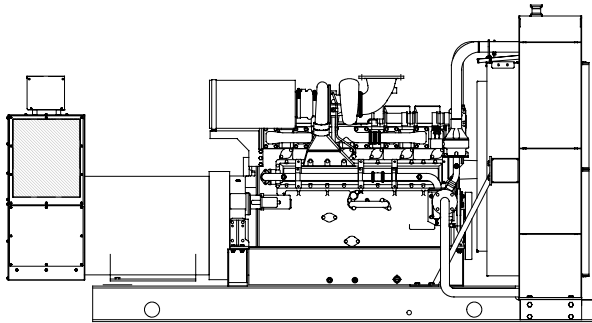




Tier 2 EPA-Certified for Stationary Emergency Applications

Ratings Range

		60 Hz
Standby:	kW	565-615
	kVA	706-769
Prime:	kW	525-560
	kVA	656-700



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.
- The generator set complies with ISO 8528-5, Class G3, requirements for transient performance.
- A one-year limited warranty covers all systems and components. Two-, five-, and ten-year extended warranties are also available.
- Alternator features:
 - The pilot-excited, permanent magnet (PM) alternator provides superior short-circuit capability.
 - The brushless, rotating-field alternator has broadrange reconnectability.
- Other features:
 - Controllers are available for all applications. See controller features inside.
 - The low coolant level shutdown prevents overheating (standard on radiator models only).
 - Integral vibration isolation eliminates the need for under-unit vibration spring isolators.
 - An electronic, isochronous governor delivers precise frequency regulation.

Generator Set Ratings

Alternator	Voltage	Ph	Hz	150°C Rise Standby Rating		130°C Rise Standby Rating		125°C Rise Prime Rating		105°C Rise Prime Rating	
				kW/kVA	Amps	kW/kVA	Amps	kW/kVA	Amps	kW/kVA	Amps
5M4030	120/208	3	60	600/750	2084	565/706	1962	545/681	1893	525/656	1823
	127/220	3	60	600/750	1971	590/738	1939	545/681	1789	545/681	1789
	139/240	3	60	605/756	1821	600/750	1806	550/688	1657	545/681	1640
	240/416	3	60	600/750	1042	565/706	981	545/681	946	525/656	912
	277/480	3	60	605/756	910	600/750	903	550/688	829	545/681	820
5M4032	120/208	3	60	605/756	2101	605/756	2101	550/688	1912	550/688	1912
	127/220	3	60	610/763	2005	610/763	2005	555/694	1823	555/694	1823
	139/240	3	60	610/763	1838	610/763	1838	555/694	1671	555/694	1671
	220/380	3	60	595/744	1132	595/744	1132	540/675	1027	540/675	1027
	240/416	3	60	605/756	1050	605/756	1050	550/688	956	550/688	956
	277/480	3	60	610/763	919	610/763	919	555/694	836	555/694	836
5M4164	220/380	3	60	610/763	1161	610/763	1161	555/694	1056	555/694	1056
5M4272	347/600	3	60	605/756	728	600/750	723	550/688	663	545/681	656
5M4276	347/600	3	60	615/769	740	615/769	740	560/700	674	560/700	674

RATINGS: All three-phase units are rated at 0.8 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
Type	4-Pole, Rotating-Field
Exciter type	Brushless, Permanent-Magnet Pilot Exciter
Voltage regulator	Solid State, Volts/Hz
Insulation:	NEMA MG1
Material	Class H, Synthetic, Nonhygroscopic
Temperature rise	130°C, 150°C Standby
Bearing: quantity, type	1, Sealed
Coupling	Flexible Disc
Amortisseur windings	Full
Rotor balancing	125%
Voltage regulation, no-load to full-load (with <0.5% drift due to temp. 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 5M4030 (10 lead)	1775
480 V 5M4032 (10 lead)	2200
380 V 5M4164 (4 lead)	2300
600 V 5M4272 (4 lead)	1750
600 V 5M4276 (4 lead)	2800

- 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 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	
Manufacturer	Mitsubishi
Engine model	S6R-Y2PTAW-1
Engine type	4-Cycle, Turbocharged
Cylinder arrangement	6 Inline
Displacement, L (cu. in.)	24.51 (1496)
Bore and stroke, mm (in.)	170 x 180 (6.69 x 7.09)
Compression ratio	14.5:1
Piston speed, m/min. (ft./min.)	648 (2126)
Main bearings: quantity, type	7, Precision Half-Shell
Rated rpm	1800
Max. power at rated rpm, kWm (BHP)	685 (918)
Cylinder head material	Cast Iron
Crankshaft material	Forged Steel
Governor type	Electronic
Frequency regulation, no-load to full-load	Isochronous
Frequency regulation, steady state	±0.25%
Frequency	Fixed
Air cleaner type, all models	Dry

