

## Installation Manual

### Version 1.2

#### DESCRIPTION

Flight Systems is now offering a new GenStart model controller that is an exact drop-in replacement for the popular Generac E-Panel controller (0A4087). It mounts in the original panel cut-out with the original clamps, and the original harness plugs right in. No wiring changes are needed. Set-up is fast and easy using the front panel controls.



#### FEATURES

- Exact drop-in replacement for Generac E-Panel controller (0A4087)
- User friendly, easier access to information
- Enhanced graphics display with icons; visible day or night
- More information displayed on each screen
- LED indicators for Power, Not In Auto, Com Alarm and Gen Run
- Electronic PIN-accessible lockout replaces key switch
- Audible alarm
- Real-time clock
- Automatic, programmable self-exercise
- Timestamped event logging
- Communications port selection (RS232/RS485) from front panel
- GenLink® version 1.0 (via RS-232) is supported
- Compatible with Generac 20-light Remote Annunciator Panel (0A6388)
- Compatible with Generac 8-Channel Relay Panel (0A9036)
- Made in U.S.A.

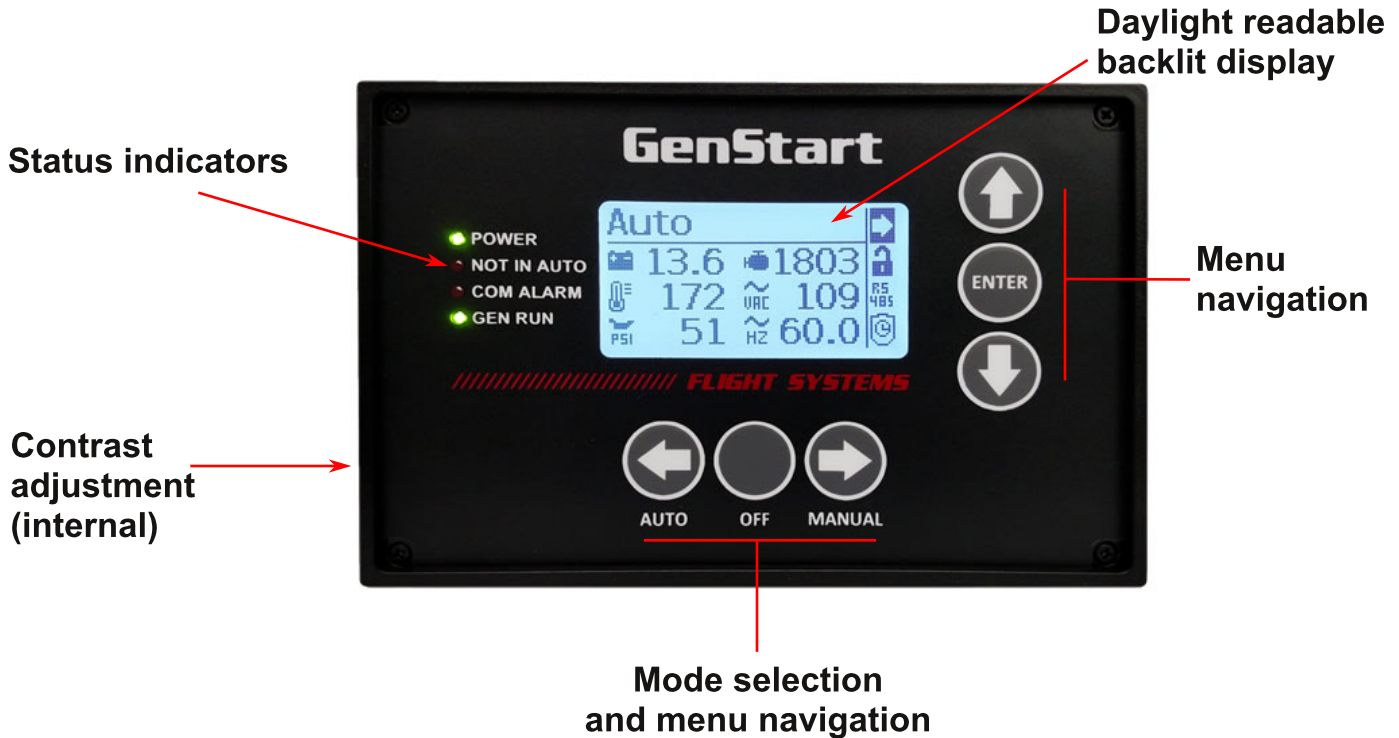
# 74-0A4087-00

# Flight Systems

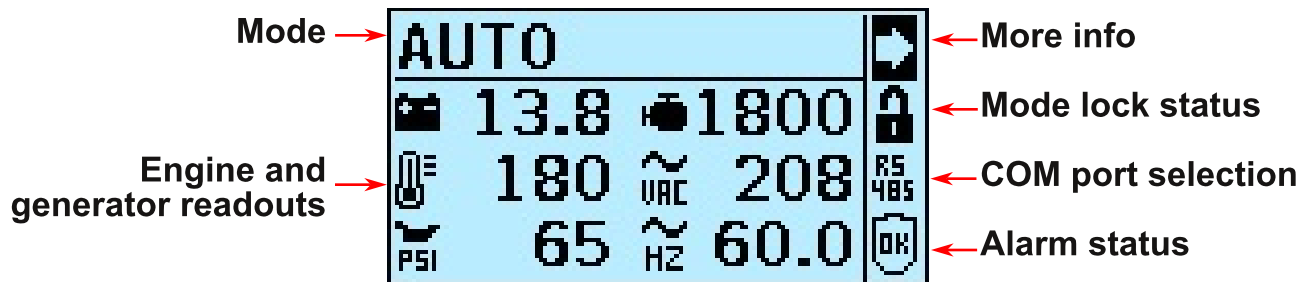
Replacement for Generac 0A4087

[www.flightsystems.com](http://www.flightsystems.com)

## LAYOUT



## DISPLAY



### Engine & Generator

|                 |                |
|-----------------|----------------|
| Battery Voltage | Engine Hours   |
| Coolant Temp    | Coolant Level  |
| Oil Pressure    | Fuel Level     |
| Engine RPM      | Oil Temp       |
| Voltage AC      | Analog Input 1 |
| Frequency       | Analog Input 2 |

### Alarm Status

|                |
|----------------|
| Alarms Clear   |
| Warning        |
