KOHLER

Model: 1250REOZMD

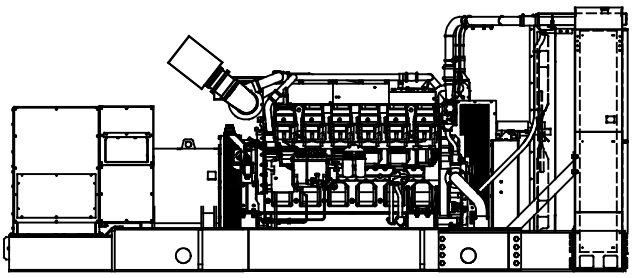
380- 4160 V **Diesel**

ISO 9001 KOHLER NATIONALLY REGISTERED

Tier 2 EPA-Certified for Stationary Emergency Applications

Ratings Range

		60 Hz
Standby:	**kW**	940- 1280
	kVA	1175- 1600
Prime:	**kW**	860- 1160
	kVA	1075- 1450



Standard Features

- Kohler Co. provides one-source responsibility for the generating system and accessories.
- Approved for use with certified renewable Hydrotreated Vegetable Oil (HVO) / Renewable Diesel (RD) fuels compliant with EN15940 / ASTM D975.
- 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 standard one-year limited warranty covers all generator set systems and components. Two-, five-, and ten-year extended limited 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:
  - 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).
  - An electronic, isochronous governor delivers precise frequency regulation.
  - Multiple circuit breaker configurations.

Generator Set Ratings

				150°C Rise Standby Rating		130°C Rise Standby Rating		125°C Rise Prime Rating		105°C Rise Prime Rating	
Alternator	**Voltage**	**Ph**	**Hz**	**kW/kVA**	**Amps**	**kW/kVA**	**Amps**	**kW/kVA**	**Amps**	**kW/kVA**	**Amps**
7M4046	220/380	3	60	940/1175	1785	940/1175	1785	860/1075	1633	860/1075	1633
	240/416	3	60	1180/1475	2047	1110/1388	1926	1090/1363	1891	1020/1275	1770
	277/480	3	60	1250/1563	1879	1220/1525	1834	1140/1425	1714	1120/1400	1684
7M4048	220/380	3	60	1030/1288	1956	1030/1288	1956	940/1175	1785	940/1175	1785
	240/416	3	60	1250/1563	2169	1180/1475	2047	1140/1425	1978	1100/1375	1908
	277/480	3	60	1270/1588	1909	1270/1588	1909	1160/1450	1744	1160/1450	1744
7M4050	220/380	3	60	1160/1450	2203	1160/1450	2203	1060/1325	2013	1060/1325	2013
	240/416	3	60	1280/1600	2221	1280/1600	2221	1160/1450	2012	1160/1450	2012
	277/480	3	60	1280/1600	1925	1280/1600	1925	1160/1450	1744	1160/1450	1744
7M4052	220/380	3	60	1280/1600	2431	1280/1600	2431	1160/1450	2203	1160/1450	2203
	240/416	3	60	1280/1600	2221	1280/1600	2221	1160/1450	2012	1160/1450	2012
	277/480	3	60	1280/1600	1925	1280/1600	1925	1160/1450	1744	1160/1450	1744
7M4172	220/380	3	60	1270/1588	2412	1260/1575	2393	1160/1450	2203	1160/1450	2203
7M4174	220/380	3	60	1280/1600	2431	1280/1600	2431	1160/1450	2203	1160/1450	2203
7M4288	347/600	3	60	1280/1600	1540	1280/1600	1540	1160/1450	1395	1160/1450	1395
7M4366	2400/4160	3	60	1280/1600	222	1280/1600	222	1160/1450	201	1160/1450	201
7M4368	2400/4160	3	60	1280/1600	222	1280/1600	222	1160/1450	201	1160/1450	201

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		Controller Dependent
One-step load acceptance at 60 Hz		100% of Rating
Unbalanced load capability		100% of Rated Standby Current
Peak motor starting kVA:		(35% dip for voltages below)
480 V	7M4046 (4 bus bar)	3900
480 V	7M4048 (4 bus bar)	3700
480 V	7M4050 (4 bus bar)	4500
480 V	7M4052 (4 bus bar)	5500
380 V	7M4172 (4 bus bar)	2600
380 V	7M4174 (4 bus bar)	4200
600 V	7M4288 (4 bus bar)	5400
4160 V	7M4366 (6 lead)	3900
4160 V	7M4368 (6 lead)	4900

