

Model: **800REOZMB**

KOHLER POWER SYSTEMS

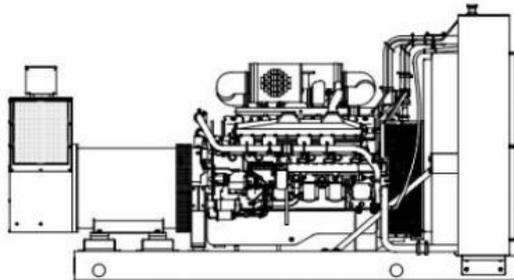
380-600 V

Diesel



Ratings Range

| | | |
|-----------------|------------|--------------|
| | | 60 Hz |
| Standby: | kW | 725-810 |
| | kVA | 906-1013 |
| Prime: | kW | 680-730 |
| | kVA | 850-913 |



Standard Features

- Kohler Co. provides one-source responsibility for the generating system and accessories.
- The generator set and its components are prototype-tested, factory-built, and production-tested.
- The 60 Hz generator set offers a UL 2200 listing.
- The generator set accepts rated load in one step.
- The 60 Hz generator set meets NFPA 110, Level 1, when equipped with the necessary accessories and installed per NFPA standards.
- The generator set complies with ISO 8528-5, Class G3, requirements for transient performance.
- The 60 Hz generator set engine is certified by the Environmental Protection Agency (EPA) to conform to Tier 2 nonroad emissions regulations.
- A one-year limited warranty covers all systems and components. Two-, five-, and ten-year extended warranties are also available.
- Alternator features:
 - The pilot-excited, permanent magnet (PM) alternator provides superior short-circuit capability.
 - Additional alternator voltages are available including 12.47 kV, 13.2 kV, and 13.8 kV medium voltages. Contact your local distributor for more detailed information.
 - The brushless, rotating-field alternator has broadrange reconnectability.
- Other features:
 - Controllers are available for all applications. See controller features inside.
 - The low coolant level shutdown prevents overheating (standard on radiator models only).
 - The generator set-to-skid mounting options are either integral vibration isolation or direct mounting with spring isolators.
 - An electronic, isochronous governor delivers precise frequency regulation.

Generator Set Ratings

| Alternator | Voltage | Ph | Hz | 150°C Rise Standby Rating | | 130°C Rise Standby Rating | | 125°C Rise Prime Rating | | 105°C Rise Prime Rating | |
|------------|---------|----|----|---------------------------|------|---------------------------|------|-------------------------|------|-------------------------|------|
| | | | | kW/kVA | Amps | kW/kVA | Amps | kW/kVA | Amps | kW/kVA | Amps |
| 5M4034 | 240/416 | 3 | 60 | 725/906 | 1258 | 725/906 | 1258 | 720/900 | 1249 | 680/850 | 1180 |
| | 277/480 | 3 | 60 | 810/1013 | 1218 | 750/938 | 1128 | 730/913 | 1098 | 710/888 | 1067 |
| 5M4036 | 240/416 | 3 | 60 | 810/1013 | 1405 | 785/981 | 1362 | 730/913 | 1266 | 725/906 | 1258 |
| | 277/480 | 3 | 60 | 810/1013 | 1218 | 810/1013 | 1218 | 730/913 | 1098 | 730/913 | 1098 |
| 5M4038 | 240/416 | 3 | 60 | 810/1013 | 1405 | 810/1013 | 1405 | 730/913 | 1266 | 730/913 | 1266 |
| | 277/480 | 3 | 60 | 810/1013 | 1218 | 810/1013 | 1218 | 730/913 | 1098 | 730/913 | 1098 |
| 5M4166 | 220/380 | 3 | 60 | 810/1013 | 1538 | 810/1013 | 1538 | 730/913 | 1386 | 730/913 | 1386 |
| 5M4168 | 220/380 | 3 | 60 | 810/1013 | 1538 | 810/1013 | 1538 | 730/913 | 1386 | 730/913 | 1386 |
| 5M4278 | 347/600 | 3 | 60 | 810/1013 | 974 | 810/1013 | 974 | 730/913 | 878 | 730/913 | 878 |
| 5M4280 | 347/600 | 3 | 60 | 810/1013 | 974 | 810/1013 | 974 | 730/913 | 878 | 730/913 | 878 |

