

# 20 kW

## Synergy™

### Variable Speed Residential Standby Generator Air-Cooled Gas Engine

#### INCLUDES:

- G-Flex™ Variable Speed Technology
- Two Line LCD Multilingual Digital Evolution™ Controller (English/Spanish/French/Portuguese)
- 200 Amp Smart Switch with onboard load management
- Electronic Governor
- System Status & Maintenance Interval LED Indicators
- Mobile Link™ Cellular Monitoring System\*
- Sound Attenuated Enclosure
- Flexible Fuel Line Connector
- Direct-To-Dirt Composite Pad
- Protective Base Fascia
- Natural Gas or LP Gas Operation
- 5 Year Limited Warranty
- Capability to be installed within 18" (457 mm) of a building\*\*




Standby Power Rating

Model G007040-0 (Aluminum - Bisque) - 20 kW 60 Hz - USA  
Model G007041-0 (Aluminum - Bisque) - 20 kW 60 Hz - Canada



QUIET-TEST™

\*Built in the USA using domestic and foreign parts

\* Download the free App at   

Canadian units do not include Mobile Link.

\*\*Only if located away from doors, windows and fresh air intakes, and unless otherwise directed by local codes.

## FEATURES

- **INNOVATIVE DESIGN & PROTOTYPE TESTING** are key components of GENERAC'S success in "IMPROVING POWER BY DESIGN." But it doesn't stop there. Total commitment to component testing, reliability testing, environmental testing, destruction and life testing, plus testing to applicable CSA, NEMA, EGSA, and other standards, allows you to choose GENERAC POWER SYSTEMS with the confidence that these systems will provide superior performance.
- **G-Flex Variable Speed Technology:** By utilizing patented variable speed technology, the generator is capable of running at various RPMs depending on the electrical demand, resulting in quieter operation, better fuel economy and produce power at <1.5% total harmonic distortion for quality power.
- **TEST CRITERIA:**
  - ✓ PROTOTYPE TESTED
  - ✓ NEMA MG1-22 EVALUATION
  - ✓ SYSTEM TORSIONAL TESTED
  - ✓ MOTOR STARTING ABILITY
- **SOLID-STATE, FREQUENCY COMPENSATED VOLTAGE REGULATION.** This state-of-the-art power maximizing regulation system is standard on all Generac models. It provides optimized FAST RESPONSE to changing load conditions and MAXIMUM MOTOR STARTING CAPABILITY by electronically torque-matching the surge loads to the engine. Digital voltage regulation at ±1%.
- **SINGLE SOURCE SERVICE RESPONSE** from Generac's extensive dealer network provides parts and service know-how for the entire unit, from the engine to the smallest electronic component.
- **GENERAC TRANSFER SWITCHES.** Long life and reliability are synonymous with GENERAC POWER SYSTEMS. One reason for this confidence is that the GENERAC product line includes its own transfer systems and controls for total system compatibility.

## 20 kW

**Engine**

- Generac (OHVI) design  
Maximizes engine “breathing” for increased fuel efficiency. Plateau honed cylinder walls and plasma moly rings helps the engine run cooler, reducing oil consumption resulting in longer engine life.
- Quiet-Test™  
Greatly reduces sound output and fuel consumption during bi-weekly exercise.
- “Spiny-lok” cast iron cylinder walls  
Rigid construction and added durability provide long engine life.
- Electronic ignition/spark advance  
These features combine to assure smooth, quick starting every time.
- Full pressure lubrication system  
Pressurized lubrication to all vital bearings means better performance, less maintenance and longer engine life. Now featuring up to a 2 year/200 hour oil change interval.
- Low oil pressure shutdown system  
Shutdown protection prevents catastrophic engine damage due to low oil.
- High temperature shutdown  
Prevents damage due to overheating.
- Optimized muffler and resonator  
Results in dramatically quieter operation during exercise and normal loads than constant speed systems.

