

Models: **14/20RESA**

KOHLER Power Systems

Multi-Fuel
LPG/Natural Gas

ISO 9001
KOHLER
POWER SYSTEMS
NATIONALLY REGISTERED

GreenBuilder
EDITORS' CHOICE
THE HOT 50
PRODUCTS 2010



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 limited 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 generators restore power to your home quickly and reliably.

Standard Features

- **RDC2 Controller**
 - One digital controller manages both the generator set and transfer switch functions (with optional Model RXT).
 - Designed for today's most sophisticated electronics.
 - Electronic speed control responds quickly to varying demand.
 - Digital voltage regulation protects your sensitive electronics from harmonic distortion and unstable power quality.
- **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 LPG 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.
 - Load connection terminal block allows easy field wiring.
 - Designed for outdoor installation only.
- **Certifications**
 - Meets emission regulations for U.S. Environmental Protection Agency (EPA) with both natural gas and LPG.
Note: CARB does not regulate emergency standby generators with outputs less than 50 HP.
 - UL 2200 listed (60 Hz model).
 - CSA certification available (60 Hz model).
 - GOST certified (Russia).
 - Accepted by the Massachusetts Board of Registration of Plumbers and Gas Fitters
- **Warranty**
 - 5-year/2000 hour limited warranty for on-grid (standby) applications in locations served by a reliable utility source.
 - 18 month/1000 hour limited warranty for off-grid (non-standby) applications (Model 14RESA only).

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

Generator Ratings

Model	Alternator	Voltage	Phase	Hz	Standby Ratings				Line Circuit Breaker	
					Natural Gas		LPG		Amps	Poles
					kW/kVA	Amps	kW/kVA	Amps		
14RESA	2F5	120 *	1	60	12/12	100	13/13	108	125	1
		110/220	1	60	12/12	54	14/14	63	100	2
		120/240 *	1	60	12/12	50	14/14	58	70	2
		115/230	1	50	10/10	43	11/11	47	70	2
		220 †	1	50	10/10	45	11/11	50	50	1
		230	1	50	10/10	43	11/11	47	50	1
		240 †	1	50	10/10	41	11/11	45	50	1
	2G5	120/208 *	3	60	12/15	41	13/16	45	50	3
		127/220	3	60	12/15	39	13/16	42	50	4
		120/240 *	3	60	12/15	36	13/16	39	50	3
		220/380	3	60	12/15	22	13/16	24	32	4
		277/480	3	60	12/15	18	13/16	20	25	3
		220/380 ‡	3	50	10/12	18	11/13	20	25	4
		230/400	3	50	10/12	18	11/13	19	25	4
240/416 ‡	3	50	10/12	17	11/13	19	25	4		
20RESA	2F7	120 *	1	60	18/18	150	20/20	166	175	1
		110/220	1	60	18/18	81	20/20	90	100	2
		120/240 *	1	60	18/18	75	20/20	83	100	2
		100/200	1	50	15/15	75	16/16	80	80	2
		115/230	1	50	15/15	65	16/16	69	100	2
		220 †	1	50	15/15	68	16/16	72	80	1
		230	1	50	15/15	65	16/16	69	80	2
	240 †	1	50	15/15	62	16/16	66	80	1	
	2G7	120/208 *	3	60	17/21	58	17/21	58	70	3
		110/220	3	60	17/21	55	17/21	55	80	3
		127/220	3	60	17/21	55	17/21	55	80	4
		120/240 *	3	60	17/21	51	17/21	51	60	3
		220/380	3	60	17/21	32	17/21	32	40	4
		277/480	3	60	17/21	26	17/21	26	30	3
100/200		3	50	14/17	50	15/18	54	63	3	
220/380 ‡	3	50	14/17	26	15/18	28	32	4		
230/400	3	50	14/17	25	15/18	27	32	4		
240/416 ‡	3	50	14/17	24	15/18	26	32	4		

* UL listed.

† 50 Hz single-phase models are factory-connected as 230 volts. Field-adjustable to 220 or 240 volts by an authorized service technician.

‡ 50 Hz 3-phase models are factory-connected as 230/400 volts. Field-adjustable to 220/380 or 240/416 volts by an authorized service technician.

Note: The line circuit breaker is automatically selected based on the generator set model and voltage configuration.

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.

Alternator Specifications

Alternator Specifications

Specifications	Alternator	
Manufacturer	Kohler	
Type	2-Pole, Rotating Field	
Leads, quantity		
2F5, 2F7	4	
2G5, 2G7	12	
Voltage regulator	Digital	
Insulation:	NEMA MG1-1.66	
Material	Class H	
Temperature rise	130°C Standby	
Bearing: quantity, type	1, Sealed	
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: (35% dip for voltages below)		
14RESA:		
240V, 1 ph	2F5 (4 lead)	33 (60 Hz)
220 V, 1 ph	2F5 (4 lead)	26 (50 Hz)
480 V or 240 V, 3 ph	2G5 (12 lead)	54 (60 Hz)
380 V or 220 V, 3 ph	2G5 (12 lead)	38 (50 Hz)
20RESA:		
240 V, 1 ph	2F7 (4 lead)	41 (60 Hz)
220 V, 1 ph	2F7 (4 lead)	28 (50 Hz)
480 or 240 V, 3 ph	2G7 (12 lead)	69 (60 Hz)
380 or 220 V, 3 ph	2G7 (12 lead)	55 (50 Hz)

Alternator Features

- Compliance with NEMA, IEEE, and ANSI standards for temperature rise.
- Self-ventilated and dripproof construction.
- Windings are vacuum-impregnated with 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.
- Total harmonic distortion (THD) from no load to full load with a linear load is less than 5%.

