# INDUSTRIAL SPARK-IGNITED GENERATOR SET

PRAMAC | Power Engineering Division







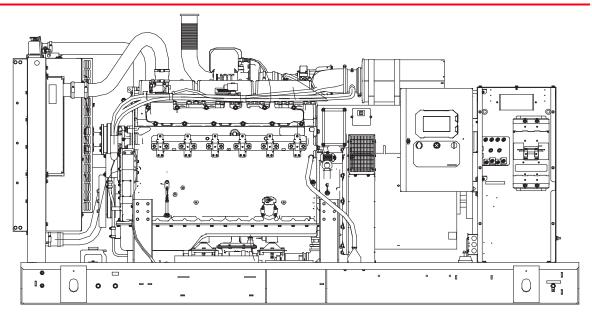


Image used for illustration purposes only

Power Ratings		
GGW200 -	Standby	200 kW/250 kVA
	Prime	180 kW/225 kVA

# **Codes and Standards**

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



BS5514 and DIN 6271



**SAE J1349** 



ISO 3046, 7637, 8528, 9001



NEMA ICS10, MG1, 250, ICS6, AB1



ANSI C62.41

# **ENERGY GENERATION**

PRAMAC ensures superior quality and performance by managing all aspects of production: from design to manufacturing.

PRAMAC can trace its roots back to 1966; from then onwards it has been expanding its activity in the energy and material-handling sector, continuously growing globally with a wide and flexible product range.

In the field of power generation, PRAMAC offers solutions for every kind of power supply demand: portable and industrial generators for stand by and prime power applications, and mobile and towable lighting for outdoor needs.

PRAMAC operates through a wide distribution network and provides global coverage even in the most demanding markets.

# INDUSTRIAL SPARK-IGNITED GENERATOR SET

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## STANDARD FEATURES



## **ENGINE SYSTEM**

- · Oil Drain Extension
- · Heavy Duty Air Cleaner
- · Level 1 Fan and Belt Guards (Open Set Only)
- Stainless Steel Flexible Exhaust Connection
- · Factory Filled Oil and Coolant
- · Radiator Duct Adapter (Open Set Only)
- · Critical Silencer (Enclosed Units Only)
- · Oil Temperature Indication and Alarm

## **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

## **Electrical System**

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

### **ALTERNATOR SYSTEM**

- GENprotect<sup>™</sup>
- 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 (Enclosed Units Only)
- · Standard Factory Testing
- 1 Year Limited Warranty or 1,000 Hours
- · 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 Hoods (Radiator and Exhaust)
- · Stainless Steel Lift Off Door Hinges
- · Stainless Steel Lockable Handles
- RhinoCoat<sup>™</sup> Textured Polyester Powder Coat Paint

## **CONTROL SYSTEM**



Power Zone® 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<sup>®</sup>, Bluetooth<sup>®</sup>, 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<sup>2</sup>T 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

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## **CONFIGURABLE OPTIONS**



## **ENGINE SYSTEM**

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

### **ELECTRICAL SYSTEM**

- O 10A Battery Charger
- O Battery Warmer

## **FUEL SYSTEM**

O NPT Flexible Fuel Line

## **ALTERNATOR SYSTEM**

- O Alternator Upsizing
- O Anti-Condensation Heater
- O Tropical Coating

## **CIRCUIT BREAKER OPTIONS**

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

## **GENERATOR SET**

- Extended Factory Testing (3-Phase Only)
- O Vapor Recovery Heater
- O 12 Position Load Center

## **ENCLOSURE**

- O Weather Protected Enclosure
- O Level 1 Sound Attenuated
- O Level 2 Sound Attenuated
- O Level 2 Sound Attenuated with Motorized Dampers
- O Steel Enclosure
- Aluminum Enclosure
- Up to 321 KMH Wind Load Rating (Contact Factory for Availability)
- O AC/DC Enclosure Lighting Kit
- O Door Open Alarm Switch
- O Enclosure Heater (with Motorized Dampers Only)

