# **MG300**

# For Generac Modular Power Systems (MPS)

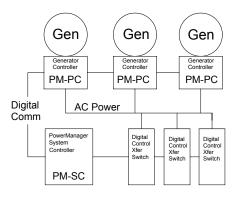
Standby Power Rating 300 KW 60 Hz

**Power Matched** 

### **GENERAC 13.3GTA ENGINE**

Turbocharged/Aftercooled Gas Engine Generator Meets EPA Emission Regulations

### PowerManager® Digital Control Platform



## **FEATURES**

- INNOVATIVE DESIGN & PROTOTYPETESTING 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
  - ✓ PARALLEL UP TO 10 UNITS
- 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 200 kW 6000 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.



### GENERATOR SPECIFICATIONS

TYPE	Four-pole, revolving field
ROTOR INSULATION	Class H
STATOR INSULATION	Class H
TOTAL HARMONIC DISTORTION	<3%
TELEPHONE INTERFERENCE FACTOR (1	TIF)<30
SHORT CIRCUIT CURRENT	300%
ALTERNATORS	elf-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 ✓ ±0.25% regulation ✓

# CONTROL SYSTEM PM-GC (See Note 5)

The Generac PowerManager™ Generator control is mounted at the generator set and monitors all engine and alternator parameters: High/Low Frequency

- High/Low Battery
- · High Oil Temp
- Low Oil Pressure
- Low Coolant Level
- High Coolant Level
- Low Coolant Level Overspeed/Underspeed
- Sensor Failures
- The instrumentation screen displays the following:
  - AC volts AC amps
  - Frequency

  - Power Factor
  - Coolant level
  - Fuel level(%)
  - Oil Pressure

Overcrank

- kW
- Coolant Temp

• Pre-alarm Hi Oil Temp

· Pre-alarm Hi Coolant

· Over/Under Voltage

· Critical Low Fuel

Lo Fuel Pressure

· Pre-alarm Lo Oil Pressure

- · Run time hours
- · Battery Voltage
- · Engine Speed
- Serial Communication to the PowerManager Integral 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 heald
  - Built in ARC supression
- 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
DISPLACEMENT
BORE
STROKE
COMPRESSION RATIO
INTAKE AIRTurbocharged/Aftercooled
NUMBER OF MAIN BEARINGS7
CONNECTING RODS6-Carbon Steel
CYLINDER HEADCast Iron with Overhead Valve
CYLINDER LINERSWet/Replaceable
IGNITIONAltronic CD1
PISTONSHeat-Resistant Alloy with 4 Rings
CRANKSHAFT Induction-Hardened, Die-Forged Carbon Steel
•
<u>VALVE TRAIN</u>
LIFTER TYPESolid
INTAKE VALVE MATERIALSpecial Heat Resistant Steel
EXHAUST VALVE MATERIALInconel Alloy High Temp.
HARDENED VALVE SEATSHight Temp. Alloy Stellite Faced
ENGINE GOVERNOR
ELECTRONIC
STEADY STATE REGULATION±0.25%
LUBBICATION CYCTEM
LUBRICATION SYSTEM  TYPE OF OIL PUMPGear Driven
OIL FILTERFull flow, cartridge
CRANKCASE CAPACITY27 Liters (7.13 gal.)
COOLING SYSTEM
TYPE OF SYSTEMPressurized, closed recovery
WATER PUMPPre-lubed, self-sealing
TYPE OF FAN
NUMBER OF FAN BLADES8
DIAMETER OF FAN
COOLANT HEATER
0000 111 112 112 112 112 112 112 112 112
FUEL SYSTEM
FUEL
☐ Natural Gas Standard
CARBURETORDown draft
SECONDARY FUEL REGULATOR
AUTOMATIC FUEL LOCKOFF SOLENOID Standard
OPERATING FUEL PRESSURE11" to 15" H <sub>2</sub> O
MINIMUM BTU (ft³)875
INPUT PIPE SIZE
ELECTRICAL SYSTEM
BATTERY CHARGE ALTERNATOR 20 Amps at 24 V
STARTER MOTOR24 V
RECOMMENDED BATTERY 925 CCA (2) - 12 V, 135 A.H., 4D
GROUND POLARITYNegative
-





