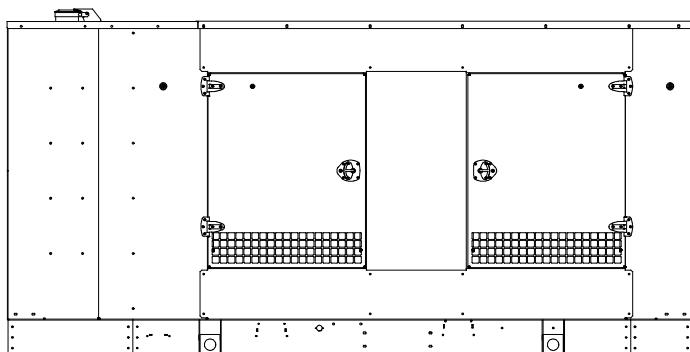




**EPA-Certified for Stationary
Emergency Applications**

Ratings Range

		60Hz	
Standby:	kW	105- 150	
	kVA	105- 188	

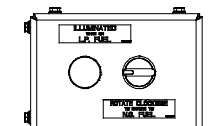


Standard Features

- 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 generator set accepts rated load in one step.
- The 60 Hz generator set engine is certified by the Environmental Protection Agency (EPA) to conform to the New Source Performance Standard (NSPS) for stationary spark-ignited emissions.
- A five- year limited warranty covers all generator set systems and components. A five- year comprehensive warranty is 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.
- Other features:
 - Kohler® APM402 controller. See Controllers on page 3.
 - The electronic, isochronous governor incorporates an integrated drive-by-wire throttle body actuator delivering precise frequency regulation.
- Quick- ship (QS) models with selected features and a five- year basic warranty are available. See your Kohler distributor for details.
- 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.
 - The natural gas rating is available when running on natural gas.

Generator Set Ratings

Alternator	Voltage	Ph	Hz	Natural Gas 130°C Rise		LP Gas 130°C Rise	
				Standby Rating kW/kVA	Amps	Standby Rating kW/kVA	Amps
4R13X	120/208	3	60	135/169	470	135/169	470
	127/220	3	60	140/175	460	140/175	460
	120/240	1	60	105/105	438	105/105	438
	120/240	3	60	135/169	407	135/169	407
	220/380	3	60	120/150	228	120/150	228
	254/440	3	60	140/175	230	140/175	230
	277/480	3	60	150/188	227	150/188	227
4S12X/ 4S13X (Common Ratings)	120/208	3	60	150/188	522	150/188	522
	127/220	3	60	150/188	494	150/188	494
	120/240	3	60	150/188	453	150/188	453
	254/440	3	60	150/188	247	150/188	247
	277/480	3	60	150/188	227	150/188	227
4S12X	347/600	3	60	150/188	181	150/188	181
	120/240	1	60	105/105	438	105/105	438
4S13X	220/380	3	60	140/175	266	140/175	266
	120/240	1	60	110/110	459	110/110	459
4T13X	220/380	3	60	150/188	286	150/188	286
	120/240	1	60	140/140	584	140/140	584



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.

Alternator Specifications

Specifications	Alternator
Manufacturer	Kohler
Type	4-Pole, Rotating-Field
Exciter type	Brushless, Rare-Earth Permanent Magnet
Leads: quantity, type	
4RX, 4SX	12, Reconnectable
4TX	4, 120/240 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 4R13X (12 lead)	540 (60 Hz)
480 V 4S12X (12 lead)	480 (60 Hz)
480 V 4S13X (12 lead)	570 (60 Hz)
240 V 4T13X (4 lead)	440 (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 alternator field.
- Self-ventilated and dripproof construction.
- Windings are vacuum-impregnated with epoxy varnish for dependability and long life.
- Superior voltage waveform from a two-thirds pitch stator and skewed rotor.
- Total harmonic distortion (THD) from no load to full load with a linear load is less than 4%.

