SG1000 | 49.0L | 1,000 kW

INDUSTRIAL SPARK-IGNITED GENERATOR SET

EPA Certified Stationary Emergency and Non-Emergency

GENERAC® | INDUSTRIAL POWER

DEMAND RESPONSE READY

Standby Power Rating
1,000 kW, 1,250 kVA, 60 Hz

Demand Response Rating
1,000 kW, 1,250 kVA, 60 Hz

Prime Power Rating
900 kW, 1,125 kVA, 60 Hz

ISO 9001:2008

USA ENGINEERED & BUILT* *Assembled in the USA using domestic and foreign parts

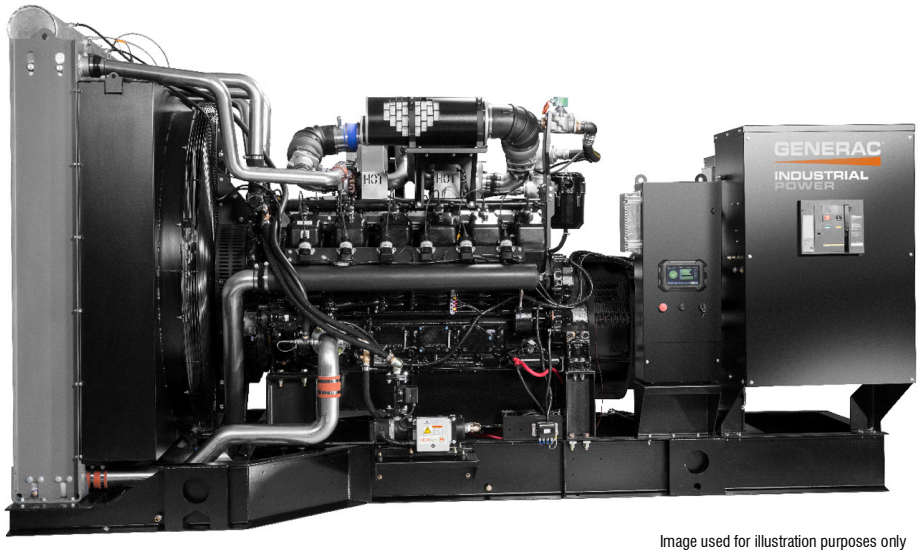

Image used for illustration purposes only

Codes and Standards

Not all codes and standards apply to all configurations. Contact factory for details.

- UL2200, UL6200, UL1236, UL489
- CSA C22.2, B149
- BS5514 and DIN 6271
- SAE J1349
- NFPA 37, 70, 99, 110
- NEC700, 701, 702, 708
- ISO 3046, 7637, 8528, 9001
- NEMA ICS10, MG1, 250, ICS6, AB1
- ANSI C62.41

Powering Ahead

Generac ensures superior quality by designing and manufacturing most of its generator components, such as alternators, enclosures, control systems and communications software. Generac also makes its own spark-ignited engines, and you'll find them on every Generac gaseous-fueled generator. We engineer and manufacture them from the block up — all at our facilities throughout Wisconsin. Applying natural gas and LP-fueled engines to generators requires advanced engineering expertise to ensure reliability, durability and necessary performance. By designing specifically for these dry, hotter-burning fuels, the engines last longer and require less maintenance. Building our own engines also means we control every step of the supply chain and delivery process, so you benefit from single-source responsibility.

Plus, Generac Industrial Power's distribution network provides all parts and service so you don't have to deal with third-party suppliers. It all leads to a positive owner experience and higher confidence level. Generac spark-ignited engines give you more options in commercial and industrial generator applications as well as extended run time from utility-supplied natural gas.

