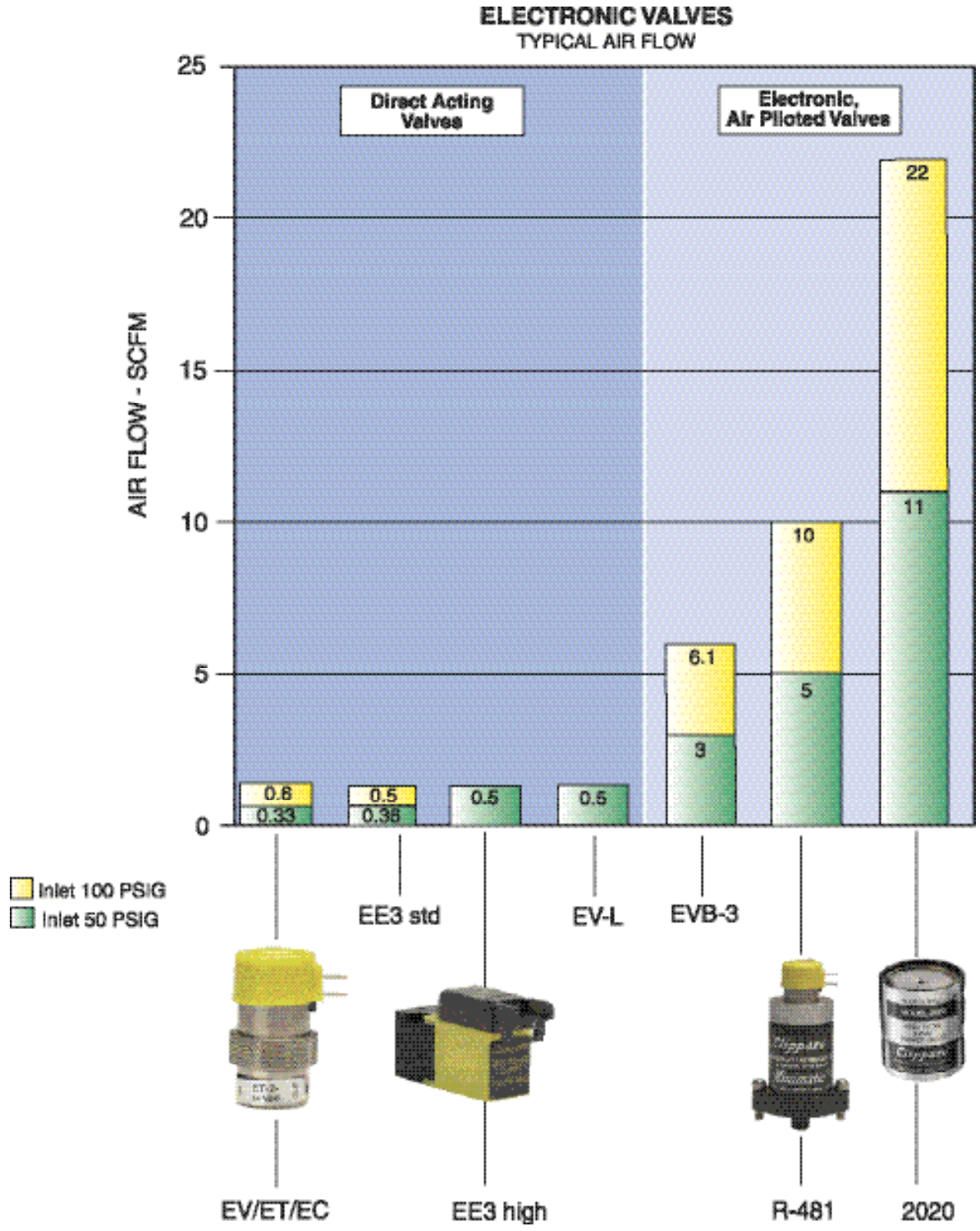
The EV, ET, EC, EI, ES and EE3 are electronic valves offered by Clippard. Combined with a series of Clippard manifolds, they provide a complete system for efficient interface with electric and electronic circuits. The chart below shows typical air flow values to help select the right valve for the application.



The Mouse Valve Series
EV, ET, EC Series Valves

Like a mouse, this valve is quiet, quick, eats very little (0.67 watts) and is cute. Valves accept low voltage, low current signals, convert them into high pressure (100 psig) pneumatic outputs. Optional low pressure/medium flow and low pressure/high flow are available. (The air supply should be reasonably clean and dry for optimum performance. Recommended filtration is 40 micron.)

Valve caps are of molded Hytrel®. Depending upon valve type, cap is:

- plain top on 2-way models
- with exhaust holes in cap on certain 3-way models
- with fitting, as shown, for 3-way N.O. styles for N.C. exhaust (inlet when N.O.)

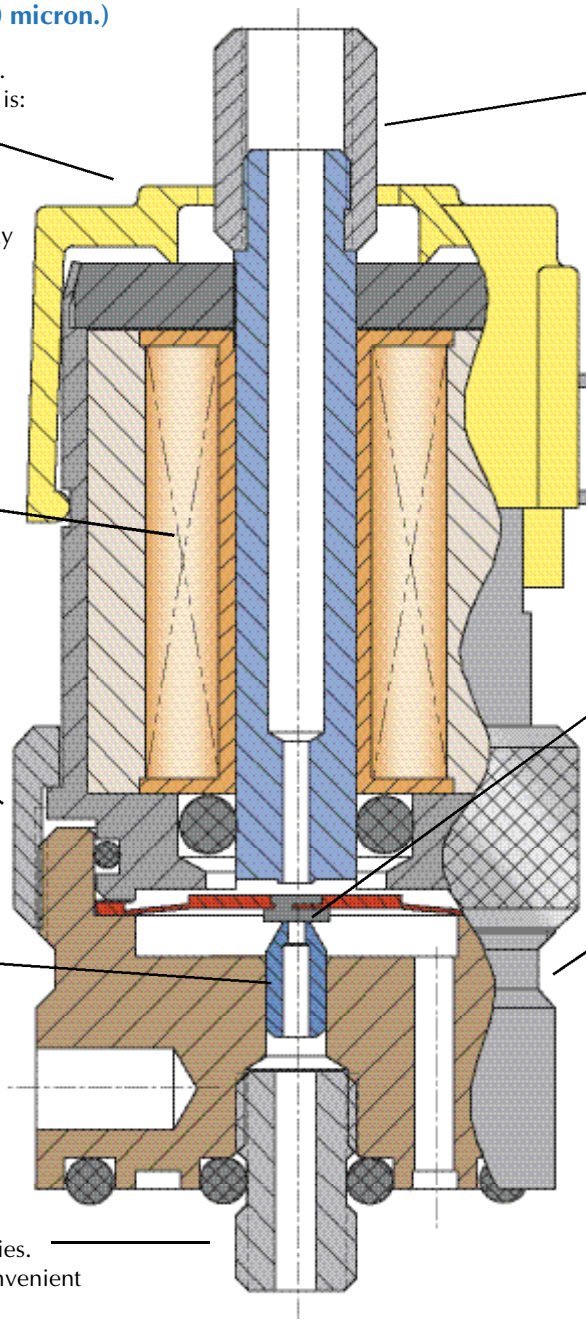
Low power coil uses only 0.67 watts at the rated voltage. Standard voltages include 6, 12 and 24. Other voltages are available.

Adjusting ring may be loosened for positioning to orient connections.

DO NOT REMOVE. Parts orientation will be lost and warranty voided.

Standard orifice is .025. Also available are:
L - 0.040 orifice
H - 0.060 orifice

Manifold mount base shown permits fast, secure mounting of electronic valves to manifolds for grouping in compact assemblies. Alternate standard model has convenient mounting holes.



ETO and similar styles have top #10-32 threaded fitting for N.C. exhaust or N.O. inlet.

Quick-connect spade lugs are of tinned brass and furnished on all ET models. EV models are available with 18″ wire leads for popular voltages. EC models are furnished with 0.025″ square pin connector.

Clippard Electronic Valves are unique, with only one internal moving part that travels a mere 0.007 inches.

Valves are small in size with a variety of mounting options. Ideal for use in biomedical, test equipment, machines, computer-directed industrial systems, and in portable devices.

Hytrel® is a registered trademark of DuPont

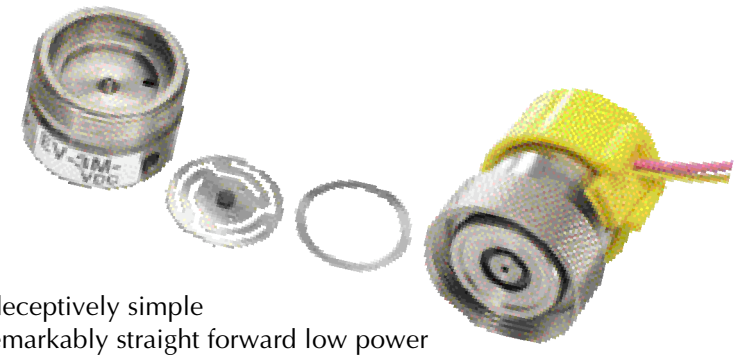
All Clippard standard ET, EC and EV valves and Clippard R-481 and R-482 valves are recognized under the Component Program of Underwriters Laboratories, Inc.

File No. MH 13573

Clippard Minimatic electronic valves are precision-built 2-way or 3-way control valves, utilizing a unique, patented, valving principle. There are no sliding parts. Complete poppet travel is a mere 0.007″. As a result, low power consumption and exceptionally long life are major benefits of this design.

The valves are very quiet in operation and also very cool. No flow is needed for cooling. The valves' small size makes them well suited to a wide range of applications in biomedical, EDP, environmental test equipment, textile machines, packaging machinery, computerized industrial automation, and portable systems.

FEATURES



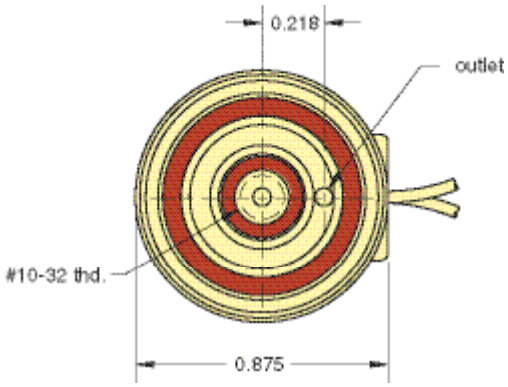
Clippard Functional Simplicity

- The patented design of Clippard electronic valves is a deceptively simple arrangement with a minimum of operating parts, and remarkably straight forward low power operation.
- The Clippard "spider" is the only moving part and its motion to operate the valve is a mere 0.007" travel.
- Low voltage D.C. inputs, signals from simple manual switching up to computer directed systems, move the spider in extremely fast response time... 5-10 milliseconds.
- The unit uses extremely low power (0.67 watts at the rated voltage) and is cool running. The valves are light in weight, compact in physical size and mount easily in space-saving packages.

Quick Connect

Clippard ET valves feature spade lugs for simple, quick secure low voltage connections. Wire crimp-on spade lug connectors are available separately to adapt electronic wiring where necessary. Clippard original EV type valves are available in popular voltages with 18" wire leads. The EC model utilizes a 0.025" square pin connector.

Easy Mount



The complete line of EC, EV, and ET electronic valves are available with two mounting options. Standard base models have two 6-32 threaded, 7/32" deep mounting holes. Manifold models are equipped with a bottom stud, 5/32" long with #10-32 thread, which fits Clippard standard and special manifolds, accessory valves and subplates. Spanner holes in the valve body permit tightening.

NOMINAL			Power (watts)	Working Range (cont. duty)
Voltage	Current (amps)	Resistance (ohms)		
6	0.11	54	0.67	90% - 150% of rated voltage
12	0.055	218	0.67	
24	0.028	864	0.67	

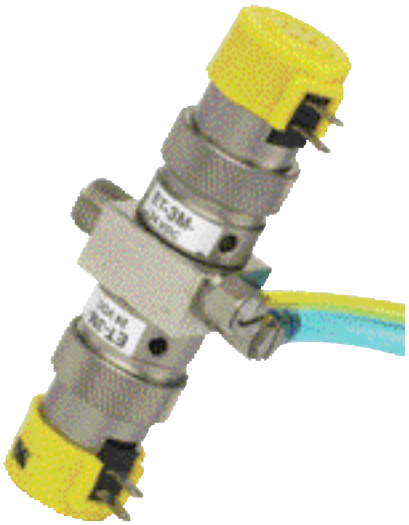
ACCESSORIES

EVB-2 & EVB-3 Booster

Clippard EVB-2 & EVB-3 booster valves mate with manifold mount EC, EV, and ET valves and manifolds to provide increased flow. Direct piloting from a Clippard EC, EV and ET valve provides a flow of up to 6.1 SCFM at 100 psig.

2020/2021 High Flow Valves

Model 2020 and 2021 high flow valves are piloted 3-way valves that work with the Clippard EC, EV, and ET 3-way manifold valves. Output from the EC, EV, or ET will actuate the valve and produce output up to 22 SCFM at 100 psig. Piloted 4-way valves are also available as R-481 and R-482.

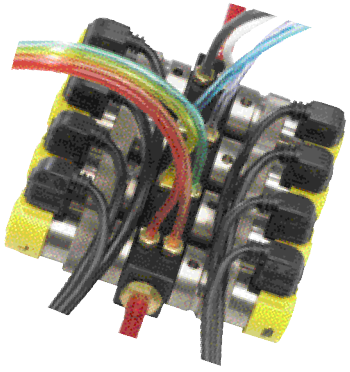


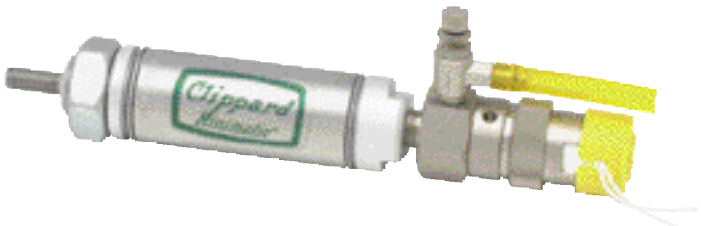
Dual Supply Manifold

Shown is the 15490-3 Clippard Dual Supply Manifold with two ET-3M electronic/pneumatic interface valves. 1/8" NPT inlet is seen at the left of the manifold with the dual #10-32 port outlets at the right.

Multi-Valve Manifolds

Multi-valve manifolds are available in two lengths with either single or double (top or top and bottom) rows of outputs for versatility in application. Input to all valves mounted on this manifold is through the manifold end. Outputs are individual #10-32 ports for hose barb fittings and vinyl or urethane hose.



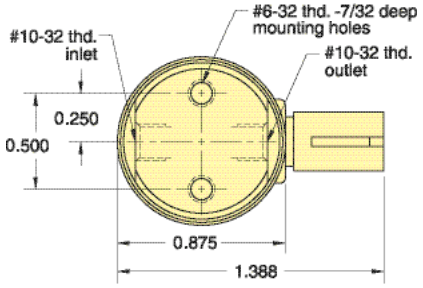


Pilot Manifold

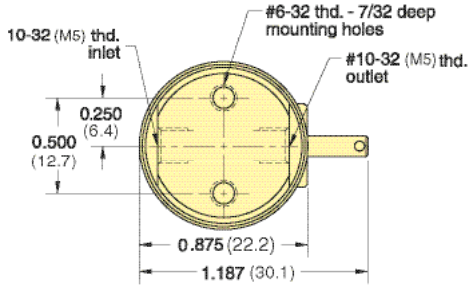
Here a Clippard ET valve is mounted to the 15491-1 Clippard Pilot manifold, making it possible for the ET-3M valve controlled by an electronic signal to actuate a larger air-piloted valve or an air cylinder.

EV, ET, EC Series 2-Way Normally Closed Valves
In-line Mount

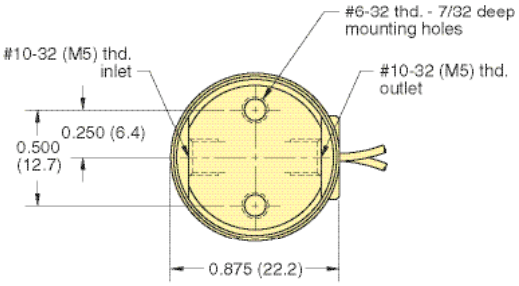
EC - 2 - ❑ - ❑



ET - 2 - ❑ - ❑



EV - 2 - ❑ - ❑



Type: Normally Closed 2-Way

Medium: Air (40 micron filtration)

Temperature Range: 30˚ to 180˚

Power Consumption: 0.67 watt

Response: 5 - 10 milliseconds

Mounting: In-line

Ports: #10-32 (M5)

Operating Range: 90% to 150% of rated voltage

Air Flow: 0.6 scfm @ 100 psig; 15 l/min @ 7 bar
"L" option - 0.5 scfm @ 50 psig; 15 l/min @ 3.5 bar
"H" option - 0.45 scfm @ 25 psig; 14 l/min @ 1.8 bar

Pressure Range:
28" Hg Vac. to 105 psig; 0-7 bar max
"L" option:
28" Hg Vac. to 50 psig; 0-3.5 bar max
"H" option:
28" Hg Vac. to 25 psig; 0-1.8 bar max

For Cable and Connectors, see Page 184.

