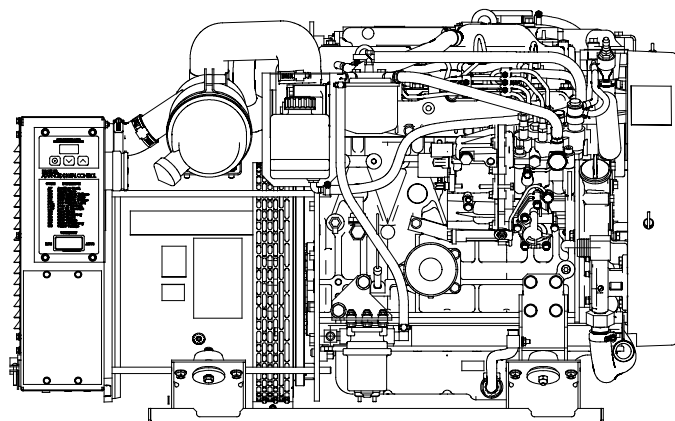


Model: 23EOZD 60 Hz
20EFOZD 50 Hz

KOHLER POWER SYSTEMS

1-Phase Diesel

ISO 9001
KOHLER
POWER SYSTEMS
NATIONALLY REGISTERED



Marine Generator Set

Engine Features

- Diesel fueled
- Four cylinder
- Four cycle
- Certified by the Environmental Protection Agency (EPA) to conform to Tier 4 emissions regulations (60 Hz model)
- Closed cooling system
- Heat exchanger
- Lifting eyes
- Electric fuel lift pump

Generator Features

- Remote start 12-pin connector
- Class H insulation
- Multivoltage adjustability
- Voltage regulation of $\pm 1.5\%$
- Radio suppression

Generator Weights and Dimensions

| | Without Sound Shield | With Sound Shield |
|-------------------|-------------------------|----------------------|
| Weight, kg (lbs.) | | |
| wet | 358 (790) | 394 (870) |
| dry | 352 (775) | 387 (855) |
| Length, mm (in.) | | |
| 12 volt | 1049.3 (41.31) | 1136.7 (44.75) |
| 24 volt | 1055 (41.52) | 1136.7 (44.75) |
| Width, mm (in.) | 574.7 (22.63) | 635 (25.00) |
| Height, mm (in.) | 656.7 (25.86) | 690.3 (27.18) |

Generator Ratings

| Model Series | Voltage | Hz | 25°C (77°F) | 25°C (77°F) | Ph |
|--------------|---------|----|-------------|-------------|----|
| | | | Amps | kW/kVA | |
| 23EOZD | 120/240 | 60 | 191.6/95.8 | 23/23 | 1 |
| | 115/230 | 50 | 174/87 | 20/20 | 1 |
| 20EFOZD | 230 | 50 | 87 | 20/20 | 1 |
| | 240 | 50 | 83.3 | 20/20 | 1 |

RATINGS: Marine continuous ratings per ISO 3046, ISO 8528-1, and Kohler ISO rating guideline 2.14. Obtain technical information bulletin (TIB-101) on ratings guidelines for complete ratings definitions.

Availability is subject to change without notice. Kohler Co. reserves the right to change the design or specifications without notice and without any obligation or liability whatsoever. Contact your local Kohler generator distributor for availability.

10% Overload Capacity One Hour in Twelve Hours

ADC 2100 Advanced Digital Control Features

- Designed for today's most sophisticated electronics
- Easy to read alpha-numeric display
- Compact, integrally mounted control
- Potted boards/sealed connectors for maximum corrosion protection
- SAE J-1939 CANbus output
- Remote monitoring of up to 13 fault conditions
- Membrane keypad for configuration and adjustment
- Programmed crank cycle

