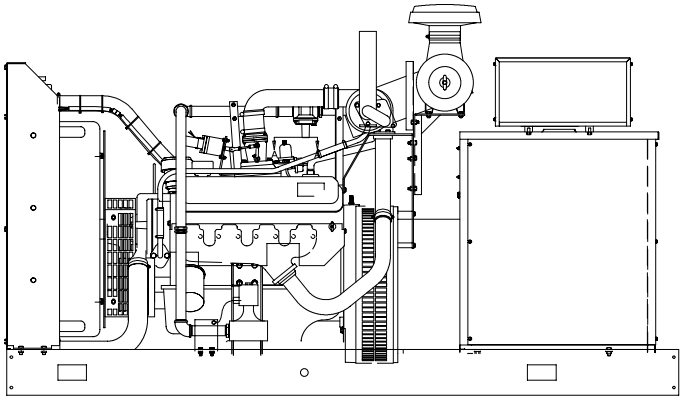
Model: 100RZ

KOHLER POWER SYSTEMS

Gas



Standard Features

- Kohler Co. provides one-source responsibility for the generating system and accessories.
- The generator set and components are prototype-tested, factory-built, and production-tested.
- The generator set provides one-step load acceptance.
- A one-year limited warranty covers all systems and components. Two-, five-, and ten-year extended warranties are available.
- Generator features:
  - Kohler's unique Fast-Response™ excitation system delivers the fastest voltage response in the industry.
  - The brushless, rotating-field generator has broadrange reconnectability.
  - Kohler's permanent magnet-excited generator (PMG) provides superior short-circuit capability.
- Other features:
  - Controllers are available for all applications. See controller features inside.
  - Low coolant level shutdown prevents overheating.
  - Integral vibration isolation eliminates the need for under-unit vibration spring isolators.
  - An electronic, isochronous governor delivers precise frequency regulation.

Generator Ratings

Model Series	Voltage Code	Voltage	Standby Amps	Phase	Hz	Generator Model	Standby Ratings, kW/kVA	
							Nat. Gas	LP Gas
100RZ	01	120/240	301	3	60	4S9	100/125	90/113
100RZ	51	139/240	301	3	60	4S9	100/125	90/113
100RZ	51	127/220	328	3	60	4S9	100/125	90/113
100RZ	61	120/240	396	1	60	4S13	95/95	85/85
100RZ	71	277/480	150	3	60	4S9	100/125	90/113
100RZ	71	220/380	190	3	60	4S13	100/125	90/113
100RZ	81	120/208	347	3	60	4S9	100/125	90/113
100RZ	91	347/600	120	3	60	4S9	100/125	90/113

RATINGS: Standby ratings are continuous for the duration of any power outage. No overload capacity is specified at this rating. Prime ratings are continuous per BS 5514, DIN 6271, ISO-3046, and IEC 34-1 with 10% overload capacity one hour in twelve hours. All single-phase units are rated at 1.0 power factor. All three-phase units are rated at 0.8 power factor. Contact the factory for ratings of city water-cooled and remote radiator models. Larger alternators may be used to meet special application requirements. Availability is subject to change without notice. Kohler Co. reserves the right to change the design or specifications without notice and without any obligation or liability whatsoever. Contact your local Kohler Co. generator distributor for availability. GENERAL GUIDELINES FOR DERATION: *ALTITUDE*: Derate 4% per 1000 ft. (305 m) elevation above 500 ft. (153 m). *TEMPERATURE*: Derate 1% per 10°F (5.5°C) temperature increase above 85°F (29°C).

