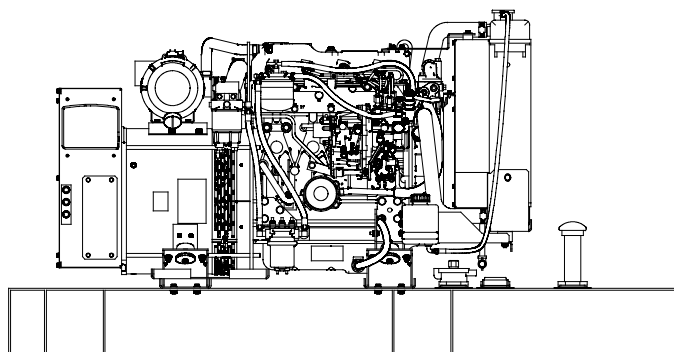


Model: **20REODB/REOZDB**

KOHLER POWER SYSTEMS

Compact Diesel

ISO 9001
KOHLER
POWER SYSTEMS
NATIONALLY REGISTERED



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 is CSA certified, file # LR 955.
- UL 2200 listing is available.
- The generator set engine is certified by the Environmental Protection Agency (EPA) to conform to Tier 4 nonroad emissions regulations.
- The generator set meets NFPA 110, Level 1, when equipped with the necessary accessories and installed per NFPA standards.
- A one-year limited warranty covers all systems and components. Two- and five-year extended warranties are also available.
- Four-point mounting with vibration isolators.
- Static-excited (REODB) or brushless (REOZDB) alternator.
- Voltage regulation of $\pm 1.5\%$.
- Sustained short-circuit capability.
- Remote start 12-pin connector.
- Single-side access.
- Enclosure features:
 - Weather and sound enclosures are available.
 - All weather and sound enclosures are rated for 150 mph winds.
 - Enclosures reduce sound levels and protect the generator set from the elements, animal intrusion, and unwanted entry.
 - Enclosures have a fade-, scratch-, and corrosion-resistant Kohler cream beige finish with lockable, flush-mounted door latches.
 - Acoustic insulation meets UL 94 HF1 flammability classification.

Generator Set Ratings

Alternator	Voltage	Hz	Ph	130 °C Rise Standby Rating		105 °C Rise Prime Rating	
				kW/kVA	Amps	kW/kVA	Amps
4H7	120/240	60	1	20/20	83.3	18/18	75.0
	120/208	60	3	20.0/25.0	69.5	18.0/22.5	62.6
	120/240	60	1	16.5/16.5	68.8	14.9/14.9	61.9
	120/240	60	3	20.0/25.0	60.2	18.0/22.5	54.2
4J7	127/220	60	3	20.0/25.0	65.7	18.0/22.5	59.1
	139/240	60	3	20.0/25.0	60.2	18.0/22.5	54.2
	220/380	60	3	20.0/25.0	38.0	18.0/22.5	34.2
	277/480	60	3	20.0/25.0	30.1	18.0/22.5	27.1

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. Contact your local Kohler® generator set distributor for availability. **GENERAL GUIDELINES FOR DERATING:** **ALTITUDE:** Derate 0.8% per 100 m (328 ft.) elevation above 200 m (656 ft.). **TEMPERATURE:** Derate 6.0% per 10°C (18°F) temperature above 25°C (77°F).

Alternator Specifications

Specifications	Alternator
Manufacturer	Kohler
Type	4-Pole, Rotating-Field
Exciter type	
REODB	Static-Excited
REOZDB	Brushless
Leads: quantity, type	
4H7	4
4J7	12, Reconnectable
Voltage regulator	Solid State
Insulation:	
Material	Class H
Temperature rise in 25°C ambient	130°C
Bearings, quantity	1
Coupling	Flexible Disc
Amortisseur windings	Full
Voltage regulation, no-load to full-load	±1.5% Maximum
One-step load acceptance	100% of Rating
Peak motor starting kVA (35% dip for voltages below):	
240 V 4H7 (4 lead)	51 (60 Hz)
240 V 4J7 (12 lead)	75 (60 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.
- Self-ventilated and dripproof construction.
- Windings vacuum impregnated with fungus-resistant epoxy varnish per MIL-I-24092.
- Class H insulation.
- Rotors dynamically balanced to minimize vibration.
- Copper windings to ensure minimal heat buildup. Insulation meeting NEMA standards for class H insulation.
- Generator direct connected to the engine.
- Sealed precision ball bearings with a precision-machined steel sleeve in the end bracket to prevent shaft misalignment and extend bearing life.
- Skewed rotor to provide smooth voltage waveform.
- 100% of rated standby current unbalanced load capability.

