

Robertshaw 780-845

Robertshaw 780-845 Intermittent Pilot Ignition Module User Manual

Model: 780-845

1. INTRODUCTION

The Robertshaw 780-845 is an intermittent pilot ignition module designed for use with residential and commercial heating equipment. This control unit manages the ignition sequence, pilot flame monitoring, and main burner operation to ensure safe and efficient heating.

2. SAFETY INFORMATION

WARNING: HIGH VOLTAGE PRESENT - SHOCK HAZARD.

- Always disconnect power to the heating equipment before servicing the ignition module.
- This unit is not field repairable. If the module is faulty, it must be replaced with a new Robertshaw 780-845 unit.
- Installation and servicing should only be performed by a qualified service technician.

3. PRODUCT OVERVIEW

The Robertshaw 780-845 ignition module features 1/4-inch quick-connect electrical terminals and a universal bracket for versatile mounting. It is specifically designed for intermittent pilot ignition systems.

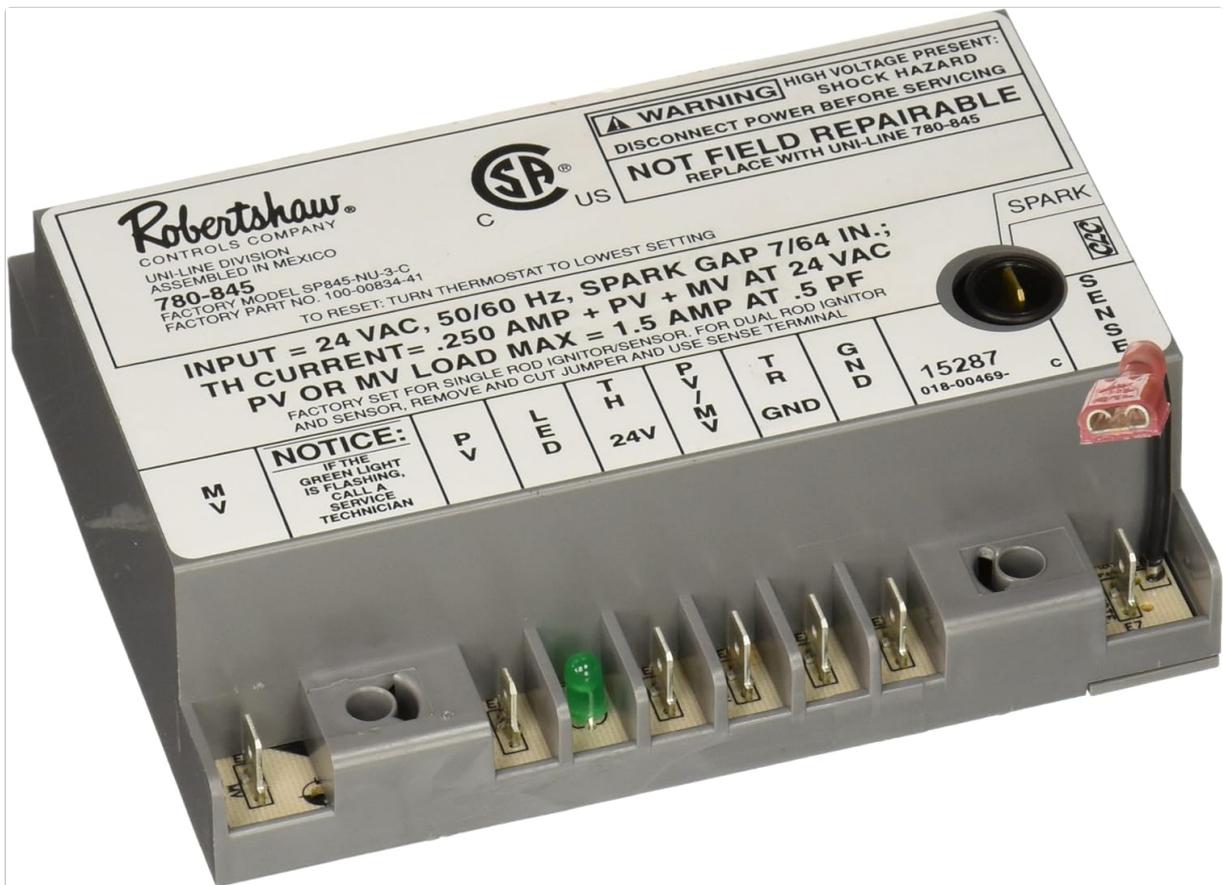


Figure 1: Robertshaw 780-845 Intermittent Pilot Ignition Module. This image displays the top-down view of the module, showing the terminal connections, warning labels, and the green LED indicator.

