity	US gal.	4.5				
Heat rejection to coolant	BTU/hr.	342,000				
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	262				
Sound emissions in DBA						
Exercising at 7 meters		61				
Normal operation at 7 meters		72				
Exhaust						
Exhaust flow at rated output 60 Hz	cfm	888				
Exhaust temp. at muffler outlet	°C (°F)	516 (960)				
Engine parameters						
Rated synchronous RPM	60 Hz	2300				
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	183				
	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
100	240 1 Ø	500	3-2/0 to 400 mcm
100	240 3 Ø	350	(1) 600 mcm to #4 or (2) 250 mcm to 1/0
100	208 3 Ø	400	(1) 600 mcm to #4 or (2) 250 mcm to 1/0
100	480 3 Ø	175	#6 to 300 mcm

Nexus control features

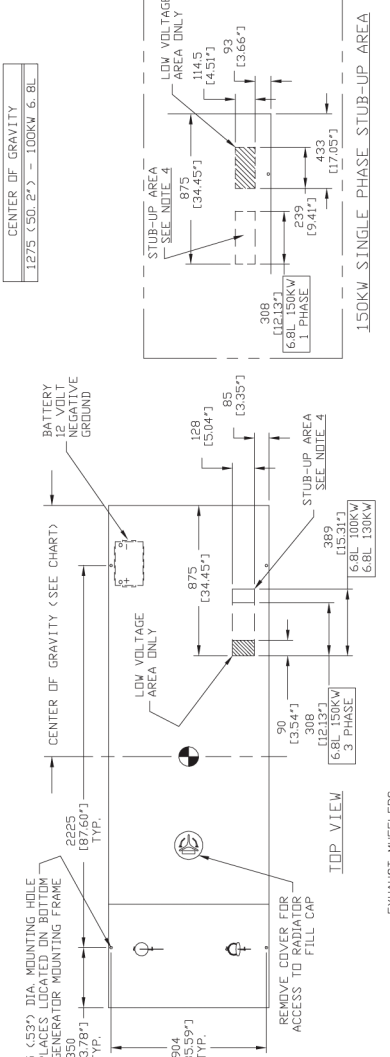
2-line plain text LCD display	Simple user interface for ease of operation
Mode Switch	Automatic start on utility failure. 7 day exerciser
-Auto	Automatic start on utility failure. 7 day exerciser
-Off	Stops unit. Power is removed. Control and charger still operate.
-Manual/Test (start)	Start with starter 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 100kW

WEIGHT DATA			
ENGINE/AV	ENCLOSURE (AC L1871)	GENERATOR (AC L1872)	CONCRETE (AC L1873)
6.8L 100KW	1148 (L1851)	79 (L175)	1827 (L2062)
	(4) ADDS SHIPPING WEIGHT AS TO		

