Model: 800ROZD-4

KOHLER POWER SYSTEMS

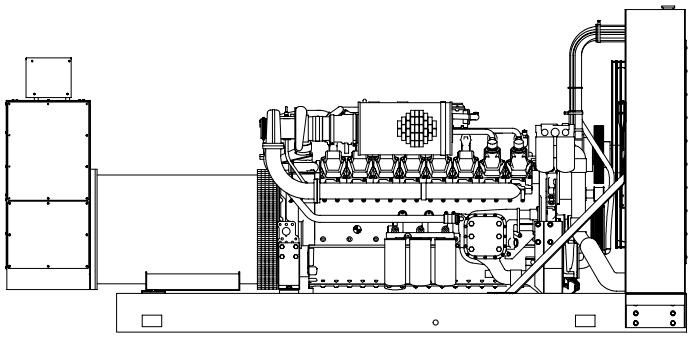
380–600 V

4-Cycle Diesel

ISO 9001 KOHLER POWER SYSTEMS NATIONALLY REGISTERED

Ratings Range

		60 Hz	50 Hz
Standby:	**kW**	705–815	640–728
	kVA	881–1019	800–910
Prime:	**kW**	640–740	584–660
	kVA	800–925	730–825



800ROZD-4, 60 Hz Model Shown

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.
- At 60 Hz the generator set accepts rated load in one step.
- 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).
- A one-year limited warranty covers all systems and components. Two-, five-, and ten-year extended warranties are also available.
- Generator features:
  - The brushless, rotating-field generator has broadrange reconnectability.
  - The pilot-excited, permanent-magnet generator (PMG) provides superior short-circuit capability.
- 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.
  - Electronic engine controls and a generator microprocessor controller combine to deliver one of the most advanced control systems in today's generator market.

Generator Ratings

Alternator	Voltage	Ph	Hz	150°C Rise Standby Rating kW/kVA	130°C Rise Standby Rating kW/kVA	125°C Rise Prime Rating kW/kVA	105°C Rise Prime Rating kW/kVA
5M4034	240/416	3	60	725/906	725/906	720/900	680/850
	277/480	3	60	810/1013	750/938	735/919	710/888
5M4036	240/416	3	60	810/1013	785/981	735/919	725/906
	277/480	3	60	810/1013	810/1013	735/919	735/919
	220/380	3	50	708/885	664/830	652/815	612/765
	230/400	3	50	712/890	688/860	656/820	632/790
	240/416	3	50	668/835	640/800	628/785	584/730
5M4038	220/380	3	60	705/881	705/881	640/800	640/800
	240/416	3	60	810/1013	810/1013	735/919	735/919
	277/480	3	60	815/1019	815/1019	740/925	740/925
	220/380	3	50	728/910	728/910	660/825	660/825
	230/400	3	50	728/910	728/910	660/825	660/825
	240/416	3	50	728/910	728/910	660/825	660/825
5M4166	220/380	3	60	810/1013	810/1013	735/919	735/919
5M4278	347/600	3	60	810/1013	810/1013	735/919	735/919

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 1.5% per 305 m (1000 ft.) elevation above 1006 m (3300 ft.). Maximum altitude capability is 3048 m (10000 ft.). *Temperature:* Derate 0.4% per 5.5°C (10°F) temperature above 25°C (77°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% 60 Hz, 150% 50 Hz
Voltage regulation, no-load to full-load (with < 0.5% drift due to temp. variation)		3-Phase Sensing, ±0.25%
One-step load acceptance at 60 Hz		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 (60 Hz)
480 V, 380 V	5M4036 (10 lead)	3150 (60 Hz), 2100 (50 Hz)
480 V, 380 V	5M4038 (4 lead)	3050 (60 Hz), 2000 (50 Hz)
380 V	5M4166 (4 lead)	2750 (60 Hz)
600 V	5M4278 (4 lead)	4000 (60 Hz)

- 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 generator 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	60 Hz	50 Hz
Manufacturer	Detroit Diesel/MTU	
Engine: model	16V2000 G70 R163-7K35	16V2000 G60 R163-7K08
Engine: type	4-Cycle, Turbocharged, Intercooled	
Cylinder arrangement	16-V	
Displacement, L (cu. in.)	31.9 (1944)	
Bore and stroke, mm (in.)	130 (5.12) x 150 (5.91)	
Compression ratio	16.0:1	
Piston speed, m/min. (ft./min.)	540 (1772)	450 (1476)
Main bearings: quantity, type	9, Precision Half Shells	
Rated rpm	1800	1500
Max. power at rated rpm, kWm (BHP)	895 (1200)	795 (1066)
Cylinder head material	Cast Iron	
Crankshaft material	Forged Steel	
Valve (exhaust) material	Austenitic Steel	
Governor: type, make/model	DDEC Electronic Control	
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	60 Hz	50 Hz
Exhaust flow at rated kW, m^3/min. (cfm)	184 (6510)	152 (5350)
Exhaust temperature at rated kW, dry exhaust, °C (°F)	471 (880)	513 (955)
Maximum allowable back pressure, kPa (in. Hg)	10.2 (3.0)	
Exh. outlet size at eng. hookup, mm (in.)	See ADV drawing	

