

SD600

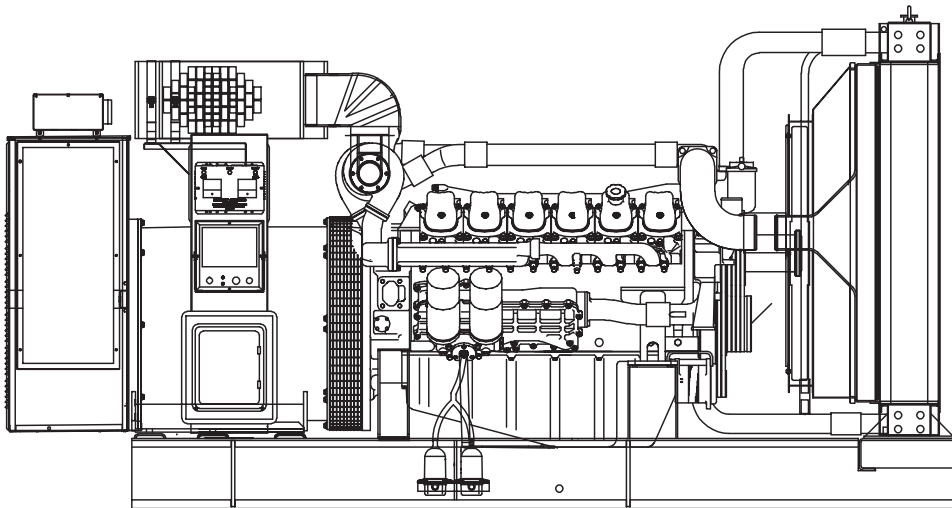
Liquid Cooled Diesel Engine Generator Sets

Standby Power Rating

600KW 60 Hz / 620KVA 50 Hz

Prime Power Rating

547KW 60 Hz / 590KVA 50 Hz



Power Matched

GENERAC 22.0DTA ENGINE

Turbocharged / Aftercooled

Tier II Compliant

EPA Cert. DWX-NRC1-06-06

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.
- **TEST CRITERIA:**
 - ✓ PROTOTYPE TESTED
 - ✓ SYSTEM TORSIONAL TESTED
 - ✓ ELECTRO-MAGNETIC INTERFERENCE
 - ✓ NEMA MG1 EVALUATION
 - ✓ MOTOR STARTING ABILITY
 - ✓ SHORT CIRCUIT TESTING
 - ✓ UL 2200 COMPLIANCE AVAILABLE
- **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 Paralleling 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 DIESEL POWER.** Low cost operation due to modern diesel engine technology. Better fuel utilization plus lower cost per gallon provide real savings.
- **LONGER ENGINE LIFE.** Generac heavy-duty diesels provide long and reliable operating life.
- **GENERAC TRANSFER SWITCHES, SWITCHGEAR 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, switchgear and controls for total system compatibility.

GENERAC®

GENERATOR SPECIFICATIONS

TYPE	Marathon Four-pole, revolving field
ROTOR INSULATION	Class H
STATOR INSULATION	Class H
LINE-TO-LINE HARMONIC FACTOR	5%
TELEPHONE INTERFERENCE FACTOR (TIF)	<50
ALTERNATOR	Self-ventilated and drip-proof
BEARINGS (PRE-LUBED & SEALED)	1
COUPLING	Direct, Flexible Disc
LOAD CAPACITY (STANDBY)	100%
LOAD CAPACITY (PRIME)	110%

NOTE: Emergency loading in compliance with NFPA 99, NFPA 110, paragraph 5-13.2.6. Generator rating and performance in accordance with ISO8528-5, BS5514, SAE J1349, ISO3046 and DIN6271 standards.

EXCITATION SYSTEM

<input type="checkbox"/> PERMANENT MAGNET EXCITER	±0.25% regulation ✓
(standard)	Enhances motor starting capabilities ✓
	Isolates the excitation system from non-linear loads ✓
	Sustains short circuit current (300% for 10 seconds) ✓
	Mounted outboard of main bearing (for easy maintenance) ✓
REGULATION	Solid-state ✓
	3-phase sensing ✓

