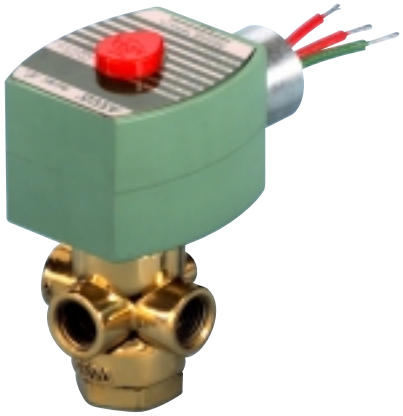
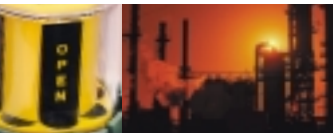
Fluid Control Products





ASCO® A Constant Flow Of Ideas

3 Way Inline Valves

T A B L E O F C O N T E N T S

Three way valves have three pipe connections and two orifices. When one orifice is open, the other is closed, and vice versa. They are commonly used to alternately apply pressure to and exhaust pressure from a valve actuator or a single-acting cylinder.

Three Types of Operations Apply:

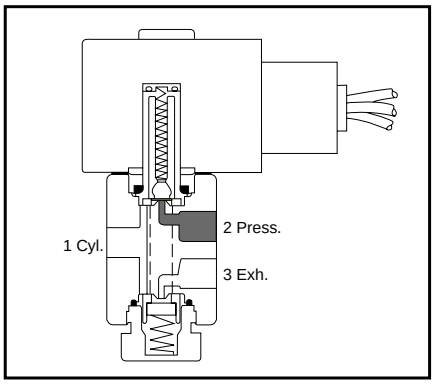
Normally Closed (NC)
When the valve is de-energized, the pressure port is closed and the exhaust port is connected to the cylinder port. When the valve is energized, the exhaust port is closed and the pressure port is connected to the cylinder port.

Normally Open (NO)
When the valve is de-energized, the pressure port is connected to the cylinder port and the exhaust port is closed. When the valve is energized, the pressure port is closed and the cylinder port is connected to the exhaust port.

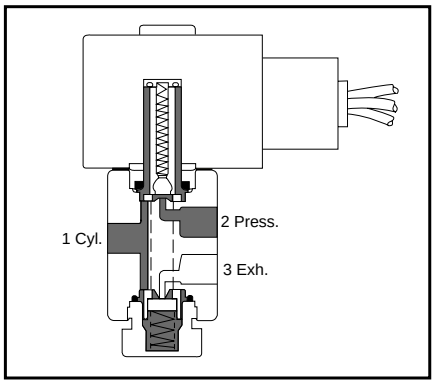
Universal (Univ)
This allows the valve to be connected in either the Normally Closed or Normally Open position … or to select one of two fluids or to divert flow from one port to another.

Standard and Optional Features:
Solenoid valves are supplied, as listed, with either Red-Hat II® molded epoxy solenoids or Red-Hat® solenoids with metal enclosures. Red-Hat II valves are identified by the letter "G" or "H" in their catalog numbers; e.g., 8320***G***1. Many optional features may be added to your valves; e.g., high- temperature Class H molded coils and manual operators.

3 Way/2 Position Valves Flow Diagrams



De-Energized



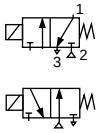
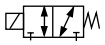
Energized

ASCO® Red-Hat®

Direct Acting

General Service Solenoid Valves

Brass or Stainless Steel Bodies
1/8" to 1/2" NPT

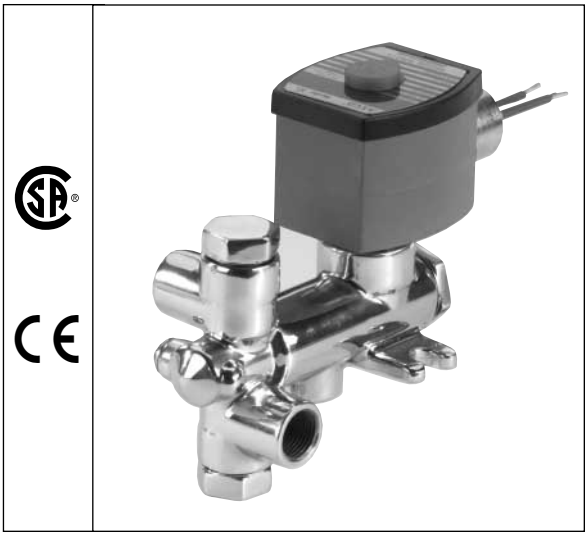
NC  U 

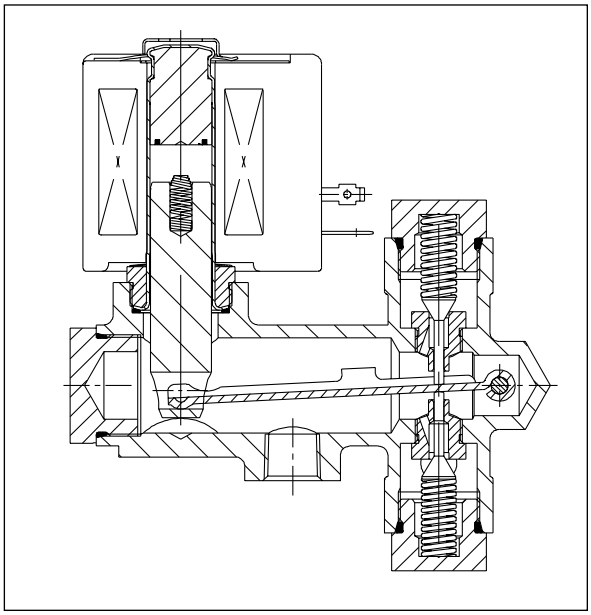
NO

3/2
SERIES
8300
8315

Features

- Designed for high flow and high pressure service.
- Direct acting, requires no minimum operating pressure.
- Choice of metal seating materials to handle aggressive fluids, or resilient seating for airtight shutoff.
- Ideal for power plants and similar applications.