Application Data

Engine

Engine Specifications	
Manufacturer	Kohler
Engine: model, type	KG10V08T-6CGS (NG), 10.3 L, 4-Cycle, Turbocharged KG10V08T-6DGS (LPG), 10.3 L, 4-Cycle, Turbocharged
Cylinder arrangement	V-8
Displacement, L (cu. in.)	10.3 (632)
Bore and stroke, mm (in.)	116.8 x 120.6 (4.6 x 4.7)
Compression ratio	9.3:1
Piston speed, m/min. (ft./min.)	434.3 (1425)
Main bearings: quantity, type	5, Tri-Metal
Rated rpm	1800
Max. power at rated rpm (NG), kW (HP)	178(239) NG only 245 (329) Dual fuel
Max. power at rated rpm (LPG), kW (HP)	195 (262)
Cylinder head material	Cast Iron
Piston type and material	Dished Top Cast Aluminum
Crankshaft material	Forged Steel
Valve (exhaust) material	Inconel
Governor type	Electronic
Frequency regulation, no-load to full-load	Isochronous
Frequency regulation, steady state	±0.75%
Frequency	Fixed
Air cleaner type, all models	Dry

Exhaust

Exhaust System	
Exhaust manifold type	Dry
Exhaust flow at rated kW, m ³ /min. (cfm)	30.6 (1081)
Exhaust temperature at rated kW, dry exhaust, °C (°F)	697 (1287)
Maximum allowable back pressure, kPa (in. Hg)	19.8 (5.87)
Exhaust outlet size at engine hookup, mm (in.)	Flanged Outlet at Catalyst see ADV drawing

Engine Electrical

Engine Electrical System	
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, 925
Battery voltage (DC)	12

Fuel

Fuel System	
Fuel type	Natural Gas, LP Gas, or Dual Fuel
Fuel supply line inlet	1.5 NPT
Natural gas, LPG, and Dual fuel supply pressure, kPa (in. H ₂ O)	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.

Application Data

Lubrication

Lubricating System

Type	Full Pressure
Oil pan capacity, L (qt.) ‡	11.3 (12)
Oil pan capacity with filter, L (qt.) ‡	15.1 (16)
Oil filter: quantity, type ‡	1, Cartridge
‡ Kohler recommends the use of Kohler Genuine oil and filters.	

Cooling

Radiator System

Ambient temperature, °C (°F) *	50 (122)
Engine jacket water capacity, L (gal.)	11 (2.9)
Radiator system capacity, including engine, L (gal.)	34 (9)
Engine jacket water flow, Lpm (gpm)	219 (58)
Heat rejected to cooling water at rated kW, dry exhaust, kW (Btu/min.)	99 (5630)
Heat rejected to engine oil at rated kW, dry exhaust, kW (Btu/min.)	18.3 (1041)
Water pump type	Centrifugal
Fan diameter, including blades, mm (in.)	
Natural Gas	750 (29.5)
LP Gas or Dual Fuel	850 (33.4)
Fan, kWm (HP)	
Natural Gas	9 (12)
LP Gas or Dual Fuel	15 (20.1)
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).

Operation Requirements

Air Requirements

Radiator-cooled cooling air, m ³ /min. (scfm) †	269 (9500)
Combustion air, m ³ /min. (cfm)	12.74 (450)
Heat rejected to ambient air:	
Engine, kW (Btu/min.)	45.8 (1476)
Alternator, kW (Btu/min.)	15.7 (893)

† Air density = 1.20 kg/m³ (0.075 lbm/ft³)

Fuel Consumption ‡

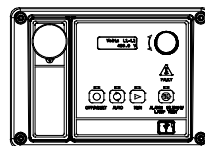
Natural Gas, m ³ /hr. (cfh) at % load	Standby Ratings	
100%	53.1	(1873.5)
75%	41.9	(1480.5)
50%	30.8	(1087.5)
25%	19.7	(694.5)
0%	8.5	(301.5)
LP Gas, m ³ /hr. (cfh) at % load	Standby Ratings	
100%	23.5	(829)
75%	18.5	(654)
50%	13.6	(479)
25%	8.6	(304)
0%	3.7	(129)

‡ Nominal fuel rating: Natural gas, 37 MJ/m³ (1000 Btu/ft.³)
LP vapor, 93 MJ/m³ (2500 Btu/ft.³)

LP vapor conversion factors:

- 8.58 ft.³ = 1 lb.
- 0.535 m³ = 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.

