

Model: **KV400U/KV440**

KOHLER POWER SYSTEMS

200–600 V

Diesel



Ratings Range

| | | KV400U 60 Hz | KV440 50 Hz |
|-----------------|------------|------------------------|-----------------------|
| Standby: | kW | 370–400 | 348–352 |
| | kVA | 463–500 | 435–440 |
| Prime: | kW | 337–364 | 316–320 |
| | kVA | 421–455 | 395–400 |

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.
- A one-year limited warranty covers all systems and components.
- Volvo engine with 24-volt battery charging alternator.
- Leroy Somer single-bearing alternator with insulation class H.
- Unit-mounted radiator with 50°C (122°F) ambient air capability.
- Skid and vibration isolators.
- Subbase fuel tank, 470 L (124 gal.).
- Dry type air filter.
- Main line circuit breaker.
- Microprocessor controller.
- Battery, battery rack, and cables.
- Industrial 9 dB(A) reduction exhaust silencer (loose).
- Operation and installation literature.

Generator Set Ratings

| Alternator | Voltage | Ph | Hz | Standby Rating | | Prime Rating | |
|------------|---------|----|----|----------------|------|--------------|------|
| | | | | kW/kVA | Amps | kW/kVA | Amps |
| LSA472VS3 | 120/208 | 3 | 60 | 387/484 | 1343 | 352/440 | 1221 |
| | 127/220 | 3 | 60 | 400/500 | 1312 | 364/455 | 1194 |
| | 115/230 | 3 | 60 | 370/463 | 1162 | 337/421 | 1057 |
| | 120/240 | 3 | 60 | 387/484 | 1164 | 352/440 | 1059 |
| | 220/380 | 3 | 60 | 400/500 | 760 | 364/455 | 691 |
| | 254/440 | 3 | 60 | 400/500 | 656 | 364/455 | 597 |
| | 277/480 | 3 | 60 | 400/500 | 601 | 364/455 | 547 |
| | 347/600 | 3 | 60 | 400/500 | 481 | 364/455 | 438 |
| | 115/200 | 3 | 50 | 352/440 | 1270 | 320/400 | 1155 |
| | 110/220 | 3 | 50 | 352/440 | 1155 | 320/400 | 1050 |
| | 115/230 | 3 | 50 | 352/440 | 1105 | 320/400 | 1004 |
| | 120/240 | 3 | 50 | 352/440 | 1059 | 320/400 | 962 |
| | 220/380 | 3 | 50 | 348/435 | 661 | 316/395 | 600 |
| | 230/400 | 3 | 50 | 352/440 | 635 | 320/400 | 577 |
| | 240/415 | 3 | 50 | 352/440 | 612 | 320/400 | 556 |



With Available Enclosure Accessory

RATINGS: All three-phase units are rated at 0.8 power factor. See TIB-109 for generator set derate tables.

Obtain the technical information bulletin (TIB-101) on ratings guidelines for the complete ratings definitions.

PRP: Prime power is available for an unlimited number of annual operating hours in variable load applications in accordance with ISO-8528/1.

A 10% overload capability is available for a period of 1 hour within a 12-hour period of operating in accordance with ISO-3046/1.

ESP: The emergency standby power rating is applicable for supplying emergency power in variable load applications in accordance with ISO-8528/1. Overload is not allowed.

The generator set manufacturer reserves the right to change the design or specifications without notice and without any obligation or liability whatsoever.

Alternator Specifications

- NEMA-MG21, UTE NF C51.111, VDE 0530, BS 4999, CSA standards compliance for temperature rise and motor starting.
- Self-ventilated and dripproof construction.
- Vacuum-impregnated windings with fungus-resistant epoxy varnish for dependability and long life.
- Superior voltage waveform from a two-thirds pitch stator and skewed rotor.

| Specifications | 60 Hz | 50 Hz |
|------------------------------------------|-----------|-----------|
| Ratings voltage | 480 | 400 |
| Standby rating @ 27°C, kVA | 545 | 430 |
| Prime rating @ 40°C, kVA | 466 | 400 |
| Efficiency @ full load | 93.3% | 93.1% |
| Air flow, m ³ /min. (cfm) | 66 (2331) | 54 (1907) |
| Direct axis subtransient reactance (X"d) | 18.3% | 17.7% |

| Specifications | Alternator |
|------------------------------------------|------------------------|
| Manufacturer | Leroy Somer |
| Type | 4-Pole, Rotating-Field |
| Exciter type | Shunt |
| Leads: quantity, type | 12, Reconnectable |
| Voltage regulator | Solid State, R230 |
| Insulation: | NEMA MG1 |
| Material | Class H |
| Bearing: quantity, type | 1, Sealed |
| Coupling | Direct |
| Voltage regulation, no-load to full-load | ±0.5% |

