

# MG 135

## Generac Modular Power System (MPS)

Standby Power Rating  
**135KW 60 Hz**

Power Matched

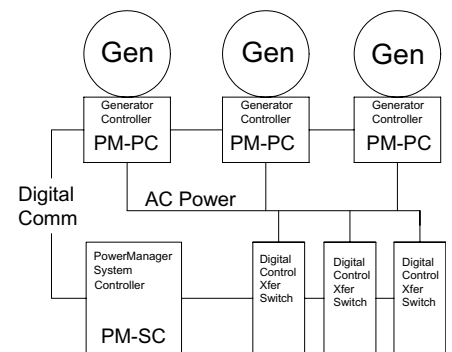
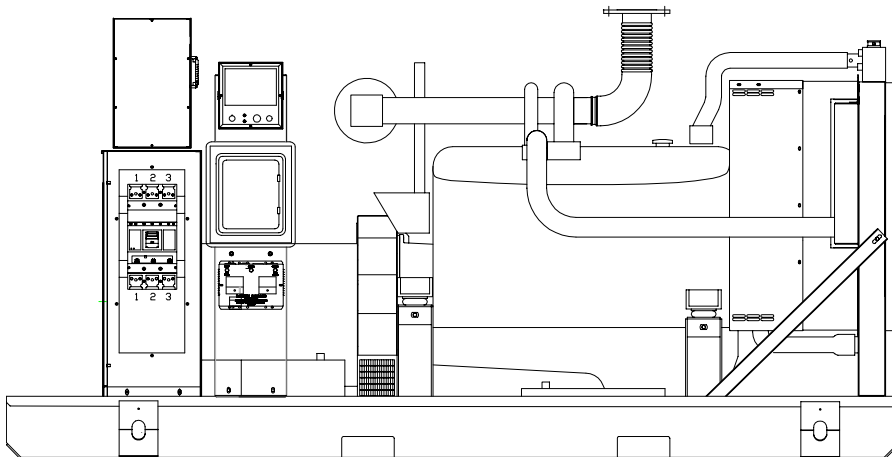
**GENERAC 13.3G ENGINE**

Nat. Asp.

Gas Engine Generator

Meets 2009 EPA Emission Regulations

PowerManager® Digital Control Platform



## FEATURES

- **INNOVATIVE DESIGN & PROTOTYPE TESTING** are key components of GENERAC'S success in "IMPROVING POWER BY DESIGN." But it doesn't stop there. Total commitment to component testing, reliability testing, environmental testing, destruction and life testing, plus testing to applicable CSA, NEMA, EGSA, and other standards, allows you to choose GENERAC POWER SYSTEMS with the confidence that these systems will provide superior performance.
- **PARALLELING SYSTEM FEATURES:**
  - ✓ AUTO SYNCHRONIZATION
  - ✓ ISOCHRONOUS LOAD SHARING
  - ✓ REVERSE POWER PROTECTION
  - ✓ MAXIMUM POWER PROTECTION
  - ✓ ELECTRICALLY OPERATED MECHANICALLY HELD TRANSFER SYSTEM
  - ✓ REDUNDANT OPERATION AND INCREASED RELIABILITY
  - ✓ UL2200 LISTED
- **POWERMANAGER DIGITAL CONTROL PLATFORM™.** The PowerManager Digital Control Platform (PM-DCP) is a powerful control system built around a 32-bit, industrial microprocessor. Standard factory programming controls the entire engine/generator

system, while allowing the PM-DCP, with its onboard PLC, to be customized to meet any application requirement. The system is available on single unit gas, diesel or bi-fuel installations as well as Modular Power Systems (MPS) from 350 kW - 3000 kW.