Enclosure Information

- Sound level compared to competitor ratings with no load: 59 dB(A).*
- Sound attenuating enclosure uses acoustic insulation that meets UL 94 HF1 flammability classification and repels moisture absorption.
- Vertical air inlet and outlet discharge with 90 degree bends to redirect air and reduce noise.
- Internal-mounted critical silencer and flexible exhaust connector.
- Skid-mounted, steel (standard) or aluminum (optional) construction with hinged doors.
- Fade-, scratch-, and corrosion-resistant Kohler® Cashmere Power Armor™ textured e-coat paint.
- Lockable, flush-mounted door latches.
- Certified to withstand 299 kph (186 mph) wind load rating (aluminum enclosures only).
- Steel Enclosures withstands 241 kph (150 mph) wind load rating.

* Lowest of 8 points measured around the generator. Sound levels at other points around generator may be higher depending on installation parameters.

Standard Features

- Air Cleaner Restriction indicator
- Alternator Protection
- Battery Rack and Cables
- Closed Crankcase Ventilation (CCV) Filter
- Dual Fuel Reset Box (standard on dual fuel models)
- Flexible Fuel Line (for fuel supply connection)
- 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
- Steel Sound Enclosure
- Three Way Catalyst
- Approvals and Listings:
 - CSA Approval

Available Options

Circuit Breakers

- | Type | Rating |
|---|--|
| <input type="checkbox"/> Magnetic Trip | <input type="checkbox"/> 80% |
| <input type="checkbox"/> Thermal Magnetic Trip | <input type="checkbox"/> 100% |
| <input type="checkbox"/> Electronic Trip (LI) | Operation |
| <input type="checkbox"/> Electronic Trip with Short Time (LSI) | <input type="checkbox"/> Manual |
| <input type="checkbox"/> Electronic Trip with Ground Fault (LSIG) | <input type="checkbox"/> 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

Enclosure

- Aluminum Sound Enclosure

Fuel System

- Flexible Fuel Line
- Fuel Filter Kit
- Secondary Gas Solenoid Valve (UL Fuel System)

Controller

- Two Input/Five Output Module
- Four Input/Fifteen Output Module
- Remote Emergency Stop Switch
- Run Relay, 12 V
- Manual Speed Adjust
- Lockable Emergency Stop
- Remote Annunciator panel

Cooling System

- Block Heater, 1500 W, 110-120 V

Electrical System

- Alternator Strip Heater
- Battery
- Battery Charger (6A or 10A)
- Battery Charger Temperature Compensation
- Battery Heater, 120V

Miscellaneous

- Certified Test Report
- Engine Fluids (oil and coolant) Added
- Rated Power Factor Testing
- Rodent Guards
- Skid End Caps

Literature

- General Maintenance
- Overhaul
- Production

Warranty

- 5-Year Basic Warranty
- 5-Year Comprehensive Warranty

Other Options

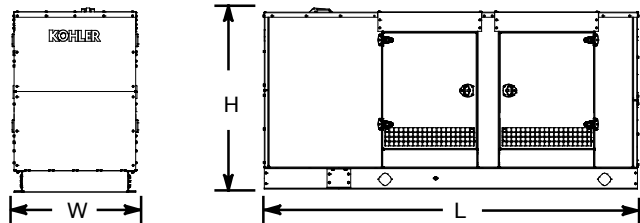
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Dimensions and Weights

Overall Size, L x W x H, mm (in.) : 3502 x 1340 x 1949
 (137.9 x 52.8 x 76.7)

Weight, wet, kg (lb.):
 With standard steel sound enclosure 2132 (4703)
 With aluminum sound enclosure 1976 (4360)

Weight includes generator set with the alternator, engine fluids, sound enclosure, and silencer.



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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