



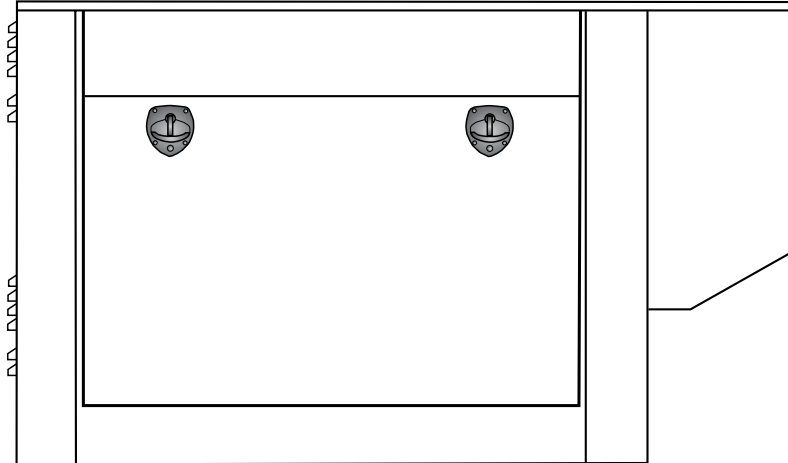
# MQP20PK4iD

## MQ POWER Industrial Generator

Prime Rating — 17 kW (21.25 kVA)

Standby Rating — 20 kW (25 kVA)

3-Phase, 60 Hertz, EPA Certified



### STANDARD FEATURES

#### Heavy Duty Engine

- Heavy duty, 4-cycle, diesel engine; turbocharged, direct injection, water cooled, overhead valves.
- Single side service engine
- Meets EPA Interim Tier 4 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
- CSA standard C22.2 No. 100-04



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### SPECIFICATIONS

| <b>Generator Specifications</b>           | <b>Standard<br/>3-Phase Generator</b> | <b>Optional Full Output<br/>1-Phase Generator</b> |
|---|---------------------------------------|---|
| Manufacturer/Model                        | Marathon Magnapuls 282PSL1705         | Marathon Magnapuls 283PSL1706                     |
| 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                        | 250 cfm (7.1 m <sup>3</sup> /min.)    | 250 cfm (7.1 m <sup>3</sup> /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                                    |

| <b>Engine Specifications</b>               |   |
|--|---|
| Manufacturer/Model                         | Perkins / 404D-22GN33/1800C                                       |
| Type                                       | 4-cycle, indirect injection                                       |
| Cylinder Arrangement                       | 4 In-Line   |
| Displacement                               | 135 in <sup>3</sup> (2.2 liter)                                   |
| Bore                                       | 3.30 in. (84 mm)  |
| Stroke                                     | 3.93 in. (100 mm)   |
| Compression Ratio                          | 23.3:1  |
| Cylinder Block                             | Cast iron   |
| Cylinder Head                              | Cast iron, overhead valves  |
| Crankshaft                                 | High carbon steel, forged and tufrided                            |
| Brake Mean Effective Pressure (BMEP)       | 106 psi (731 kPa)   |
| Rated RPM                                  | 1800 RPM  |
| SAE Gross Horsepower                       | 32.6 hp   |
| Governor Type                              | Electronic  |
| Frequency Regulation: no load to full load | 3%~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.

| <b>Amperage</b>          |       |      |          |
|--------------------------|-------|------|----------|
| Voltage                  | Phase | Wire | Amperage |
| 120/208 Volt             | 3     | 4    | 69       |
| 120/240 Volt             | 3     | 4    | 60       |
| 277/480 Volt             | 3     | 4    | 30       |
| 120/240 Volt Full Output | 1     | 3    | 83       |

| <b>Fuel System</b>             |                                    |
|--------------------------------|------------------------------------|
| Fuel Injection Pump Make       | Zexel                              |
| Recommended Fuel               | ASTM-D975 / No.2-D                 |
| Feed Pump Pressure             | 24.9 psi (172 kPa)                 |
| Feed Pump Maximum Suction Head | 2.6 feet (.8 meter)                |
| Fuel Filter                    | Spin-on, paper element type filter |
| Max. Fuel Flow                 | 16.6 gal/hr (63 L/h)               |
| Fuel Consumption               |                                    |
| Diesel Fuel At % of Load       | gal/hr (L/hr)                      |
| 100%                           | 1.5 (5.7)                          |
| 75%                            | 1.2 (4.5)                          |
| 50%                            | 0.8 (3.0)                          |
| 25%                            | 0.7 (2.6)                          |

| <b>Exhaust System</b>           |                                    |
|---------------------------------|------------------------------------|
| Exhaust Flow at Rated kW        | 178 cfm (5.04 m <sup>3</sup> /min) |
| Exhaust Temperature at Rated kW | 892°F (478°C)                      |
| Maximum Allowable Backpressure  | 40.95 in/wc (10.2 kPa)             |
| Heat Rejection To Exhaust       | 1,650 Btu/min (29 kW)              |



