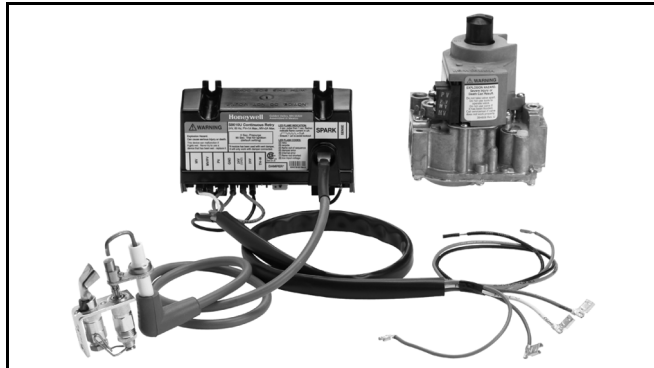


Y8610U Intermittent Pilot Retrofit Kit

PRODUCT DATA



GENERAL

The Y8610U is a complete kit for converting conventional standing pilot systems to intermittent pilot systems. It is used on gas-fired atmospheric furnaces, boilers, and heating appliances. Not for use on direct vent, induced draft, or power burner equipment. Meets ANSI Z21.71 standard for automatic intermittent pilot ignition systems on central furnaces and boilers.

FEATURES

- Y8610U kits can be used with either natural or LP gas.
- The S8610U ignition control provides a 90 second maximum ignition trial, shuts off, waits five minutes nominal, then re-initiates the pilot ignition sequence. The ignition trial, shutoff, and wait cycle repeat until the pilot lights or the call for heat ends.

Each kit includes:

- S8610U Intermittent Pilot Module
- VR8304M Dual Valve Combination Gas Control or VR8204A Dual Valve Combination Gas Control

- 392431 Igniter-Sensor
- 394800-30 Ignition Cable
- 393691 Natural to LP Gas Conversion Kit
- Wiring Harness
- 393690-14 Straight Flange Kit (3/4 in.)
- Reducer adapters for gas control with VR8304M
- Installation hardware

Temperature Ratings:

- S8610U: -40°F to 165°F (-40°C to 74°C)
- VR8304M: -40°F to 175°F (-40°C to 79°C)
- VR8204A: 0°F to 175°F (-18°C to 79°C)

Intermittent Pilot Gas Ignition Control Module

- Uses flame rectification for flame sense
- Internal spark generator lights pilot gas; main burner lights after pilot flame lights and proves
- 100% shutoff of pilot and main gas if burner fails to light
- Continuous retry ignition sequence prevents nuisance lockouts
- Two LEDs indicate system status and flame signal strength

Gas Control Valve

- Straight through body pattern
- VR8304M capacity is 270 ft³/hr (7.6 m³/hr)
- VR8204A capacity with or without 1/2" x 3/4" adapter is 150 ft³/hr (4.2 m³/hr)
- Manual ON-OFF valve blocks gas flow into the gas control when in the OFF position
- Two main automatic valves: one solenoid-operated, and one a servo-operated diaphragm system

Igniter-Sensor

- Single electrode made of Kanthal provides both ignition and flame sensing
- Rated for 1775°F (968°C) at electrode tip; 1250°F (677°C) at ceramic insulator

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Table 1. S8610U Universal Intermittent Pilot Gas Ignition Control Module.

Igniter-Sensor Type	Valve Current Rating @ 24 Vac	Prepurge Timing (field selectable)	Trial for Pilot Ignition (field selectable)	Ignition Sequence Type	Ignition Sequence (After prepurge, if prepurge is selected)	Integral Damper Connector
Combination (one rod; local flame sensing)	1.0 A Pilot and 2.0 A Main	0 (zero) or 30 seconds; 0 (zero) seconds recommended	15 or 90 seconds; 90 seconds recommended	Retry	Spark and pilot gas ON until lightoff or trial for ignition ends. If established flame is lost, trial for ignition restarts immediately. If pilot fails to light, pilot gas and spark turned off (100% shutoff). After 5 minute delay, a new trial for ignition is initiated. This sequence continues until lightoff or "Call for Heat" is removed.	Included for use as needed. If initially installed and powered up with damper attached, unit must always have a vent damper connected.

SPECIFICATIONS

IMPORTANT

The specifications given in this publication do not include normal manufacturing tolerances. Therefore, units might not match the listed specifications exactly. Also, units are tested and calibrated under closely controlled conditions, and some minor differences in performance can be expected if those conditions are changed.