- 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	
Manufacturer	Mitsubishi
Engine model	S12R-Y2PTAW-1
Engine type	4-Cycle, Turbocharged
Cylinder arrangement	12 V
Displacement, L (cu. in.)	49.0 (2992)
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)	1403 (1881)
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)	356 (12570)
Exhaust temperature at rated kW, dry exhaust, °C (°F)	497 (927)
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)	Dual, 24
Battery, recommended cold cranking amps (CCA):	
Quantity, CCA rating each	Four, 1150
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. fuel flow, Lph (gph)	480 (127)
Max. fuel pump restriction, kPa (in. Hg)	10 (3.0)
Max. return line restriction, kPa (in. Hg)	20 (5.9)
Fuel filter: quantity, type	4, Secondary
Recommended fuel	#2 Diesel / HVO / RD

Lubrication

Lubricating System	
Type	Full Pressure
Oil pan capacity, L (qt.)	150 (159)
Oil pan capacity with filter, L (qt.)	180 (190)
Oil filter: quantity, type §	4, Cartridge
Oil cooler	Water-Cooled

§ Kohler recommends the use of Kohler Genuine oil and filters.

Application Data

Cooling

Radiator System	
Ambient temperature, °C (°F)*	40 (104)
Engine jacket water capacity, L (gal.)	130 (34)
Radiator system capacity, including engine, L (gal.)	327 (86)
Engine jacket water flow, Lpm (gpm)	1850 (489)
Charge cooler water flow, Lpm (gpm)	340 (90)
Heat rejected to cooling water at rated kW, dry exhaust, kW (Btu/min.)	511 (29045)
Heat rejected to charge cooler water at rated kW, dry exhaust, kW (Btu/min.)	511 (29045)
Water pump type	Centrifugal
Fan diameter, including blades, mm (in.)	1829 (72)
Fan kWm (HP)	57 (76)
Max. restriction of cooling air, intake and discharge side of radiator, kPa (in. H_2O)	0.125 (0.5)

High Ambient Radiator System	
Ambient temperature, °C (°F)*	50 (122)
Engine water capacity, L (gal.)	130 (34)
Radiator system capacity, including engine, L (gal.)	341 (90)
Engine jacket water flow, Lpm (gpm)	1850 (489)
Charge cooler water flow, Lpm (gpm)	340 (90)
Heat rejected to cooling water at rated kW, dry exhaust, kW (Btu/min.)	511 (29045)
Heat rejected to charge cooler water at rated kW, dry exhaust, kW (Btu/min.)	511 (29045)
Water pump type	Centrifugal
Fan diameter, including blades, mm (in.)	1829 (72)
Fan kWm (HP)	57 (76)
Max. restriction of cooling air, intake and discharge side of radiator, kPa (in. H_2O)	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.)	95 (3.75)
Jacket water engine outlet, mm (in.)	95 (3.75)
Intercooler water engine inlet, mm (in.)	83 (3.25)
Intercooler water engine outlet, mm (in.)	83 (3.25)
Static head allowable above engine, kPa (ft. H_2O)	98 (32.8)

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

Operation Requirements

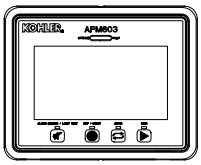
Air Requirements	
Radiator-cooled cooling air, m^3/min. (scfm)‡	1756 (62000)
High ambient radiator-cooled cooling air, m^3/min. (scfm)‡	1699 (60000)
Cooling air required for generator set when equipped with city water cooling or remote radiator, based on 14°C (25°F) rise, m^3/min. (scfm)‡	677 (23900)
Combustion air, m^3/min. (cfm)	135 (4767)
Heat rejected to ambient air:	
Engine, kW (Btu/min.)	118 (6703)
Alternator, kW (Btu/min.)	71 (4038)

‡ Air density = 1.20 kg/m^3 (0.075 lbm/ft^3)

Fuel Consumption**	
Diesel, Lph (gph) at % load	**Standby Rating**
100%	392 (103.4)
75%	284 (75.1)
50%	193 (51.0)
25%	110 (29.2)
Diesel, Lph (gph) at % load	**Prime Rating**
100%	344 (90.9)
75%	259 (68.4)
50%	176 (46.4)
25%	105 (27.6)

** Volumetric Fuel consumption is up to 4% higher when using HVO/RD than #2 ULSD.

Controllers

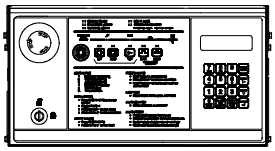


APM603 Controller

Provides advanced control, system monitoring, and system diagnostics for optimum performance and compatibility.

- 7-inch graphic display with touch screen and menu control provides easy local data access
- Measurements are selectable in metric or English units
- Paralleling capability to control up to 8 generators on an isolated bus with first-on logic, synchronizer, kW and kVAR load sharing, and protective relays
  Note: Parallel with other APM603 controllers only
- Generator management to turn paralleled generators off and on as required by load demand
- Load management to connect and disconnect loads as required
- Controller supports Modbus® RTU, Modbus® TCP, SNMP and BACnet®
- Integrated voltage regulator with ±0.25% regulation
- Built-in alternator thermal overload protection
- UL-listed overcurrent protective device
- NFPA 110 Level 1 capability

Refer to G6-162 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 to control up to 8 generators on an isolated bus with first-on logic, synchronizer, kW and kVAR load sharing, and protective relays
  Note: Parallel with other Decision-Maker® 6000 controllers only
- 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.
BACnet® is a registered trademark of ASHRAE.

