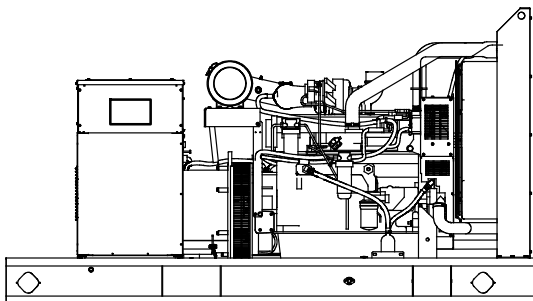




Tier 3 EPA-Certified for Stationary Emergency Applications

Ratings Range

		60 Hz	50 Hz
Standby:	kW	140- 180	105- 168
	kVA	175- 225	105- 210
Prime:	kW	130- 165	100- 160
	kVA	165- 206	100- 200



Generator Set Ratings

Alternator	Voltage	Ph	Hz	130° C Rise Standby Rating		105° C Rise Prime Rating	
				kW/kVA	Amps	kW/kVA	Amps
4S12X	120/208	3	60	155/190	538	140/195	486
	127/220	3	60	160/200	525	150/188	492
	120/240	3	60	155/190	466	140/195	421
	139/240	3	60	180/225	541	165/206	496
	220/380	3	60	140/175	266	130/165	247
	277/480	3	60	180/225	271	165/206	248
	347/600	3	60	170/210	204	155/194	186
	110/190	3	50	132/165	501	124/155	471
	115/200	3	50	140/175	505	128/160	462
	120/208	3	50	144/180	500	136/170	472
4S13X	110/220	3	50	132/165	433	124/155	407
	110/220	1	50	105/105	477	100/100	455
	220/380	3	50	132/165	251	124/155	236
	230/400	3	50	140/175	253	128/160	231
	240/416	3	50	144/180	250	136/170	236
	120/208	3	60	180/225	625	165/206	573
	127/220	3	60	180/225	590	165/206	541
	120/240	3	60	180/225	541	165/206	496
	139/240	3	60	180/225	541	165/206	496
	220/380	3	60	164/205	313	155/194	294
277/480	3	60	180/225	271	165/206	248	
347/600	3	60	180/225	217	160/200	192	
4S13X	110/190	3	50	156/195	593	144/180	547
	115/200	3	50	164/205	592	152/190	548
	120/208	3	50	168/210	583	160/200	555
	110/220	3	50	156/195	512	144/180	472
	110/220	1	50	110/110	500	110/110	500
	220/380	3	50	156/195	296	144/180	273
	230/400	3	50	164/205	296	152/190	274
	240/416	3	50	168/210	291	160/200	278

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.
- The generator set accepts rated load in one step.
- The 60 Hz generator set meets NFPA 110, Level 1, when equipped with the necessary accessories and installed per NFPA standards.
- 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.
- Other features:
 - Kohler designed controllers for one-source system integration and remote communication. See Controllers on page 3.
 - The low coolant level shutdown prevents overheating (standard on radiator models only).
 - Integral vibration isolation eliminates the need for under-unit vibration spring isolators.
 - Multiple circuit breaker configurations.

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. Prime Power Ratings: 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 and ISO-3046-1. For limited running time and continuous ratings, consult the factory. 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	
4SX	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	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, 380 V 4S12X (12 lead)	480 (60 Hz), 380 (50 Hz)
480 V, 380 V 4S13X (12 lead)	570 (60 Hz), 463 (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.
- Windings are vacuum-impregnated with epoxy varnish for dependability and long life.
- Superior voltage waveform from a two-thirds pitch stator and skewed rotor.

