

# SmartValve™ Control Systems

## SV9520 SmartValve™ System



The SV9520 SmartValve™ System Controls combine gas flow control and electronic direct main burner ignition sequencing functions into a single unit. The ignition source is 120V hot surface igniter lighting the main burner flame. Provides all gas ignition safety functions by controlling gas flow, ignition source, and a 120 Vac combustion air blower. The control also monitors the appliance airflow proving switch circuit and limit string to assure proper appliance operation. The SmartValve™ System Controls provide prepurge, postpurge and timed trial for ignition with multiple ignition trials and auto reset from lockout. Diagnostic LED indicates system status.

- The control communicates directly with the ST9160 Electronic Fan Timer (EFT) in typical forced warm air furnace applications.
- It will also interface with the 208907 Terminal Board, providing compatibility with power-stealing thermostats. Or, it directly interfaces with the appropriate power supplies and a system thermostat for additional appliance applications.
- When controlled directly by a thermostat, the control does not provide a postpurge function, as power to the control is removed when the thermostat call for heat ends.
- This system is suitable for a wide range of fan-assisted combustion, gas-fired appliances including furnaces, rooftop furnaces, boilers, unit heaters, infrared heaters, water heaters and commercial cooking appliances.

**Dimensions, Approximate:** 3.2 in. wide x 4.9 in. high x 4.1 in. long  
(81 mm wide x 124 mm high x 104 mm long)

**Body Pattern:** Straight-through

**Maximum Capacity at 1 in. P.D.** 150 ft<sup>3</sup>/hr (4.2 m<sup>3</sup>/hr)

**Maximum Capacity:** 200 ft<sup>3</sup>/hr (5.7 m<sup>3</sup>/hr)

**Minimum Capacity:** 20 ft<sup>3</sup>/hr (0.6 m<sup>3</sup>/hr)

**Electrical Ratings:** 24 Vac

**Frequency:** 60 Hz; 50 Hz

**Control Voltage (Thermostat or other call for heat):** 24 Vac, 60 Hz.

**Flame Failure Response Time (sec):** 2 sec @ 5 µA

**Flame Sense:** Two Rod

**Ignition Sequence:** 7/12 sec

**Ignition System Type:** Direct Hot Surface Ignition

**Ignition Trial Time (sec):** 7 sec

**Ignition Trials To Lockout:** 4 trials

**Pressure Ratings:** 1/2 psi (3.5 kPa)

**Pressure Tapping:** 1/8 in. - NPT

**Ambient Temperature Range:** 0 F to 175 F (-18 C to +79 C)

**Mounting:** 0 to 90 degrees in any direction from the upright position of the gas control knob, including vertically.

**Approvals:**

**Canadian Standards Association:** CSA International: 158158-10592145

	Product Number	Type of Gas	Opening Characteristics (standard, step)	Inlet/Outlet Size (in.)	Pressure Regulator Setting		PrePurge	Includes
					(psi)	(kPa)		
•	SV9520H8513	Natural	Fast-Slow Opening	1/2 in. NPT x 1/2 in. NPT	3.5 in. wc	0.87 kPa	15 seconds	LP Conversion Kit
•	SV9520M2536	Natural	Standard Opening	1/2 in. NPT x 1/2 in. NPT	3.5 in. wc	0.87 kPa	15 seconds	LP Conversion Kit

\* TRADELINE models • SUPER TRADELINE models

# SmartValve™ Control Systems Selection Guide

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		Specifications							Cross-Reference
Ignition/ Application	Universal Service Part	Gas Type	Opening Characteristics	Ambient Temperature Range	Natural to LP Conversion Kit (Included)	3/4 in. x 1/2 in. Reducer Bushings (Included)	Extension Harness (Included)	OEM Brands	Replaces
HSI Water Heaters	SV9570A2518	Natural	Standard Opening	0 to 150 F (-18 to 66 C)	No	None	No	A.O Smith	SV9570A2054, SV9570A2070, SV9570A2096
	SV9570A2526	LP						A.O. Smith	SV9570A2062, SV9570A2088, SV9570A2187
Intermittent HSI Pilot with Combustion Air Control and Limit Monitoring Forced Air Furnace	SV9541Q2561	Natural	2-Stage	-40 to 175 F (-40 to 79 C)	Yes	None	No	ICP, Heil, Tempstar, Arcoaire, Comfortmaker, KeepRite	SV9540Q2464, SV9541Q3098
	SV9641M4510		Standard Opening		Yes	Two		ICP, Heil, Tempstar, Arcoaire, Comfortmaker, KeepRite, Mestek, Sant Fin	SV9541M2094, SV9540M2229, SV9540M2260, SV9640M4116, SV9640M4124, SV9540M2278, SV9540M2245, SV9640M3126, SV9640M4132
Direct Ignition, General Application	SV9510M2511	Natural	Standard Opening	-40 to 175 F (-40 to 79 C)	Yes	None	No	Modine	SV9510M2347, SV9510M2362, SV9410M2902, SV9510M2412, SV9510M2354, SV9410M2910, SV9510M2388, SV9510M2420
	SV9520M2536			-40 to 175 F (-40 to 79 C)				—	SV9420M2331, SV9520M2403, SV9420M2323
	SV9510K2539		Slow Opening	-40 to 175 F (-40 to 79 C)				Roberts Gordon	SV9510H2228, SV9510K2133, SV9510K2158, SV9510K2141, SV9510K2166
	SV9520H8513		Fast-Slow Opening	0 to 175 F (-18 to 79C)				Armstrong, Concord, AirEase	SV9520H8042, SV9520H8034, SV9520H8067, SV9520H8026

Residential  
Combustion Controls