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STANDARD FEATURES

DEMAND RESPONSE READY

ENGINE SYSTEM

- Oil Drain Extension
- Heavy Duty Air Cleaner
- Level 1 Fan and Belt Guards (Open Set Only)
- Stainless Steel Flexible Exhaust Connection
- Radiator Duct Adapter (Open Set Only)
- Critical Silencer/Catalyst
- Coolant Heater Ball Valves
- Factory Filled Oil and Coolant
- Oil Temperature Sender with Indication Alarm

Fuel System

- Primary and Secondary Fuel Shutoff

Cooling System

- Closed Coolant Recovery System
- Factory-Installed Radiator
- Radiator Drain Extension
- 50/50 Ethylene Glycol Antifreeze

Electrical System

- Battery Charging Alternator
- Battery Cables
- Battery Tray
- Rubber-Booted Engine Electrical Connections
- Solenoid Activated Starter Motor

ALTERNATOR SYSTEM

- UL2200 GENprotect™
- Class H Insulation Material
- 2/3 Pitch
- Skewed Stator
- Permanent Magnet Excitation
- Sealed Bearings
- Amortisseur Winding
- Low Temperature Rise (<120 °C)

GENERATOR SET

- Spring Isolators Under Frame
- Separation of Circuits - High/Low Voltage
- Separation of Circuits - Multiple Breakers
- Standard Factory Testing
- 2 Year Limited Warranty (Standby or Demand Response Rated Units)
- 1 Year Limited Warranty (Prime Rated Units)
- Ready to Accept Load in <10 Seconds

ENCLOSURE (If Selected)

- Structural Steel Sub-Base
- Sub-Base Lifting Eyes
- Enamel Finish
- Zinc Plated Fasteners
- Zinc Plated Cast Aluminum Keylock Door Handles
- Heavy Duty Stainless Steel Hinges
- Modular Construction
- Rhino Coat™ - Textured Polyester Powder Coat Paint

CONTROL SYSTEM

Power Zone® Pro Sync Controller

Program Functions

- NFPA 110 Level 1 Compliant
- Engine Protective Functions
- Alternator Protective Functions
- Digital Engine Governor Control
- Digital Voltage Regulator
- Multiple Programmable Inputs and Outputs
- Remote Display Capability
- Remote Communication via Modbus® RTU, Modbus TCP/IP, and Ethernet 10/100
- Alarm and Event Logging with Real Time Stamping
- Expandable Analog and Digital Inputs and Outputs
- Remote Wireless Software Update Capable
- Wi-Fi®, Bluetooth®, BMS and Remote Telemetry
- Built-In Programmable Logic Eliminates the Need for External Controllers Under Most Conditions
- Ethernet Based Communications Between Generators
- Programmable I/O Channel Properties
- Built-In Diagnostics

Protections

- Low Oil Pressure
- Low Coolant Level
- High/Low Coolant Temperature
- Sensor Failure
- Oil Temperature
- Over/Under Speed
- Over/Under Voltage
- Over/Under Frequency
- Over/Under Current
- Over Load
- High/Low Battery Voltage
- Battery Charger Current
- Phase to Phase and Phase to Neutral Short Circuits (I^2T Algorithm)

7 Inch Color Touch Screen Display

- Resistive Color Touch Screen
- Sunlight Readable (1400 NITS)
- Easily Identifiable Icons
- Multi-Lingual
- On Screen Editable Parameters
- Key Function Monitoring
- Three Phase Voltage, Amperage, kW, kVA, and kVAr
- Selectable Line to Line or Line to Neutral Measurements
- Frequency
- Engine Speed
- Engine Coolant Temperature
- Engine Oil Pressure
- Engine Oil Temperature
- Battery Voltage
- Hourmeter
- Warning and Alarm Indication
- Diagnostics
- Maintenance Events/Information

CONFIGURABLE OPTIONS

DEMAND RESPONSE READY

ENGINE SYSTEM

- Engine Coolant Heater
- Oil Heater
- Level 1 Fan and Belt Guards (Enclosed Units Only)
- Two Stage Air Cleaner
- Air Filter Restriction Indicator
- Radiator Stone Guard (Open Set Only)
- Catalyst and Silencer

ELECTRICAL SYSTEM

- 20A UL Listed Battery Charger
- Battery Warmer

FUEL SYSTEM

- Threaded Flexible Fuel Line

ALTERNATOR SYSTEM

- Alternator Upsizing
- Anti-Condensation Heater

CIRCUIT BREAKER OPTIONS

- Up to 4 Main Line Circuit Breaker Selection
- Shunt Trip and Auxiliary Contact
- Electronic Trip Breaker

GENERATOR SET

- Spring Vibration Isolator
- Extended Factory Testing (3-Phase Only)
- 24 Position Load Center