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### Lubrication System

|                              |                              |
|------------------------------|------------------------------|
| Type                         | Gear Driven                  |
| System Capacity-With Filter  | 2.8 gallons (10.6 liters)    |
| Oil Filter                   | Full flow disposable spin-on |
| Oil Pressure At Rated Speed  | 17-21 psi (117-145 kPa)      |
| Oil Temperature Normal Range | 125-257°F (52-125°C)         |

### Cooling System

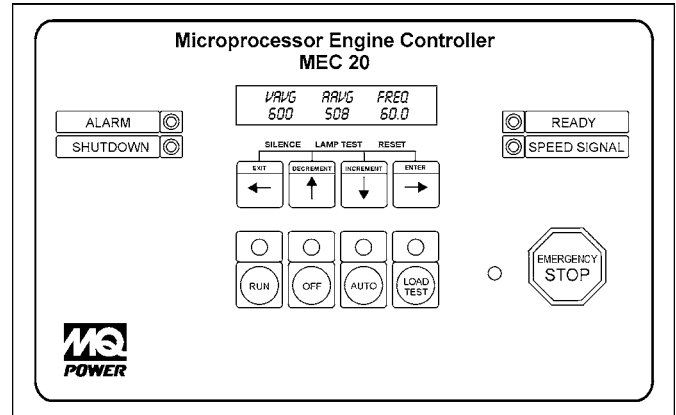
|                                   |                               |
|-----------------------------------|-------------------------------|
| Exhaust Manifold Type             | Dry                           |
| Radiator Design                   | Standard horizontal discharge |
| Ambient Temperature Rating        | 104°F (40°C)                  |
| Coolant Capacity (Engine Only)    | 1.0 gallons (3.6 liters)      |
| Water Pump Design/Type            | Belt driven, Centrifugal Vane |
| Coolant Flow                      | 38 gal/min (144 L/min)        |
| Radiator Cooling Air              | 3600 cfm (2.41 m3/min)        |
| Heat Rejection From Engine        | 490 Btu/min (5.5 kW)          |
| Fan Diameter                      | 18.0 in. (457 mm)             |
| Fan Horsepower                    | 0.8 hp (0.6 kW)               |
| High Water Temperature Indication | 221.0oF (105oC)               |
| Pressure Cap Setting              | 15 psi (103 kPa)              |

### Engine Electrical System

|                                    |            |
|------------------------------------|------------|
| Battery Charging Alternator - Make | DENSO      |
| Ground Type                        | Negative   |
| Volts (DC)                         | 12VDC      |
| Ampere Rating                      | 85A        |
| Starter Motor Make/Model           | Delco Remy |
| Starter Motor Rated Voltage        | 12 VDC     |
| Cranking Current                   | 600 A      |

### Derating Factors

|   | Altitude      | Ambient Temperature |
|---|---------------|---------------------|
| The engine may be operated up to 500 ft. and up to 40°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

- 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 Fault 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 (50 gal), Double Wall, UL142
- Sub-base Fuel Tank (90 gal), Double Wall, UL142

#### Automatic Transfer Switch

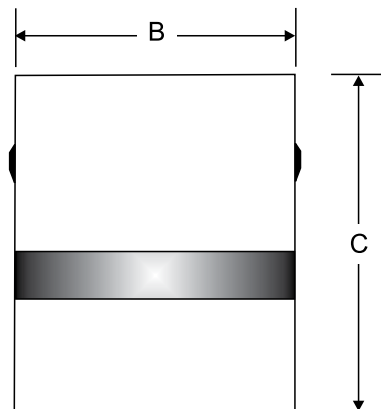
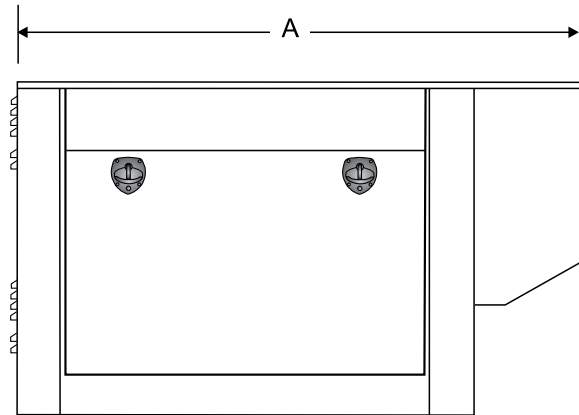
- Amperage \_\_\_\_\_
- No. Poles \_\_\_\_\_
- Type Enclosure \_\_\_\_\_
- Options \_\_\_\_\_

#### 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

| <b>Weights and Dimensions</b> |                        |                    |                         |
|-------------------------------|------------------------|--------------------|-------------------------|
| Housing Options               | A                      | B                  | C                       |
| Sound Attenuated              | 74.5 in.<br>(1,892 mm) | 36 in.<br>(914 mm) | 73.25 in.<br>(1,861 mm) |
|                               | Weight <sup>1</sup>    |                    | 2,050 lbs<br>(930 Kg)   |

<sup>1</sup>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.

Manufactured by Denyo Co.

Your MultiQuip dealer is:

