

# 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
- External Main Circuit Breaker, System Status & Maintenance Interval LED Indicators
- Mobile Link™ Cellular Monitoring System\*
- GFCI Duplex Outlet
- Sound Attenuated Enclosure
- Flexible Fuel Line Connector
- Composite Mounting 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\*\*

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

#### Standby Power Rating

Model 006055-0 (Aluminum - Gray) - 20 kW 60 Hz - USA  
Model 006098-0 (Aluminum - Gray) - 20 kW 60 Hz - Canada



\*Built in the USA using domestic and foreign parts

\* Download the free App at



## 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.
- “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  
Delivers charge to the battery only when needed at varying rates depending on outdoor air temperature.
- Main line circuit breaker  
Protects generator from overload.
- Electronic governor  
Maintains constant 60 Hz frequency.

**Unit**

- Weather protective enclosure  
Ensures protection against mother nature and can withstand winds up to 150mph. 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.
- SAE  
Sound attenuated enclosure ensures quiet operation.

**Installation System**

- 1 ft (305 mm) flexible fuel line connector  
Easy installation.
- Composite mounting pad

## 20 kW

### Generator

|  |   |
|--|---|
| <b>Model</b>   | <b>006055-0/006098-0</b>                |
| 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  | 90 Amp                                  |
| Phase  | 1                                       |
| Number of Rotor Poles  | 2                                       |
| Rated AC Frequency   | 60 Hz                                   |
| Power Factor   | 1.0                                     |
| Battery Requirement (not included)   | Group 26R, 12 Volts and 525 CCA Minimum |
| Unit Weight (lb/kg)  | 471/213.6                               |
| 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                                 | 174 (4.93)          |
|                               | Full Load                                | 285 (8.07)          |
| Liquid Propane                | ft <sup>3</sup> /hr (gal/hr) [l/hr]      |                     |
|                               | Exercise                                 | 5.55 (1.15) [.58]   |
|                               | 1/2 Load                                 | 59.7 (1.64) [6.20]  |
|                               | Full Load                                | 123.7 (3.4) [12.94] |

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).

**20 kW**

**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.
- 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<br>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 outdoor enclosure.
- Main contacts are silver plated or silver alloy to resist welding and sticking.

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

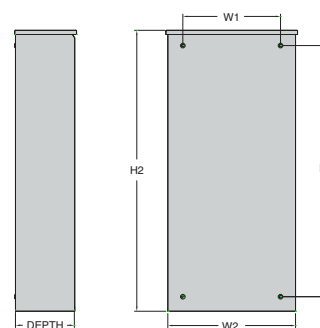
\*\*\*Note: Any single load larger than 10 kW or 2.4 kVar must be connected to the load management control

**Dimensions**

|    | 200 Amps 120/240, 1Ø<br>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 |

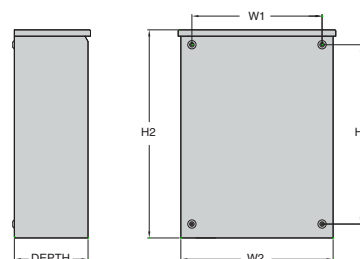
| Model                             | 006055-0 (USA)  |
|-----------------------------------|-----------------|
| No. of Poles                      | 2               |
| Current Rating (Amps)             | 200             |
| Voltage Rating (VAC)              | 120/240, 1Ø     |
| Utility Voltage Monitor (Fixed)*  |                 |
| -Pick-up                          | 80%             |
| -Dropout                          | 60%             |
| 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                             | 006098-0 (Canada) |
|-----------------------------------|-------------------|
| No. of Poles                      | 2                 |
| Current Rating (Amps)             | 200               |
| Voltage Rating (VAC)              | 120/240, 1Ø       |
| Utility Voltage Monitor (Fixed)*  |                   |
| -Pick-up                          | 80%               |
| -Dropout                          | 60%               |
| 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      |

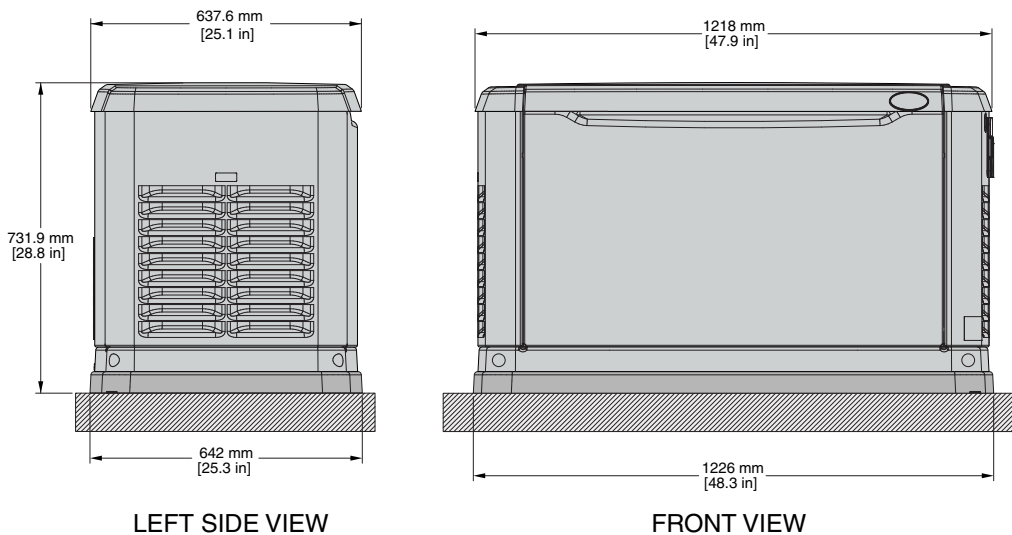
\*Function of Evolution Controller



| Model #  | Product                               | Description   |
|----------|---------------------------------------|---|
| 005819-0 | 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.  |
| 006212-0 | Cold Weather Kit                      | If the temperature regularly falls below 32 °F (0 °C), a cold weather kit is required to maintain optimal battery and oil temperatures. Kit consists of battery warmer and oil filter heater with built-in thermostats.   |
| 005621-0 | 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.   |
| 005704-0 | 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.  |
| 006829-0 | Scheduled Maintenance Kit             | Generac's scheduled maintenance kits provide all the hardware necessary to perform complete routine maintenance on a Generac automatic standby generator.   |
| 006186-0 | 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.   |
| 006199-0 | 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. |

**dimensions & UPC**

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



| Model    | UPC          |
|----------|--------------|
| 006055-0 | 696471060553 |
| 006098-0 | 696471060980 |