Construction

Valve Parts in Contact with Fluids		
Body	Brass	304 Stainless Steel
Disc	303 Stainless Steel (Metal), PA or Brass (Resilient)	
Seats	NBR, Phosphor Bronze	303 Stainless Steel
Core Tube	305 Stainless Steel	
Core and Plugnut	430 F Stainless Steel	
Springs	302 Stainless Steel, 17-7PH or Iconel	
Shading Coil	Copper	Silver
Gaskets	NBR	PTFE

Electrical

Standard Coil and Class of Insulation	Watt Rating and Power Consumption				Spare Coil Part Number			
		AC			General Purpose		Explosionproof	
	DC Watts	Watts	VA Holding	VA Inrush	AC	DC	AC	DC
F	-	20.1	43	240	272610	-	272614	-
H	36.2	28	60	330	222345	222184	222345	222184
H	-	16.1	35	180	272810	-	272814	-
H	-	28.2	50	385	224195	-	224195	-

Standard Voltages: 24, 120, 240, 480 volts AC, 60 Hz (or 110, 220 volts AC, 50 Hz). 6, 12, 24,120, 240 volts DC. Must be specified when ordering.

Note: 125 and 250 volts DC are battery voltages applied in power plants. Special AC and DC constructions are available to pilot power plant control valves. Consult your local ASCO sales office for details.

Solenoid Enclosures

Standard: Red-Hat II - Watertight, Types 1, 2, 3, 3S, 4, and 4X; Red-Hat - Type 1.
Optional: Red-Hat II - Explosionproof and Watertight, Types 3, 3S, 4, 4X, 6, 6P, 7, and 9; Red-Hat - Explosionproof and Watertight, Types 3, 4, 4X, 7, and 9. See footnote on next page.
(To order, add prefix "EF" to catalog number.)

Nominal Ambient Temperature Ranges:

Class F Coils AC: 32˚F to 125˚F (0˚C to 52˚C)
Class H Coils AC: 32˚F to 140˚F (0˚C to 59˚C)
Class H Coils DC: 32˚F to 77˚F (0˚C to 25˚C)
(104˚F/40˚C occasionally)

Approvals:

CSA certified. Meets applicable CE directives.

Specifications (English units)

Pipe Size (ins.)	Orifice Size (ins.)	Cv Flow Factor	Operating Pressure Differential (psi) Air-Inert Gas, Water, Lt. Oil Max. AC NC/NO	Max. AC Univ.	Max. DC NC/NO	Max. DC Univ.	Max. Fluid Temp. ˚F AC	Max. Fluid Temp. ˚F DC	Brass Body ① Add Suffix "F" for NC, "G" for NO, "U" for Univ. Catalog Number	Brass Body Constr. Ref. No.	Stainless Steel Body ① Add Suffix "F" for NC, "G" for NO, "U" for Univ. Catalog Number	Stainless Steel Body Constr. Ref. No.	Watt Rating/ Class of Coil Insulation AC	Watt Rating/ Class of Coil Insulation DC
METAL SEATS AND DISCS														
1/8	1/8	.13	-	-	250	125	-	180	8300D55	1	-	-	-	36.2/H
1/8	1/8	.13	550	300	-	-	200	-	8300G55	1	-	-	20.1/F	-
1/8	3/16	.35	-	-	125	60	-	180	8300D3	1	-	-	-	36.2/H
1/8	3/16	.35	250	150	-	-	200	-	8300G3	1	-	-	20.1/F	-
1/4	3/16	.35	-	-	125	60	-	180	8300D58	1	-	-	-	36.2/H
1/4	3/16	.35	250	150	-	-	200	-	8300G58	1	-	-	20.1/F	-
1/4	1/4	.45	-	-	75	35	-	180	8300A81	1	-	-	-	36.2/H
1/4	1/4	.45	190	90	-	-	200	-	8300G81	1	-	-	20.1/F	-
1/4	1/4	.45	250	120	-	-	200	-	8300D61 ②	1	-	-	28/H	-
3/8	1/4	.45	-	-	50	25	-	180	-	-	8300B410	2	-	36.2/H
3/8	1/4	.45	150	75	-	-	200	-	-	-	8300G410	2	20.1/F	-
3/8	1/4	.45	-	-	75	35	-	180	8300A82	1	-	-	-	36.2/H
3/8	1/4	.45	190	90	-	-	200	-	8300G82	1	-	-	20.1/F	-
3/8	1/4	.45	250	120	-	-	200	-	8300D9 ②	1	-	-	28/H	-
3/8	1/4	.45	175	85	-	-	200	-	-	-	8300B411 ②	2	28/H	-
3/8	5/16	.75	-	-	40	20	-	180	8300D64	2	8300B412	2	-	36.2/H
3/8	5/16	.75	120	60	-	-	200	-	8300G64	2	8300G412	2	20.1/F	-
3/8	3/8	1.00	-	-	30	15	-	180	8300D72	2	8300B413	2	-	36.2/H
3/8	3/8	1.00	75	35	-	-	200	-	8300G72	2	8300G413	2	20.1/F	-
1/2	5/16	.75	-	-	40	20	-	180	8300D68	2	8300B403	3	-	36.2/H
1/2	5/16	.75	120	60	-	-	200	-	8300G68	2	8300G403	3	20.1/F	-
1/2	3/8	1.00	-	-	30	15	-	180	8300D76	2	8300B404	3	-	36.2/H
1/2	3/8	1.00	75	35	-	-	200	-	8300G76	2	8300G404	3	20.1/F	-
NBR SEATS AND BRASS DISCS														
1/4	3/16	.25	-	-	125	60	-	180	8300D58R	1	-	-	-	36.2/H
1/4	3/16	.25	250	150	-	-	180	-	8300G58R	1	-	-	20.1/F	-
1/4	1/4	.39	-	-	75	35	-	180	8300A81R	1	-	-	-	36.2/H
1/4	1/4	.39	150	75	-	-	180	-	8300G81R	1	-	-	20.1/F	-
3/8	1/4	.39	-	-	75	35	-	180	8300A82R	1	-	-	-	36.2/H
3/8	1/4	.39	150	75	-	-	180	-	8300G82R	1	-	-	20.1/F	-
3/8	5/16	.53	-	-	40	20	-	180	8300D64R	2	-	-	-	36.2/H
3/8	5/16	.53	120	60	-	-	180	-	8300G64R	2	-	-	20.1/F	-
1/2	5/16	.53	-	-	40	20	-	180	8300D68R	2	-	-	-	36.2/H
1/2	5/16	.53	120	60	-	-	180	-	8300G68R	2	-	-	20.1/F	-
PHOSPHOR BRONZE SEATS - STEAM SERVICE ONLY														
1/4	1/4	.45	100	50	-	-	344	-	8315G2	1	-	-	16.1/H	-
3/8	1/4	.45	100	50	-	-	344	-	8315G3	1	-	-	16.1/H	-
3/8	5/16	.75	100	50	-	-	344	-	831534	4	-	-	28.2/H	-
1/2	5/16	.75	100	50	-	-	344	-	831535	4	-	-	28.2/H	-

Notes: ① NC = Normally Closed: Exhaust pressure when de-energized. NO = Normally Open: Applies pressure when de-energized. Univ. = Universal: Pressure at any port.