Engine Electrical

Engine Electrical System	60 Hz	50 Hz
Battery charging alternator:		
Ground (negative/positive)	Negative	
Volts (DC)	24	
Ampere rating	70	
Starter motor rated voltage (DC)	24	
Battery, recommended cold cranking amps (CCA):		
Qty., CCA rating above 0°C (32°F)	2, 1000	
Qty., CCA rating below 0°C (32°F)	4, 700	
Battery voltage (DC)	12	

Fuel

Fuel System	60 Hz	50 Hz
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.)	2.1 (6.8)	
Max. fuel flow, Lph (gph)	1421 (375)	1210 (320)
Max. fuel pump restriction with new filter, kPa (in. Hg)	20 (6)	
Max. fuel pump restriction with used filter, kPa (in. Hg)	41 (12)	
Fuel filter: quantity, type	2, Secondary	
Recommended fuel	#2 Diesel	

Lubrication

Lubricating System	60 Hz	50 Hz
Type	Full Pressure	
Oil pan capacity, L (qt.)	96.5 (102)	
Oil pan capacity with filter, L (qt.)	107.9 (114)	
Oil filter: quantity, type	3, Cartridge	
Oil cooler	Water-Cooled	

Application Data

Cooling

Radiator System	60 Hz	50 Hz
Ambient temperature, °C (°F)	50 (122)	
Engine jacket water capacity, L (gal.)	76 (20)	
Radiator system capacity, including engine, L (gal.)	174 (46)	227 (60)
Engine jacket water flow, Lpm (gpm)	1136 (300)	992 (262)
Charge cooler water flow, Lpm (gpm)	—	356 (94)
Heat rejected to cooling water at rated kW, dry exhaust, kW (Btu/min.)	519 (29510)	300(17056)
Heat rejected to charge cooling water at rated kW, dry exhaust, kW (Btu/min.)	—	132 (7507)
Water pump type	Centrifugal	
Fan diameter, including blades, mm (in.)	1118 (44)	1321 (57)
Fan, kWm (HP)	31 (42)	22 (30)
Max. restriction of cooling air, intake and discharge side of radiator, kPa (in. H_2O)	0.125 (0.5)	

Remote Radiator System*	60 Hz	50 Hz
Exhaust manifold type	Dry	
Connection sizes:		
Water inlet, mm (in.)	102 (4)	
Water outlet, mm (in.)	Two 77 (3)	Two 77 (3)
Intercooler inlet/outlet, mm (in.)	—	44.5 (1.75)
Static head allowable above engine, kPa (ft. H_2O)	149 (50)	

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

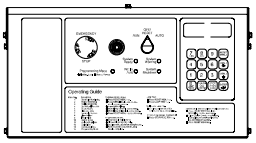
Operation Requirements

Air Requirements	60 Hz	50 Hz
Radiator-cooled cooling air, m^3/min. (scfm)†	841 (29700)	753 (26600)
Cooling air required for generator set when equipped with city water cooling or remote radiator, based on 14°C (25°F) rise, m^3/min. (scfm)†	612 (21600)	524 (18500)
Combustion air, m^3/min. (cfm)	71 (2515)	55 (1950)
Heat rejected to ambient air:		
Engine, kW (Btu/min.)	119 (6750)	100 (5680)
Generator, kW (Btu/min.)	52 (2950)	47 (2650)

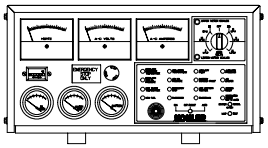
† Air density = 1.20 kg/m^3 (0.075 lbm/ft^3)

Fuel Consumption	60 Hz	50 Hz
Diesel, Lph (gph) at % load	Standby Rating	
100%	217.6(57.5)	184.8(48.8)
75%	161.8(42.7)	137.2(36.3)
50%	108.4(28.6)	92.1(24.3)
25%	62.9(16.6)	48.2(12.7)
Diesel, Lph (gph) at % load	Prime Rating	
100%	194.4(51.3)	165.9(43.8)
75%	146.6(38.7)	123.9(32.7)
50%	99.4(26.3)	83.7(22.1)
25%	57.8(15.3)	45.3(12.0)

Controllers



Decision-Maker™ 550 Controller
Audiovisual annunciation with NFPA 110 Level 1 capability.
Programmable microprocessor logic and digital display features.
Generator 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.