Alternator Specifications

Specifications	Fast-Response™ Generator
Manufacturer	Kohler
Type	4-Pole, Rotating Field
Exciter type	Brushless, Permanent Magnet
Leads: quantity, type	12, Reconnectable
Voltage regulator	Solid State, Volts/Hz
Insulation:	NEMA MG1-1.66
Material	Class H
Temperature rise	130° C, Standby
Bearing: quantity, type	1, Sealed
Coupling	Flexible Disc
Amortisseur windings	Full
Voltage regulation, no load to full load	±2%
Unbalanced load capability	100% of Rated Standby Power
One-step load acceptance	100% of Rating
Peak motor starting kVA:	(35% dip for 480 V, 60 Hz)
4S9	315 (60Hz)
4S13	515 (60Hz)

- Complies with NEMA, IEEE, and ANSI standards for temperature rise.
- Sustains short-circuit current of up to 300% of rated current for up to 10 seconds.
- Sustains short-circuit current enabling downstream circuit breakers to trip without collapsing the generator field.
- Self-ventilation, dripproof construction.
- Vacuum-impregnated windings with fungus-resistant epoxy varnish for dependability and long life.
- Superior voltage waveform from a two-thirds pitch stator and skewed rotor.
- Solid-state, volts-per-hertz voltage regulator with ±2% no-load to full-load regulation.
- Fast-Response™ brushless alternator with brushless exciter for excellent load response.

Application Data

Engine

Engine Specifications	60 Hz	50 Hz
Manufacturer	Ford	
Engine: model, type	LSG-875, 4-Cycle, Turbocharger	
Cylinder arrangement	V-8	
Displacement, cu. in. (L)	460 (7.538)	
Bore and stroke, in. (mm)	4.36 (111.0) x 3.85 (98.0)	
Compression ratio	8.0:1	
Piston speed, ft./min. (m/sec.)	1155 (5.86)	—
Main bearings: quantity, type	5, Replaceable Insert	
Rated rpm	1800	—
Max. power at rated rpm, HP (kW)	168 (125)	—
Cylinder head material	Cast Iron Alloy	
Piston type and material	Autothermic Aluminum Alloy	
Crankshaft material	Nodular Cast Iron	
Valves material	Forged Steel	
Governor: type, make/model	Electronic, Barber Colman	
Frequency regulation, no load to full load	Isochronous	
Frequency regulation, steady state	±0.5%	
Air cleaner type, all models	Dry	

Exhaust

Exhaust System	60 Hz	50 Hz
Exhaust flow at rated kW, cfm (m^3/min.)	854 (24.2)	—
Exhaust temperature at rated kW, dry exhaust, °F (°C)	1300 (705)	
Maximum allowable back pressure, in. Hg (kPa)	2.0 (6.8)	
Exhaust outlet size at hookup, in. (mm)	2.25 (64.0)	

Engine Electrical

Engine Electrical System	60 Hz	50 Hz
Ignition system	Electronic, Breakerless	
Battery charging alternator:		
Ground (negative/positive)	Negative	
Volts (DC)	12	
Ampere rating	37	
Starter motor rated voltage (DC)	12	
Recommended battery cold cranking amps (CCA) rating for 0°F (-18°C)	630	
Batteries, quantity	1	
Battery voltage (DC)	12	
Rolling current at 32°F (0°C)	—	

Fuel

Fuel System	60 Hz	50 Hz
Fuel type	LP Gas or Natural Gas Vapor	
Fuel supply line inlet	1 1/4 NPT	
Natural gas/LPG fuel supply pressure oz./$in.^2$ (in. H_2O)	4-6 (7-11)	

Lubrication

Lubricating System	60 Hz	50 Hz
Type	Full Pressure	
Oil pan capacity, qts. (L)	8.0 (7.6)	
Oil pan capacity with filter, qts. (L)	9.0 (8.5)	
Oil filter: quantity, type	1, Cartridge	
Oil cooler	Water-Cooled	

Application Data

Cooling (Standard Radiator)