② "EF" Prefix variations are suitable for enclosures Types 3, 4, 7 (C&D), and 9 (E) only and have a temperature range code T3A.

Specifications (Metric units)

Pipe Size (ins.)	Orifice Size (mm)	Kv Flow Factor (m3/h)	Operating Pressure Differential (bar) Air-Inert Gas, Water, Lt. Oil Max. AC NC/NO	Max. AC Univ.	Max. DC NC/NO	Max. DC Univ.	Max. Fluid Temp.°C AC	Max. Fluid Temp.°C DC	Brass Body ① Add Suffix "F" for NC, "G" for NO, "U" for Univ. Catalog Number	Brass Body Constr. Ref. No.	Stainless Steel Body Catalog Number	Stainless Steel Body Constr. Ref. No.	Watt Rating/ Class of Coil Insulation AC	Watt Rating/ Class of Coil Insulation DC
METAL SEATS AND DISCS														
1/8	3	.11	-	-	17	9	-	81	8300D55	1	-	-	-	36.2/H
1/8	3	.11	38	21	-	-	92	-	8300G55	1	-	-	20.1/F	-
1/8	5	.30	-	-	9	4	-	81	8300D3	1	-	-	-	36.2/H
1/8	5	.30	17	10	-	-	92	-	8300G3	1	-	-	20.1/F	-
1/4	5	.30	-	-	9	4	-	81	8300D58	1	-	-	-	36.2/H
1/4	5	.30	17	10	-	-	92	-	8300G58	1	-	-	20.1/F	-
1/4	6	.39	-	-	5	2	-	81	8300A81	1	-	-	-	36.2/H
1/4	6	.39	13	6	-	-	92	-	8300G81	1	-	-	20.1/F	-
1/4	6	.39	17	8	-	-	92	-	8300D61 ②	1	-	-	28/H	-
3/8	6	.39	-	-	3	2	-	81	-	-	8300B410	2	-	36.2/H
3/8	6	.39	10	5	-	-	92	-	-	-	8300G410	2	20.1/F	-
3/8	6	.39	-	-	5	2	-	81	8300A82	1	-	-	-	36.2/H
3/8	6	.39	13	6	-	-	92	-	8300G82	1	-	-	20.1/F	-
3/8	6	.39	17	8	-	-	92	-	8300D9 ②	1	-	-	28/H	-
3/8	6	.39	12	6	-	-	92	-	-	-	8300B411 ②	2	28/H	-
3/8	8	.64	-	-	3	1	-	81	8300D64	2	8300B412	2	-	36.2/H
3/8	8	.64	8	4	-	-	92	-	8300G64	2	8300G412	2	20.1/F	-
3/8	10	.86	-	-	2	1	-	81	8300D72	2	8300B413	2	-	36.2/H
3/8	10	.86	5	2	-	-	92	-	8300G72	2	8300G413	2	20.1/F	-
1/2	8	.64	-	-	3	1	-	81	8300D68	2	8300B403	3	-	36.2/H
1/2	8	.64	8	4	-	-	92	-	8300G68	2	8300G403	3	20.1/F	-
1/2	10	.86	-	-	2	1	-	81	8300D76	2	8300B404	3	-	36.2/H
1/2	10	.86	5	2	-	-	92	-	8300G76	2	8300G404	3	20.1/F	-
NBR SEATS AND BRASS DISCS														
1/4	5	.21	-	-	9	4	-	81	8300D58R	1	-	-	-	36.2/H
1/4	5	.21	17	10	-	-	81	-	8300G58R	1	-	-	20.1/F	-
1/4	6	.33	-	-	5	2	-	81	8300A81R	1	-	-	-	36.2/H
1/4	6	.33	10	5	-	-	81	-	8300G81R	1	-	-	20.1/F	-
3/8	6	.33	-	-	5	2	-	81	8300A82R	1	-	-	-	36.2/H
3/8	6	.33	10	5	-	-	81	-	8300G82R	1	-	-	20.1/F	-
3/8	8	.45	-	-	3	1	-	81	8300D64R	2	-	-	-	36.2/H
3/8	8	.45	8	4	-	-	81	-	8300G64R	2	-	-	20.1/F	-
1/2	8	.45	-	-	3	1	-	81	8300D68R	2	-	-	-	36.2/H
1/2	8	.45	8	4	-	-	81	-	8300G68R	2	-	-	20.1/F	-
PHOSPHOR BRONZE SEATS - STEAM SERVICE ONLY														
1/4	.5	.39	7	3	-	-	173	-	8315G2	1	-	-	16.1/H	-
3/8	.5	.39	7	3	-	-	173	-	8315G3	1	-	-	16.1/H	-
3/8	.6	.64	7	3	-	-	173	-	831534	4	-	-	28.2/H	-
1/2	.6	.64	7	3	-	-	173	-	831535	4	-	-	28.2/H	-

Notes: ① NC = Normally Closed: Exhaust pressure when de-energized. NO = Normally Open: Applies pressure when de-energized. Univ. = Universal: Pressure at any port.

