



50kW Diesel On-Site Power Industrial Generator

Model	Emissions	Standby Rating	Prime Rating
MQP50IV	EPA Certified	60 Hertz	
		50 kW (62.50 kVA)	45 kW (56.25 kVA)



Standard Features

Heavy Duty Engine

- Heavy duty, 4-cycle, diesel engine; naturally aspirated, direct injection, overhead valves.
- Manual speed control governor.
- Meets EPA Tier 3 emissions standards.

Alternator

- Brushless, 4-pole, synchronous, 12 lead design.
- Class H insulation system conforms to NEMA MG1-22, BS5000, CSA-C22-2, IEC-34-1 standards for temperature rise.
- Sustained short-circuit capability allowing downstream coordination breakers to trip without collapsing the generator field.
- Drip-proof, self-venting, amortisseur windings.
- Epoxy impregnated windings with tropical insulation for increased environmental protection and long life.
- Exceptional waveshape and voltage balance; 2/3 pitch winding to minimize harmonic distortion.

Electronic Voltage Regulator

- Encapsulated electronic voltage regulator precisely regulates the current into the exciter field.
- Voltage regulation of 1% no load to full load.

Full Load Acceptance

- Accepts 100% of standby nameplate rating in one step, in compliance with NFPA, para 5-13.2.6.

Cooling System

- Closed circuit, pressurized system with ambient temperature rating of 40°C (104°F).

Generator Control Panel

- MEC 20™ microprocessor-based, digital control panel; vibration isolated and NFPA 110 compliant.
- Liquid crystal display screen with alphanumeric readout for display and programming.
- Self-diagnostic feature continuously verifies processing, memory circuits and input/output.

Skid and Housing

- Generator available as skid-mount or sub-base tank mount design.
- Integral vibration isolators.
- Outdoor weather-protective or sound-attenuated housings.
- Steel battery rack and battery cables.

Warranty

- Engine-generator sets are covered by an express written 2-year/2000 hour (whichever occurs first) limited warranty.
- Optional extended warranties available.

Agency Approval

- UL 2200 certification.
- CSA standard C22.2 No. 100-04



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Alternator Specifications	Standard 3-Phase Generator	Optional Full-Output 1-Phase Generator	Optional 600 VAC 3-Phase Generator
Manufacturer/Model	Marathon Magnaplus 361PSL1601	Marathon Magnaplus 361CSL1612	Marathon Magnaplus 361PSL1633
Type	4-Pole, Rotating Field	4-Pole, Rotating Field	4-Pole, Rotating Field
Exciter Type	Brushless, Shunt Excitation Design	Brushless, Shunt Excitation Design	Brushless, Shunt Excitation Design
Number of Leads	12 Lead, Broad Range, Reconnectable	4 Lead	4 Lead
Voltage Regulator	SE350, Solid State, Volts-per-Hertz	SE350, Solid State, Volts-per-Hertz	SE350, Solid State, Volts-per-Hertz
Insulation	NEMA MG1-1.66	NEMA MG1-1.66	NEMA MG1-1.66
Material	Class H	Class H	Class H
Temperature Rise	125°C, Standby Rating	125°C, Standby Rating	125°C, Standby Rating
Bearing, Type	Single, Sealed	Single, Sealed	Single, Sealed
Coupling	Flexible Disk Type	Flexible Disk Type	Flexible Disk Type
Cooling Air Volume	700 cfm (20 m ³ /min)	250 cfm (7 m ³ /min)	700 cfm (20 m ³ /min)
Amortisseur Windings	Full	Full	Full
Voltage Regulation (no load to full load)	1%	1%	1%
Single Step Load Acceptance per NFPA 110	100% of Rating	100% of Rating	100% of Rating

