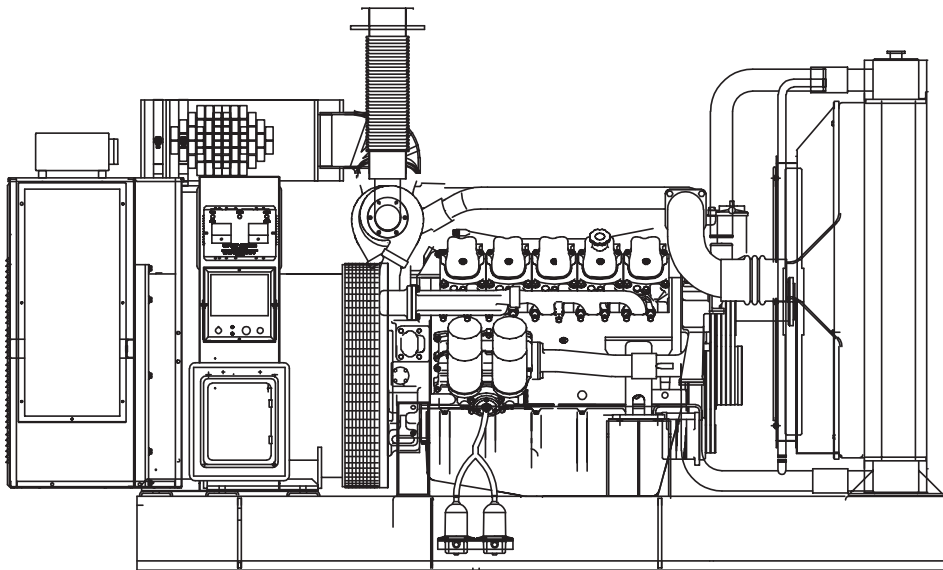


SD500

Liquid Cooled Diesel Engine Generator Sets

Standby Power Rating

500KW 60 Hz / 500KVA 50Hz



Power Matched

GENERAC 18.0DTA ENGINE

Turbocharged / Aftercooled

EPA Certified

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
 - ✓ UL2200 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.** 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	WEG Four-pole, revolving field
ROTOR INSULATION	Class H
STATOR INSULATION	Class H
LINE-TO-LINE HARMONIC FACTOR	5%
TELEPHONE INTERFERENCE FACTOR (TIF)	<50
ALTERNATOR	WEG Self-ventilated and drip-proof
BEARINGS (PRE-LUBED & SEALED)	1
COUPLING	Direct, Flexible Disc
LOAD CAPACITY (STANDBY)	100%

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.

Rating definitions - Standby: Applicable for supplying emergency power for the duration of the utility power outage. No overload capability is available for this rating. (All ratings in accordance with BS5514, ISO3046 and DIN6271). Prime (Unlimited Running Time): Applicable for supplying electric power in lieu of commercially purchased power. Prime power is the maximum power available at variable load. A 10% overload capacity is available for 1 hour in 12 hours. (All ratings in accordance with BS5514, ISO3046, ISO8528 and DIN6271).

ENGINE SPECIFICATIONS

MAKE	Doosan
MODEL	P180FE
CYLINDERS	10
DISPLACEMENT - liter/(cu. in.)	18.3 (1115)
BORE - mm/(in.)	128 (5.04)
STROKE - mm/(in.)	142 (5.59)
COMPRESSION RATIO	15.0:1
INTAKE AIR	Turbocharged/Aftercooled
NUMBER OF MAIN BEARINGS	5
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

ELECTRONIC	Standard
STEADY STATE FREQUENCY REGULATION	±0.25%

LUBRICATION SYSTEM

TYPE OF OIL PUMP	Gear
OIL FILTER	Full Flow Cartridge
CRANKCASE CAPACITY - liter/(gal.)	27 (7.13)

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 (4000 W)

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"
FUEL RETURN LINE	5/16"

