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Title: 250 Electric Valves

ISO Date: April 10, 2006

Don't Take Chances

Compressed air is an extremely powerful medium. Always take maximum precautions when handling any component of a compressed air system. **Never** attempt to construct, replace, operate or service any component of a compressed air system unless you have been specifically and properly trained to do so. **Always** disconnect the supply air, and exhaust the air system before attempting to remove or service a component of that system. Failure to heed these warnings could result in SERIOUS, EVEN FATAL, PERSONAL INJURY.

Design And Specifications

The design and specifications and other product information contained in this catalog is for general reference purposes based upon customary and usual manufacturing standards and product applications. However, it is difficult to predict or to anticipate the functioning or suitability of the product for any particular application or use. Therefore, nothing herein shall be deemed a representation or warranty of the product design or specifications and Buyer shall have the responsibility for investigating and testing the product in any particular application or use and all risks attendant in such use.

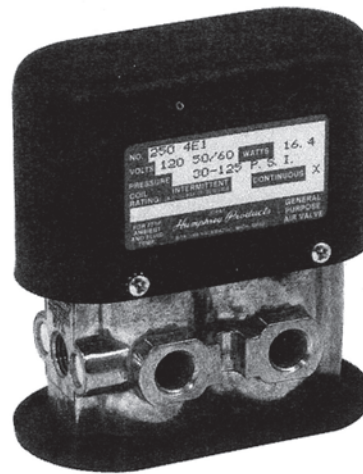
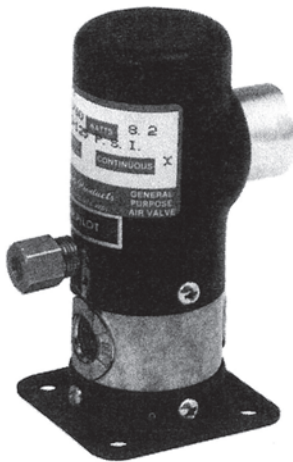
Humphrey Products Company
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* Available with U.L. Rating, consult factory

Humphrey 250 Series electric air valves are of double diaphragm poppet design. Because these "no stick" valves require no lubrication, they are ideal for use with instrument air and other media which prohibit lubrication. The use of lubrication, however, will not prevent a 250 Series valve from functioning if the lubricant is varied or removed.

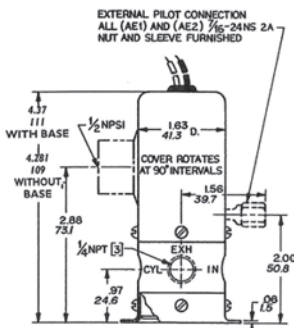
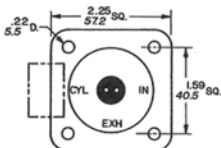
250 Series electric air valves have no sliding seals subject to cuts or metal seals subject to scratches, so they are ideal for use with contaminating media and are unaffected by compressor varnish.

250 Series air valves are 2-position, 2-way, 3-way or 4-way, single- or double-solenoid valves. They are designed for rugged duty and rapid cycling and can be mounted in any position.



250E1 250E1-3-10-21-36
Model 250E1 is a single-solenoid, maintained-contact, spring return, 2-way or 3-way valve available either normally closed or normally open.

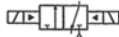
Model 250AE1 is identical to the 250E1 but has an external air pilot connection for valving media below 30 psig. Pilot air is isolated from valved media such as water, oil, instrument air, and gases.



250E2 250AE2-3-21
Model 250E2 is a double-solenoid, momentary-contact, maintained-position, 2-way or 3-way valve. It holds in either the closed or open position with internal air pressure.

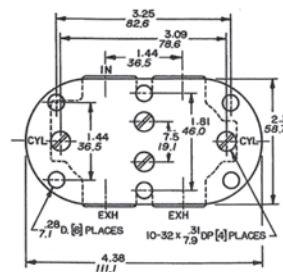
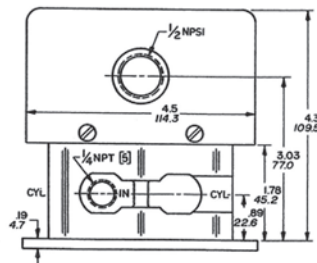
Model 250AE2 (shown) is identical to the 250E2 but has an external air pilot connection for valving media below 30 psig. Pilot air is isolated from valved media such as water, oil, instrument air, and gases.

