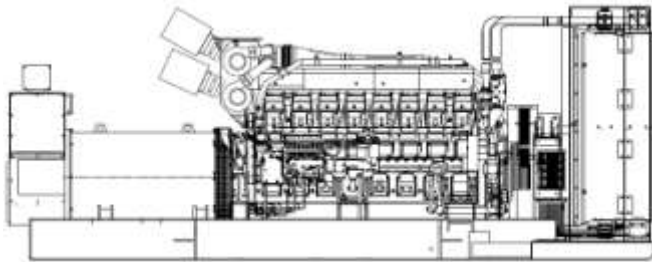




Ratings Range

		50 Hz
Standby:	kW	1950-2000
	kVA	2438-2500
Prime:	kW	1780-1800
	kVA	2225-2250
DCC :	kW	1780-1800
	kVA	2225-2250



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 complies with ISO 8528-5, Class G3 requirements for transient performance.
- The generator set accepts rated load in one step.
- A standard 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 broad range reconnectability.
- Other features:
 - Kohler designed controllers for guaranteed system integration and remote communication. See Controllers on page 3.
 - The low coolant level shutdown prevents overheating. (Standard on radiator models only).
 - An electronic, isochronous governor delivers precise frequency regulation.
 - Multiple circuit breaker configurations.

Alternator	Voltage	Ph	Hz	150°C Rise Standby Rating		125°C Rise Prime Rating		125°C Rise DCC Rating	
				kW/kVA	Amps	kW/kVA	Amps	kW/kVA	Amps
7M8059	220/380	3	50	2000/2500	3798	1800/2250	3418	1800/2250	3418
	230/400	3	50	2000/2500	3608	1800/2250	3247	1800/2250	3247
	240/415	3	50	1950/2438	3391	1780/2225	3095	1780/2225	3095

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. DCC : Data Center Continuous Power ratings apply to Data Center installations where a reliable utility power is available and comply with Uptime institute Tier III and IV requirements. At constant or varying load, the number of generator set operating hours is unlimited. Average load: ≤ 100%. For limited running time and base load ratings, consult the factory. General guideline for deration: Altitude = Derate 2.5% per 300m (984ft) elevation above 1500m (4921 ft) up to 5000m (16400 ft), Temperature = Derate 7.5% per 10°C (18°F) temperature above 40°C (104°F) up to a maximum temperature of 60°C (140°F). 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	Generator
Type	4-Pole, Rotating-Field
Exciter type	Brushless, Permanent-Magnet Pilot Exciter
Voltage regulator	Solid State, Volts/Hz
Insulation:	NEMA MG1
Material	Class H
Temperature rise	125°C Prime, 150°C Standby
Bearing: quantity, type	1, Sealed
Coupling	Flexible Disc
Amortisseur windings	Full
Rotor balancing	125%
Voltage regulation, steady state duty	3-Phase Sensing, ±0.25%
Unbalanced load capability	100% of Rated Standby Current
Peak motor starting kVA:	(35% dip for voltages below)
380 V 7M8059 (4 bus bar)	7500 (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.
- Brushless alternator with brushless pilot exciter for excellent load response.

Application Data

Engine

Engine Specifications	50 Hz
Engine model	S16R2-PTAW
Engine type	4-Cycle, Turbocharged
Cylinder arrangement	16-V
Displacement, L (cu. in.)	79.9 (4879)
Bore and stroke, mm (in.)	170 x 220 (6.69 x 8.66)
Compression ratio	14.0:1
Piston speed, m/min. (ft./min.)	660 (2165)
Main bearings: quantity, type	7, Precision Half-Shell
Rated rpm	1500
Max. power at rated rpm, kWm (BHP)	2167 (2905)
Cylinder head material	Cast Iron
Crankshaft material	Forged Steel
Governor: type, make/model	Electronic
Frequency regulation, no-load to full-load	Isochronous
Frequency	Fixed
Air cleaner type, all models	Dry

Exhaust

Exhaust System	50 Hz
Exhaust manifold type	Dry
Exhaust flow at rated kW, m ³ /min. (cfm)	498 (17584)
Exhaust temperature at rated kW, dry exhaust, °C (°F)	508 (946)
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	50 Hz
Battery charging alternator:	
Ground (negative/positive)	Negative
Volts (DC)	24
Ampere rating	35
Starter motor rated voltage (DC)	Dual, 24
Battery, recommended cold cranking amps (CCA):	
Qty., CCA rating	4, 1000
Battery voltage (DC)	12

Fuel

Fuel System	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)	1128 (298.4)
Max. fuel pump restriction, kPa (in. Hg)	10 (3.0)
Fuel filter: quantity, type	4, Secondary
Recommended fuel	#2 Diesel

