

Models: **14/20RESAL**

# KOHLER POWER SYSTEMS

**Multi-Fuel  
LP Vapor/Natural Gas**



## The Kohler® Advantage

- **High Quality Power**  
Kohler home generators provide advanced voltage and frequency regulation along with ultra-low levels of harmonic distortion for excellent generator power quality to protect your valuable electronics.
- **Extraordinary Reliability**  
Kohler is known for extraordinary reliability and performance and backs that up with an industry-leading 5-year or 2000 hour warranty.
- **Powerful Performance**  
Exclusive Powerboost™ technology provides excellent starting power. The Kohler 14 kW generator can easily start and run a 5 ton air conditioner.\*
- **Corrosion-Proof Enclosure**  
The bold new Kohler design is completely corrosion proof, even in harsh seaside environments, and is impact-resistant even at -34° C (-30° F).
- **Fast Response**  
Kohler's unique Fast-Response™ excitation system delivers excellent voltage response and short-circuit capability.
- **Quiet Operation**  
Kohler home generators provide quiet, neighborhood-friendly performance.

## Generator Ratings

Model	Voltage	Phase	Hz	Alternator	Standby Ratings			
					Natural Gas		LP Gas	
					kW/kVA	Amps	kW/kVA	Amps
14RESAL	120/240	1	60	2F5	12/12	50.0	14/14	58.3
20RESAL	120/240	1	60	2F7	18/18	75.0	20/20	83.3

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 2% per 5.5°C (10°F) temperature increase above 16°C (60°F). Availability is subject to change without notice. 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 Co. generator distributor for availability.

\* Check the appliance manufacturer's specifications for actual power requirements. Consult a Kohler® Power Systems professional to calculate your exact residential power system requirements.

## Standard Features

- **DC2 Controller**
  - One digital controller manages both the generator set and Model RXT transfer switch functions.
  - Designed for today's most sophisticated electronics.
  - Electronic speed control responds quickly to varying household demand.
  - Digital voltage regulation protects your sensitive electronics from harmonic distortion and unstable power quality.
  - Two-line, backlit LCD display is easy to read, even in direct sunlight or low light.
- **Kohler Command PRO Engine Features**
  - Kohler Command PRO® OHV engine with hydraulic valve lifters for reliable performance without routine valve adjustment or lengthy break-in requirements
  - Powerful, reliable air-cooled performance
  - 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
  - Hinged, locking roof
  - Fuel and electrical connections through the enclosure wall eliminate the need for stub-ups through the bottom
  - Load connection terminal block allows easy field wiring
  - Designed for outdoor installation only
- **Model RXT Transfer Switch**
  - 100 amp ATS with load center is included with the 14RESAL.
  - 200 amp standard ATS is included with the 20RESAL.
  - See specification sheet G11-121 for more information.
- **Certifications**
  - Meets emission regulations for U.S. Environmental Protection Agency (EPA) phase 2 small off-road engines and CA 2006 and later LSI engines with both LP vapor and natural gas
  - UL 2200 listed (60 Hz model)
  - CSA certification available (60 Hz model)
  - Approved for stationary standby applications in locations served by a reliable utility source
  - Model 14RESAL is also approved for non-standby (off-grid) applications (18 month or 1000 hour warranty applies for non-standby applications)

# Alternator Specifications

## 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	± 1.0%
One-step load acceptance	100% of Rating
Peak motor starting kVA @ 240 V:	
14RESAL	35
20RESAL	40.5

## 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 ±1.0% no-load to full-load RMS regulation
- Rotating-field alternator with static exciter for excellent load response

## Application Data

### Engine

Engine Specifications	14RESAL	20RESAL
Manufacturer	Kohler	
Engine: model, type	CH740 4-Cycle	CH1000 4-Cycle
Cylinder arrangement	V-2	
Displacement, cm <sup>3</sup> (cu. in.)	725 (44)	999 (61)
Bore and stroke, mm (in.)	83 x 67 (3.27 x 2.64)	90 x 78.5 (3.54 x 3.1)
Compression ratio	9:1	8.8:1
Main bearings: quantity, type	2, Parent Material	
Rated RPM	3600	
Max. engine power at rated rpm, kW (HP)		
LP vapor, 60 Hz	17.6 (23.6)	23.0 (30.9)
Natural gas, 60 Hz	15.3 (20.5)	20.2 (27.1)
Cylinder head material	Aluminum	
Valve material	Steel/Stellite®	
Piston type and material	Aluminum Alloy	
Crankshaft material	Heat Treated, Ductile Iron	
Governor: type	Electronic	
Frequency regulation, no load to full load	Isochronous	
Frequency regulation, steady state	±0.5%	
Air cleaner type	Dry	