NUMBERING SYSTEM

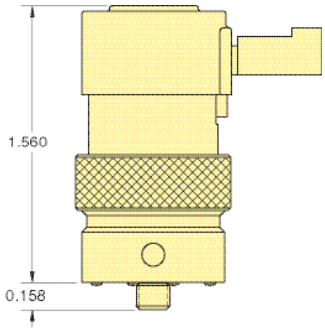
E ❑ - 2 - ❑ - ❑ - ❑

- ❑ (1st): C - Connector; T - Terminal Spades; V - Wire Leads
- ❑ (2nd): Voltages: * 6 - 6 Volts; 12 - 12 Volts; 24 - 24 Volts
- ❑ (3rd): Standard Options: Blank - Standard orifice 0.025; L - 0.040 orifice; H - 0.060 orifice; V - Viton® seals. Non-Standard Options: E - EPR seals; S - Silicon seals; D - Diode
- ❑ (4th): M5 - Metric

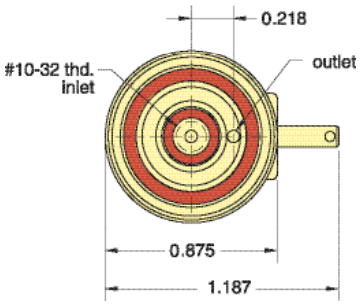
* Consult factory for availability of non-standard voltages and other options

EV, ET, EC Series 2-Way Normally Closed Valves
Manifold Mount

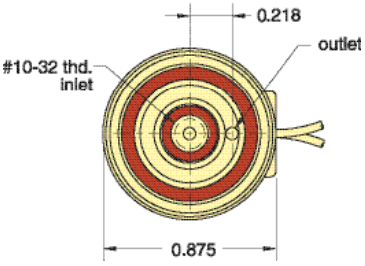
EC - 2M - ❑ - ❑



ET - 2M - ❑ - ❑



EV - 2M - ❑ - ❑



Type: Normally Closed 2-Way

Medium: Air (40 micron filtration)

Temperature Range: 30˚ to 180˚ F

Power Consumption: 0.67 watt

Response: 5 - 10 milliseconds

Mounting: Manifold

Ports: Manifold mounted with #10-32 stud

Operating Range: 90% to 150% of rated voltage

Air Flow: 0.6 scfm @ 100 psig
"L" option - 0.5 scfm @ 50 psig
"H" option - 0.45 scfm @ 25 psig

Pressure Range:
28" Hg Vac. to 105 psig
"L" option:
28" Hg Vac. to 50 psig
"H" option:
28" Hg Vac. to 25 psig

For Cable and Connectors, see Page 184.

NUMBERING SYSTEM

E ❑ - 2 M - ❑ - ❑

C - Connector
T - Terminal Spades
V - Wire Leads

Voltages: *
6 - 6 Volts
12 - 12 Volts
24 - 24 Volts

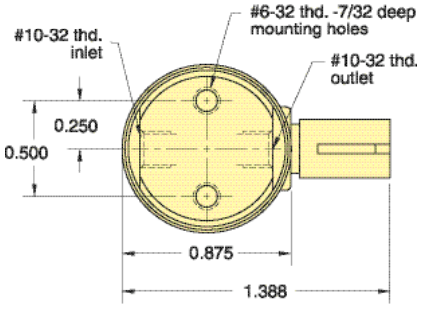
Standard Options:
Blank - Standard orifice 0.025
L - 0.040 orifice (50 psig max)
H - 0.060 orifice (25 psig max)
V - Viton® seals

Non-Standard Options:
E - EPR seals
S - Silicon seals
D - Diode

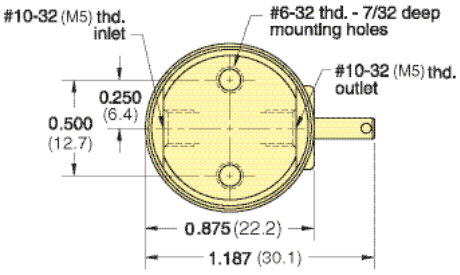
* Consult factory for availability of non-standard voltages and other options

EV, ET, EC Series 3-Way Normally Closed Valves
In-line Mount

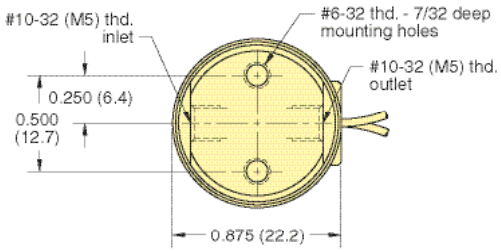
EC - 3 - ❑ - ❑



ET - 3 - ❑ - ❑



EV - 3 - ❑ - ❑



Type: Normally Closed 3-Way

Medium: Air (40 micron filtration)

Temperature Range: 30˚ to 180˚

Power Consumption: 0.67 watt

Response: 5 - 10 milliseconds

Mounting: In-line

Ports: #10-32 (M5)

Operating Range: 90% to 150% of rated voltage

Air Flow: 0.6 scfm @ 100 psig
15 l/min @ 7 bar
"L" option - 0.5 scfm @ 50 psig;
15 l/min @ 3.5 bar
"H" option - 0.45 scfm @ 25 psig;
14 l/min @ 1.8 bar

Pressure Range:
28" Hg Vac. to 105 psig;
0-7 bar max
"L" option:
28" Hg Vac. to 50 psig;
0-3.5 bar max
"H" option:
28" Hg Vac. to 25 psig;
0-1.8 bar max

For Cable and Connectors, see Page 184.

NUMBERING SYSTEM

E ❑ - 3 - ❑ - ❑ - ❑

- **C** - Connector
- **T** - Terminal Spades
- **V** - Wire Leads

Voltages: *
- **6** - 6 Volts
- **12** - 12 Volts
- **24** - 24 Volts

Standard Options:
- **Blank** - Standard orifice 0.025
- **L** - 0.040 orifice
- **H** - 0.060 orifice
- **V** - Viton® seals

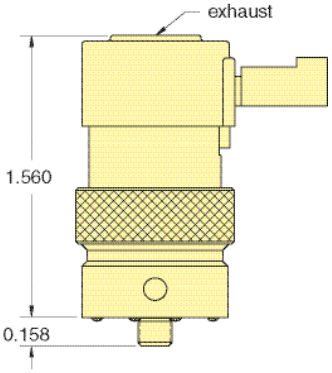
Non-Standard Options:
- **E** - EPR seals
- **S** - Silicon seals
- **D** - Diode

M5 - Metric

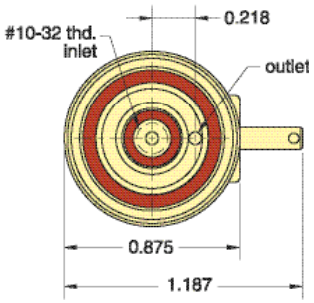
* Consult factory for availability of non-standard voltages and other options

EV, ET, EC Series 3-Way Normally Closed Valves
Manifold Mount

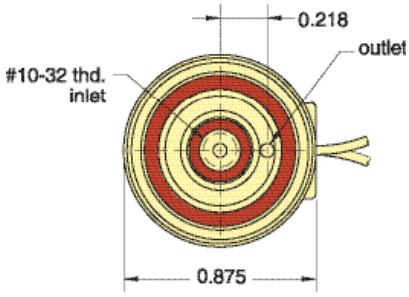
EC - 3M - ❑ - ❑



ET - 3M - ❑ - ❑



EV - 3M - ❑ - ❑



Type: Normally Closed 3-Way

Medium: Air (40 micron filtration)

Temperature Range: 30˚ to 180˚ F

Power Consumption: 0.67 watt

Response: 5 - 10 milliseconds

Mounting: Manifold

Ports: Manifold mounted with #10-32 stud

Operating Range: 90% to 150% of rated voltage

Air Flow: 0.6 scfm @ 100 psig
"L" option - 0.5 scfm @ 50 psig
"H" option - 0.45 scfm @ 25 psig

Pressure Range:
28" Hg Vac. to 105 psig
"L" option:
28" Hg Vac. to 50 psig
"H" option:
28" Hg Vac. to 25 psig

For Cable and Connectors, see Page 184.

NUMBERING SYSTEM

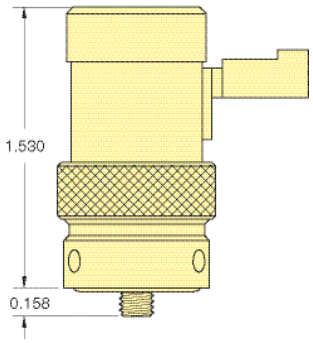
E ❑ - 3 M - ❑ - ❑

- ❑ = C - Connector, T - Terminal Spades, V - Wire Leads
- ❑ = Voltages: * 6 - 6 Volts, 12 - 12 Volts, 24 - 24 Volts
- ❑ = Standard Options: Blank - Standard orifice 0.025, L - 0.040 orifice (50 psig max), H - 0.060 orifice (25 psig max), V - Viton® seals; Non-Standard Options: E - EPR seals, S - Silicon seals, D - Diode

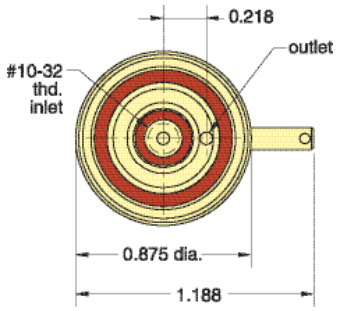
* Consult factory for availability of non-standard voltages and other options

EV, ET, EC Series 2-Way Normally Open Valves
Manifold Mount

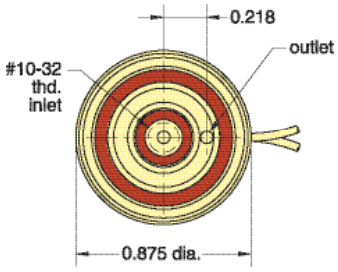
ECN - 2M - ❑ - ❑



ETN - 2M - ❑ - ❑



EVN - 2M - ❑ - ❑



Type: Normally Open 2-Way

Medium: Air (40 micron filtration)

Temperature Range: 30˚ to 180˚ F

Power Consumption: 0.67 watt

Response: <15 milliseconds

Mounting: Manifold

Ports: Manifold mounted with #10-32 stud

Operating Range: 90% to 150% of rated voltage

Air Flow: 0.9 scfm @ 100 psig

Pressure Range: 28" Hg Vac. to 105 psig

ECN, ETN & EVN series valves are 2- & 3-way N.O. solenoid valves. The normally open inlet is through the center mounting stud, so the valves can be supplied directly from the manifold without external tubing.

For Cable and Connectors, see Page 184.

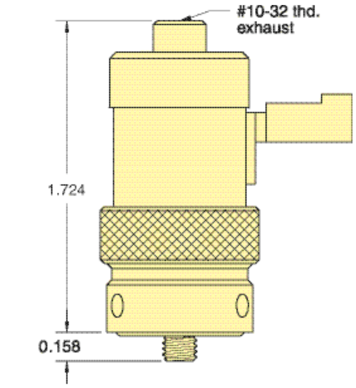
NUMBERING SYSTEM

E ❑ N - 2 M - ❑ - ❑

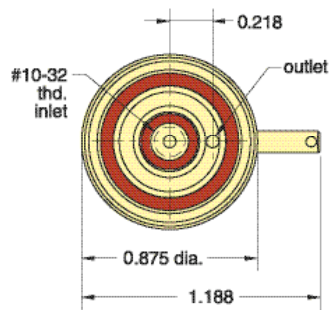
- ❑ (Connector): C - Connector; T - Terminal Spades; V - Wire Leads
- ❑ (Voltages): * 6 - 6 Volts; 12 - 12 Volts; 24 - 24 Volts
- ❑ (Standard Options): Blank - Buna-N seals; V - Viton® seals
- ❑ (Non-Standard Options): E - EPR seals; D - Diode

* Consult factory for availability of non-standard voltages and other options

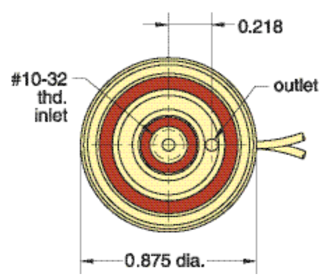
ECN - 3M - ❑ - ❑



ETN - 3M - ❑ - ❑



EVN - 3M - ❑ - ❑



Type: Normally Open 3-Way

Medium: Air (40 micron filtration)

Temperature Range: 30˚ to 180˚ F

Power Consumption: 0.67 watt

Response: <15 milliseconds

Mounting: Manifold

Ports: Manifold mounted with #10-32 stud

Operating Range: 90% to 150% of rated voltage

Air Flow: 0.9 scfm @ 100 psig

Pressure Range: 28″ Hg Vac. to 105 psig

ECN, ETN & EVN series valves are 2- & 3-way N.O. solenoid valves. The normally open inlet is through the center mounting stud, so the valves can be supplied directly from the manifold without external tubing.

For Cable and Connectors, see Page 184.

NUMBERING SYSTEM

E ❑ N - 3 M - ❑ - ❑

First ❑:
- **C** - Connector
- **T** - Terminal Spades
- **V** - Wire Leads

Second ❑ — **Voltages:** *
- **6** - 6 Volts
- **12** - 12 Volts
- **24** - 24 Volts

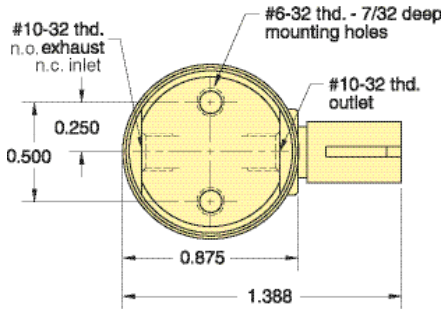
Third ❑ — **Standard Options:**
- **Blank** - Buna-N seals
- **V** - Viton® seals

Non-Standard Options:
- **E** - EPR seals
- **D** - Diode

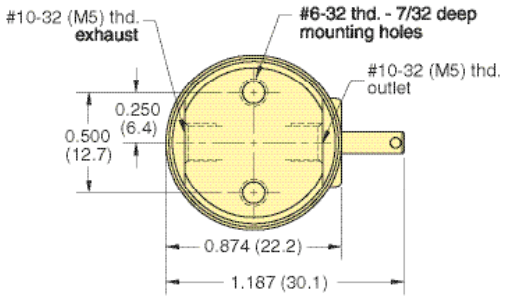
* Consult factory for availability of non-standard voltages and other options

EV, ET, EC Series 3-Way Fully Ported Valves
In-line Mount

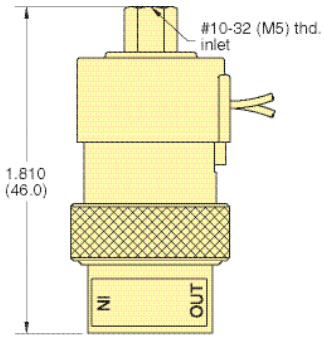
ECO - 3 - ❑ - ❑



ETO - 3 - ❑ - ❑



EVO - 3 - ❑ - ❑



Type: Fully Ported 3-Way

Medium: Air (40 micron filtration)

Temperature Range: 30˚ to 180˚

Power Consumption: 0.67 watt

Response: 5 - 10 milliseconds

Mounting: In-line

Ports: #10-32 (M5)

Operating Range: 90% to 150% of rated voltage

Air Flow: 0.6 scfm @ 100 psig*;
15 l/min @ 7 bar
"L" option - 0.5 scfm @ 50 psig;
15 l/min @ 3.5 bar
"H" option - 0.45 scfm @ 25 psig;
14 l/min @ 3.8 bar

* When air supply is connected to the top port to operate valve normally open, main flow is 0.9 scfm and exhaust flow is 0.6 scfm at 100 psig.

Pressure Range:
28" Hg Vac. to 105 psig;
0-7 bar max
"L" option:
28" Hg Vac. to 50 psig;
0-3.5 bar max
"H" option:
28" Hg Vac. to 25 psig;
0-1.8 bar max

For Cable and Connectors, see Page 184.

NUMBERING SYSTEM

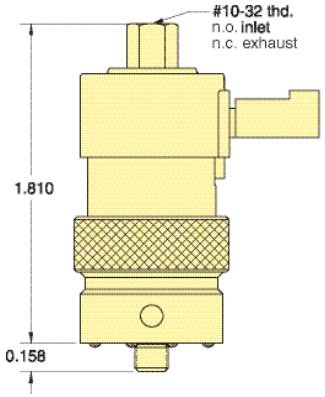
E ❑ O - 3 - ❑ - ❑ - ❑

- ❑ (Connector): C - Connector; T - Terminal Spades; V - Wire Leads
- ❑ (Voltages): * 6 - 6 Volts; 12 - 12 Volts; 24 - 24 Volts
- ❑ (Standard Options): Blank - Standard orifice 0.025; L - 0.040 orifice; H - 0.060 orifice; V - Viton® seals
- ❑ (Non-Standard Options): E - EPR seals; S - Silicon seals; D - Diode
- ❑ (Metric): M5 - Metric Version

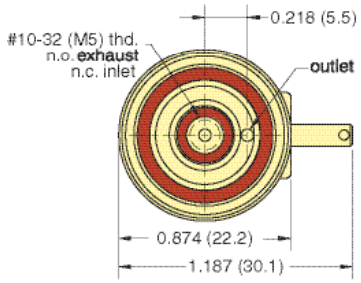
* Consult factory for availability of non-standard voltages and other options

EV, ET, EC Series 3-Way Fully Ported Valves
Manifold Mount

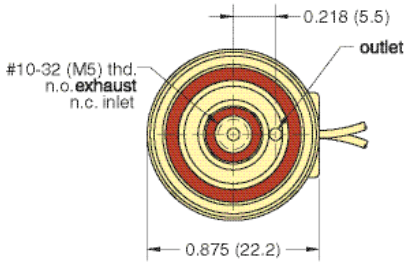
ECO - 3M - ❑ - ❑



ETO - 3M - ❑ - ❑



EVO - 3M - ❑ - ❑



Type: Fully Ported 3-Way

Medium: Air

Temperature Range: 30˚ to 180˚

Power **Consumption:** 0.67 watt

Response: 5 - 10 milliseconds

Mounting: Manifold

Ports: Manifold mounted with #10-32 (M5) stud

Operating Range: 90% to 150% of rated voltage

Air Flow: 0.6 scfm @ 100 psig*;
15 l/min @ 7 bar
"L" option - 0.5 scfm @ 50 psig;
15 l/min @ 3.5 bar;
"H" option - 0.45 scfm @ 25 psig;
14 l/min @ 1.8 bar;

* When air supply is connected to the top port to operate valve normally open, main flow is 0.9 scfm and exhaust flow is 0.6 scfm at 100 psig.

Pressure Range:
28" Hg Vac. to 105 psig;
0-7 bar max
"L" option:
28" Hg Vac. to 50 psig;
0-3.5 bar max
"H" option:
28" Hg Vac. to 25 psig;
0-1.8 bar max

For Cable and Connectors, see Page 184.

NUMBERING SYSTEM

E ❑ O - 3 - M ❑ - ❑ - ❑

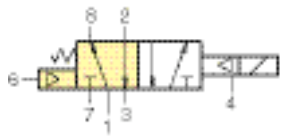
- ❑ (Connector): C - Connector; T - Terminal Spades; V - Wire Leads
- ❑ (Voltages): * 6 - 6 Volts; 12 - 12 Volts; 24 - 24 Volts
- ❑ (Standard Options): Blank - Standard orifice 0.025; L - 0.040 orifice; H - 0.060 orifice; V - Viton® seals
  Non-Standard Options: E - EPR seals; S - Silicon seals; D - Diode
- ❑ (M5 - Metric)

* Consult factory for availability of non-standard voltages and other options

ET Piloted 4-Way Valves

R-481

For more information please see page 286 in the Modular Valve section of this catalog.



