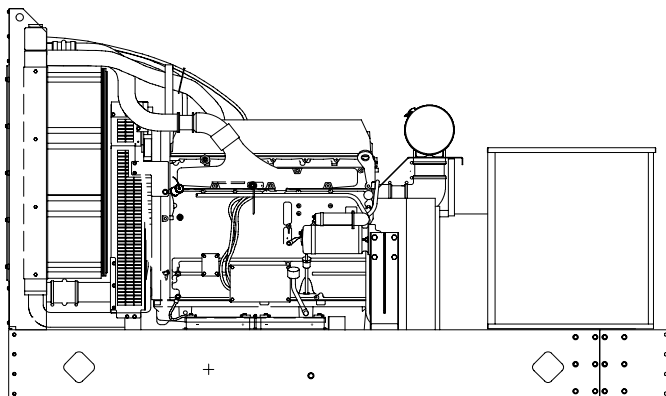




Ratings Range

60 Hz

Standby:	kW	230-240
	kVA	288-300
Prime:	kW	210-215
	kVA	263-269



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.
- A one-year limited warranty covers all systems and components. Two-, five-, and ten-year extended warranties are also available.
- Alternator features:
 - Kohler's Fast-Response™ III wound field (WF) design alternator provides excellent voltage response and short-circuit capability using an auxiliary power brushless exciter.
 - Kohler's unique Fast-Response™ II excitation system delivers excellent voltage response and short circuit capability using a permanent magnet (PM)-excited alternator.
 - The brushless, rotating-field alternator has broadrange reconnectability.
- Other features:
 - Controllers are available for all applications. See controller features inside.
 - Integral vibration isolation eliminates the need for under-unit vibration spring isolators.
 - Electronic engine controls and a generator set microprocessor controller combine to deliver one of the most advanced control systems in today's market.
 - A low-pressure natural gas fuel system enables the generator set to operate with fuel supply pressures as low as 13 cm (5 in.) water column without reducing the generator set's performance.
 - Lean-burn natural gas technology provides maximum power and fuel efficiency.

Generator Set Ratings

Alternator	Voltage	Ph	Hz	130°C Rise Standby Rating		105°C Rise Prime Rating	
				kW/kVA	Amps	kW/kVA	Amps
4UA9W/ 4UA9	120/208	3	60	230/288	798	210/263	729
	120/240	3	60	230/288	692	210/263	632
	127/220	3	60	230/288	754	210/263	690
	139/240	3	60	235/294	707	210/263	632
	220/380	3	60	230/288	437	210/263	399
	277/480	3	60	235/294	353	210/263	316
	347/600	3	60	230/288	277	210/263	253
4UA13W/ 4UA13	120/208	3	60	240/300	833	215/269	747
	120/240	3	60	240/300	722	215/269	647
	127/220	3	60	240/300	787	215/269	706
	139/240	3	60	240/300	722	215/269	647
	220/380	3	60	240/300	456	215/269	409
	277/480	3	60	240/300	361	215/269	324
	347/600	3	60	240/300	289	215/269	259

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 6.5% per 305 m (1000 ft.) elevation above 183 m (600 ft.). Maximum altitude capability is 1524 m (5000 ft.). *Temperature:* No derate for temperature.

Alternator Specifications

Specifications	Alternator
Manufacturer	Kohler
Type	4-Pole, Rotating Field
Exciter type	
Wound field (WF)	Wound Exciter Field with Separate Excitation Power Winding
Permanent magnet (PM)	Brushless, Permanent-Magnet
Leads: quantity, type	12, Reconnectable
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	
Wound field (WF) alternator	±0.25% Average
Permanent magnet (PM) alternator ..	±2% Average
550 controller (with 0.5% drift due to temperature variation)	3-Phase Sensing, ±0.25%
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 4UA9W/4UA9	690
480 V 4UA13W/4UA13	980

- 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.
- 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.
- Fast-Response™ III wound field (WF) brushless alternator with auxiliary power brushless exciter for excellent load response.
- Fast-Response™ II brushless alternator with brushless exciter for excellent load response.