Exhaust

Exhaust System	
Exhaust manifold type	Dry
Exhaust flow at rated kW, m ³ /min. (cfm)	179 (6320)
Exhaust temperature at rated kW, dry exhaust, °C (°F)	465 (888)
Maximum allowable back pressure, kPa (in. Hg)	5.9 (1.7)
Exhaust outlet size at engine hookup, mm (in.)	See ADV drawing

Engine Electrical

Engine Electrical System		
Battery charging alternator:		
Ground (negative/positive)	Negative	
Volts (DC)	24	
Ampere rating	30	
Starter motor rated voltage (DC)	24	
Battery, recommended cold cranking amps (CCA):		
Quantity, CCA rating above 0°C (32°F), each	Two, 800	
Quantity, CCA rating below 0°C (32°F) each	Four, 920	
Battery voltage (DC)	12	

Fuel

Fuel System	
Fuel supply line, min. ID, mm (in.)	19 (0.75)
Fuel return line, min. ID, mm (in.)	19 (0.75)
Max. lift, engine-driven fuel pump, m (ft.)	1.0 (3.0)
Max. fuel flow, Lph (gph)	240 (63)
Max. fuel pump restriction, kPa (in. Hg)	10 (3.0)
Fuel filter: quantity, type	2, Cartridge
Recommended fuel	#2 Diesel

Lubrication

Lubricating System	
Type	Full Pressure
Oil pan capacity, L (qt.)	80 (84.5)
Oil pan capacity with filter, L (qt.)	100 (105.7)
Oil filter: quantity, type	3, Cartridge
Oil cooler	Water-Cooled

Application Data

Cooling

Radiator System	
Ambient temperature, °C (°F)*	40 (104)
Engine jacket water capacity, L (gal.)	50 (13)
Radiator system capacity, including engine, L (gal.)	178 (47)
Engine jacket water flow, Lpm (gpm)	800 (211)
Charge cooler water flow, Lpm (gpm)	400 (106)
Heat rejected to cooling water at rated kW, dry exhaust, kW (Btu/min.)	257 (14622)
Heat rejected to charge cooler water at rated kW, dry exhaust, kW (Btu/min.)	237 (13497)
Water pump type	Centrifugal
Fan diameter, including blades, mm (in.)	1219 (48)
Fan, kWm (HP)	29 (39)
Max. restriction of cooling air, intake and discharge side of radiator, kPa (in. H ₂ O)	0.125 (0.5)

High Ambient Radiator System	
Ambient temperature, °C (°F)*	50 (122)
Engine jacket water capacity, L (gal.)	50 (13)
Radiator system capacity, including engine, L (gal.)	253 (67)
Engine jacket water flow, Lpm (gpm)	800 (211)
Charge cooler water flow, Lpm (gpm)	400 (106)
Heat rejected to cooling water at rated kW, dry exhaust, kW (Btu/min.)	257 (14622)
Heat rejected to charge cooler water at rated kW, dry exhaust, kW (Btu/min.)	237 (13497)
Water pump type	Centrifugal
Fan diameter, including blades, mm (in.)	1219 (48)
Fan, kWm (HP)	29 (39)
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).

Remote Radiator System†	
Exhaust manifold type	Dry
Connection sizes:	
Jacket water engine inlet, mm (in.)	89 (3.5)
Jacket water engine outlet, mm (in.)	64 (2.5)
Intercooler water engine inlet, mm (in.)	64 (2.5)
Intercooler water engine outlet, mm (in.)	76 (3.0)
Static head allowable above engine, kPa (ft. H ₂ O)	98 (32.8)

† Contact your local distributor for cooling system options and specifications based on your specific requirements.

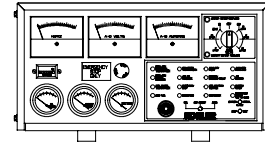
Operation Requirements

Air Requirements	
Radiator-cooled cooling air, m ³ /min. (scfm)‡	838 (29600)
High ambient radiator-cooled cooling air, m ³ /min. (scfm)‡	1108 (39130)
Cooling air required for generator set when equipped with city cooling water or remote radiator, based on 14°C (25°F) rise, m ³ /min. (scfm)‡	374 (13200)
Combustion air, m ³ /min. (cfm)	68 (2401)
Heat rejected to ambient air:	
Engine, kW (Btu/min.)	59 (3374)
Alternator, kW (Btu/min.)	45 (2560)

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

Fuel Consumption		
Diesel, Lph (gph) at % load	Standby Rating	
100%	193	(50.8)
75%	140	(36.9)
50%	95	(25.2)
25%	55	(14.5)
Diesel, Lph (gph) at % load	Prime Rating	
100%	173	(45.6)
75%	131	(34.6)
50%	89	(23.6)
25%	48	(12.7)

Controllers

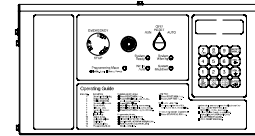


Decision-Maker® 3+ Controller

Provides system control and monitoring capabilities.