Y8610U Intermittent Pilot Retrofit Kit

Electrical Ratings:

- Voltage and Frequency: 24 Vac, 60 Hz
- Current Rating: 0.7A (includes both module and gas control)
- Thermostat Anticipator Setting: 0.7A plus current ratings of other devices in the thermostat control circuit

S8610U Intermittent Pilot Gas Ignition Control Specifications

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

Trial for Ignition: See Table 1 above

Prepurge: See Table 1 above

Flame Failure Response Time: 2 seconds maximum

LEDs:

The green LED provides system status, error codes and indicates flame sensing

Operating Temperature:

Minimum ambient temperature rating is -40°F (-40°C)

Maximum ambient temperature rating when used with 2.0 A main valve is 165°F (74°C)

Relative Humidity: 0% to 95% non condensing

Dimensions: See Fig. 2 on page 4.

Thermostat Compatibility:

Compatible with any Honeywell 24V thermostat and with competitive 24V thermostats that are powered independently of the module.

ORDERING INFORMATION

When purchasing replacement and modernization products from your TRADELINE® wholesaler or distributor, refer to the TRADELINE® Catalog or price sheets for complete ordering number.

If you have additional questions, need further information, or would like to comment on our products or services, please write or phone:

1. Your local Honeywell Automation and Control Products Sales Office (check white pages of your phone directory).
2. Honeywell Customer Care
1885 Douglas Drive North
Minneapolis, Minnesota 55422-4386
3. <http://customer.honeywell.com> or <http://customer.honeywell.ca>

In Canada—Honeywell Limited/Honeywell Limitée, 35 Dynamic Drive, Toronto, Ontario M1V 4Z9.

International Sales and Service Offices in all principal cities of the world. Manufacturing in Australia, Canada, Finland, France, Germany, Japan, Mexico, Netherlands, Spain, Taiwan, United Kingdom, U.S.A.

Transformer Sizing:

Add current ratings of Y8610, vent damper, and any other control system components. Multiply this total by 24V to determine the transformer VA requirement.

Mounting:

Mounts in any position except with terminals up. Recommended mounting position is with terminals down to provide maximum protection from dripping water or dust accumulation. Refer to Fig. 14 on page 12.

Fasten with No. 6-32 machine screws or No. 8 sheet metal screws or 8-18 x 5/8 pan head tapping screws of appropriate length.

Wiring Connections:

- Between the module and gas control: 30 in. (762 mm) wiring harness with 1/4 in. quick-connect terminals.
- Between the module and the igniter-sensor: 30 in. (762 mm) ignition cable with stud terminal and 1/4 in. quick-connect terminal.

Terminals:

1/4 in. male quick-connects. S8610U has Molex plug for connection to a vent damper harness. Once the S8610U has powered a vent damper, the module works only if the vent damper is connected.

VR8204A and VR8304M Dual Valve Combination Gas Controls Specifications

Table 2. VR8204A and VR8304M Dual Valve Combination Gas Controls Specifications.

Model	Capacity ^a	Pipe Size	Ambient Temperature Rating	Dimensions
VR8204A	150 ft ³ /hr (4.2 m ³ /hr); (with or without 1/2" x 3/4" adapter)	1/2 in. X. 1/2 in. NPT inlet x outlet ^b	0° to 175° F (-18° to 79° C)	See Fig. 4 on page 5
VR8304M	270 ft ³ /hr (7.6 m ³ /hr)	1/2 in. X. 3/4 in. NPT inlet x outlet	-40° to 175°F (-40° to 79°C)	See Fig. 3 on page 5

^a Based on 1,000 Btu/ft³, 0.64 specific gravity natural gas at 1 in. wc pressure drop (37.3 MJ/m³, 0.64 specific gravity natural gas at 0.25 kPa pressure drop).

^b 3/4 in. straight flange included to provide 3/4" NPT outlet if needed.

Mounting:

Can be mounted from 0 to 90 degrees, in any direction, from the gas control upright position

Pressure Rating: 1/2 psig (3.45 kPa) inlet pressure

Terminals: 1/4 in. male quick-connect terminals

Igniter-Sensor Specifications

Model:

392431 Igniter-Sensor; includes igniter-sensor assembly, ground rod, and adapter (refer to Fig. 1 on page 4)

Electrode/Flame Rod Material: Kanthal

Maximum Temperature Ratings:

Ground Rod Tip: 1775°F (968°C)

