KOHLER®

Model: KG100

190- 600 V Gas

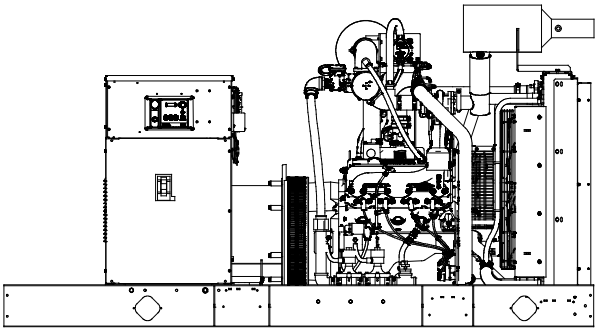
ISO 9001 KOHLER® NATIONALLY REGISTERED

EPA-Certified for 60 Hz Stationary Emergency Applications

EPA certification not applicable at 50 Hz

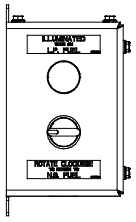
Ratings Range

		60 Hz	50 Hz
Standby:	**kW**	77- 100	70- 76
	kVA	77- 125	70- 95



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.
- CSA approval is available.
- The 60 Hz generator set meets NFPA 110, Level 1, when equipped with the necessary accessories and installed per NFPA standards.
- The generator set accepts rated load in one step.
- A one-year limited warranty covers all generator set systems and components. Two- and five-year extended limited warranties are also available.
- Alternator features:
  - The unique Fast-Response® X excitation system delivers excellent voltage response and short-circuit capability using a rare-earth, permanent magnet (PM)-excited alternator.
  - The brushless, rotating-field alternator has broadrange reconnectability.
- Dual fuel model features:
  - Natural gas is the primary fuel. Automatically transfers back to primary fuel when LPG fuel becomes low or generator stops and restarts.
  - The patent pending reset box on the generator provides the ability to manually transfer back to natural gas.



Generator Set Ratings

Alternator	Voltage	Ph	Hz	Natural Gas 130°C Rise Standby Rating kW/kVA	Natural Gas 130°C Rise Standby Rating Amps	LP Gas 130°C Rise Standby Rating kW/kVA	LP Gas 130°C Rise Standby Rating Amps
4R9X	120/208	3	60	100/125	347	100/125	347
	127/220	3	60	100/125	329	100/125	329
	120/240	3	60	100/125	301	100/125	301
	120/240	1	60	77/77	321	77/77	321
	139/240	3	60	100/125	301	100/125	301
	220/380	3	60	91/114	174	91/114	174
	277/480	3	60	100/125	151	100/125	151
	347/600	3	60	100/125	121	100/125	121
	110/190	3	50	76/95	289	76/95	289
	115/200	3	50	76/95	275	76/95	275
	120/208	3	50	76/95	264	76/95	264
	110/220	3	50	76/95	250	76/95	250
	110/220	1	50	70/70	319	70/70	319
	220/380	3	50	76/95	145	76/95	145
	230/400	3	50	76/95	138	76/95	138
	240/415	3	50	76/95	133	76/95	133

RATINGS: All three-phase units are rated at 0.8 power factor. All single-phase units are rated at 1.0 power factor. *Standby Ratings:* 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-8528-1 and ISO-3046-1. Obtain technical information bulletin (TIB-101) for ratings guidelines, complete ratings definitions, and site condition derates. The generator set manufacturer reserves the right to change the design or specifications without notice and without any obligation or liability whatsoever.

Generator Set Ratings, continued

				Natural Gas 130°C Rise Standby Rating		LP Gas 130°C Rise Standby Rating	
Alternator	**Voltage**	**Ph**	**Hz**	**kW/kVA**	**Amps**	**kW/kVA**	**Amps**
4R12X	120/208	3	60	100/125	347	100/125	347
	127/220	3	60	100/125	329	100/125	329
	120/240	3	60	100/125	301	100/125	301
	120/240	1	60	91/91	380	91/91	380
	139/240	3	60	100/125	301	100/125	301
	220/380	3	60	100/125	190	100/125	190
	277/480	3	60	100/125	151	100/125	151
	347/600	3	60	100/125	121	100/125	121
	110/190	3	50	76/95	289	76/95	289
	115/200	3	50	76/95	275	76/95	275
	120/208	3	50	76/95	264	76/95	264
	110/220	3	50	76/95	250	76/95	250
	110/220	1	50	76/76	346	76/76	346
	220/380	3	50	76/95	145	76/95	145
	230/400	3	50	76/95	138	76/95	138
	240/415	3	50	76/95	133	76/95	133
4T13X	120/240	1	60	100/100	417	100/100	417
	110/220	3	50	76/76	346	76/76	346