ENCLOSURE

- Weather Protected Enclosure
- Level 1 Sound Attenuated
- Level 2 Sound Attenuated
- Level 2 Sound Attenuated with Motorized Dampers
- Steel Enclosure
- Aluminum Enclosure
- AC Enclosure Lighting Kit
- Enclosure Heater (With Motorized Dampers Only)
- Up to 180 MPH Wind Load Rating (Contact Factory for Availability)

CONTROL SYSTEM

- NFPA 110 Level 1 Compliant 21-Light Remote Annunciator
- Remote Output Relays (8 or 16)
- Remote E-Stop (Break Glass-Type, Surface Mount)
- Remote E-Stop (Red Mushroom-Type, Surface Mount)
- Remote E-Stop (Red Mushroom-Type, Flush Mount)
- 10A Engine Run Relay
- Ground Fault Annunciator
- Damper Alarm Contacts (With Motorized Dampers Only)
- 100 dB Alarm Horn
- 120V GFCI and 240V Outlets

WARRANTY (Standby Gensets Only)

- 2 Year Extended Limited Warranty
- 5 Year Limited Warranty
- 5 Year Extended Limited Warranty
- 7 Year Extended Limited Warranty
- 10 Year Extended Limited Warranty

ENGINEERED OPTIONS

CONTROL SYSTEM

- Additional Spare Inputs/Outputs
- Battery Disconnect Switch

ALTERNATOR SYSTEM

- Unit Mounted Load Banks
- Medium Voltage Alternators

ENCLOSURE

- Door Open Alarm Switch

GENERATOR SET

- Special Testing
- Battery Boxes

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APPLICATION AND ENGINEERING DATA

DEMAND RESPONSE READY

ENGINE SPECIFICATIONS

General

Make	Generac
Cylinder #	12
Type	V
Displacement - in^3 (L)	2,992 (49.03)
Bore - in (mm)	6.69 (170)
Stroke - in (mm)	7.09 (180)
Compression Ratio	10.0:1
Intake Air Method	Turbocharged/Aftercooled
Number of Main Bearings	7
Number of Connecting Rods	12
Cylinder Head	4 Valve
Cylinder Liners	Yes
Ignition	MotorTech
Piston Type	Cast Aluminum Alloy
Crankshaft Type	Chromium Molybdenum Steel SCM440H
Lifter Type	Solid
Intake Valve Material	Proprietary Alloy
Exhaust Valve Material	Proprietary Alloy
Hardened Valve Seats	Proprietary Alloy

Engine Governing

Governor	Electronic
Frequency Regulation (Steady State)	±0.25%

Lubrication System

Oil Pump Type	Gear Driving
Oil Filter Type	Full Flow Spin-on Cartridge
Crankcase Capacity with Filter - qt (L)	285 (270)

Cooling System

Cooling System Type	Forced Circulation by Centrifugal Pump
Fan Type	Pusher
Fan Speed - RPM	1,025
Fan Diameter - in (mm)	76 (1,930)

Fuel System

Fuel Type	Natural Gas
Carburetor	Variable Venturi
Secondary Fuel Regulator	Standard
Fuel Shut Off Solenoid	Standard
Operating Fuel Pressure - in H_2O (kPa)	14 - 28 (3.5 - 7.0)

Engine Electrical System

System Voltage	24 VDC
Battery Charger Alternator	Standard
Battery Size	See Battery Index 0161970SBY
Battery Voltage	(4) - 12 VDC
Ground Polarity	Negative

ALTERNATOR SPECIFICATIONS

Standard Model	K1248064N22
Poles	4
Field Type	Rotating
Insulation Class - Rotor	H
Insulation Class - Stator	H
Total Harmonic Distortion	<5%
Telephone Interference Factor (TIF)	<50

Standard Excitation	Permanent Magnet
Bearings	Single
Coupling	Flexible Plates
Prototype Short Circuit Test	Yes
Voltage Regulator Type	Full Digital
Number of Sensed Phases	3
Regulation Accuracy (Steady State)	±0.5%

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OPERATING DATA

DEMAND RESPONSE READY

POWER RATINGS - NATURAL GAS

	Standby/Demand Response	Prime
Three-Phase 277/480 VAC @0.8pf	1,000 kW/1,250 kVA Amps: 1,505	900 kW/1,125 kVA Amps: 1,355
Three-Phase 346/600 VAC @0.8pf	1,000 kW/1,250 kVA Amps: 1,204	900 kW/1,125 kVA Amps: 1,084