## **CONTROL SYSTEM**

- O 21-Light Remote Annunciator
- O Remote Relay Assembly (8 or 16)
- O Remote E-Stop (Break Glass-Type, Surface Mount)
- Remote E-Stop (Red Mushroom-Type, Surface Mount)
- O Remote E-Stop (Red Mushroom-Type, Flush Mount)
- O 10A Engine Run Relay
- O 100 dB Alarm Horn
- Ground Fault Annunciator
- Damper Alarm Contacts (with Motorized Dampers Only)
- O 120V GFCI and 240V Outlets

## **ENGINEERED OPTIONS**

## **ENGINE SYSTEM**

- O Coolant Heater Ball Valves
- O Fluid Containment Pan

## **ALTERNATOR SYSTEM**

O 3rd Breaker System

## **CONTROL SYSTEM**

O Battery Disconnect Switch

## **GENERATOR SET**

- O Special Testing
- O Battery Box

# INDUSTRIAL SPARK-IGNITED GENERATOR SET

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# PRAMAC

# **APPLICATION AND ENGINEERING DATA**

# **ENGINE SPECIFICATIONS**

## General

Make	Generac
Cylinder #	6
Туре	Inline
Displacement – in <sup>3</sup> (L)	846.71 (14.2)
Bore – in (mm)	5.31 (135)
Stroke – in (mm)	6.50 (165)
Compression Ratio	9.5:1
Intake Air Method	Turbocharged/Aftercooled
Number of Main Bearings	7
Connecting Rods	Carbon Steel
Cylinder Head	Cast Iron GT250, OHV
Cylinder Liners	Ductile Iron
Ignition	Electronic
Piston Type	Aluminum
Crankshaft Type	Ductile Iron
Lifter Type	Solid
Intake Valve Material	Special Heat-Resistant Steel
Exhaust Valve Material	High Temperature Steel Alloy
Hardened Valve Seats	High Temperature Steel Alloy

# **Engine Governing**

Governor	Electronic
Frequency Regulation (Steady State)	±0.25%

# Lubrication System

Oil Pump Type	Gear Driven
Oil Filter Type	Full-Flow Cartridge
Crankcase Capacity – qt (L)	36.2 (34.3)

# Cooling System

Cooling System Type	Pressurized Closed Recovery
Fan Type	Pusher
Fan Speed – RPM	1,894
Fan Diameter – in (mm)	30 (762)

# Fuel System

Fuel Type	Natural Gas
Carburetor	Down Draft
Secondary Fuel Regulator	Standard
Fuel Shut Off Solenoid	Standard
Operating Fuel Pressure – in H <sub>2</sub> O (kPa)	7–11 (1.7–2.7)

# Engine Electrical System

System Voltage	24 VDC
Battery Charger Alternator	Standard
Battery Size	See Battery Index 10000016949
Battery Voltage	(2) - 12 VDC
Ground Polarity	Negative

# **ALTERNATOR SPECIFICATIONS**

Standard Model	K0200124Y21
Poles	4
Field Type	Revolving
Insulation Class - Rotor	Н
Insulation Class - Stator	Н
Total Harmonic Distortion	<5% (3-Phase Only)
Telephone Interference Factor (TIF)	<50

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

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## **OPERATING DATA**

## **POWER RATINGS**

	Standby	Prime	
Single-Phase 120/240 VAC @1.0pf	200 kW/200 kVA Amps: 833	180 kW/180 kVA Amps: 750	
Three-Phase 120/208 VAC @0.8pf	200 kW/250 kVA Amps: 695	180 kW/225 kVA Amps: 625	
Three-Phase 120/240 VAC @0.8pf	200 kW/250 kVA Amps: 602	180 kW/225 kVA Amps: 542	
Three-Phase 277/480 VAC @0.8pf	200 kW/250 kVA Amps: 301	180 kW/225 kVA Amps: 271	
Three-Phase 346/600 VAC @0.8pf	200 kW/250 kVA Amps: 241	180 kW/225 kVA Amps: 217	

## **MOTOR STARTING CAPABILITIES (skVA)**

## skVA vs. Voltage Dip

277/480 VAC		30%	208/240 VAC	30%	
	K0200124Y21	478	K0200124Y21	361	
	K0250124Y21	630	K0250124Y21	506	
	K0300124Y21	790	K0300124Y21	609	

## **FUEL CONSUMPTION RATES\***

# Natural Gas - scfh (m³/hr)

Percent Load	Standby	Prime
25%	960 (27.2)	900 (25.5)
50%	1,440 (40.8)	1,320 (37.4)
75%	1,980 (56.1)	1,800 (51.0)
100%	2,460 (69.7)	2,280 (64.6)

 $<sup>\</sup>ensuremath{^{\star}}$  Fuel supply installation must accommodate fuel consumption rates at 100% load.