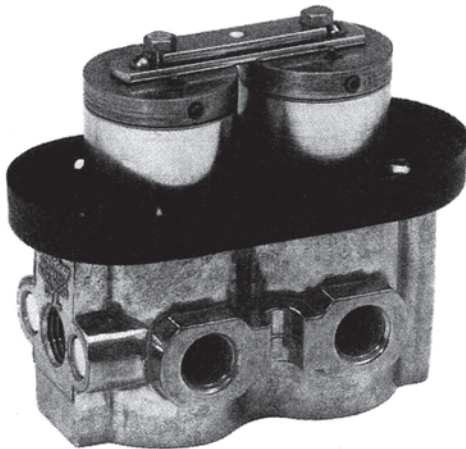
If AC coils are to be energized longer than 30 seconds, specify Code CD (Continuous Duty). All coils for DC voltages are Code CD.



250-4E1
Model 250-4E1 is a single-solenoid, maintained-contact, spring return, 4-way valve. It can be mounted with mounting base (Code 21), with four #10-32 holes

in bottom, or with the two slotted lugs on body. The 250-4E1 is also available as a 3-position, NC/NC or NO/NO valve. Furnished with conduit cover.



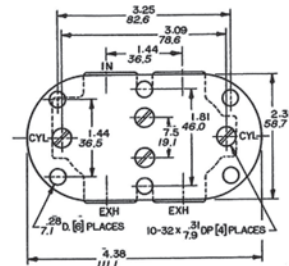
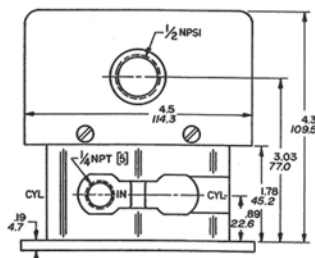


250-4E2

250-4E2 (without cover)

Model 250-4E2 is a double-solenoid, momentary-contact, maintained-position, 4-way valve. It can be mounted with mounting base (Code 21), with four #10-32 holes in bottom, or with two slotted lugs on body. Furnished with conduit cover.

All voltages Continuous Duty as standard.



Specifications

MEDIA:
Compressed Air (Consult factory for others)

PRESSURE RANGE:
30 to 125 psig (2.1 to 8.6 bars)
AE1/AE2: 0 to 125 psig (0 to 8.6 bars)
(body), 30 to 125 psig (2.1 to 8.6 bars)
(pilot)

External pilot pressure (AE1/AE2): Equal to
valved pressure, 30 psig (2.1 bars) Minimum

TEMPERATURE RANGE:
0 to 125°F (-17.8 to 51.7°C)

OPERATING SPEEDS:
To 600 CPM

MATERIALS:
Zinc Die Cast, Brass, Zinc Plated Steel, Stainless Steel, Buna N, Polyurethane

LUBRICATION: Not required
FILTRATION: Not required

Air Flow to Atmosphere

MODEL	25 PSIG CFM	(1.7 BARS) LPM	125 PSIG CFM	(8.6 BARS) LPM
250E1/E2	25.0	707.5	75.0	2122.5
AE1/AE2				
250-4E1/E2				
250-4AE1	22.0	622.6	70.0	1981.0
250-4AE2				

Weight

MODEL	ACTUAL LBS	KGS
250E1/E2	1.2	0.5
AE1/AE2	1.2	0.5
250-4E1/E2	1.4	0.6
250-4AE1	2.8	1.3
250-4AE2	2.9	1.4

Options for 250 Series valves

When ordering, specify desired option.

For all 250 valves:

- Mounting Base (Code 21)
- Fluoroelastomer diaphragms for resistance to mild chemicals and for sustained temperatures to 400°F (204.4°C) and intermittent temperatures to 600°F (315.5°C).

For E2 models only:

- All voltages Continuous Duty as standard on 4-way only.

For 2- or 3-way models only:

- Brass body.
- Bottom inlet for normally closed models.
- Cover seal (Code 61) for dirty or wet conditions.

Electrical Specifications

MODEL	VOLTAGE	COIL NUMBER	WATTS	AMPS	OHMS	HEAT RISE (°C)	ON TIME SECONDS	OFF TIME SECONDS
250E1	24 DC	46-8A	6.7	0.296	86	85.9	0.024	0.024
	120 AC	46-4	8.2	0.161	255	102.0	0.010	0.029
250E2	24 DC	46-8A	6.7	0.296	86	85.9	0.015	0.020
	120 AC	46-3	23.0	0.236	105	77.8	0.009	0.013
250-4E1	24 DC	46-8A	13.4	0.296	86	85.9	0.019	0.021
	120 AC	46-4	16.4	0.161	255	102.0	0.008	0.012
250-4E2	24 DC	46-10A	16.9	0.712	34	85.9	0.019	0.021
	120 AC	46-4	8.2	0.161	255	77.8	0.008	0.012

Lead Wire: # 18 AWG, 16-30 TC, 1/32, 105°C, PVC, UL & CSA.