- **SINGLE SOURCE SERVICE RESPONSE** from Generac's dealer network provides parts and service know-how for the entire unit, from the engine to the smallest electronic component. You are never on your own when you own a GENERAC POWER SYSTEM.
- **ECONOMICAL NATURAL GAS POWER.** Low cost operation due to modern gas engine technology. Better fuel utilization plus lower cost per kW provide real savings.
- **LONGER ENGINE LIFE.** Generac heavy-duty natural gas engines provide long and reliable operating life.
- **GENERAC TRANSFER SWITCHES, POWERMANAGER™ AND ACCESSORIES.** Long life and reliability is synonymous with GENERAC POWER SYSTEMS. One reason for this confidence is that the GENERAC product line includes its own transfer systems, accessories, and PowerManager™ controls for total system compatibility.

# GENERAC®

# APPLICATION & ENGINEERING DATA

MG135

## GENERATOR SPECIFICATIONS

TYPE .....	Four-pole, revolving field
ROTOR INSULATION .....	Class H
STATOR INSULATION .....	Class H
TOTAL HARMONIC DISTORTION .....	<3%
TELEPHONE INTERFERENCE FACTOR (TIF) .....	<30
SHORT CIRCUIT CURRENT .....	300%
ALTERNATOR .....	Self-ventilated and drip-proof
BEARINGS (PRE-LUBED & SEALED) .....	1
COUPLING .....	Direct, Flexible Disc
LOAD CAPACITY (STANDBY) .....	100%

**NOTE: Generator rating and performance in accordance with ISO8528-5, BS5514, SAE J1349, ISO3046 and DIN6271 standards.**

### EXCITATION SYSTEM

PERMANENT MAGNET EXCITER .....	Eighteen pole exciter ✓
	Magnetically coupled DC current ✓
	Mounted outboard of main bearing ✓
REGULATION .....	Digital Solid-state ✓
	±1% regulation ✓

## CONTROL SYSTEM PM-PC (See Note 5)

The Generac PowerManager™ Paralleling control is mounted at the generator set and monitors all engine and alternator parameters:

- High/Low Battery
- High/Low Frequency
- High Oil Temp
- Pre-alarm Hi Oil Temp
- Low Oil Pressure
- Pre-alarm Lo Oil Pressure
- Low Coolant Level
- Overcrank
- Overspeed/Underspeed
- Pre-alarm Hi Coolant
- Sensor Failures
- Critical Low Fuel
- Over/Under Voltage
- Lo Fuel Pressure
- Sensor Failures

The instrumentation screen displays the following:

- AC volts
- AC amps
- Frequency
- kW
- Power Factor
- Coolant Temp
- Coolant level
- Run time hours
- Fuel level(%)
- Battery Voltage
- Oil Pressure
- Engine Speed

■ Serial Communication to the PowerManager Integrated Controller or System Controller via RS485 connection

■ Programmable

■ Built in Synchronizer for paralleling control and protection

■ Digital Voltage Regulator for concise control

■ Three Pole 1000amp paralleling switch

- Rated 600 volts
- UL Recognized device
- Electrically Operated - Mechanically held
- Built in arc suppression

■ Mainline Circuit Breaker

Mounted in series with paralleling switch

■ Generator Connection Box

Mounted on right side (facing rear) 12" x 22" x 36"

Access from side, top, bottom to paralleling switch

## ENGINE SPECIFICATIONS

MAKE .....	GENERAC
MODEL .....	13.3GTA
CYLINDERS .....	6 in-line
DISPLACEMENT .....	13.3 Liter (811 cu. in.)
BORE .....	137 mm (5.39 in.)
STROKE .....	150 mm (5.91 in.)
COMPRESSION RATIO .....	10.5:1
INTAKE AIR .....	Turbocharged/Aftercooled
NUMBER OF MAIN BEARINGS .....	7
CONNECTING RODS .....	6-Carbon Steel
CYLINDER HEAD .....	Cast Iron with Overhead Valve
CYLINDER LINERS .....	Wet/Replaceable
IGNITION .....	Altronic CD1
PISTONS .....	Heat-Resistant Alloy with 4 Rings
CRANKSHAFT .....	Induction-Hardened, Die-Forged Carbon Steel