Note: Supply pressure must be applied to both ports 1 & 4. Minimum pressure on port 4 should be 40 psig.

Type: 4-way combination electronic and modular spool type interface valve. Fully ported ET-3 & R401 hybrid

Medium: Air, water, or oil; pilot - air only

Input Pressure: Pilot - 45 psig minimum
Working - 0-150 psig

Air Flow: Valve - 10 scfm @ 100 psig

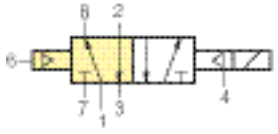
Voltages: R-481-6 6 VDC
R-481-12 12 VDC
R-481-24 24 VDC

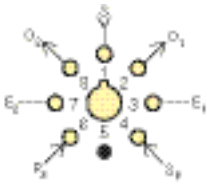
Mounting: Uses Octoport base and two captivated screws

Ports: Valve has patented Octoport system

R-482

For more information please see page 286 in the Modular Valve section of this catalog.





Note: Supply pressure must be applied to both ports 1 & 4. Minimum pressure on port 4 should be 40 psig.

Type: 4-way combination electronic and modular spool type interface valve. Fully ported ET-3 & R402 hybrid

Medium: Air, water, or oil; pilot - air only

Input Pressure: Pilot - 45 psig minimum
Working - 0 to 150 psig

Air Flow: Valve - 10 scfm @ 100 psig

Voltages: R-482-6 6 VDC
R-482-12 12 VDC
R-482-24 24 VDC

Mounting: Uses Octoport base and two captivated screws

Ports: Valve has patented Octoport system

ET-C48
ET-C120

Black molded lug connectors are available for easy push on connection ET-C48 is 48" in length, ET-C120 is 120" in length

ET Valve Connectors

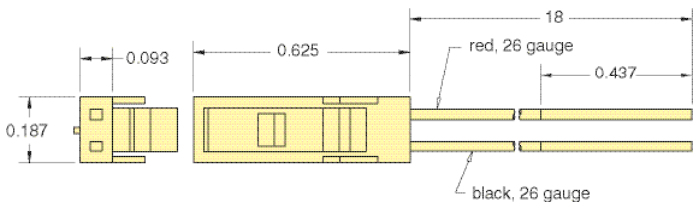
3831

Insulated crimp-on spade lug connectors are available for wiring up leads to connect electronic circuit to ET style valves. Accepts #22, #24, or #26 wire

C2-RB18
C2-RB120

AMP connector #103959-1 with 18" or 120" wire leads for EC/ECO and EI/EIO valves

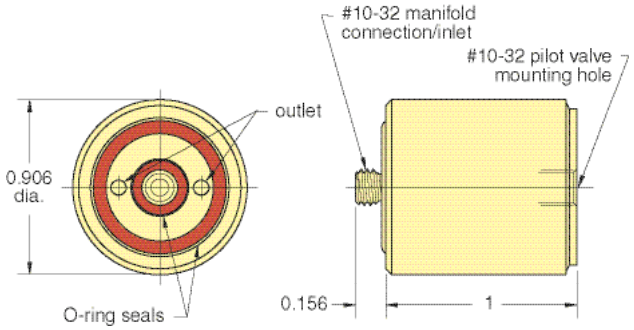
EC & EI Valve Connectors



EVB-2

EC, EV and ET Piloted 2-Way Valve, Manifold Mount

Electronic Valve Booster Amplifies the flow capacity of EC, EV and ET type valves by over twelve times. Manifold style electronic valves mount onto booster body, which, in turn, mounts on Clippard manifolds.



Type: 2-Way Normally Closed, Pressure Piloted Valve

Medium: Air

Input Pressure: 20 to 150 psig

Air Flow: 6.1 scfm @ 100 psig

Response: 20 milliseconds at 20 psig
13 milliseconds at 100 psig

Mounting: Mounts to manifold

Ports: Inlet and outlet through manifold

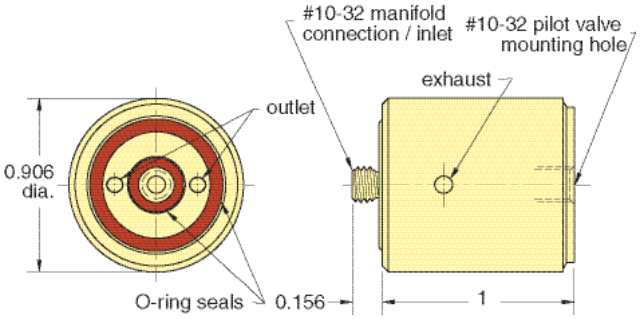
Materials: Nickel plated brass, acetyl, stainless steel and Buna-N

Additional Note Use only normally closed 3-way pilot valves in conjunction with EVB-2

EVB-3

EC, EV and ET Piloted 3-Way Valve, Manifold Mount

Electronic Valve Booster Amplifies the flow capacity of EC, EV and ET type valves by over twelve times. Manifold style electronic valves mount onto booster body, which, in turn, mounts on Clippard manifolds.



Type: 3-Way Normally Closed, Pressure Piloted Valve

Medium: Air

Input Pressure: 20 to 150 psig

Air Flow: 6.1 scfm @ 100 psig

Response: 20 milliseconds at 20 psig
13 milliseconds at 100 psig

Mounting: Mounts to manifold

Ports: Inlet and outlet through manifold

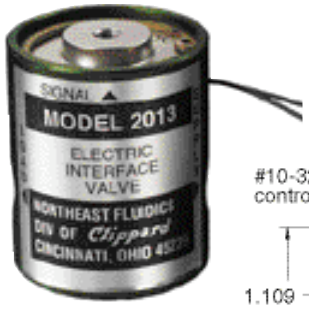
Materials: Nickel plated brass, acetyl, stainless steel and Buna-N

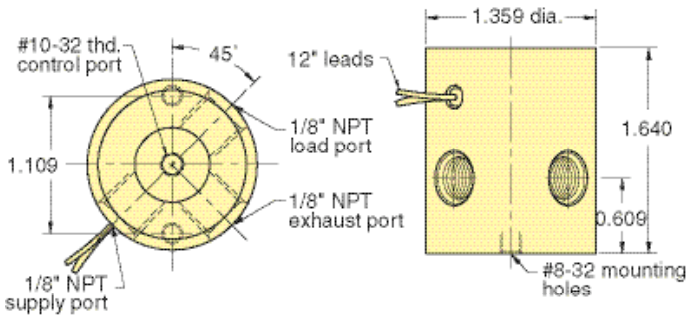
Additional Note Use only normally closed 3-way pilot valves in conjunction with EVB-3

2013 - ❑

Electronic Fluidamp

Low-power DC solenoid solid state output signals can be directly converted to high pressure pneumatic power without amplification





Type: 3-Way Normally Closed, Electronic Valve

Medium: Air

Input Pressure: 30 to 100 psig

Air Flow: 22 scfm @ 100 psig

Bleed Flow: 0.10 scfm @ 100 psig

Filtration: 10 micron

Frequency Response: 50 Hz @ 100 psig
70 Hz @ 30 psig

Ports: 1/8" NPT female

Switching Speed: 10 milliseconds

Electrical Data

Continuous Overload: 350% @ 25°C ambient
250% @ 50°C ambient

Power Consumption: Less than .50 watts at rated voltage (80 ma. @ 6V, 40 ma. @ 12 V, 20 ma. @ 24V)

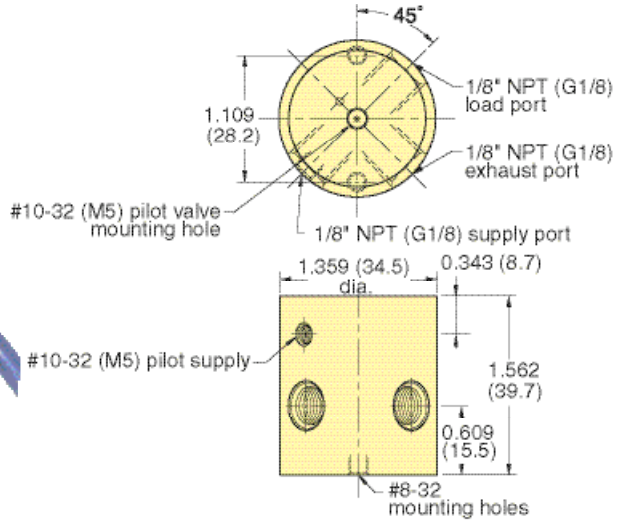
Leads: 28 gauge stranded P.V.C. insulated

Standard Options: 2013-6 6 volts DC
2013-12 12 volts DC
2013-24 24 volts DC

2020/2021

High Flow EC, EV and ET Piloted 3-Way Valves

Designed to be piloted by a Clippard EC, EV and ET manifold mount electronic valve. Output from the EC, EV and ET actuates the valve to produce outputs up to 22 scfm at 100 psig. Combines low wattage, long life and cool running of the EC, EV and ET valves with quick response and high flow of Clippard "Fluidamp" type valves. The 2020 and 2021 are identical in all respects except one. The 2020 has an external #10-32 port for the pressure supply to the EC, EV, and ET electronic pilot valve.



Type: 3-Way Normally Closed, Pressure Piloted Valve

Medium: Air

Input Pressure: 30 to 100 psig; 2.1 to 6.9 bar

Pilot Pressure: (2020) 60% of supply pressure, minimum

Air Flow: 22 scfm at 100 psig/620 l/min @ 6 bar

Response: Approximately 20 milliseconds

Mounting: Mounting holes provided

Ports: Inlet and outlet, exhaust 1/8" NPT Pilot supply on 2020 is #10-32 female

Materials: Anodized Aluminum, Stainless Steel and Buna-N

Additional Note Use only normally closed 3-way pilot valves in conjunction with 2020/2021

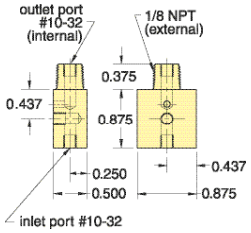
Option: Add -MG for Metric Version

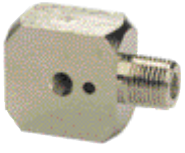
Specialized Manifolds

Material: Nickel plated brass

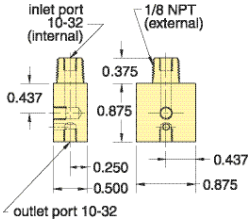
Use: Mount EC, EV and ET valves to any 1/8" NPT supply port

15490-1 and 15490-1-MR (metric).
#10-32 (M5) Inlet
1/8" NPT (R1/8) Outlet

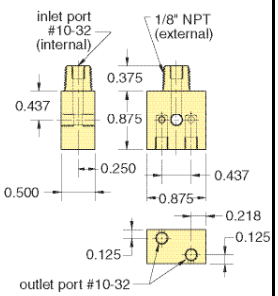


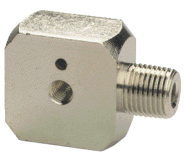


15490-2 and 15490-2-MR (metric).
1/8" NPT (R1/8) Inlet
#10-32 (M5) Outlet

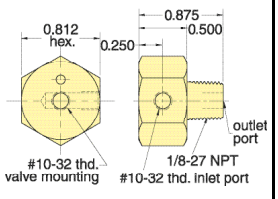


15490-3 and 15490-3-MR (metric) Dual Supply.
1/8" NPT (R1/8) Inlet
#10-32 (M5) Outlet

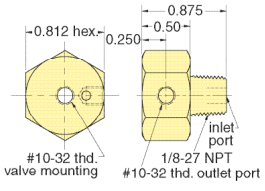




15491-1 and 15491-1-MR (metric).
#10-32 (M5) Inlet
1/8" NPT (R1/8) Outlet



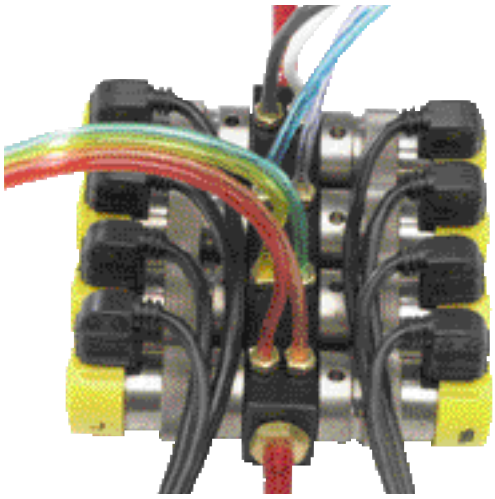
15491-2 and 15491-1-MR (metric).
1/8" NPT (R1/8) Inlet
#10-32 (M5) Outlet



1548 ❑ - ❑

Multi-Valve Manifolds

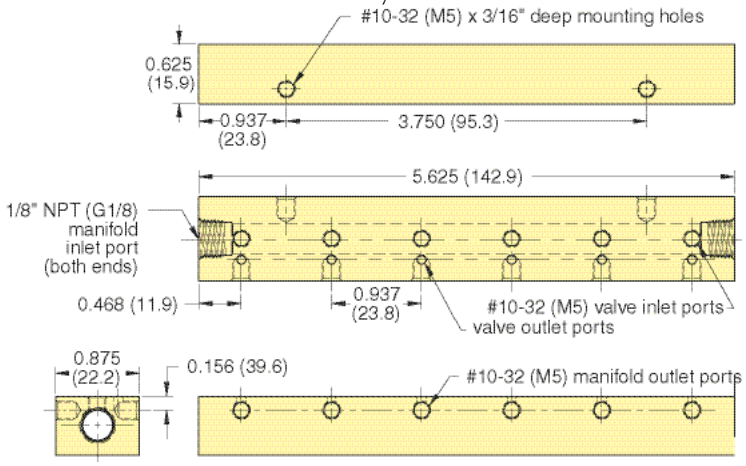
Construction: Black anodized aluminum



Eight ET valves mounted on a 15482-8

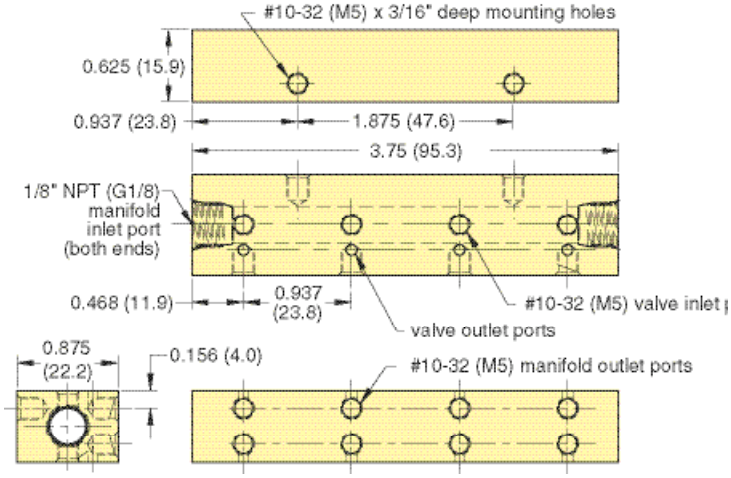
15481-6 & 15481-6-M5 (Metric)

Mounts six valves on one side only



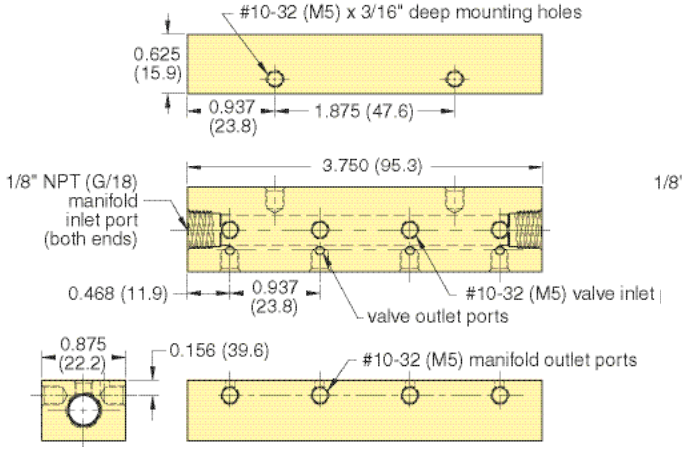
15482-8 & 15482-8-M5 (Metric)

Mounts eight valves, four each on opposite sides



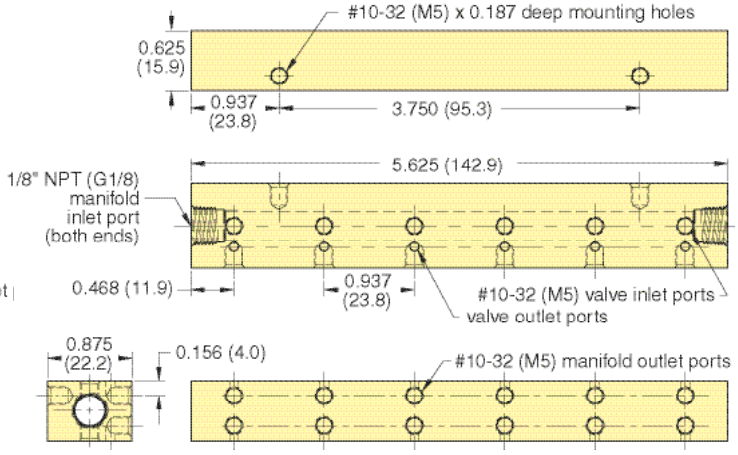
15481-4 & 15481-4-M5 (Metric)

Mounts four valves on one side only

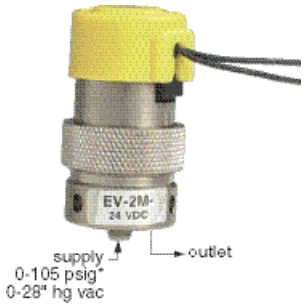


15482-12 & 15482-12-M5 (Metric)

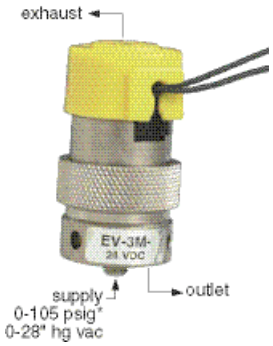
Mounts twelve valves, six each on opposite sides