**Generator**

- Cylindrically wound rotor  
Allows for multi-phase excitation, enabling variable engine RPM resulting in fuel savings and sound reduction.
- Skewed stator  
Produces a smooth output waveform for compatibility with electronic equipment.
- Variable speed, constant frequency AVR  
Provides uncommonly clean power with less than 1.5% THD (Total Harmonic Distortion)
- Automatic voltage regulation  
Regulates the output voltage to  $\pm 1\%$  prevents damaging voltage spikes.
- UL 2200 listed  
For your safety.

**Transfer Switch**

- Fully automatic  
Transfers your vital electrical loads to the energized source of power.
- DPM Technology  
Digital Power Management Technology allows for the smart control of two air conditioners without any additional items.
- NEMA 3R Rated  
Can be mounted indoors or outdoors for simple, low cost installation

**Evolution™ Controls**

- Auto/Manual/Off illuminated buttons  
Selects the operating mode and provides easy, at-a-glance status indication in any condition.
- Sealed, raised buttons  
Smooth, weather-resistant user interface for programming and operations.
- Utility voltage sensing  
Constantly monitors utility voltage, setpoints 65% dropout, 80% pick-up, of standard voltage.
- Generator voltage sensing  
Constantly monitors generator voltage to ensure the cleanest power delivered to the home.
- Utility interrupt delay  
Prevents nuisance start-ups of the engine, adjustable 2-1500 seconds from the factory default setting of 5 seconds by a qualified dealer.
- Engine warm-up  
Ensures engine is ready to assume the load, setpoint approximately 5 seconds.
- Engine cool-down  
Allows engine to cool prior to shutdown, setpoint approximately 1 minute.
- Programmable exerciser  
Operates engine to prevent oil seal drying and damage between power outages by running the generator for 5 minutes every other week as default with the option of setting weekly or monthly to allow for flexibility and potential fuel savings.
- Smart battery charger  
Compatible with both lead acid and AGM-style batteries.
- Main line circuit breaker  
Protects generator from overload.
- Electronic governor  
Maintains constant 60 Hz frequency.

**Unit**

- SAE weather protective enclosure  
Sound attenuated enclosures ensure quiet operation and protection against mother nature, withstanding winds up to 150 mph. Hinged key locking roof panel for security. Lift-out front for easy access to all routine maintenance items. Electrostatically applied textured epoxy paint for added durability.
- Enclosed critical grade muffler  
Quiet, critical grade muffler is mounted inside the unit to prevent injuries.
- Small, compact, attractive  
Makes for an easy, eye appealing installation, as close as 18" away from a building.

**Installation System**

- 1 ft (305 mm) flexible fuel line connector  
Absorbs any generator vibration when connected to rigid pipe.
- Direct-to-dirt composite pad  
Complex lattice design prevents settling or sinking of the generator system.
- Integral sediment trap  
Prevents particles and moisture from entering the fuel regulator and engine, prolonging engine life

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### Generator

Model	G007040-0/G007041-0
Rated Maximum Continuous Power Capacity (LP)	20,000 Watts*
Rated Maximum Continuous Power Capacity (NG)	18,000 Watts*
Rated Voltage	240
Rated Maximum Continuous Load Current – 240 Volts (LP/NG)	83.3/75
Total Harmonic Distortion	Less than 1.5%
Main Line Circuit Breaker	100 Amp
Phase	1
Number of Rotor Poles	2
Rated AC Frequency	60 Hz
Power Factor	1.0
Battery Requirement (not included)	12 Volts, Group 26R 540 CCA Minimum or Group 35AGM 650 CCA Minimum
Unit Weight (lb/kg)	471/214
Dimensions (L x W x H) in/mm	48 x 25 x 29/1218 x 638 x 732
Sound output in dB(A) at 23 ft (7 m) with generator operating at normal load**	63
Sound output in dB(A) at 23 ft (7 m) with generator in Quiet-Test™ low-speed exercise mode**	57