| Alarm Bypass   |
| Cool Down      |
| Alarm Shutdown |

### Settings

|                 |
|-----------------|
| Settings        |
| More Info       |
| RS232 COM       |
| RS485 COM       |
| CANbus Selected |

# 74-0A4087-00

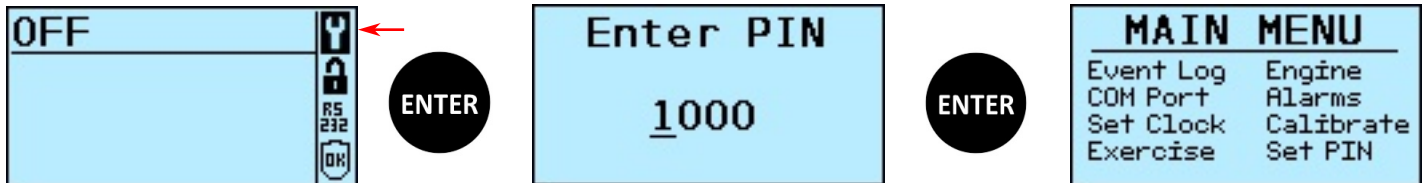
# Flight Systems

Replacement for Generac 0A4087

www.flightsystems.com

## ACCESS THE MAIN MENU

To access the Main Menu, place the controller in the OFF position. Select the Settings icon and press **ENTER**. When prompted to enter your PIN, use the **UP** and **DOWN** arrows to adjust values and the **LEFT** and **RIGHT** arrows to move the cursor. The default PIN is 1000.



When making adjustments use the arrow buttons to navigate. Press **ENTER** to select an option. If the function contains multiple parameters, pressing **ENTER** will progress to the next available parameter. To save your settings you must navigate to the SAVE function and press **ENTER** to exit. Optionally, you can select BACK to cancel or press **OFF** to cancel or move back in the menu at any time. Most alarms have 2 parameters, active state and function, which are abbreviated as follows.

### ACTIVE STATES

OFF - DISABLED  
DEL - DELAYED  
IMM - IMMEDIATE  
ON - ALWAYS ON

### FUNCTIONS

NLT - NON LATCHING  
LAT - LATCHING  
STA - STATUS ONLY  
SD - SHUT DOWN

## ENGINE CONFIGURATION

Use the navigation buttons to select Engine and press **ENTER**. Use the **UP** and **DOWN** arrows to select a parameter to edit. Press **ENTER** to highlight the parameter value and use the **UP** and **DOWN** arrows to increase or decrease the entry. When complete press **ENTER** to return to the engine options. Repeat the same procedure for all of the engine parameters. This **MUST** be complete before attempting to run.

