

Models: **12RESL/12RESM1**

KOHLER POWER SYSTEMS

Multi-Fuel
LP Vapor/Natural Gas

ISO 9001
KOHLER
POWER SYSTEMS
NATIONALLY REGISTERED



The Kohler® Advantage

- **The Smart Choice**
Known for its reliability, the Kohler® 12 kW generator was named a “Best Buy” as well as the highest-rated generator in a leading consumer magazine in October, 2006
- **Powerful**
Exclusive Powerboost™ technology allows the Kohler® 12 kW generator to start and run a typical 4 ton (48,000 BTU) central air conditioner, while still running other home appliances and electronics *
- **Cleaner Power for Sensitive Electronics**
Protects sophisticated electronics with clean, stable power that exceeds strict utility requirements and IEEE standards for total harmonic distortion (THD)
- **Faster Response**
Kohler® generators restore power in as little as 10 seconds
- **Quiet**
Quiet operation: 65 dB(A) at 7 m maintains neighborhood solitude
- **Premium Five-Year Limited Warranty**

Standard Features

- **Digital Control (DC-RET)**
 - Digital voltage regulation
 - LED display shows system status
- **Engine Features**
 - Kohler Command PRO® OHV engine with hydraulic valve lifters for reliable performance without routine valve adjustment or lengthy break-in requirements
 - Digital Spark Advance Ignition (DSA) optimizes engine performance for natural gas and LP vapor fuels
 - Simple field conversion between natural gas and LP vapor fuels while maintaining emission certification
- **Designed for Easy Installation**
 - Polymer base eliminates the need for a concrete mounting pad, reducing installation time and cost
 - Fuel and electrical connections through the enclosure wall eliminate the need for stub-ups through the bottom
 - Field-connection terminal block simplifies electrical connections
 - Designed for outdoor installation only
- **Certifications**
 - California Air Resources Board (CARB)-certified for both LP vapor and natural gas
 - Meets Environmental Protection Agency (EPA) nonstationary unit requirements
 - UL 2200 listed
 - UL listed to Canadian safety standards
 - Approved for stationary standby applications in locations served by a reliable utility source
- **Power System Packages**
 - Model 12RESL/12RESM1 generator set with sound enclosure and all standard features
 - 100 amp Model RDT automatic transfer switch with 12-circuit load center for connection of essential loads
 - With or without optional carburetor heater for improved cold-weather starting

Generator Ratings

| Alternator Model | Voltage | Phase | Hz | Standby Amps | | Standby Ratings, kW/kVA | |
|------------------|---------|-------|----|--------------|--------|-------------------------|-----------|
| | | | | Natural Gas | LP Gas | Natural Gas | LP Gas |
| 2F4 | 120/240 | 1 | 60 | 43 | 50 | 10.4/10.4 | 12.0/12.0 |

RATINGS: Standby ratings apply to installations served by a reliable utility source. All single-phase units are rated at 1.0 power factor. The standby rating is applicable to variable loads with an average load factor of 80% for the duration of the power outage. No overload capacity is specified at this rating. Ratings are in accordance with ISO-3046/1, BS5514, AS2789, and DIN 6271. GENERAL GUIDELINES FOR DERATING: **ALTITUDE:** Derate 4% per 305 m (1000 ft.) elevation above 153 m (500 ft.). **TEMPERATURE:** Derate 1.5% per 5.5°C (10°F) temperature increase above 16°C (60°F). 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 Co. generator distributor for availability.

* Due to the cycling operation of many electrical appliances, the generator set may not run all appliances simultaneously. Check the appliance manufacturer's specifications for actual power requirements. Consult a Kohler® Power Systems professional for your exact residential power system requirements.

