KOHLER®

Model: 550REOZVB

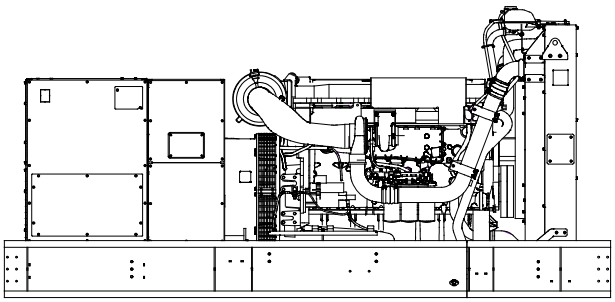
208- 600 V **Diesel**

ISO 9001 KOHLER® NATIONALLY REGISTERED

Tier 2 EPA-Certified for Stationary Emergency Applications

Ratings Range

		60 Hz
Standby:	**kW**	485- 550
	kVA	606- 688
Prime:	**kW**	475- 500
	kVA	594- 625



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).
  - Integral vibration isolation eliminates the need for under-unit vibration spring isolators.
  - 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**
5M4028	120/208	3	60	535/669	1857	525/656	1822	485/606	1683	475/594	1649
	127/220	3	60	545/681	1788	545/681	1788	495/619	1624	495/619	1624
	139/240	3	60	545/681	1639	545/681	1639	495/619	1489	495/619	1489
	240/416	3	60	535/669	929	525/656	911	485/606	842	475/594	825
	277/480	3	60	545/681	820	545/681	820	495/619	745	495/619	745
5M4030	120/208	3	60	550/688	1909	550/688	1909	500/625	1735	500/625	1735
	127/220	3	60	550/688	1805	550/688	1805	500/625	1641	500/625	1641
	139/240	3	60	550/688	1654	550/688	1654	500/625	1504	500/625	1504
	240/416	3	60	550/688	955	550/688	955	500/625	868	500/625	868
	277/480	3	60	550/688	827	550/688	827	500/625	752	500/625	752
5M4032	120/208	3	60	550/688	1909	550/688	1909	500/625	1735	500/625	1735
	127/220	3	60	550/688	1805	550/688	1805	500/625	1641	500/625	1641
	139/240	3	60	550/688	1654	550/688	1654	500/625	1504	500/625	1504
	220/380	3	60	550/688	1045	550/688	1045	500/625	950	500/625	950
	240/416	3	60	550/688	955	550/688	955	500/625	868	500/625	868
	277/480	3	60	550/688	827	550/688	827	500/625	752	500/625	752
5M4164	220/380	3	60	550/688	1045	550/688	1045	500/625	950	500/625	950
5M4272	347/600	3	60	545/681	656	545/681	656	500/625	602	500/625	602

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
Leads: quantity, type		10, Reconnectable
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		100% of Rating
Unbalanced load capability		100% of Rated Standby Current
Peak motor starting kVA:		(35% dip for voltages below)
480 V	5M4028 (10 lead)	1800
480 V	5M4030 (10 lead)	1775
480 V	5M4032 (10 lead)	2200
380 V	5M4164 (4 lead)	2300
600 V	5M4272 (4 lead)	1750

- 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	Volvo
Engine model	TAD1642GE- B
Engine type	4-Cycle, Turbocharged, Charge Air-Cooled
Cylinder arrangement	6 Inline
Displacement, L (cu. in.)	16.12 (984)
Bore and stroke, mm (in.)	144 x 165 (5.67 x 6.50)
Compression ratio	17:1
Piston speed, m/min. (ft./min.)	594 (1949)
Main bearings: quantity, type	7, Precision Half-Shell
Rated rpm	1800
Max. power at rated rpm, kWm (BHP)	604 (809)
Cylinder head material	Cast Iron
Piston: type, material	Steel
Crankshaft material	Forged Steel
Valve material	Nimonic
Governor type	EMS 2.4
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)	117.6 (4153)
Exhaust temperature at rated kW, dry exhaust, °C (°F)	512 (954)
Maximum allowable back pressure, kPa (in. Hg)	10 (2.95)
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	80
Starter motor rated voltage (DC)	24V, 7kW
Battery, recommended cold cranking amps (CCA):	
Quantity, CCA rating each	Two, 925
Battery voltage (DC)	12

Fuel

Fuel System	
Fuel supply line, min. ID, mm (in.)	8 (0.31)
Fuel return line, min. ID, mm (in.)	6 (0.25)
Max. fuel flow, Lph (gph)	204.4 (54)
Max. fuel pump restriction, kPa (in. Hg)	30 (8.9)
Max. return line restriction, kPA (in. Hg)	20 (5.9)
Fuel prime pump	Manual
Fuel filter: quantity, type	2, Primary, 10 Micron/ Secondary w/Water Separator, 3 Microns
Recommended fuel	#2 Diesel / HVO / RD

Lubrication

Lubricating System	
Type	Full Pressure
Oil pan capacity, L (qt.) §	42.0 (44.4)
Oil pan capacity with filter, L (qt.) §	48.1 (50.8)
Oil filter: quantity, type §	3, Cartridge
Oil cooler	Water-Cooled

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

Application Data

Cooling

Radiator System	
Ambient temperature, °C (°F) *	50 (122)
Engine jacket water capacity, L (gal.)	33 (8.7)
Radiator system capacity, including engine, L (gal.):	60 (15.9)
Engine jacket water flow, Lpm (gpm)	463.3 (122.4)
Heat rejected to cooling water at rated kW, dry exhaust, kW (Btu/min.)	248 (14104)
Heat rejected to air charge cooler at rated kW, dry exhaust, kW (Btu/min.)	159 (9042)
Water pump type	Centrifugal
Fan diameter, including blades, mm (in.)	890 (35)
Fan, kWm (HP)	19 (25.5)
Max. restriction of cooling air, intake and discharge side of radiator, kPa (in. H_2O)	0.125 (0.5)

* Weather and sound enclosures with internal silencer and weather housing with external silencer reduce ambient temperature capability by 5°C (9°F).