Application Data

Engine

Engine Specifications	60 Hz
Manufacturer	Yanmar
Engine: model, type	4TNV84T
Cylinder arrangement	4, inline
Displacement, L (cu. in.)	1.995 (121.74)
Bore and stroke, mm (in.)	84 x 90 (3.31 x 3.54)
Compression ratio	18.9:1
Combustion system	Direct Injection
Main bearings: quantity, type	5, Replaceable Sleeve
Rated rpm	1800
Max. power at rated rpm, kWm (BHP)	27.1 (36.3)
Cylinder head material	Cast Iron
Crankshaft material	Horizontal
Connecting rod material	Forged Carbon Steel
Governor: type, make	Mechanical, Yanmar
Frequency regulation:	
No-load to full-load	±2.5%
Steady state	±0.33%
Frequency	Mechanically Adjustable
Air cleaner type	Dry

Exhaust

Exhaust System	60 Hz
Exhaust flow at rated kW, m ³ /min. (cfm)	6.1 (215)
Exhaust temperature at rated kW, °C (°F)	560 (1040)
Maximum allowable back pressure, kPa (in. Hg)	9.8 (2.9)
Exhaust outlet size at engine hookup	1.5 NPT

Engine Electrical

Engine Electrical System	60 Hz
Battery-charging alternator:	
Ground (negative/positive)	Negative
Volts (DC)	12
Ampere rating	70
Starter motor rated voltage (DC)	12
Battery recommended cold cranking amps (CCA):	
Qty., CCA for 0°C (-18°F)	One, 650
Battery voltage (DC)	12

Fuel

Fuel System	60 Hz
Fuel supply line	1/4 NPT
Fuel return line, mm (in.)	8 (0.31)
Maximum lift, m (ft.)	1 (3.3)
Fuel pump	Electric
Fuel filter	5 Micron
Fuel/water separator	Yes
Recommended fuel	Diesel Fuel ASTM D975 No. 2-D

Lubrication

Lubricating System	60 Hz
Type	Pressure
Oil pan capacity with filter, L (qt.)	5.8 (6.1)
Oil filter	Full flow, Cartridge
Oil cooler	Water-Cooled

Application Data

Cooling

Cooling System	60 Hz
Ambient temperature, °C (°F)	50 (122) *
Type	Liquid
Capacity, engine only, L (qt.)	2.7 (2.8)
Engine jacket water flow, Lpm (gpm)	33.0 (8.7)
Capacity with unit-mounted radiator, L (qt.)	9.3 (9.8)
Heat rejected to cooling water at rated kW, Btu/min.	1123
Fan diameter, unit-mounted radiator, mm (in.)	409 (16.1)
Fan, kW (HP)	0.6 (0.75)
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).

Cooling System	60 Hz
Exhaust manifold type	Dry
Connection sizes	
Water inlet, mm (in.)	34 (1.3)
Water outlet, mm (in.)	28 (1.1)
Static head, maximum, m (ft.)	4 (13.1)

Operation Requirements

Air Requirements	60 Hz
Radiator min. cooling air, m ³ /min. (cfm)	45 (1600)
Alternator min. cooling air, m ³ /min. (cfm)	6 (210)
Radiator min. cooling air, m ³ /min. (cfm)	45 (1600)
Combustion air, m ³ /min. (cfm)	2.4 (83)
Heat rejected to ambient air:	
Engine, kW (Btu/min.)	19.4 (1105)
Alternator, kW (Btu/min.)	3.5 (200)

Fuel Consumption	60 Hz
Diesel, Lph (gph), at % load	Standby Rating
100%	7.3 (1.9)
75%	5.6 (1.5)
50%	4.1 (1.1)
25%	2.8 (0.7)
Diesel, Lph (gph), at % load	Prime Rating
100%	6.6 (1.7)
75%	5.2 (1.4)
50%	3.8 (1.0)
25%	2.7 (0.7)

Sound

Acoustic Data with Sound Enclosure	60 Hz
Average dBA at 7 meters:	
100% load	68
75% load	68
No load	68

Controller



KPC 1000 Controller Features

- Audiovisual annunciation with NFPA 99 and NFPA 110 capability
- Multi-line digital data display and keypad to access data
- 12- or 24-volt DC engine electrical system capability
- Graphic liquid crystal display (LCD) with 128 x 64 pixel resolution and backlighting
- Sealed six-button keypad
- Ten bi-color (yellow warning and red shutdown) fault or green status indicating LED lights
- Red failure (fault) shutdown LED
- Three-button master switch: Auto, Off (Reset), Run
- Alarm horn with silence switch function
- Upgradeable application code
- RS-485 connector for serial data communication
- Password-protected programming mode
- PC Interface Software for monitoring, adjustment, and upgrades
- Faults:
 - Auxiliary fault
 - High engine temperature
 - Low cranking voltage
 - Low oil pressure
 - Low coolant level
 - Overcrank
 - Overspeed
 - Overvoltage
 - Undervoltage
 - Overfrequency
 - Underfrequency
 - Low battery voltage
 - High battery voltage

Refer to G32-15 for additional controller features and accessories.

