Models: 14/20RES

KOHLER POWER SYSTEMS

Multi-Fuel LP Vapor/Natural Gas









The Kohler® Advantage

• Best-in-Class Power Quality

Kohler home generators provide industry-leading voltage and frequency regulation along with ultra-low levels of harmonic distortion for the best generator power quality you can get to protect your prized 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 greater starting power. The Kohler 14 kW generator can easily start and run a 5 ton air conditioner without dropping power to other appliances — an unheard-of feat in other generators of this size.*

• Exclusive 100% Corrosion-Proof Enclosure

Unlike aluminum or steel enclosures, the bold new Kohler design is completely corrosion-proof, even in harsh seaside environments.

Faster Response

Kohler home generators restore power to your home 2-3 times faster than competitive models.

Quiet Operation

Kohler home generators provide quiet neighborhoodfriendly performance. Now with the Model RRT transfer switch, you will experience even quieter operation during the ultra-quiet weekly diagnostic test.

Standard Features

• RDC Residential Digital Control

- One digital controller manages both the generator set and transfer switch functions (with optional model RRT transfer switch)
- o 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
- LED display shows system status and setup information

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

Certifications

- California Air Resources Board (CARB)-certified for both LP vapor and natural gas (60 Hz model)
- Meets Environmental Protection Agency (EPA) nonstationary unit requirements (60 Hz model)
- 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

Generator Ratings

					Standby Ratings			
					Natural	Gas	LP G	as
Model	Voltage	Phase	Hz Alternator	Alternator	kW/kVA	Amps	kW/kVA	Amps
14RES	120/240	1	60	2F5	12/12	50	14/14	58
20RES	120/240	1	60	2F7	18/18	75	20/20	83

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.

Application Data

Engine

g		
Engine Specifications	14RES	20RES
Manufacturer	Kol	nler
Engine: model, type	CH740	CH1000
_	4-Cycle	4-Cycle
Cylinder arrangement	V	·2
Displacement, cm ³ (cu. in.)	725 (44)	999 (61)
Bore and stroke, mm (in.)	83 x 67 (3.27 x 2.64)	
Compression ratio	9:1	8.8:1
Main bearings: quantity, type	2, Parent	Material
Rated RPM	36	00
Max. engine power at rated rpm, kW (HP)	ı	
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	Alum	inum
Valve material	Steel/S	itellite®
Piston type and material	Aluminu	ım Alloy
Crankshaft material	Heat Treated	, Ductile Iron
Governor: type	Elect	ronic
Frequency regulation, no load to full load	Isochr	onous
Frequency regulation, steady state	±0.	5%
Air cleaner type	D	ry

Engine Electrical

Electronic, Capacitive Discharge
12
15
Negative
12
1
500
51

Exhaust

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

Lubrication

Lubricating System	14RES	20RES
Туре	Full Pr	essure
Oil capacity (with filter), L (qt.)	1.9 (2.0)	2.8 (3.0)
Oil filter: quantity, type	1, Car	tridge
Oil cooler	Inte	gral

Fuel Requirements

14RES	20RES
Natural Gas	or LP Vapor
1/2 NPT	
1.2-2.7	(5-11)
1.7-2.7	(7-11)
193,000	281,000
203,000	340,000
	Natural Gas 1/2 N 1.2-2.7 1.7-2.7

Fuel Pipe Size

Minimum Gas Pipe Size Recommendation, in. NPT					
	14	RES	20RES		
Pipe Length, m (ft.)	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 Consumption

Fuel Consumption, m ³ /hr. (cfh)					
Fuel Type	% Load	14	RES	20	RES
	100%	5.4	(193)	8.0	(281)
Natural Gas	75%	4.7	(163)	6.9	(243)
Natural Gas	50%	3.5	(124)	4.6	(161)
	25%	2.6	(93)	3.6	(127)
	100%	2.3	(81)	3.9	(136)
I D) /om ou	75%	2.1	(75)	3.1	(109)
LP Vapor	50%	1.8	(60)	2.3	(82)
	25%	1.2	(45)	1.7	(59)

LP vapor conversion factors: $8.58 \text{ ft.}^3 = 1 \text{ lb.}$ $0.535 \text{ m}^3 = 1 \text{ kg}$ $36.39 \text{ ft.}^3 = 1 \text{ gal.}$

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 ±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