### Exhaust

Exhaust System	14RESAL	20RESAL
Exhaust temperature exiting the enclosure at rated kW, dry, °C (°F)	260 (500)	

### Engine Electrical

Engine Electrical System	14RESAL	20RESAL
Ignition system	Electronic, Capacitive Discharge	
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)	500	
Group size	51	

### Lubrication

Lubricating System	14RESAL	20RESAL
Type	Full Pressure	
Oil capacity (with filter), L (qt.)	1.9 (2.0)	2.8 (3.0)
Oil filter: quantity, type	1, Cartridge	
Oil cooler	Integral	

### Fuel Pipe Size

Pipe Length, m (ft.)	Minimum Gas Pipe Size Recommendation, in. NPT			
	14RESAL	20RESAL		
	Natural Gas 193,000 Btu/hr.	LP Vapor 203,000 Btu/hr.	Natural Gas 281,000 Btu/hr.	LP Vapor 340,000 Btu/hr.
8 (25)	3/4	3/4	1	3/4
15 (50)	1	3/4	1	1
30 (100)	1	1	1 1/4	1
46 (150)	1 1/4	1	1 1/4	1 1/4
61 (200)	1 1/4	1	1 1/4	1 1/4

## Fuel Requirements

Fuel System	14RESAL	20RESAL
Fuel types	Natural Gas or LP Vapor	
Fuel supply inlet	1/2 NPT	
Fuel supply pressure, kPa (in. H <sub>2</sub> O):		
Natural gas	1.2-2.7 (5-11)	
LP	1.7-2.7 (7-11)	

Fuel Composition Limits *	Nat. Gas	LP Gas
Methane, % by volume (minimum)	90 min.	—
Ethane, % by volume (maximum)	4.0 max.	—
Propane, % by volume	1.0 max.	85 min.
Propene, % by volume (maximum)	0.1 max.	5.0 max.
C <sub>4</sub> and higher, % by volume	0.3 max.	2.5 max.
Sulfur, ppm mass (maximum)	25 max.	
Lower heating value, MJ/m <sup>3</sup> (Btu/ft <sup>3</sup> ), min.	33.2 (890)	84.2 (2260)

\* Contact your local distributor for suitability and rating derates based on fuel compositions outside these limits.

## Operation Requirements

Fuel Consumption		Fuel Consumption, m <sup>3</sup> /hr. (cfh)	
Fuel Type	% Load	14RESAL	20RESAL
Natural Gas	100	5.4 (193)	8.0 (281)
	75	4.7 (163)	6.9 (243)
	50	3.5 (124)	4.6 (161)
	25	2.6 (93)	3.6 (127)
LP Vapor	100	2.3 (81)	3.9 (136)
	75	2.1 (75)	3.1 (109)
	50	1.8 (60)	2.3 (82)
	25	1.2 (45)	1.7 (59)
Nominal fuel rating: Natural gas:		37 MJ/m <sup>3</sup> (1000 Btu/ft. <sup>3</sup> )	
LP gas:		93 MJ/m <sup>3</sup> (2500 Btu/ft. <sup>3</sup> )	
LP gas conversion factors:		8.58 ft. <sup>3</sup> = 1 lb.	
		0.535 m <sup>3</sup> = 1 kg	
		36.39 ft. <sup>3</sup> = 1 gal.	

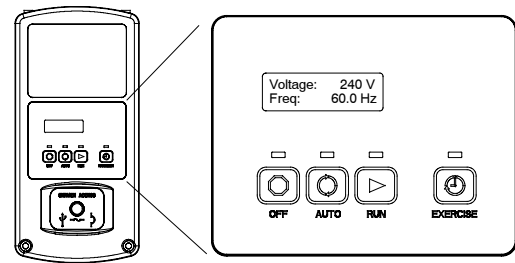
## Sound Data

Model 14RESAL sound level is 63 dBA during weekly engine exercise and 67 dBA during full-speed generator diagnostics and normal operation.

Model 20RESAL sound level is 64 dBA during weekly engine exercise and 69 dBA during full-speed generator diagnostics and normal operation.

All sound levels are measured at 7 meters with no load.

## DC2 Controller



The DC2 controller provides integrated control for the generator set, Kohler® Model RXT transfer switch, programmable interface module (PIM), and load control module (LCM)

The DC2 controller's 2-line LCD display provides a clear, easy-to-read display of status messages even in direct sunlight or low light.