Application Data

Engine

Engine Specifications	60 Hz
Manufacturer	Detroit Diesel
Engine: model, type	S60G, 4-Cycle Turbocharged
Cylinder arrangement	6 Inline
Displacement, L (cu. in.)	12.7 (778)
Bore and stroke, mm (in.)	130 x 160 (5.12 x 6.30)
Compression ratio	10.0:1
Piston speed, m/min. (ft./min.)	576 (1890)
Main bearings: quantity, type	7, Precision Half-Shell
Rated rpm	1800
Max. power at rated rpm, kWm (BHP)	287 (385)
Cylinder head material	Cast Iron
Piston: type, material	Crosshead, Malleable Iron
Crankshaft material	Forged Steel
Valve material:	
Intake	Iron-Based Seat
Exhaust	Nickel-Based Seat
Governor: type, make/model	DDEC Electronic Control
Frequency regulation, no-load to full-load	Isochronous
Frequency regulation, steady state	±0.5%
Frequency	Fixed
Air cleaner type, all models	Dry

Exhaust

Exhaust System	60 Hz
Exhaust flow at rated kW, m ³ /min. (cfm)	57 (2005)
Exhaust temperature at rated kW, dry exhaust, °C (°F)	542 (1008)
Maximum allowable back pressure, kPa (in. Hg)	10.2 (3.0)
Exhaust outlet size at engine hookup, mm (in.)	127 (5)

Engine Electrical

Engine Electrical System	60 Hz
Ignition system	DDEC Electronic Controlled Ignition
Battery charging alternator:	
Ground (negative/positive)	Negative
Volts (DC)	24
Ampere rating	40
Starter motor rated voltage (DC)	24
Battery, recommended cold cranking amps (CCA):	
Quantity, CCA rating	2, 950
Battery, voltage (DC)	12

Fuel

Fuel System	60 Hz
Fuel type	Natural Gas
Fuel supply line inlet	2 NPT
Natural gas fuel supply pressure, measured at the generator set fuel inlet downstream of any fuel system equipment accessories, kPa (oz./in. ²)	1.25-5 (2.9-11.6)
Particulate filter requirement, mm (in.)	0.05 (0.002)

Lubrication

Lubricating System	60 Hz
Type	Full Pressure
Oil pan capacity, L (qt.)	30 (32)
Oil pan capacity with filter, L (qt.)	36 (38)
Oil filter: quantity, type	2, Cartridge
Oil cooler	Water-Cooled
Lubrication oil requirements	15W40 Mobil Delvac GEO or Exxon Estor

Application Data

Cooling

Radiator System	60 Hz
Ambient temperature, °C (°F)	50 (122) *
Engine jacket water capacity, L (gal.)	22.7 (6.0)
Radiator system capacity, including engine, L (gal.)	45.4 (12)
Engine jacket water flow, Lpm (gpm)	363 (96)
Heat rejected to cooling water at rated kW, dry exhaust, kW (Btu/min.)	132.9 (7562)
Heat rejected to charge cooler at rated kW, dry exhaust, kW (Btu/min.)	45.5 (2586)
Water pump type	Centrifugal
Fan diameter, including blades, mm (in.)	991 (39)
Fan, kWm (HP)	21 (28)
Max. restriction of cooling air, intake and discharge side of radiator, kPa (in. H ₂ O)	0.125 (0.5)

* Weather housing reduces ambient temperature capability by 3°C (5°F).