Application Data

Engine

| Engine Specifications | 60 Hz |
|---|----------------------------|
| Manufacturer | Kohler |
| Engine: model, type | CH740 4-Cycle |
| Cylinder arrangement | V-2 |
| Displacement, L (cu. in.) | 0.725 (44) |
| Bore and stroke, mm (in.) | 83 x 67 (3.27 x 2.64) |
| Compression ratio | 9.0:1 |
| Main bearings: quantity, type | 2, Parent Material |
| Rated rpm | 3600 |
| Max. engine power at rated rpm, kW (HP) | |
| CH740, LP vapor | 17.6 (23.6) |
| CH740, natural gas | 15.3 (20.5) |
| Cylinder head material | Aluminum |
| Valve material | Steel/Stellite® |
| Piston type and material | Aluminum Alloy |
| Crankshaft material | Heat Treated, Ductile Iron |
| Governor: type | Mechanical |
| Frequency regulation, steady state | ±1.25% |
| Air cleaner type | Dry |

Engine Electrical

| Engine Electrical System | |
|---|---|
| Ignition system | Electronic, DSAM |
| Starter motor rated voltage (DC) | 12 |
| Battery charger, ampere rating | 6 |
| Battery (purchased separately): | |
| Ground | Negative |
| Volts (DC) | 12 |
| Battery quantity | 1 |
| Recommended cold cranking amps (CCA) rating for -18°C (0°F) | 525 |
| Maximum dimensions, L x W x H, mm (in.) | 210 x 178 x 197 (8.25 x 7.00 x 7.75) |

Exhaust

| Exhaust System | |
|---|------------|
| Exhaust flow at rated kW, m ³ /min. (cfm) | 3.8 (135) |
| Exhaust temperature at rated kW, dry exhaust, °C (°F) | 760 (1400) |

Operation Requirements

| Cooling Air | |
|---|------------|
| Total inlet air, m ³ /min. (cfm) | 28.0 (990) |
| Cooling air, m ³ /min. (cfm) | 26.9 (950) |
| Combustion air, m ³ /min. (cfm) | 1.1 (39.2) |

Lubrication

| Lubricating System | |
|-------------------------------------|---------------|
| Type | Full Pressure |
| Oil capacity (with filter), L (qt.) | 1.9 (2.0) |
| Oil filter: quantity, type | 1, Cartridge |
| Oil cooler | Integral |

Fuel Requirements

| Fuel System | |
|---|-------------------------|
| Fuel types | Natural Gas or LP Vapor |
| Fuel supply inlet | 1/2 NPT |
| Fuel supply pressure, kPa (in. H ₂ O): | |
| Natural gas | 1.2-2.7 (5-11) |
| LP | 1.7-2.7 (7-11) |

Minimum Gas Pipe Size Recommendation, in. NPT

| Pipe Length, m (ft.) | Natural Gas (193,000 Btu/hr.) | LP Vapor (203,000 Btu/hr.) |
|----------------------|----------------------------------|-------------------------------|
| 8 (25) | 3/4 | 3/4 |
| 15 (50) | 1 | 3/4 |
| 30 (100) | 1 | 1 |
| 46 (150) | 1 1/4 | 1 |
| 61 (200) | 1 1/4 | 1 |

Fuel Consumption at % rated load

| % Load | |
|--|-----------|
| Natural Gas, m ³ /hr. (cfh) | |
| 100% | 5.4 (193) |
| 75% | 4.7 (163) |
| 50% | 3.5 (124) |
| 25% | 2.6 (93) |
| LP Vapor, m ³ /hr. (cfh) | |
| 100% | 2.3 (81) |
| 75% | 2.1 (75) |
| 50% | 1.8 (60) |
| 25% | 1.2 (45) |
| LP Vapor, kg/hr. (lb./hr.) | |
| 100% | 4.3 (9.4) |
| 75% | 3.9 (8.7) |
| 50% | 3.4 (7.0) |
| 25% | 2.2 (5.2) |

LP vapor conversion factors:

8.58 ft.³ = 1 lb.
0.535 m³ = 1 kg
36.39 ft.³ = 1 gal.