- Analog display using AC meters, engine gauges, and voltage selector switch.
- 16-light status, warning, and shutdown fault annunciation.
- Alarm horn, emergency stop switch, and hour meter features.
- Remote annunciation options.
- Remote start and prime power options.

Refer to G6-30 for additional controller features and accessories.

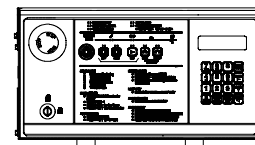


Decision-Maker® 550 Controller

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.

Additional Standard Features

- Alternator Protection
(standard with Decision-Maker® 550 and 6000 controllers)
- Oil Drain Extension
- Operation and Installation Literature
- Reactive Droop Compensation
(standard with Decision-Maker® 550 and 6000 controllers)

Available Options

Approvals and Listings

- CSA Approval
- Rated Power Factor Testing
- UL 2200 Listing

Enclosed Unit

- Sound Enclosure/Fuel Tank Package
- Weather Enclosure/Fuel Tank Package

Open Unit

- Exhaust Silencer, Hospital (kits: PA-354911, PA-354912)
- Exhaust Silencer, Critical (kits: PA-354898, PA-354901)
- Flexible Exhaust Connector, Stainless Steel

Fuel System

- Flexible Fuel Lines
- Fuel Pressure Gauge
- Fuel/Water Separator

Controller

- Common Failure Relay
- Communication Products and PC Software
(Decision-Maker® 550 and 6000 controllers)
- Customer Connection
(Decision-Maker® 3+ and 550 controllers)
- Dry Contact (isolated alarm)
- Prime Power Switch
(Decision-Maker® 550 and 6000 controllers)
- Remote Audiovisual Alarm Panel
- Remote Emergency Stop
- Remote Mounting Cable
(Decision-Maker® 3+ and 550 controllers)
- Remote Serial Annunciator Panel
- Run Relay

Cooling System

- Block Heater;
Recommended for Ambient Temperatures Below 20°C (68°F)
- High Ambient Radiator
- Remote Radiator Cooling Setup

Electrical System

- Alternator Strip Heater
- Battery
- Battery Charger, Equalize/Float Type
- Battery Heater
- Battery Rack and Cables
- Bus Bar (standard on 7M alternators, 380-600 volt only)
- Line Circuit Breaker (NEMA type 1 enclosure)
- Line Circuit Breaker with Shunt Trip (NEMA type 1 enclosure)
- Safeguard Breaker (Decision-Maker® 3+ controller only)

Paralleling System

- Decision-Maker® Paralleling System (DPS)
(Decision-Maker® 6000 controller only)
- Reactive Droop Compensator
(Decision-Maker® 3+ controller only)
- Remote Voltage Adjustment Control
- Voltage Regulator Relocation (Decision-Maker® 3+ controller only)

Miscellaneous

- Air Cleaner, Heavy Duty
- Air Cleaner Restriction Indicator
- Engine Fluids
- Oil Temperature Gauge

Literature

- General Maintenance
- NFPA 110
- Overhaul
- Production

Warranty

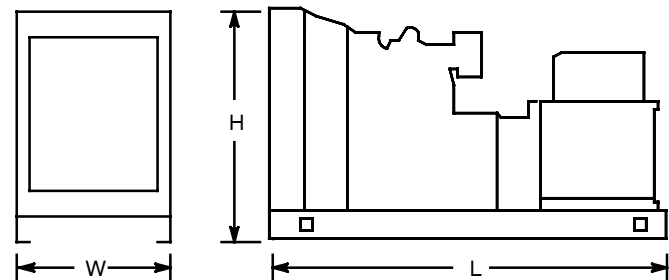
- 2-Year Basic
- 2-Year Prime
- 5-Year Basic
- 5-Year Comprehensive
- 10-Year Major Components

Other Options

- _____
- _____
- _____

Dimensions and Weights

Overall Size, L x W x H, max., mm (in.): 4010 x 1702 x 2255
 (157.9 x 67.0 x 88.8)
 Weight (radiator model), wet, max., kg (lb.): 5897 (13000)



Note: This drawing is provided for reference only and should not be used for planning the installation. Contact your local distributor for more detailed information.

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