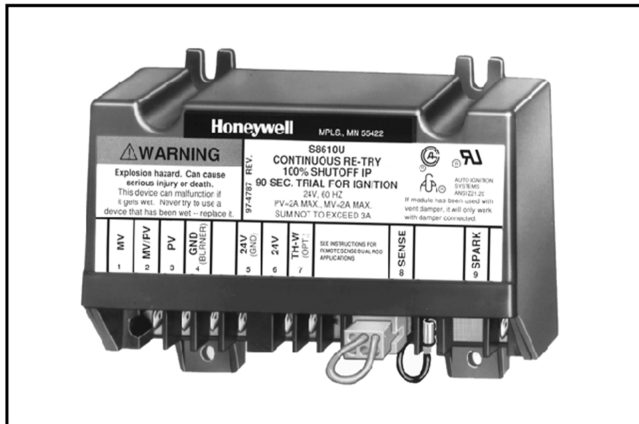


S8610U Universal Intermittent Pilot Module

PRODUCT DATA



APPLICATION

The S8610U Universal Replacement Ignition Module is designed to provide easy field replacement of a wide range of intermittent pilot ignition modules manufactured by Honeywell, Robertshaw, Johnson and others. The S8610U Module provides ignition sequence, flame monitoring, and safety shutoff for intermittent pilot central furnaces, residential boilers, and other heating appliances.

FEATURES

- Provides up to 1.0A pilot and 2.0A main valve current rating.
- System uses rectification principle for flame sensing.
- For use with separate igniter and sensor or combination igniter-sensor. Q345, Q348, Q362, Q373 or Q381 Igniter-sensor recommended as combination igniter-sensor; Q179C with igniter and sensor mounted on one bracket, or Q354 Sensor with Q345, Q348, Q362, Q373 or Q381 Igniter-sensor recommended as separate igniter and sensor.
- Q3450/Q3480 Hot Surface Pilot hardware plugs directly into system control.
- Can be used on natural or LP gas; provides 100 percent shutoff on ignition failure. Waits six minutes nominal following shutoff, then reinitiates the pilot ignition sequence. The ignition trial-shutoff-wait cycle repeats until the pilot lights or the call for heat ends.
- Replaces numerous Honeywell and competitor modules.
- Capacitive discharge spark output.
- Temperature rating is -40°F to 175°F (-40°C to 79°C) when used with 1.0A or less main valve; -40°F to 165°F (-40°C to 74°C) when used with 1.0 to 2.0A main valve.

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SPECIFICATIONS

IMPORTANT

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

SUPER TRADELINE® Models

SUPER TRADELINE® models are selected and packaged for ease of handling, ease of stocking, and maximum replacement value. SUPER TRADELINE® model specifications are the same as those of standard models except as noted.

SUPER TRADELINE® Model Available:

S8610U Universal Intermittent Pilot Module.

Electrical Ratings:

Voltage: 24V, 60 Hz.

Current Draw: 1A pilot valve, 2A main valve.

Valve Contact Rating: 0.2A.

Trial for Ignition:

90 seconds maximum, then 100% shutoff (pilot and main gas).

Continuous Retry:

Five-minute minimum (six-minute nominal) delay if pilot fails to light during trial for ignition. After delay, trial for ignition is repeated. This sequence (trial, delay, trial, delay) continues until pilot lights or call for heat ends.

Spark Generator Output:

13 kV peak at 25 pF load.

Thermostat Anticipator Setting:

0.2A plus pilot valve rating plus main valve rating.

Ambient Temperature Rating:

-40°F to +175°F (-40°C to +79°C) with main valve rated 1.0A or less.

-40°F to +165°F (-40°C to +74°C) with main valve rated 1.0A to 2.0A.

Relative Humidity Rating:

5 to 90% RH at 95°F.

Flame Failure Response Time:

0.8 sec at 1.0 mA flame current.

Terminals:

SENSE: 3/16 in. male quick connect.