ELECTRICAL SYSTEM

BATTERY CHARGE ALTERNATOR	45 Amps at 24V
STARTER MOTOR	6.6 kW at 24V
RECOMMENDED BATTERY	(2) 12V, 700 CCA, 27F
GROUND POLARITY	Negative

SD500

OPERATING DATA

		STANDBY			
		SD500			
GENERATOR OUTPUT VOLTAGE/KW—60Hz		kW		Rated AMP	
120/208V, 3-phase, 0.8 pf	NOTE: Consult your Generac dealer for additional voltages.	500		1735	
120/240V, 3-phase, 0.8 pf		500		1504	
277/480V, 3-phase, 0.8 pf		500		752	
600V, 3-phase, 0.8 pf		500		601	
GENERATOR OUTPUT VOLTAGE/KVA-50Hz		kVA		Rated AMP	
220/380V, 3-phase, 0.8 pf	NOTE: Consult your Generac dealer for additional voltages.	500		760	
230/400V, 3-phase, 0.8 pf		500		722	
240/415V, 3-phase, 0.8 pf		500		696	
MOTOR STARTING Locked rotor kva at 35% Instantaneous voltage dip 50 / 60 Hz		Low Wye & Delta 1583 / 1900		High Wye 1583 / 1900	
FUEL					
Fuel consumption—60 Hz	Load	25%	50%	75%	100%
	gal./hr.	12.6	16.2	21.6	33.0
	liters/hr.	47.7	61.3	81.8	124.9
Fuel consumption—50 Hz	gal./hr.	10.1	13.0	17.3	26.4
	liters/hr.	38.2	49.1	65.4	99.9
Fuel pump lift	in.	39*			
COOLING					
Coolant capacity	System - lit./gal.	109 (28.8)			
	Engine - lit./gal.	34 (8.9)			
	Radiator - lit./gal.	75 (19.8)			
Coolant flow/min.	60 Hz - lit./gal.	757 (200)			
	50 Hz - lit./gal.	631 (166)			
Heat rejected to coolant @ FL	BTU/hr.	12,000,000			
Inlet air	60 Hz - m ³ /min. (cfm)	396 (14,000)			
	50 Hz - m ³ /min. (cfm)	330 (11,667)			
Max. air temp onto radiator*	°C (°F)	60 (140)			
Max. ambient temperature*	°C (°F)	50 (122)			
Max. external pressure drop on radiator	in. H ₂ O	0.5			
COMBUSTION AIR REQUIREMENTS					
Flow at rated power	60 Hz - m ³ /min. (cfm)	46.3 (1634)			
	50 Hz - m ³ /min. (cfm)	36.8 (1299)			
EXHAUST					
Exhaust flow at rated output	60 Hz - m ³ /min. (cfm)	152 (5357)			
	50 Hz - m ³ /min. (cfm)	120.6 (4259)			
Maximum recommended back pressure	Kpa (" Hg)	5.1 (1.5)			
Exhaust temp. at rated output	°C (°F)	704 (1300)			
Exhaust outlet size	inches (mm.)	2 x 4 ANSI Flange			
ENGINE					
Rated RPM	60 Hz / 50 Hz	1800 / 1500			
Gross HP at rated KW	60 Hz/50 Hz-BHP	752 / 625			
Piston speed	60 Hz - m/sec. (ft./min)	8.4 (1677)			
	50 Hz - m/sec. (ft./min)	7.1 (1398)			
BMEP	60 Hz / 50 Hz - PSI	285 / 272			
POWER ADJUSTMENTS FOR AMBIENT CONDITIONS					
Temperature					
	-4.0% for every 10°C above - °C	40			
	-2.5% for every 10°F above - °F	104			
Altitude					
	-0.8% for every 100 m above - m	1067			
	-2.5% for every 1000 ft. above - ft.	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.

- 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
- Flex Fuel Lines

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 (Consult Factory)
 - Alternator Heater
 - Main Line Circuit Breaker
- **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 ENCLOSURE**
 - Weather Protective
 - Sound Attenuated
 - Aluminum

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