

## V-2410 Three-Way Multipurpose Solenoid Air Valve

### Features

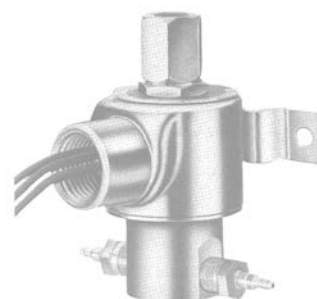
- Compact Size with Durable, Solid Brass Construction
- Can Be Mounted in Any Position
- Conduit Adaptable to Meet Electrical Code Requirements (Conduit Housing Style Models Only)
- Readily Adaptable Air Connections
- Positive Air Seal
- Can Be Used in Smoke Control Applications

The V-2410 Three-Way Multipurpose Solenoid Air Valve is designed for use in applications where the operation

of a pneumatic device is dependent upon an electrical circuit. The V-2410 diverts the air signal to the pneumatic device(s) when the coil is energized or de-energized, depending on the choice of air connections used (N.O. Normally Open, N.C. Normally Closed, and COM. Common).

### Operation

In a typical V-2410 application, supply air is connected to the N.C. port, the control device is connected to the COM. port, and the N.O. port is left vented. When the solenoid is energized, a magnetic field activates a plunger-type valve stem, the N.C. port opens, and supply air is directed through the COM. port to the control device. When the solenoid is de-energized,



**Fig. 1: V-2410 Conduit Housing Style Three-Way Multipurpose Solenoid Air Valve**



**Fig. 2: V-2410 Yoke Style Three-Way Multipurpose Solenoid Air Valve**

The supply air connection is closed and the N.O. port exhausts air from the control device. Reversed signals may be obtained by connecting the supply air to the N.O. port, using the N.C. port for exhaust.

(Continued on Page 4)

### Specifications

<b>Product</b>		V-2410 Three-Way Multipurpose Solenoid Air Valve	
<b>Models</b>		See Table 1	
<b>Air Connections</b>	<b>Conduit Housing Style Models</b>	<b>N.O.</b>	1/8 in. NPT
		<b>N.C. &amp; COM.</b>	1/8 in. NPT Barbed Fittings for 5/32 or 1/4 in. O.D. Poly tubing
	<b>Yoke Style Models</b>	<b>N.O., N.C., &amp; COM.</b>	1/8 in. NPT
<b>Output Flow Capacity</b>		See Table 2	
<b>Operating Pressure</b>		0 to 30 PSIG (0 to 210 kPa) Maximum	
<b>Power Consumption</b>		See Table 1	
<b>Volt-Ampere Ratings</b>		See Table 3	
<b>Leakage</b>	<b>Internal</b>	None	
	<b>External</b>	Maximum 0.1 SCIM (0.03 mL/s) per Fitting Used	
<b>Ambient Operating Temp Limits</b>		32 to 130°F (0 to 54°C)	
<b>Materials</b>		Solid Brass Body	
<b>Wiring (Conduit Housing Style Models Only)</b>		Three 18 AWG Thermoplastic Wires, 18 in. (457 mm) Long	
<b>Agency Listings</b>	<b>Conduit Housing Style Models</b>	UL and CSA Approved	
	<b>Yoke Style Models</b>	UL and CSA Component Listed	

The performance specifications are nominal and conform to acceptable industry standards. For application at conditions beyond these specifications, consult the local Johnson Controls office. Johnson Controls, Inc. shall not be liable for damages resulting from misapplication or misuse of its products.

**Table 1: Models**

V-2410 -Suffix	Style	Electrical Rating	Electrical Termination	Nominal Power Consumption*	Shipping Weight lb**
-1	Conduit Housing	24V/50-60 Hz	Thermoplastic Leads	6.5 Watts	0.9
-2	Conduit Housing	120V/50-60 Hz	Thermoplastic Leads	6.5 Watts	0.9
-3	Conduit Housing	208V/50-60 Hz	Thermoplastic Leads	6.5 Watts	0.9
-4	Conduit Housing	240V/50-60 Hz	Thermoplastic Leads	6.5 Watts	0.9
-5	Conduit Housing	277V/50-60 Hz	Thermoplastic Leads	6.5 Watts	0.9
-6	Conduit Housing	480V/50-60 Hz	Thermoplastic Leads	6.5 Watts	0.9
-7	Conduit Housing	24 VDC	Thermoplastic Leads	5.7 Watts	0.9
-8	Yoke	24V/50-60 Hz	Push-On Spade Terminal	8.0 Watts	0.8
-9	Yoke	120V/50-60 Hz	Push-On Spade Terminal	8.0 Watts	0.8

\* Refer to Table 3 for transformer sizing.