### Engine

Type of Engine	GENERAC OHVI V-TWIN	
Number of Cylinders	2	
Displacement	999 cc	
Cylinder Block	Aluminum w/ Cast Iron Sleeve	
Valve Arrangement	Overhead Valve	
Ignition System	Solid-state w/ Magneto	
Governor System	Electronic	
Compression Ratio	9.5:1	
Starter	12 Vdc	
Oil Capacity Including Filter	Approx. 1.9 qt/1.8 L	
Operating rpm	2,700-3,600	
Fuel Consumption		
Natural Gas	ft <sup>3</sup> /hr (m <sup>3</sup> /hr)	
	Exercise	43 (1.22)
	1/2 Load	200 (5.66)
	Full Load	282 (7.99)
Liquid Propane	ft <sup>3</sup> /hr (gal/hr) [l/hr]	
	Exercise	5.55 (1.15) [.58]
	1/2 Load	66.8 (1.84) [6.95]
	Full Load	126.0 (3.5) [13.11]

Note: **Fuel pipe must be sized for full load.** Required fuel pressure to generator fuel inlet at all load ranges - 3.5-7" water column (7-13 mm mercury) for natural gas, 10-12" water column (19-22 mm mercury) for LP gas. For Btu content, multiply ft<sup>3</sup>/hr x 2500 (LP) or ft<sup>3</sup>/hr x 1000 (NG). For Megajoule content, multiply m<sup>3</sup>/hr x 93.15 (LP) or m<sup>3</sup>/hr x 37.26 (NG).

### Controls

2-Line Plain Text Multilingual LCD Display	Simple user interface for ease of operation.
Mode Buttons:	Automatic Start on Utility failure. Programmable exercise.
Auto	
Manual	Start with starter control, unit stays on. If utility fails, transfer to load takes place.
Off	Stops unit. Power is removed. Control and charger still operate.
Ready to Run/Maintenance Messages	Standard
Engine Run Hours Indication	Standard
Programmable start delay between 2-1500 seconds	Standard (programmable by dealer only)
Utility Voltage Loss/Return to Utility Adjustable	From 140-171 V/190-216 V
Future Set Capable Exerciser/Exercise Set Error Warning	Standard
Run/Alarm/Maintenance Logs	50 Events Each
Engine Start Sequence	Cyclic cranking: Engine cranks a maximum of five times at factory set intervals and durations.
Starter Lock-out	Starter cannot re-engage until 5 sec after engine has stopped.
Smart Battery Charger	Standard
Charger Fault/Missing AC Warning	Standard
Low Battery/Battery Problem Protection and Battery Condition Indication	Standard
Automatic Voltage Regulation with Over and Under Voltage Protection	Standard
Under-Frequency/Overload/Stepper Overcurrent Protection	Standard
Safety Fused/Fuse Problem Protection	Standard
Automatic Low Oil Pressure/High Oil Temperature Shutdown	Standard
Overcrank/Overspeed (@ 72 Hz)/rpm Sense Loss Shutdown	Standard
High Engine Temperature Shutdown	Standard
Internal Fault/Incorrect Wiring Protection	Standard
Common External Fault Capability	Standard
Field Upgradable Firmware	Standard

\*\*Sound levels are taken from the front of the generator. Sound levels taken from other sides of the generator may be higher depending on installation parameters. Rating definitions - Standby: Applicable for supplying emergency power for the duration of the utility power outage. No overload capability is available for this rating. (All ratings in accordance with BS5514, ISO3046 and DIN6271). \* Maximum wattage and current are subject to and limited by such factors as fuel Btu/megajoule content, ambient temperature, altitude, engine power and condition, etc. Maximum power decreases about 3.5 percent for each 1,000 feet (304.8 meters) above sea level; and also will decrease about 1 percent for each 6 °C (10 °F) above 16 °C (60 °F).