Engine Specifications	
Manufacturer/Model	Iveco Motors / NEF45SM2*
Type	4-cycle, turbocharged, EGR, smoke puff limiter
Cylinder Arrangement	4 vertical in-Line
Displacement	274.6 in ³ (4.5 liter)
Bore	4.09 in. (104 mm)
Stroke	5.19 in. (132 mm)
Compression Ratio	17.5 : 1
Cylinder Block	Cast iron
Cylinder Head	Cast iron, overhead valves
Brake Mean Effective Pressure (BMEP)	159.0 psi (1096.3 kPa)
Rated RPM	1800 RPM
SAE Gross Horsepower	79 hp
Governor Type	Electronic
Frequency Regulation: no load to full load	Isochronous under varying loads from no load to 100% rated load
Frequency Regulation: Steady State	±0.25% of mean value for constant loads from no load to full load
Air Cleaner Type	Dry

* EPA engine model number F4GE9455B

Rating Guidelines

STANDBY POWER: Rating corresponds to ISO Standard Fuel Stop Power. It is applicable for supplying standby electrical power at variable load in areas with well established electrical networks in the event of normal utility power failure. No overload capability is available for this rating.

PRIME POWER: Rating corresponds to ISO Standard Power for continuous operation. It is applicable for supplying electrical power at variable load for an unlimited number of hours instead of commercially purchased power. A 10% overload capability is available for this rating.

SINGLE PHASE OUTPUT: Broad range alternators can supply single phase output up to 2/3 set rated 3-phase kW at 1.0 P.F. Refer to Amperage chart.

MQP501V Rev 2

Amperage			
Voltage	Phase	Wire	Amperage
120/208 Volt	3	4	173
120/240 Volt	3	4	150
277/480 Volt	3	4	75
600 VAC	3	4	60
120/240 Volt	1	3	188
120/240 Volt Full Output	1	3	208

Fuel System	
Fuel Injection Pump Make	Stanadyne
Recommended Fuel	ASTM-D975 No.1 & No.2 Diesel
Feed Pump Maximum Suction Head	10 ft. (3 m)
Fuel Filter	Spin-on Filter/water separator
Maximum Fuel Flow	23.7 gal/hr (90 L/hr)
Fuel Consumption	
Diesel Fuel At % of Load (Standby)	gal/hr (L/hr)
100%	4.2 (15.8)
75%	3.2 (12.1)
50%	2.3 (8.7)
25%	1.5 (5.6)

Exhaust System	
Exhaust Flow at Rated kW	583 cfm (16.5 m ³ /min)
Exhaust Temperature at Rated kW	750°F (398°C)
Maximum Allowable Backpressure	24 in/H ₂ O (5.9 kPa)
Heat Rejection To Exhaust	4269 Btu/min (75 kW)



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Lubrication System

Type	Gear Driven
System Capacity-Less Filter	2.9 gallons (11 liters)
System Capacity-With Filter	3.4 gallons (13 liters)
Oil Filter	Full flow disposable spin-on
Oil Pressure At Rated Speed	43-85 psi (290-590 kPa)
Maximum Oil Temperature	230°F (110°C)

Cooling System

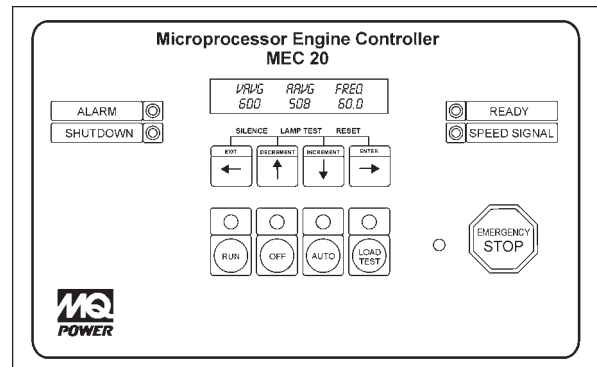
Exhaust Manifold Type	Dry
Radiator Design	Horizontal discharge
Ambient Temperature Rating	104°F (40°C)
Coolant Capacity - Engine Only	2.25 gal (8.5 L)
Coolant Capacity - with Radiator	2.6 gal (10 L)
Water Pump Design/Type	Belt driven, Centrifugal Vane
Coolant Flow	32.6 gal/min (123.4 L/min)
Radiator Cooling Air	7140 cfm (202 m ³ /min)
Heat Rejection From Engine	247.4 Btu/min (4.35 kW)
Heat Rejection To Coolant	2534.3 Btu/min (44.5 kW)
Fan Diameter	19.7 in. (500 mm)
Fan Horsepower	2.9 hp (2.2 kW)
High Water Temperature Indication	217°F (103°C)
Pressure Cap Setting	10.1 psi (70 kPa)