Key components and indicators:

- **Terminals:** Labeled for PV (Pilot Valve), LED (Light Emitting Diode), TH (Thermostat), 24V (24 Volt power), PV/MV (Pilot Valve/Main Valve common), TR (Transformer), GND (Ground), MV (Main Valve), Spark, and Sense.
- **Green LED:** Indicates operational status. A flashing green light signals a service technician is required.
- **Spark Terminal:** Connects to the ignitor for pilot ignition.
- **Sense Terminal:** Used for flame sensing, particularly in dual rod ignitor/sensor configurations. The module is factory set for a single rod ignitor/sensor; for dual rod systems, a jumper must be removed and cut, and the sense terminal utilized.

4. SETUP AND INSTALLATION

Before beginning installation, ensure the main power supply to the heating equipment is disconnected.

1. **Mounting:** Secure the 780-845 module using its universal bracket in a suitable location within the heating equipment enclosure.
2. **Wiring:** Carefully connect the electrical wires to the appropriate 1/4-inch quick-connect terminals on the module. Refer to the wiring diagram provided with your heating equipment and the labels on the module. Common connections include:
 - **24V:** 24 VAC power supply.
 - **TH:** Thermostat input.
 - **PV:** Pilot Valve.
 - **MV:** Main Valve.

- **PV/MV:** Common connection for Pilot and Main Valves.
 - **Spark:** Ignitor connection.
 - **Sense:** Flame sensor connection (if applicable for dual rod systems).
 - **GND:** Ground connection.
3. **Spark Gap:** Ensure the spark gap for the ignitor is set to 7/64 inches.
 4. **Dual Rod Ignitor/Sensor Configuration:** If using a dual rod ignitor/sensor, remove and cut the factory-set jumper and utilize the dedicated sense terminal.
 5. **Power Restoration:** Once all connections are secure and verified, restore power to the heating equipment.

5. OPERATING INSTRUCTIONS

The 780-845 module operates automatically in response to a call for heat from the thermostat.

1. **Initiation:** When the thermostat calls for heat, the control simultaneously initiates ignition sparking and opens the pilot valve portion of the gas valve.
2. **Pilot Flame Recognition:** Upon successful pilot flame establishment, the module recognizes the flame, stops ignition sparking, and opens the main valve portion of the gas valve, allowing the main burner to ignite.
3. **Flame Monitoring:** The pilot burner flame is continuously monitored at a synchronous frequency throughout the heating cycle.
4. **Pilot Flame Failure:** Should the pilot flame fail during the heating cycle, the control will shut off the main valve until the pilot flame is re-established.
5. **Lockout Sequence:** The 780-845 lockout ignition control provides 90 seconds of spark during an ignition attempt. This is followed by a 6-minute time delay (purge) between ignition attempts. After three unsuccessful ignition attempts, if no pilot flame is sensed, the control enters a one-hour lockout period.
6. **Lockout Reset:** To reset the module after a lockout, turn the thermostat to its lowest setting and then back to the desired temperature. At the end of the one-hour lockout period, if the demand for heat is still present, the unit will automatically repeat the three ignition attempts.

6. MAINTENANCE

The Robertshaw 780-845 ignition module itself requires no routine maintenance. However, regular maintenance of the overall heating system, including cleaning of the pilot burner and flame sensor, is recommended to ensure optimal performance and longevity of the ignition system. Always consult your heating equipment's manual for specific maintenance schedules and procedures.

7. TROUBLESHOOTING

If your heating system is not operating correctly, consider the following troubleshooting steps:

- **No Heat:** Check if the thermostat is set to a temperature above the ambient room temperature and if the system is calling for heat.
- **Flashing Green Light:** If the green LED on the module is flashing, this indicates a fault condition. Contact a qualified service technician for diagnosis and repair.
- **Pilot Not Lighting:** Verify that the gas supply to the pilot is open. Check for proper spark at the ignitor. Ensure the ignitor and pilot assembly are clean and free from obstructions.

- **Main Burner Not Igniting After Pilot:** Ensure the pilot flame is strong and stable. A weak pilot flame may not be adequately sensed, preventing the main valve from opening. Clean the flame sensor rod if necessary.
- **System in Lockout:** If the system has attempted ignition three times without success, it will enter a one-hour lockout period. To reset, turn the thermostat to its lowest setting for at least 30 seconds, then return it to the desired temperature.
- **Loose Connections:** Inspect all electrical connections to the module for tightness and proper contact.

If these steps do not resolve the issue, contact a qualified HVAC technician.

8. SPECIFICATIONS

Brand	Robertshaw
Model Number	780-845
Input Voltage	24 VAC, 50/60 Hz
TH Current	0.250 Amp + PV + MV at 24 VAC
PV or MV Load Max	1.5 Amp at 0.5 PF
Spark Gap	7/64 inches
Electrical Connections	1/4" Quick Connect
Dimensions	4.75 x 1.5 x 3 inches
Weight	14.4 ounces
Included Components	Product & Instructions Guide

9. WARRANTY AND SUPPORT

For information regarding product warranty, please refer to the documentation included with your Robertshaw 780-845 ignition module or visit the official Robertshaw website. For technical support or service inquiries, contact Robertshaw customer service or a certified HVAC professional.