OPERATING DATA	STANDBY
GENERATOR OUTPUT VOLTAGE/KW-60Hz 120/208V, 3-phase, 0.8 pf 277/480V, 3-phase, 0.8 pf 600V, 3-phase, 0.8 pf voltages.	MG300  N.G. Rated AMP 288 999 300 451 300 361
MOTOR STARTING KVA Maximum at 35% instantaneous voltage dip with standard alternator — 60 Hz	<b>208V</b> 794 kVA 1059 kVA
FUEL Fuel consumption—60 Hz—Natural Gas* ft.3 hr. No Load 25% Load 50% Load 75 % Load 100% Load	N.G. 906 1671 2376 3189 4100
COOLING  Coolant capacity System - US gal.  Coolant flow/min. 60 Hz - US gal.  Heat rejection to coolant  Inlet air 60 Hz - cfm  Max. operating air temperature on radiator °F  Max. operating ambient temperature °F  Max. external pressure drop on radiator " H <sub>2</sub> O	15 45 1,048,250 19,200 140 120 0.5
COMBUSTION AIR REQUIREMENTS Flow at rated power 60 Hz - cfm	1200
EXHAUST  Exhaust flow at rated output 60 Hz - cfm  Max recommended back pressure  Exhaust temp at rated output °F  Exhaust outlet size I.D. (flange)	4335 1.5" 1490 4"
ENGINE         60 Hz           Rated RPM         60 Hz           HP at rated KW**         60 Hz           Piston speed         60 Hz - ft./min.           BMEP         60 Hz - psi	2300 454 2265 193
DERATION FACTORS Temperature  1.1% for every 10°F above - °F Altitude	104
2.1% for every 1000 ft. above - ft.	4500

<sup>\*</sup> Refer to "Emissions Data Sheets" for maximum fuel flow for EPA and SCAQMD permitting purposes.

### Notes:

- 1. Motor Starting kVA adds directly for each generator on the bus. With Generac's PowerManager® Control System, the load is shared proportionally.
- 2. For Additional voltages consult factory.
- 3. 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.
- 4. 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.
- 5. For complete system operation, the MPS requires either the Power Manager Integral Control (PM-IC) which is part of the Generac Power Manager Automatic Transfer Switch or the Power Manager System Control (PM-SC) which is a separate enclosure and connects to multiple transfer switches with 2 wire start. Up to 3 separate switches or 3 groups of multiple switches can be controlled individually.
- 6. MPS Gensets are available for Standby Applications Only, at this time.

<sup>\*\*</sup> Refer to "Emissions Data Sheets" for maximum bHP for EPA and SCAQMD permitting purposes.

- 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** 
  - O Flex Fuel Lines
  - O Low Pressure Alarm
- OPTIONAL ELECTRICAL ACCESSORIES
  - O 10A Dual Rate Battery Charger
  - O Battery, 24 Volt, (2) 12 Volt Size 31
  - O Battery warmer
- **OPTIONAL ALTERNATOR ACCESSORIES** 
  - O Alternator Heater
- **OPTIONAL EXHAUST ACCESSORIES** 
  - O 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 Transer Switches See Spec 0167380SBY for Additional Information

### ADDITIONAL OPTIONAL EQUIPMENT

- O 20 Light Remote Annunciator
- O Remote Relay Panels
- O Oil Make-Up System
- O Oil Heater
- O GenLink® Communications Software

#### OPTIONAL ENCLOSURES

- O Weather Protective
- O Sound Attenuated
- Aluminum and Stainless Steel