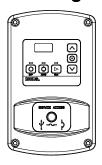
Alternator Specifications

Specifications	PowerBoost™ Generator 1-Phase
Manufacturer	Kohler
Output reconnectable	120/240
Туре	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	±1.5%
One-step load acceptance	100% of Rating
Peak motor starting kVA @ 240 V:	_
14RES	35
20RES	40.5

Sound Data

	Sound Le	Sound Level at 7 m			
Model	Low Speed No Load	Full Speed No Load			
14RES	66 dBA	70 dBA			
20RES	66 dBA	73 dBA			

RDC Residential Digital Controller



Controller Features

- Integrated control for the generator set and transfer switch *
- Membrane keypad:
 - o OFF, AUTO, and RUN pushbuttons
 - Password-protected access to system configuration and adjustment menus
 - System voltage/frequency selection and engine configuration
 - Voltage, gain, and engine speed adjustment
- OFF, AUTO, and RUN LED indicators
- LED display:
 - Scrolling system status display includes engine runtime hours, battery voltage, generator voltage, engine temperature, and utility voltage*
 - o Crank cycle status
 - Setup information
 - Software version
 - Faults
 - Event history
- · Faults displayed:
 - Auxiliary fault
 - o ATS communication error
 - High battery voltage
 - High engine temperature
 - Locked rotor
 - Low battery voltage
 - o Low oil pressure
 - Overcrank
 - Overfrequency
 - Overspeed
 - Overvoltage
 - Underfrequency
 - ondernequency
 - $\circ \ \ Underspeed$
 - Undervoltage
- Exercise modes
 - Unloaded quiet diagnostic test *
 - Loaded exercise
- Smart engine cooldown senses engine temperature *
- Remote two-wire start/stop capability for optional connection of Model RDT or RSB transfer switches
- Digital isochronous governor to maintain steady-state speed at all loads
- Digital voltage regulation: ±1.5% RMS no-load to full-load
- Automatic start with programmed cranking cycle
- Field-upgradeable firmware
- Front-access mini USB connector for firmware upgrade
- Front access fuses and mini-breaker
- * Model RRT transfer switch required

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 Kohler Power Systems Asia Pacific Headquarters 7 Jurong Pier Road Singapore 619159 Phone (65) 6264-6422, Fax (65) 6264-6455

Standard Features

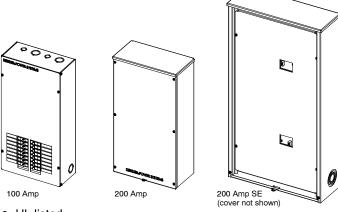
- Battery cables
- CARB- and EPA-certified fuel system
- Critical silencer
- Engine-mounted 15 amp battery charging alternator
- Field-connection terminal block
- Fuel solenoid valve and secondary regulator
- Multi-fuel system, LP vapor/natural gas, field-convertible
- Oil drain extension with shutoff valve
- RDC generator set/ATS controller
- Rodent-resistant construction
- Sound-deadening, flame-retardant foam per UL 94, class HF-1
- Corrosion-proof polymer sound enclosure
- Premium 5-year limited warranty
- 6-amp battery charger
- Line circuit breaker: 14RES: 70 amps 20RES: 125 amps

Available Accessories

Communication Accessories
OnCue Home™ Generator Management System
Electrical System
Battery
Battery heater
Fuel System
Gas strainer
Braided stainless steel flexible fuel line
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 $0^{\circ}C$ [32°F])
Transfer Switch
Kohler automatic transfer switch
Miscellaneous Accessories

Available Accessories

Model RRT Automatic Transfer Switch



- UL listed
- 240 VAC/60 Hz
- Withstand short circuit rating 10,000 amps with specified breakers. Service entrance models are rated 22,000 amps.
- Three models available:
 - o 100 amp NEMA 1 with load center for indoor installation
 - o 200 amp NEMA 3R for outdoors or indoors (no load center)
 - o 200 amp NEMA 3R service entrance-rated model
- Designed for the 14/20RES/RESL generator sets with RDC or DC integrated generator set/ATS controller
- Use with the 14/20RES generator set for unloaded, quiet diagnostic test, utility voltage sensing, and smart engine cooldown

Dimensions and Weights

Overall Size, L x W x H:

1216 x 665 x 733 mm
(48 x 26.2 x 29 in.)

Weight:

14RES
20RES

186 kg (410 lb.)
227 kg (500 lb.)

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