\*\* lb x 0.454 = kg

**Table 2: Output Flow Capacity  $\frac{\text{SCIM}}{\text{mL/s}}$** 

Air Connections	20 PSIG (140 kPa) Supply, 1 PSIG (7 kPa) Drop		20 PSIG (140 kPa) Supply, 20 PSIG (140 kPa) Drop	
	N.O.	N.C.	N.O.	N.C.
Barbed Fittings for 5/32 or 1/4 in. O.D. Polytubing (Included with Conduit Housing Style Models)	$\frac{700}{191}$	$\frac{750}{205}$	$\frac{1900}{519}$	$\frac{2100}{573}$
Barbed Fittings or Compression Fittings for 1/4 in. O.D. Tubing	$\frac{1000}{273}$	$\frac{1400}{382}$	$\frac{2650}{723}$	$\frac{4200}{1147}$

**Table 3: Volt-Ampere Ratings**

V-2410 - Suffix	50 Hz		60 Hz	
	Inrush	Holding	Inrush	Holding
-1	20 VA	15 VA	18 VA	11 VA
-2	20 VA	15 VA	18 VA	11 VA
-3	20 VA	15 VA	18 VA	11 VA
-4	20 VA	15 VA	18 VA	11 VA
-5	20 VA	15 VA	18 VA	11 VA
-6	20 VA	15 VA	18 VA	11 VA
-7	20 VA	15 VA	18 VA	11 VA
-8	24 VA	17 VA	19 VA	13 VA
-9	24 VA	17 VA	19 VA	13 VA

Caution: The V-2410 is basically an inductive device in an electrical circuit. When switching an inductive load, it may be necessary to provide transient suppression, depending on the circuitry and switching devices involved.

