

Marine generator set Quiet Diesel™ Series 4/5 QD Model MDKBH



Cummins Onan
Digital Display

Cummins Onan

Performance you rely on.™



Features and benefits

- Rugged dependability, high quality and innovation make Cummins Onan Marine Generators the leader in marine generator design and development, providing performance you rely on.™
- The digital QD (Quiet Diesel) Series models are the first marine generator sets with self-monitoring capability and network communication.
- The optional Cummins Onan Digital Display provides user-friendly diagnostics including extensive engine and alternator information, self-diagnostic features and text display.
- The Cummins Onan Marine Generators with advanced design and development processes use technology to lower sound and vibration. Our sound shields minimize noise and deliver better sound quality. The optimized mounting system greatly reduces vibration.
- Certified to U.S. Environmental Protection Agency (EPA) and emission standards.
- Cummins Onan Marine Generators have the largest worldwide certified distributor/dealer support network in the industry with more than 70 years of experience.

Models and ratings

| Model | kW/kVA | Voltage | Amps | Phase | Hz | Engine RPM |
|----------|---------|---------|-----------|-------|-------|------------|
| 4.0MDKBH | 4.0/4.0 | 110/220 | 36.4/18.2 | 1 | 50 Hz | 2400 |
| | | 115/230 | 34.8/17.4 | 1 | 50 Hz | 2400 |
| | | 120/240 | 33.3/16.6 | 1 | 50 Hz | 2400 |
| 5.0MDKBH | 5.0/5.0 | 120 | 41.7 | 1 | 60 Hz | 2900 |
| | | 120/240 | 41.7/20.8 | 1 | 60 Hz | 2900 |

Single phase output at 1.0 power factor. Other single phase configurations are available, contact your distributor/dealer for more information. Rating conditions are 100 kPa (29.6 in Hg) barometric pressure, 30% relative humidity and 25° C (77° F) (ref. ISO 3046).

Sound level, weight, and size

| Sound level | | Dimensions | | | |
|---------------------|---------------------|-----------------|------------------|------------------|------------------|
| 50 Hz configuration | 60 Hz configuration | Weight (dry) | Length | Width | Height |
| 68 dB(A)* | 71 dB(A)* | 159 kg (350 lb) | 662 mm (26.0 in) | 511 mm (20.1 in) | 524 mm (20.6 in) |

* Full load at 1 m

Standard feature

- Advanced digital electronic control providing extensive diagnostic capability
- Shutdown with diagnostic indicator light for: high engine coolant temperature, high exhaust temperature, low oil pressure, over speed/voltage, starter overcrank, no raw water flow, additional customer input and many more
- Start-run-stop switch with glow plug preheat and fuel pump priming modes for easy starting; run light and diagnostic indicator light
- Start function has automatic glow plug preheat providing better, cleaner starting
- Engine starter with automatic start disconnect
- Electronic governor allows the generator set to maintain isochronous frequency control and close voltage regulation to provide quality power for digital appliances and computers
- Switchable between 50/60 Hz
- Front panel oil fill and level check
- Single phase AC alternator with single or dual voltages
- Digital voltage regulator integral with control
- 12 V DC electric system with battery charging, negative ground, DC protective circuit breakers
- Electric fuel transfer pump for priming and lift capability
- Freshwater cooling system with heat exchanger, expansion tank and coolant recovery system
- Water cooled exhaust mixing elbow
- AC mainline circuit breaker
- Running time meter
- Air intake silencer
- Captive focalized mounting systems with vibration isolators
- Full flow lube oil filter
- Oil drain and hose extension
- Electric fuel shut-off via electronic governing actuator
- Fuel filter/water separator
- Drip pan base capable of containing all generator set fluids
- External mount tabs allow flexible mounting arrangement
- Bulk head type connections for ease of installation include fuel in, fuel out, battery, raw water inlet, wet exhaust, generator set ground (vessel bond)
- Integral enclosure for environmental protection from noise, salt water, and moving parts
- Plug-in watertight connector for optional remote control
- Closed crankcase breather re-circulation to eliminate engine room contamination
- Coolant overflow bottle to easily maintain coolant level
- Fire extinguisher access port
- Factory load tested
- Five year limited warranty
- Ignition protected and is therefore permitted under USCG regulation 33CRF183 to be located in a gasoline fuel environment.