Operation Requirements

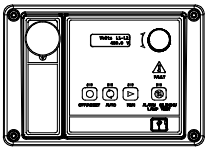
Air Requirements	
Radiator-cooled cooling air, m^3/min. (scfm)†	598 (21120)
Combustion air, m^3/min. (cfm)	46.6 (1646)
Heat rejected to ambient air:	
Engine, kW (Btu/min.)	24 (1365)
Alternator, kW (Btu/min.)	39 (2202)

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

Fuel Consumption**	
Diesel, Lph (gph) at % load	**Standby Rating**
100%	151.2 (39.9)
75%	109.1 (28.8)
50%	72.4 (19.1)
25%	39.2 (10.4)
Diesel, Lph (gph) at % load	**Prime Rating**
100%	136.0 (35.9)
75%	98.6 (26.0)
50%	66.4 (17.5)
25%	36.9 (9.8)

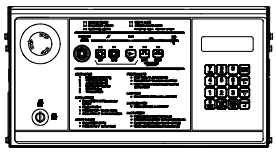
** Volumetric Fuel consumption is up to 4% higher when using HVO/RD than #2 ULSD.

Controllers



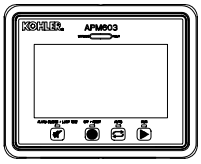
APM402 Controller
Provides advanced control, system monitoring, and system diagnostics for optimum performance and compatibility.
- Digital display and menu control provide easy local data access
- Measurements are selectable in metric or English units
- Remote communication thru a PC via network or 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® 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.



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.

Modbus® is a registered trademark of Schneider Electric.

KOHLER

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For the nearest sales and service outlet in the US and Canada, phone 1-800-544-2444
KOHLERPower.com

Standard Features

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

Available Options

Circuit Breakers

Type

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

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

- ❑ CSA Certified
- ❑ UL 2200 Listing
- ❑ Hurricane Rated Enclosure

Enclosed Unit

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

Open Unit

- ❑ Exhaust Silencer, Hospital (kit: PA-354907)
- ❑ Exhaust Silencer, Critical (kit: PA-354894)
- ❑ Flexible Exhaust Connector, Stainless Steel

Fuel System

- ❑ Flexible Fuel Lines, Rubber
- ❑ Flexible Fuel Lines, Stainless Steel
- ❑ Fuel Pressure Gauge

Controller

- ❑ Common Failure Relay (Decision-Maker® 6000 and APM603 controllers only)
- ❑ Communications Products and PC Software
- ❑ Decision-Maker® Paralleling System (DPS) (Decision-Maker® 6000 controller only)
- ❑ Dry Contact (isolated alarm) (Decision-Maker® 6000 controller only)
- ❑ Two Input/Five Output Module (APM402 controller only)
- ❑ Four Input/Fifteen Output Module (APM603 controller only)
- ❑ Remote Audiovisual Alarm Panel (Decision-Maker® 6000 controller only)
- ❑ Remote Emergency Stop
- ❑ Remote Mounting Cable
- ❑ Remote Serial Annunciator Panel
- ❑ Run Relay (standard with APM603, optional with others)
- ❑ Manual Key Switch (APM603 controller only)
- ❑ Manual Speed Adjust (APM402 controller only)

Cooling System

- ❑ Block Heater, 4000 W, 190/208 V, 1 Ph
- ❑ Block Heater, 4000 W, 210/240 V, 1 Ph
- ❑ Block Heater, 4000 W, 380/480 V, 1 Ph Required for ambient temperatures below 0°C (32°F)
- ❑ Radiator Duct Flange

Electrical System

- ❑ Generator Heater
- ❑ Battery
- ❑ Battery Charger, Equalize/Float Type
- ❑ Battery Heater
- ❑ Bus Bar
- ❑ Line Circuit Breaker (NEMA type 1 enclosure)
- ❑ Line Circuit Breaker with Shunt Trip (NEMA type 1 enclosure)

Paralleling System

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

Miscellaneous

- ❑ Air Cleaner, Heavy Duty
- ❑ Air Cleaner Restriction Indicator
- ❑ Closed Crankcase Ventilation
- ❑ Engine Fluids (oil and coolant) Added
- ❑ Rated Power Factor Testing

Literature

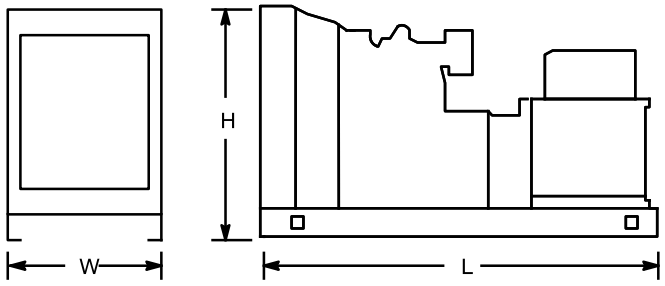
- ❑ General Maintenance
- ❑ NFPA 110
- ❑ Overhaul
- ❑ Production

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.):	4229 x 1829 x 1961 (166.5 x 72.0 x 77.2)
Weight (radiator model), wet, max., kg (lb.):	4400 (9700)



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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