Alternator Specifications

Specifications	**Alternator**
Manufacturer	Kohler
Type	4-Pole, Rotating-Field
Exciter type	Brushless, Rare- Earth Permanent Magnet
Leads: quantity, type	
4RX	12, Reconnectable
4TX	4, 110- 120/220- 240 V
Voltage regulator	Solid State, Volts/Hz
Insulation:	NEMA MG1
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	Controller Dependent
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, 400 V 4R9X (12 lead)	385 (60 Hz), 296 (50 Hz)
480 V, 400 V 4R12X (12 lead)	448 (60 Hz), 355 (50 Hz)
240 V, 220 V 4T13X (4 lead)	440 (60 Hz), 396 (50 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 alternator field.
- Self-ventilated and dripproof construction.
- Superior voltage waveform from a two-thirds pitch stator and skewed rotor.
- Windings are vacuum- impregnated with epoxy varnish for dependability and long life.

Application Data

Engine

Engine Specifications	**60 Hz**	**50 Hz**
Manufacturer	Kohler	
Engine: model, type	KG6208THD 6.2 L Turbocharged, Aftercooled	
Cylinder arrangement	V-8	
Displacement, L (cu. in.)	6.2 (378)	
Bore and stroke, mm (in.)	101.6 x 95.25 (4.00 x 3.75)	
Compression ratio	9.8:1	
Rated rpm	1800	1500
Max. power at rated rpm, kW (HP)		
NG	152 (204)	125 (168)
LP	131 (175)	109 (146)
Cylinder head material	Cast Aluminum	
Piston type and material	Cast Aluminum	
Crankshaft material	Forged steel	
Valve (exhaust) material	Forged Steel	
Governor type	Electronic	
Frequency regulation, no-load to full-load	Isochronous	
Frequency regulation, steady state	±1.0%	
Frequency	Fixed	
Air cleaner type, all models	Dry	

Exhaust

Exhaust System	**60 Hz**	**50 Hz**
Exhaust manifold type	Dry	
Exhaust flow at rated kW, m^3/min. (cfm)	24 (848)	20 (706)
Exhaust temperature at rated kW, dry exhaust, °C (°F)	700 (1292)	650 (1202)
Maximum allowable back pressure, kPa (in. Hg)	15 (4.43)	12 (3.54)
Exhaust outlet size at engine hookup, mm (in.)	88.9 (3.5)	

Engine Electrical

Engine Electrical System	**60 Hz**	**50 Hz**
Ignition system	Coil Pack	
Battery charging alternator:		
Ground (negative/positive)	Negative	
Volts (DC)	12	
Ampere rating	130	
Starter motor rated voltage (DC)	12	
Battery, recommended cold cranking amps (CCA):		
Qty., rating for - 18°C (0°F)	One, 650	
Battery voltage (DC)	12	

Fuel

Fuel System	60 Hz	50 Hz
Fuel type	Natural Gas, LP Gas, or Dual Fuel	
Fuel supply line inlet	1.5 NPT	
Natural gas and LPG vapor fuel supply pressure, kPa (in. H_2O)	1.74- 2.74 (7-11)	
Fuel Composition Limits *	**Nat. Gas**	**LP Gas**
Methane, % by volume	90 min.	—
Ethane, % by volume	4.0 max.	—
Propane, % by volume	1.0 max.	85 min.
Propene, % by volume	0.1 max.	5.0 max.
C_4 and higher, % by volume	0.3 max.	2.5 max.
Sulfur, ppm mass	25 max.	
Lower heating value, MJ/m^3 (Btu/ft^3), min.	33.2 (890)	84.2 (2260)

* Fuels with other compositions may be acceptable. If your fuel is outside the listed specifications, contact your local distributor for further analysis and advice.

