

SG400 | 21.9L | 400 kW
INDUSTRIAL SPARK-IGNITED GENERATOR SET
EPA Certified Stationary Emergency and Non-Emergency

GENERAC® | **INDUSTRIAL POWER**

DEMAND RESPONSE READY

Standby Power Rating

400 kW, 500 kVA, 60 Hz

Demand Response Rating

400 kW, 500 kVA, 60 Hz

Prime Power Rating

360 kW, 450 kVA, 60 Hz



*Assembled in the USA using domestic and foreign parts



**Offered on Units sold in the U.S. and Canada.



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



NEMA ICS10, MG1, 250, ICS6, AB1



ANSI C62.41



IBC 2009, CBC 2010, IBC 2012,
ASCE 7-05, ASCE 7-10, ICC-ES
AC-156 (2012)

Powering Ahead

Generac provides 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 they can be found 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 for 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 owners 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 more options in commercial and industrial generator applications as well as extended run time from utility-supplied natural gas.

SG400 | 21.9L | 400 kW

INDUSTRIAL SPARK-IGNITED GENERATOR SET

EPA Certified Stationary Emergency and Non-Emergency

GENERAC® | **INDUSTRIAL POWER**

STANDARD FEATURES

DEMAND RESPONSE READY

ENGINE SYSTEM

- Oil Drain Extension
- Air Cleaner
- Stainless Steel Flexible Exhaust Connection
- Factory Filled Oil and Coolant
- Engine Coolant Heater
- Radiator Duct Adapter (Open Set Only)
- Critical Silencer

FUEL SYSTEM

- NPT Fuel Connection on Frame
- Primary and Secondary Fuel Shutoff

COOLING SYSTEM

- Closed Coolant Recovery System
- UV/Ozone Resistant Hoses
- Factory-Installed Radiator
- 50/50 Ethylene Glycol Antifreeze
- Radiator Drain Extension

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 Bearing
- Amortisseur Winding
- Full Load Capacity Alternator

GENERATOR SET

- Internal Genset Vibration Isolation
- Separation of Circuits - High/Low Voltage
- Separation of Circuits - Multiple Breakers
- Wrapped Exhaust Piping
- Standard Factory Testing
- 2 Year Limited Warranty (Standby and Demand Response Rated Units)
- 1 Year Limited Warranty (Prime Rated Units)
- Silencer Mounted in the Discharge Hood (Enclosed Units Only)

ENCLOSURE (If Selected)

- Rust-Proof Fasteners with Nylon Washers to Protect Finish
- High Performance Sound-Absorbing Material (Sound Attenuated Enclosures)
- Gasketed Doors
- Upward Facing Discharge Hood (Radiator and Exhaust)
- Stainless Steel Lift Off Door Hinges
- Stainless Steel Lockable Handles
- RhinoCoat™ - 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
- 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 (I²T 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
- Hour Meter
- Warning and Alarm Indication
- Diagnostics
- Maintenance Events/Information

SG400 | 21.9L | 400 kW

INDUSTRIAL SPARK-IGNITED GENERATOR SET

EPA Certified Stationary Emergency and Non-Emergency

GENERAC | **INDUSTRIAL POWER**

CONFIGURABLE OPTIONS

DEMAND RESPONSE READY

ENGINE SYSTEM

- Baseframe Cover/Rodent Guard
- Oil Heater
- Air Filter Restriction Indicator
- Radiator Stone Guard (Open Set Only)
- Level 1 Fan and Belt Guards (Enclosed Units Only)

FUEL SYSTEM

- NPT Flexible Fuel Line

ELECTRICAL SYSTEM

- 10A UL Listed Battery Charger
- Battery Warmer

ALTERNATOR SYSTEM

- Alternator Upsizing
- Anti-Condensation Heater
- Tropical Coating

CIRCUIT BREAKER OPTIONS

- Main Line Circuit Breaker
- 2nd Main Line Circuit Breaker
- Shunt Trip and Auxiliary Contact
- Electronic Trip Breakers

GENERATOR SET

- Demand Response Rating
- Extended Factory Testing (3-Phase Only)
- 12 Position Load Center

ENCLOSURE

- Weather Protected Enclosure
- Level 1 Sound Attenuated
- Level 2 Sound Attenuated
- Level 2 Sound Attenuated with Motorized Dampers
- Level 3 Sound Attenuated (Steel Only)
- Steel Enclosure
- Aluminum Enclosure
- Damper Alarm (with Motorized Dampers Only)
- Up to 200 MPH Wind Load Rating (Contact Factory for Availability)
- AC/DC Enclosure Lighting Kit
- Enclosure Heaters (with Motorized Dampers Only)
- Door Open Alarm Switch

CONTROL SYSTEM

- Oil Temperature Sender with Indication Alarm
- 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
- 100 dB Alarm Horn
- 120V GFCI and 240V Outlets

