

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.

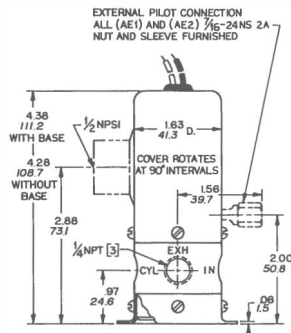
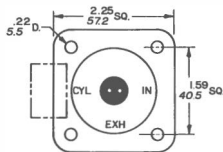
250 Series electric air valves have no sliding seals subject to cuts or metal seals subject to scratches, so they are ideal for use with contaminated media and are unaffected by compressor varnish.

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 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.

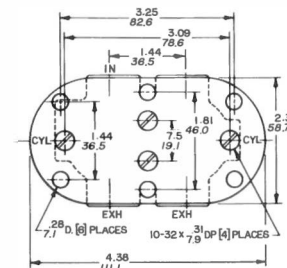
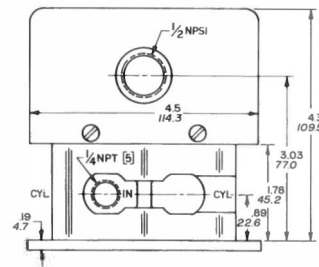
Model 250AE2 (shown) is identical to the 250E2 but has an external air pilot connection for valving media below 30 psig. Pilot air is isolated from valved media such as water, oil, instrument air, and gases.

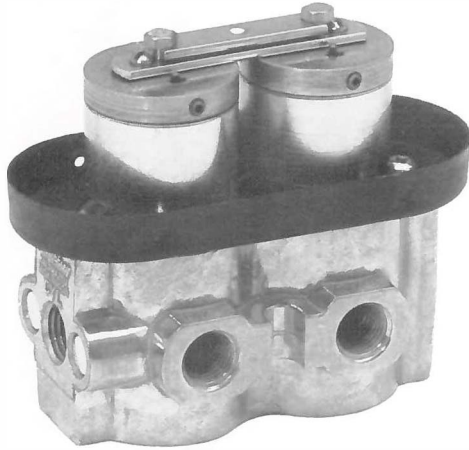
If AC coils are to be energized longer than 30 seconds, specify Code CD (Continuous Duty). All coils for DC voltages are Code CD.



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

250-4E1-21
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.



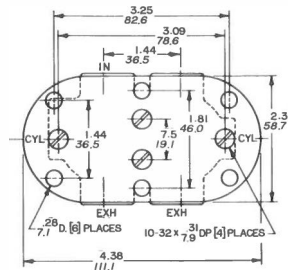
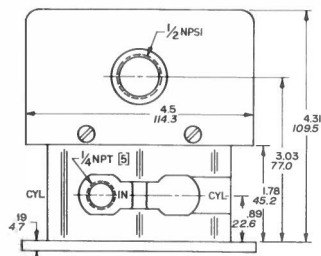


250-4E2

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 | Weight | | | | ACTUAL LBS | KGS |
|------------|-------------|----------------|--------------|----------------|------------|-----|
| | 25 PSIG CFM | (1.7 BARS) LPM | 125 PSIG CFM | (8.6 BARS) LPM | | |
| 250E1/E2 | 25.0 | 707.5 | 75.0 | 2122.5 | 1.2 | 0.5 |
| AE1/AE2 | | | | | 1.2 | 0.5 |
| 250-4E1/E2 | | | | | 1.4 | 0.6 |
| 250-4AE1 | 22.0 | 622.6 | 70.0 | 1981.0 | 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).
- 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 |
| 250-4E1 | 24 DC | 46-8A | 6.7 | 0.296 | 86 | 85.9 | 0.019 | 0.021 |
| | 120 AC | 46-4 | 8.2 | 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 |

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 |
| 250E1/E2 | Chamber Fill 0-40 psig (0-2.8 bars) | | Exhaust 50-10 psig (3.5-0.7 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) | |
| 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 |

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

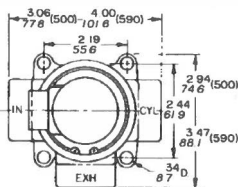
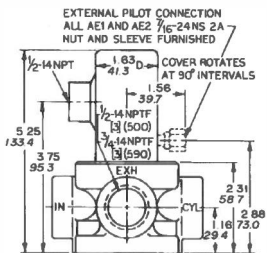
When ordering, specify desired option.

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 |

Humphrey 590 Series Electric Air Valves

Humphrey 590 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 590 Series valve from functioning if the lubricant is varied or removed.

590 Series electric valves have no sliding seals subject to cuts or metal seals subject to scratches, so they are also ideal for use with contaminated media and are unaffected by compressor varnish. Constructed of lightweight anodized aluminum, these valves offer 0.625 inch orifices for high flow (312 scfm at 125 psig). 590 Series electric valves are two-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.



590E1 590E1-3-10-36
Model 590E1 is a single-solenoid, maintained-contact, spring-return, 2-way or 3-way valve available either normally closed or normally open.



590AE1 590AE1-3-10-36
Model 590AE1 is identical to the 590E1 but has an external air pilot connection for the valving of media below 30 psig. The valve isolates pilot air from valved media such as water, oil, instrument air, or gases.



590E2 590E2-3
Model 590E2 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.



Options for 590 Series Electric Valves

When ordering specify desired option.

- Cover Seal (Code 61) for dirty or wet conditions.
- Continuous Duty Coils (Code CD) for double-solenoid valves.
- 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).
- Brass Body.

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

LUBRICATION Not required
FILTRATION Not required

Air Flow to Atmosphere

| MODEL | 30 PSIG (2.1 BARS) | | 120 PSIG (8.3 BARS) | | Weight | |
|----------|--------------------|--------|---------------------|--------|------------|-----|
| | CFM | LPM | CFM | LPM | ACTUAL LBS | KGS |
| 590E1/E2 | 95.0 | 2688.5 | 283.0 | 8008.9 | 2.1 | 0.9 |

Electrical Specifications

| MODEL | VOLTAGE | COIL NUMBER | WATTS | AMPS | OHMS | HEAT RISE (°C) | ON TIME SECONDS | OFF TIME SECONDS |
|-------|---------|-------------|-------|-------|------|----------------|-----------------|------------------|
| 590E1 | 24 DC | 46-8A | 6.7 | 0.296 | 86 | 85.9 | 0.046 | 0.050 |
| | 120 AC | 46-4 | 8.2 | 0.161 | 255 | 102.0 | 0.034 | 0.042 |
| 590E2 | 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 | 0.009 | 0.041 |

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) | | | |
| | 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) | FILL | EXHAUST | FILL | EXHAUST |
| 590E1/E2 | 0.063 | 0.069 | 0.100 | 0.185 | 0.063 | 0.070 | 0.118 | 0.225 |