Flywheel - 137 teeth  
Crank Disconnect - 500 RPM  
Crank Time - 10 seconds  
Crank Rest - 5 seconds  
Crank Attempts - 3  
Nominal Voltage - 150 VAC  
Frequency - 58.0 Hz  
Preheat - 0 seconds  
Alarm Bypass - 10 seconds

Warm Up - 0 seconds  
Cool Down - 0 seconds

# 74-0A4087-00

# Flight Systems

Replacement for Generac 0A4087

www.flightsystems.com

## ALARM CONFIGURATION

Return to the main menu and select Alarms. The following parameters **MUST** be set or confirmed before running.

|              |                 |      |                    |
|--------------|-----------------|------|--------------------|
| Oil Pressure | PRE LOW         | 25.0 |                    |
|              | LOW             | 15.0 |                    |
| Coolant Temp | LOW             | 0    |                    |
|              | PRE HIGH        | 195  |                    |
| Engine RPM   | HIGH            | 220  |                    |
|              | OVER SPEED      | 3000 |                    |
| Stator       | UNDER SPEED     | 1000 |                    |
|              | OVER VOLTAGE    | 600  | SD (SHUT DOWN)     |
|              | UNDER VOLTAGE   | 100  | NLT (NON LATCHING) |
|              | OVER FREQUENCY  | 65.0 | SD (SHUT DOWN)     |
| Battery      | UNDER FREQUENCY | 35.0 | NLT (NON LATCHING) |
|              | LOW             | 10.0 |                    |
|              | HIGH            | 30.0 |                    |

The following parameters are optional.

|                |              |              |                |                    |
|----------------|--------------|--------------|----------------|--------------------|
| Fuel Level     | HIGH         | 80%          | OFF (DISABLED) |                    |
|                | PRE LOW      | 20%          | OFF (DISABLED) |                    |
|                | LOW          | 10%          | OFF (DISABLED) |                    |
| Oil Temp       | PRE HIGH     | 195          | OFF (DISABLED) | NLT (NON LATCHING) |
|                | HIGH         | 220          | OFF (DISABLED) | SD (SHUT DOWN)     |
| Analog Input 1 | HIGH         | 8.0          | OFF (DISABLED) | SD (SHUT DOWN)     |
|                | LOW          | 2.0          | OFF (DISABLED) | SD (SHUT DOWN)     |
| Analog Input 2 | HIGH         | 8.0          | OFF (DISABLED) | SD (SHUT DOWN)     |
|                | LOW          | 2.0          | OFF (DISABLED) | SD (SHUT DOWN)     |
| Digital Inputs | 1 - OFF - SD | 5 - OFF - SD |                |                    |
|                | 2 - OFF - SD | 6 - OFF - SD |                |                    |
|                | 3 - OFF - SD | 7 - OFF - SD |                |                    |
|                | 4 - OFF - SD | 8 - OFF - SD |                |                    |

## COM PORT

From the main menu navigate to COM Port and press **ENTER**. Press **UP** to select RS485 or **DOWN** to select RS232. The current selection is displayed below. Press **ENTER** to save and exit.

## REAL TIME CLOCK

To set the real time clock select the Set Clock function and press **ENTER**. Use the **UP** and **DOWN** arrows to change values. Press **ENTER** to move to the next option and press **ENTER** to save and exit. Optionally, you can enable the self exercise function by selecting Set Exercise from the main menu. The default setting for the exercise function is disabled.

|          |     |
|----------|-----|
| Exercise | OFF |
| Weekday  | SUN |
| Hour     | 01  |
| Minute   | 00  |
| Duration | 00  |

