# **Humphrey** 250 Series Electric Air Valves

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 contaminated media and are unaffected by compressor varnish.

250 Series electric 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.



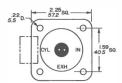


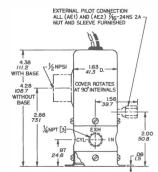


**250E1**250E1-3-10-21-36
Model 250E1 is a single-solenoid, maintained-contact, spring return, 2-way of 3-way valve available either normally closed or normally open.

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, maintainedposition, 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.

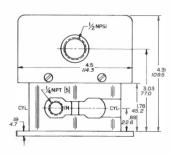


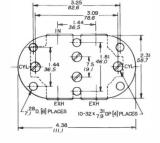
250-4E1

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.

250-4E1-21

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#### 250-4E2

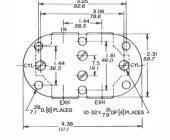
Model 250-4E2 is a doublesolenoid, momentary-contact, maintained-position, 4-way valve. It can be mounted with mounting base (Code 21), with four #10-32 holes in bottom, or with two slotted lugs on body. Furnished with conduit cover.

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250-4E2 (without 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)

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

Air Flow to	Weight					
MODEL	25 PSIG CFM	(1.7 BARS) LPM	125 PSIG CFM	(8.6 BARS) LPM	ACTUAL LBS	KGS
250E1/E2 AE1/AE2	25.0	707.5	75.0	2122.5	1.2 1.2	0.5 0.5
250-4E1/E2 250-4AE1 250-4AE2	22.0	622.6	70.0	1981.0	1.4 2.8 2.9	0.6 1.3 1.4

# **Options for 250 Series valves**

When ordering, specify desired option.

### For all 250 valves:

- Mounting Base (Code 21).
- Viton A 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	46-4	23.0	0.236	105	77.8	0.009	0.013
250-	24 DC	46-8A	6.7	0.296	86	85.9	0.019	0.021
4E1	120 AC	46-4	8.2	0.161	255	102.0	0.008	0.012
250-	24 DC	46-10A	16.9	0.712	34	85.9	0.019	0.021
4F2	120 AC	46-4	8.2	0.161	255	77.8	0.008	0.012

See Electric Air Valves Introduction, Continuous Duty Coils, for additional voltages.

# Fill/Exhaust Times (Seconds)

	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 (3.57 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)		
MODEL	FILL	EXHAUST	FILL	EXHAUST	FILL	EXHAUST	FILL	EXHAUST	
250E1/E2 250-4F1/4F2	0.048	0.062	0.290	0.431	0.057	0.075	0.330	0.521	