Engine details

Design: 4-cycle, water-cooled diesel

Cylinders: 2

Bore: 64 mm (2.52 in)

Stroke: 62.2 mm (2.45 in)

Displacement: 400 cm³ (24.41 in³)

Compression ratio: 23:1

Max fuel lift: 1.22 m (4 ft)

Lube oil and coolant capacity: 2.1 L (2.2 qt)

Coolant capacity: 2.1 L (2.2 qt)

Coolant flow rate:

50 Hz: 11 L/min (3 Gal/min)

60 Hz: 13 L/min (3.5 Gal/min)

Typical fuel consumption

| No. 2 diesel fuel, L/hr (Gal/hr) | No load | 1/4 load | 1/2 load | 3/4 load | Full load |
|----------------------------------|------------|------------|------------|------------|------------|
| 7.0 MDK BK-50 Hz | 0.6 (0.16) | 0.8 (0.21) | 1.1 (0.29) | 1.4 (0.37) | 1.9 (0.50) |
| 9.0 MDK BK-60 Hz | 0.7 (0.20) | 1.0 (0.25) | 1.3 (0.35) | 1.7 (0.44) | 2.3 (0.60) |

Alternator details

Design: Cummins Onan revolving field, 2-pole, drip-proof construction, with encapsulated rectifiers

Voltage Regulator: Integral with the digital-control

Stator: Skewed stator and 2/3 pitch windings minimize field heating and voltage harmonics; resin-coated for corrosion protection

Rotor: Dynamically balanced assembly; supported by pre-lubricated, maintenance-free ball bearings

Cooling: Rotor mounted centrifugal blower

Insulation system: Class H per NEMA MG1-1 -1.65 and BS 5000

Raw water flow rate:

50 Hz: 15 L/min (4 Gal/min)

60 Hz: 19 L/min (5 Gal/min)

Starting system: 12 V

Power (max): SAEJ1349

50 Hz at 2400 RPM 6.0 kW (7.9 hp)

60 Hz at 2900 RPM 7.1 kW (9.6 hp)

Fuel injection pump: Bosch MD type

Combustion Chamber: Spherical

Max Raw Water Lift: 1.22 m (4 ft)

Generator set performance

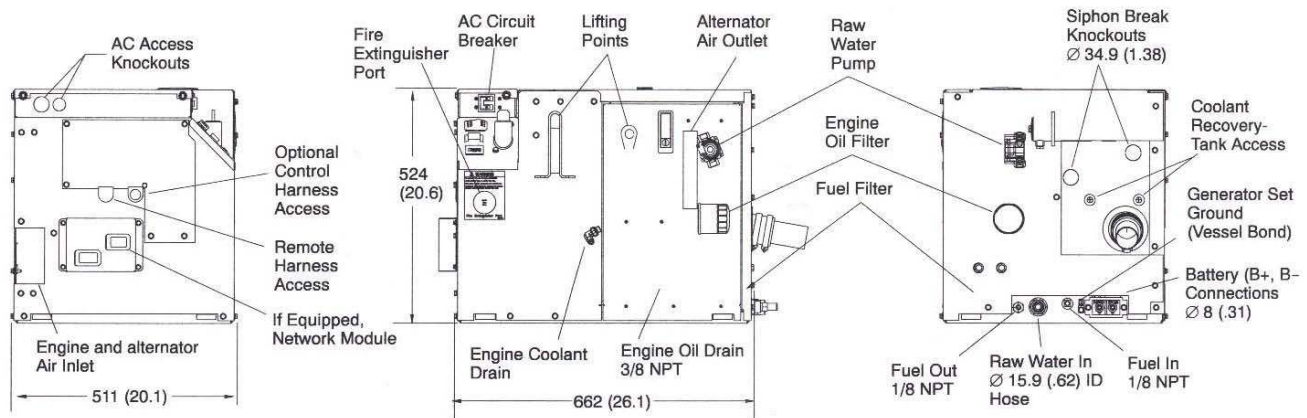
Operating environment: Generator sets are durability tested at maximum ambient air temperature: 50° C (122° F); raw water temperature 37.8° C (100° F)