Lubrication

Lubricating System	60 Hz	50 Hz
Type	Full Pressure	
Oil pan capacity, L (qt.) §	5.7 (6.0)	
Oil pan capacity with filter and oil cooler, L (qt.) §	9.0 (9.5)	
Oil filter: quantity, type §	1, Cartridge	

§ Kohler recommends the use of Kohler Genuine oil and filters.

Cooling

Radiator System	60 Hz	50 Hz
Ambient temperature, °C (°F) *	50 (122)	
Engine jacket water capacity, L (gal.)	7.3 (1.93)	
Radiator system capacity, including engine, L (gal.)	28.4 (7.5)	
Engine jacket water flow, Lpm (gpm)	126 (33.3)	105 (27.7)
Heat rejected to cooling water at rated kW, dry exhaust, kW (Btu/min.)	73.9 (4207)	61.5 (3501)
Heat rejected to charge air cooler at rated kW, dry exhaust, kW (Btu/min.)	18 (1025)	15 (854)
Water pump type	Centrifugal	
Fan diameter, including blades, mm (in.)	711 (28)	
Fan, kWm (HP)	12 (16.1)	7.0 (9.4)
Max. restriction of cooling air, intake and discharge side of radiator, kPa (in. H_2O)	0.12 (0.5)	

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

Operation Requirements

Air Requirements	60 Hz	50 Hz
Radiator-cooled cooling air, m^3/min. (scfm) †	290 (10,241)	242 (8,546)
Combustion air, m^3/min. (cfm)	6.9 (244)	5.8 (205)
Heat rejected to ambient air:		
Engine, kW (Btu/min.)	30 (1708)	23 (1309)
Alternator, kW (Btu/min.)	8 (455)	6 (342)

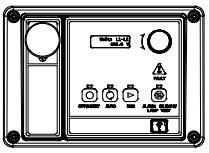
† Air density = 1.20 kg/m^3 (0.075 lbm/ft^3)

Fuel Consumption ‡	60 Hz	50 Hz
Natural Gas, m^3/hr. (cfh) at % load	**Standby Ratings**	
100%	41.7 (1473)	31.9 (1126)
75%	34.7 (1224)	26.3 (928)
50%	26.8 (946)	19.4 (685)
25%	17.7 (625)	13.0 (458)
0%	8.3 (292)	7.1 (252)
LP Gas, m^3/hr. (cfh) at % load	**Standby Ratings**	
100%	18.8 (664)	12.6 (444)
75%	15.1 (532)	9.2 (325)
50%	11.0 (388)	6.1 (214)
25%	6.1 (216)	4.2 (147)
0%	3.4 (121)	2.5 (88)

‡ Nominal fuel rating: Natural gas, 37 MJ/m^3 (1000 Btu/$ft.^3$)
LP vapor, 93 MJ/m^3 (2500 Btu/$ft.^3$)

LP vapor conversion factors:
8.58 $ft.^3$ = 1 lb.
0.535 m^3 = 1 kg.
36.39 $ft.^3$ = 1 gal.

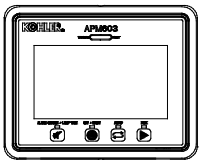
Controllers



APM402 Controller
Provides advanced control, system monitoring, and system diagnostics for optimum performance and compatibility.
- Digital display and menu control provide easy local data access
- Measurements are selectable in metric or English units
- Remote communication thru a PC via network or serial configuration
- Controller supports Modbus® protocol
- Integrated hybrid voltage regulator with ±0.5% regulation
- Built-in alternator thermal overload protection
- NFPA 110 Level 1 capability

Refer to G6-161 for additional controller features and accessories.

Modbus® is a registered trademark of Schneider Electric.



APM603 Controller
Provides advanced control, system monitoring, and system diagnostics for optimum performance and compatibility.
- 7-inch graphic display with touch screen and menu control provides easy local data access
- Measurements are selectable in metric or English units
- Paralleling capability to control up to 8 generators on an isolated bus with first-on logic, synchronizer, kW and kVAR load sharing, and protective relays
  Note: Parallel with other APM603 controllers only
- Generator management to turn paralleled generators off and on as required by load demand
- Load management to connect and disconnect loads as required
- Controller supports Modbus® RTU, Modbus® TCP, SNMP and BACnet®
- Integrated voltage regulator with ±0.25% regulation
- Built-in alternator thermal overload protection
- UL-listed overcurrent protective device
- NFPA 110 Level 1 capability

Refer to G6-162 for additional controller features and accessories.