Additional Standard Features

- Fuel/Water Separator
- KPC 1000 Controller
- Oil Drain Extension
- Low Fuel Alarm

Available Accessories

Cooling Systems

- ☐ Remote Radiator Setup (radiator sold separately)
- ☐ Unit-Mounted Radiator w/Pusher Fan (included with enclosures)

Cooling System Accessories

- ☐ Block Heater
(recommended for ambient temperatures below 0°C [32°F])
- ☐ Coolant Added (N/A with remote radiator)
- ☐ Radiator Duct Flange (open units only)
- ☐ Remote Radiator, 12V

Enclosures

- ☐ Sound Enclosure (rated for 150 mph wind load)
- ☐ Weather Enclosure (rated for 150 mph wind load)

Open Units

- ☐ Exhaust Silencer (kit GM41678-KP1) (engine-mounted)

Electrical System

- ☐ Battery
- ☐ Battery Cables (for units with subbase tank)
- ☐ Battery Charger, 6 Amp
- ☐ Battery Charger, 10 Amp
- ☐ Battery Charger, 10 Amp with alarms (required for NFPA 110)
- ☐ Battery Heater
(recommended for ambient temperatures below 0°C [32°F])
- ☐ Electronic Governor
(isochronous, with $\pm 0.25\%$ steady-state frequency regulation)
- ☐ Emergency Stop Switch, Local
- ☐ Emergency Stop Switch, Remote
- ☐ Line Circuit Breaker
- ☐ Oil Pressure Sender
- ☐ Preheat Kit
(recommended for ambient temperatures below 5°C [41°F])

Engine

- ☐ Auxiliary Fuel Pump
- ☐ Flexible Fuel Lines

Fuel Tank and Mounting (must select one)

- ☐ 40 Gallon Subbase Tank and Mounting
- ☐ 80 Gallon Subbase Tank and Mounting

Fuel Tank Accessories

- ☐ Inner Tank Leak Alarm

KPC 1000 Controller Accessories

- ☐ Converter, Modbus/Ethernet
- ☐ Customer Interface Harness
- ☐ PC Interface Software
- ☐ Remote Serial Annunciator
- ☐ Run and Common Fault Relays

Maintenance and Literature

- ☐ General Maintenance Literature Kit
- ☐ NFPA 110 Literature Kit
- ☐ Overhaul Literature Kit
- ☐ Production Literature Kit

Warranty

- ☐ Five-Year Comprehensive Warranty
- ☐ Two-Year Extended Warranty
- ☐ Five-Year Extended Warranty

Miscellaneous Accessories

- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____

Dimensions and Weights

With Radiator and Subbase Tank:

Dimensions, L x W x H, mm (in.):

40 gal.:	1730 x 860 x 896 (68.1 x 33.9 x 35.3)
80 gal.:	1730 x 860 x 1071 (68.1 x 33.9 x 42.2)

Weight, wet, max., kg (lb.):

40 gal.:	697 (1535)
80 gal.:	864 (1905)

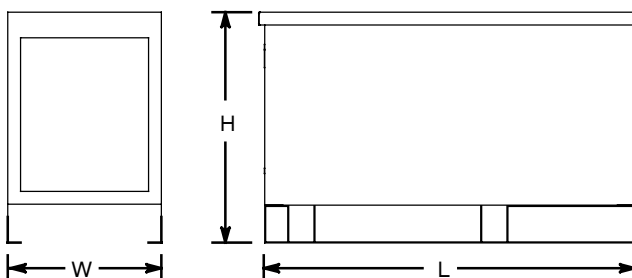
With Radiator, Tank, and Enclosure:

Dimensions, L x W x H, mm (in.):

40 gal.:	1730 x 862 x 1075 (68.1 x 34.0 x 42.3)
80 gal.:	1730 x 862 x 1250 (68.1 x 34.0 x 49.2)

Weight, wet, max., kg (lb.):

40 gal.:	885 (1950)
80 gal.:	998 (2200)



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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