Nominal fuel rating:

Natural gas: 37 MJ/m³ (1000 Btu/ft.³)
LP vapor: 93 MJ/m³ (2500 Btu/ft.³)

Alternator

Alternator Features

- Compliance with NEMA, IEEE, and ANSI standards for temperature rise
- Self-ventilated and dripproof construction
- Vacuum-impregnated windings with fungus-resistant epoxy varnish for dependability and long life
- Superior voltage waveform and minimum harmonic distortion from skewed alternator construction
- Digital voltage regulator with $\pm 1.5\%$ no-load to full-load RMS regulation
- Rotating-field alternator with static exciter for excellent load response
- Skewed generator construction produces a smooth AC waveform

Alternator Specifications

| Specifications | PowerBoost™ Generator 1-Phase |
|---|----------------------------------|
| Manufacturer | Kohler |
| Output reconnectable | 120/240 |
| Type | 2-Pole, Rotating Field |
| Leads, quantity | 4 |
| Voltage regulator | Digital |
| Insulation: | NEMA MG1-1.66 |
| Material | Class H |
| Temperature rise | Class H |
| Bearing: quantity, type | 1, Sealed Ball |
| Coupling | Direct |
| Amortisseur windings | Full |
| Voltage regulation, no-load to full-load RMS | $\pm 1.5\%$ |
| One-step load acceptance | 100% of Rating |
| Peak motor starting kVA | 32 |

Controller



DC-RET Digital Control Features

- Compact controller
- Integrally mounted to the generator set
- LED display:
 - Runtime hours
 - Crank cycle status
 - Diagnostics
- LED display communicates faults:
 - High engine temperature
 - Low battery voltage
 - Low oil pressure
 - Overcrank safety
 - Overspeed
 - Underfrequency
- Master switch: Run/Off-Reset/Auto (on junction box)
- Remote two-wire start/stop capability
- Digital voltage regulation: $\pm 1.5\%$ RMS no-load to full-load
- Automatic start with programmed cranking cycle

Standard Features

- Five-year limited warranty
- DC-RET Digital Control
- Polymer base
- Battery cables
- Fuel solenoid valve and secondary regulator
- Line circuit breaker
- Oil drain extension with shutoff valve
- Critical silencer
- Sound enclosure, quiet 65 dB(A) operation
- Sound-deadening, flame-retardant foam per UL 94, class HF-1
- Rodent-resistant construction
- CARB- and EPA-certified fuel system
- Multi-fuel system, LP vapor/natural gas, field-convertible
- 6-amp battery charger
- Field-connection terminal block
- Flexible fuel line

Power System Packages

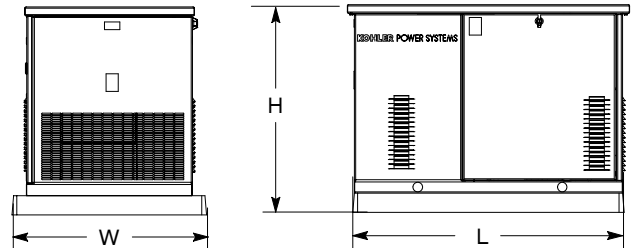
- GM39503-SA6, includes:
 - 12RESL/12RESM1 generator set
 - All standard features listed above
 - Model RDT 100 amp ATS with 12-circuit load center
- GM39503-SA7, includes:
 - 12RESL/12RESM1 generator set
 - All standard features listed above
 - Factory-installed carburetor heater
 - Model RDT 100 amp ATS with 12-circuit load center

Model RDT Automatic Transfer Switch

- 100 Amps, 240 VAC, 60 Hz
- 2 pole, single phase
- Withstand short circuit rating 22,000 amps
- NEMA Type 1 enclosure
- 12-circuit load center
- UL 67 listed
- Equipped with microprocessor-based controls for source sensing and required time delays
- Automatic engine start
- Engine cooldown
- Weekly exercise function, loaded or unloaded
- Load control contact allows delayed connection of selected loads to the generator set
- LED indicator shows:
 - Exercise running
 - Faults
- Dimensions, H x W x D:
610 x 330 x 154 mm (24 x 13 x 6 in.)
- Weight: 12.3 kg (27 lb.)

Dimensions and Weights

Overall Size, L x W x H: 1079 x 774 x 826 mm
(42.5 x 30.5 x 32.5 in.)
Weight: 186 kg (410 lb.)
Shipping weight: 195 kg (430 lb.)



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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