All Other Terminals Including Ignition: 1/4 in. male quick connects. Molex plug for connection to Honeywell D80D or D892 Vent Damper.

Flame Current:

1 uA minimum.

Mounting:

Mounts in any position except with terminals up. However, recommended mounting position is with terminals down to provide maximum protection from dripping water or dust accumulation. Fasten with no. 6-32 machine or no. 8 sheetmetal screws of appropriate length. See Fig. 1.

Underwriters Laboratories Inc. Component Recognized:

File no. MH15564, Guide no. MCCZ2.

IAS Design Certified: C2030011.

Other System Components

These modules provide operating control of an intermittent pilot system. Additional components required to complete the system must be ordered separately:

- Dual valve combination gas control designed for intermittent pilot.
- Combination pilot burner/igniter-sensor or separate igniter and sensor on pilot burner bracket.
- Ignition cable.
- Transformer.
- 24V thermostat.
- High limit and other auxiliary controls, as required.

Dual Valve Combination Gas Control:

Any that meet current ratings listed below. VR8204, VR8440 or VR8520 are recommended.

S8610U: 1.0A pilot, 2.0A main valve.

Pilot Burner/Igniter-Sensor:

See Table 1.

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, or specify:

1. SUPER TRADELINE® order 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 Home and Building Control Sales Office (check white pages of your phone directory).
2. Home and Building Control Customer Logistics
Honeywell Inc., 1885 Douglas Drive North
Minneapolis, Minnesota 55422-4386

In Canada—Honeywell Limited/Honeywell Limitée, 35 Dynamic Drive, Scarborough, 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.

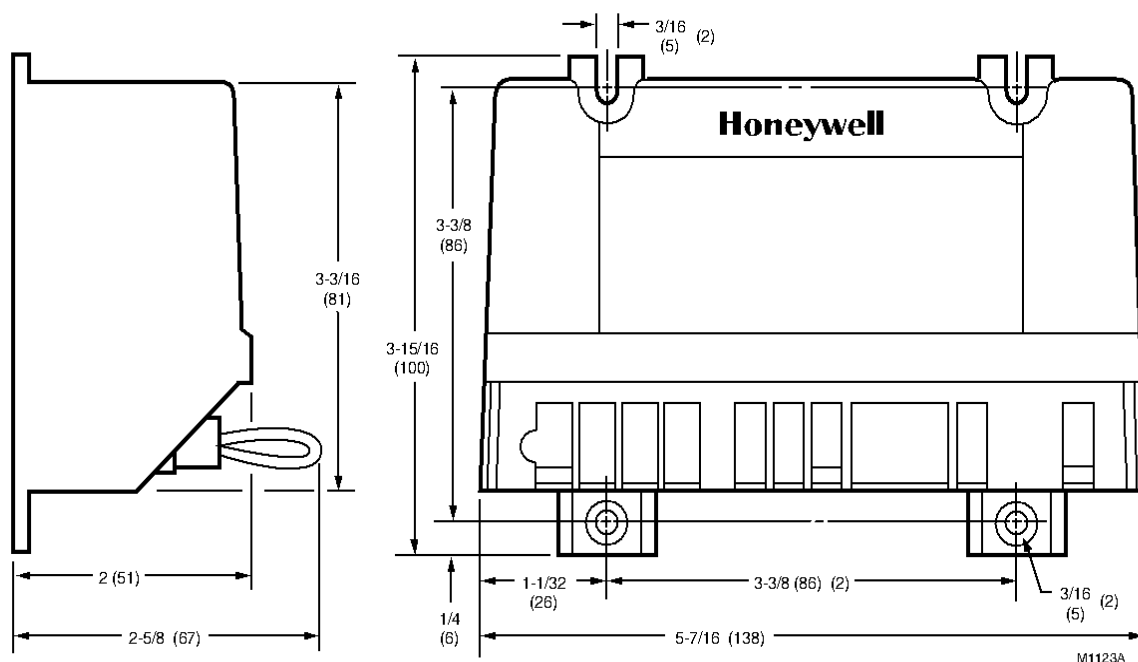


Fig. 1. Approximate ignition module dimensions in in. (mm).

