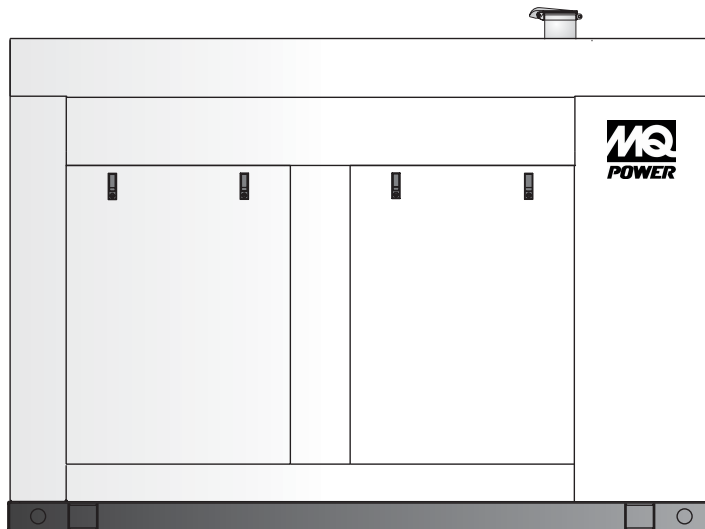




50kW Diesel On-Site Power Industrial Generator

| Model | Emissions | Standby Rating | Prime Rating |
|---------|---------------|-------------------|-------------------|
| MQP50IZ | 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; turbocharged, direct injection, overhead valves.
- Manual speed control governor.
- Meets EPA emissions standards for mobile off-highway.

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 $\pm 1.0\%$ 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

- ICS-50™ 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.



50kW Diesel On-Site Power Industrial Generator

| Alternator Specifications | Standard 3-Phase Generator | Optional Full-Output 1-Phase Generator |
|---|-------------------------------------|---|
| Manufacturer/Model | Marathon MagnaPlus 361PSL1601 | Marathon MagnaPlus 286PSL1712 |
| Type | 4-Pole, Rotating Field | 4-Pole, Rotating Field |
| Exciter Type | Brushless, Shunt Excitation Design | Brushless, Shunt Excitation Design |
| Number of Leads | 12 Lead, Broad Range, Reconnectable | 4 Lead |
| Voltage Regulator | SE350, Solid State, Volts-per-Hertz | SE350, Solid State, Volts-per-Hertz |
| Insulation | NEMA MG1-1.66 | NEMA MG1-1.66 |
| Material | Class H | Class H |
| Temperature Rise | 125°C, Standby Rating | 125°C, Standby Rating |
| Bearing, Type | Single, Sealed | Single, Sealed |
| Coupling | Flexible Disk Type | Flexible Disk Type |
| Cooling Air Volume | 700 cfm (7.1 m ³ /min.) | 250 cfm (7.1 m ³ /min.) |
| Amortisseur Windings | Full | Full |
| Voltage Regulation (no load to full load) | ±1% | ±1% |
| Single Step Load Acceptance per NFPA 110 | 100% of Rating | 100% of Rating |

Engine Specifications

| | |
|--|--|
| Manufacturer/Model | Isuzu 4BG1TRV |
| Type | 4-cycle, direct injection, turbocharged, water cooled |
| Cylinder Arrangement | 4 In-Line |
| Displacement | 262.4 in ³ (4.3 liter) |
| Bore | 4.13 in. (105 mm) |
| Stroke | 4.92 in. (125 mm) |
| Compression Ratio | 17.0:1 |
| Cylinder Block | Cast iron |
| Cylinder Head | Cast iron, overhead valves |
| Crankshaft | High carbon steel, forged and tuftided |
| Brake Mean Effective Pressure (BMEP) | 147 psi (1.01 kPa) |
| Rated RPM | 1800 RPM |
| Max. Power Rated RPM (with fan) | Standby: 87.4 bhp (65.1 kW) Prime: 78.4 bhp (58.5 kW) |
| Governor Type | Mechanical |
| Frequency Regulation: no load to full load | 5% under varying loads from no load to 100% rated load |
| Frequency Regulation: Steady State | ±0.5% of mean value for constant loads from no load to full load |
| Air Cleaner Type | Dry |

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.

Amperage

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

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) |
| Oil Temperature: | |
| Normal Range | 185-230°F (85-110°C) |
| Maximum Range | 230°F (110°C) |

Engine Electrical System

| | |
|------------------------------------|------------|
| Battery Charging Alternator - Make | Denso |
| Ground Type | Negative |
| Volts (DC) | 12VDC |
| Ampere Rating | 50A |
| Starter Motor Make/Model | Denso |
| Starter Motor Rated Voltage | 12VDC |
| Starter Motor Battery Capacity | 750 Ah |
| Pre-Heater Type | Glow Plugs |
| Inrush Current | 1500 A |
| Cranking Current | 750 A |



50kW Diesel On-Site Power Industrial Generator

Cooling System

| | |
|-----------------------------------|--|
| Exhaust Manifold Type | Dry |
| Radiator Design | Standard horizontal discharge |
| Ambient Temperature Rating | 104°F (40°C) |
| Coolant Capacity (Engine Only) | 2.25 gallons (8.5 liters) |
| Water Pump: | |
| Design | Belt driven |
| Type | Centrifugal Vane |
| Coolant Flow | 35 gal/min (135 L/min) |
| Heat Rejection At Rated Load: | |
| From Engine | Standby: 483.8 Btu/min (8.5 kW) Prime: 438.2 Btu/min (7.7 kW) |
| To Coolant | Standby: 2447.5 Btu/min (43 kW) Prime: 2219.8 Btu/min (39 kW) |
| Fan Diameter | 19.7 in. (500 mm) |
| Fan Horsepower | 1.9 hp (1.4 kW) |
| Thermostat: | |
| High Water Temperature Indication | Pre-Alarm: 210.2 °F (99 °C) Shutdown: 221.0 °F (105 °C) |
| Pressure Cap Setting | 7 psi (48 kPa) |