WARRANTY (Standby Gensets Only)

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

ENGINEERED OPTIONS

ENGINE SYSTEM

- Coolant Heater Ball Valves
- Fluid Containment Pans

CIRCUIT BREAKER OPTIONS

- 3rd Main Line Circuit Breaker
- 4th Main Line Circuit Breaker

CONTROL SYSTEM

- Battery Disconnect Switch

GENERATOR SET

- Special Testing
- Battery Box

APPLICATION AND ENGINEERING DATA

DEMAND RESPONSE READY

ENGINE SPECIFICATIONS

General

| | |
|------------------------------------|------------------------------|
| Make | Generac |
| Cylinder # | 12 |
| Type | V12 |
| Displacement - in ³ (L) | 1,336.4 (21.9) |
| Bore: in (mm) | 5.03 (128) |
| Stroke: in (mm) | 5.60 (142) |
| Compression Ratio | 10.0:1 |
| Intake Air Method | Turbocharged/Aftercooled |
| Number of Main Bearings | 7 |
| Connecting Rods | Steel Alloy |
| Cylinder Head | Cast Iron |
| Cylinder Liners | Cast Steel Alloy |
| Ignition | Electronic |
| Piston Type | Cast Aluminum Alloy |
| Crankshaft Type | Steel |
| Lifter Type | Solid |
| Intake Valve Material | High Temperature Steel Alloy |
| Exhaust Valve Material | High Temperature Steel Alloy |
| Hardened Valve Seats | Proprietary Alloy |

Engine Governing

| | |
|-------------------------------------|------------|
| Governor | Electronic |
| Frequency Regulation (Steady State) | ±0.25% |

Lubrication System

| | |
|-----------------------------|-----------------------------|
| Oil Pump | Gear |
| Oil Filter Type | Full-Flow Spin-On Cartridge |
| Engine Oil Capacity: qt (L) | 31.7 (30) |

Cooling System

| | |
|------------------------|-----------------------------|
| Cooling System Type | Pressurized Closed Recovery |
| Fan Type | Pusher |
| Fan Speed (RPM) | 1,404 |
| Fan Diameter - in (mm) | 44 (1,118) |

Fuel System

| | |
|---|---------------------|
| Fuel Type | Natural Gas |
| Carburetor | Down Draft |
| Secondary Fuel Regulator | Standard |
| Fuel Shut Off Solenoid | Standard |
| Operating Fuel Pressure- in H ₂ O (kPa) | 11 - 14 (2.7 - 3.5) |
| Optional Operating Fuel Pressure- in H ₂ O (kPa) | 7 - 11 (1.7 - 2.7) |

Engine Electrical System

| | |
|----------------------------|------------------------------|
| System Voltage | 24 VDC |
| Battery Charger Alternator | 57 A |
| Battery Size | See Battery Index 0161970SBY |
| Battery Voltage | (2) - 12 VDC |
| Ground Polarity | Negative (-) |

ALTERNATOR SPECIFICATIONS

| | |
|-------------------------------------|---------------|
| Standard Model | K0400124Y21 |
| Poles | 4 |
| Field Type | Revolving |
| Insulation Class - Rotor | H |
| Insulation Class - Stator | H |
| Total Harmonic Distortion | <5% (3-Phase) |
| Telephone Interference Factor (TIF) | <52 |

| | |
|------------------------------------|--------------------------|
| Standard Excitation | Permanent Magnet |
| Bearings | Sealed Ball |
| Coupling | Direct via Flexible Disc |
| Prototype Short Circuit Test | Yes |
| Voltage Regulator Type | Full Digital |
| Number of Sensed Phases | All |
| Regulation Accuracy (Steady State) | ±0.25% |

OPERATING DATA

DEMAND RESPONSE READY

POWER RATINGS - NATURAL GAS

| | Standby/Demand Response | | Prime | |
|--------------------------------|-------------------------|-------------|----------------|-------------|
| Three-Phase 120/208 VAC @0.8pf | 400 kW/500 kVA | Amps: 1,390 | 360 kW/450 kVA | Amps: 1,251 |
| Three-Phase 120/240 VAC @0.8pf | 400 kW/500 kVA | Amps: 1,204 | 360 kW/450 kVA | Amps: 1,084 |
| Three-Phase 277/480 VAC @0.8pf | 400 kW/500 kVA | Amps: 602 | 360 kW/450 kVA | Amps: 542 |
| Three-Phase 346/600 VAC @0.8pf | 400 kW/500 kVA | Amps: 482 | 360 kW/450 kVA | Amps: 434 |

MOTOR STARTING CAPABILITIES (skVA)

| skVA vs. Voltage Dip | | | |
|----------------------|-------|-------------|-------|
| 277/480 VAC | 30% | 208/240 VAC | 30% |
| K0400124Y21 | 953 | K0500124Y23 | 730 |
| K0500124Y23 | 1,020 | K0600124Y23 | 1,120 |
| K0600124Y23 | 1,560 | | |