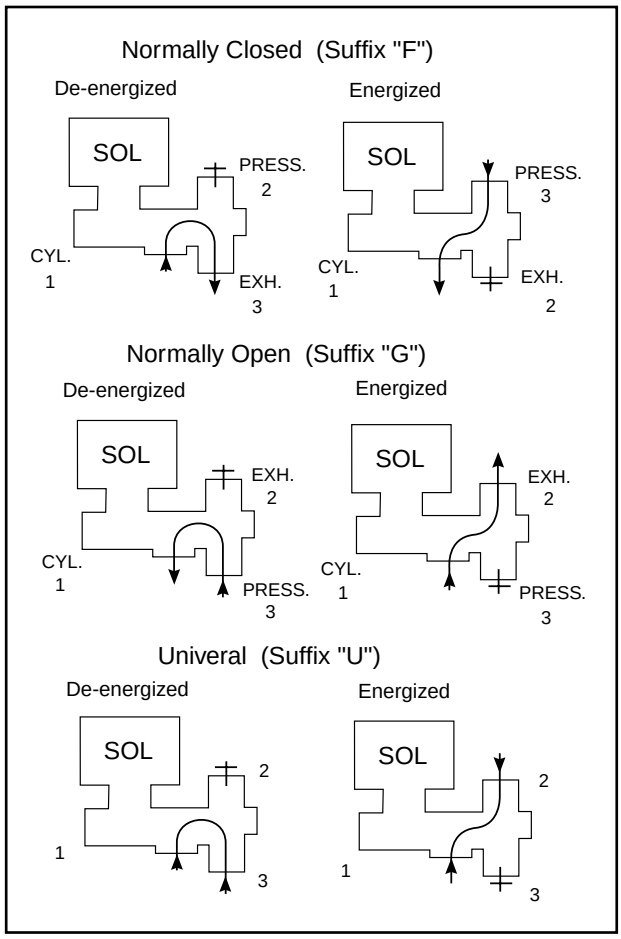
② "EF" Prefix variations are suitable for enclosures Types 3, 4, 7 (C&D), and 9 (E) only and have a temperature range code T3A.

Dimensions: inches (mm)

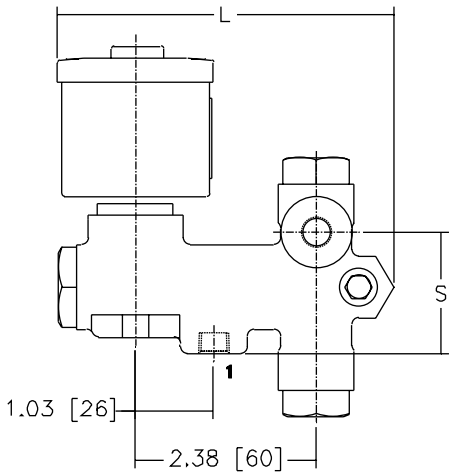
Constr. Ref. No.		H	K	L	P	R	S	W
1	ins.	4.89	1.44	4.44	2.46	1.34	1.60	3.30
	mm	124	37	113	62	34	40	84
2	ins.	5.91	1.88	4.44	2.37	1.66	2.00	3.30
	mm	150	48	113	60	42	51	84
3	ins.	5.90	1.88	4.62	2.37	1.66	2.00	3.55
	mm	150	48	117	60	42	51	90
4	ins.	4.89	1.44	4.44	2.46	1.34	1.60	3.30
	mm	124	37	113	02	34	40	84

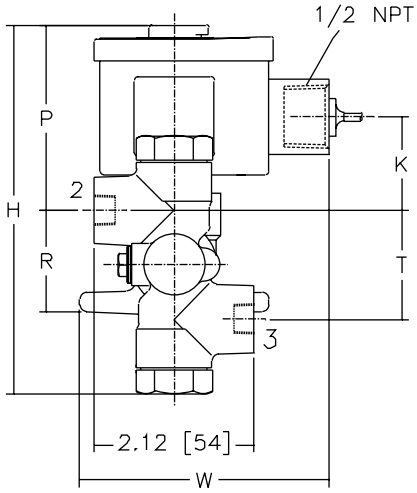
IMPORTANT: Valves must be mounted vertical and upright.

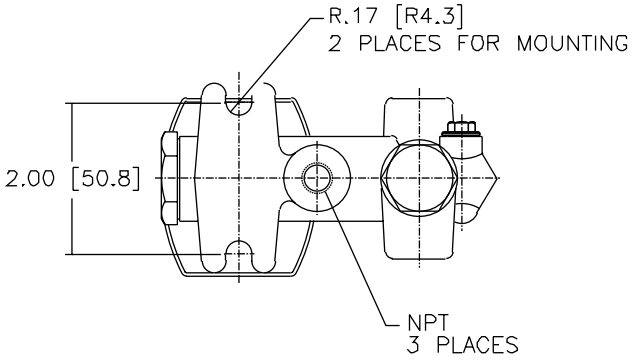
Flow Diagrams



Constr. Refs. 1, 2, 3, 4

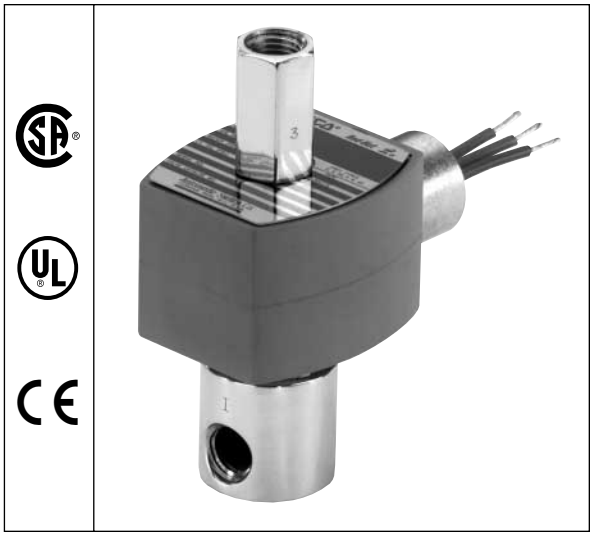






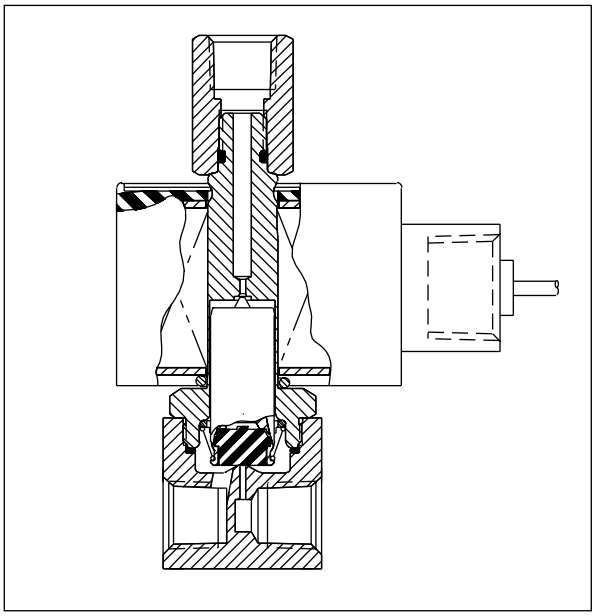
Features

- No minimum operating pressure required.
- The original 3 way valve design.
- High-speed general service.
- Simplest valve for basic 3 way piloting operation, only a spring and two moving parts.
- Moderate flow pilots, smaller control valves and actuators.
- Can also be used for low-volume fluid diversion.