Fill/Exhaust Times (Seconds)

MODEL	SUPPLY PRESSURE							
	At 50 psig (3.5 bars)				At 100 psig (7.0 bars)			
	Chamber Fill 0-40 psig (0-2.8 bars)		Exhaust 50-10 psig (3.5-7 bars)		Chamber Fill 0-80 psig (0-5.5 bars)		Exhaust 100-20 psig (7.0-1.4 bars)	
	10 Cubic Inches (164cc)	100 Cubic Inches (1640cc)	10 Cubic Inches (164cc)	100 Cubic Inches (1640cc)	10 Cubic Inches (164cc)	100 Cubic Inches (1640cc)	10 Cubic Inches (164cc)	100 Cubic Inches (1640cc)
	FILL	EXHAUST	FILL	EXHAUST	FILL	EXHAUST	FILL	EXHAUST
250E1/E2	0.048	0.062	0.290	0.431	0.057	0.075	0.330	0.521
250-4E1/4E2	0.046	0.058	0.299	0.410	0.054	0.068	0.326	0.486

250/500/501/590 Series

1/4-, 1/2-, and 3/4-inch ports, 2-way, 3-way, 4-way

VALVES

Option Code	2 Way	3 Way	Norm. Closed	Norm. Open	w/Out Mount. Base	With Mount. Base	Grommet Leads (18")	Conduit Leads (18")	DIN Connector	Grom./Conduit Leads (72")	Cover Seal	FKM* Seals	Brass Body	Bottom Inlet (NC Only)	Specify Voltage with option code				12VDC 24VDC
															120V 50/60, 240/50/60 (ID not available on E1)		24V 50/60 w/"Flywheel" Rectifiers for CD		Spec. Volt.
Model																			
250E1	SP	N/C	N/C	N/C	N/C	SP	N/C	N/C	SP	SP	SP	SP	SP	SP	STD	NA	SP	NA	N/C
250AE1	SP	N/C	N/C	N/C	N/C	SP	NA	STD	SP	SP	NA	SP	SP	SP	STD	NA	SP	NA	N/C
250E2	SP	N/C	NA	NA	N/C	SP	NA	STD	SP	SP	SP	SP	SP	SP	SP	STD	SP	SP	N/C
250AE2	SP	N/C	NA	NA	N/C	SP	NA	STD	SP	SP	NA	SP	SP	SP	SP	STD	SP	SP	N/C
250-4E1	NA	NA	NA	NA	N/C	SP	NA	STD	SP	SP	NA	SP	NA	NA	STD	NA	SP	NA	N/C
250-4E1 NC NC	NA	NA	NA	NA	N/C	SP	NA	STD	SP	SP	NA	SP	NA	NA	STD	NA	SP	NA	N/C
250-4E1 NO NO	NA	NA	NA	NA	N/C	SP	NA	STD	SP	SP	NA	SP	NA	NA	STD	NA	SP	NA	N/C
250-4E2	NA	NA	NA	NA	N/C	SP	NA	STD	SP	SP	NA	SP	NA	NA	STD	NA	SP	NA	N/C

CD=Continuous Duty; ID=Intermittent Duty.

Note: Code 39 not available on E2 models with continuous duty coils (Code CD).

*Fluoroelastomer

ACCESSORIES

Model	Description
HS4	DIN Connector for use with Code 39 Valves.
JB	— Add "JB" to model number of any solenoid valve with conduit Connection (Code 36).

HOW TO ORDER

Starting with Model Number specify options in order from left to right.

Example: To Order Model 250E1-3-10-21-36 12VDC

3-Way Operation, Single Solenoid (250E1-3)
 Normally Closed (250E1-3-10)
 With Mounting Base (250E1-3-10-21)
 Conduit Leads (18") (250E1-3-10-21-36)
 Voltage 12VDC (250E1-3-10-21-36 12VDC)

Remember: Option Codes marked STD and NA are not used as part of the Model Number when ordering. N/C indicates no charge but Option Code must be included in the Model Number. OS indicates that Option must be ordered separately and is not used as part of the Model Number.

N/C=No charge
 NA =Not available
 OS =Order separately, additional charge for this option
 STD=Standard
 SP=Specify, additional charge for this option