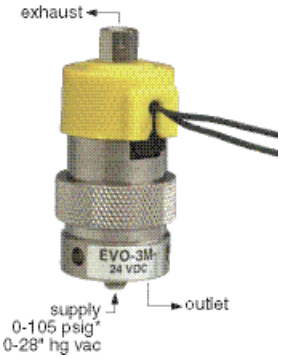
Models Offered



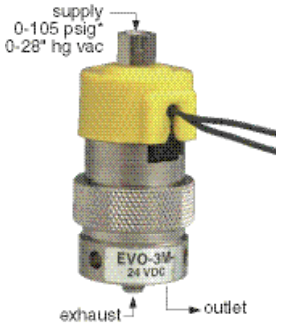
EV-2M
Normally Closed



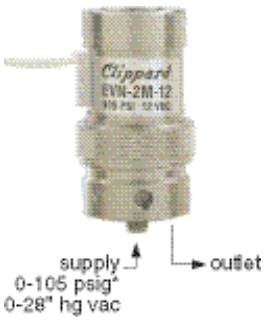
EV-3M
Normally Closed



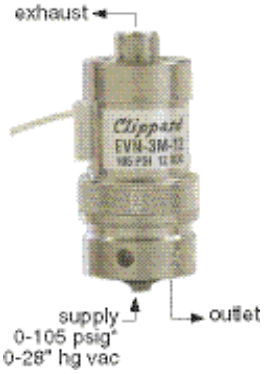
EVO-3M
Normally Closed



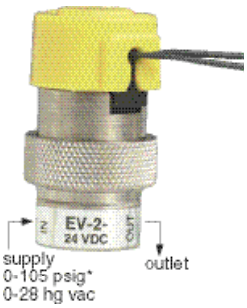
EVO-3M
Normally Open



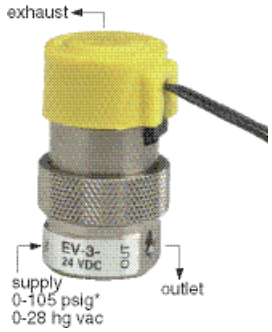
EVN-2M
Normally Open



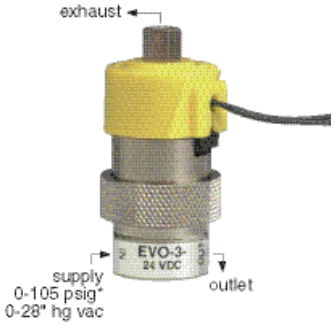
EVN-3M
Normally Open



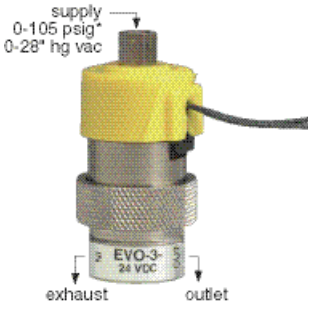
EV-2
Normally Closed



EV-3
Normally Closed



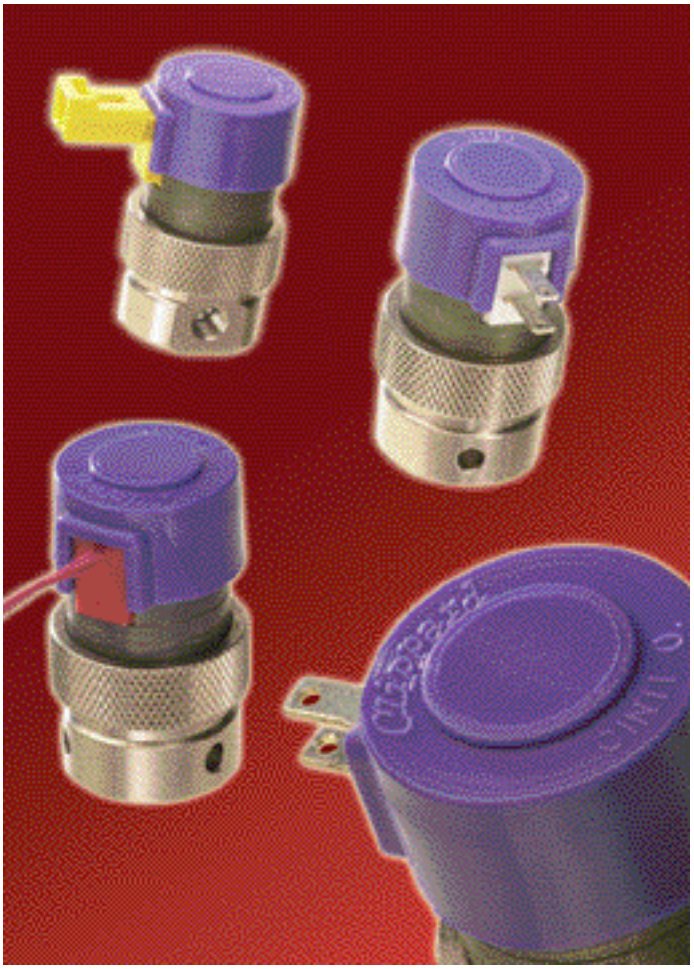
EVO-3
Normally Closed



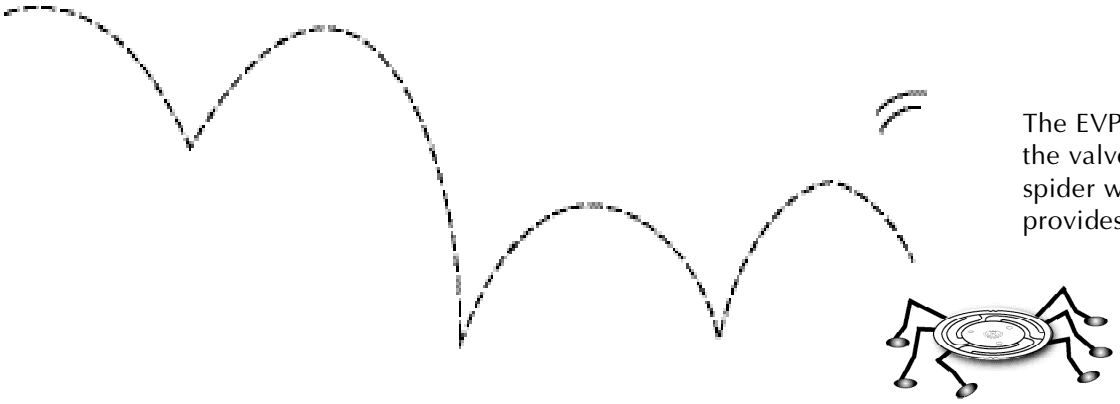
EVO-3
Normally Open

EVO-3
as Diverter

For Cable and Connectors, see Page 184.



An introductory CD is available which highlights the features and specifications of the award-winning EVP Proportional Control Valves. Call and request one today!



The EVP's armature is the heart of the valve. It resembles a metal spider with flexing legs which provides precise flow control.

EVP Series Proportional Control Valves

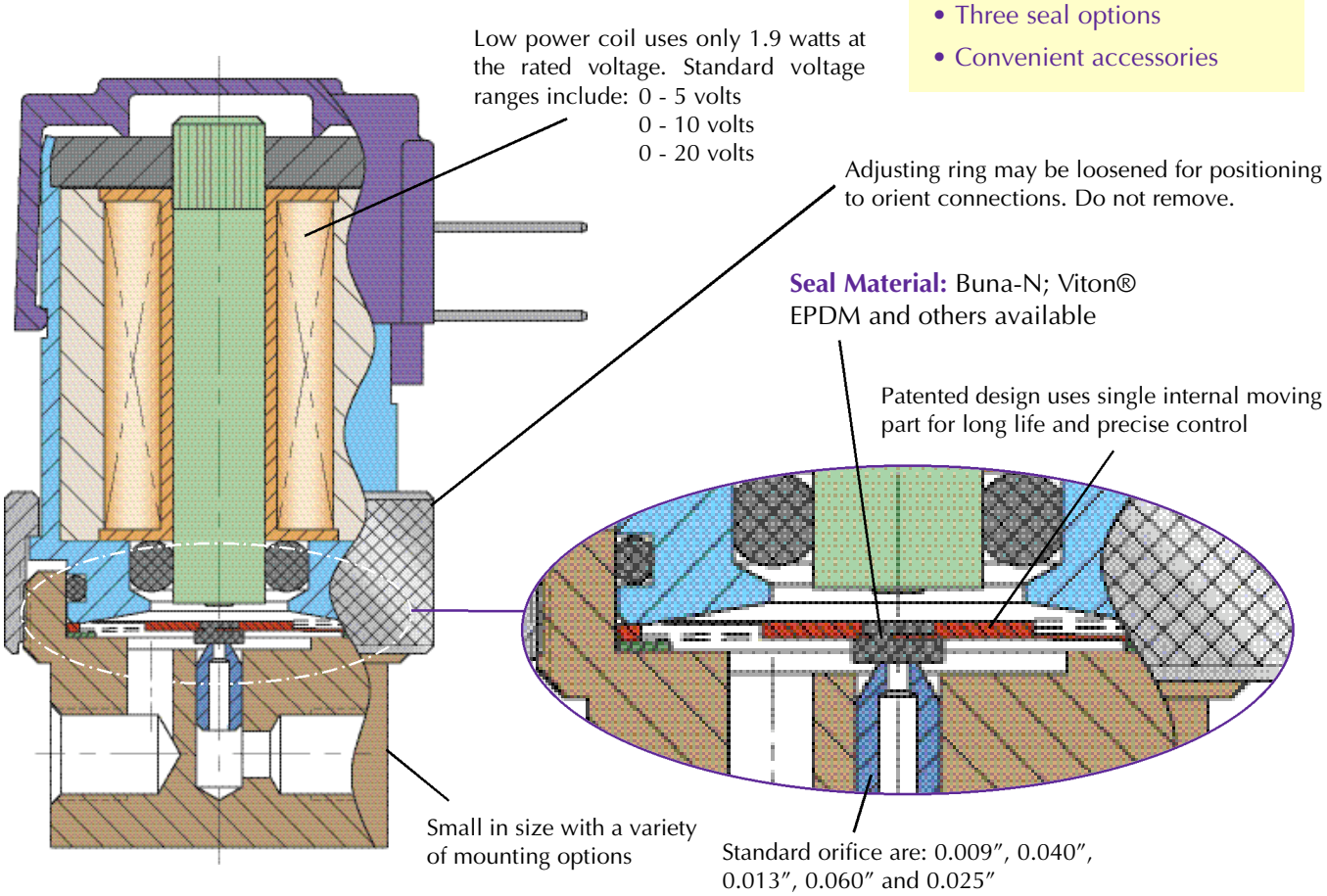
The EVP series Proportional Control Valves combine the features of the existing EV series valve - long life, low power, and Clippard's reputation for high quality components - with the additional capability for proportional control.

The EVP series valve provides air or gas flow control, and varies the output flow based on the current input to the solenoid. The consistent gain (see chart) of this valve provides a high degree of control for many applications.

Controllability and overall value are the main features of the EVP Proportional Valve series. The valve may be controlled using DC current, open or closed-loop control, and even PWM (pulse width closed-loop control, to cover a broad range of applications.

Features

- Fast response
- Long life
- Small package
- Single moving part - low friction and wear
- Five orifice sizes
- Three voltage ranges
- Three connection styles
- Two mounting types
- Three seal options
- Convenient accessories

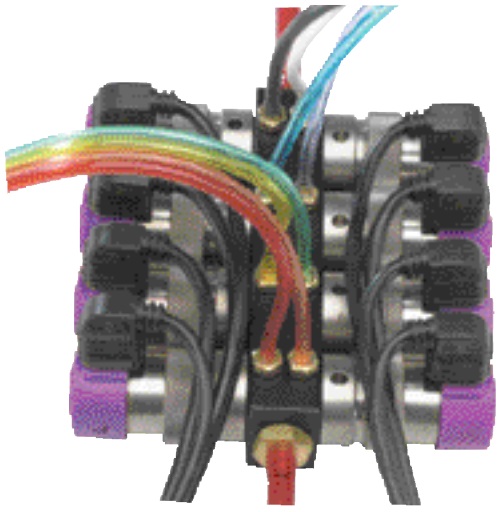


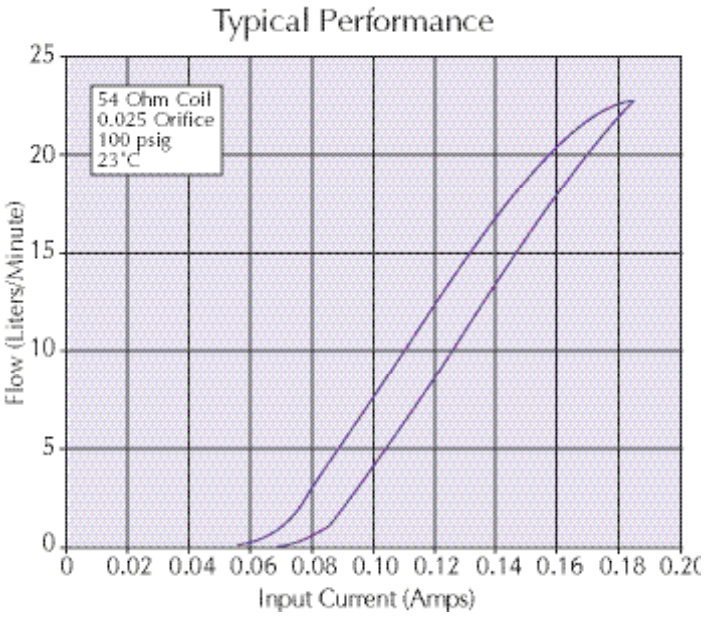
Designed For:

- Analytical Instruments
- Blood pressure monitoring
- Precise pressure control
- Dialysis
- Automotive
- Gas Controllers
- Mass Flow Control
- Patient Simulators
- Gas Chromatography
- Respirators / Ventilators
- Semiconductor - CMP

and many more...

EVP Series Proportional Control Valves





Type: 2-Way, Proportional

Medium: Air, Inert Gases

Temperature Range: 32˚ to 120˚ F (0˚ to 50˚ C)

Power Consumption: 1.9 watts at 23˚C 2.3 watts max.

Mounting: In-line or Manifold

Ports: #10-32 Female (In-line)
#10-32 Male Stud (Manifold)

Seal Material: Buna-N; Viton® and EPDM. Others available.

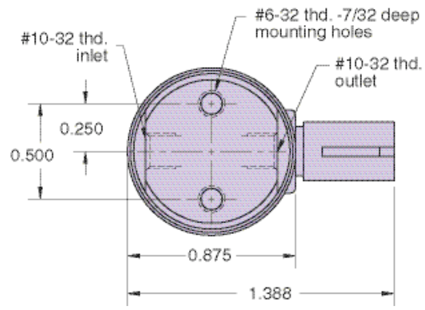
Maximum Hysteresis: 10% of full current

Orifice Diameter	Rated Pressure	Flow at Max. Current (±10%)
0.009″	100 psig	2.7 slpm / 5.7 scfh
0.013″	100 psig	6.7 slpm / 14.2 scfh
0.025″	100 psig	23.5 slpm / 50.0 scfh
0.040″	50 psig	19.0 slpm / 40.0 scfh
0.060″	25 psig	14.0 slpm / 30.0 scfh

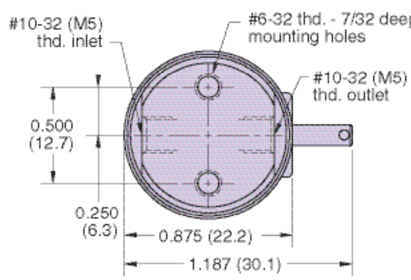
Nominal Voltage Range at 23˚C	Input Current Range	Coil Resistance at 23˚C	Max. Voltage Required
0 - 5 vdc	0 - 0.370 amps	13.5 ohms	6.2 vdc
0 - 10 vdc	0 - 0.185 amps	54 ohms	12.4 vdc
0 - 20 vdc	0 - 0.093 amps	218 ohms	24.8 vdc

EVP Series Proportional Control Valves
In-line Mount

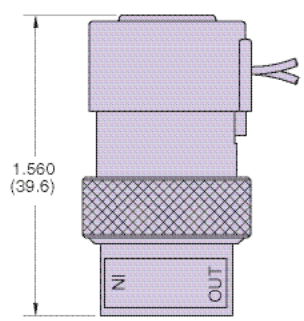
EC - P - ❑ - ❑❑ - ❑



ET - P - ❑ - ❑❑ - ❑



EV - P - ❑ - ❑❑ - ❑



Type: 2-Way, Proportional

Medium: Air, Inert Gases

Temperature Range: 32˚ to 120˚ F

Power Consumption: 1.9 watts at 23˚C 2.3 watts max.

Mounting: In-line

Ports: #10-32 (M5) Female

Orifice Diameter (in.)	Rated Pressure (psig)	Flow at Max. Current (scfh)
0.009	100	5.7±10%
0.013	100	14.2±10%
0.025	100	50.0±10%
0.040	50	40.0±10%
0.060	25	30.0±10%

Nominal Voltage Range at 23˚C (vdc)	Input Current Range (amps)	Coil Resistance at 23˚C (ohms)	Max. Voltage Required (vdc)
0 - 5	0 - 0.370	13.5	6.2
0 - 10	0 - 0.185	54	12.4
0 - 20	0 - 0.092	218	24.8

The EVP Proportional Valve can be calibrated for pressures less than the maximum shown here. Lower pressures may be substituted, and will be used for calibration. The pressures shown above are standard options. For pressures less than 10 psig, please consult factory.