MOTOR STARTING CAPABILITIES (skVA)

skVA vs. Voltage Dip

277/480 VAC	30%
K1248064N22	3,300
K1344064N22	4,000
K1500064N22	4,500

FUEL CONSUMPTION RATES*

Natural Gas – scfh (m^3/hr) at Standard Conditions 68 °F (20 °C), 14.7 psi (101 kPa)

Percent Load	Standby/Demand Response
25%	3,540 (100.2)
50%	5,571 (157.8)
75%	7,602 (215.3)
100%	9,625 (272.5)

* Fuel supply installation must accommodate fuel consumption rates at 100% load.

COOLING

		Standby/Demand Response
Air Flow (Fan Air Flow Across Radiator) - Open Set	cfm (m^3/min)	57,846 (1,638)
Coolant Flow	gpm (Lpm)	489 (1,850)
Coolant System Capacity	gal (L)	80 (303)
Maximum Operating Ambient Temperature	°F (°C)	122 (50)
Maximum Operating Ambient Temperature (Before Derate)		Contact Factory
Maximum Additional Radiator Backpressure	in H_2O (kPa)	2.6 (0.65)

COMBUSTION AIR REQUIREMENTS

	Standby/Demand Response
Flow at Rated Power - cfm (m^3/min)	2,205 (62.4)

ENGINE

		Standby/Demand Response
Rated Engine Speed	RPM	1,800
Horsepower at Rated kW**	hp	1,467
Piston Speed	ft/min (m/min)	2,126 (648)
BMEP	psi (kPa)	216 (1,488)

EXHAUST

		Standby/Demand Response
Exhaust Flow (Rated Output)	cfm (m^3/min)	8,500 (241)
Maximum Allowable Exhaust Backpressure (Post Silencer)	inHg (kPa)	0.73 (2.49)
Exhaust Temperature (Rated Output)	°F (°C)	1,458 (792)

** Refer to "Emissions Data Sheet" for maximum bHP for EPA and SCAQMD permitting purposes.

Deration – Operational characteristics consider maximum ambient conditions. Derate factors may apply under atypical site conditions.
Please contact a Generac Power Systems Industrial Dealer for additional details. All performance ratings in accordance with ISO3046, BS5514, ISO8528, and DIN6271 standards.
Standby - See Bulletin 0187500SSB
Prime - See Bulletin 0187510SSB
Demand Response - See Bulletin 10000018250

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DIMENSIONS AND WEIGHTS*

DEMAND RESPONSE READY

OPEN SET

L x W x H - in (mm)	220.3 (5,597) x 102.0 (2,590) x 132.6 (3,369)
Weight - lbs (kg)	20,342 - 21,422 (9,227 - 9,717)

WEATHER PROTECTED ENCLOSURE

L x W x H - in (mm)	329.3 (8,356) x 105.8 (2,688) x 136.9 (3,477)
Weight - lbs (kg)	Steel - 26,558 - 28,256 (12,050 - 12,820) Aluminum - 24,092 - 25,789 (10,931 - 11,701)

LEVEL 1 SOUND ATTENUATED ENCLOSURE

L x W x H - in (mm)	329.3 (8,356) x 105.8 (2,688) x 136.9 (3,477)
Weight - lbs (kg)	Steel - 27,801 - 29,499 (12,614 - 13,384) Aluminum - 25,337 - 27,034 (11,496 - 12,266)

LEVEL 2 SOUND ATTENUATED ENCLOSURE

L x W x H - in (mm)	329.3 (8,356) x 105.8 (2,688) x 136.9 (3,477)
Weight - lbs (kg)	Steel - 29,697 - 31,394 (13,474 - 14,244) Aluminum - 26,279 - 27,976 (11,923 - 12,693)

* All measurements are approximate and for estimation purposes only.

YOUR FACTORY RECOGNIZED GENERAC INDUSTRIAL DEALER

Specification characteristics may change without notice. Please contact a Generac Power Systems Industrial Dealer for detailed installation drawings.

SPEC SHEET

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