Table 1. Pilot Burner/Igniter-Sensors.

	Pilot Burner/ Igniter-Sensor	Flow Rate*	
		cfh	m ³ /hr
Combined	Q345	0.8	0.02
	Q348	1.5	0.04
	Q362	0.5	0.014
	Q373	0.8	0.02
	Q381	0.5	0.014
Separate	Q179C	1.8	0.05
	Q354 with Q345, Q348, Q362 or Q381.		

*With natural gas at 7.0 in. wc (1.7 kPa).

Ignition Cable:

Use Honeywell preassembled cable, see Table 2, or assemble locally. Use the cable recommended in Table 3 (or equivalent), insulated female 1/4 in. quick connect and insulated Rajah connector receptacle. Maximum recommended length is 36 in. (914 mm).

Table 2. Honeywell Preassembled Ignition Cables (UL Style 3257).

Cable Part Number	Length	Module End	Igniter End
394800-30	30 in.	1/4 in. quick connect, insulated	Rajah connector receptacle, 90 degree rubber boot
394801-30	30 in.	1/4 in. quick connect, insulated	Rajah connector receptacle, straight rubber boot

Table 3. Recommended Ignition Cable for Field Assembly.

Cable Type	Voltage Rating (rms)	Temperature Rating	
		°C	°F
UL Style 3217	10,000	150	302
UL Style 3257	10,000	250	484

Transformer:

Add current ratings of module, pilot valve, main valve, vent damper and any other components of the control system to determine transformer-size requirement. Use a 30 VA or larger transformer if a vent damper will be connected to the S8610U Vent Damper Connector.

Thermostat:

Use open-close switch type, or independently-powered electronic, 24V thermostat capable of switching rated control system load. Before using electronic thermostat powered through the heating/cooling controls, consult thermostat manufacturer to assure proper control system operation.

High Limit and Other Auxiliary Controls:

As specified by the heating appliance manufacturer.

Ignition Modules Replaced

⚠ WARNING

Check Table 4 before replacing an existing intermittent pilot module with the S8610U. If the existing module is not listed, do not use the S8610U to replace it unless you are certain the specifications of the S8610U match those of the existing module.

The S8610U replaces existing flame rectification type intermittent pilot ignition modules with the following characteristics:

- Single rod (local sense) or two rod (remote sense) flame sensing.
- Non-100 percent shutoff, 100 percent shutoff/lockout, or 100 percent shutoff/continuous retry.
- Natural or LP gas.
- Shutoff/lockout times of 30 seconds or longer.
- Prepurge times of four seconds or shorter.
- Pilot burners with flow rates of 1500 Btuh or less.
- With or without vent dampers.

A complete list of the specific Honeywell and other modules that the SUPER TRADELINE® S8610U is designed to replace is provided in Table 4.

The S8610U SUPER TRADELINE® package contains complete, easy-to-use instructions, plus the accessories required to adapt the existing spark cable (Rajah, stud, nail, or other) to the spark terminal on the S8610U. It also provides labels to help assure proper marking of the wires attached to the existing module.

The S8610U SUPER TRADELINE® Universal Module is not designed to replace controls with the following characteristics:

- Flame sensing other than by flame rectification (White Rodgers Cycle-Pilot®, Robertshaw thermal sensing).
- Flame rectification modules with shutoff/lockout times of less than 30 seconds, prepurge times of more than four seconds, or pilot burners larger than 1500 Btuh.
- Standing pilot appliances.

Honeywell provides additional control packages to accomplish these replacements. See the Honeywell Electronic Ignition Service Manual, form 70-6604, or call your Honeywell wholesaler.

PLANNING THE INSTALLATION

WARNING

FIRE OR EXPLOSION HAZARD
CAN CAUSE PROPERTY DAMAGE, SEVERE
INJURY OR DEATH.