NUMBERING SYSTEM

E ❑ - P - ❑ - ❑ ❑ - ❑ - ❑

C - Connector
T - Terminal Spades
V - Wire Leads

Voltages: *
05 - 0-5 VDC
10 - 0-10 VDC
20 - 0-20 VDC

Orifice Options: §
09 - 0.009 dia.
13 - 0.013 dia.
25 - 0.025 dia.
→ **Maximum Pressure:** § **25** - 25 psig, **50** - 50 psig, **A0** - 100 psig

40 - 0.040 dia. → **25** - 25 psig, **50** - 50 psig

60 - 0.060 dia. → **25** - 25 psig

Options:
Blank - none
E - EPDM
V - Viton® seals

Ports:
Blank - #10-32
M5 - Metric

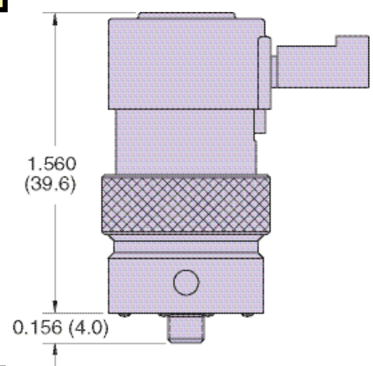
* Consult factory for availability of non-standard voltages and other options

§ Standard Orifice Configurations
09A0 13A0 25A0
4050 6025

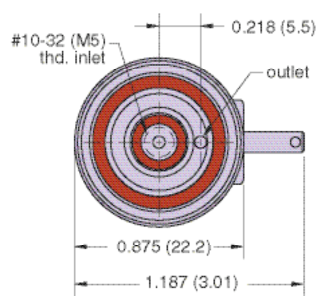
Sample part number:
EC-P-10-25A0

For Cable and Connectors, see Page 184.

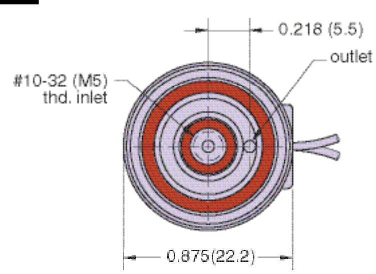
EC - PM - ❑ - ❑ ❑ - ❑



ET - PM - ❑ - ❑ ❑ - ❑



EV - PM - ❑ - ❑ ❑ - ❑



Type: 2-Way, Proportional

Medium: Air, Inert Gases

Temperature Range: 32˚ to 120˚ F

Power Consumption: 1.9 watts at 23˚C 2.3 watts max.

Mounting: Manifold

Ports: #10-32 (M5) male stud

Orifice Diameter (in.)	Rated Pressure (psig)	Flow at Max. Current (scfh)
0.009	100	5.7±10%
0.013	100	14.2±10%
0.025	100	50.0±10%
0.040	50	40.0±10%
0.060	25	30.0±10%

Nominal Voltage Range at 23˚C (vdc)	Input Current Range (amps)	Coil Resistance at 23˚C (ohms)	Max. Voltage Required (vdc)
0 - 5	0 - 0.370	13.5	6.2
0 - 10	0 - 0.185	54	12.4
0 - 20	0 - 0.092	218	24.8

The EVP Proportional Valve can be calibrated for pressures less than the maximum shown here. Lower pressures may be substituted, and will be used for calibration. The pressures shown above are standard options. For pressures less than 10 psig, please consult factory.

NUMBERING SYSTEM

E ❑ - P M - ❑ - ❑ ❑ - ❑ - ❑

C - Connector
T - Terminal Spades
V - Wire Leads

Voltages: *
05 - 0-5 VDC
10 - 0-10 VDC
20 - 0-20 VDC

Orifice Options: § → **Maximum Pressure:** §
09 - 0.009 dia., **13** - 0.013 dia., **25** - 0.025 dia. → **25** - 25 psig, **50** - 50 psig, **A0** - 100 psig
40 - 0.040 dia. → **25** - 25 psig, **50** - 50 psig
60 - 0.060 dia. → **25** - 25 psig

Options:
Blank - none
E - EPDM
V - Viton® seals

Ports:
Blank - #10-32
M5 - Metric

* Consult factory for availability of non-standard voltages and other options

§ Standard Orifice Configurations
09A0 13A0 25A0
4050 6025

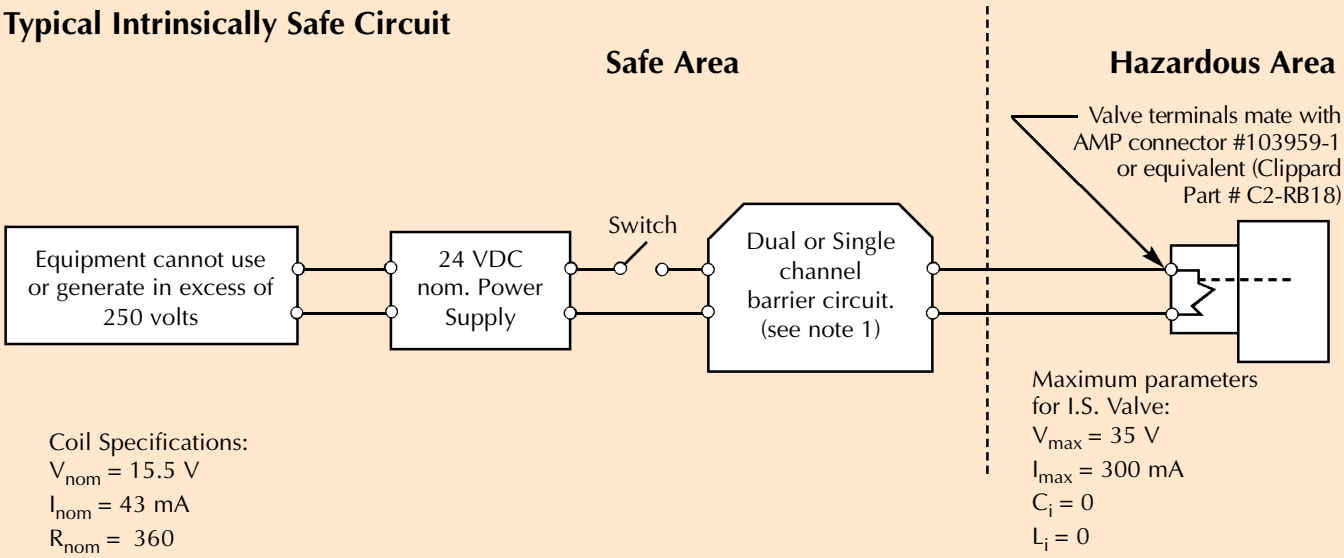
Sample part number:
EC-PM-10-25A0

For Cable and Connectors, see Page 184.

Definitions

C_a : Maximum Allowed Capacitance
C_i : Maximum Internal Capacitance
I_{max} : Maximum Input Current
I_{sc} : Maximum Output Current
L_a : Maximum Allowed Inductance
L_i : Maximum Internal Inductance
V_{oc} : Maximum Output Voltage
V_{max} : Maximum Input Voltage
V_t : Voltage Total

FM APPROVAL
Typical Intrinsically Safe Circuit



Coil Specifications:
V_{nom} = 15.5 V
I_{nom} = 43 mA
R_{nom} = 360

Maximum parameters for I.S. Valve:
V_{max} = 35 V
I_{max} = 300 mA
C_i = 0
L_i = 0

1. For barrier interconnection refer to maximum barrier output parameters as referenced on the specific barrier installation drawing. Connect as follows:
   a. $V_{max} > V_{oc}$ of single channel barrier or V_t of dual channel barrier
   b. $I_{max} > I_{sc}$ of single channel barrier or I_t of dual channel barrier
   c. C_i + field wiring < C_a of single or dual channel barrier
   d. L_i = field wiring < L_a of single or dual channel barrier
2. Installation of intrinsically safe system is to be done in accordance with ANSI / ISA-RP12.6

NUMBERING SYSTEMS

Porting — Valve Type — Mounting Style — Voltage (DC) — Orifice Options — Coil Connections

E I ❑ - ❑ ❑ - 1 5 . 5 - ❑ ❑ - ❑

Blank - #10-32
M5 - Metric

Blank - Normally CLOSED
O - Normally Open or Captivated Exhaust

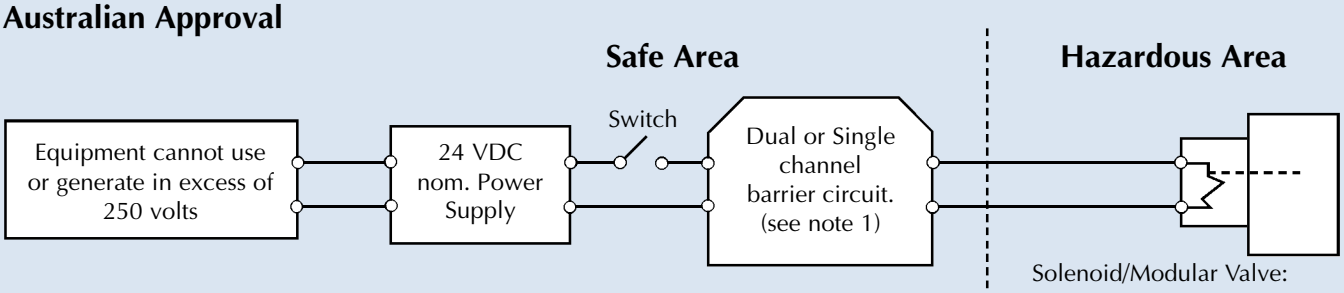
2 - 2-Way
3 - 3-Way

Blank - Standard Mount
M - Manifold Mount

Blank - 0.025 Dia. Orifice
L - 0.040 Dia Orifice
H - 0.060 Dia. Orifice

Blank - Amp Conn.
C - 18 gage leads
CP - 18 gage leads with pipe connection

Australian Approval



Solenoid/Modular Valve:
U_i = 35 V
I_i = 300 mA
C_i = 0
L_i = 0

1. For barrier interconnection, refer to maximum barrier output parameters as referenced on the specific barrier installation drawing. Connect as follows:
   a. U_i > U_o of single channel barrier or U_t of dual channel barrier
   b. I_i > I_o of single channel barrier or I_t of dual channel barrier
   c. C_i + field wiring < C_o of single or dual channel barrier
   d. L_i = field wiring < L_o of single or dual channel barrier
2. Installation of intrinsically safe system is to be done in accordance with AS 2381.1.

Increase Flow

High Flow Valves Models 2020 and 2021 high flow valves are piloted 3-way valves that work with EI/EIO intrinsically safe valves as well as EV/ET 3-way valves. They are designed to be mounted on EI/EIO manifold valves. Outputs from the EI/EIO will actuate the valve and produce outputs up to 22 scfm at 100 psig. Piloted 3-way valves are also available as R-481 and R-482.

Solenoid/Modular Valve:
(Electrical Parameters)
U_{max} = 28 V
I_{max} = 93.3 mA
P_{max} = 0.653 W
C_{eq} = 1.0 pF (opened circuit)
L_{eq} = 157 H/

EVB Booster Valve Clippard EVB-3 booster valve mates with manifold mounted EI/EIO valves and manifolds to provide increased flow. Direct piloting from Clippard EI/EIO valves provides a flow of up to 6.1 scfm at 100 psig.

What is Intrinsic Safety?

An intrinsically safe system is one in which all electrical devices and their associated circuits are designed such that they can neither arc nor spark with sufficient energy to ignite the hazardous substances around which they are being used. Put another way, the energy stored from the inductance of the circuit components must be unable to generate a spark or arc at the circuits open point during current circulation that is capable of igniting the hazardous materials present when they are in a fuel/air mixture that is most favorable for ignition.

What is Entity approval?

According to INTRINSIC SAFETY standards, there is no requirement for authorized laboratory certification of system-wide intrinsic safety if the designer can determine, with certainty, that the physical and electrical parameters of every system component has been met sufficient to ensure that system-wide intrinsic safety has been maintained.
An "Entity Approval" is documentation stating that a device is intrinsically safe in specified hazardous atmospheres if the stated physical and electrical conditions contained in the approval are met. By meeting the requirements of "Entity Approvals" on all components of a system, the designer can more easily document that system-wide intrinsic safety has been maintained.

The Clippard EI-EIO series valves hold the Entity Approvals listed and supporting documentation is available to our customers.

EI Intrinsically Safe Normally Closed Valves

EI-❑❑-15.5-❑

Standard Mount

Manifold Mount

EI-❑❑-15.5-❑C

Standard Mount

Manifold Mount

EI-❑❑-15.5-❑CP

Standard Mount

Manifold Mount

Type: 2-Way or 3-Way Poppet, Normally Closed

Medium: Air (40 micron filtration)

Temperature Range: 30° - 180°F

Input Pressure: 28 Hg. Vac to 105 psig; 0-7 bar
28 Hg. Vac to 50 psig (L); 0-3.5 bar
28 Hg. Vac to 25 psig (H); 0-1.8 bar

Air Flow: 0.6 scfm @ 100 psig; 15 l/min @ 7 bar
0.5 scfm @ 50 psig (L); 15 l/min @ 3.5 bar
0.45 scfm @ 25 psig (H); 14 l/min @ 1.8 bar

Voltages: 15.5 VDC

Power Consumption: 0.65 watt at rated voltage (0.66 watt on top three products)

Response: 5 - 10 milliseconds @ 100 psig

Ports: Inlet - #10-32 (M5), Outlet - #10-32 (M5) - on std.

Metric: Add -M5 to Part Number (standard mount only)

For Cable and Connectors, see Page 184.

EIO-❑❑-15.5-❑

Standard Mount

Manifold Mount

EIO-❑❑-15.5-❑C

Standard Mount

Manifold Mount

Type: 2-Way or 3-Way Poppet, Fully Ported

Medium: Air (40 micron filtration)

Temperature Range: 30˚ - 180˚F

Input Pressure: 28 Hg. Vac to 105 psig; 0-7 bar
28 Hg. Vac to 50 psig (L); 0-3.5 bar
28 Hg. Vac to 25 psig (H); 0-1.8 bar

Air Flow: 0.6 scfm @ 100 psig; 15 l/min @ 7 bar
0.5 scfm @ 50 psig (L); 15 l/min @ 3.5 bar
0.45 scfm @ 25 psig (H); 14 l/min @ 1.8 bar

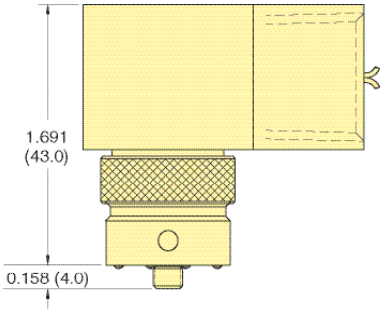
Voltages: 15.5 VDC

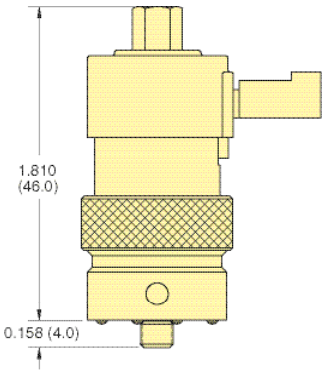
Power Consumption: 0.65 watt at rated voltage

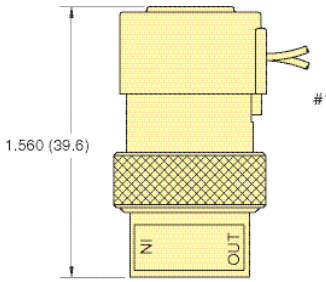
Response: 5 - 10 milliseconds @ 100 psig

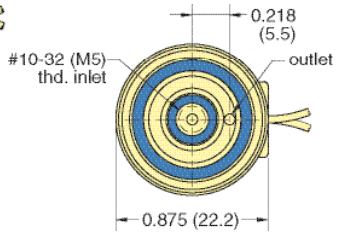
Ports: Inlet - #10-32 (M5), Outlet - #10-32 (M5) - on std.

Metric: Add -M5 to Part Number









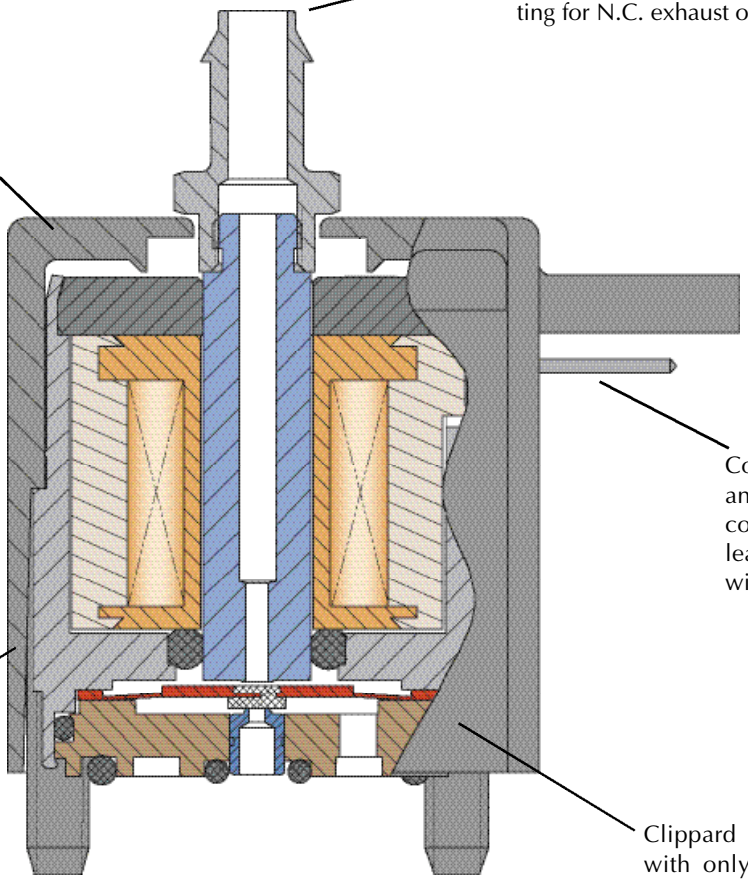
For Cable and Connectors, see Page 184.

ES, ESO Series Compact Valves

Valves are small in size with a variety of coil voltages and flow options. Mounting is as close as 7/8″ on center.

ESO and similar styles have top hose barb or #10-32 threaded fitting for N.C. exhaust or N.O. inlet.

Housing is molded Zytel ST 801 for toughness and rigidity.



Coils are available with an AMP# 103959-2 pin connection or 18″ wire leads which utilize #26 wire.

Valves feature low power, cool running, quiet operation and fast response time. They convert low voltage, low current signals into high pressure pneumatic outputs.

Clippard ES valves are unique, with only one internal moving part that travels a mere 0.007 inches.