Engine Electrical System

Battery Charging Alternator - Make	Bosch
Ground Type	Negative
Volts (DC)	14VDC
Ampere Rating	90A
Starter Motor - Make	Bosch
Starter Motor Rated Voltage	12VDC
Starter Motor Battery Capacity	1 x 100 Ah

Derating Factors

	Altitude	Ambient Temperature
The engine may be operated up to 1000m altitude and 40°C ambient temperature at the Standby rating, without derating. For operation at higher altitudes and ambient temperatures, the power should be derated according to the following factors:	>1000<3000m %/500m - 2%	> 40°C %/5°C - 2%
	>3000m %/500m - 4%	



GENERATOR CONTROLLER

- MEC 20™ microprocessor-based digital generator controller.
- 12 or 24 Volt DC compatible.
- Meets all NFPA 110 requirements for emergency power systems Level I installations.
- Backlit LCD display screen with alphanumeric readout.
- Front panel keypad provides password protected programming.
- Self diagnostic features continuously verify processing, input/output and memory circuits.
- Metering accurate to ±1% within temperature range of 0°C to +50°C.
- EMI/RFI noise immunity and surge performance per IEEE C62.41.
- Certified to UL508 and CSA 22.2 #14 Industrial Control Equipment Standards.

Standard Controller Features

AC Metering Display:

- Voltage/Amperage/ Frequency
- Generator Phase Voltage / Current
- Generator Frequency

Engine Information Display:

- Engine Temperature / Oil Pressure (psi)
- Battery Voltage (DC) / Tachometer
- Hourmeter

Minor Fault Warning Display:

- Switch Not In Auto
- Low Fuel Level
- Low Oil Pressure Alarm
- Low Engine Temperature
- High Engine Temperature Alarm
- Low Battery Voltage
- High Battery Voltage
- Weak Battery Condition
- Battery Charger Input Fail

- Undervoltage
- Over / Underfrequency
- Overcurrent

Major Fault Shutdown Display:

- Overvoltage
- Emergency Stop
- Loss Of Speed
- Overcrank
- Overspeed
- Low Oil Pressure
- High Engine Temperature
- Low Coolant Level
- Spare Programmable Digital Faults

Switches And Operating Controls:

- Run / Off / Auto / Load Test Buttons
- Decrement / Increment / Previous (Exit) /Next (Enter) Program Buttons
- Emergency Stop Button
- Audible Alarm Horn – 80 dB(A) at 2 ft.
- Alarm Horn Silence Button
- Lamp Test Button
- Fault Reset Function
- RJ45 Remote Communications, External Expansion Module Ports

Timer Countdown Display:

- Engine Start Delay
- Oil Bypass
- Overcrank
- Cycle Crank
- Starter Re-engage Delay
- Bypass Delay

Control LED Indicators:

- Switch Position (Run,Off,Auto,Test)
- Common Alarm (Minor Fault)
- Common Shutdown (Major Fault)
- Generator Ready (When in Auto)
- Speed Signal
- Emergency Stop

Diagnostic LED Indicators:

- Run Output Energized
- Crank Output Energized
- Remote Start Signal Initiated
- Common Fail Output Energized
- Watchdog - CPU Running
- Programmable Output Contacts



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Generator Set Options

Alternator

- Full output 1 Phase Alternator
- Generator Strip Heater
- Permanent Magnet Generator (PMG)

Control Panel

- Remote Monitoring and Generator Network Communications Link
- Voltage Adjusting Rheostat