### VALVE TRAIN

LIFTER TYPE .....	Solid
INTAKE VALVE MATERIAL .....	Special Heat Resistant Steel
EXHAUST VALVE MATERIAL .....	Inconel Alloy High Temp.
HARDENED VALVE SEATS .....	High Temp. Alloy Stellite Faced

### ENGINE GOVERNOR

ELECTRONIC .....	Standard
FREQUENCY REGULATION, NO-LOAD TO FULL LOAD .....	0.5%
STEADY STATE REGULATION .....	±0.25%

### LUBRICATION SYSTEM

TYPE OF OIL PUMP .....	Gear Driven
OIL FILTER .....	Full flow, cartridge
CRANKCASE CAPACITY .....	27 Liters (7.13 gal.)

### COOLING SYSTEM

TYPE OF SYSTEM .....	Pressurized, closed recovery
WATER PUMP .....	Pre-lubed, self-sealing
TYPE OF FAN .....	Pusher
NUMBER OF FAN BLADES .....	6
DIAMETER OF FAN .....	25.6 in.
COOLANT HEATER .....	2-240V, 1000 W

### FUEL SYSTEM

FUEL	<input type="checkbox"/> Natural Gas..... Standard
CARBURETOR .....	Down draft
SECONDARY FUEL REGULATOR .....	Nat. Gas
AUTOMATIC FUEL LOCKOFF SOLENOID .....	Standard
OPERATING FUEL PRESSURE SYSTEMS .....	7" to 15" H <sub>2</sub> O
MINIMUM BTU / ft <sup>3</sup> .....	875
INPUT PIPE SIZE .....	1 1/2" NPT

### ELECTRICAL SYSTEM

BATTERY CHARGE ALTERNATOR .....	20 Amps at 24 V
STARTER MOTOR .....	24 V
RECOMMENDED BATTERY .....	925 CCA (2) - 12 V, 135 A.H., 4D
GROUND POLARITY .....	Negative

OPERATING DATA		STANDBY	
		MG135	
<b>GENERATOR OUTPUT VOLTAGE/KW-60Hz</b>		<b>N.G.</b>	<b>Rated AMP</b>
120/208V, 3-phase, 0.8 pf	NOTE: Consult your Generac dealer for additional voltages.	135	468
277/480V, 3-phase, 0.8 pf		135	203
600V, 3-phase, 0.8 pf		135	162
<b>MOTOR STARTING KVA</b>			
Maximum at 35% instantaneous voltage dip with standard alternator — 60 Hz		<b>208V</b> 348 kVA	<b>480V</b> 464 kVA
with optional alternator — 60 Hz		900 kVA	1356 kVA
<b>FUEL</b>			
Fuel consumption—60 Hz—100% Load ft. <sup>3</sup> hr.		<b>N.G.</b> 2081	<b>L.P.</b> 827
<b>COOLING</b>			
Coolant capacity	System - US gal.		7.7
	Engine - US gal.		5.6
	Radiator - US gal.		2.1
Coolant flow/min.	60 Hz - US gal.		45
Heat rejection to coolant			514,000
Inlet air	60 Hz - cfm		8,086
Max. operating air temperature on radiator	°F		140
Max. operating ambient temperature	°F		122
Max. external pressure drop on radiator	" H <sub>2</sub> O		0.5
<b>COMBUSTION AIR REQUIREMENTS</b>			
Flow at rated power 60 Hz - cfm			359
<b>EXHAUST</b>			
Exhaust flow at rated output 60 Hz - cfm			1240
Max recommended back pressure Hg. in.			1.5
Exhaust temp at rated output °F			1300
Exhaust outlet size I.D. (flange) in.			4
<b>ENGINE</b>			
Rated RPM 60 Hz			1800
HP at rated KW 60 Hz			209
Piston speed 60 Hz - ft./min.			1773
BMEP 60 Hz - psi			113
<b>DERATION FACTORS</b>			
Temperature			
	2.77% for every 10°F above - °F		77
Altitude			
	3.5% for every 1000 ft. above - ft.		600