Application Data

Engine

| Engine Specifications | 60 Hz | 50 Hz |
|--------------------------------------------|------------------------------------|------------|
| Manufacturer | Volvo | |
| Engine model | TAD1242GE | |
| Engine type | 4-Cycle, Turbocharged, Aftercooled | |
| Cylinder arrangement | 6 Inline | |
| Displacement, L (cu. in.) | 12.13 (740) | |
| Bore and stroke, mm (in.) | 131 x 150 (5.2 x 5.9) | |
| Compression ratio | 17.5:1 | |
| Piston speed, m/min. (ft./min.) | 540 (1770) | 450 (1476) |
| Rated rpm | 1800 | 1500 |
| Max. power at rated rpm, kWm (BHP) | 430 (576) | 387 (519) |
| Governor type | Isochronous | |
| Frequency regulation, no-load to full-load | ISO 5% | |
| Frequency regulation, steady state | ±0.5% | |
| Air cleaner type, all models | Dry | |

Exhaust

| Exhaust System | 60 Hz | 50 Hz |
|-------------------------------------------------------|-----------|-----------|
| Exhaust manifold type | Dry | |
| Exhaust flow at rated kW, m ³ /min. (cfm) | 75 (2649) | 63 (2225) |
| Exhaust temperature at rated kW, dry exhaust, °C (°F) | 505 (941) | |
| Maximum allowable back pressure, kPa (in. Hg) | 9.7 (2.9) | |
| Exhaust outlet size at engine hookup, mm (in.) | 83 (3.27) | |

Engine Electrical

| Engine Electrical System | 60 Hz | 50 Hz |
|------------------------------------------------|-----------|-------|
| Battery charging alternator: | 24 Volt | |
| Ground (negative/positive) | Negative | |
| Volts (DC) | 24 | |
| Starter motor rated voltage (DC) | 24 | |
| Battery, recommended cold cranking amps (CCA): | | |
| Quantity, CCA rating each | Two, 1000 | |
| Battery voltage (DC) | 12 | |

Fuel

| Fuel System | 60 Hz | 50 Hz |
|------------------------------|------------|------------|
| Max. fuel flow, Lph (gph) | 150 (39.6) | 130 (34.3) |
| Fuel prime pump | Manual | |
| Recommended fuel | #2 Diesel | |
| Fuel tank capacity, L (gal.) | 470 (124) | |

Lubrication

| Lubricating System | 60 Hz | 50 Hz |
|---------------------------------------|---------------|-------|
| Type | Full Pressure | |
| Oil pan capacity, L (qt.) | 31 (32.8) | |
| Oil pan capacity with filter, L (qt.) | 35 (36.8) | |

Application Data

Cooling

| Radiator System | 60 Hz | 50 Hz |
|----------------------------------------------------------------------------------------------------|-------------|------------|
| Ambient temperature, °C (°F) | 50 (122) | |
| Radiator system capacity, including engine, L (gal.) | 44 (11.6) | |
| Heat rejected to cooling water at rated kW, dry exhaust, kW (Btu/min.) | 139 (7904) | 123 (6994) |
| Water pump type | Centrifugal | |
| Fan, kWm (HP) | 19 (25.5) | 11 (14.8) |
| Max. restriction of cooling air, intake and discharge side of radiator, kPa (in. H ₂ O) | 0.5 (1.9) | 0.4 (1.7) |

Operation Requirements

| Air Requirements | 60 Hz | 50 Hz |
|------------------------------------------------------------|-------------|-------------|
| Radiator-cooled cooling air, m ³ /min. (scfm) * | 618 (21827) | 510 (18012) |
| Combustion air, m ³ /min. (cfm) | 30 (1060) | 25 (882) |

* Air density = 1.20 kg/m³ (0.075 lbm/ft³)

| Fuel Consumption | 60 Hz | 50 Hz |
|------------------------------|----------------|-------------|
| Diesel, Lph (gph) at % load | Standby Rating | |
| 110% (of the standby rating) | 106 (28.0) | 89.6 (23.7) |
| Diesel, Lph (gph) at % load | Prime Rating | |
| 100% (of the prime rating) | 92.7 (24.5) | 81.5 (21.5) |
| 75% (of the prime rating) | 67.8 (17.9) | 59.5 (15.7) |
| 50% (of the prime rating) | 45.5 (12.0) | 40.5 (10.7) |

