

1097-850

AAON 1097-850 Ignition Module User Manual

Model: 1097-850 | Brand: Generic

1. INTRODUCTION

This manual provides essential information for the safe and effective installation, operation, and maintenance of the AAON 1097-850 Series Direct Spark Igniter Module. This module is designed to control the ignition sequence in HVAC systems, operating at 24VAC, 60Hz, with a maximum current draw of 250mA. Please read this manual thoroughly before proceeding with any procedures.

2. SAFETY INFORMATION

WARNING: Improper installation, adjustment, alteration, service, or maintenance can cause property damage, injury, or death. Read the installation, operating, and maintenance instructions thoroughly before installing or servicing this equipment.

- Installation and service must be performed by a qualified service technician.
- Always disconnect the main power supply to the appliance before installing, servicing, or removing the ignition module.
- Ensure all wiring connections comply with local and national electrical codes.
- Do not operate the appliance if any part has been submerged in water. Immediately call a qualified service technician to inspect the appliance and replace any part of the control system and any gas control that has been submerged in water.
- Handle the module with care to avoid damage to electronic components.

3. PRODUCT OVERVIEW

The AAON 1097-850 Ignition Module is a direct spark igniter designed for reliable ignition control. It features specific timings for pre-purge, inter-purge, post-purge, ignition, and blower delays, along with diagnostic codes to assist in troubleshooting.



Figure 1: AAON 1097-850 Ignition Module. This image displays the top view of the ignition module, highlighting the product label with detailed timings for various operational stages (Pre-purge, Inter-purge, Post-purge, Ignition, Blower On Delay, Blower Off Delay) and a list of diagnostic flash codes. Various electrical connection terminals are visible on the sides, labeled for inputs and outputs such as 24VAC, GV OUT, LS PS W2 C W1, Blower, Flame, Inducer, and Alarm (NC).

3.1. Operational Timings

The module operates with the following factory-set timings:

- **Pre-purge:** 5 seconds
- **Inter-purge:** 45 seconds
- **Post-purge:** 5 seconds
- **Ignition Trial:** 10 seconds
- **Blower On Delay:** 30 seconds
- **Blower Off Delay:** 120 seconds

3.2. Electrical Specifications

- **Voltage:** 24VAC
- **Frequency:** 60Hz
- **Maximum Current:** 250mA

4. SETUP AND INSTALLATION

Installation of the ignition module should only be performed by a qualified HVAC technician. Ensure all safety precautions are followed before beginning installation.

1. **Power Disconnection:** Turn off all electrical power to the HVAC unit at the main service panel. Verify power is off using a voltmeter.

2. **Access:** Open the control panel or access cover of the HVAC unit to locate the existing ignition module.
3. **Wiring Disconnection:** Carefully disconnect all wires from the old ignition module, noting their positions and labels. It is recommended to take a photograph or draw a diagram of the existing wiring for reference.
4. **Module Removal:** Remove the old ignition module from its mounting.
5. **New Module Installation:** Mount the new AAON 1097-850 Ignition Module in the same location as the old one, ensuring it is securely fastened.
6. **Wiring Connection:** Connect all wires to the new module according to the diagram or photograph taken earlier. Ensure connections are tight and secure. Refer to the labels on the module (e.g., C 24VAC, GV OUT, LS PS W2 C W1, Blower, Flame, Inducer, Inputs R W1 W2 ALARM (NC)).
7. **Verification:** Double-check all wiring connections for correctness and security.
8. **Power Restoration:** Close the control panel or access cover. Restore electrical power to the HVAC unit.
9. **Test Operation:** Initiate a call for heat to test the module's operation and ensure proper ignition.

5. OPERATING INSTRUCTIONS

The AAON 1097-850 Ignition Module operates automatically as part of the HVAC system's control sequence. Once installed and powered, it manages the ignition process based on the system's call for heat.

1. Upon a call for heat from the thermostat, the module initiates the pre-purge cycle.
2. After pre-purge, the inducer motor starts, and the pressure switch is checked.
3. The module then proceeds to the ignition trial, sending a spark to ignite the gas.
4. Flame rectification confirms successful ignition.
5. If ignition is successful, the main burner remains lit, and the blower fan will engage after the Blower On Delay.
6. If ignition fails, the module will attempt re-ignition or enter a lockout state, indicated by diagnostic flash codes.
7. When the call for heat ends, the main burner shuts off, and the blower fan continues to operate for the Blower Off Delay period to dissipate residual heat.

6. MAINTENANCE

The AAON 1097-850 Ignition Module is a sealed electronic component and generally requires no routine maintenance itself. However, regular inspection of the overall HVAC system is recommended to ensure optimal performance and longevity of all components, including the ignition module.

- **Annual Inspection:** Have a qualified HVAC technician inspect the entire heating system annually.
- **Wiring Check:** During inspections, ensure all wiring connections to the module are secure and free from corrosion or damage.
- **Cleanliness:** Keep the area around the module clean and free from dust, debris, or moisture.

7. TROUBLESHOOTING

The module provides diagnostic flash codes to assist in identifying operational issues. Observe the LED

indicator on the module (if present) for flash sequences.

7.1. Diagnostic Codes

Flash Code	Description	Possible Cause / Action
1 Flash	Control in 1 hour lockout	Module has attempted ignition multiple times and entered a safety lockout. Power cycle the unit to reset. If issue persists, investigate ignition components.
2 Flashes	Pressure switch open with inducer on	Inducer motor may not be operating, or pressure switch is faulty/hose is blocked. Check inducer motor, vent system, and pressure switch.
3 Flashes	Pressure switch closed with inducer off	Pressure switch is stuck closed or faulty. Check pressure switch and its wiring.
4 Flashes	Limit switch is open	High temperature limit switch has tripped. Check for restricted airflow, dirty filters, or faulty blower motor. Allow unit to cool.
5 Flashes	False flame 1 hour lockout	Flame sensed when it should not be, or flame sensor is faulty. Check flame sensor, wiring, and gas valve. Power cycle to reset.

7.2. General Troubleshooting Tips

- **No Power:** Check circuit breakers and fuses. Ensure 24VAC is supplied to the module.
- **No Ignition:** Verify gas supply is on. Check igniter and flame sensor for damage or carbon buildup. Ensure proper grounding.
- **Intermittent Operation:** Inspect all wiring connections for looseness or corrosion. Check for proper voltage supply.
- If the issue persists after basic troubleshooting, contact a qualified HVAC technician.

8. SPECIFICATIONS

Feature	Detail
Model Number	1097-850
Type	Direct Spark Igniter Module
Voltage	24VAC
Frequency	60Hz
Max Current	250mA
Pre-purge	5 seconds
Inter-purge	45 seconds
Post-purge	5 seconds

Feature	Detail
Ignition Trial	10 seconds
Blower On Delay	30 seconds
Blower Off Delay	120 seconds
Product Dimensions	8 x 6 x 5 inches (approximate)
Manufacturer	Fits AAON (Generic)

9. WARRANTY INFORMATION

As this product is listed under a "Generic" brand, specific warranty details may vary. Please refer to the warranty information provided by your original seller or distributor at the time of purchase. Retain your proof of purchase for any warranty claims.

10. TECHNICAL SUPPORT

For technical assistance, troubleshooting beyond the provided diagnostic codes, or service inquiries, please contact the seller or a qualified HVAC service technician. Do not attempt to repair the module yourself, as this may void any applicable warranty and could lead to further damage or safety hazards.