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**switch options**

**Service Rated Smart Switch Features (USA)**

- Includes Digital Power Management Technology specifically designed for variable speed operation standard (DPM).
- Intelligently manages two air conditioner loads with no additional hardware.
- Up to four more large (120/240 VAC) loads can be managed when used in conjunction with 50 amp Power Management Modules (PMM\*\*).
- Electrically operated, mechanically-held contacts for fast, clean connections.
- Rated for all classes of load, 100% equipment rated, both inductive and resistive.
- 2 pole, 250 VAC contactors.
- Service rated, dual coil design.
- Rated for both aluminum and copper conductors.
- NEMA/UL 3R aluminum outdoor enclosure allows for indoor or outdoor mounting flexibility.
- Main contacts are silver plated or silver alloy to resist welding and sticking.

\*\*Note: PMM starter kit is required prior to using the modules.

Note: Any single load larger than 10 kW or 2.4 kVar must be connected to the load management control

**Dimensions**

	200 Amps 120/240, 1Ø Open Transition Service Rated				
	Height		Width		Depth
	H1	H2	W1	W2	
in	27.24	30.0	11.4	13.5	7.09
mm	692.0	762.4	289.0	343.0	180.0

**Non-service Rated Smart Switch Features (Canada)**

- Includes Digital Power Management Technology specifically designed for variable speed operation standard (DPM).
- Intelligently manages two air conditioner loads with no additional hardware.
- Up to four more large (120/240 VAC) loads can be managed when used in conjunction with 50 amp Power Management Modules (PMM\*\*).
- Electrically operated, mechanically-held contacts for fast, clean connections.
- Rated for all classes of load, 100% equipment rated, both inductive and resistive.
- 2 pole, 250 VAC contactors.
- Dual coil design.
- Rated for both aluminum and copper conductors.
- NEMA/UL 3R aluminum enclosure allows for indoor or outdoor mounting flexibility.
- Main contacts are silver plated or silver alloy to resist welding and sticking.

\*\*Note: PMM starter kit is required prior to using the modules.

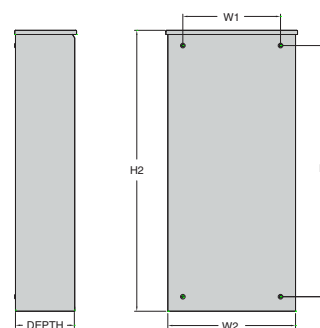
Note: Any single load larger than 10 kW or 2.4 kVar must be connected to the load management control

**Dimensions**

	200 Amps 120/240, 1Ø Open Transition Non-Service Rated				
	Height		Width		Depth
	H1	H2	W1	W2	
in	17.24	20.0	12.5	14.6	7.09
mm	437.9	508	317.5	370.8	180.1

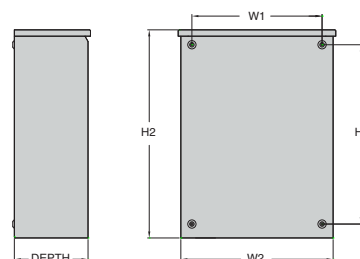
Model	G007040-0 (USA)
No. of Poles	2
Current Rating (Amps)	200
Voltage Rating (VAC)	120/240, 1Ø
Utility Voltage Monitor (Fixed)*	
-Pick-up	80%
-Dropout	65%
Return to Utility*	approx. 13 sec.
Bi-weekly exercise for 5 minutes*	Standard
UL Listed	Standard
Enclosure Type	NEMA 3R
Withstand Rating (Amps)	22,000
Lug Range	250 MCM - #6

\*Function of Evolution Controller



Model	G007041-0 (Canada)
No. of Poles	2
Current Rating (Amps)	200
Voltage Rating (VAC)	120/240, 1Ø
Utility Voltage Monitor (Fixed)*	
-Pick-up	80%
-Dropout	65%
Return to Utility*	approx. 13 sec.
Bi-weekly exercise for 5 minutes*	Standard
CSA Listed	Standard
Enclosure Type	NEMA 3R
Withstand Rating (Amps)	22,000
Lug Range	250 MCM - #6