NUMBERING SYSTEMS

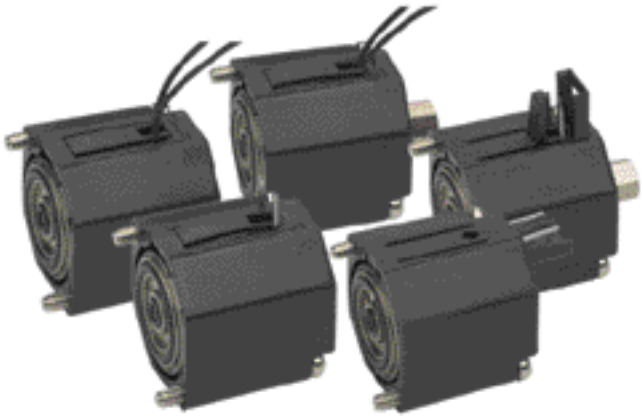
E S ❑ - ❑ ❑ - ❑ - ❑ ❑

- Valve Type: **2** - 2-Way; **3** - 3-Way
- Options (ESO only): **Blank** - #10-32 Female; **1** - 1/16″ I.D. Hose Barb; **2** - 1/8″ I.D. Hose Barb
- Porting: **Blank** - Normally Closed; **O** - Normally Open or Captivated Exhaust
- Coil Connections: **S** - Side Pin; **T** - Top Pin; **W** - Wires; **B** - Board Mount
- Voltage: **6** - Volts; **12** - Volts; **24** - Volts
- Orifice Options: **Blank** - 0.025 Dia. Orifice (105 psig); **L** - 0.040 Dia Orifice (50 psig); **H** - 0.060 Dia Orifice (25 psig)

Quality Design

The compact ES valve, like Clippard EV and ET valves, converts low voltage, low current signals into high pressure (0-105 psig) pneumatic outputs, utilizing a unique, patented, valving principle. Since there are no sliding parts, and complete poppet travel is only 0.007″, low power consumption and exceptionally long life are assured with this design. No flow is required for cooling because the compact ES is cool, as well as quiet, in operation.

The compact nature of design makes this valve well suited to a wide range of applications in biomedical, environmental test equipment, textile machines, packaging machinery, computerized industrial automation, and portable systems.



Features

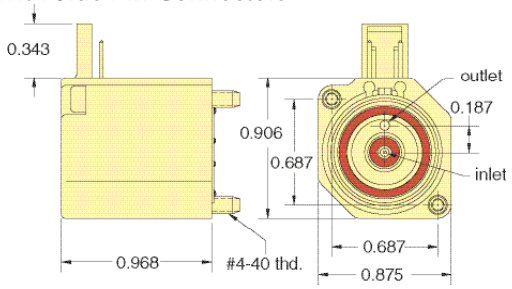
- Temperature Range: 30˚ - 180˚ F
- Medium: Air (40 micron filtration)
- Low power consumption - 1 watt at rated voltage
- Close mounting - 7/8″ on center
- Voltage Options: 6, 12 or 24 VDC
- Overall height less than 1 inch
- Easy to mount on manifold with two #4-40 screws
- Response: 5-10 ms at max rated pressure
- Geometric design
- Polymer housing - Zytel ST 801® super tough
- Pin connectors - AMP # 103959-2 or 18″ wire leads: #26 wire
- Flow up to 0.6 scfm/15 l/min

Zytel ST 801® super tough is a registered trademark of DuPont

NOMINAL			Power (watts)	Working Range (cont. duty)
Voltage	Current (amps)	Resistance (ohms)		
6	0.17	36	1.0	90% - 150% of rated voltage
12	0.083	144	1.0	
24	0.042	576	1.0	

ES-2S - ❑

Normally Closed 2-Way Electronic Poppet Valve with Side Pin Connectors



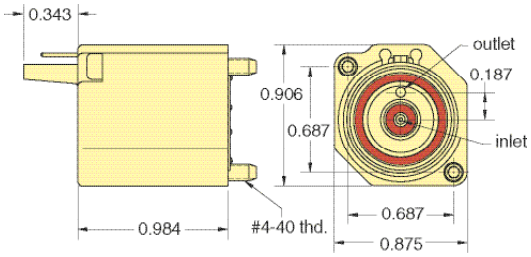
Input Pressure: 28″ Hg Vac. to 105 psig
28″ Hg Vac. to 50 psig (L)
25″ Hg Vac. to 50 psig (H)

Air Flow: 0.6 scfm @ 100 psig
0.5 scfm @ 50 psig (L)
0.45 scfm @ 25 psig (H)

Ports: Inlet and outlet through manifold

ES-2T - ❑

Normally Closed 2-Way Electronic Poppet Valve with Top Pin Connectors

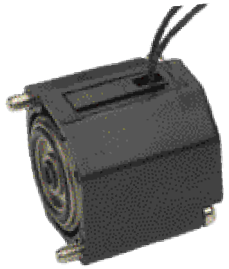


Input Pressure: 28″ Hg Vac. to 105 psig
28″ Hg Vac. to 50 psig (L)
25″ Hg Vac. to 50 psig (H)

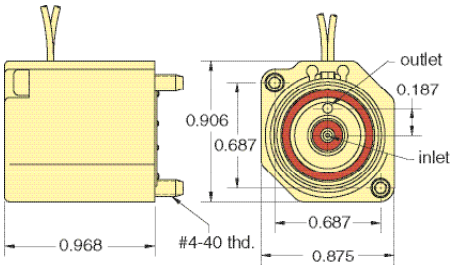
Air Flow: 0.6 scfm @ 100 psig
0.5 scfm @ 50 psig (L)
0.45 scfm @ 25 psig (H)

Ports: Inlet and outlet through manifold

ES-2W - ❑



Normally Closed 2-Way Electronic Poppet Valve with Wire Leads

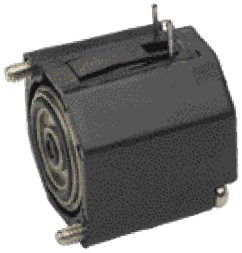


Input Pressure: 28″ Hg Vac. to 105 psig
28″ Hg Vac. to 50 psig (L)
25″ Hg Vac. to 50 psig (H)

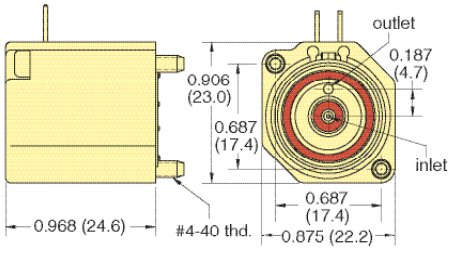
Air Flow: 0.6 scfm @ 100 psig
0.5 scfm @ 50 psig (L)
0.45 scfm @ 25 psig (H)

Ports: Inlet and outlet through manifold

ES-2B - ❑



Normally Closed 2-Way Electronic Poppet Valve with Board Mount



Input Pressure: 28″ Hg Vac. to 105 psig;
0-7 bar
28″ Hg Vac. to 50 psig (L);
0-3.5 bar
25″ Hg Vac. to 50 psig (H);
0-1.8 bar

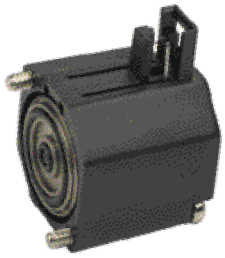
Air Flow: 0.6 scfm @ 100 psig;
15 l/min @ 7 bar
0.5 scfm @ 50 psig (L);
15 l/min @ 3.5 bar
0.45 scfm @ 25 psig (H);
14 l/min @ 1.8 bar

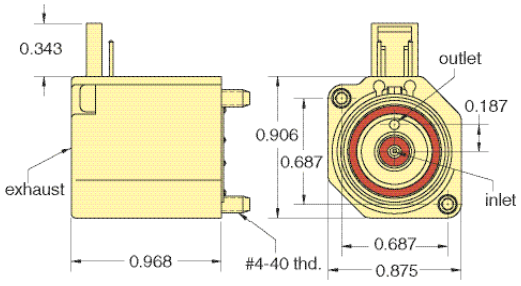
Ports: Inlet and outlet through manifold

For Cable and Connectors, see Page 184.

ES-3S - ❑

Normally Closed 3-Way Electronic Poppet Valve with Side Pin Connector





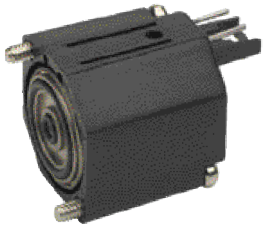
Input Pressure: 28″ Hg Vac. to 105 psig
28″ Hg Vac. to 50 psig (L)
25″ Hg Vac. to 50 psig (H)

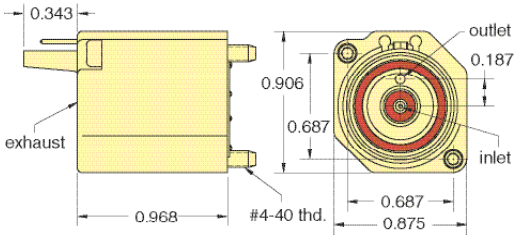
Air Flow: 0.6 scfm @ 100 psig
0.5 scfm @ 50 psig (L)
0.45 scfm @ 25 psig (H)

Ports: Inlet and outlet through manifold;
3-way exhaust through top of valve

ES-3T - ❑

Normally Closed 3-Way Electronic Poppet Valve with Top Pin Connector





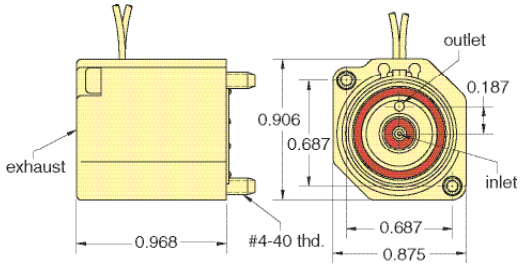
Input Pressure: 28″ Hg Vac. to 105 psig
28″ Hg Vac. to 50 psig (L)
25″ Hg Vac. to 50 psig (H)

Air Flow: 0.6 scfm @ 100 psig
0.5 scfm @ 50 psig (L)
0.45 scfm @ 25 psig (H)

Ports: Inlet and outlet through manifold;
3-way exhaust through top of valve

ES-3W - ❑

Normally Closed 3-Way Electronic Poppet Valve with Wire Leads



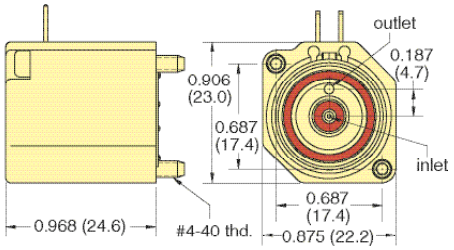
Input Pressure: 28″ Hg Vac. to 105 psig
28″ Hg Vac. to 50 psig (L)
25″ Hg Vac. to 50 psig (H)

Air Flow: 0.6 scfm @ 100 psig
0.5 scfm @ 50 psig (L)
0.45 scfm @ 25 psig (H)

Ports: Inlet and outlet through manifold;
3-way exhaust through top of valve

ES-3B - ❑

Normally Closed 3-Way Electronic Poppet Valve with Board Mount



Input Pressure: 28″ Hg Vac. to 105 psig;
0-7 bar
28″ Hg Vac. to 50 psig (L);
0-3.5 bar
25″ Hg Vac. to 50 psig (H);
0-1.8 bar

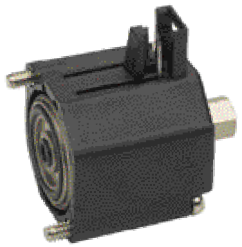
Air Flow: 0.6 scfm @ 100 psig;
15 l/min @ 7 bar
0.5 scfm @ 50 psig (L);
15 l/min @ 3.5 bar
0.45 scfm @ 25 psig (H);
14 l/min @ 1.8 bar

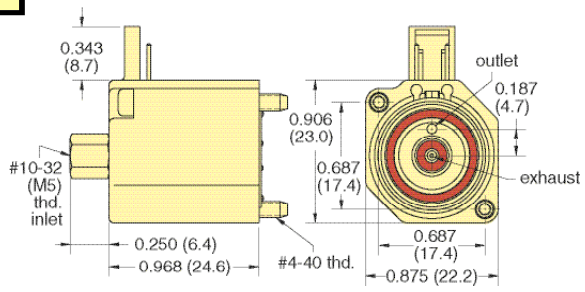
Ports: Inlet and outlet through manifold;
3-way exhaust through top of valve

For Cable and Connectors, see Page 184.

ESO-3S- ❑

Fully Ported 3-Way Electronic Poppet Valve with Side Pin Connector





Input Pressure: 28″ Hg Vac. to 105 psig;
0-7 bar
28″ Hg Vac. to 50 psig (L);
0-3.5 bar
25″ Hg Vac. to 50 psig (H);
0-1.8 bar

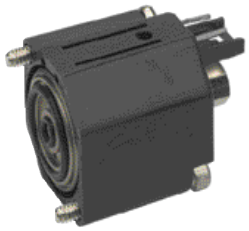
Air Flow: 0.6 scfm @ 100 psig;
15 l/min @ 7 bar
0.5 scfm @ 50 psig (L);
15 l/min @ 3.5 bar
0.45 scfm @ 25 psig (H);
14 l/min @ 1.8 bar

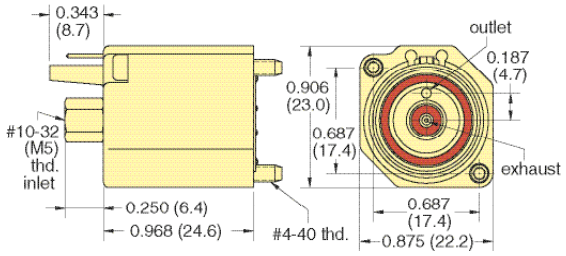
Ports: Exhaust and outlet through manifold;
3-way supply (#10-32/M5) through top of valve

Metric: Add -M5 to Part Number

ESO-3T- ❑

Fully Ported 3-Way Electronic Poppet Valve with Top Pin Connector





Input Pressure: 28″ Hg Vac. to 105 psig;
0-7 bar
28″ Hg Vac. to 50 psig (L);
0-3.5 bar
25″ Hg Vac. to 50 psig (H);
0-1.8 bar

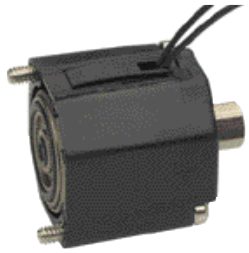
Air Flow: 0.6 scfm @ 100 psig;
15 l/min @ 7 bar
0.5 scfm @ 50 psig (L);
15 l/min @ 3.5 bar
0.45 scfm @ 25 psig (H);
14 l/min @ 1.8 bar

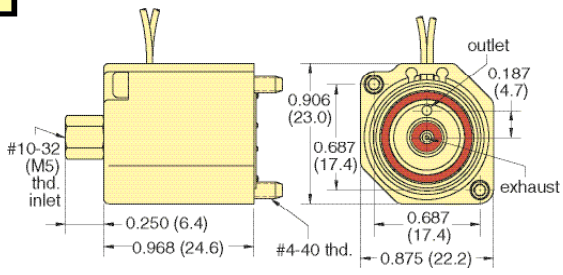
Ports: Exhaust and outlet through manifold;
3-way supply (#10-32/M5) through top of valve

Metric: Add -M5 to Part Number

ESO-3W- ❑

Fully Ported 3-Way Electronic Poppet Valve with Wire Leads





Input Pressure: 28″ Hg Vac. to 105 psig;
0-7 bar
28″ Hg Vac. to 50 psig (L);
0-3.5 bar
25″ Hg Vac. to 50 psig (H);
0-1.8 bar

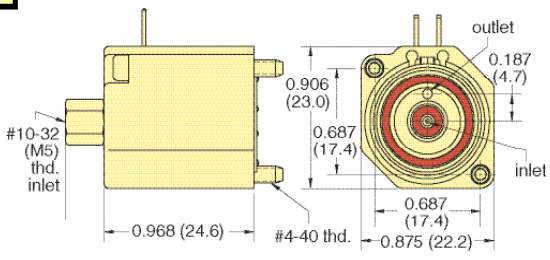
Air Flow: 0.6 scfm @ 100 psig;
15 l/min @ 7 bar
0.5 scfm @ 50 psig (L);
15 l/min @ 3.5 bar
0.45 scfm @ 25 psig (H);
14 l/min @ 1.8 bar

Ports: Exhaust and outlet through manifold;
3-way supply (#10-32 (M5) through top of valve

Metric: Add -M5 to Part Number

ESO-3B- ❑

Normally Open 3-Way Electronic Poppet Valve with Board Mount



Input Pressure: 28″ Hg Vac. to 105 psig;
0-7 bar
28″ Hg Vac. to 50 psig (L);
0-3.5 bar
25″ Hg Vac. to 50 psig (H);
0-1.8 bar

Air Flow: 0.6 scfm @ 100 psig;
15 l/min @ 7 bar
0.5 scfm @ 50 psig (L);
15 l/min @ 3.5 bar
0.45 scfm @ 25 psig (H);
14 l/min @ 1.8 bar

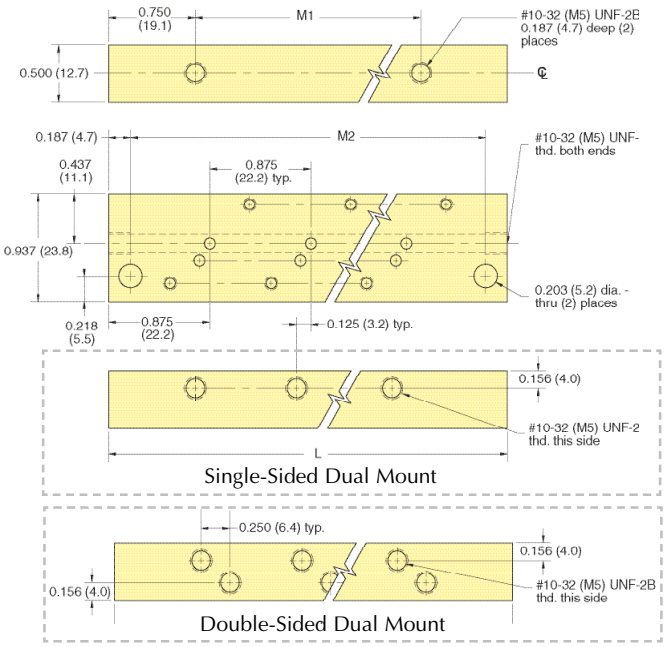
Ports: Exhaust and outlet through manifold;
3-way supply (#10-32/M5) through top of valve

Metric: Add -M5 to Part Number

For Cable and Connectors, see Page 184.