Construction

Valve Parts in Contact with Fluids		
Body	Brass	303 Stainless Steel
Seals and Disc	NBR, PA	
Core Tube	305 Stainless Steel	
Core and Plugnut	430F Stainless Steel	
Core Springs	302 Stainless Steel and 17-7PH Stainless Steel	
Shading Coil	Copper	Silver
Core Guide	CA (All AC valves and 1/8" orifice Normally Open DC valves)	



Electrical

Standard Coil and Class of Insulation	Watt Rating and Power Consumption				Spare Coil Part Number			
		AC			General Purpose		Explosionproof	
	DC Watts	Watts	VA Holding	VA Inrush	AC	DC	AC	DC
F	11.6	10.1	25	50	238610	238710	238614	238714

Standard Voltages: 24, 120, 240, 480 volts AC, 60 Hz (or 110, 220 volts AC, 50 Hz). 6, 12, 24, 120, 240 volts DC. Must be specified when ordering. Other voltages are available when required.

Nominal Ambient Temperature Ranges:

AC: 32˚F to 125˚F (0˚C to 52˚C)
AC: 32˚F to 104˚F (0˚C to 40˚C)

Solenoid Enclosures

Standard: Watertight, Types 1, 2, 3, 3S, 4, and 4X.
Optional: Explosionproof and Watertight, Types 3, 3S, 4, 4X, 6, 6P, 7, and 9. (To order, add prefix "EF" to catalog number.)

Approvals:

CSA certified. UL listed General Purpose Valves. Meets applicable CE directives.

Specifications (English units)

Pipe Size (ins.)	Orifice Size (ins.)	Cv Flow Factor	Operating Pressure Differential (psi) Max. AC: Air-Inert Gas	Max. AC: Water	Max. AC: Lt. Oil @ 45 SSU	Max. DC: Air-Inert Gas	Max. DC: Water	Max. DC: Lt. Oil @ 45 SSU	Max. Fluid Temp. °F: AC	Max. Fluid Temp. °F: DC	Brass Body: Catalog Number	Brass Body: Constr. Ref. No.	Stainless Steel Body: Catalog Number	Stainless Steel Body: Constr. Ref. No.	Watt Rating/ Class of Coil Insulation: AC	Watt Rating/ Class of Coil Insulation: DC
UNIVERSAL OPERATION (Pressure at any port)																
1/8	3/64	.04	160	160	160	70	65	65	200	104	8314G41	1	-	-	10.1/F	11.6/F
1/4	3/64	.04	160	160	160	70	65	65	200	104	8314G6	2	-	-	10.1/F	11.6/F
1/4	3/32	.15	80	40	40	35	35	15	200	104	8314G7	2	8314G120	4	10.1/F	11.6/F
1/4	1/8	.25	45	25	25	20	15	15	200	104	8314G8	2	-	-	10.1/F	11.6/F
NORMALLY CLOSED (Closed when de-energized)																
1/8	3/64	.04	230	230	230	120	140	135	200	104	8314G31	1	-	-	10.1/F	11.6/F
1/4	3/64	.04	230	230	230	120	140	135	200	104	8314G34	2	-	-	10.1/F	11.6/F
1/4	3/32	.15	150	100	100	60	70	30	200	104	8314G35	2	8314G121	4	10.1/F	11.6/F
1/4	1/8	.25	75	60	60	30	40	25	200	104	8314G36	2	-	-	10.1/F	11.6/F
NORMALLY CLOSED (Closed when de-energized), Air Only - Exhausts to Atmosphere																
1/4	3/64	.04	230	-	-	120	-	-	200	104	8314G22	3	-	-	10.1/F	11.6/F
1/4	3/32	.15	150	-	-	60	-	-	200	104	8314G23	3	-	-	10.1/F	11.6/F
NORMALLY OPEN (Open when de-energized)																
1/8	3/64	.04	300	300	300	200	200	120	200	104	8314G49	1	-	-	10.1/F	11.6/F
1/4	3/32	.15	175	175	175	70	90	45	200	104	8314G53	2	8314G122	4	10.1/F	11.6/F
1/4	1/8	.25	90	90	90	40	40	25	200	104	8314G54	2	-	-	10.1/F	11.6/F

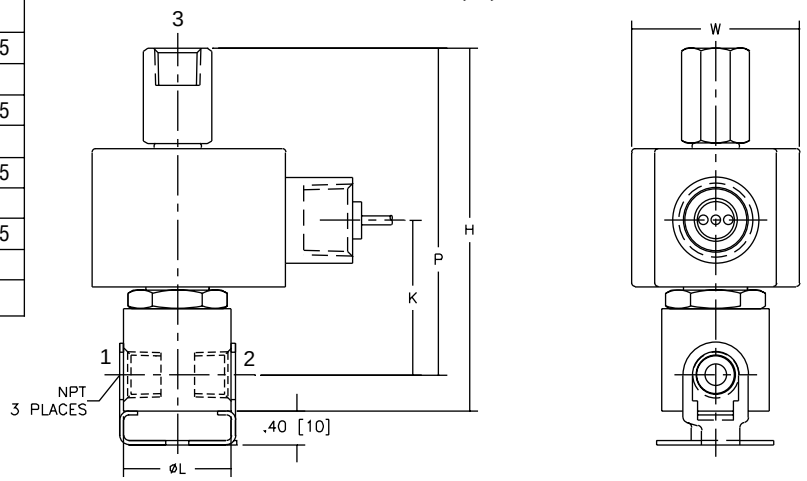
Specifications (Metric units)

