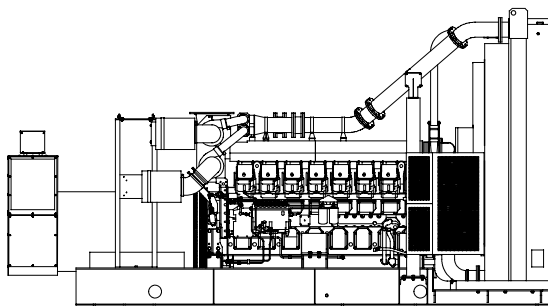




Ratings Range

		60 Hz	50 Hz
Standby:	kW	1480-1830	1280-1624
	kVA	1850-2288	1600-2030
Prime:	kW	1350-1660	1200-1480
	kVA	1688-2075	1500-1850



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.
- At 60 Hz, 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:
 - The low coolant level shutdown prevents overheating (standard on radiator models only).
 - The generator set is direct-mounted to the skid.

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
7M4052	220/380	3	60	1480/1850	2811	1480/1850	2811	1350/1688	2564	1350/1688	2564
	240/416	3	60	1620/2025	2810	1610/2013	2793	1470/1838	2550	1460/1825	2533
	277/480	3	60	1750/2188	2631	1750/2188	2631	1650/2063	2481	1600/2000	2406
7M4054	220/380	3	50	1480/1850	2811	1420/1775	2697	1420/1775	2697	1320/1650	2507
	230/400	3	50	1488/1810	2613	1344/1680	2425	1344/1680	2425	1240/1550	2237
	240/416	3	50	1380/1725	2394	1280/1600	2221	1280/1600	2221	1200/1500	2082
7M4056	220/380	3	60	1590/1988	3020	1590/1988	3020	1450/1813	2754	1450/1813	2754
	240/416	3	60	1820/2275	3157	1820/2275	3157	1650/2063	2862	1650/2063	2862
	277/480	3	60	1820/2275	2736	1820/2275	2736	1650/2063	2481	1650/2063	2481
7M4058	220/380	3	50	1584/1980	3008	1528/1910	2902	1480/1850	2811	1400/1750	2659
	230/400	3	50	1624/2030	2930	1536/1920	2771	1480/1850	2670	1424/1780	2569
	240/416	3	50	1608/2010	2790	1500/1875	2602	1480/1850	2568	1380/1725	2394
7M4176	220/380	3	60	1830/2288	3475	1790/2238	3475	1650/2063	3153	1650/2063	3153
	240/416	3	60	1830/2288	3175	1830/2288	3175	1660/2075	2880	1660/2075	2880
	277/480	3	60	1830/2288	2751	1830/2288	2751	1660/2075	2496	1660/2075	2496
7M4292	220/380	3	50	1624/2030	3084	1624/2030	3084	1480/1850	2811	1480/1850	2811
	230/400	3	50	1624/2030	2930	1624/2030	2930	1480/1850	2670	1480/1850	2670
	240/416	3	50	1624/2030	2817	1624/2030	2817	1480/1850	2568	1480/1850	2568
7M4370	220/380	3	60	1830/2288	3475	1830/2288	3475	1660/2075	3153	1660/2075	3153
	240/416	3	60	1830/2288	3175	1830/2288	3175	1660/2075	2880	1660/2075	2880
	277/480	3	60	1830/2288	2751	1830/2288	2751	1660/2075	2496	1660/2075	2496
7M4374	220/380	3	50	1624/2030	3084	1624/2030	3084	1480/1850	2811	1480/1850	2811
	230/400	3	50	1624/2030	2930	1624/2030	2930	1480/1850	2670	1480/1850	2670
	240/416	3	50	1624/2030	2817	1624/2030	2817	1480/1850	2568	1480/1850	2568
7M4374	220/380	3	60	1820/2275	3457	1820/2275	3457	1650/2063	3134	1650/2063	3134
	240/416	3	60	1820/2275	2189	1820/2275	2189	1650/2063	1985	1650/2063	1985
	1905/3300	3	50	1624/2030	355	1520/1900	332	1480/1850	324	1400/1750	306
7M4374	2400/4160	3	60	1820/2275	316	1820/2275	316	1650/2063	286	1650/2063	286
	1905/3300	3	50	1624/2030	355	1600/2000	350	1480/1850	324	1448/1810	317

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 2.5% per 300 m (984 ft.) elevation above 1500 m (4921 ft.). **Temperature:** Derate 11.5% per 10°C (18°F) temperature above 45°C (113°F) up to a maximum temperature of 55°C (131°F).