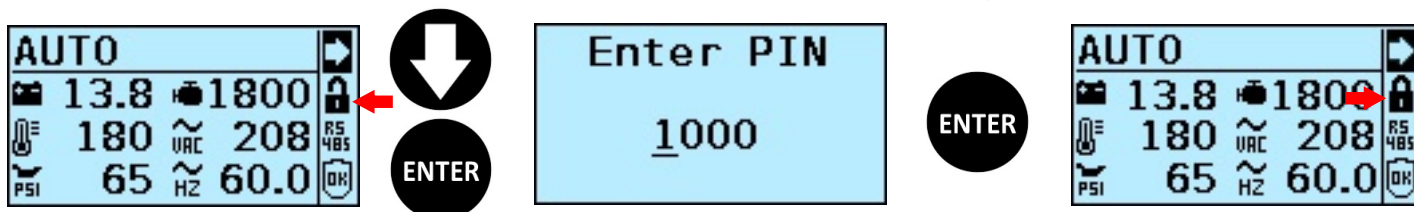
## EVENT LOG

The event log will display a history of alarms and exercise functions. Select Event Log and press **ENTER**. To view the event log select View Events and press **ENTER**. Use the **UP** and **DOWN** arrows to cycle through the event log. Most recent events will be displayed first. When finished press **OFF** to escape. To clear the event log select Clear Events. The event log will be erased and return to the Event Log menu. Press **OFF** to escape or scroll to the BACK option and press **ENTER**.

## PIN LOCK

Activating the mode lock will require the user to enter a PIN before switching modes. Even in the event of a power failure, upon restoring power the unit will return to its locked mode until unlocked by the user. Note that for safety reasons, emergency stop will always override the mode lock and shut down the generator. The mode lock can be activated in auto, off, or manual position.

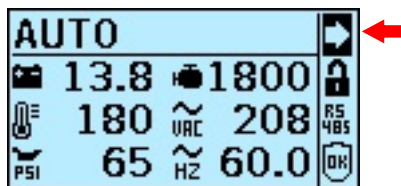
1. Place the unit in the required mode before activating the PIN lock.
2. Press **DOWN** to the unlocked icon and press **ENTER**.
3. Set the correct user PIN and press **ENTER** to activate the mode lock. The controller will return to the selected mode and the unlocked icon will change to locked.



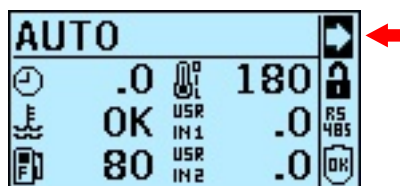
## AUTO AND MANUAL MODE

To place the controller in AUTO or MANUAL use the **LEFT** and **RIGHT** arrows while in the OFF position. The default layout will display battery level, coolant temperature, oil pressure, RPM, ac voltage, and frequency. While in AUTO or MANUAL use the **LEFT** and **RIGHT** arrows to select the display or press **ENTER** on the info icon.

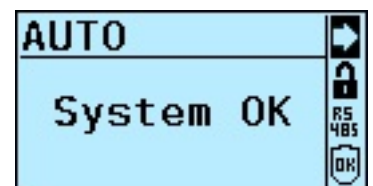
DISPLAY 1



DISPLAY 2



DISPLAY 3



In the event of a shut down or warning alarm, the display will default to page 3 indicating the cause of the alarm. To silence the alarm press ENTER to acknowledge the alarm and return to the default display setting.

## RELAY OUTPUTS BY FUNCTION CODE

- |                                 |                                      |
|---------------------------------|--------------------------------------|
| 0 - OUTPUT DISABLED             | 25 - OIL PRESSURE SENSOR FAULT       |
| 1 - COMMON ALARM                | 26 - OIL TEMP SENSOR FAULT           |
| 2 - PRE LOW OIL PRESSURE        | 27 - COOLANT TEMP SENSOR FAULT       |
| 3 - LOW OIL PRESSURE            | 28 - ANALOG INPUT 1 HIGH             |
| 4 - PRE HIGH COOLANT TEMP       | 29 - ANALOG INPUT 1 LOW              |
| 5 - HIGH COOLANT TEMP           | 30 - ANALOG INPUT 2 HIGH             |
| 6 - LOW COOLANT TEMP            | 31 - ANALOG INPUT 2 LOW              |
| 7 - PRE HIGH OIL TEMP           | 32 - DIGITAL INPUT 1                 |
| 8 - HIGH OIL TEMP               | 33 - DIGITAL INPUT 2                 |
| 9 - LOW BATTERY                 | 34 - DIGITAL INPUT 3                 |
| 10 - HIGH BATTERY               | 35 - DIGITAL INPUT 4                 |
| 11 - OVER SPEED                 | 36 - DIGITAL INPUT 5                 |
| 12 - UNDER SPEED                | 37 - DIGITAL INPUT 6                 |
| 13 - OVER VOLTAGE               | 38 - DIGITAL INPUT 7                 |
| 14 - UNDER VOLTAGE              | 39 - DIGITAL INPUT 8                 |
| 15 - OVER FREQUENCY             | 40 - AUTO POSITION                   |
| 16 - UNDER FREQUENCY            | 41 - MANUAL POSITION                 |
| 17 - HIGH FUEL LEVEL            | 42 - OFF POSITION                    |
| 18 - LOW FUEL LEVEL             | 43 - GENERATOR STOPPED               |
| 19 - LOW FUEL CRITICAL          | 44 - GENERATOR SHUTDOWN ALARM        |
| 19 - LOW FUEL CRITICAL          | 45 - GENERATOR READY TO START        |
| 20 - OVER CRANK                 | 46 - GENERATOR RUNNING               |
| 21 - LOW COOLANT LEVEL          | 47 - TRANSFER READY                  |
| 22 - RPM SENSOR LOSS            | 48 - GENERATOR READY, ALARMS ENABLED |
| 23 - OIL PRESSURE START INHIBIT |                                      |
| 24 - EMERGENCY STOP             |                                      |