Cooling System	60 Hz	50 Hz
Ambient temperature, °F (°C)	105 (40)	
Engine jacket water capacity, gal. (L)	4.0 (15.1)	
Radiator system capacity, including engine, gal. (L)	8.1 (30.7)	
Engine jacket water flow, gpm (Lpm)	50 (189)	—
Heat rejected to cooling water at rated kW, dry exhaust Btu/min.	5890	—
Water pump type	Centrifugal	
Fan diameter, including blades, in. (mm)	23.6 (599)	
Fan, HP (kW)	9.5 (7.1)	—
Max. restriction of cooling air, intake and discharge side of radiator, in. H_2O (kPa)	0.5 (0.125)	

Cooling (Optional Systems)

High Ambient Radiator System	60 Hz	50 Hz
Ambient temperature, °F (°C)	122 (50)	
Engine jacket water capacity, gal. (L)	4.0 (15.1)	
Radiator system capacity, including engine, gal. (L)	—	
Engine jacket water flow, gpm (Lpm)	58 (219.5)	—
Heat rejected to cooling water at rated kW, dry exhaust Btu/min.	5890	—
Water pump type	Centrifugal	
Fan diameter, including blades, in. (mm)	23.6 (599)	
Fan, HP (kW)	16.0 (11.9)	—
Max. restriction of cooling air, intake and discharge side of radiator, in. H_2O (kPa)	0.5 (0.125)	

Remote Radiator System*	60 Hz	50 Hz
Exhaust manifold type	Dry	
Connection sizes: Water inlet, in. (mm) . . . . . . Water outlet, in. (mm)	 2.00 (51) ID Hose 1.50 (38) ID Hose	
Static head allowable above engine, ft. (m)	17.0 (4.32)	

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

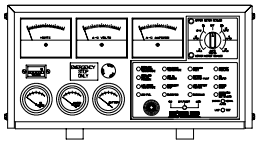
City Water Cooling (CWC) System	60 Hz	50 Hz
Exhaust manifold type	Dry	
System capacity, gal. (L)	6.6 (25.0)	
City water consumption, gpm (Lpm) at 50°F (10°C)	11.6 (44.0)	
Connection sizes: Water inlet, in. (mm) . . . . . . Water outlet, in. (mm)	 0.75 (19) NPT 1.0 (25) NPT	

Operation Requirements

Air Requirements	60 Hz	50 Hz
Radiator-cooled cooling air, cfm (m^3/min.)	12300 (348)	—
Cooling air required for gen. set when equipped with CWC or remote radiator, based on 25°F (14°C) rise and ambient temp. of 85°F (29°C), cfm (m^3/min.)	7700 (218)	—
Combustion air, cfm (m^3/min.)	325 (11.7)	—
Heat rejected to ambient air: Engine Btu/min. (kW) . . . . . . Generator Btu/min. (kW)	 2680 (47.1) 670 (11.8)	 — —

Fuel Consumption	60 Hz	50 Hz
Natural Gas, cfh (m^3/hr.) at % load		
100%	1600 (45.3)	—
75%	1280 (36.2)	—
50%	920 (26.1)	—
25%	600 (17.0)	—
LP Gas, cfh (m^3/hr.) at % load		
100%	640 (18.1)	—
75%	500 (14.2)	—
50%	380 (10.8)	—
25%	260 (7.4)	—

Controllers



Standard Controller

Decision-Maker™ 3+, 16-Light Controller
Audio/visual annunciation with NFPA-110, Level 1 capability
Microprocessor logic with AC meters and engine gauges
Compatible with 12-volt and 24-volt engine electrical systems
Remote start, prime power, and remote annunciation capability

Optional Controllers

Decision-Maker™ 340 Controller
Audio/visual annunciation with NFPA-110, Level 1 capability
Programmable microprocessor logic with digital display
Compatible with 12-volt and 24-volt engine electrical systems
Remote start, prime power, remote annunciation, and remote communication capability

Decision-Maker™ 3+, 7-Light Controller
Audio/visual annunciation with NFPA-110, Level 2 capability
Microprocessor logic with AC meters and engine gauges
Compatible with 12-volt and 24-volt engine electrical systems
Remote start, prime power, and remote annunciation capability

Decision-Maker™ 1 Controller
Provides remote or automatic start with NFPA compliance
Uses single-light annunciation with basic control functions
Relay logic with three models—standard, standard with engine gauges, and expanded with AC meters and engine gauges
Compatible with 12-volt engine electrical systems only

NOTE: See the respective controller spec sheet for additional controller features and accessories.