Lubrication

Lubricating System	50 Hz
Type	Full Pressure
Oil pan capacity, L (qt.)	200 (211)
Oil pan capacity with filter, L (qt.)	290 (306)
Oil filter: quantity, type	4, Cartridge
Oil Cooler	Water-Cooled

Application Data

Controllers

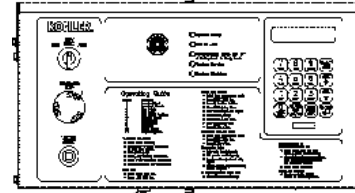
Cooling

Radiator System	50 Hz
Ambient Temperature, °C (°F)	40 (104)
Engine jacket water capacity, L (gal.)	157 (41.5)
Radiator system capacity, including engine, L (gal.)	515 (136)
Engine jacket water flow, Lpm, (gpm)	1650 (436)
Charge cooler water flow, ±Lpm (gpm)	920 (243)
Heat rejected to cooling water at rated kW, dry exhaust, kW (Btu/min.)	750 (42833)
Heat rejected to charge cooling water at rated kW, dry exhaust, kW(Btu/min.)	555 (31728)
Water pump type	Centrifugal
Fan diameter, including blades, mm(in)	1880 (74)
Fan, kWm (HP)	72 (96.5)
Max. restriction of cooling air, intake and discharge side of radiator, kPa (in. H ₂ O)	0.125 (0.5)

Operation Requirements

Air Requirements	50 Hz
Radiator-cooled cooling air, m ³ /min. (scfm) ~	2777 (98000)
Combustion air, m ³ /min. (cfm)	188 (6638)
Heat rejected to ambient air:	
Engine, kW (Btu/min.)	165 (9438)
Generator, kW (Btu/min.)	89 (5112)
~ Air density = 1.20 kg/m ³ (0.075 lbm/ft ³)	

Fuel Consumption	50 Hz
Diesel, Lph (gph) at % load	Standby Rating
100%	542 (143.4)
75%	399 (105.5)
50%	268 (70.9)
Diesel, Lph (gph) at % load	Prime Rating
100%	485 (128.3)
75%	368 (97.3)
50%	251 (66.4)



Decision-Maker[®] 550 Controller

Audiovisual annunciation with NFPA 110 Level 1 capability.

Programmable microprocessor logic and digital display features.
Generator safeguards 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.

Standard Features and Accessories

Additional Standard Features

- Alternator Protection
- Electronic, Isochronous Governor
- Oil Drain Extension
- Operation and Installation Literature
- Pilot-Excited, Permanent Magnet Generator (PMG)

Accessories

Open Unit

- Exhaust Silencer, Hospital
- Exhaust Silencer, Critical
- Exhaust Silencer, Residential
- Exhaust Silencer, Industrial
- 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 Generator

- Air Cleaner, Heavy Duty
- Air Cleaner Restriction Indicator
- Bus Bar Kits (standard on 7M generators, 380-600 volt only)
- Crankcase Emissions Canister
- Fuel/Water Separator
- Generator Strip Heater
- Line Circuit Breaker (NEMA1 enclosure)
- Line Circuit Breaker with Shunt Trip (NEMA1 enclosure)
- NFPA 110 Literature
- Oil Temperature Gauge
- Rated Power Factor Testing
- Spring Isolators

Paralleling System

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

Maintenance and Literature

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

Controller

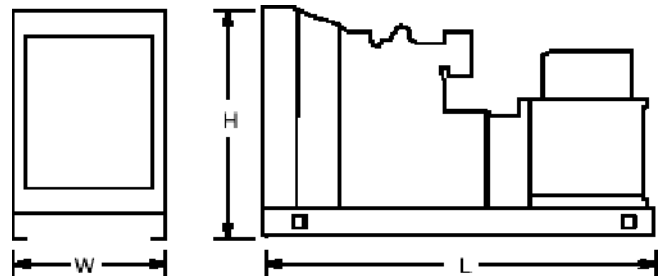
- Common Failure Relay Kit
- Communications Products and PC Software
- Customer Connection Kit
- Dry Contact Kit (isolated alarm)
- Remote Annunciator Panel
- Remote Audiovisual Alarm Panel
- Remote Emergency Stop Kit
- Remote Mounting Cable
- Run Relay Kit

Miscellaneous Accessories

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

Dimensions and Weights

Overall Size, L x W x H, mm (in.): 6450 x 2229 x 2507
 (254 x 87.7 x 98.7)
 Weight (radiator model), wet, max., kg (lb.): 16800 (36960)



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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