BACnet® is a registered trademark of ASHRAE.

KOHLER

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Phone 920-457-4441, Fax 920-459-1646
For the nearest sales and service outlet in the US and Canada, phone 1-800-544-2444
KOHLERPower.com

Standard Features

- Air Cleaner Restrictor Indicator
- Alternator Protection
- Battery Rack and Cables
- Dual Fuel Reset Box (standard on dual fuel models)
- Electronic, Isochronous Governor
- Gas Fuel System (includes fuel mixer, electronic secondary gas regulator, gas solenoid valve, and flexible fuel line between the engine and the skid-mounted fuel system components)
- Integral Vibration Isolation
- Local Emergency Stop Switch
- Oil Drain Extension
- Operation and Installation Literature
- Open Unit Accessory Kit (radiator duct flange, stone guard, flexible exhaust, and three-way catalyst)
- Three- Way Exhaust Catalyst

Available Options

Circuit Breakers

Type

- ❑ Magnetic Trip
- ❑ Thermal Magnetic Trip
- ❑ Electronic Trip (LI)
- ❑ Electronic Trip with Short Time (LSI)
- ❑ Electronic Trip with Ground Fault (LSIG)

Rating

- ❑ 80%
- ❑ 100%

Operation

- ❑ Manual
- ❑ Electrically Operated (for paralleling)

Circuit Breaker Mounting

- ❑ Generator Mounted
- ❑ Remote Mounted
- ❑ Bus Bar (for remote mounted breakers)

Enclosures for Remote Mounted Circuit Breakers

- ❑ NEMA 1
- ❑ NEMA 3R

Approvals and Listings

- ❑ CSA Approval
- ❑ IBC Seismic Certification
- ❑ UL 2200 Listing
- ❑ Hurricane Rated Enclosure

Enclosure

- ❑ Sound Enclosure (with enclosed critical silencer)
- ❑ Weather Enclosure (with enclosed critical silencer)

Open Unit

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

Fuel System

- ❑ Dual Fuel NG/LPG (automatic changeover)
- ❑ Flexible Fuel Line
- ❑ Fuel Filter Kit
- ❑ Secondary Gas Solenoid Valve (NFPA Fuel System)

Controller

- ❑ Common Failure Relay (APM603 Controller only)
- ❑ Four Input/Fifteen Output Module
- ❑ Lockable Emergency Stop
- ❑ Manual Key Switch (APM603 only)
- ❑ Manual Speed Adjust (APM402 only)
- ❑ Remote Emergency Stop
- ❑ Run Relay (Standard with APM603)
- ❑ Remote Annunciator panel
- ❑ Two Input/Five Output Module (APM402 only)

Cooling System

- ❑ Block Heater, 1500 W, 110- 120 V
- ❑ Block Heater, 1500 W, 190- 240 V
  Recommended for ambient temperatures below 10°C (50°F)

Electrical System

- ❑ Battery
- ❑ Battery Charger
- ❑ Battery Charger Temperature Compensation
- ❑ Battery Heater
- ❑ Generator Heater

Miscellaneous

- ❑ Certified Test Report
- ❑ Engine Fluids Added
- ❑ Rated Power Factor Testing
- ❑ Rodent Guards

Literature

- ❑ General Maintenance
- ❑ NFPA 110
- ❑ Overhaul
- ❑ Production

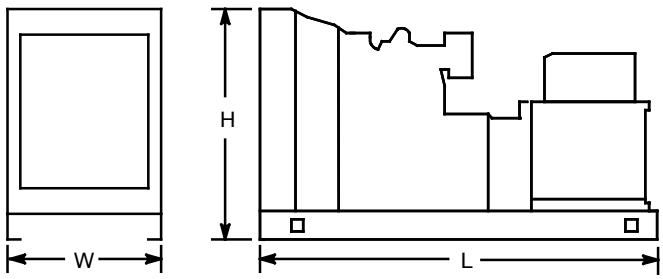
Warranty

- ❑ 2-Year Basic Limited Warranty
- ❑ 5-Year Basic Limited Warranty
- ❑ 5-Year Comprehensive Limited Warranty

Dimensions and Weights

Overall Size, L x W x H, mm (in.) :
2800 x 1120 x 1528 (110.2 x 44.1 x 60.2)

Weight, wet, kg (lb.): 1207 (2660)



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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