Application Data

Engine

Engine Specifications	60 Hz	50 Hz
Manufacturer	John Deere	
Engine model	6068HFG82	
Engine type	4-Cycle, Turbocharged, Charge Air-Cooled	
Cylinder arrangement	6 Inline	
Displacement, L (cu. in.)	6.8 (415)	
Bore and stroke, mm (in.)	106 x 127 (4.19 x 5.00)	
Compression ratio	17.0:1	
Piston speed, m/min. (ft./min.)	457 (1500)	381 (1250)
Main bearings: quantity, type	7, Replaceable Insert	
Rated rpm	1800	1500
Max. power at rated rpm, kWm (BHP)	212 (284)	202 (271)
Cylinder head material	Cast Iron	
Crankshaft material	Forged Steel	
Valve material:		
Intake	Chromium-Silicon Steel	
Exhaust	Stainless Steel	
Governor: type, make/model	JDEC Electronic L14 Denso HP3	
Frequency regulation, no-load to full-load	Isochronous	
Frequency regulation, steady state	±0.25%	
Frequency	Field-Convertible	
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)	29.9 (1056)	30.1 (1063)
Exhaust temperature at rated kW, dry exhaust, °C (°F)	483 (901)	580 (1076)
Maximum allowable back pressure, kPa (in. Hg)	Min. 3 (1.13) Max. 7.5 (2.2)	
Exhaust outlet size at engine hookup, mm (in.)	98 (3.86)	

Engine Electrical

Engine Electrical System (12/24 Volt*)	60 Hz	50 Hz
Battery charging alternator:	24 Volt	
Ground (negative/positive)	Negative	
Volts (DC)	24	
Ampere rating	45	
Starter motor rated voltage (DC)	24	
Battery, recommended cold cranking amps (CCA):		
Quantity, CCA rating each	Two, 950	
Battery voltage (DC)	12	

Fuel

Fuel System	60 Hz	50 Hz
Fuel supply line, min. ID, mm (in.)	11.0 (0.44)	
Fuel return line, min. ID, mm (in.)	6.0 (0.25)	
Max. lift, fuel pump: type, m (ft.)	Electronic, 1.8 (6.0)	
Max. fuel flow, Lph (gph)	92.7 (24.5)	
Max. return line restriction, kPa (in. Hg)	20 (5.9)	
Fuel prime pump	Manual	
Fuel filter		
Primary	30 Microns	
Secondary	2 Microns @ 98% Efficiency	
Water Separator	Yes	
Recommended fuel	#2 Diesel	

Lubrication

Lubricating System	60 Hz	50 Hz
Type	Full Pressure	
Oil pan capacity, L (qt.) §	32.5 (34.4)	
Oil pan capacity with filter, L (qt.) §	33.4 (35.3)	
Oil filter: quantity, type §	1, Cartridge	
Oil cooler	Water-Cooled	
§ Kohler recommends the use of Kohler Genuine oil and filters.		

Application Data

Cooling

Radiator System	60 Hz	50 Hz
Ambient temperature, °C (°F) *	50 (122)	
Engine jacket water capacity, L (gal.)	11.9 (3.2)	
Radiator system capacity, including engine, L (gal.)	27.6 (7.3)	
Engine jacket water flow, Lpm (gpm)	180 (48)	160 (42)
Heat rejected to cooling water at rated kW, dry exhaust, kW (Btu/min.)	85.2 (4850)	86.0 (4895)
Heat rejected to air charge cooler at rated kW, dry exhaust, kW (Btu/min.)	47.3 (2692)	35.6 (2026)
Water pump type	Centrifugal	
Fan diameter, including blades, mm (in.)	787 (31)	
Fan, kWm (HP)	10.1 (13.5)	5.8 (7.8)
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).

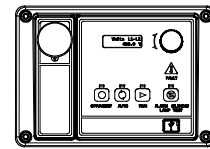
Operation Requirements

Air Requirements	60 Hz	50 Hz
Radiator-cooled cooling air, m ³ /min. (scfm)‡	368.1 (13000)	306.7 (10833)
Combustion air, m ³ /min. (cfm)	16.4 (579)	12.9 (456)
Heat rejected to ambient air:		
Engine, kW (Btu/min.)	37.7 (2152)	
Alternator, kW (Btu/min.)	14.4 (820)	

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

Fuel Consumption	60 Hz	50 Hz
Diesel, Lph (gph) at % load	Standby Rating	
100%	51.8 (13.7)	49.0 (12.9)
75%	42.7 (11.3)	41.3 (10.9)
50%	28.9 (7.6)	28.7 (7.6)
25%	16.6 (4.4)	15.6 (4.1)
Diesel, Lph (gph) at % load	Prime Rating	
100%	48.4 (12.8)	46.4 (12.2)
75%	39.9 (10.6)	35.9 (9.4)
50%	26.7 (7.0)	25.2 (6.6)
25%	15.3 (4.1)	14.6 (3.8)

Controllers

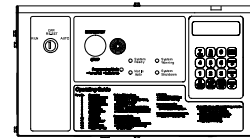


APM402 Controller

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.