Cooling System

- Coolant Heater
- Low Coolant Shutdown Safety
- Radiator Duct Flange

Engine

- Electronic Governor
- Engine Crankcase Ventilation Filter
- Engine Block Heater

Enclosed Unit

- Outdoor Weather-protective Housing
- Outdoor Sound-Attenuated Housing
- Critical Grade Exhaust Silencer
- Exhaust Mounting Package
- Rain Cap

Open Unit

- Critical Exhaust Silencer
- Exhaust Mounting Package

Electrical System

- Battery
- Environmental Plastic Battery Box
- Battery Tender® Charger, Float Type, 5 Amperes @ 12VDC / (2.5A@24 VAC)
- Battery Charger, Equalize/Float Type 3.5 Amperes
- Battery Charger w/Alarms, Equalize/Float Type, 10 Amperes

Fuel System

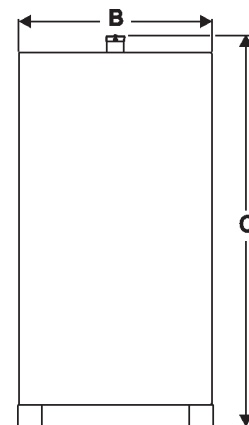
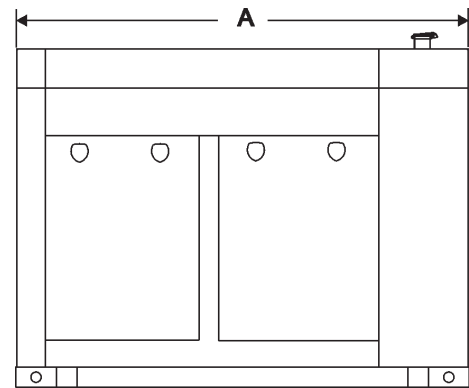
- Sub-base Fuel Tank (12-hr / 50 gal), Double Wall, UL142
- Sub-base Fuel Tank (24-hr / 100 gal), Double Wall, UL142

Automatic Transfer Switch

- Amperage _____
- No. Poles _____
- Type Enclosure _____
- Options _____

Miscellaneous

- Main Line Circuit Breaker
 - 120/208 Volt, 3 Phase, 3 Pole
 - 120/240 Volt, 3 Phase, Delta, 3 Pole
 - 139/240 Volt, 3 Phase, 3 Pole
 - 277/480 Volt, 3 Phase, 3 Pole
 - 120/240 Volt, 1 Phase, 2 Pole
- Main Line Circuit Breaker Options
 - Auxiliary Contacts
 - DC Shunt Trip
- Remote Annunciator Panel
- Remote Emergency Stop Kit
- Vibration Isolators, Spring Type



Weights and Dimensions

Housing Options	A	B	C		
			Skid-mount	12hr fuel tank*	24hr fuel tank*
Open Genset	104.5 in. (2,654 mm)	34 in. (863 mm)	50 in. (1,270 mm)	57 in. (1,447 mm)	67 in. (1,702 mm)
	Weight ¹		1,839 lbs (834 kg)	2,429 lbs (1,102 kg)	2,654 lbs (1,204 kg)
Standard	104.5 in. (2,654 mm)	34 in. (863 mm)	71 in. (1,803 mm)	76 in. (1,930 mm)	84 in. (2,133 mm)
	Weight ¹		2,387 lbs (1,083 kg)	2,977 lbs (1,350 kg)	3,202 lbs (1,452 kg)
Sound Attenuated	104.5 in. (2,654 mm)	34 in. (863 mm)	71 in. (1,803 mm)	76 in. (1,930 mm)	84 in. (2,133 mm)
	Weight ¹		2,449 lbs (1,111 kg)	3,039 lbs (1,378 kg)	3,264 lbs (1,480 kg)

* Optional

1. Weights are approximate and based on dry gensets with standard equipment. The total weight may vary according to fluid additions and/or optional equipment ordered with the unit.

Backfeed to a utility system can cause electrocution and/or property damage. Do not connect to any building's electrical system except through an approved device. Specifications are subject to change without notice.

Your MQ Power dealer is:



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