GENERATOR FEATURES

- Four pole, revolving field generator, directly connected to the engine shaft through a heavy-duty, flexible disc for permanent alignment.
- Generator meets the temperature rise standards for class "H" insulation as defined by NEMA MG1-32.6.
- All prototype models have passed a three-phase symmetrical short circuit test to assure system protection and reliability.
- All prototype models are tested for motor starting ability by measuring the instantaneous voltage dip with a waveform data acquisition system.
- All models utilize an advanced wire harness design with sealed connectors for reliable interconnection within the circuitry.
- Magnetic circuit, including amortisseur windings, tooth and skewed stator design, provides a minimal level of waveform distortion and an electromagnetic interference level which meets accepted requirements for standard AM radio, TV, and marine radio telephone applications.
- Voltage waveform deviation, total harmonic content of the AC waveform, and T.I.F. (Telephone Influence Factor) have been evaluated to acceptable standards in accordance with NEMA MG1-32.
- Alternator is self-ventilated and drip-proof constructed.
- Fully life-tested protective systems, including "field circuit overload protection" and optional main-line circuit breakers capable of handling full rated output.
- System Torsional acceptability confirmed during Prototype Testing.

ENGINE SPECIFICATIONS

MAKE	Doosan
MODEL/FAMILY	P222FE/6DWXL21.9UYA
CYLINDERS	12
DISPLACEMENT - liter/(cu. in.)	22.0 (1338)
BORE - mm/(in.)	128 (5.04)
STROKE - mm/(in.)	142 (5.60)
COMPRESSION RATIO	15.0:1
INTAKE AIR	Turbocharged/Aftercooled (Jacket Water)
NUMBER OF MAIN BEARINGS	6
CONNECTING RODS	I-Beam Section
CYLINDER HEAD	Individual Cylinder Heads/Two Valves
PISTONS	Open Chamber/Oil Cooled
CRANKSHAFT	Counter Weighted Type

VALVE TRAIN

LIFTER TYPE	Solid
HARDENED VALVE SEATS	Yes

ENGINE GOVERNOR

<input type="checkbox"/> ELECTRONIC / ISOCHRONOUS	Standard
STEADY STATE FREQUENCY REGULATION	±0.25%

LUBRICATION SYSTEM

TYPE OF OIL PUMP	Gear
OIL FILTER	Full Flow Cartridge
CRANKCASE CAPACITY - liter(gal.)	42 (11.1)

COOLING SYSTEM

TYPE OF SYSTEM	Pres. Closed Recovery
WATER PUMP	Centrifugal Type, Belt Driven
TYPE OF FAN	Pusher
NUMBER OF FAN BLADES	7
DIAMETER OF FAN - mm/(in.)	915 (36)
COOLANT HEATER	240V (4000W)

FUEL SYSTEM

FUEL	No. 2 Diesel Fuel
	(Fuel should conform to ASTM Spec.)
FUEL FILTER	Full Flow Cartridge
FUEL INJECTION PUMP	Bosch P Type x 1
FUEL PUMP	Bosch/Piston Type
INJECTORS	Bosch Multi-Hole
ENGINE TYPE	V-Type, 4 Cycle
FUEL LINE (Supply)	1/2"FNPT
FUEL RETURN LINE	1/2"FNPT

ELECTRICAL SYSTEM

BATTERY CHARGE ALTERNATOR	45 Amps at 24V
STARTER MOTOR	6.6 kW at 24V
RECOMMENDED BATTERY	2 x 12V
GROUND POLARITY	Negative