Operation Requirements

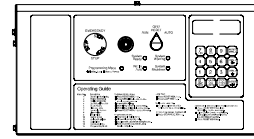
Air Requirements	60 Hz
Radiator-cooled cooling air, m ³ /min. (scfm)†	447 (15800)
Combustion air, m ³ /min. (cfm)	20 (706)
Heat rejected to ambient air:	
Engine, kW (Btu/min.)	130.5 (7423)
Alternator, kW (Btu/min.)	22.0 (1250)

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

Fuel Consumption‡	60 Hz
Natural Gas, m³/hr. (cfh) at % load	Standby Ratings
100%	75 (2650)
75%	59 (2080)
50%	45 (1590)
25%	31 (1100)
Natural Gas, m³/hr. (cfh) at % load	Prime Ratings
100%	68 (2410)
75%	55 (1930)
50%	42 (1490)
25%	28 (980)

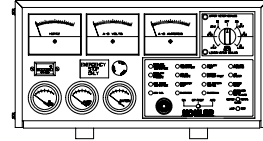
‡ Fuel consumption is based on 1015 Btu/standard cu. ft. natural gas.

Controllers



Decision-Maker™ 550 Controller

Audiovisual annunciation with NFPA 110 Level 1 capability. Programmable microprocessor logic and digital display features. Alternator 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.

Standard Features and Accessories

Additional Standard Features

- Alternator Protection (standard on 550 controller)
- Battery Rack and Cables
- Gas Fuel System (includes fuel mixer, secondary gas regulator, gas solenoid valve, and flexible fuel line between the engine and the skid-mounted fuel system components)
- Oil Drain Extension
- Operation and Installation Literature

Accessories

Enclosed Unit

- Exhaust Silencer, Critical (kit: PA-354258)
- Exhaust Silencer, Residential (kit: PA-354257)
- Silencer Mounting Kit for Housing
- Tail Pipe and Rain Cap Kit
- Weather Housing (with roof-mounted silencer)

Open Unit

- Exhaust Silencer, Critical (kits: PA-354880, PA-354881)
- Exhaust Silencer, Residential (kits: PA-354878, PA-354879)
- Flexible Exhaust Connector, Stainless Steel

Cooling System

- Block Heater
- Radiator Duct Flange

Fuel System

- Flexible Fuel Line (required when the generator set skid is spring mounted)
- Natural Gas Filter
- Secondary Gas Solenoid Valve

Electrical System

- Battery
- Battery Charger, Equalize/Float Type
- Battery Heater

Engine and Alternator

- Alternator, Wound Field (WF)
- Alternator, Permanent Magnet (PM)
- Air Cleaner Restriction Indicator
- Bus Bar Kits
- CSA Certification
- Current Transformer Kit
- Alternator Strip Heater
- Line Circuit Breaker (NEMA1 enclosure)
- Line Circuit Breaker with Shunt Trip (NEMA1 enclosure)
- NFPA 110 Literature
- Rated Power Factor Testing
- Rodent Guards
- Safeguard Breaker (not available with 550 controller)
- Voltage Regulation, 1%
- Voltage Regulator Sensing, Three-Phase

Maintenance

- General Maintenance Literature Kit
- Maintenance Kit (includes air and oil filters)
- Overhaul Literature Kit
- Production Literature Kit

Controller

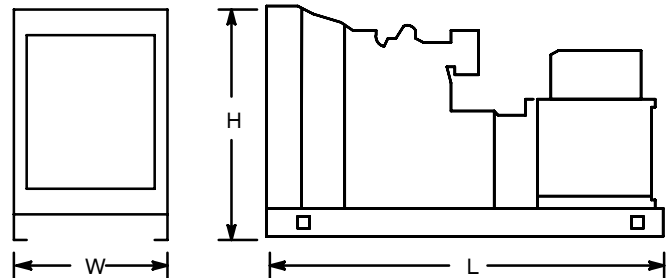
- Common Failure Relay Kit
- Communication Products and PC Software (550 controller only)
- Customer Connection Kit
- Dry Contact Kit (isolated alarm)
- Engine Prealarm Sender Kit
- Extension Wiring Harness for Remote Mounting of Controller
- FASTCHECK® Diagnostic Fault Detector
- Prime Power Switch (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, L x W x H, mm (in.): 3416 x 1270 x 2012
 (134.5 x 50.0 x 79.2)
 Weight (radiator model), wet, kg (lb.) 2849 (6280)



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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