\*Function of Evolution Controller



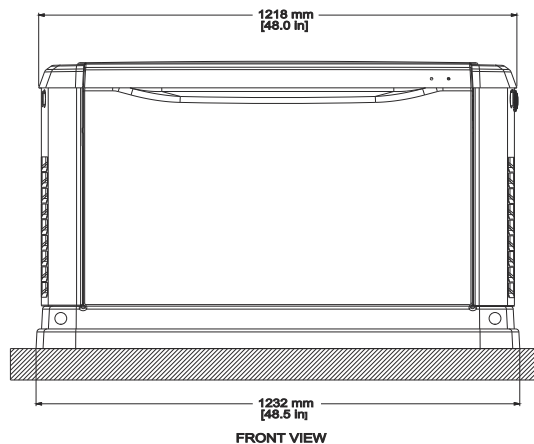
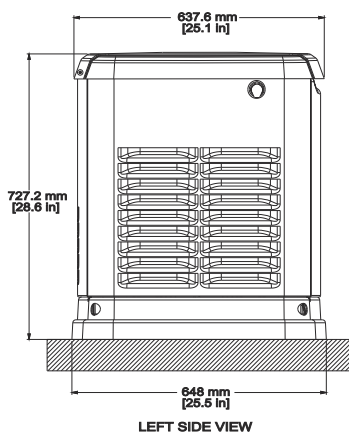
**20 kW**

**available accessories**

Model #	Product	Description
G005819-0	26R Wet Cell Battery	Every standby generator requires a battery to start the system. Generac offers the recommended 26R wet cell battery for use with all air-cooled standby product.
G007101-0	Battery Pad Warmer	The pad warmer rests under the battery. Recommended for use if the temperature regularly falls below 0°F. (Not necessary for use with AGM-style batteries.)
G007102-0	Oil Warmer	Oil warmer slips directly over the oil filter. Recommended for use if the temperature regularly falls below 0°F.
G007103-0	Breather Warmer	The breather warmer is for use in extreme cold weather applications. For use with Evolution controllers only in climates where heavy icing occurs.
G005621-0	Auxiliary Transfer Switch Contact Kit	The auxiliary transfer switch contact kit allows the transfer switch to lock out a single large electrical load you may not need.
G005704-0	Paint Kit	If the generator enclosure is scratched or damaged, it is important to touch-up the paint to protect from future corrosion. The paint kit includes the necessary paint to properly maintain or touch-up a generator enclosure.
G006829-0	Scheduled Maintenance Kit	Generac's scheduled maintenance kits provide all the hardware necessary to perform complete routine maintenance on a Generac automatic standby generator.
G006186-0	Power Management Module (50 Amps)	Power Management Modules are used in conjunction with the Smart Switch to increase its power management capabilities. It gives the Smart Switch additional power management flexibility not found in any other transfer switch.
G006199-0	PMM Starter Kit	The PMM Starter Kit consists of a 24 VAC, field installed transformer that enables the use of the 24 VAC Power Management Modules (PMMs) and one PMM. The standard controller (without starter kit) can control two HVAC loads with no additional hardware. This kit is required if installing this unit in a home with a digital HVAC controls vs. the standard 24 VAC system.
G006873-0	Smart Management Module (50 Amps)	Smart Management Modules are used in conjunction with the Automatic Transfer Switch to increase its power management capabilities. It provides additional power management flexibility not found in any other power management system.

**dimensions & UPC**

Dimensions shown are approximate. Refer to installation manual for exact dimensions. DO NOT USE THESE DIMENSIONS FOR INSTALLATION PURPOSES.



Model	UPC
G007040-0	696471070408
G007041-0	696471070415