



ICM2901

Intermittent Pilot Gas Ignition Control Module

REPLACES

Johnson Control: G770RJA-1 **York:** 025-27762-700 and comparable ignition controls.

FEATURES

- Intermittent Pilot Gas Ignition Control Module
- For use with intermittent pilot boilers, furnaces and other heating appliances
- Microprocessor-based
- Monitors timing, trial for ignition, rollout switch, flame sensing and lockout
- Remote flame sensing
- 100% lockout safety feature
- Compatible with LP or Natural Gas

SPECIFICATIONS

Control Voltage: Line 24 VAC (18-30 VAC) 50/60 Hz

Anticipator Setting: 0.3A plus valve load @ 24 VAC

Prepurge: None

Trial for Ignition: 85 seconds

Retry: None

Operating Temperature:

• Min. ambient temperature rating is -40°F (-40°C)

• Max. ambient rating when used with 2.0A main valve is 160°F (71°C)

Relative Humidity: 0% to 95% non-condensing

SAFETY CONSIDERATIONS

Only trained personnel should install or service heating equipment. When working with heating equipment, be sure to read and understand all precautions in the documentation, on labels, and on tags that accompany the equipment. Failure to follow all safety guidelines may result in damage to equipment, severe personal injury or death.

INTRODUCTION

The **ICM2901** Intermittent Pilot Gas Ignition Control Module provides easy field replacement of **Johnson Control:** G770RJA-1, **York:** 025-27762-700 and comparable ignition controls. The **ICM2901** replaces existing flame rectification type, intermittent pilot ignition modules with the following characteristics:

- Remote flame sensing
- 100 percent shutoff/lockout
- Natural or LP gas

REMOVE EXISTING CONTROL

CAUTION! To service control, and prior to disconnection, label all wires. Failure to do so may result in wiring errors that can cause dangerous operation.

1. Turn thermostat to OFF position or set it to the lowest possible setting.
2. Turn OFF electrical supply to furnace/appliance.
3. Turn OFF gas supply to furnace/appliance.

CAUTION! Failure to turn off gas and electric supplies can result in explosion, fire, death, or personal injury.

4. Label each wire with the correct terminal designation.
5. Disconnect the power supply and the thermostat lead wires from the existing ignition control.
6. Disconnect the sensing probe lead, the high voltage cable, the pilot valve and main valve leads, and any ground leads from the existing ignition control.
7. Remove screws and any other fasteners, and the old ignition board.

INSTALL NEW CONTROL

1. Mount the new control with metal screws or bolts through the mounting holes of the enclosure.
2. Wire per wiring diagrams on reverse side.
3. Verify the sequence of operation.

NOTE: Do not connect the thermostat wires to the control board until wiring is verified.

Sequence of Operation:

The ignition control module's operation is divided into two phases: 1) Trial for pilot ignition and 2) Main burner operation

Trial for Pilot Ignition

On a "Call for Heat", providing RO switch is closed, the ignition control module energizes the spark source and the pilot valve relay simultaneously. The pilot valve opens, allowing gas to flow to the pilot burner for the ignition trial time. The spark lights the pilot flame when pilot gas is present. A flame rectification circuit confirms the presence of the pilot flame, shuts off the spark source, and energizes the main valve relay.

Main Burner Operation

When the main valve opens, gas flows to the main burner where it is lit by the pilot flame. There is a short flame stabilization period as the main valve opens to allow the pilot flame to stabilize as the main gas lights. The system is now in the run mode with the presence of the pilot flame continuously monitored by the flame rectification circuit. If the pilot flame goes out, the ignition control module senses loss of pilot flame and shuts off the main valve relay. Flow of gas to main burner stops as the valve closes. The spark source turns on to reinstate flame for the TFI duration.

Failed Trial for Pilot Ignition

If the pilot is not lit or sensed before the end of the trial for ignition time, the ignition control shuts off the spark and pilot gas (100% shutoff). There is no retry. The control can only be reset by cycling the system thermostat or removing and restoring system power.

