

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 (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)
Exhaust temperature exiting the enclosure, °C (°F)	216 (420)

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

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

Model RDT Automatic Transfer Switch

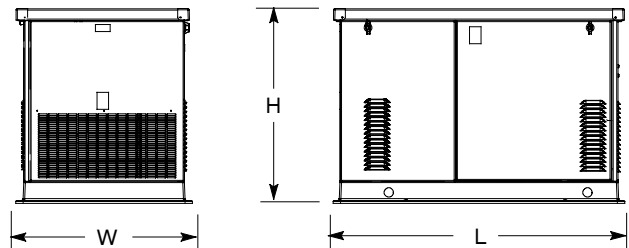
- 100 Amps, 240 VAC, 60 Hz
- 2 pole, single phase
- Withstand short circuit rating 22,000 amps
- NEMA Type 1 enclosure
- 12-circuit load center
- UL 67 listed
- Equipped with microprocessor-based controls for source sensing and required time delays
- Automatic engine start
- Engine cooldown
- Weekly 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.)

Available Accessories

- Carburetor heater GM39564-KA1, 120 VAC
(recommended for reliable starting at temperatures below
0°C [32°F])

Dimensions and Weights

Overall Size, L x W x H:	1123 x 726 x 804 mm (44.3 x 28.6 x 31.6 in.)
Weight:	182 kg (400 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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