RATINGS: All three-phase units are rated at 0.8 power factor. **Standby Ratings:** Standby ratings apply to installations served by a reliable utility source. The standby rating is applicable to varying loads for the duration of a power outage. There is no overload capability for this rating. Ratings are in accordance with ISO-3046/1, BS 5514, AS 2789, and DIN 6271. **Prime Power Ratings:** Prime power ratings apply to installations where utility power is unavailable or unreliable. At varying load, the number of generator set operating hours is unlimited. A 10% overload capacity is available for one hour in twelve. Ratings are in accordance with ISO-8528/1, overload power in accordance with ISO-3046/1, BS 5514, AS 2789, and DIN 6271. For limited running time and base load ratings, consult the factory. Obtain the technical information bulletin (TIB-101) on ratings guidelines for the complete ratings definitions. The generator set manufacturer reserves the right to change the design or specifications without notice and without any obligation or liability whatsoever. **GENERAL GUIDELINES FOR DERATION:** *Altitude:* Derate 1.0% per 100 m (328 ft.) elevation above 1000 m (3279 ft.). *Temperature:* Derate 5.0% per 10°C (18°F) temperature above 40°C (104°F).

Alternator Specifications

| Specifications | Alternator |
|--|---|
| Type | 4-Pole, Rotating-Field |
| Exciter type | Brushless, Permanent-Magnet Pilot Exciter |
| Voltage regulator | Solid State, Volts/Hz |
| Insulation: | NEMA MG1 |
| Material | Class H, Synthetic, Nonhygroscopic |
| Temperature rise | 130°C, 150°C Standby |
| Bearing: quantity, type | 1, Sealed |
| Coupling | Flexible Disc |
| Amortisseur windings | Full |
| Rotor balancing | 125% |
| Voltage regulation, no-load to full-load (with <0.5% drift due to temp. variation) | 3-Phase Sensing, ±0.25% |
| One-step load acceptance | 100% of Rating |
| Unbalanced load capability | 100% of Rated Standby Current |
| Peak motor starting kVA: | (35% dip for voltages below) |
| 480 V 5M4034 (10 lead) | 2600 |
| 480 V 5M4036 (10 lead) | 3200 |
| 480 V 5M4038 (4 lead) | 3050 |
| 380 V 5M4166 (4 lead) | 2800 |
| 380 V 5M4168 (4 bus bar) | 2700 |
| 600 V 5M4278 (4 lead) | 3900 |
| 600 V 5M4280 (4 bus bar) | 3450 |

- NEMA MG1, IEEE, and ANSI standards compliance for temperature rise and motor starting.
- Sustained short-circuit current of up to 300% of the rated current for up to 10 seconds.
- Sustained short-circuit current enabling downstream circuit breakers to trip without collapsing the alternator field.
- Self-ventilated and dripproof construction.
- Superior voltage waveform from two-thirds pitch windings and skewed stator.
- Digital solid-state, volts-per-hertz voltage regulator with ±0.25% no-load to full-load regulation.
- Brushless alternator with brushless pilot exciter for excellent load response.

Application Data

Engine

| Engine Specifications | |
|--|-------------------------|
| Manufacturer | Mitsubishi |
| Engine model | S12A2-Y2PTAW-2 |
| Engine type | 4-Cycle, Turbocharged |
| Cylinder arrangement | 12 V |
| Displacement, L (cu. in.) | 33.93 (2071) |
| Bore and stroke, mm (in.) | 150 x 160 (5.91 x 6.30) |
| Compression ratio | 15.3:1 |
| Piston speed, m/min. (ft./min.) | 576 (1890) |
| Main bearings: quantity, type | 7, Precision Half-Shell |
| Rated rpm | 1800 |
| Max. power at rated rpm, kW/m (BHP) | 900 (1207) |
| Cylinder head material | Cast Iron |
| Crankshaft material | Forged Steel |
| Governor type | Electronic |
| Frequency regulation, no-load to full-load | Isochronous |
| Frequency regulation, steady state | ±0.25% |
| Frequency | Fixed |
| Air cleaner type, all models | Dry |

Exhaust

| Exhaust System | |
|---|-----------------|
| Exhaust manifold type | Dry |
| Exhaust flow at rated kW, m ³ /min. (cfm) | 232 (8192) |
| Exhaust temperature at rated kW, dry exhaust, °C (°F) | 473 (883) |
| Maximum allowable back pressure, kPa (in. Hg) | 5.9 (1.7) |
| Exhaust outlet size at engine hookup, mm (in.) | See ADV drawing |