Pipe Size (ins.)	Orifice Size (mm)	Kv Flow Factor (m3/h)	Operating Pressure Differential (bar) Max. AC: Air-Inert Gas	Max. AC: Water	Max. AC: Lt. Oil @ 45 SSU	Max. DC: Air-Inert Gas	Max. DC: Water	Max. DC: Lt. Oil @ 45 SSU	Max. Fluid Temp. °C: AC	Max. Fluid Temp. °C: DC	Brass Body: Catalog Number	Brass Body: Constr. Ref. No.	Stainless Steel Body: Catalog Number	Stainless Steel Body: Constr. Ref. No.	Watt Rating/ Class of Coil Insulation: AC	Watt Rating/ Class of Coil Insulation: DC
UNIVERSAL OPERATION (Pressure at any port)																
1/8	1	.03	11	11	11	5	4	4	92	40	8314G41	1	-	-	10.1/F	11.6/F
1/4	1	.03	11	11	11	5	4	4	92	40	8314G6	2	-	-	10.1/F	11.6/F
1/4	2	.13	6	3	3	2	2	1	92	40	8314G7	2	8314G120	4	10.1/F	11.6/F
1/4	3	.21	3	2	2	1	1	1	92	40	8314G8	2	-	-	10.1/F	11.6/F
NORMALLY CLOSED (Closed when de-energized)																
	1	.03	16	16	16	8	10	9	92	40	8314G31	1	-	-	10.1/F	11.6/F
1/4	1	.03	16	16	16	8	10	9	92	40	8314G34	2	-	-	10.1/F	11.6/F
1/4	2	.13	10	7	7	4	5	2	92	40	8314G35	2	8314G121	4	10.1/F	11.6/F
1/4	3	.21	5	4	4	2	3	2	92	40	8314G36	2	-	-	10.1/F	11.6/F
NORMALLY CLOSED (Closed when de-energized), Air Only - Exhausts to Atmosphere																
1/4	1	.03	16	-	-	8	-	-	92	40	8314G22	3	-	-	10.1/F	11.6/F
1/4	2	.13	10	-	-	4	-	-	92	40	8314G23	3	-	-	10.1/F	11.6/F
NORMALLY OPEN (Open when de-energized)																
1/8	1	.03	21	21	21	14	14	8	92	40	8314G49	1	-	-	10.1/F	11.6/F
1/4	2	.13	12	12	12	5	6	3	92	40	8314G53	2	8314G122	4	10.1/F	11.6/F
1/4	3	.21	6	6	6	3	3	2	92	40	8314G54	2	-	-	10.1/F	11.6/F

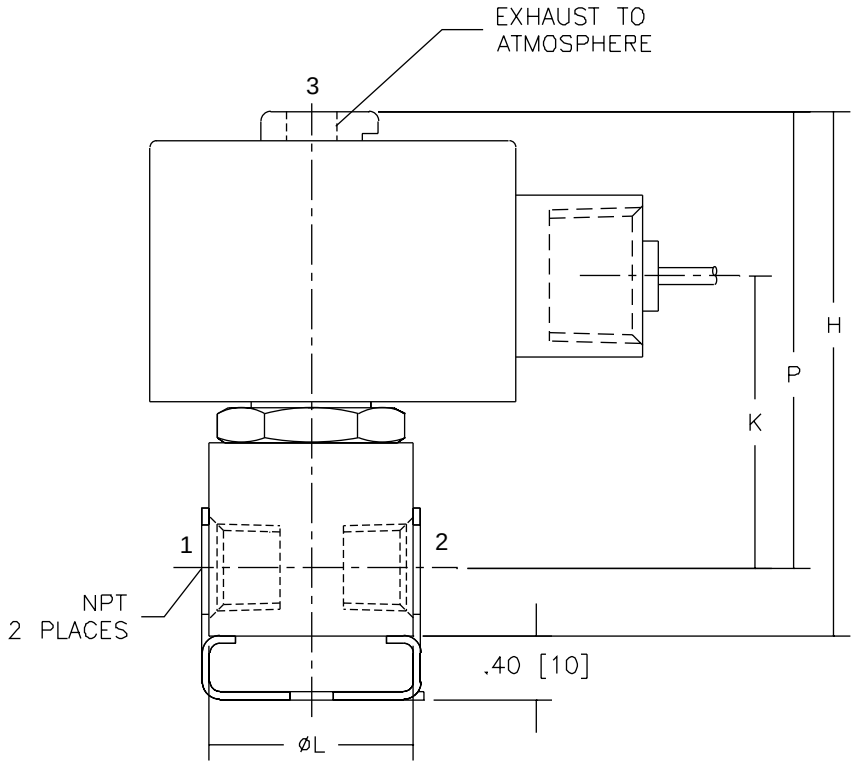
Dimensions: inches (mm)

Constr. Ref. No.		H	K	L	P	W
1	ins.	3.87	1.67	Ø1.19	3.51	1.95
	mm	98	42	Ø30	89	50
2	ins.	4.21	1.80	Ø1.25	3.79	1.95
	mm	107	46	Ø32	96	50
3	ins.	3.34	1.80	Ø1.25	2.92	1.95
	mm	85	46	Ø32	74	50
4	ins.	4.14	1.78	Ø1.63	3.77	1.95
	mm	105	45	Ø41	96	50
IMPORTANT: Valves can be mounted in any position.						

Constr. Ref. 1, 2, 4



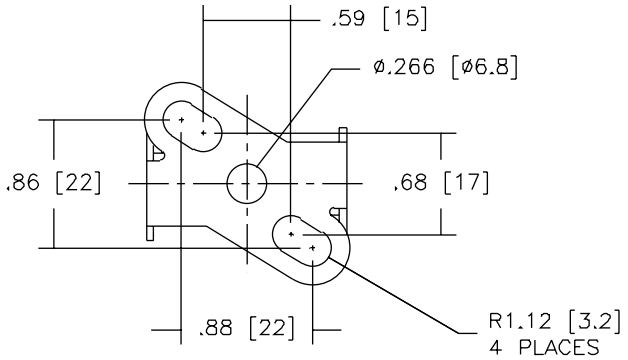
Constr. Ref. 3



Dimensions: inches (mm)