Controllers



Decision-Maker™ 4000

Standard Features

- Large LCD display panel
- Unique control wheel for system access
- User buttons for start, stop, menu, and escape
- Emergency stop button
- On/off key switch
- Panel-mounted battery fuse
- Panel-mounted USB ports for PC access and software upgrades
- Password-protected access to control parameters
- Upgradeable software for future enhancements

LCD Panel Features

- 600 x 800 resolution
- Multiple lines of text or graphic display
- Icons for quick identification of system status
- Five languages: English, French, German, Portuguese, and Spanish

Communication Features

- Engine communication via CANbus
- Modbus communication via RS-485 or ethernet
- PC and flash drive connections via USB

Functions

- View and adjust system operation parameters
- View system faults

Viewable/Selectable Parameters (may require optional module)

- Voltage: phase-to-neutral, total voltage
- Current
- Frequency
- Power (active/reactive/apparent)
- Power factor
- Engine speed
- Oil pressure
- Coolant temperature
- Battery voltage
- Fuel level (%)
- Time delays

Viewable Faults (over 60 individual faults are monitored) including:

- Alternator protection (if equipped)
- Circuit breaker and ground fault protection
- Communication and engine ECM monitoring
- Cooling air monitoring
- Electrical charging system
- Engine cooling system
- Engine lube system
- Fuel system
- Generator set status

Available Accessories

Enclosed Unit

- ☐ Sound Enclosure M228, 60 Hz, 73 dB(A) @ 7 m (23 ft.), Standby (with enclosed critical silencer)
- ☐ Sound Enclosure M228, 50 Hz, 70 dB(A) @ 7 m (23 ft.), Standby (with enclosed critical silencer)

Open Unit

- ☐ Exhaust Silencer, Critical 40 dB(A) Reduction
- ☐ Exhaust Silencer, Residential 29 dB(A) Reduction
- ☐ Exhaust Pipe Extension, 40 cm (16 in.)
- ☐ Flexible Exhaust Connector
- ☐ Protection Mesh for Exhaust Parts

Cooling System

- ☐ Block Heater [recommended for ambient temperatures below 0°C (32°F)]
- ☐ Radiator Core Guard

Decision-Maker™ 4000 Controller

- ☐ Alternator Protection
- ☐ Audible Alarm Module
- ☐ Five Expandable Modules with Four Inputs/Six Outputs Each
- ☐ Network Modules (RTC and GSM modems and ethernet router)
- ☐ NFPA-110 Module
- ☐ Remote Annunciator
- ☐ Voltage/Speed Adjustment Module
- ☐ WinTelys Software

Fuel System

- ☐ Subbase Fuel Tank with Secondary Containment Basin
- ☐ Subbase Fuel Tank Leak Alarm
- ☐ Water Separator Fuel Filter

Electrical System

- ☐ Battery Charger, Equalize/Float Type
- ☐ Battery Isolator Switch

Engine and Alternator

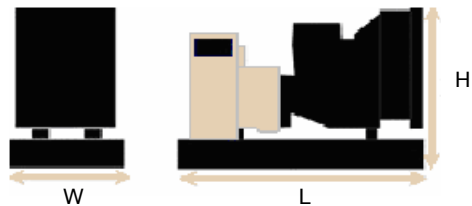
- ☐ Alternator Strip Heater
- ☐ Air Cleaner, Heavy Duty (with air restriction indicator)
- ☐ Droop Kit with 3-Function Voltage Regulator
- ☐ Lube Oil Drain Pump
- ☐ PMG Alternator and Voltage Regulator
- ☐ Tropical Heavy-Duty Alternator Insulation

Miscellaneous Accessories

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

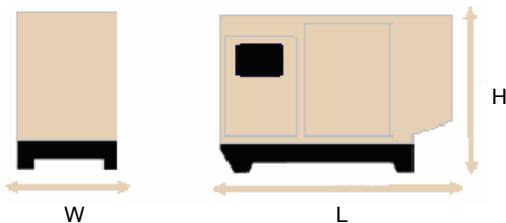
Dimensions and Weights

Open Model



Overall Size, L x W x H, mm (in.): 3160 x 1340 x 1805 (124 x 53 x 71)
 Weight, wet, kg (lb.): 3718 (8194)

With Available Enclosure Accessory



Overall Size, L x W x H, mm (in.): 4475 x 1410 x 2430 (176 x 56 x 96)
 Weight, wet, kg (lb.): 4790 (10557)

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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