Application Data

Engine

Engine Specifications	14RESA	20RESA
Manufacturer	Kohler	
Engine: model, type	CH740 4-Cycle	CH1000 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)	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		
60 Hz	3600	
50 Hz	3000	
Max. engine power at rated rpm, kW (HP)		
LPG, 60 Hz	17.6 (23.6)	23.0 (30.9)
LPG, 50 Hz	15.8 (21.2)	20.0 (26.8)
Natural gas, 60 Hz	15.3 (20.5)	20.2 (27.1)
Natural gas, 50 Hz	13.8 (18.5)	16.8 (22.5)
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	

Engine Electrical

Engine Electrical System	14RESA	20RESA
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	

Exhaust

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

Lubrication

Lubricating System	14RESA	20RESA
Type	Full Pressure	
Oil capacity (with filter), L (qt.)	1.8 (1.9)	1.9 (2.0)
Oil filter: quantity, type	1, Cartridge	
Oil cooler	Integral	

Fuel Pipe Size

Minimum Gas Pipe Size Recommendation, in. NPT				
Pipe Length, m (ft.)	14RESA		20RESA	
	Natural Gas 193,000 Btu/hr.	LPG 203,000 Btu/hr.	Natural Gas 281,000 Btu/hr.	LPG 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	14RESA	20RESA
Fuel types	Natural Gas or LPG	
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)	

Fuel Composition Limits *	Nat. Gas	LPG
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 ₄ and higher, % by volume	0.3 max.	2.5 max.
Sulfur, ppm mass (maximum)	25 max.	
Lower heating value, MJ/m ³ (Btu/ft ³), (minimum)	33.2 (890)	84.2 (2260)

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

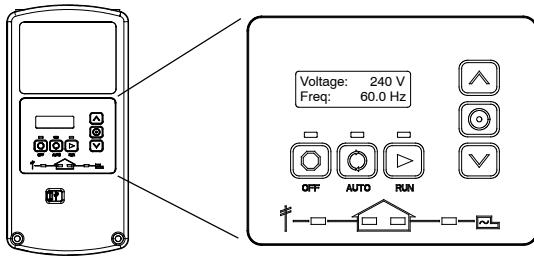
Operation Requirements

Fuel Consumption					
Model	Fuel Type	% Load	Fuel Consumption, m ³ /hr. (cfh)		
			60 Hz		50 Hz
14RESA	Natural Gas	100	5.4 (193)	4.9 (175)	
		75	4.7 (163)	4.2 (148)	
		50	3.5 (124)	3.1 (108)	
		25	2.6 (93)	2.4 (84)	
		Exercise	1.7 (60)	1.7 (60)	
	LPG	100	2.3 (81)	2.1 (74)	
		75	2.1 (75)	1.9 (68)	
		50	1.8 (60)	1.5 (53)	
		25	1.2 (45)	1.1 (40)	
		Exercise	0.8 (30)	0.8 (30)	
20RESA	Natural Gas	100	8.0 (281)	6.4 (225)	
		75	6.9 (243)	5.4 (189)	
		50	4.6 (161)	3.9 (139)	
		25	3.6 (127)	2.9 (103)	
		Exercise	2.0 (71)	2.0 (71)	
	LPG	100	3.9 (136)	2.9 (102)	
		75	3.1 (109)	2.4 (85)	
		50	2.3 (82)	1.8 (63)	
		25	1.7 (59)	1.3 (47)	
		Exercise	1.0 (35)	1.0 (35)	

Nominal fuel rating: Natural gas: 37 MJ/m³ (1000 Btu/ft.³)
LPG: 93 MJ/m³ (2500 Btu/ft.³)

LPG conversion factors: 8.58 ft.³ = 1 lb.
0.535 m³ = 1 kg
36.39 ft.³ = 1 gal.

RDC2 Controller



The RDC2 controller provides integrated control for the generator set, Kohler® Model RXT transfer switch, programmable interface module (PIM), and load control module (LCM).

The RDC2 controller's 2-line LCD screen displays status messages and system settings that are clear and easy to read, even in direct sunlight or low light.

