Model: 500ROZD

KOHLER® POWER SYSTEMS

Diesel

ISO 9001 KOHLER GENERATORS INTERNATIONALLY REGISTERED

Ratings Range

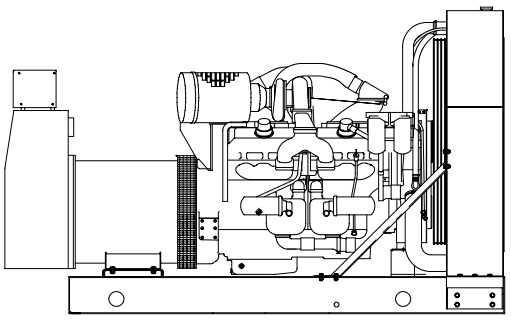
		60 Hz	50 Hz
Standby:	**kW**	**405–530**	**408–452**
	kVA	**506–663**	**510–565**
Prime:	**kW**	**365–480**	**368–408**
	kVA	**456–600**	**460–510**

Generator Ratings

Generator	Voltage	PH	Hz	130°C Rise Standby Rating kW/kVA	105°C Rise Prime Rating kW/kVA	150°C Rise Standby Rating kW/kVA	125°C Rise Prime Rating kW/kVA
5M4027	120/208	3	60	475/594	430/538	505/631	460/575
	127/220	3	60	500/625	455/569	520/650	470/588
	139/240	3	60	515/644	465/581	520/650	470/588
	220/380	3	60	405/506	365/456	405/506	365/456
	240/416	3	60	475/594	430/538	505/631	460/575
	277/480	3	60	515/644	465/581	520/650	470/588
	110/190	3	50	408/510	368/460	436/545	396/495
	115/200	3	50	424/530	384/480	440/550	400/500
	120/208	3	50	408/510	368/460	424/530	384/480
	220/380	3	50	408/510	368/460	436/545	396/495
	230/400	3	50	424/530	384/480	440/550	400/500
	240/416	3	50	408/510	368/460	424/530	384/480
5M4028	120/208	3	60	525/656	475/594	525/656	475/594
	127/220	3	60	525/656	475/594	525/656	475/594
	139/240	3	60	525/656	475/594	525/656	475/594
	220/380	3	60	470/588	425/531	470/588	425/531
	240/416	3	60	525/656	475/594	525/656	475/594
	277/480	3	60	525/656	475/594	525/656	475/594
	110/190	3	50	452/565	408/510	452/565	408/510
	115/200	3	50	452/565	408/510	452/565	408/510
	120/208	3	50	436/545	396/495	448/560	408/510
	220/380	3	50	452/565	408/510	452/565	408/510
	230/400	3	50	452/565	408/510	452/565	408/510
	240/416	3	50	436/545	396/495	448/560	408/510
5M4030	120/208	3	60	525/656	475/594	525/656	475/594
	127/220	3	60	525/656	475/594	525/656	475/594
	139/240	3	60	530/663	480/600	530/663	480/600
	220/380	3	60	485/606	440/550	485/606	440/550
	240/416	3	60	525/656	475/594	525/656	475/594
	277/480	3	60	530/663	480/600	530/663	480/600
	110/190	3	50	452/565	408/510	452/565	408/510
	115/200	3	50	452/565	408/510	452/565	408/510
	120/208	3	50	452/565	408/510	452/565	408/510
	220/380	3	50	452/565	408/510	452/565	408/510
	230/400	3	50	452/565	408/510	452/565	408/510
	240/416	3	50	452/565	408/510	452/565	408/510
5M4162	220/380	3	60	500/625	455/569	520/650	470/588
5M4164	220/380	3	60	530/663	480/600	530/663	480/600
5M4270	347/600	3	60	510/638	460/575	520/650	470/588
5M4272	347/600	3	60	530/663	480/600	530/663	480/600

Standard Features

- **Kohler Co. provides one-source responsibility for the generating system and accessories.**
- **All generator sets and components are prototype tested, factory built, and production tested.**
- **Generator set provides one-step load acceptance per NFPA 110.**
- **A one-year limited warranty covers all systems and components. Two-, five-, and ten-year extended warranties are available.**
- **Generator features:**
  - **Brushless, rotating-field generator has broadrange reconnectability.**
  - **Permanent-magnet, pilot-excited generator (PMG) provides superior short-circuit capability.**
- **Other features:**
  - **Controllers are available to meet all applications. See controller features inside.**
  - **Low coolant level shutdown protects generator set from overheating.**
  - **Electronic, isochronous governor provides precise frequency regulation.**



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 3-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 1.5% per 1000 ft. (305 m) elevation above 3300 ft. (1006 m). *TEMPERATURE:* Derate 1.0% per 10°F (5.5°C) temperature increase above 77°F (25°C).