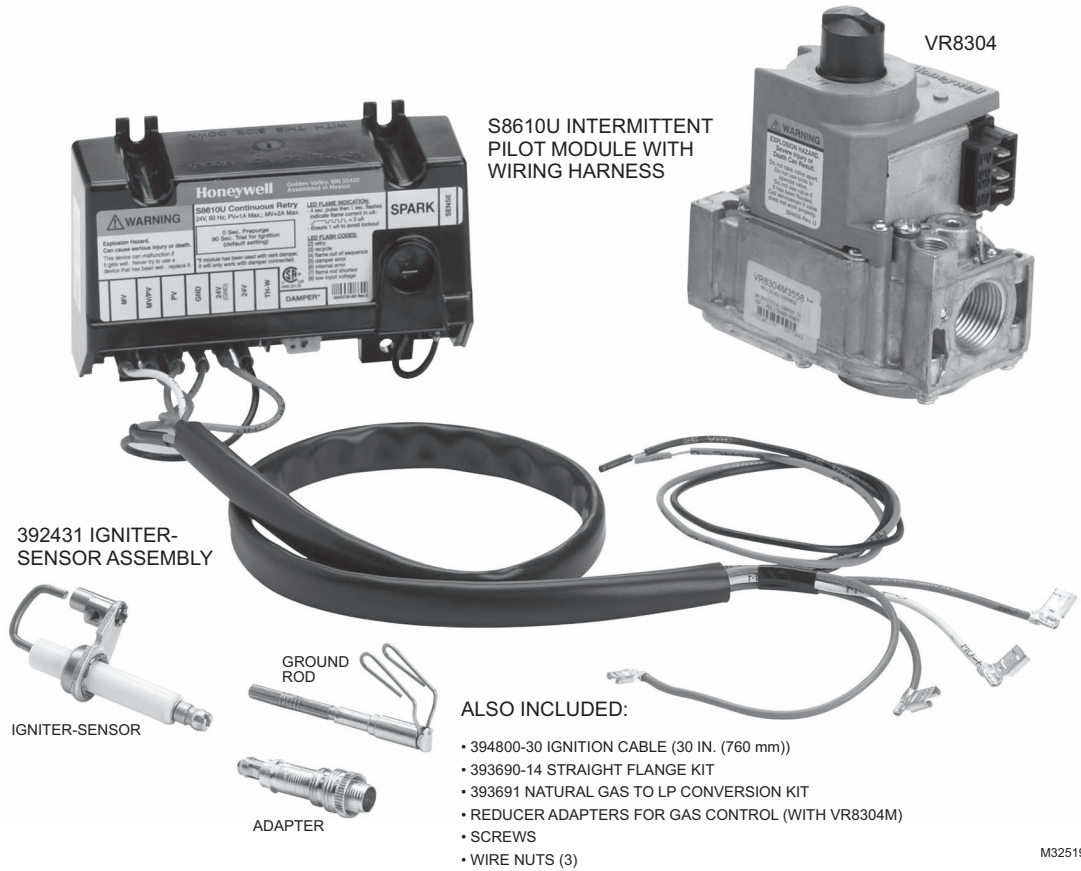
Ceramic Insulator: 1250°F (677°C)

Dimensions: See Fig. 5 on page 6.

Mounting:

Attach the supplied ground rod and adapter, which replace the thermocouple on the existing pilot burner

Y8610U INTERMITTENT PILOT RETROFIT KIT



M32519

Fig. 1. Y8610U retrofit kit components.

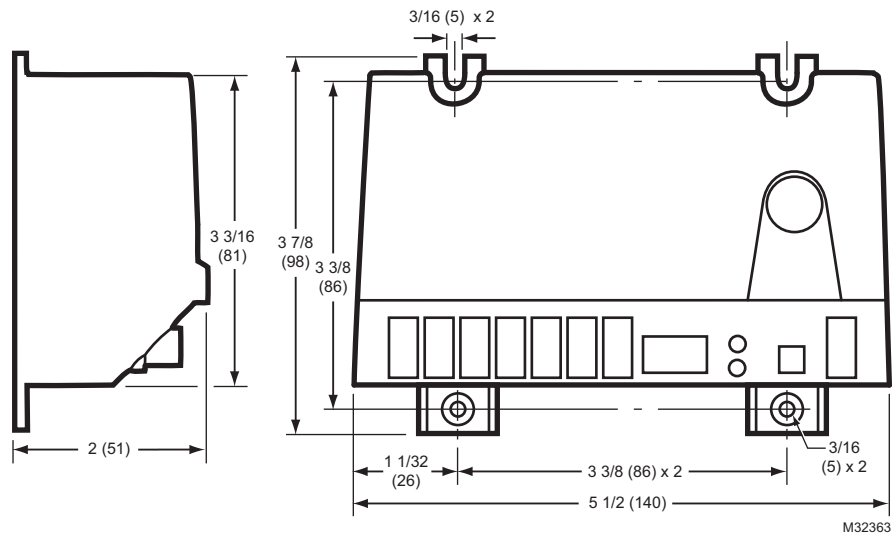


Fig. 2. S8610U module dimensions in inches (mm).