26081-❑ Single-Sided Dual Mount

Suffix	Valves	L	M1	M2
-4	4	4.375″	2.875″	4.000″
-4-M5	4	111.1 mm	73.0 mm	101.6 mm
-6	6	6.125″	4.625″	5.750″
-6-M5	6	155.6 mm	117.5 mm	146.1mm
-8	8	7.875″	6.375″	7.500″
-8-M5	8	200.0 mm	161.9 mm	190.5 mm



26082-❑ Double-Sided Dual Mount

Suffix	Valves	L	M1	M2
-8	8	4.375″	2.875″	4.000″
-8-M5	8	111.1 mm	73.0 mm	101.6 mm
-12	12	6.125″	4.625″	5.750″
-12-M5	12	155.6 mm	117.5 mm	146.1mm
-16	16	7.875″	6.375″	7.500″
-16-M5	16	200.0 mm	161.9 mm	190.5 mm

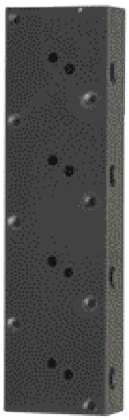
* ESM-CP plate is to cover individual unused manifold station.

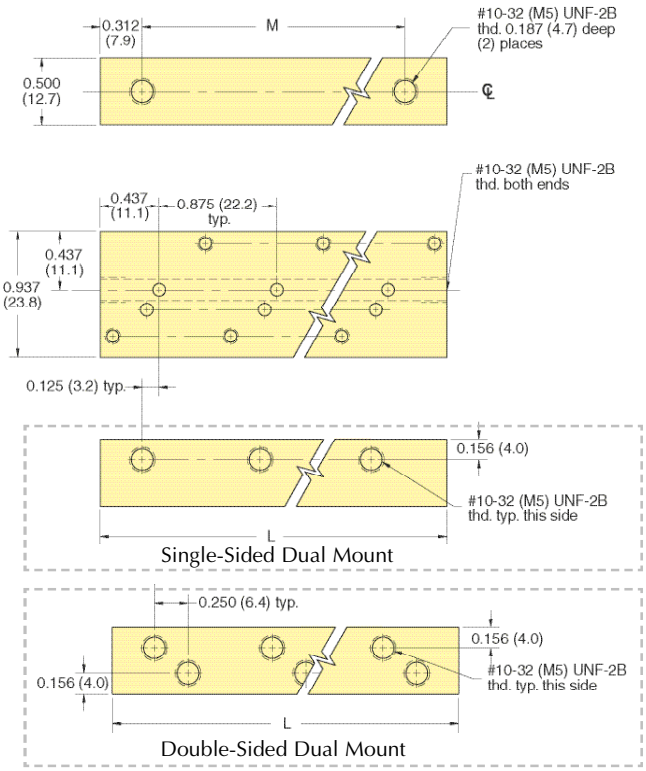
26083-❑ Single-Sided Rear Mount

Suffix	Valves	L	M
-4	4	3.500″	2.875″
-6	6	5.250″	4.625″
-8	8	7.000″	6.375″

26084-❑ Double-Sided Rear Mount

Suffix	Valves	L	M
-8	8	3.500″	2.875″
-8-M5	8	88.9 mm	73.0 mm
-12	12	5.250	4.625
-12-M5	12	133.4 mm	117.5 mm
-16	16	7.000	6.375
-16-M5	16	177.8 mm	161.9 mm

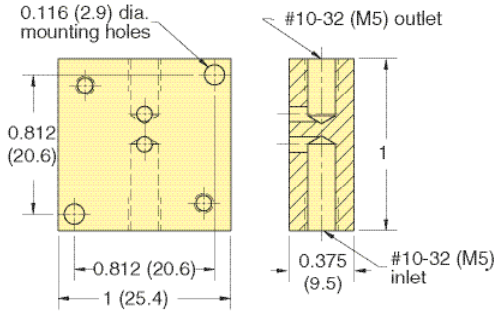




* ESM-CP cover plate is available for one manifold station.

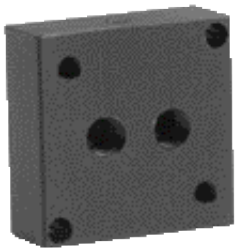
26090-1

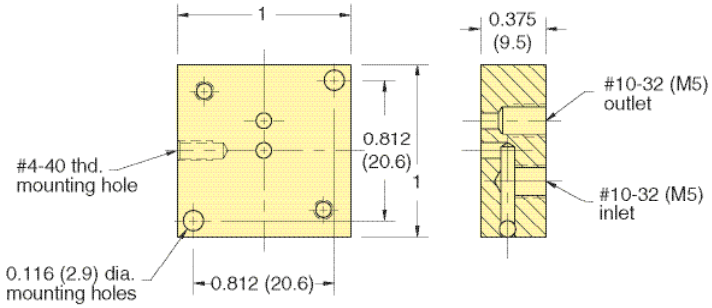
Single Station Side Port Manifold



26090-2

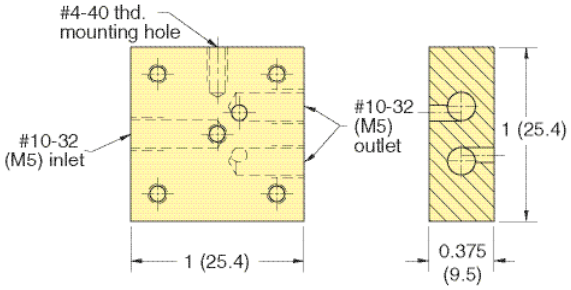
Single Station Bottom Port Manifold





26090-3

Dual Station Manifold

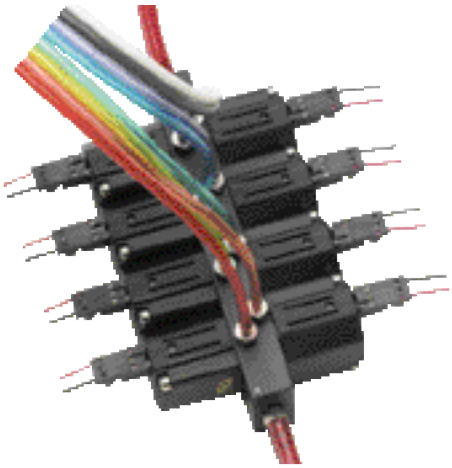


ES / ESO

The ES/ESO series valve was developed to fit into tighter physical envelopes. By reducing the size of the base as well as the size of the coil, a considerable volume savings was achieved.

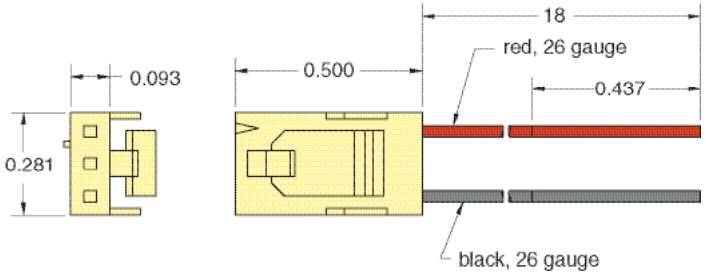
As in the case of the EI/EIO product, the ES/ESO uses the single moving part design proven many times in the EV/ET/EC series valves. Of course, given the reduced size of the coil the power to operate increases to 1 watt.

Because of its reliability, the ES/ESO series valve is found in many of the same applications and industries as its predecessor, the EV/ET, EC. However, the smaller size finds it used more commonly in portable or mobile equipment. This makes the valve particularly applicable in home healthcare applications.



C3-RXB18

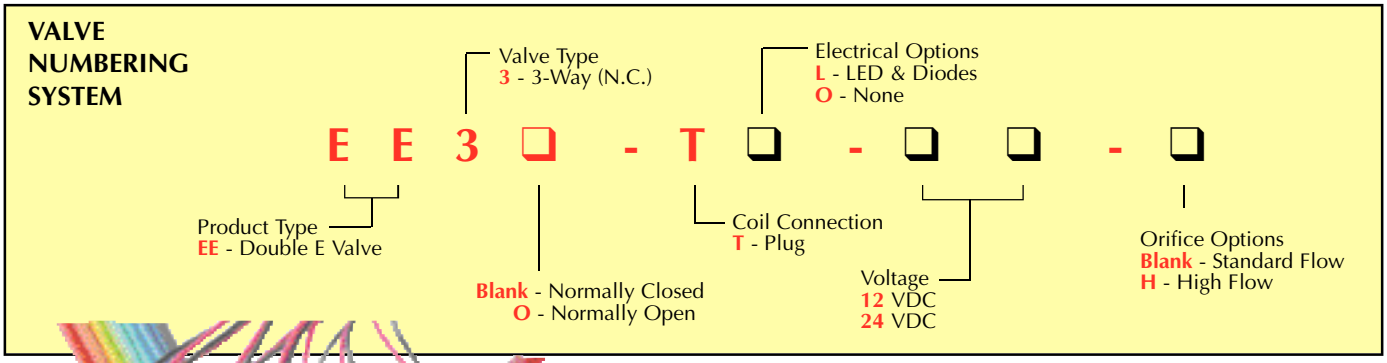
AMP Connector #103960-2 with 18″ wire leads for ES/ESO valves

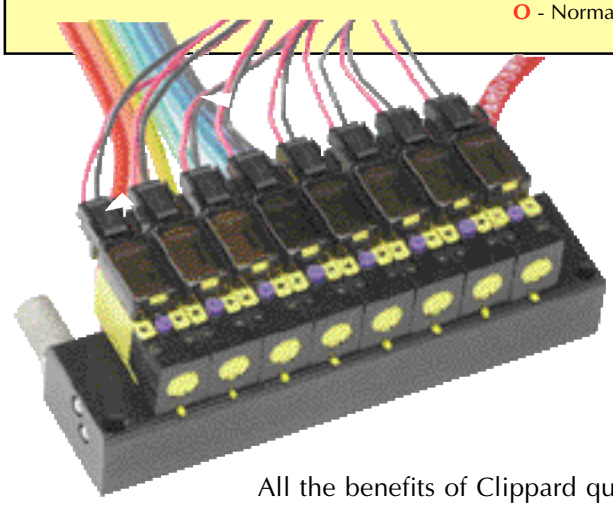


Lead Set Chart For ES Valve						
Part No.	Used On	Wire Colors			Lead Length	Wire Gage
		pin 1	pin 2	pin 3		
C3-RXB18	ES	red	~	black	18″	#26

EE3 Series Sub-Miniature Valves

VALVE NUMBERING SYSTEM

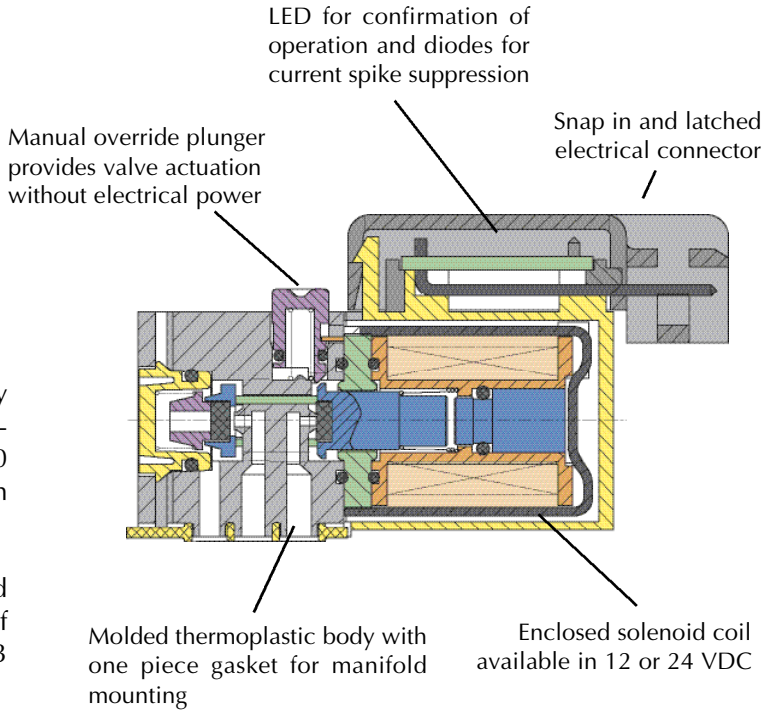




All the benefits of Clippard quality and reliability are available in our Double E-3 normally closed 3-way valve, an American made 10 mm subminiature electronic valve. A normally open model is also available.

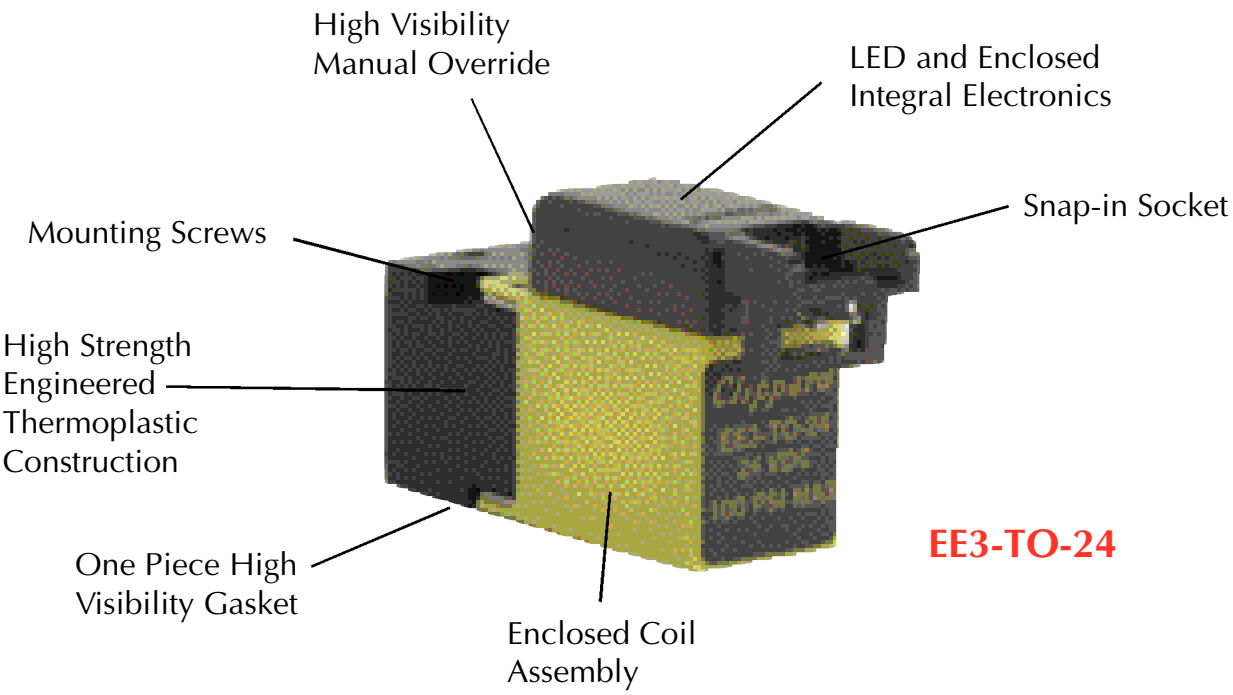
The Double E-3 has a high strength, lightweight engineered thermoplastic body, making it suitable for a wide range of applications. Since it has few moving parts, the Double E-3 is subject to less wear, and has a longer life.

Double E-3 Valves are available factory assembled on manifolds



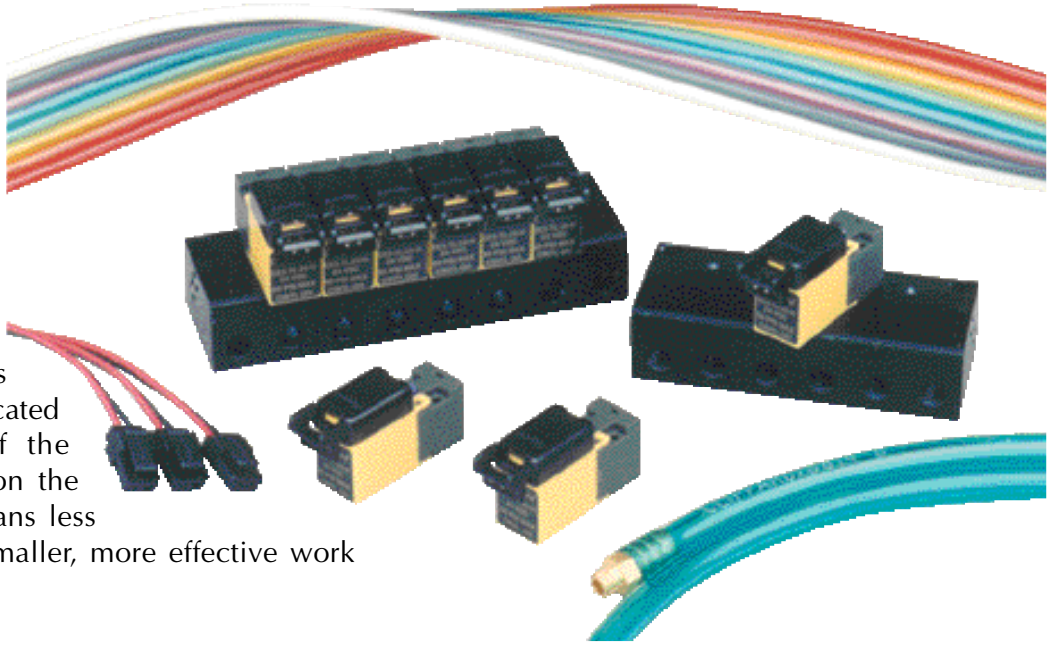
Features

- Made in USA
- Miniature size
- 12 and 24 VDC
- Direct acting
- Fast response
- Few moving parts
- High flow/low power
- Made of high strength engineered thermoplastic
- Manifold mount
- LED for confirmation of operation
- Spike suppression diodes
- High visibility manual override
- Universal orientation
- Enclosed integral electronics
- One-piece gasket eases installation
- Short stroke, low mass poppet
- Corrosion resistant molded body
- Electrical plug snaps in - clip latched



EE3-TO-24

Unique Porting Method



Unlike other valves, Double E-3 supply ports and exhaust ports are located on the output side of the manifold, rather than on the manifold ends. This means less space required, and a smaller, more effective work envelope.

Other configurations are available.

Double E-3 valves are available factory assembled on manifolds.