Alternator Specifications

Specifications		TR II-Series™ Generator
Type		4-Pole, Rotating Field
Exciter type		Brushless Permanent Magnet Pilot Exciter
Voltage regulator		Solid State, Volts/Hz
Insulation: NEMA MG1-1.66		
Material		Class H, Synthetic, Nonhygroscopic
Temperature rise		130°C, 150°C Standby
Bearing: number, type		1, Sealed
Coupling		Flexible Disc
Amortisseur windings		Full
Rotor balancing		125% (60Hz) 150% (50Hz)
Voltage regulation, no load to full load (with <0.5% drift due to temp. variation)		±0.25%
One-step load acceptance per NFPA 110		100% of Rating
Peak motor starting kVA:		(35% dip for voltages listed)
480/416 V	5M4027 (10 lead)	1550 (60Hz), 1250 (50Hz)
480/416 V	5M4028 (10 lead)	1800 (60Hz), 1450 (50Hz)
480/416 V	5M4030 (10 lead)	1775 (60Hz), 1325 (50Hz)
380 V	5M4162 (4 lead)	2100 (60Hz)
380 V	5M4164 (4 lead)	2300 (60Hz)
600 V	5M4270 (4 lead)	1250 (60Hz)
600 V	5M4272 (4 lead)	1750 (60Hz)

- Compliance with NEMA, IEEE, and ANSI standards for temperature rise.
- Sustained short-circuit current up to 300% of rated current for up to 10 seconds.
- Sustained short-circuit capability enabling downstream circuit breakers to trip without collapsing the generator field.
- Self-ventilation and drip-proof 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	
Engine, model, type	12V-92TA, (8123-7405) 2-Cycle, Turbocharged, Aftercooled	
Cylinder arrangement	12-V	
Displacement, cu. in. (L)	1104 (18.1)	
Bore and stroke, in. (mm)	4.84 (123) x 5.00 (127)	
Compression ratio	17.0:1	
Piston speed, ft/min. (m/sec.)	1500 (7.6)	1250 (6.3)
Main bearings: number, type	8, Precision Half Shells	
Rated rpm	1800	1500
Max. power at rated rpm, hp (kW)	830 (619)	700 (522)
Cylinder head material	Cast Iron	
Crankshaft material	Forged Steel	
Valve (exhaust) material	Cast Eatonite	
Governor, type, make/model	Electronic, Barber-Colman, Dyna 8000	
Frequency regulation, no load to full load	Isochronous	
Frequency regulation, steady state	±0.25%	
Air cleaner type, all models	Dry	

Exhaust

Exhaust System	60 Hz	50 Hz
Exhaust flow at rated kW, cfm (m^3/min.)	4870 (138)	4210 (119)
Exhaust temperature at rated kW, dry exhaust, °F (°C)	810 (432)	790 (421)
Maximum allowable back pressure, in. Hg (kPa)	2.0 (6.8)	1.4 (4.7)
Engine exhaust outlet size, in. (mm)	See ADV Drawing	

Engine Electrical

Engine Electrical System	60 Hz	50 Hz
Battery charging alternator:		
Ground (negative/positive)	Negative	
Volts (DC)	24	
Ampere rating	65	
Starter motor rated voltage (DC)	24	
Recommended battery cold cranking amps (CCA) rating	950 above 32°F (0°C), 1250 below 32°F (0°C)	
Quantity of batteries	2 above 32°F (0°C), 4 below 32°F (0°C)	
Battery voltage (DC)	12	
Rolling current at 32° F (0°C)	—	

Fuel

Fuel System	60 Hz	50 Hz
Fuel supply line, min. ID, in. (mm)	0.5 (13)	
Fuel return line, min. ID, in. (mm)	0.31 (8)	
Max. lift, engine-driven fuel pump, ft. (m)	6.8 (2.1)	
Max. fuel flow, gph (Lph)	138 (522)	125 (473)
Fuel prime pump	Not Available	
Fuel filter	2, Primary/Secondary	
Recommended fuel	#2 Diesel	

Lubrication

Lubricating System	60 Hz	50 Hz
Type	Full Pressure	
Oil pan capacity, qts. (L)	36 (34.1)	
Oil pan capacity with filter , qts. (L)	38 (36.1)	
Oil filter, quantity, type	2, 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)	12.75 (48)	
Radiator system capacity, including engine, gal. (L)	37.5 (142)	
Engine jacket water flow, gpm (Lpm)	232 (878)	189 (715)
Heat rejected to cooling water at rated kW, dry exhaust Btu/min.	25730	21700
Water pump type	Centrifugal	
Fan diameter, including blades, in. (mm)	52 (1321)	
Fan hp (kW)	37 (28)	21 (16)
Max. restriction of cooling air, intake and discharge side of rad., 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)	12.75 (48)	
Radiator system capacity, including engine, gal. (L)	40.25 (152)	
Engine jacket water flow, gpm (Lpm)	232 (878)	189 (715)
Heat rejected to cooling water at rated kW, dry exhaust Btu/min.	25730	21700
Water pump type	Centrifugal	
Fan diameter, including blades, in. (mm)	52 (1321)	
Fan hp (kW)	42 (31)	24 (18)
Max. restriction of cooling air, intake and discharge side of rad., 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)	4 (102) ID Hose	
Water outlet, in. (mm)	(2) 3 (76) ID Hose	
Static head allowable above engine, ft. (m)	50 (15.25)	
*Contact your local distributor for cooling system options and specifications based on your specific application.		