Optional Accessories

- Sound shield
- Remote digital gauge
- Siphon break
- Circuit breakers

Application Data

Engine

| Engine Specifications | 60 Hz | 50 Hz |
|---|-------------------------|-------|
| Type | 4 cycle, turbocharged | |
| Cylinder, number | 4 | |
| Displacement, L (cu. in.) | 1.995 (121.74) | |
| Bore and stroke, mm (in.) | 84 (3.31) x 90 (3.54) | |
| Compression ratio | 18.9:1 | |
| Combustion system | Direct injection | |
| Rated rpm | 1800 | 1500 |
| Max. power at rated rpm, HP | 37.1 | 29.3 |
| Cylinder block material | Cast iron | |
| Cylinder head material | Cast iron | |
| Piston rings | 2 compression/1 oil | |
| Crankshaft material | Forged steel | |
| Connecting rod material | Forged carbon steel | |
| Governor, type | Centrifugal, mechanical | |
| Frequency regulation, mechanical governor | | |
| No load to full load (droop) | ±5% | |
| Steady state | ±0.8% | |

Engine Electrical

| Engine Electrical System | 60 Hz | 50 Hz |
|-----------------------------------|---|-------|
| Battery, voltage | 12 volt (standard) 24 volt (optional) | |
| Battery, charging | 40-amp alternator | |
| Battery, recommendation (minimum) | 650 CCA, 100 amp hr. | |
| Starter motor | 1.8 kW Bendix, gear-reduction automotive type | |

Cooling

| Cooling System | 60 Hz | 50 Hz |
|--|-------------------------------------|------------|
| Capacity, L (U.S. qts.) (approx.) | 6.0 (6.3) | |
| Heat exchanger type | Integral with water-cooled manifold | |
| Seawater pump type | Impeller type, belt driven | |
| Heat rejected to cooling water at rated kW, wet exhaust, kW (Btu/min.) | 19.7 (1123) | 15.6 (886) |
| Engine water pump flow, Lpm (gpm) | 42.8 (11.3) | 30.7 (8.1) |
| Seawater pump flow, Lpm (gpm) | 22.7 (6) | 18.9 (5) |

Fuel

| Fuel System | 60 Hz | 50 Hz |
|--|-----------------------|-------|
| Fuel shutoff solenoid | Electric | |
| Fuel pump | Electric, rotary vane | |
| Fuel pump priming | Electric | |
| Maximum recommended fuel lift, m (ft.) | 1.2 (4) | |

Lubrication

| Lubricating System | 60 Hz | 50 Hz |
|---|-------------------------|-------|
| Oil pan capacity with filter, L (U.S. qts.) | 5.8 (6.1) | |
| Oil pump type | Pressure, trochoid pump | |

Operation Requirements

| Air Requirements | 60 Hz | 50 Hz |
|---|--------------|------------|
| Engine combustion air requirements L/min. (cfm) | 2340 (83) | 1950 (69) |
| Engine/generator cooling requirements L/min. (cfm) | 5946 (210) | 4955 (175) |
| Max. air intake restriction, kPa (mm H ₂ O) | 6.23 (635) | |
| Exhaust flow, m ³ /min. (cfm) | 5.4 (189) | 4.4 (157) |
| Exhaust temp., 25°C (77°F) | 371 (700) | |
| Max. allowed exhaust back pressure, kPa (mm H ₂ O) | 11.77 (1200) | |

| Fuel Consumption | 60 Hz | 50 Hz |
|------------------------------------|------------|------------|
| Diesel, Lph (gph) at % load | | |
| 100% | 7.3 (1.93) | 5.6 (1.47) |
| 75% | 5.6 (1.49) | 4.2 (1.10) |
| 50% | 4.1 (1.07) | 3.1 (0.81) |
| 25% | 2.8 (0.73) | 2.1 (0.56) |

Note: The fuel consumption of the 60 Hz model is based on 23EOZD, and the fuel consumption of the 50 Hz model is based on 20EFOZD.