# 74-0A4087-00

# Flight Systems

Replacement for Generac 0A4087

[www.flightsystems.com](http://www.flightsystems.com)

## PREHEAT OUTPUT / PREHEAT ALTERNATIVE

00 - PREHEAT DISABLED

11 - PREHEAT BEFORE START

22 - PREHEAT BEFORE AND DURING START

If preheat is set to disabled then the PREHEAT ALT (preheat alternative) function can be set to reassign the preheat relay to any of the 48 output functions previously listed.

## CALIBRATION

To correct AC voltage readings first measure the voltage at the connector. On some generators the actual AC voltage is reduced or stepped down before connected to the controller. For example, on a 480VAC system 240VAC is typically seen at the connector. Before adjusting the scaling factor, **adjust the VAC calibration to match the voltage at the main power connector (240VAC)**. As a general rule each decimal number will increase or decrease the AC voltage by 0.5VAC. After the voltage has been calibrated **adjust the scaling factor to display the correct systems voltage**. In this case 2.0 to display 480VAC. Optionally you can adjust for battery voltage and set run hours from this menu as well.

**WARNING! The run hours can only be increased. Be absolutely sure the run hours are correct before saving. After the entry for run hours has been saved the operation can not be undone.**

## DEFAULT SETTINGS

|                |       |
|----------------|-------|
| Scaling Factor | 1.0   |
| VAC            | 0.157 |
| Battery        | 0.135 |
| Hours          | 0     |

## SUPPORT

**Technical Assistance** - If you require technical assistance during installation or operation of the GenStart controller, please call our Technical Service Department at 717-590-7330 M-F, 8am-5pm ET or email [hawk@flightsystems.com](mailto:hawk@flightsystems.com).

**Warranty** - The GenStart Controller is warranted to be free from defects in materials and workmanship for a period of two years from the date of shipment. FLIGHT SYSTEMS' liability is limited to the repair or replacement of defective product within the warranty period, and does not cover installation or removal costs incurred or possible damage to other equipment (including generator sets and transfer switches) as a result of a malfunction of the GENSTART REPLACEMENT CONTROL. If, in the opinion of FLIGHT SYSTEMS (or its authorized agent), the malfunction of the GENSTART REPLACEMENT CONTROL PANEL was caused by abuse, misuse or improper installation, the warranty claim will be disallowed and established repair rates shall apply.

**Repair** - Should the GenStart Controller suffer a problem when out of warranty, repair service is available from the manufacturer at reasonable rates. Ship unit to Flight Systems, 207 Hempt Road Mechanicsburg, PA 17050.

---



---

# This manual is provided courtesy of **RV Tech Cheat Sheet**



**Professional resources for the whole RV industry — free.**

We put manuals, wiring diagrams and hard-won tech knowledge in every technician's hands, so repairs get done right the first time, techs work faster, and RV owners everywhere get better service.

---



---

**[rvtechcheatsheet.com/manuals](https://rvtechcheatsheet.com/manuals)**

**Find thousands more RV manuals, wiring diagrams and parts lists**

**RV techs:** share fixes, ask questions and learn from each other.

**Join our free Facebook group →**

---



---

Follow proper safety practices. If in doubt, consult a professional RV technician.