Fuel System

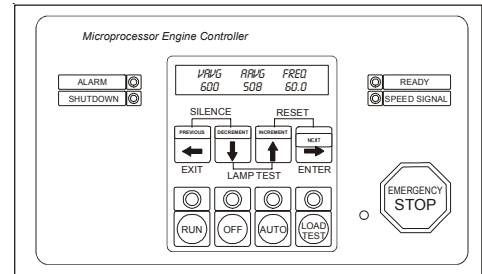
| | | |
|--------------------------------|---|------------|
| Fuel Injection Pump Make | Bosch/Zexel | |
| Recommended Fuel | ASTM-D975/No.2 Diesel | |
| Feed Pump Pressure | 24.9 psi (172 kPa) | |
| Feed Pump Maximum Suction Head | 3.28 feet (1.0 meter) | |
| Fuel Filter | Replaceable spin-on paper element type filter | |
| Max. Fuel Flow | 39.63 gal/hr (150.0 L/hr) | |
| Fuel Consumption | | |
| Diesel Fuel At % of Load | Standby gal/hr (L/hr) | Prime L/hr |
| 100% | 4.2 (15.8) | 3.9 (14.7) |
| 75% | 3.2 (12.1) | 3.0 (11.3) |
| 50% | 2.3 (8.7) | 2.2 (8.3) |
| 25% | 1.5 (5.6) | 1.5 (5.6) |

Exhaust System

| | |
|---------------------------------|---------------------------------|
| Exhaust Flow at Rated kW | Standby: 342.5 cfm (9.7 m³/min) |
| Exhaust Temperature at Rated kW | Standby: 810°F (432°C) |
| Maximum Allowable Backpressure | 40.95 in/wc (10.2 kPa) |
| Heat Rejection To Exhaust | Standby: 4269 Btu/min (75 kW) |

Derating Factors

| Derating Factors | Altitude | Ambient Temperature |
|---|---------------|---------------------|
| The engine may be operated up to 500 ft. and up to 25°C without derating. For operation at higher altitudes and ambient temperatures, the power should be derated according to the following factors: | 3% / 1000 ft. | 0.36% / °C |



GENERATOR CONTROLLER

- ICS-50™ 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 $\pm 1\%$ 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

Timer Countdown Display:

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

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
- Underfrequency
- Overfrequency
- 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 feet
- Alarm Horn Silence Button
- Lamp Test Button
- Fault Reset Function
- RJ45 Remote Communications, External Expansion Module Ports

Control LED Indicators:

- Switch Position (Run, Off, Auto, Load 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



50kW Diesel On-Site Power Industrial Generator

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

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 Charger, Equalize/Float Type 3.5 Amperes
- Battery Charger w/Alarms, Equalize/Float Type, 10 Amperes

Fuel System

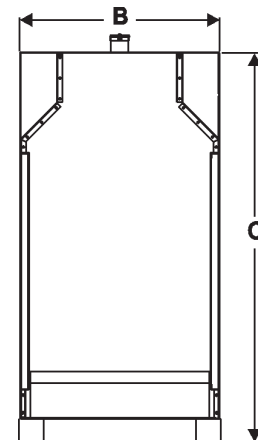
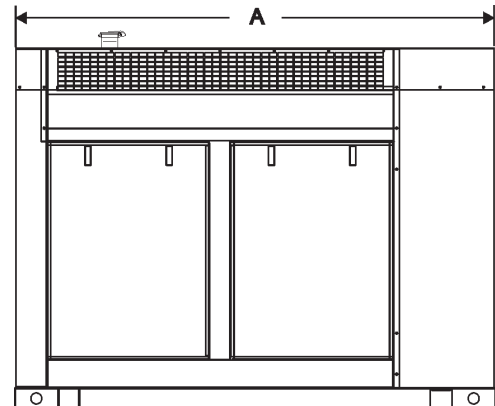
- Sub-base Fuel Tank (12-hr / 39 gal), Double Wall, UL142
- Sub-base Fuel Tank (24-hr / 77 gal), Double Wall, UL142

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 | 100.5 in. (2,552 mm) | 34 in. (863 mm) | 50 in. (1,270 mm) | 57 in. (1,447 mm) | 67 in. (1,702 mm) |
| | Weight | | 1,839 lbs (834 kg) | 2,429 lbs (1,102 kg) | 2,654 lbs (1,204 kg) |
| Standard | 100.5 in. (2,133 mm) | 34 in. (863 mm) | 67 in. (1,701 mm) | 74 in. (1,879 mm) | 84 in. (2,133 mm) |
| | Weight | | 2,387 lbs (1,083 kg) | 2,977 lbs (1,350 kg) | 3,202 lbs (1,452 kg) |
| Sound Attenuated | 100.5 in. (2,133 mm) | 34 in. (863 mm) | 67 in. (1,701 mm) | 74 in. (1,879 mm) | 84 in. (2,133 mm) |
| | Weight | | 2,449 lbs (1,111 kg) | 3,039 lbs (1,378 kg) | 3,264 lbs (1,480 kg) |

* Optional

NOTE: Weights are 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:



MQ POWER

POST OFFICE BOX 6254
 CARSON, CA 90749
 310-537-3700 • 800-883-2551
 FAX: 310-632-2656
 E-MAIL: mqpower@multiquip.com
 WEBSITE: www.mqpower.com