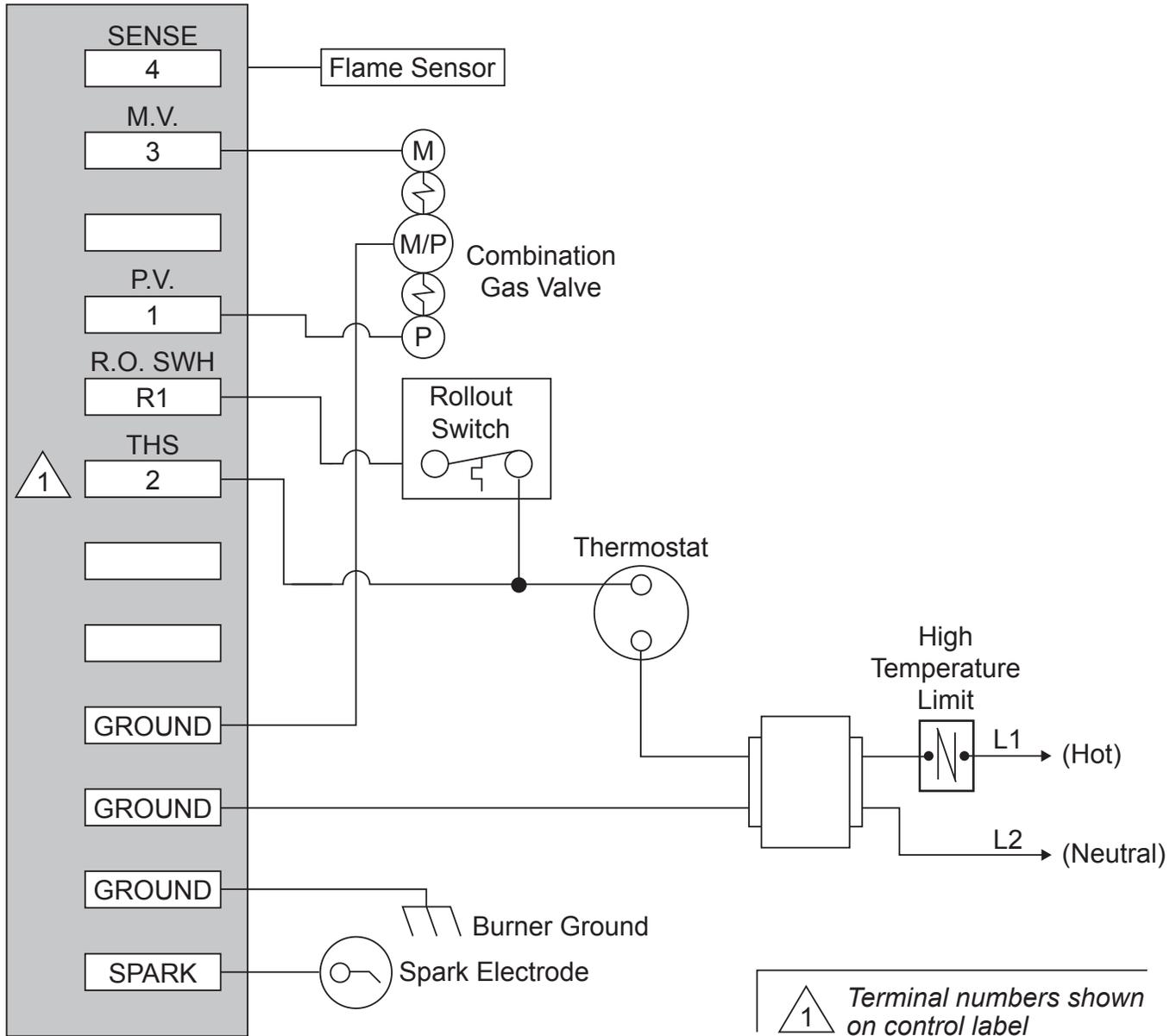
Rollout Switch

The control does not start the trial for ignition if rollout switch is open. Additionally, if rollout switch opens during running mode, the control shuts off both the pilot and the main valve relays, and locks out. The controls can only be reset by cycling the system thermostat or removing and restoring system power.

TROUBLESHOOTING

Symptom	Remedy
Flame not established	Check gas supply, pilot burner, spark and flame sense wiring, flame rod contaminated or not enveloped with flame, burner ground connection.
Flame out	If system fails to light on next trial for ignition, check gas supply, pilot burner, flame sense wiring, contamination of flame rod, burner ground connection.
Flame out of sequence	Check for pilot flame. Replace gas valve if pilot flame present. If no pilot flame, cycle "Call for Heat".

ICM2901 TYPICAL WIRING DIAGRAMS



ONE-YEAR LIMITED WARRANTY

The Seller warrants its products against defects in material or workmanship for a period of one (1) year from the date of manufacture. The liability of the Seller is limited, at its option, to repair, replace or issue a non-case credit for the purchase prices of the goods which are provided to be defective. The warranty and remedies set forth herein do not apply to any goods or parts thereof which have been subjected to misuse including any use or application in violation of the Seller's instructions, neglect, tampering, improper storage, incorrect installation or servicing not performed by the Seller. In order to permit the Seller to properly administer the warranty, the Buyer shall: 1) Notify the Seller promptly of any claim, submitting date code information or any other pertinent data as requested by the Seller. 2) Permit the Seller to inspect and test the product claimed to be defective. Items claimed to be defective and are determined by Seller to be non-defective are subject to a \$30.00 per hour inspection fee. This warranty constitutes the Seller's sole liability hereunder and is in lieu of any other warranty expressed, implied or statutory. Unless otherwise stated in writing, Seller makes no warranty that the goods depicted or described herein are fit for any particular purpose.



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Patented:
 Energy Preservation & Transfer Mechanism (#5,889,645)
 Fail Safe Relay Driver (#5,917,691)
 Ignition Boost (#6,222,719)
 PWM relay actuator circuit (#5,930,104)