### Notes:

- Motor Starting kVA adds directly for each generator on the bus. With Generac's PowerManager® Control System, the load is shared proportionally.
- Maximum distance between Generator Sets is determined by the voltage drop of the power conductors and the maximum distance allowed for the RS485 connection. If the Distance between units exceeds **500** feet, consult factory for wire and communication recommendations.
- Fuel consumption like motor starting kVA is additive. Each Generator will proportionally share the load and the fuel consumption will be based on the percentage of load shared.
- A complete MPS system requires a PowerManager Paralleling Controller (PM-PC), a PowerManager System Controller (PM-SC), and switch(es) from Generac Power System's GTS line of digitally controlled transfer switches. In addition, Generac Power Systems' Genlink® Communications Software provides remote monitoring and user interface with the Power Manager Digital Control Platform.
- Values given are maximum temperatures to which power adjustment factors can be applied. Consult your Generac representative if operating conditions exceed these maximums.
- MPS Gensets are available for Standby Applications Only, at this time.

- High Coolant Temperature Automatic Shutdown
- Low Coolant Level Automatic Shutdown
- Low Oil Pressure Automatic Shutdown
- Overspeed Automatic Shutdown (Solid-state)
- Crank Limiter (Solid-state)
- Oil Drain Extension
- Radiator Drain
- Factory-Installed Cool Flow Radiator
- Closed Coolant System
- UV/Ozone Resistant Hoses
- Rubber-Booted Engine Electrical Connections
- Stainless Steel Flexible Exhaust Connection
- Battery Charge Alternator
- Battery Cables
- Battery Tray
- 24 Volt, Solenoid-activated Starter Motor
- Air Cleaner
- Fan Guard
- Control Console
- Isochronous Governor
- Jacket water heater
- Autosynchronizer
- Isochronous Load Sharing Module
- Reverse Power Protection Relay
- Dead Bus Sensing
- Sync Check Relay
- Main Line Circuit Breaker
- 2 Year Warranty
- Engine Coolant Heater

## GENERATOR CONNECTIONS

1. 4 Wire load connections on Paralleling Contactor: Each phase will accept (4) #6 to 350MCM aluminum or copper conductor.
2. 2 wire shielded cable (RS485) to Power Manager System Control or Power Manager Integral Control.
3. 2 wire Twisted pair from Transfer switch (when multiple transfer switches are used). Can also go to the Power Manager System Controller.
4. 120 Volt 15 amp input circuit for Battery Charger.
5. 240 Volt 20 amp input for Coolant Heater.

## OPTIONS

- **OPTIONAL COOLING SYSTEM ACCESSORIES**
  - Radiator Duct Adapter
- **OPTIONAL FUEL ACCESSORIES**
  - Flex Fuel Lines
  - Low Pressure Alarm
- **OPTIONAL ELECTRICAL ACCESSORIES**
  - 10A Dual Rate Battery Charger
  - Battery, 24 Volt
  - Battery warmer
- **OPTIONAL ALTERNATOR ACCESSORIES**
  - Alternator Heater
- **OPTIONAL EXHAUST ACCESSORIES**
  - Critical Exhaust Silencer
- **GENERAC POWERMANAGER™ INTEGRATED**
  - Controller and ATS Note 5 - See Spec 0167390SBY for additional information
- **GENERAC POWERMANAGER™ SYSTEM**
  - Controller Note 5 for Multiple Transfer Switches See Spec 0167380SBY for Additional Information
- **ADDITIONAL OPTIONAL EQUIPMENT**
  - 20 Light Remote Annunciator
  - Remote Relay Panels
  - Oil Make-Up System
  - Oil Heater
  - GenLink® Communications Software
- **OPTIONAL ENCLOSURES**
  - Weather Protective
  - Sound Attenuated
  - Aluminum and Stainless Steel

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