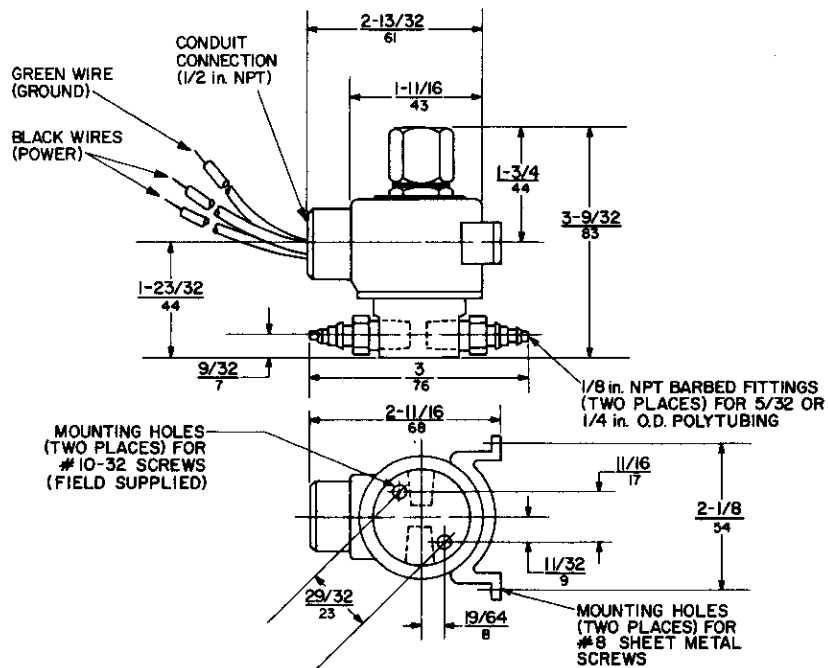


Fig. 3: Conduit Housing Style V-2410

Dimensions  $\frac{\text{in.}}{\text{mm}}$

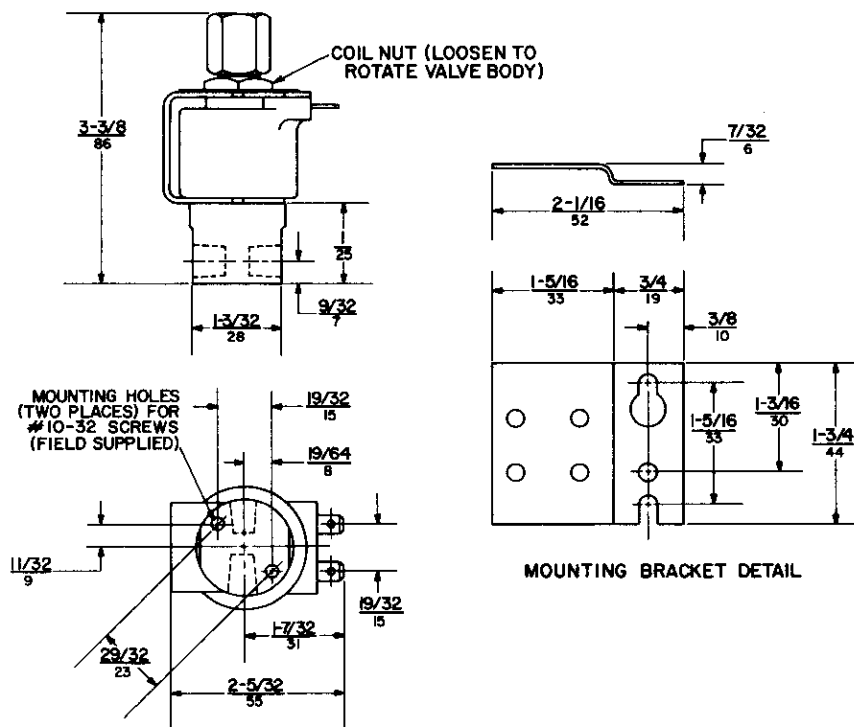


Fig. 4: Yoke Style V-2410

Dimensions  $\frac{\text{in.}}{\text{mm}}$

## Mounting

The V-2410 can be mounted in a variety of ways depending on the model ordered. All models feature two mounting holes on the bottom of the unit for surface mounting using two #10-32 screws (field supplied).

In addition, the V-2410-1, -2, -3, -4, -5, -6, and -7 feature an integral bracket for wall or panel mounting using two #8 screws (field supplied). These models also feature a conduit connection should the application require it.

**IMPORTANT:** All conduit housing style V-2410s are furnished with a ground wire; however, if this style of solenoid is to be grounded via the conduit, make sure that metallic conduit is used to conform with electrical code requirements.

The V-2410-8 and V-2410-9 (yoke style models featuring push-on spade terminals) are

shipped with a separate mounting bracket which can be attached to the valve base using the two furnished #10-32 screws. The valve and bracket assembly can then be mounted to the surface using two #10 screws (field supplied).

Regardless of the mounting method chosen, all models can be installed in any position without affecting the operation of the unit. Refer to Figs. 3 and 4 for space requirements and additional mounting details.

**⚠ CAUTION: Risk of Property Damage.** It is recommended that additional devices, for example, blade indication on damper blades in smoke control applications, be added to indicate proper system operation. Improper system operation can lead to system closure, improper flow, or loss of pressure due to valve failure.

**MISE EN GARDE : Risque de dégâts matériels.** Il est recommandé d'ajouter des éléments supplémentaires comme des indicateurs de position des lames de registres dans les applications de contrôle des fumées afin de signaler le bon fonctionnement du système. Le fonctionnement incorrect peut entraîner la fermeture du système, un débit anormal ou une perte de pression dus à une défaillance de la vanne.

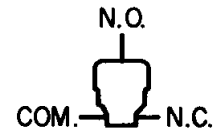
**When the V-2410 is used in smoke control applications, it is recommended that the solenoid be mounted in an upright position as close to the actuator as possible to provide quick response.**

## Repair Information

Field repairs must not be made. For a replacement V-2410, contact the nearest Johnson Controls branch office.

## Application and Drawing Identification

E/PV-



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