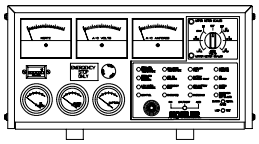
City Water Cooling System	60 Hz	50 Hz
Exhaust manifold type	Dry	
System capacity, gal. (L)	20.1 (76.1)	
City water consumption, gpm (Lpm) at 50°F (10°C)	40 (151)	32 (121)
Connection sizes:		
Water inlet, in.	1.5 NPT	
Water outlet, in.	1.0 NPT	

Operation Requirements

Air Requirements	60 Hz	50 Hz
Radiator-cooled cooling air, cfm (m^3/min.)	31800 (901)	26500 (750)
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.)	13400 (379)	12000 (340)
Combustion air, cfm (m^3/min.)	2010 (57)	1770 (50)
Heat rejected to ambient air:		
Engine BTU/min.	3450	3180
Generator BTU/min.	2400	2070

Fuel Consumption	60 Hz	50 Hz
Diesel, gph (Lph) at % load		
100%	41.3 (156.3)	33.9 (128.3)
75%	31.2 (118.1)	25.4 (96.1)
50%	21.5 (81.4)	17.3 (65.5)
25%	12.3 (46.6)	10.0 (37.9)

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

Oversized Meterbox Controllers
Provides additional space for optional engine oil temperature gauge, tachometer, and wattmeter
Available with 16-light or 7-light annunciation and microprocessor logic
Same features as Decision-Maker™ 3+ controller
Compatible with 12-volt and 24-volt engine electrical systems

Engine Gauge Box Controller for Paralleling Switchgear
Interfaces between generator set and switchgear for paralleling switchgear applications
Engine gauges with emergency stop switch
Compatible with 24-volt engine electrical systems only

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

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Accessories

Open Unit

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

Cooling System

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

Fuel System

- ❑ Day Tanks
- ❑ Flexible Fuel Lines
- ❑ Fuel Pressure Gauge
- ❑ Subbase Fuel Tanks

Electrical System

- ❑ Battery
- ❑ Battery Charger, Equalize/Float Type
- ❑ Battery Charger, Trickle Type
- ❑ Battery Heater
- ❑ Battery Rack and Cables (standard)

Engine and Generator

- ❑ Air Cleaner, Heavy Duty
- ❑ Air Cleaner Restriction Indicator
- ❑ Bus Bar Kits
- ❑ 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
- ❑ Safeguard Breaker
- ❑ Vibration Spring Isolator

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

Controller (Standard Controller)

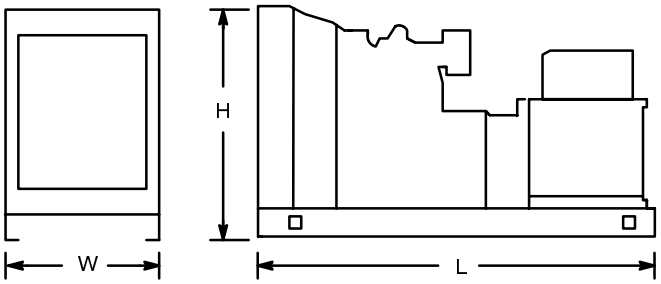
- ❑ Common Failure Relay Kit
- ❑ Customer Connection Kit
- ❑ Decision Monitor™ Remote Annunciator Panel
- ❑ Dry Contact Kit (Isolated Alarm)
- ❑ Extension Wiring Harness for Remote Mounting of Controller
- ❑ FASTCHECK® Diagnostic Fault Detector
- ❑ Prealarm Sender Kit
- ❑ Remote Audio/Visual Alarm Panel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

Miscellaneous Accessories

- ❑ _____
- ❑ _____
- ❑ _____
- ❑ _____
- ❑ _____
- ❑ _____
- ❑ _____
- ❑ _____
- ❑ _____
- ❑ _____

WEIGHTS AND DIMENSIONS

Overall Size, L x W x H, in. (mm)
std. 141.2 x 63.0 x 82.7 (3586 x 1600 x 2101)
opt. 141.2 x 68.0 x 89.2 (3586 x 1727 x 2520)
Weight (Radiator Model), wet lb. (kg): 9880 (4482)



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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