RDC2 Controller Features

- Membrane keypad:
 - OFF, AUTO, and RUN pushbuttons
 - Select and arrow buttons for access to system configuration and adjustment menus
- LED indicators for OFF, AUTO, and RUN modes
- LED indicators for utility power and generator set source availability and ATS position (Model RXT transfer switch required)
- LCD display:
 - Two lines x 16 characters per line
 - Backlit display with adjustable contrast for excellent visibility in all lighting conditions
- Scrolling system status display:
 - Generator set status
 - Voltage and frequency
 - Engine temperature
 - Oil pressure
 - Battery voltage
 - Engine runtime hours
- Date and time displays
- Smart engine cooldown senses engine temperature
- Digital isochronous governor to maintain steady-state speed at all loads
- Digital voltage regulation: $\pm 1.0\%$ RMS no-load to full-load
- Automatic start with programmed cranking cycle
- Programmable exerciser can be set to start automatically on any future day and time, and run every week or every two weeks
- 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™ or USB Utility connection
- Integral Ethernet connector for Kohler® OnCue® Plus
- Built-in 2.5 amp battery charger
- Remote two-wire start/stop capability for optional connection of Model RDT or RSB transfer switches

Additional RDC2 Controller Features

- Diagnostic messages:
 - Displays diagnostic messages for the engine, generator, Model RXT transfer switch, programmable interface module (PIM), and load control module (LCM)
 - Over 70 diagnostic messages can be displayed
- Maintenance reminders
- System settings:
 - System voltage, frequency, and phase
 - Voltage adjustment
 - Measurement system, English or metric
- ATS status (Model RXT ATS required):
 - Source availability
 - ATS position (normal/utility or emergency/generator)
 - Source voltage and frequency
- ATS control (Model RXT ATS required):
 - Source voltage and frequency settings
 - Engine start time delay
 - Transfer time delays
 - Voltage calibration
 - Fixed pickup and dropout settings
- Programmable Interface Module (PIM) status displays:
 - Input status (active/inactive)
 - Output status (active/inactive)
- Load control module (LCM) menus:
 - Load status
 - Test function

Generator Set Sound Data

Model 14RESA 8 point logarithmic average sound levels are 63 dB(A) during weekly engine exercise and 67 dB(A) during full-speed generator diagnostics and normal operation. For comparison to competitor ratings, the lowest sound levels are 58 dB(A) and 63 dB(A) respectively.*

Model 20RESA 8 point logarithmic average sound levels are 64 dB(A) during weekly engine exercise and 69 dB(A) during full-speed generator diagnostics and normal operation. For comparison to competitor ratings, the lowest point sound levels are 62 dB(A) and 67 dB(A) respectively.*

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

* Lowest of 8 points measured around the generator. Sound levels at other points around generator may vary depending on installation parameters.

Generator Set Standard Features

- Battery cables
- EPA certified fuel system
- Corrosion-proof polymer sound enclosure
- Critical silencer
- Field-connection terminal block
- Fuel solenoid valve and secondary regulator
- Line circuit breaker
- Multi-fuel system, LPG/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 (14RESA only)
- RDC2 generator set/ATS controller
- Rodent-resistant construction
- Sound-deadening, flame-retardant foam per UL 94, class HF-1

Available Options

Approvals and Listings

- CSA approval

Communication Accessories

- OnCue® Plus Generator Management System
- OnCue® Plus Wireless Generator Management System

Concrete Mounting Pads

- Concrete mounting pad, 3 in. thick
- Concrete mounting pad, 4 in. thick (recommended for storm-prone areas)

Electrical System

- Battery
- Battery heater, 120VAC
- Battery heater, 240VAC
- Emergency stop kit
- Load control module (LCM) (provides 4 power relays and 2 HVAC relays)
- PowerSync™ Automatic Paralleling Module (APM) (single phase only; parallels two 14RESA or two 20RESA generators)
- Programmable interface module (PIM) (provides 2 digital inputs and 6 relay outputs)

Available Options, Continued

Fuel System

- Flexible fuel line

Literature

- General maintenance literature kit
- Overhaul literature kit
- Production literature kit

Maintenance

- Maintenance kit (includes air filter, oil, oil filter, and spark plugs)

Starting Aids

- Carburetor heater, 120 VAC
- Carburetor heater, 240 VAC
Carburetor heater is recommended for reliable starting at temperatures below 0°C (32°F)
- Fuel regulator heater pad 120VAC (20RESA)
- Fuel regulator heater pad 240VAC (20RESA)
Fuel regulator heater is recommended for reliable starting at temperatures below -18°C (0°F).

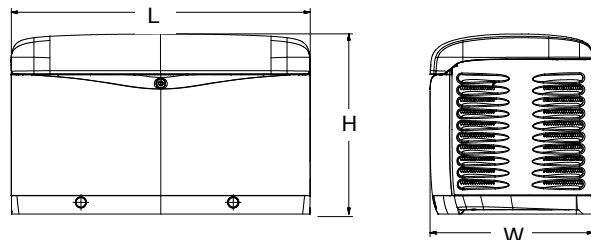
Kohler® Automatic Transfer Switch

- Model RXT
- Model RDT
- Model RSB
- Other Kohler® ATS

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:	14RESA	191 kg (420 lb.)
	20RESA	243 kg (535 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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