FUEL CONSUMPTION RATES*

| | Natural Gas – scfh (m³/hr) | |
|--------------|----------------------------|---------------|
| Percent Load | Standby/Demand Response | Prime |
| 25% | 1,680 (47.6) | 1,620 (45.9) |
| 50% | 2,640 (74.8) | 2,460 (69.7) |
| 75% | 3,600 (101.9) | 3,300 (93.4) |
| 100% | 4,620 (130.8) | 4,200 (118.9) |

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

COOLING

| | | Standby/Demand Response | Prime |
|---|---------------------------|-----------------------------|-----------------------------|
| Air Flow (Fan Air Flow Across Radiator) | cfm (m³/min) | 28,004 (793) | 28,004 (793) |
| Coolant Flow | gpm (Lpm) | 211 (799) | 211 (799) |
| Coolant System Capacity | gal (L) | 15.5 (58.7) | 15.5 (58.7) |
| Maximum Operating Ambient Temperature | °F (°C) | 122 (50) | 122 (50) |
| Maximum Operating Ambient Temperature (Before Derate) | | See Bulletin No. 0199270SSD | See Bulletin No. 0199270SSD |
| Maximum Additional Radiator Backpressure | in H ₂ O (kPa) | 0.5 (0.12) | 0.5 (0.12) |

COMBUSTION AIR REQUIREMENTS

| | Standby/Demand Response | Prime |
|------------------------------------|-------------------------|------------|
| Flow at rated power cfm - (m³/min) | 731 (20.7) | 666 (18.9) |

ENGINE

| | | Standby/Demand Response | Prime |
|--------------------------|----------------|-------------------------|-------------|
| Rated Engine Speed | RPM | 1,800 | 1,800 |
| Horsepower at Rated kW** | hp | 589 | 530 |
| Piston Speed | ft/min (m/min) | 1,680 (512) | 1,680 (512) |
| BMEP | psi (kPa) | 194 (1,338) | 175 (1,204) |

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

EXHAUST

| | | Standby/Demand Response | Prime |
|---|--------------|-------------------------|---------------|
| Exhaust Flow (Rated Output) | cfm (m³/min) | 2,378 (67.3) | 2,142 (60.7) |
| Max. Backpressure (Post Silencer) | inHG (kPa) | 0.75 (2.54) | 0.75 (2.54) |
| Exhaust Temp (Rated Output - Post Silencer) | °F (°C) | 1,297 (702.8) | 1,277 (691.7) |

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 BS5514 and DIN6271 standards.
 Standby - See Bulletin 0187500SSB • Demand Response - See Bulletin 10000018250 • Prime - See Bulletin 0187510SSB

DIMENSIONS AND WEIGHTS*

DEMAND RESPONSE READY

OPEN SET (Includes Exhaust Flex)

| | |
|---------------------|---|
| L x W x H - in (mm) | 154.4 (3,922) x 71.0 (1,803) x 66.5 (1,689) |
| Weight - lbs (kg) | 7,286 - 8,650 (3,304 - 3,923) |

WEATHER PROTECTED ENCLOSURE

| | |
|---------------------|--|
| L x W x H - in (mm) | 207.4 (5,268) x 71.0 (1,803) x 80.0 (2,032) |
| Weight - lbs (kg) | Steel: 9,490 - 10,840 (4,304 - 4,916) Aluminum: 8,404 - 9,753 (3,811 - 4,423) |

LEVEL 1 SOUND ATTENUATED ENCLOSURE

| | |
|---------------------|--|
| L x W x H - in (mm) | 247.5 (6,287) x 71.0 (1,803) x 80.0 (2,032) |
| Weight - lbs (kg) | Steel: 10,498 - 11,847 (4,761 - 5,373) Aluminum: 8,818 - 10,185 (3,999 - 4,619) |

LEVEL 2 SOUND ATTENUATED ENCLOSURE

| | |
|---------------------|--|
| L x W x H - in (mm) | 207.4 (5,268) x 71.0 (1,803) x 114.1 (2,898) |
| Weight - lbs (kg) | Steel: 10,836 - 12,185 (4,914 - 5,526) Aluminum: 8,963 - 10,330 (4,065 - 4,685) |

LEVEL 3 SOUND ATTENUATED ENCLOSURE

| | |
|---------------------|--|
| L x W x H - in (mm) | 232.0 (5,893) x 76.9 (1,953) x 129.2 (3,282) |
| Weight - lbs (kg) | 13,224 - 14,285 (5,997 - 6,478) |

* All measurements are approximate and for estimation purposes only.

YOUR FACTORY RECOGNIZED GENERAC INDUSTRIAL DEALER

Specification characteristics may change without notice. Dimensions and weights are for preliminary purposes only. Please consult a Generac Power Systems Industrial Dealer for detailed installation drawings