## **COOLING**

		Standby	Prime
Air Flow (Fan Air Flow Across Radiator) - Open Set	cfm (m³/min)	9,162 (259)	9,162 (259)
Coolant Flow	gpm (Lpm)	90 (341)	90 (341)
Coolant System Capacity	gal (L)	10.5 (39.7)	10.5 (39.7)
Maximum Operating Ambient Temperature	°F (°C)	122 (50)	122 (50)
Maximum Operating Ambient Temperature (Before Derate)		See Bulletin 10000011339	
Maximum Additional Radiator Backpressure	in H <sub>2</sub> O (kPa)	0.5 (0.12)	0.5 (0.12)

## **COMBUSTION AIR REQUIREMENTS**

	Standby	Prime
Flow at Rated Power - cfm (m <sup>3</sup> /min)	390 (11.0)	362 (10.3)

ENGINE				EXHAUST			
		Standby	Prime			Standby	Prime
Rated Engine Speed	RPM	1,800	1,800	Exhaust Flow (Rated Output)	cfm (m <sup>3</sup> /min)	1,327 (37.6)	1,213 (34.4)
Horsepower at Rated kW	hp	304	274	Maximum Allowable Backpressure (Post Silencer)	inHg (kPa)	0.75 (2.54)	0.75 (2.54)
Piston Speed	ft/min (m/min)	1,950 (594)	1,950 (594)	Exhaust Temperature (Rated Output)	°F (°C)	1,378 (747.8)	1,273 (689)
BMEP	psi (kPa)	155 (1,065)	139 (959)				

Deration – Operational characteristics consider maximum ambient conditions. Derate factors may apply under atypical site conditions. Please contact a Dealer for additional details. All performance ratings in accordance with ISO3046, BS5514, ISO8528, and DIN6271 standards. Standby – See Bulletin 10000018933

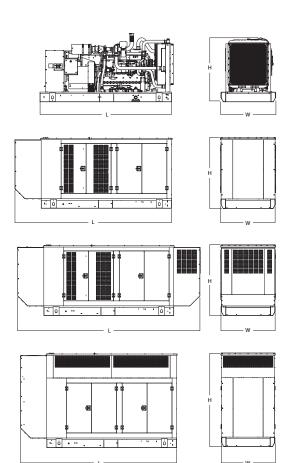
Prime – See Bulletin 10000018926

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# **DIMENSIONS AND WEIGHTS\***





## **OPEN SET**

L x W x H - in (mm)	128.0 (3,250) x 53.4 (1,357) x 62.3 (1,583)
Weight - Ibs (kg)	5,460 (2,477)

# **WEATHER PROTECTED ENCLOSURE**

L x W x H - in (mm)	154.4 (3,923) x 54.0 (1,371) x 69.8 (1,772)
Weight - Ibs (kg)	Steel: 6,440 (2,921) Aluminum: 5,974 (2,710)

## **LEVEL 1 SOUND ATTENUATED ENCLOSURE**

L x W x H - in (mm)	179.9 (4,569) x 54.0 (1,371) x 69.8 (1,772)
Weight - lbs (kg)	Steel: 6,744 (3,059) Aluminum: 6,104 (2,769)

## **LEVEL 2 SOUND ATTENUATED ENCLOSURE**

L x W x H - in (mm)	154.5 (3,923) x 54.0 (1,371) x 93.3 (2,370)
Weight - Ibs (kg)	Steel: 6,980 (3,166) Aluminum: 6,206 (2,815)

<sup>\*</sup> Specification characteristics may change without notice. Dimensions and weights are for preliminary purposes only. Please contact a PRAMAC Industrial Dealer for detailed installation drawings.