Follow these warnings exactly:

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

When intermittent pilot systems are used on central heating equipment in barns, greenhouses, and commercial properties and on heating appliances such as commercial cookers, agricultural equipment, industrial heating equipment and pool heaters, heavy demands are made on the controls. Special steps may be required to prevent nuisance shutdowns and control failure due to frequent cycling, severe environmental conditions related to moisture, corrosive chemicals, dust or excessive heat. These applications require Honeywell Home and Building Control Engineering review; contact your Honeywell Sales Representative for assistance.

Review the following conditions that could 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 only. In year-round applications with greater cycling rates, the control can wear out more quickly. Perform a monthly checkout.

Water Or Steam Cleaning

If a module or gas control 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 module; see the Electronic Ignition Service Manual, form 70-6604.

High Humidity or Dripping Water

Dripping water can cause the module to fail. Never install an appliance where water can drip on the controls. In addition, high ambient humidity can cause 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 module; see the Electronic Ignition Service Manual, form 70-6604.

Corrosive Chemicals

Corrosive chemicals can attack the module and gas control, eventually causing a failure. If chemicals are used for routine cleaning, make sure they cannot reach the controls. Where chemicals are suspended in air, as in some industrial or agricultural applications, use a NEMA 4 enclosure for the ignition module; see the Electronic Ignition Service Manual, form 70-6604.

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 module and the gas control to limit contamination. A NEMA 4 enclosure is recommended for the ignition module; see the Electronic Ignition Service Manual, form 70-6604.

Heat

Excessively high temperatures can damage controls. Make sure the maximum ambient temperature at the control does not exceed the rating of the control. 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 that proper air circulation is maintained when the appliance is installed.

Table 4. S8610U Replaces these Ignition Modules.