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KohlerPowerSystems.com

Kohler Power Systems
Asia Pacific Headquarters
7 Jurong Pier Road
Singapore 619159
Phone (65)264-6422, Fax (65)264-6455

Standard Features and Accessories

Additional Standard Features

- Alternator Protection (standard with Decision-Maker™ 550)
- Oil Drain Extension
- Operation and Installation Literature
- Pilot-Excited, Permanent-Magnet Generator (PMG)

Accessories

Open Unit

❑ Exhaust Silencer, Critical
50 Hz kits: PA-354894, PA-365338, PA-365348, PA-365353
60 Hz kits: PA-354880, PA-354881, PA-354894, PA-365338

❑ Exhaust Silencer, Hospital
50 Hz kits: PA-354907, PA-365344, PA-365349, PA-365354
60 Hz kits: PA-354903, PA-354905, PA-354907, PA-365344

❑ Exhaust Silencer, Industrial
50 Hz kits: PA-343617, PA-354909, PA-365341, PA-365350
60 Hz kits: PA-354904, PA-354906, PA-354909, PA-365341

❑ Exhaust Silencer, Residential
50 Hz kits: PA-354892, PA-365335, PA-365347, PA-365352
60 Hz kits: PA-354882, PA-354883, PA-354892, PA-365335

❑ Flexible Exhaust Connector, Stainless Steel

❑ Sound Enclosure (with roof-mounted hospital silencer)

❑ Weather Enclosure (with roof-mounted critical silencer)

Cooling System

❑ Block Heater

❑ High Ambient Radiator

❑ Radiator Duct Flange

❑ Remote Radiator Cooling

Fuel System

❑ Flexible Fuel Lines

❑ Fuel Filter

❑ Fuel Pressure Gauge

❑ Subbase Fuel Tank with Day Tank

Electrical System

❑ Battery

❑ Battery Charger, Equalize/Float Type

❑ Battery Heater

❑ Battery Rack and Cables

Engine and Generator

❑ Air Cleaner, Heavy Duty

❑ Air Cleaner Restriction Indicator

❑ Bus Bar Kits (standard on 7M generators, 380–600 volt only)

❑ Generator Strip Heater

❑ Line Circuit Breaker (NEMA type 1 enclosure)

❑ Line Circuit Breaker with Shunt Trip (NEMA type 1 enclosure)

❑ NFPA 110 Literature

❑ Optional Generators

❑ Rated Power Factor Testing

❑ Safeguard Breaker (not available with Decision-Maker™ 550)

❑ Integral Vibration Isolation Mounting

❑ Direct Mounting

❑ Spring Isolators

Paralleling System

❑ Load-Sharing Module

❑ Reactive Droop Compensator

❑ Remote Speed Adjust Potentiometer/Electronic Governor

❑ Voltage Adjust Potentiometer

❑ Voltage Regulator Relocation Kit

Maintenance

❑ General Maintenance Literature Kit

❑ Maintenance Kit (includes air, oil, and fuel filters)

❑ Overhaul Literature Kit

❑ Production Literature Kit

Controller

❑ Common Failure Relay Kit

❑ Communication Products and PC Software
(Decision-Maker™ 550 controller only)

❑ Customer Connection Kit

❑ Dry Contact Kit (isolated alarm)

❑ Engine Prealarm Sender Kit

❑ Prime Power Switch (Decision-Maker™ 550 controller only)

❑ Remote Annunciator Panel

❑ Remote Audiovisual Alarm Panel

❑ Remote Emergency Stop Kit

❑ Remote Mounting Cable

❑ Run Relay Kit

Miscellaneous Accessories

❑ _____

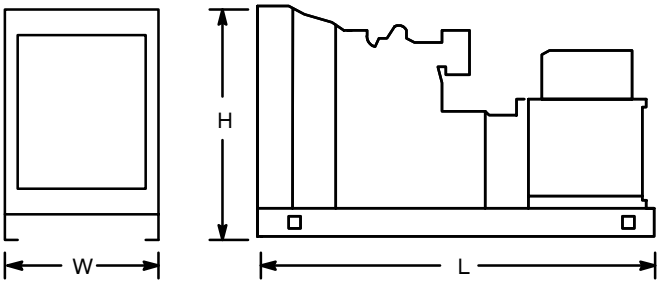
❑ _____

❑ _____

Dimensions and Weights

Overall Size, max., L x W x H, mm (in.):
60 Hz: 4418 x 1600 x 2103 (173.94 x 62.99 x 82.80)
50 Hz: 4611 x 1727 x 2210 (181.54 x 67.99 x 87.02)

Weight, radiator model, max. wet, kg (lb.): 60 Hz: 5930 (13073)
50 Hz: 6130 (13514)



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

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