## DC2 Controller Features

- OFF, AUTO, RUN, and EXERCISE pushbuttons
- LED indicators for OFF, AUTO, and RUN modes
- LCD display:
  - Two lines x 16 characters per line
  - Backlit display with adjustable contrast for excellent visibility
- Scrolling system status display
  - Generator set status
  - Voltage and frequency
  - Engine temperature
  - Oil pressure
  - Battery voltage
  - Engine runtime hours
  - Maintenance reminders
  - OnCue status (connected/disconnected)
- Date and time displays
- Smart engine cooldown senses engine temperature
- Digital isochronous governor to maintain steady-state speed at all loads
- Digital voltage regulation: ± 1.0% RMS no-load to full-load
- Automatic start with programmed cranking cycle
- Exercise modes
  - Unloaded weekly exercise with complete system diagnostics
  - Unloaded full-speed exercise
  - Loaded full-speed exercise (Model RXT ATS required)
- Front-access mini USB connector for SiteTech™ connection
- Front access mini-breaker protects the alternator
- Integral Ethernet connector for Kohler® OnCue™
- Built-in 2.5 amp battery charger
- Remote two-wire start/stop capability for optional connection of Model RDT or RSB transfer switches
- Diagnostic messages
  - Displays diagnostic messages for the engine, generator set, model RXT transfer switch, and optional programmable interface module (PIM) and load control module (LCM)
  - Over 70 diagnostic messages can be displayed
- A laptop computer and Kohler® SiteTech software can be used to change system settings or upgrade controller firmware.

## Standard Generator Set Features

- ATS: Model RXT automatic transfer switch
- Battery cables
- Braided stainless steel flexible fuel line
- CARB- and EPA-certified fuel system
- Corrosion-proof polymer sound enclosure
- Critical silencer
- DC2 generator set/ATS controller
- Field-connection terminal block
- Fuel solenoid valve and secondary regulator
- Line circuit breaker:
  - 14RESAL: 70 amps
  - 20RESAL: 100 amps
- Multi-fuel system, LP vapor/natural gas, field-convertible
- Oil drain extension with shutoff valve
- Premium 5-year limited warranty
- 18-month limited warranty for non-standby (off-grid) applications (14RESAL only)
- Rodent-resistant construction
- Sound-deadening, flame-retardant foam per UL 94, class HF-1

## Available Accessories\*

### Communication Accessories

- OnCue® Generator Management System

### Controller Accessories

- Programmable Interface Module (PIM)  
(provides 2 digital inputs and 6 relay outputs)
- Load Control Module (LCM)  
(provides 4 power relays and 2 HVAC relays)

### Electrical System

- Battery
- Battery heater

### Maintenance

- Maintenance kit (air and oil filters)
- General maintenance literature kit
- Overhaul literature kit
- Production literature kit

### Starting Aids

- Carburetor heater, 120 VAC (recommended for reliable starting at temperatures below 0°C [32°F])
- Fuel regulator heater pad (20RESAL; recommended for reliable starting at temperatures below -18°C [0°F])

### RXT Transfer Switch Accessories

- Status indicator

### Miscellaneous Accessories

- \_\_\_\_\_
- \_\_\_\_\_

\* Accessories are available through Kohler authorized distributors and dealers.

## Model RXT Transfer Switch



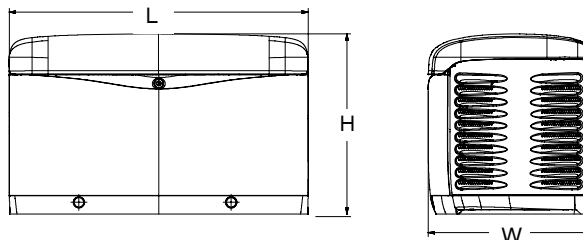
200 Amp with optional status indicator shown.

- UL listed
- 240 VAC/60 Hz
- Withstand rating 10,000 amps with specified breakers
- Models:
  - 100 amp model with load center is supplied with the 14RESAL
  - 200 amp standard model is supplied with the 20RESAL
- Corrosion-resistant NEMA 3R enclosures can be installed indoors or outdoors
- Designed for use only with Kohler® generator sets equipped with the RDC2 or DC2 controller
- See Specification Sheet G11-121 for more information

## Generator Set Dimensions and Weights

Overall Size, L x W x H: 1216 x 665 x 733 mm  
(48 x 26.2 x 29 in.)

Shipping Weight (with ATS):  
 14RESAL 213 kg (470 lb.)  
 20RESAL 263 kg (580 lb.)



NOTE: Dimensions are provided for reference only and should not be used for planning installation. Contact your local distributor for more detailed information.

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