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% 60 Hz
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, 380 V 7M4052 (4 bus bar)	5500 (60Hz), 4000 (50 Hz)
480 V, 380 V 7M4054 (4 bus bar)	7000 (60Hz), 4800 (50 Hz)
480 V, 380 V 7M4056 (4 bus bar)	7200 (60Hz), 5200 (50 Hz)
480 V, 380 V 7M4058 (4 bus bar)	11000 (60Hz), 6600 (50 Hz)
380 V 7M4176 (4 bus bar)	5400 (60Hz)
600 V 7M4292 (4 bus bar)	4250 (60Hz)
4160 V, 3300 V 7M4370 (6 lead)	5500 (60Hz), 3000 (50 Hz)
4160 V, 3300 V 7M4374 (6 lead)	6200 (60Hz), 3750 (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 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	60 Hz	50 Hz
Engine manufacturer, model	Mitsubishi	
	S16R-Y1PTAA2-1	S16R-Y1PTAA2-3
Engine model	D1820 65.4A60	D1820 65.4A50
Engine type	4-Cycle, Turbocharged, Air-to-Air Charge Cooled	
Cylinder arrangement	16 V	
Displacement, L (cu. in.)	65.4 (3989)	
Bore and stroke, mm (in.)	170 x 180 (6.69 x 7.09)	
Compression ratio	14.0:1	
Piston speed, m/min. (ft./min.)	648 (2126)	540 (1772)
Main bearings: quantity, type	7, Precision Half-Shell	
Rated rpm	1800	1500
Max. power at rated rpm, kWm (BHP)	2150 (2882)	1939 (2599)
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	

Engine Electrical

Engine Electrical System	60 Hz	50 Hz
Battery charging alternator:		
Ground (negative/positive)		Negative
Volts (DC)		24
Ampere rating		30
Starter motor rated voltage (DC)		Dual, 24
Battery, recommended cold cranking amps (CCA):		
Quantity, CCA rating each		Four, 1150
Battery voltage (DC)		12

Fuel

Fuel System	60 Hz	50 Hz
Fuel supply line, min. ID, mm (in.)		25 (1.0)
Fuel return line, min. ID, mm (in.)		19 (0.75)
Max. lift, engine-driven fuel pump, m (ft.)		1 (3)
Max. fuel flow, Lph (gph)		720 (190)
Max. fuel pump restriction, kPa (in. Hg)		10 (3.0)
Fuel filter: quantity, type		4, Secondary
Recommended fuel		#2 Diesel

Lubrication

Lubricating System	60 Hz	50 Hz
Type		Full Pressure
Oil pan capacity, L (qt.)		200 (211)
Oil pan capacity with filter, L (qt.)		250 (264)
Oil filter: quantity, type		4, Cartridge
Oil cooler		Water-Cooled

Exhaust

Exhaust System	60 Hz	50 Hz
Exhaust manifold type		Dry
Exhaust flow at rated kW, m³/min. (cfm)	433 (15289)	390 (13771)
Exhaust temperature at rated kW, dry exhaust, °C (°F)	506 (943)	512 (954)
Maximum allowable back pressure, kPa (in. Hg)		5.9 (1.7)
Exhaust outlet size at engine hookup, mm (in.)		See ADV drawing

Application Data

Cooling

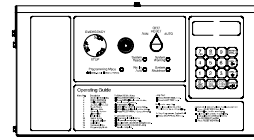
Radiator System	60 Hz	50 Hz
Ambient temperature °C (°F)	45 (113)	
Engine jacket water capacity, L (gal.)	170 (44.9)	
Radiator system capacity, including engine, L (gal.)	413 (109)	
Engine jacket water flow, Lpm (gpm)	1850 (489)	1650 (436)
Heat rejected to cooling water at rated kW, dry exhaust, kW (Btu/min.)	621 (35339)	560 (31851)
Heat rejected to charge cooling air at rated kW, dry exhaust, kW (Btu/min.)	574 (32621)	517 (29401)
Water pump type	Centrifugal	
Fan diameter, including blades, mm (in.)	1895 (75)	
Fan kWm (HP)	44 (59)	
Max. restriction of cooling air, intake and discharge side of radiator, kPa (in. H ₂ O)	0.125 (0.5)	