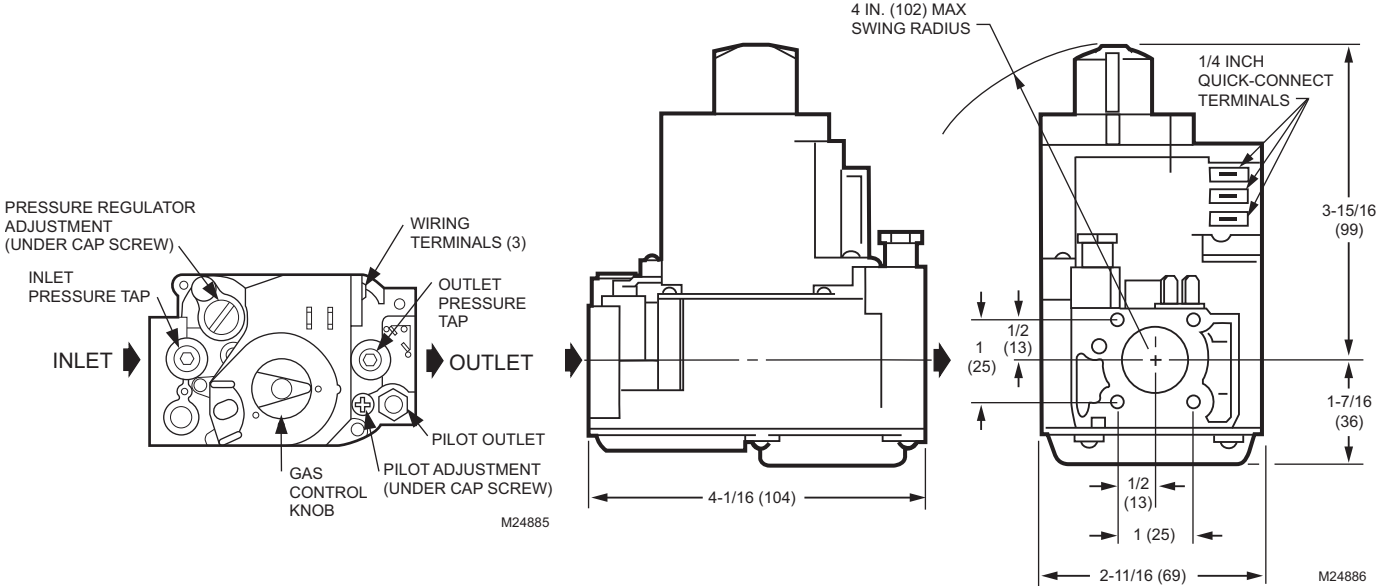


Fig. 3. VR8304M mounting dimensions in inches (mm).