CAMSTAT IPI-24-00	S86H1089 S86H1097 S86H1105 S86H1121	CSA42A-604R CSA43A-600R CSA44A-600R CSA45A-601R	G60PAG-6 G60PAJ-1 G60PAK-1 G60PAK-2	G60RCG-2 G60RCJ-1 G60RDG-1 G60RDK-1	G67AG-7 G67AG-8 G67BG-2 G67BG-3
FENWAL 05-203025-005 05-203026-005	S86H1147 S90A100 S90B1003 S90B1011	CSA45A-602R CSA46A-600R CSA48A-600R CSA49A-600R	G60PFH-1 G60PFH-2 G60PFL-1 G60PFQ-1	G60RGL-1 G60RHL-1 G60RHP-1 G60RPL-1	G67BG-4 G67BG-5 G67MG-1 G67MG-4
HONEYWELL S86A1001 S86A1019 S86A1027 S86A1035 S86B1009 S86B1017 S86B1025 S86C1007 S86C1015 S86C1031 S86C1049 S86C1056 S86D1005 S86D1021 S86E1002 S86E1010 S86E1028 S86E1036 S86E1044 S86E1051 S86E1069 S86E1077 S86E1101 S86E1119 S86E1127 S86F1000 S86F1018 S86F1026 S86F1042 S86F1059 S86F1067 S86F1075 S86F1083 S86F1091 S86G1008 S86G1016 S86G1032 S86G1057 S86G1073 S86H1006 S86H1022 S86H1048	S8600A1001 S8600B1009 S8600C1015 S8600F1000 S8600F1034 S8600F1042 S8600H1006 S8600H1022 S8600H1048 S8600H1055 S8600H1089 S8600H1105 S8600M1005 S8600M1013 S8610A1009 S8610B1007 S8610B1015 S8610C1005 S8610F1008 S8610F1016 S8610F1024 S8610F1032 S8610H1012 S8610H1038 S8610H1046 S8610H1053 S8610H1079 S8610M1003 S8610M1029 S8620H1028	CSA49A-605R CSA51A-601R CSA52A-600R G60AAA-1 G60AAG-1 G60AAG-3 G60AAG-4 G60AAG-5 G60AAG-6 G60CAA-1 G60CAA-3 G60CAG-1 G60CAG-2 G60CAG-3 G60CAG-4 G60CAG-5 G60CAG-6 G60CAG-7 G60CAG-8 G60CAG-9 G60CBA-1 G60CBA-3 G60CBG-1 G60CBG-10 G60CBG-11 G60CBG-14 G60CBG-16 G60CBG-17 G60CBG-3 G60CBG-4 G60CBG-9 G60CCA-1 G60CCG-1 G60CPG-1 G60DBG-1 G60DCG-1 G60DCG-2 G60PAG-1 G60PAG-2 G60PAG-3 G60PAG-4 G60PAG-5	G60PVL-1 G60QAG-2 G60QAG-3 G60QAK-1 G60QBG-1 G60QBG-2 G60QBG-3 G60QBG-4 G60QBG-5 G60QBG-6 G60QBG-6 G60QBG-7 G60QBG-8 G60QBG-9 G60QBH-1 G60QBK-1 G60QBK-3 G60QBL-1 G60QBL-2 G60QCG-1 G60QCJ-1 G60QCL-1 G60QDG-1 G60QFL-1 G60QHL-1 G60QJL-1 G60QLG-1 G60QPL-1 G60QRH-1 G60QRL-1 G60QRL-2 G60QRL-3 G60QSL-1 G60QTH-1 G60QTL-1 G60RAG-1 G60RAK-1 G60RBG-1 G60RBG-2 G60RBG-3 G60RBK-1 G60RBK-2	G60RSL-1 G60ZAG-1 G65BBG-1 G65BBG-2 G65BBG-3 G65BBG-4 G65BBG-5 G65BBG-6 G65BBG-7 G65BBG-8 G65BBM-1 G65BBM-2 G65BBM-3 G65BBM-4 G65BCG-1 G65BCM-1 G65BFG-1 G65BFM G65BKG-1 G65BKG-2 G65BKG-3 G65BKM-1 G65BKM-2 G65BKM-3 G65DBG G65DBM-1 G65DBM-3 G65DCM-1 G65DFG G65DFM-1 G65DKG G65DKM G65FBG G65FFG G65FKG G66AG-1 G66BG-1 G66MG-1 G66NG-1 G67AG-3 G67AG-4	G600AX-1 G600AY-1 G600MX-1 G600NX-1 G600RX-1 G670AW-1 G770MGA-1 G770MGA-2 G770MGC-1 G770MGC-2 G770MGC-3 G770MHA-1 G770NGA-1 G770NGC-4 G770NGC-5 G770NGC-6 G770NGC-7 G770RGA-1 G770RHA-1 G770MHA-2 G770MHC-1 G770NHA-1 G770NHC-1 G770RHA-2
	HSC 1003-3 1003-300	G60CBG-9 G60CCA-1 G60CCG-1 G60CPG-1 G60DBG-1 G60DCG-1 G60DCG-2 G60PAG-1 G60PAG-2 G60PAG-3 G60PAG-4 G60PAG-5	G60QRL-1 G60QRL-2 G60QRL-3 G60QSL-1 G60QTH-1 G60QTL-1 G60RAG-1 G60RAK-1 G60RBG-1 G60RBG-2 G60RBG-3 G60RBK-1 G60RBK-2	G65DFG G65DFM-1 G65DKG G65DKM G65FBG G65FFG G65FKG G66AG-1 G66BG-1 G66MG-1 G66NG-1 G67AG-3 G67AG-4	ROBERTSHAW 780-715 780-735 780-737 SP715 SP715A SP735 SP735D SP735L USI 715U
	PENN- JOHNSON CSA35A-617R CSA35A-618R CSA42A-600R CSA42A-601R CSA42A-603R	G60PAG-1 G60PAG-2 G60PAG-3 G60PAG-4 G60PAG-5	G60RBK-1 G60RBK-2		