Engine Electrical

| Engine Electrical System | | |
|--|--|-----------|
| Battery charging alternator: | | |
| Ground (negative/positive) | | Negative |
| Volts (DC) | | 24 |
| Ampere rating | | 30 |
| Starter motor rated voltage (DC) | | Dual, 24 |
| Battery, recommended cold cranking amps (CCA): | | |
| Quantity, CCA rating each | | Two, 1150 |
| Battery voltage (DC) | | 12 |

Fuel

| Fuel System | |
|---|--------------|
| Fuel supply line, min. ID, mm (in.) | 19 (0.75) |
| Fuel return line, min. ID, mm (in.) | 19 (0.75) |
| Max. lift, engine-driven fuel pump, m (ft.) | 1.0 (3.0) |
| Max. fuel flow, Lph (gph) | 630 (166) |
| Max. fuel pump restriction, kPa (in. Hg) | 10 (3.0) |
| Fuel filter: quantity, type | 3, Cartridge |
| Recommended fuel | #2 Diesel |

Lubrication

| Lubricating System | |
|---------------------------------------|---------------|
| Type | Full Pressure |
| Oil pan capacity, L (qt.) | 100 (106) |
| Oil pan capacity with filter, L (qt.) | 120 (127) |
| Oil filter: quantity, type | 3, Cartridge |
| Oil cooler | Water-Cooled |

Application Data

Cooling

| Radiator System | |
|--|-------------|
| Ambient temperature, °C (°F)* | 40 (104) |
| Engine jacket water capacity, L (gal.) | 100 (26.4) |
| Radiator system capacity, including engine, L (gal.) | 303 (80) |
| Engine jacket water flow, Lpm (gpm) | 1100 (291) |
| Charge cooler water flow, Lpm (gpm) | 470 (124) |
| Heat rejected to cooling water at rated kW, dry exhaust, kW (Btu/min.) | 359 (20418) |
| Heat rejected to charge cooler water at rated kW, dry exhaust, kW (Btu/min.) | 282 (16043) |
| Water pump type | Centrifugal |
| Fan diameter, including blades, mm (in.) | 1524 (60) |
| Fan kWm (HP) | 33 (44) |
| Max. restriction of cooling air, intake and discharge side of radiator, kPa (in. H ₂ O) | 0.125 (0.5) |

| High Ambient Radiator System | |
|--|-------------|
| Ambient temperature, °C (°F)* | 50 (122) |
| Engine jacket water capacity, L (gal.) | 100 (26.4) |
| Radiator system capacity, including engine, L (gal.) | 378 (100) |
| Engine jacket water flow, Lpm (gpm) | 1100 (291) |
| Charge cooler water flow, Lpm (gpm) | 470 (124) |
| Heat rejected to cooling water at rated kW, dry exhaust, kW (Btu/min.) | 359 (20418) |
| Heat rejected to charge cooler water at rated kW, dry exhaust, kW (Btu/min.) | 282 (16043) |
| Water pump type | Centrifugal |
| Fan diameter, including blades, mm (in.) | 1524 (60) |
| Fan kWm (HP) | 34 (45) |
| Max. restriction of cooling air, intake and discharge side of radiator, kPa (in. H ₂ O) | 0.125 (0.5) |

* Enclosure with enclosed silencer reduces ambient temperature capability by 5°C (9°F).

| Remote Radiator System† | |
|--|-----------|
| Exhaust manifold type | Dry |
| Connection sizes: | |
| Jacket water engine inlet, mm (in.) | 95 (3.75) |
| Jacket water engine outlet, mm (in.) | 95 (3.75) |
| Intercooler water engine inlet, mm (in.) | 67 (2.63) |
| Intercooler water engine outlet, mm (in.) | 95 (3.75) |
| Static head allowable above engine, kPa (ft. H ₂ O) | 98 (32.8) |

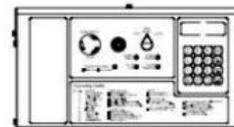
† Contact your local distributor for cooling system options and specifications based on your specific requirements.