Operation Requirements

Air Requirements	60 Hz	50 Hz
Radiator-cooled cooling air, m ³ /min. (scfm)†	2500 (88275)	
Combustion air, m ³ /min. (cfm)	164 (5791)	148 (5226)
Heat rejected to ambient air:		
Engine, kW (Btu/min.)	143 (8155)	129 (7350)
Alternator, kW (Btu/min.)	88 (5004)	
† Air density = 1.20 kg/m ³ (0.075 lbm/ft ³)		

Fuel Consumption	60 Hz	50 Hz
Diesel, Lph (gph) at % load	Standby Rating	
100%	461 (121.9)	416 (109.8)
75%	348 (92.0)	309 (81.5)
50%	243 (64.2)	212 (56.1)
25%	142 (37.4)	121 (31.9)
Diesel, Lph (gph) at % load	Prime Rating	
100%	418 (110.5)	374 (98.8)
75%	319 (84.2)	281 (74.3)
50%	226 (59.6)	196 (51.8)
25%	136 (35.8)	115 (30.3)

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.

Additional Standard Features

- Alternator Strip Heater (standard on 3300 volt and above)
- Electronic, Isochronous Governor
- Oil Drain Extension
- Operation and Installation Literature

Available Accessories

Open Unit

- Exhaust Silencer, Hospital (kit: PA-361627)
- Exhaust Silencer, Critical (kit: PA-361625)
- Flexible Exhaust Connector, Stainless Steel

Cooling System

- Block Heater
[recommended for ambient temperatures below 20°C (68°F)]
- Radiator Duct Flange

Fuel System

- Flexible Fuel Lines
- Fuel Pressure Gauge
- Subbase Fuel Tank with Day Tank

Electrical System

- Battery
- Battery Charger, Equalize/Float Type
- Battery Heater
- Battery Rack and Cables

Engine and Alternator

- Air Cleaner, Heavy Duty
- Air Cleaner Restriction Indicator
- Alternator Strip Heater (available up to 600 volt)
- Bus Bar Kits (standard on 7M alternators, 380–600 volt only)
- Crankcase Emissions Canister
- Fuel/Water Separator
- Line Circuit Breaker (NEMA type 1 enclosure)
- Line Circuit Breaker with Shunt Trip (NEMA type 1 enclosure)
- Oil Temperature Gauge
- Rated Power Factor Testing
- Spring Isolators

Paralleling System

- Load-Sharing Module
- Voltage Adjustment Control (manual)

Maintenance

- General Maintenance Literature Kit
- Maintenance Kit (includes air, oil, and fuel filters)
- NFPA 110 Literature
- Overhaul Literature Kit
- Production Literature Kit

Controller

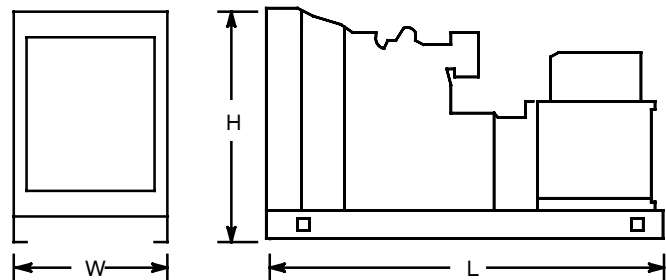
- Common Failure Relay Kit
- Communication Products and PC Software
- Customer Connection Kit
- Dry Contact Kit (isolated alarm)
- Remote Annunciator Panel
- Remote Audiovisual Alarm Panel
- Remote Emergency Stop Kit
- Remote Mounting Cable
- Run Relay Kit

Miscellaneous Accessories

- _____
- _____
- _____
- _____
- _____
- _____
- _____

Dimensions and Weights

Overall Size, L x W x H, max., mm (in.): 6005 x 2212 x 3244
 (236.4 x 87.1 x 127.7)
 Weight (radiator model), wet, max., kg (lb.): 15876 (35000)



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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