Sound Data

| Sound Levels | 60 Hz | 50 Hz |
|--|-------|-------|
| Measured at 1 m (3.28 ft.) with a housed generator set operating at full load, dBA | 66 | 64 |

Engine Features

- One-side serviceability of fuel system, lubrication system, seawater pump, and air cleaner
- Low oil pressure shutdown
- High engine temperature shutdown
- Loss of coolant shutdown
- Seawater pump impeller failure shutdown
- Focused vibromounts
- Belt guard
- Disposable oil filter
- Oil drain valve and hose
- Water-cooled turbocharger

Generator Features

- Brushless, rotating field design permits power to be obtained from stationary leads.
- Rotor and stator are vacuum impregnated and coated with high-bond epoxy varnish. Varnish helps prevent corrosion in high-humidity areas.
- Rotors are dynamically balanced to minimize vibration.
- Copper windings ensure minimal heat buildup. Insulation meets NEMA standards for class H insulation.
- Direct connected to the engine, the generator has sealed precision ball bearings with a precision-machined steel sleeve in the end bracket to prevent shaft misalignment and extend bearing life.
- Mounted on a drip-proof tray.
- Equipped with a four-lead reconnectable stator.

Application Data

ADC 2100 Control Features



- LED display:
 - Runtime hours
 - Crank cycle status
 - Diagnostics/fault codes/data
- Keypad
 - Secure access, password protected
 - Voltage, gain, and speed adjustment
 - Controller configuration (system voltage, phase, and frequency settings, battery voltage, and generator set model)
- Master control switch: run/off-reset/auto (engine start)
- Remote two-wire start/stop capability
- Potted electronics and sealed connections
- Voltage regulation $\pm 1.5\%$
- Cyclic cranking: 15 seconds on, 15 seconds off (3 cycles)
- Faults with shutdown:
 - High engine temperature
 - Low oil pressure
 - Loss of coolant
 - Overcrank safety
 - Overspeed
 - Over/under voltage
 - Over/under frequency
 - Auxiliary fault
- Faults with warning:
 - Low battery voltage
 - High battery voltage
- Power requirements:
 - 12 or 24 VDC with fuse protection
 - 200 mA @ 12VDC/100 mA @ 24 VDC

Accessories

Sound Shield

Provides for highly effective silencing, ease of access for engine/generator servicing, low maintenance, excellent durability, and safety. The sound shield's customer connection panel includes connections for the following:

- Battery (positive and negative)
- Equipment ground
- Fuel inlet and return
- Seawater inlet
- Water-cooled exhaust outlet
- Oil drain
- Customer load lead access
- Customer interface

Siphon Break

Mandatory kit on generators installed below the waterline. Prevents the siphoning of flotation water into the engine.

Line Circuit Breakers

Protect the generator from extreme overload.

Ship-to-Shore Switch

Allows immediate switching to Kohler® generator set power or shore power protecting the electrical system from the possibility of simultaneous connection of both power sources. Available as a three-pole ship-to-shore switch.

Remote Digital Gauge

Allows starting/stopping from a location remote from the generator set. Standard 76.2 mm (3 in.) dia. hole required for mounting.

Oil Pressure Sender Kit

Provides sender necessary to make digital gauge functional.

Remote Connection/Extension Harness

Provides wiring between the remote digital gauge and the ADC connector. Extension limited to a total of four kits and 23 m (75 ft.). Available in 4.6 m (15 ft.) and 7.6 m (25 ft.) lengths.

12-Inch Remote Wiring Harness

Equipped with a 12-pin connector on one end that connects to the standard customer interface connector. Equipped on the other end with leads for connection to customer-supplied wiring.

KOHLER[®] POWER SYSTEMS

KOHLER CO., Kohler, Wisconsin 53044 USA
Phone 920-565-3381, Fax 920-459-1646
For the nearest sales and service outlet in the
US and Canada, phone 1-800-544-2444
KohlerPower.com