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Phone 920-457-4441, Fax 920-459-1646
For the nearest sales and service outlet in the US and Canada, phone 1-800-544-2444
KOHLERPower.com

Standard Features

- Alternator Protection
- Alternator Strip Heater (standard on 3300 volt and above)
- Customer Connection (Decision-Maker® 6000 controller only)
- Local Emergency Stop Switch
- Oil Drain Extension
- Operation and Installation Literature
- Radiator Core Guard

Available Options

Circuit Breakers

Type

- ❑ Magnetic Trip
- ❑ Thermal Magnetic Trip
- ❑ Electronic Trip (LI)
- ❑ Electronic Trip with Short Time (LSI)

Rating

- ❑ 80%
- ❑ 100%

Operation

- ❑ Manual
- ❑ Electrically Operated (for paralleling)

Circuit Breaker Mounting

- ❑ Generator Mounted
- ❑ Remote Mounted
- ❑ Bus Bar (for remote mounted breakers)

Approvals and Listings

- ❑ HCAI Pre- Approval
- ❑ CSA Certified
- ❑ IBC Seismic Certification
- ❑ UL 2200 Listing

Enclosed Unit

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

Open Unit

- ❑ Exhaust Silencer, Hospital (kit: PA-361626)
- ❑ Exhaust Silencer, Critical (kit: PA-361617)
- ❑ 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
- ❑ Dry Contact (isolated alarm) (Decision- Maker®6000 controllers only)
- ❑ Input/Output, Digital (APM603 controller only; included with paralleling kit)
- ❑ Lockable Emergency Stop Switch
- ❑ Manual Key Switch (APM603 controller only)
- ❑ Prime Power Switch (Decision- Maker®6000 controllers only)
- ❑ Remote Emergency Stop Switch
- ❑ Remote Mounting Cable
- ❑ Remote Serial Annunciator Panel
- ❑ Run Relay (Standard with APM603 controller)

Cooling System

- ❑ Block Heater; 9000 W, 208 V, 1 Ph
- ❑ Block Heater; 9000 W, 240 V, (Select 1 Ph or 3 Ph)
- ❑ Block Heater; 9000 W, 380 V, 3 Ph
- ❑ Block Heater; 9000 W, 480 V, (Select 1 Ph or 3 Ph) Required for Ambient Temperatures Below 0°C (32°F)
- ❑ High Ambient Radiator
- ❑ Remote Radiator Cooling Setup

Electrical System

- ❑ Alternator Strip Heater (available up to 600 volt)
- ❑ Battery
- ❑ Battery Charger, Equalize/Float Type
- ❑ Battery Heater
- ❑ Battery Rack and Cables

Paralleling System

- ❑ Voltage Sensing (Decision-Maker® 6000 controller only)

Miscellaneous

- ❑ Air Cleaner, Heavy Duty
- ❑ Air Cleaner Restriction Indicator
- ❑ Crankcase Emission Canister
- ❑ Engine Fluids (oil and coolant) Added
- ❑ Oil Temperature Gauge
- ❑ Rated Power Factor Testing
- ❑ Spring Isolators

Literature

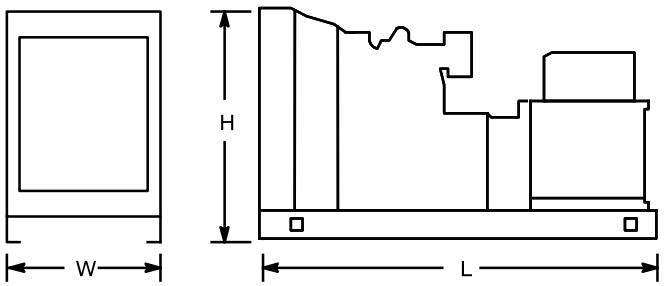
- ❑ General Maintenance
- ❑ NFPA 110
- ❑ Overhaul
- ❑ Production

Warranty

- ❑ 2-Year Basic Limited Warranty
- ❑ 2-Year Prime Limited Warranty
- ❑ 5-Year Basic Limited Warranty
- ❑ 5-Year Comprehensive Limited Warranty
- ❑ 10-Year Major Components Limited Warranty

Dimensions and Weights

Overall Size, L x W x H, max., mm (in.):	6116 x 2232 x 2491 (240.8 x 87.9 x 98.1)
Weight (radiator model), wet, max., kg (lb.):	12020 (26500)



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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