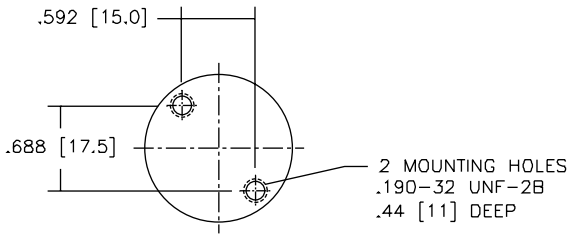
Constr. Ref. 2, 3, 4

Mounting Bracket Standard
1/4 NPT Size only

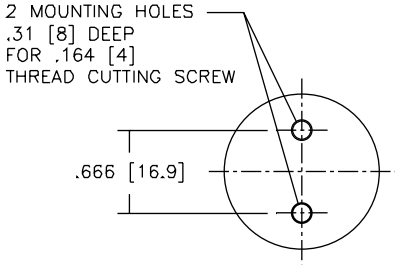


Mounting Holes in Valve Body

Constr. Ref. 1

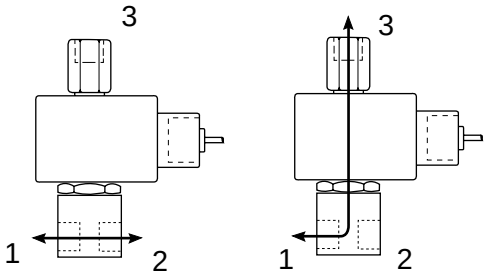


Constr. Ref. 2, 3

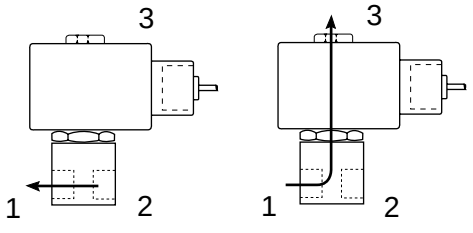


FLOW DIAGRAMS

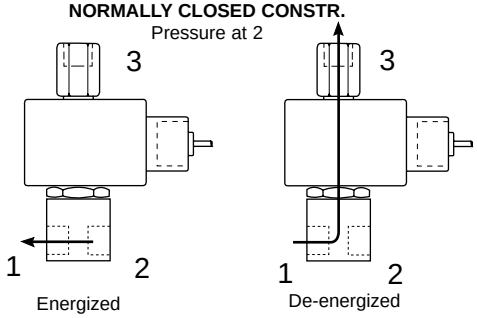
UNIVERSAL CONSTR.
Pressure at any Port



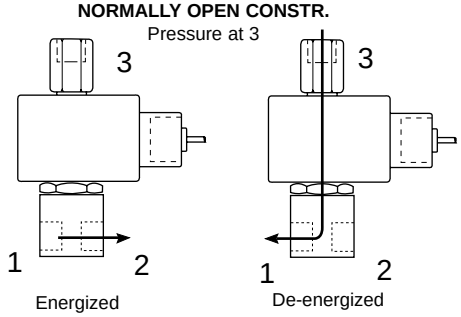
NORMALLY CLOSED CONSTR.
Air Only
Valve Vents to Atmosphere
Pressure at 2



NORMALLY CLOSED CONSTR.
Pressure at 2

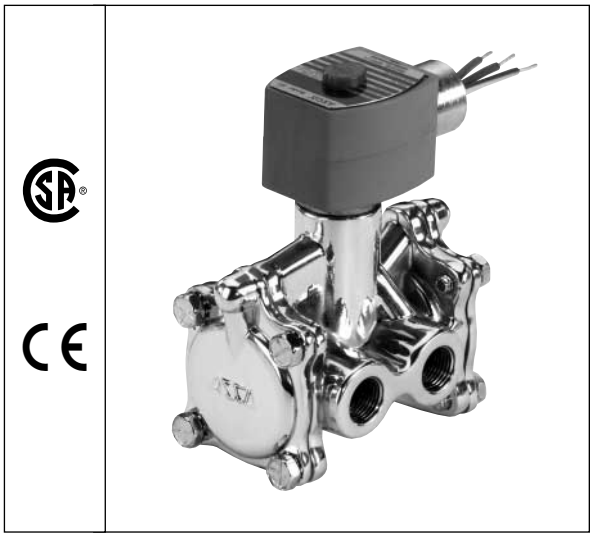


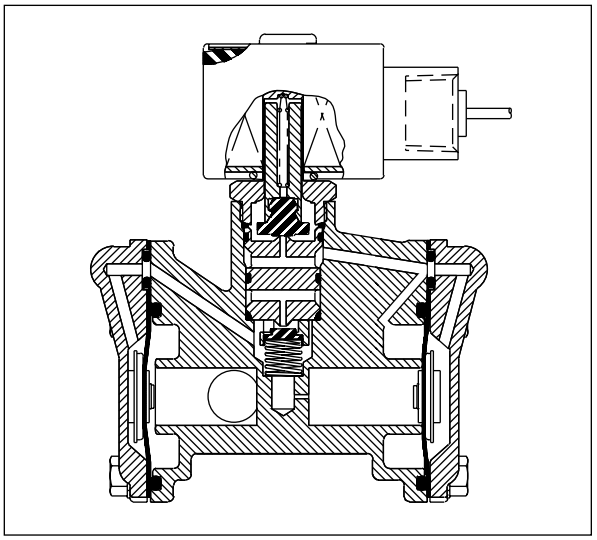
NORMALLY OPEN CONSTR.
Pressure at 3



Features

- Diaphragm poppet valves suitable for controlling air-inert gas and liquids.
- Internal piloting controls large orifices to provide high flows.
- Can be used to pilot large actuators to provide quick closing of large control valves.
- Resilient seating for tight shutoff.
- Mountable in any position.





Construction

Valve Parts in Contact with Fluids	
Body	Brass
Seals and Disc	NBR
Diaphragm Assembly	NBR
Core Tube	305 Stainless Steel
Core and Plugnut	430F Stainless Steel
Core Springs	302 Stainless Steel and 17-7PH Stainless Steel
Shading Coil	Copper
Pilot Seat Cartridge and Disc-Holder	CA

Electrical

Standard Coil and Class of Insulation	Watt Rating and Power Consumption				Spare Coil Part No.			
					General Purpose		Explosionproof	
	DC Watts	AC Watts	VA Holding	VA Inrush	AC	DC	AC	DC
F	10.6	6.1	16	30	238210	238310	238214	238314
F	22.6	17.1	40	70	238610	238710	238614	238714

Standard Voltages: 24, 120, 240, 480 volts AC, 60 Hz (or 110, 220 volts AC, 50 Hz). 6, 12, 24, 120, 240 volts DC. Must be specified when ordering. Other voltages available when required.

Solenoid Enclosures

Standard: Watertight, Types 1, 2, 3, 3S, 4, and 4X.