Operation Requirements

| Air Requirements | |
|--|--------------|
| Radiator-cooled cooling air, m ³ /min. (scfm)‡ | 1000 (35300) |
| High ambient radiator-cooled cooling air, m ³ /min. (scfm)‡ | 949 (33500) |
| Cooling air required for generator set when equipped with city cooling water or remote radiator, based on 14°C (25°F) rise, m ³ /min. (scfm)‡ | 456 (16100) |
| Combustion air, m ³ /min. (cfm) | 88 (3107) |
| Heat rejected to ambient air: | |
| Engine, kW (Btu/min.) | 77 (4375) |
| Alternator, kW (Btu/min.) | 50 (2843) |
| ‡ Air density = 1.20 kg/m ³ (0.075 lbm/ft ³) | |

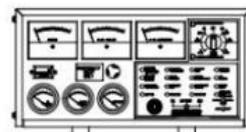
| Fuel Consumption | |
|-----------------------------|----------------|
| Diesel, Lph (gph) at % load | Standby Rating |
| 100% | 255.1 (67.4) |
| 75% | 174.4 (46.1) |
| 50% | 118.6 (31.3) |
| 25% | 66.7 (17.6) |
| Diesel, Lph (gph) at % load | Prime Rating |
| 100% | 222.1 (58.7) |
| 75% | 158.8 (41.9) |
| 50% | 108.4 (28.6) |
| 25% | 63.0 (16.7) |

Controllers



Decision-Maker® 550 Controller

Audiovisual annunciation with NFPA 110 Level 1 capability. Programmable microprocessor logic and digital display features. Alternator safeguard circuit protection. 12- or 24-volt engine electrical system capability. Remote start, remote annunciation, and remote communication options. Refer to G6-46 for additional controller features and accessories.



Decision-Maker® 3+, 16-Light Controller

Audiovisual annunciation with NFPA 110 Level 1 capability. Microprocessor logic, AC meters, and engine gauge features. 12- or 24-volt engine electrical system capability. Remote start, prime power, and remote annunciation options. Refer to G6-30 for additional controller features and accessories.

Additional Standard Features

- Alternator Protection (standard with Decision-Maker® 550)
- Oil Drain Extension
- Operation and Installation Literature

Available Accessories

Open Unit

- Exhaust Silencer, Hospital (kit: PA-354912)
- Exhaust Silencer, Critical (kit: PA-354898)
- Flexible Exhaust Connector, Stainless Steel

Cooling System

- Block Heater
[recommended for ambient temperatures below 20°C (68°F)]
- High Ambient Cooling
- Remote Radiator Cooling

Fuel System

- Flexible Fuel Lines
- Fuel Filter
- Fuel Pressure Gauge

Electrical System

- Battery
- Battery Charger, Equalize/Float Type
- Battery Heater
- Battery Rack and Cables

Engine and Alternator

- Air Cleaner, Heavy Duty
- Air Cleaner Restriction Indicator
- Alternator Strip Heater
- Bus Bar Kits (standard on 7M alternators, 380-600 volt only)
- Integral Vibration Isolation Mounting
- Line Circuit Breaker (NEMA type 1 enclosure)
- Line Circuit Breaker with Shunt Trip (NEMA type 1 enclosure)
- Rated Power Factor Testing
- Safeguard Breaker (not available with Decision-Maker® 550)
- Spring Isolators

Paralleling System

- Reactive Droop Compensator
- Remote Speed Adjust Control/Electronic Governor
- Voltage Adjustment Control (manual)
- Voltage Regulator Relocation Kit

Maintenance

- General Maintenance Literature Kit
- Overhaul Literature Kit
- Production Literature Kit

Controller

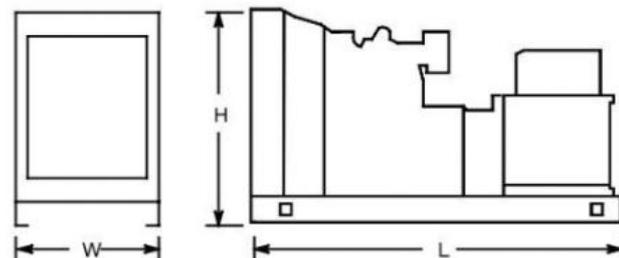
- Common Failure Relay Kit
- Communication Products and PC Software
(Decision-Maker® 550 only)
- Customer Connection Kit
- Dry Contact Kit (isolated alarm)
- Engine Prealarm Sender Kit
- Remote Annunciator Panel
- Remote Audiovisual Alarm Panel
- Remote Emergency Stop Kit
- Remote Mounting Cable
- Run Relay Kit

Miscellaneous Accessories

- _____
- _____
- _____
- _____
- _____
- _____
- _____
- _____
- _____
- _____

Dimensions and Weights

Overall Size, L x W x H, max., mm (in.): 4619 x 1853 x 2419
 (181.87 x 72.95 x 95.25)
 Weight (radiator model), wet, max., kg (lb.): 6577 (14500)



Note: This drawing is provided for reference only and should not be used for planning the installation. Contact your local distributor for more detailed information.

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