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Fax 920-459-1646 (U.S.A. Sales), Fax 920-459-1614 (International)
For the nearest sales and service outlet in U.S.A. and Canada
Phone 1-800-544-2444

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

Accessories

Enclosed Unit

- ❑ Exhaust Silencer, Critical or Industrial
- ❑ Silencer Mounting Kit for Housing
- ❑ Tail Pipe and Rain Cap Kit
- ❑ Weather Housing

Open Unit

- ❑ Exhaust Silencer, Critical or Industrial
- ❑ Flexible Exhaust Connector, Stainless Steel

Cooling System

- ❑ Block Heater
- ❑ City Water Cooling
- ❑ High Ambient Radiator
- ❑ Radiator Duct Flange
- ❑ Remote Radiator Cooling

Fuel System

- ❑ Automatic Changeover (natural gas to LP gas)
- ❑ Flexible Fuel Lines (LP gas)
- ❑ Gas Strainer
- ❑ LP Gas Liquid Withdrawal
- ❑ Manual Valve and Gas Solenoid Bypass
- ❑ Secondary Gas Solenoid Valve

Electrical System

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

Engine and Generator

- ❑ Bus Bar Kits
- ❑ CSA Certification
- ❑ Generator Strip Heater
- ❑ Line Circuit Breaker
- ❑ Line Circuit Breaker with Shunt Trip
- ❑ NFPA 110 Literature
- ❑ Oil Drain Extension with Valve Kit
- ❑ Optional Generators
- ❑ Rated Power Factor Testing
- ❑ Rodent Guards
- ❑ Safeguard Breaker
- ❑ Skid End Caps
- ❑ Voltage Regulation, 1%
- ❑ Voltage Regulator Sensing, Three-Phase

Maintenance

- ❑ General Maintenance Literature Kit
- ❑ Maintenance Kit (includes standard air, oil, and fuel filters)
- ❑ Overhaul Literature Kit

Controller (Standard Controller)

- ❑ Common Failure Relay Kit
- ❑ Customer Connection Kit
- ❑ Decision Monitor™ Remote Annunciator Panel
- ❑ Dry Contact Kit (isolated alarm)
- ❑ Extension Wiring Harness for Remote Mounting of Controller
- ❑ FASTCHECK® Diagnostic Fault Detector
- ❑ Prealarm Sender Kit
- ❑ Remote Audio/Visual Alarm Panel
- ❑ Remote Emergency Stop Kit
- ❑ Run Relay Kit

Miscellaneous Accessories

- ❑ _____
- ❑ _____
- ❑ _____
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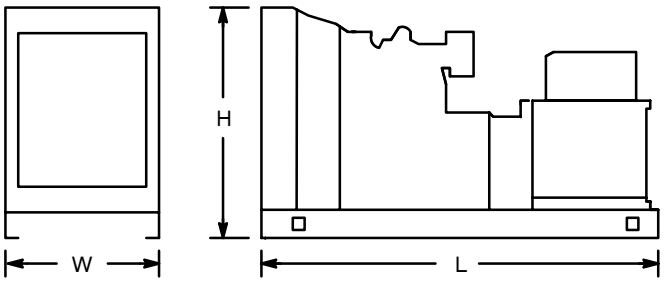
WEIGHTS AND DIMENSIONS

Overall Size, L x W x H, in. (mm):	88.25 x 34.0 x 51.26 (2242 x 864 x 1302)
Weight (Radiator Model), wet lb. (kg):	2290 (1039)



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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