SD600

OPERATING DATA

	STANDBY				PRIME				
	SD600				SD600				
GENERATOR OUTPUT VOLTAGE/KW—60Hz 120/208V, 3-phase, 0.8 pf 120/240V, 3-phase, 0.8 pf 277/480V, 3-phase, 0.8 pf 600V, 3-phase, 0.8 pf	Rated kW		Rated AMP		Rated kW		Rated AMP		
NOTE: Consult your Generac dealer for additional voltages.	600	600	2082	1804	547	547	1898	1645	
	600	600	902	722	547	547	822	658	
GENERATOR OUTPUT VOLTAGE/KVA-50Hz 220/380V, 3-phase, 0.8 pf 230/400V, 3-phase, 0.8 pf 240/415V, 3-phase, 0.8 pf	Rated kVA		Rated AMP		Rated kVA		Rated AMP		
NOTE: Consult your Generac dealer for additional voltages.	620	620	942	896	590	590	896	852	
	620	620	863	863	590	590	821	821	
MOTOR STARTING KVA Maximum @ 35% instantaneous voltage dip with standard alternator; 60 Hz-kVa	Low Wye & Delta		High Wye		Low Wye & Delta		High Wye		
	1360		2100		1360		2100		
FUEL									
Fuel consumption—60 Hz	Load gal./hr.	25%	50%	75%	100%	25%	50%	75%	100%
		14.4	23.4	36.6	46.2	14	21	32	42
Fuel consumption—50 Hz	gal./hr.	11.5	18.8	29.3	37	11.2	16.8	25.6	33.6
	liters/hr.	43.5	71.2	110	140	42.4	63.6	96.9	127.2
Fuel pump lift	in.	39				39			
COOLING									
Coolant capacity	System - lit./gal.	131 (34.6)				131 (34.6)			
	Engine - lit./gal.	36 (9.5)				36 (9.5)			
	Radiator - lit./gal.	95 (25)				95 (25)			
Coolant flow/min.	60 Hz - lit./gal.	870 (230)				870 (230)			
	50 Hz - lit./gal.	725 (191.7)				725 (191.7)			
Heat rejection to coolant @ FL	BTU/hr.	1,740,000				1,390,000			
Inlet air	60 Hz - m ³ /min. (cfm)	665 (23,500)				665 (23,500)			
	50 Hz - m ³ /min. (cfm)	551 (19,500)				551 (19,500)			
Max. air temp onto radiator*	°C (°F)	60 (140)				60 (140)			
Max. ambient temperature*	°C (°F)	50 (122)				50 (122)			
Max. external pressure drop on radiator	in. H ₂ O	0.5				0.5			
COMBUSTION AIR REQUIREMENTS									
Flow at rated power	60 Hz - m ³ /min. (cfm)	55.5 (1959)				48.6 (1716)			
	50 Hz - m ³ /min. (cfm)	45.8 (1617)				43.7 (1543)			
EXHAUST									
Exhaust flow at rated output	60 Hz - m ³ /min. (cfm)	182 (6419)				159 (5615)			
	50 Hz - m ³ /min. (cfm)	150 (5297)				143 (5050)			
Maximum recommended back pressure	Kpa (" Hg)	5.1 (1.5)				5.1 (1.5)			
Exhaust temp. at rated output	°C (°F)	704 (1300)				616 (1141)			
Exhaust outlet size	inches (mm.)	2 x 8 (203.2) or 1 x 10 (254)				2 x 8 (203.2) or 1 x 10 (254)			
ENGINE									
Rated RPM	60 / 50 Hz	1800 / 1500				1800 / 1500			
HP at rated KW	60 / 50 Hz	954 / 795				835 / 695			
Piston speed	60 Hz - m/sec. (ft./min)	8.5 (1677)				8.5 (1677)			
	50 Hz - m/sec. (ft./min)	7.1 (1398)				7.1 (1398)			
BMEP	60 / 50 Hz - PSI	313 / 261				274 / 228			
POWER ADJUSTMENTS FOR AMBIENT CONDITIONS **									
Temperature									
	4.1% for every 10°C above - °C	40				40			
	2.4% for every 10°F above - °F	104				104			
Altitude									
	0.8% for every 100 m above - m.	1067				1067			
	2.6% for every 1000 ft. above - ft.	3500				3500			

* Note: Values given are maximum temperatures to which power adjustments can be applied. Consult your Generac Power Systems representative if operating conditions exceed these maximums.

** Note: Consult Factory for high altitude cooling options.

- 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
- Vibration Isolators

POWERMANAGER® DIGITAL CONTROL PLATFORM

The PowerManager® Generator Controller (PM-GC) is a fully programmable, integrated digital generator control console using a 32-bit industrial microprocessor to handle all control, monitoring, input/output genset functions. The open architecture used allows customizing the controls to meet any customer requirement, yet maintaining the simplicity of operation 'as is' with the factory default programming. (see Generac bulletin #0168840SBY)

OPTIONS

■ OPTIONAL COOLING SYSTEM ACCESSORIES

- Radiator Duct Adapter

■ OPTIONAL FUEL ACCESSORIES

- Base Tank Low Fuel Alarm
- Primary Fuel Filters
- UL Listed Fuel Tanks
- Electric fuel transfer pump system

■ OPTIONAL ELECTRICAL ACCESSORIES

- 10A Dual Rate Battery Charger
- Battery, 24 Volt
- Battery warmer

■ OPTIONAL ALTERNATOR ACCESSORIES

- Alternator Upsizing
- Alternator Heater
- Main Line Circuit Breaker
(factory installed up to 2000 Amp.)

■ OPTIONAL EXHAUST ACCESSORIES

- Critical Exhaust Silencer
- Residential Exhaust Silencer
- Industrial Exhaust Silencer

■ ADDITIONAL OPTIONAL EQUIPMENT

- Automatic Transfer Switch
- 20 Light Remote Annunciator
- Remote Relay Panels
- Oil Make-Up System
- Oil Heater
- 5 Year Warranties
- Export Boxing
- GenLink® Communications Software

■ OPTIONAL ENCLOSURES

- Weather Protective
- Sound Attenuated
- Aluminum

Distributed by:

