

# SPARK IGNITION

## Honeywell Series S86

One of the first IID spark ignition systems was developed by Honeywell for gas heating systems. The models were known as S86. They made eight basic control models which included the S86A through S86H

What is IID? IID stands for intermittent ignition device. These are electronic devices that are often called “spark boxes”, however, they provide more than just an ignition spark.

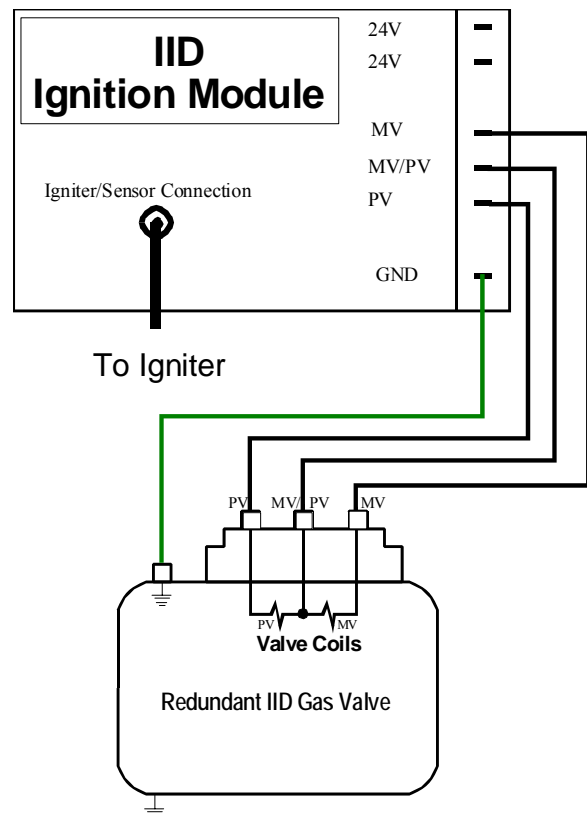
Their first function is to light a pilot by powering the pilot valve (**PV**) in an IID gas valve and provide a high voltage spark once the thermostat calls for heat. The result is spark + pilot gas flow = ignition.

When the pilot has been proven to be lit through flame rectification the control system then powers the main valve (**MV**) to allow for main gas flow to the burner/s. See Feb. 2006 newsletter for a discussion of flame rectification.

Many technicians are unaware that these controls do not always provide 24V A.C. to the PV and MV coils of the gas valve. For instance, the S86G provides 8V D.C. to the PV coil in the gas valve. Once the pilot has been proven to be lit the control sends 10V D.C. to the MV. If unaware of these “unexpected” voltages a service technician is likely to condemn and replace a good control.

To make matters worse, the gas valve and ignition module indicate a nameplate voltage of 24V A.C. No mention of the D.C. voltage is indicated on the ignition control or the gas valve.

The S86A-0 through -3 control outputs D.C. to the main valve coil and A.C. to the pilot valve coil.



See page 2 for a listing of S86A—H test voltages and flame signal requirements.

## Honeywell S86A-H Spark Ignition Controls

(To Be Used As An Aid Only- Consult Manufacturer For Exact Specifications)

Model	MV- MV/ PV	PV-MV/PV	SPARK Volts	100% Lock-out	Min. DC $\mu$ A
S86A-0 thru 3	<b>10VDC</b>	24VAC	30000	NO	1.0
S86A-4 thru 9	24VAC	24VAC	30000	NO	1.0
S86B	24VAC	24VAC	30000	NO	1.0
S86C	<b>10VDC</b>	<b>4-5VDC</b>	30000	YES	1.2
S86D	24VAC	24VAC	30000	YES	1.0
S86E	24VAC	24VAC	15000	NO	1.0
S86F	24VAC	24VAC	15000	NO	1.0
S86G	<b>10VDC</b>	<b>8VDC</b>	15000	YES	1.2
S86H	24VAC	24VAC	15000	YES	1.0



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