EE3-T❑-❑

Double-E 3-Way Valve
Normally Closed

Response: 10 milliseconds

Manual Override: High visibility momentary push button

Material: Wetted parts are acetal, nylon, nickel plated steel, stainless steel, and Buna-N

Temperature Range: 30˚ - 180˚ F

Electrical Connection: Custom plug with 12" long #22 AWG, 19 strand, 105˚C PVC insulation lead wires

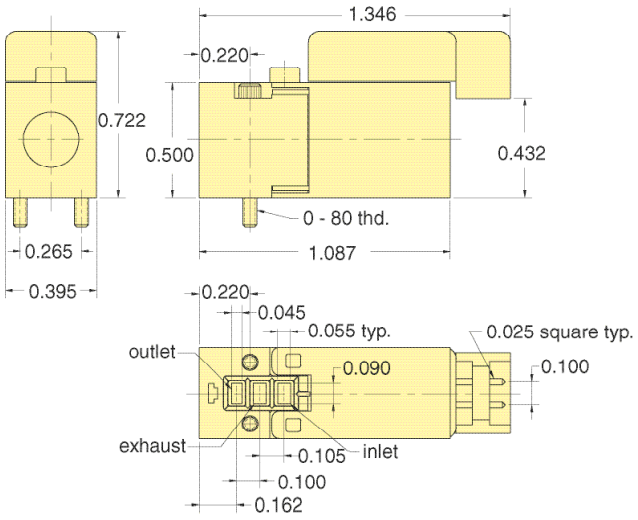
Power Consumption:
1.4 watts (with LED and diodes)
1.1 watts (24 VDC coil only)

Medium: Air, Gas

Pressure: Standard: 0-100 psig
High Flow: 0-60 psig

Air Flow: Standard: 30 scfh @ 100 psig
High Flow: 30 scfh @ 60 psig

Electrical: 12 VDC or 24 VDC - Allowable variation ± 10%
LED and spike suppression diodes standard (No LED and diodes option available)



EE30-T❑-❑

Double-E 3-Way Valve
Normally Open

Response: 10 milliseconds

Manual Override: High visibility momentary push button

Material: Wetted parts are acetal, nylon, nickel plated steel, stainless steel, and Buna-N

Temperature Range: 30˚ - 180˚ F

Electrical Connection: Custom plug with 12" long #22 AWG, 19 strand, 105˚C PVC insulation lead wires

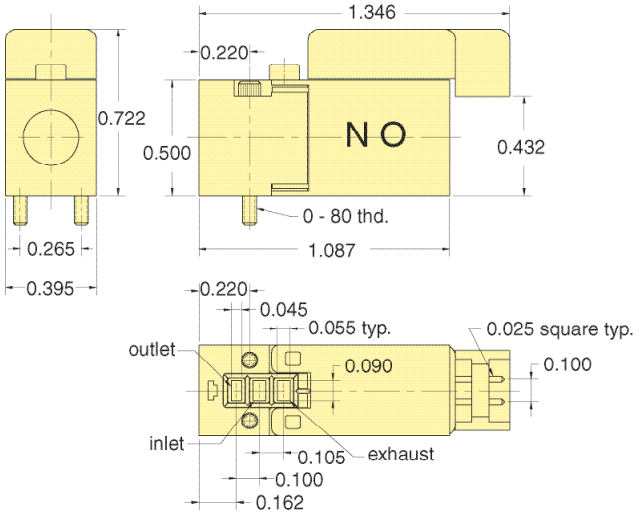
Power Consumption:
1.4 watts (with LED and diodes)
1.1 watts (24 VDC coil only)

Medium: Air, Gas

Pressure: Standard: 0-100 psig
High Flow: 0-60 psig

Air Flow: Standard: 30 scfh @ 100 psig
High Flow: 30 scfh @ 60 psig

Electrical: 12 VDC or 24 VDC - Allowable variation ± 10%
LED and spike suppression diodes standard (No LED and diodes option available)



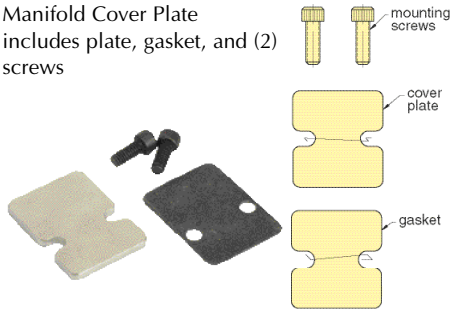
MANIFOLD NUMBERING SYSTEM

E E 3 M - ❑ ❑ - ❑ ❑

- Valve Type: 3 - 3-Way
- Product Type: EE - Double E Valve
- Mounting Style: M - Manifold Mount
- Number of Stations: 1A - Single Station Specialty; 1 - One Station; 2 - Two Station; 4 - Four Station; 6 - Six Station; 8 - Eight Station; 10 - Ten Station; 12 - Twelve Station
- Port Size: Blank - #10-32; M5 - M5 Thread

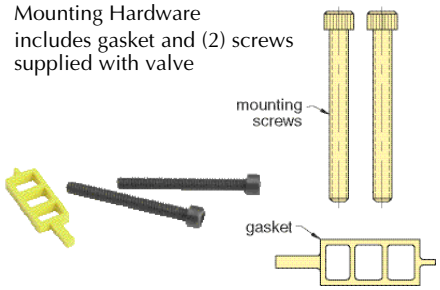
EE3M-CP

Manifold Cover Plate
includes plate, gasket, and (2) screws



EE3M-MH

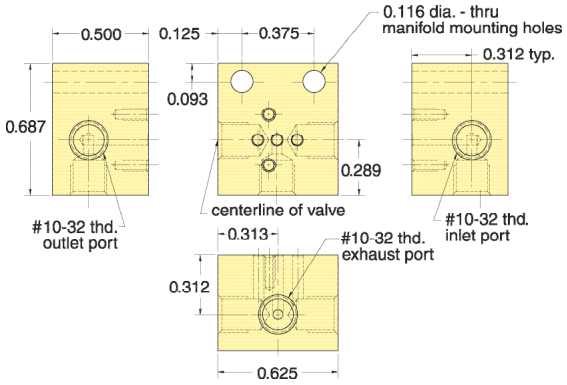
Mounting Hardware
includes gasket and (2) screws supplied with valve



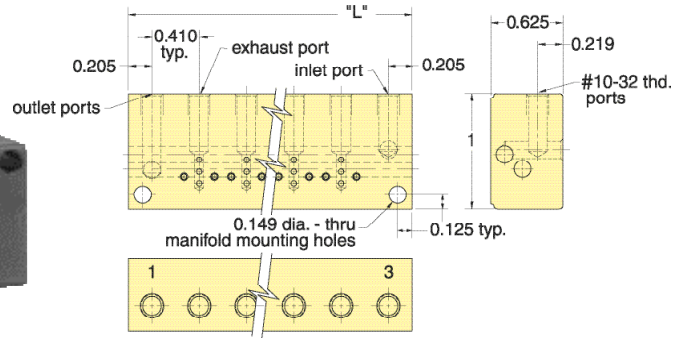
C2A-RB12

Wire Connector
includes connector with 12″ wire leads supplied with valve

EE3M-1A



EE3M-❑ ❑



Dash #	Station	"L"
-01	1	1.230
-02	2	1.640
-04	4	2.460
-06	6	3.280
-08	8	4.100
-10	10	4.920
-12	12	5.740

EMC Cards

MANIFOLD NUMBERING SYSTEM

E M C - ❑ ❑ - ❑ ❑ - ❑ ❑

- E M C — Electronic Manifold Card with ET or ETO valves
- ❑ ❑ — Number of Valves on Card
  - 08 - 8 Valves
  - 12 - 12 Valves
- ❑ ❑ — Voltage of Valves
  - 00 - w/o valves
  - 06 - 6 VDC
  - 12 - 12 VDC
  - 24 - 24 VDC
- ❑ ❑ — Type of Valve
  - 01 - w/o valves
  - 20 - ET-2M-XX
  - 22 - ET-2M-XX-H
  - 25 - ET-2M-XX-L
  - 30 - ET-3M-XX
  - 32 - ET-3M-XX-H
  - 35 - ET-3M-XX-L
  - 40 - ETO-3M-XX
  - 42 - ETO-3M-XX-H
  - 45 - ETO-3M-XX-L

EMC-08-00-01 and EMC-12-00-01 are part numbers for cards without any valves, and without manifold. Manifold mounting hardware is included. Manifolds may be ordered separately, if desired.

Part numbers are: 15482-8 and 15482-12

Convenience in interfacing electronics and pneumatics... fast mounting, completely assembled, manifolded valve cards.

Clippard Electronic Manifold Cards

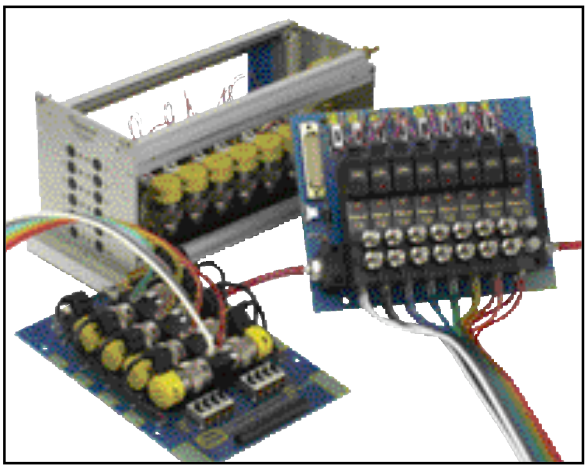
Now you can direct low-voltage DC signals from controllers, systems, computers or other sources to operate powerful pneumatic valves with a minimum of piping and hook-up.

Self-contained card includes:

- 8 or 12 Clippard ET interface valves
- Manifold mount for single air supply
- Circuit board fully wired
- Instant plug-in with 25-pin connector
- Resistor, diode, LED and switch for each valve
- Auxiliary power supply connection

Ready to operate quickly. Just mount the card and make external connection.

And each valve may be individually removed and replaced without any need for desoldering!



Features

- Fast, easy to mount
- Pre-assembled; all valves mounted
- 8 or 12 valve sizes
- 6, 12 or 24 volts DC
- Low power requirements (0.67 watt per valve)
- Choice of valve types
- Each valve switchable
- Shut-off spike protection
- 25-pin connector
- No expensive card rack required

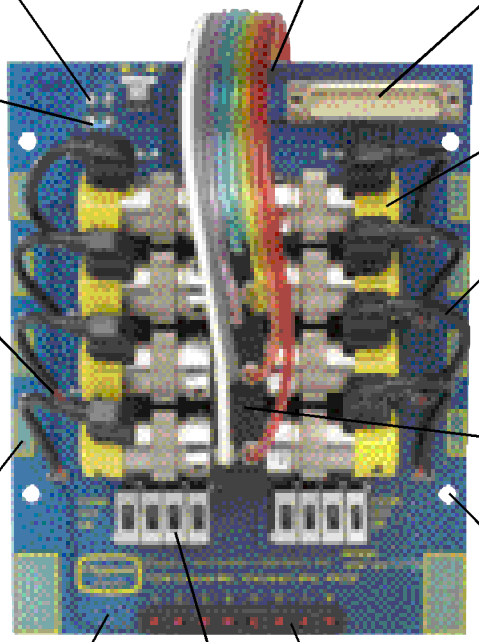
Auxiliary Power Input
Power to operate the valves may be provided through two sources: ONE, through the 25-pin connector if your signal source also has sufficient power to operate the bank of valves, or TWO, through a separate auxiliary power input connection built into the board. To isolate power from the 25-pin connector, use the power source selector switch.
NOTE: In applying power on a temporary basis, use care to observe proper circuit polarity.

Power Selector Switch
Two-position selector switch enables choice of power input source (25-pin connector or auxiliary).

25-Pin Connector

Clippard Electronic Valves

Reverse Polarity Protection
Circuit using diodes and capacitor provides input voltage protection against reverse polarity.



Valve Connection Cords
Cord and plug leads are terminated with solder connections on the board, and connect by molded plug to the valves. All connections are completed at the factory.

Resistor-Diode-LED Circuit
Individual circuit to each valve provides protection against shut-off spikes. LED is illuminated when valve is actuated.

Clippard Valve Manifold
Compact, efficient mounting of the valves is by Clippard multi-valve manifolds.

Valve Identification
Valve numbers are silk-screened on each panel.

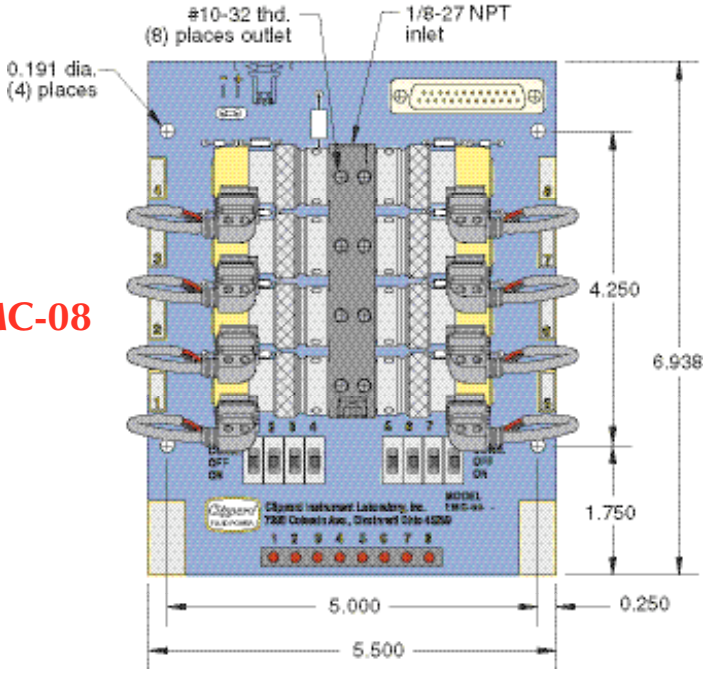
Mounting Holes
Four (EMC-08) and six (EMC-12) mounting holes 0.191" dia. are built into each board.

LED Bank
Illuminated LED signals that the valve is actuated.

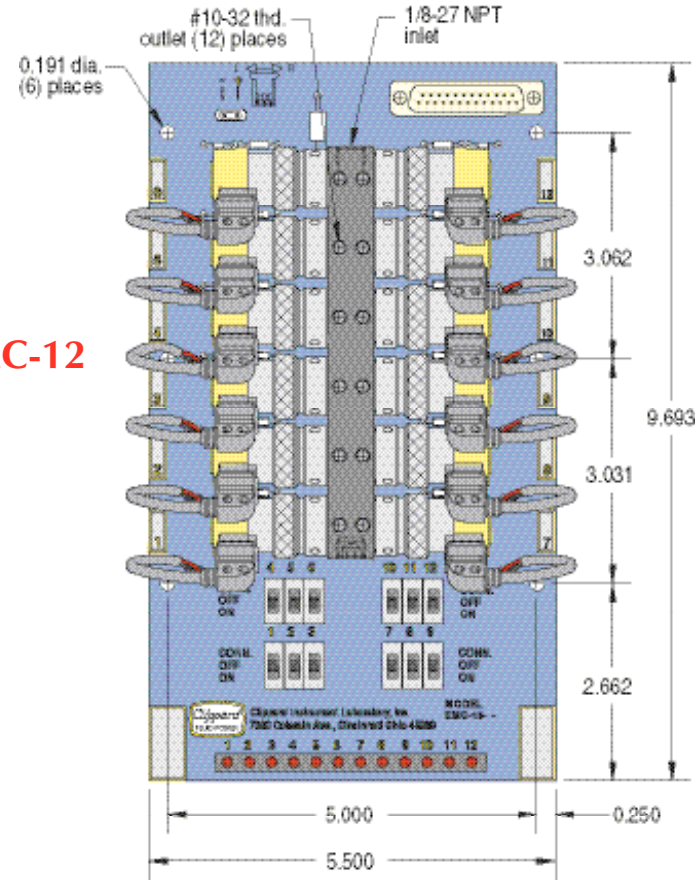
Printed Circuit Board
Basic board is a fiberglass laminated base with all components surface-mounted.

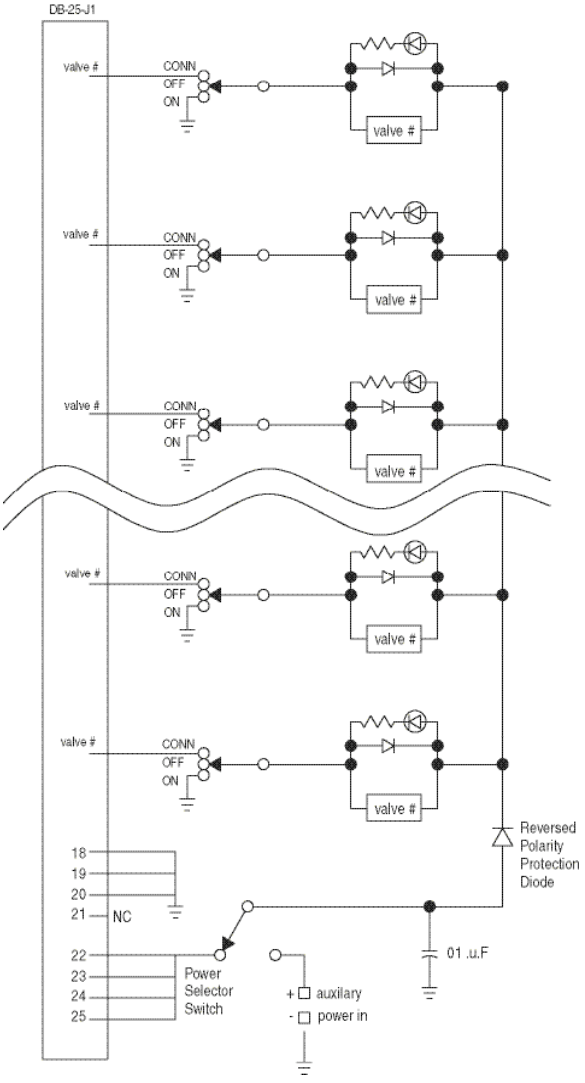
3-Position Detented Switches
Three position slide switch provides for:
ON - Power "ON"; valve is activated
OFF - Power "OFF"; valve not connected
CONN - Valve connected to 25-pin connector, and will be controlled through it.

EMC-08



EMC-12





Wiring Diagram

Note: Manifold mounted valves are normally closed. Use ETO models if exhaust must be ported. ETO models cannot be used "Normally Open" without special piping.