

# Humphrey 500 Series Electric Air Valves

Humphrey 500 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 500 Series valve from functioning if the lubricant is varied or removed.

500 Series electric 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.

With full 0.500-inch orifices, 500 Series valves have high flow (200 scfm at 125 psig).

500 Series valves are 2-position, 2-way or 3-way, single- or double-solenoid valves. They are designed for rugged duty and rapid cycling, and can be mounted in any position with body mounting holes. All 500 Series electric valves are furnished with brass bodies.



## 500E1

Model 500E1 is a single-solenoid, maintained contact, spring return, 2-way or 3-way valve available either normally closed or normally open. It can be mounted in any position with body mounting holes.



### Options for 500 Series valves

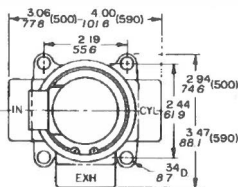
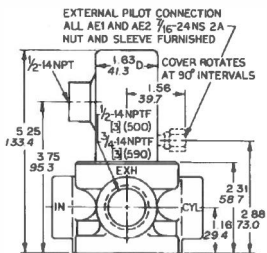
When ordering, specify desired option.

#### For all 500 valves:

- Cover seal (Code 61).
- 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:

- Code CD (Continuous Duty) coils for AC voltage valves to be energized longer than 30 seconds.



## 500E1-3-10-36

Model 500AE1 is identical to the 500E1 but has an external air pilot connection for the valving of media below 30 psig. Pilot air is isolated from valved media such as water, oil, instrument air, and gases.



## 500E2

Model 500E2 is a double-solenoid, momentary-contact, maintained-position, 2-way or 3-way valve. If AC coils are to be energized longer than 30 seconds, specify Code CD (Continuous Duty) Coils. All coils for DC voltages are Code CD.



## 500E2-3

Model 500AE2 is identical to the 500E2 but has an external air-pilot connection for the valving of media below 30 psig. Pilot air is isolated from valved media such as water, oil, instrument air, and gases.



### Specifications

#### MEDIA:

Compressed Air (Consult factory for others)

#### PRESSURE RANGE:

E1/E2: 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 (500AE1/AE2 only):

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:

Cast Brass, Machined Aluminum & Brass, Stainless Steel, Zinc Plated Steel, Buna N

LUBRICATION ..... Not required

FILTRATION ..... Not required

### Air Flow to Atmosphere

MODEL	SUPPLY PRESSURE				Weight	
	30 PSIG CFM	(2.1 BARS) LPM	120 PSIG CFM	(8.3 BARS) LPM	ACTUAL LBS	KGS
500E1/E2 500AE1/AE2	68.6	1941.4	206.0	5829.8	3.6	1.6

### Electrical Specifications

MODEL	VOLTAGE	COIL NUMBER	WATTS	AMPS	OHMS	HEAT RISE (°C)	ON TIME SECONDS	OFF TIME SECONDS
500E1	24 DC	46-8A	6.7	0.296	86	85.9	0.039	0.042
	120 AC	46-4	8.2	0.161	255	102.0	0.028	0.050
500E2	24 DC	46-8A	6.7	0.296	86	85.9	0.035	0.043
	120 AC	46-4	8.2	0.236	105	77.8	0.031	0.037

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

### Fill/Exhaust Times (Seconds)

MODEL	SUPPLY PRESSURE							
	At 50 psig (3.5 bars)				At 100 psig (7.0 bars)			
	FILL	EXHAUST	FILL	EXHAUST	FILL	EXHAUST	FILL	EXHAUST
500E1/E2	0.055	0.064	0.122	0.205	0.061	0.064	0.135	0.239