Frequency regulation: Isochronous

Random frequency variation: Will not exceed +/-0.5% of its mean value for constant loads from no load to full load

Voltage regulation: No load to rated load +/-1.5%

Basic dimensions



Note: This outline drawing is provided for general reference only and is not intended for design or installation. For more information see Operation and Installation manuals or obtain drawing 500-4138 and wiring diagram from your distributor/dealer.

Options

- SAE J-1939 CAN data link for monitoring generator set status and diagnostics for engine and alternator
- SmartCraft Networked™ data link for monitoring generator set status and diagnostics for engine and alternator (display available through Cummins MerCruiser Diesel)

Accessories

- Cummins Onan Digital Display - graphical LCD remote display for generator set operating parameters, diagnostics, and pre-alarm indication in text format
- Basic remote panel with start/stop switch with run (green) and control status (amber) lamps
- Dual remote station Y-adapter harness
- Remote switch harness (connection) only for customer panel
- Remote station harness pigtail
- Remote display or panel wire harness - 15 ft, 25 ft, 45 ft, 75 ft, 100 ft or 150 ft
- Line circuit breakers for field conversion of frequency or AC voltage output
- Remote fuel filter/water separator assembly
- Fuel supply and return hose barb connectors
- Siphon break kit
- Wet exhaust hose and stainless steel elbow
- Battery
- Kits for converting to SAE J-1939 CAN or SmartCraft Networked™
- Marine mufflers, water separator and resonator dual silencers
- 12 V isolated DC control conversion kit
- Ship-to-shore selector switch, single phase, 2 or 3 wire output
- Cruise kit - maintenance parts - fuel filters, oil filters, raw water pump impellers, raw water pump belt and plastic container



Cummins Onan Digital Display

Standards and testing

National Marine Manufacturers Association (NMMA) members produce every conceivable product used by recreational boaters. NMMA provides a wide variety of programs and services including technical expertise, standards monitoring, government relations advocacy and industry statistics.

The American Boat and Yacht Council (ABYC) develops standards and recommended practices for designing, constructing, equipping and maintaining small pleasure and commercial craft.

is generator set was designed and manufactured in facilities certified to ISO 9001.



Warranty policy

The Cummins Onan express, written limited warranty covers virtually everything except routine maintenance for the first two years you own your marine generator set, and covers parts and labor on major power train and generator set parts during the third through fifth years.

Warning: Backfeed to a utility system can cause electrocution and/or property damage. Do not connect to any building electrical except through an approved device or after building main breaker is open.

After sale support

Largest distributor/dealer support network

Cummins Onan generator sets are supported by the largest and best trained worldwide certified distributor/dealer network in the industry. This network of knowledgeable Cummins Onan distributor/dealers will help you select and install the right generator set and accessories to meet the requirements of your specific application. This same network offers a complete selection of commonly used generator set maintenance parts, accessories and products plus manuals and specification sheets. Plus, they can answer your questions regarding proper operation, maintenance schedules and more.

Manuals: Operation and installation manuals ship with the generator set. To obtain additional copies or other manuals for this model, see your Cummins Onan distributor/dealer and request the following manual numbers: Operation (981-0176), Installation (981-0643), Parts (981-0282), Service (981-0542).

To easily locate the nearest Cummins Onan distributor/dealer in your area, or for more information, contact us at 1-800-888-6626 (or 763-574-5000), or visit www.cumminsonan.com.

Contact your distributor/dealer for more information

Cummins Onan

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