WEIGHT DATA
127.5 (50.2")
100KW 6.8L

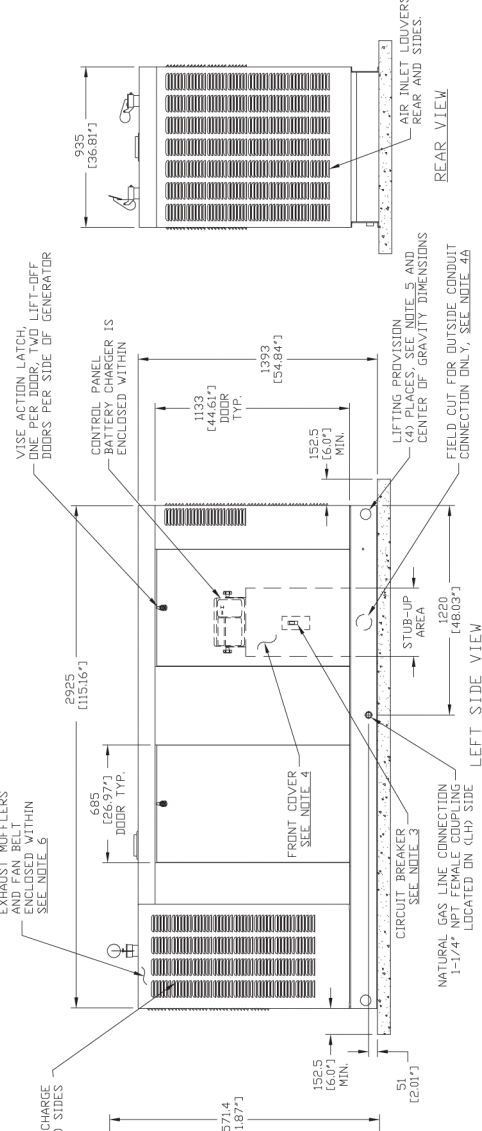
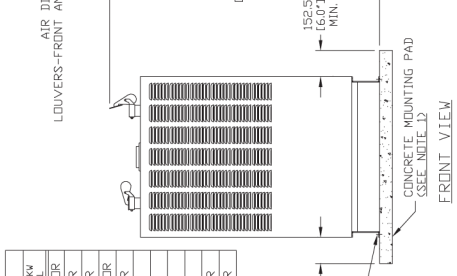


- NOTES.**
- 1) MINIMUM RECOMMENDED CONCRETE PAD SIZE: 1240(48.8") WIDE X 3230 (127.2") LONG. REFERENCE INSTALLATION GUIDE SUPPLIED WITH UNIT FOR CONCRETE PAD GUIDELINES.
 - 2) ALLOW SUFFICIENT ROOM ON ALL SIDES OF THE GENERATOR FOR MAINTENANCE AND SERVICING. THIS UNIT MUST BE INSTALLED IN ACCORDANCE WITH CURRENT APPLICABLE NATIONAL AND LOCAL ELECTRICAL CODES FOR MINIMUM DISTANCES FROM OTHER STRUCTURES.
 - 3) CIRCUIT BREAKER INFORMATION: SEE SPECIFICATION SHEET WITHIN OWNERS MANUAL.
 - 4) 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.
 - 4A) FIELD CUT HOLE IS ONLY REQUIRED FOR MOUNTING OF GENERATOR ON AN EXISTING PAD.
 - 5) REFERENCE OWNERS MANUAL FOR LIFTING WARNINGS.
 - 6) REMOVE EITHER LEFT OR RIGHT HAND SIDE PANEL TO ACCESS EXHAUST MUFLERS AND FAN BELT.

SERVICE ITEM ACCESSIBILITY CHART

SERVICE ITEM	ACCESS	
	100KW 6.8L	150KW 6.8L
DIP FILL CAP	THRU RIGHT FRONT DOOR	THRU RIGHT FRONT DOOR
OIL DIP STICK	THRU LEFT FRONT DOOR	THRU LEFT FRONT DOOR
OIL FILLER	THRU LEFT FRONT DOOR	THRU LEFT FRONT DOOR
RADIATOR DRAIN HOSE	THRU LEFT FRONT DOOR	THRU LEFT FRONT DOOR
AIR CLEANER ELEMENT	EITHER FRONT DOORS	EITHER FRONT DOORS
SPARK PLUGS	BOTH FRONT DOORS	SEE NOTE 6
MUFLERS	SEE NOTE 6	SEE NOTE 6
FAN BELT	THRU RIGHT REAR DOOR	THRU RIGHT REAR DOOR
BATTERY	THRU RIGHT REAR DOOR	THRU RIGHT REAR DOOR
*GEARBOX FILL & DRAIN	THRU RIGHT REAR DOOR	THRU RIGHT REAR DOOR

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



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

Siemens Industry Inc.
Building Technologies Division
Standby Power Systems
Catalog Numbers: SGN100RGALE, SGN100RPALE,
SGN100CGALE, SGN100CPALE, SGN100JGALE,
SGN100JPALE, SGN100IGALE, SGN100IPALE

Notes:

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