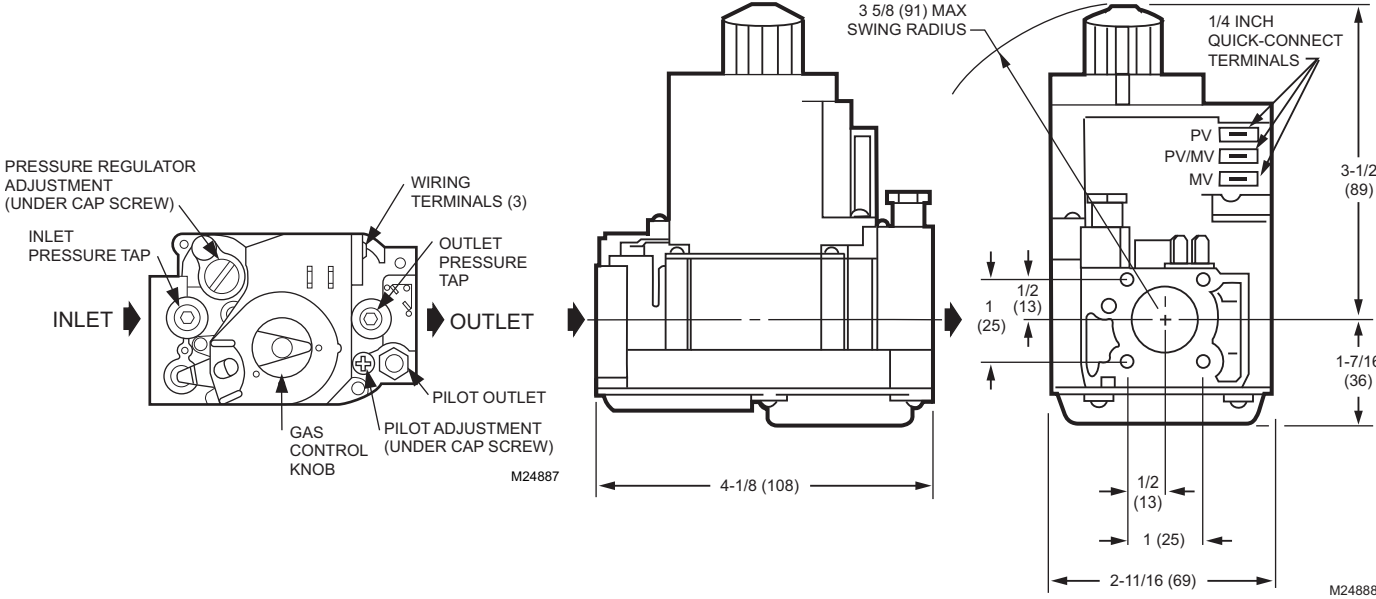


Fig. 4. VR8204A mounting dimensions in inches (mm).

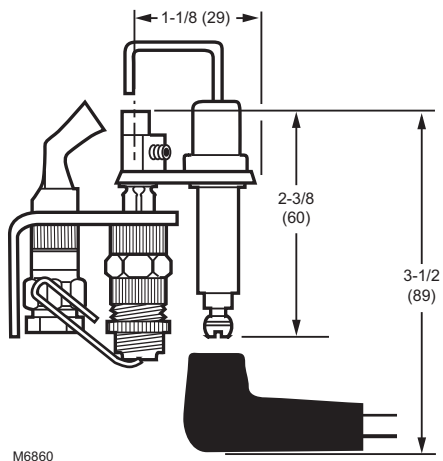


Fig. 5. 392431 Igniter-sensor mounting dimensions in inches. (mm).

PLANNING THE INSTALLATION

! WARNING

Fire or Explosion Hazard.

Can cause severe injury, death or property damage.

1. Plan the installation as outlined below.
2. Plan for frequent maintenance as described in the Maintenance section.

Intermittent pilot systems are used on a wide variety of central heating equipment and on heating appliances such as commercial cookers, agricultural equipment, industrial heating equipment and pool heaters. Some of these applications may make heavy demands on the controls, either because of frequent cycling, or because of moisture, corrosive chemicals, dust or excessive heat in the environment. In these situations, special steps may be required to prevent nuisance shutdowns and premature control module failure. These applications require special Honeywell review; contact your Honeywell Sales Representative for assistance.

Review the following conditions that can apply to your specific installation and take the precautionary steps suggested.

Frequent Cycling

These controls are designed for use on appliances that typically cycle three to four times an hour only during the heating season. In year-round applications with greater cycling rates, the control module can wear out more quickly; perform a monthly checkout.

Water or Steam Cleaning

If the control module gets wet, replace it. If the appliance is likely to be cleaned with water or steam, protect (cover) the controls and wiring from water or steam flow. Mount the controls high enough above the bottom of the cabinet so they do not get wet during normal cleaning procedures. Use a NEMA 4 enclosure for the ignition control module.

High Humidity or Dripping Water

Dripping water can cause the control module and the gas control to fail. Never install an appliance where water can drip on the controls.

In addition, high ambient humidity can cause the control module and the gas control to corrode and fail.

If the appliance is in a humid atmosphere, make sure air circulation around the controls is adequate to prevent condensation. Also, regularly check out the system. A NEMA 4 enclosure is recommended for the ignition control module.

Corrosive Chemicals

Corrosive chemicals can attack the ignition control module and gas control, eventually causing a failure. If chemicals are used for routine cleaning, make sure they do not reach the controls. Where chemicals are suspended in air, as in some industrial or agricultural applications, use a NEMA 4 enclosure for the ignition control module.

Dust or Grease Accumulation

Heavy accumulations of dust or grease can cause controls to malfunction. Where dust or grease can be a problem, provide covers for the ignition control module and the gas control to limit contamination. A NEMA 4 enclosure is recommended for the ignition control module.

Heat

Excessively high temperatures can damage controls. Make sure the maximum ambient temperature at the control module does not exceed the rating of the control module. If the appliance operates at very high temperatures, use insulation, shielding, and air circulation, as necessary, to protect the controls. Proper insulation or shielding should be provided by the appliance manufacturer; verify proper air circulation is maintained when the appliance is installed.