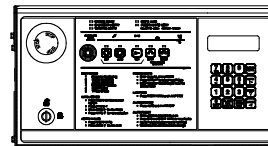


Decision-Maker® 550 Controller

Provides advanced control, system monitoring, and system diagnostics with remote monitoring capabilities.

- Digital display and keypad provide easy local data access
- Measurements are selectable in metric or English units
- Remote communication thru a PC via network or modem configuration
- Controller supports Modbus® protocol
- Integrated voltage regulator with ±0.25% regulation
- Built-in alternator thermal overload protection
- NFPA 110 Level 1 capability

Refer to G6-46 for additional controller features and accessories.



Decision-Maker® 6000 Paralleling Controller

Provides advanced control, system monitoring, and system diagnostics with remote monitoring capabilities for paralleling multiple generator sets.

- Paralleling capability with first-on logic, synchronizer, kW and kVAR load sharing, and protective relays
- Digital display and keypad provide easy local data access
- Measurements are selectable in metric or English units
- Remote communication thru a PC via network or modem configuration
- Controller supports Modbus® protocol
- Integrated voltage regulator with ±0.25% regulation
- Built-in alternator thermal overload protection
- NFPA 110 Level 1 capability

Refer to G6-107 for additional controller features and accessories.

Modbus® is a registered trademark of Schneider Electric.

Standard Features

- Alternator Protection
- Battery Rack and Cables
- Customer Connection
(standard with Decision-Maker® 6000 controller only)
- Local Emergency Stop Switch
- Oil Drain Extension
- Operation and Installation Literature

Available Options

Approvals and Listings

- California OSHPD Approval
- CSA Certified
- IBC Seismic Certification
- UL 2200 Listing
- Hurricane Rated Enclosure

Enclosed Unit

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

Open Unit

- Exhaust Silencer, Critical (kit: PA-354809)
- Flexible Exhaust Connector, Stainless Steel

Fuel System

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

Controller

- Common Failure Relay
(Decision-Maker® 550 and 6000 controllers only)
- Communication Products and PC Software
- Customer Connection (Decision-Maker® 550 controller only)
- Decision-Maker® Paralleling System (DPS)
(Decision-Maker® 6000 controller only)
- Dry Contact (isolated alarm)
(Decision-Maker® 550 and 6000 controllers only)
- Two Input/Five Output Module (APM402 controller only)
- Remote Emergency Stop Switch
- Remote Serial Annunciator Panel
- Run Relay
- Manual Speed Adjust
(Decision-Maker® 550 and APM402 controllers only)

Cooling System

- Block Heater, 1800 W, 90- 120 V, 1 Ph
- Block Heater, 2000 W, 190- 240 V, 1 Ph
Required for ambient temperature below 0°C (32°F)
- Radiator Duct Flange

Electrical System

- Alternator Strip Heater
- Battery
- Battery Charger, Equalize/Float Type
- Battery Heater
- Line Circuit Breaker (NEMA type 1 enclosure)
- Line Circuit Breaker with Shunt Trip (NEMA type 1 enclosure)

Miscellaneous

- Air Cleaner, Heavy Duty
- Air Cleaner Restriction Indicator
- Certified Test Report
- Crankcase Emissions Canister
- 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

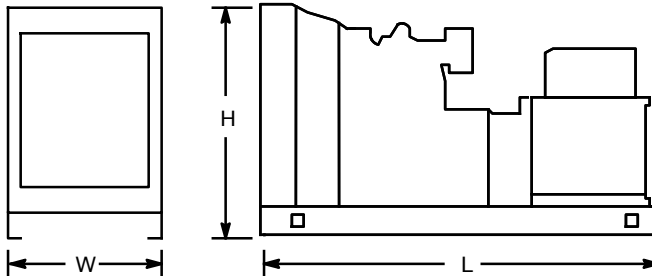
Other Options

- _____
- _____
- _____
- _____
- _____

Dimensions and Weights

Overall Size, L x W x H, mm (in.): 3000 x 1300 x 1668
(118.1 x 51.2 x 65.7)

Weight (radiator model), wet, kg (lb.): 1447 (3190)



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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