Optional: Explosionproof and Watertight, Types 3, 3S, 4, 4X, 6, 6P, 7, and 9. (To order, add prefix "EF" to catalog number.)

Nominal Ambient Temperature Ranges:

AC: 32˚F to 125˚F (0˚C to 52˚C)
AC: 32˚F to 104˚F (0˚C to 40˚C)

Approvals:

CSA certified. Meets applicable CE directives.

Important:

A minimum operating pressure differential must be maintained between the pressure and exhaust ports. Supply and exhaust piping must be full area, unrestricted. ASCO flow controls and other similar components must be installed in the cylinder lines only.

Specifications (English units)

Pipe Size (ins.)	Orifice Size (ins.)	Cv Flow Factor	Operating Pressure Differential (psi)					Max. Fluid Temp. ˚F		Brass Body	Constr. Ref. No	Watt Rating/ Class of Coil Insulation ②	
			Min. ①	Max. AC		Max. DC							
				Air-Inert Gas	Water	Air-Inert Gas	Water	AC	DC	Catalog Number		AC	DC
NORMALLY CLOSED (Closed when de-energized)													
3/8	5/8	3	10	150	125	125	125	180	120	8316G54	1	6.1/F	10.6/F
3/8	5/8	2.5	10	250	250	250	250	180	120	8316G14	2	17.1/F	22.6/F
1/2	5/8	3.2	10	150	125	125	125	180	120	8316G64	1	6.1/F	10.6/F
1/2	5/8	3.2	10	250	250	250	250	180	120	8316G24	2	17.1/F	22.6/F
3/4	11/16	4.8	10	150	125	125	125	180	120	8316G74	3	6.1/F	10.6/F
3/4	11/16	4.8	10	250	250	250	250	180	120	8316G44	4	17.1/F	22.6/F
1	1	12.5	10	150	125	125	125	180	120	8316G34	5	6.1/F	10.6/F
NORMALLY OPEN (Open when de-energized)													
3/8	5/8	2.5	10	150	125	125	125	180	120	8316G56	1	6.1/F	10.6/F
3/8	5/8	2.5	10	250	250	250	250	180	120	8316G16	2	17.1/F	22.6/F
1/2	5/8	3.2	10	150	125	125	125	180	120	8316G66	1	6.1/F	10.6/F
1/2	5/8	3.2	10	250	250	250	250	180	120	8316G26	2	17.1/F	22.6/F
3/4	11/16	4.8	10	150	125	125	125	180	120	8316G76	3	6.1/F	10.6/F
3/4	11/16	4.8	10	250	250	250	250	180	120	8316G46	4	17.1/F	22.6/F
1	1	12.5	10	150	125	125	125	180	120	8316G36	5	6.1/F	10.6/F

Notes: ① 10 psi Minimum Operating Pressure Differential required. Valve vents to "zero" psi.
② On 50 hertz service, the watt rating for 6.1/F solenoid is 8.1 watts.

Specifications (Metric units)

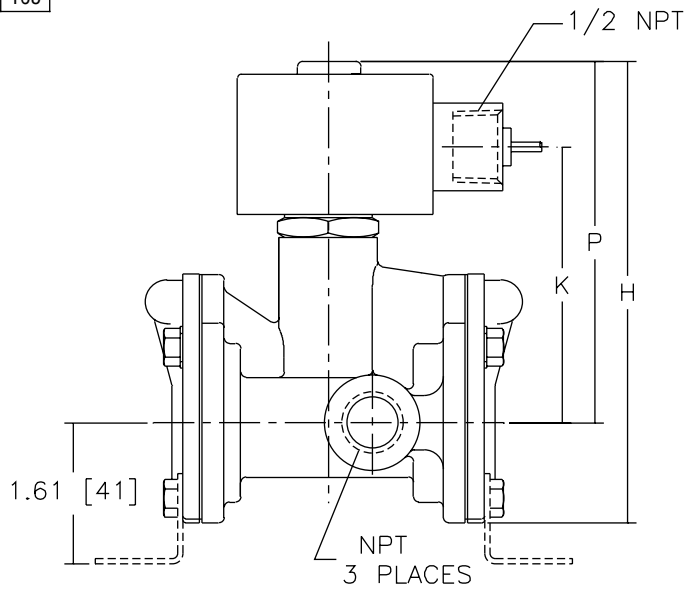
Pipe Size (ins.)	Orifice Size (mm)	Kv Flow Factor (m3/h)	Operating Pressure Differential (bar)					Max. Fluid Temp.˚C		Brass Body	Constr. Ref. No.	Watt Rating/ Class of Coil Insulation ②	
			Min. ①	Max. AC		Max. DC							
				Air-Inert Gas	Water	Air-Inert Gas	Water	AC	DC	Catalog Number		AC	DC
NORMALLY CLOSED (Closed when de-energized)													
3/8	16	2.57	0.7	10	9	9	9	81	48	8316G54	1	6.1/F	10.6/F
3/8	16	2.14	0.7	17	17	17	17	81	48	8316G14	2	17.1/F	22.6/F
1/2	16	2.74	0.7	10	9	9	9	81	48	8316G64	1	6.1/F	10.6/F
1/2	16	2.74	0.7	17	17	17	17	81	48	8316G24	2	17.1/F	22.6/F
3/4	17	4.11	0.7	10	9	9	9	81	48	8316G74	3	6.1/F	10.6/F
3/4	17	4.11	0.7	17	17	17	17	81	48	8316G44	4	17.1/F	22.6/F
1	25	10.71	0.7	10	9	9	9	81	48	8316G34	5	6.1/F	10.6/F
NORMALLY OPEN (Open when de-energized)													
3/8	16	2.14	0.7	10	9	9	9	81	48	8316G56	1	6.1/F	10.6/F
3/8	16	2.14	0.7	17	17	17	17	81	48	8316G16	2	17.1/F	22.6/F
1/2	16	2.74	0.7	10	9	9	9	81	48	8316G66	1	6.1/F	10.6/F
1/2	16	2.74	0.7	17	17	17	17	81	48	8316G26	2	17.1/F	22.6/F
3/4	17	4.11	0.7	10	9	9	9	81	48	8316G76	3	6.1/F	10.6/F
3/4	17	4.11	0.7	17	17	17	17	81	48	8316G46	4	17.1/F	22.6/F
1	25	10.71	0.7	10	9	9	9	81	48	8316G36	5	6.1/F	10.6/F

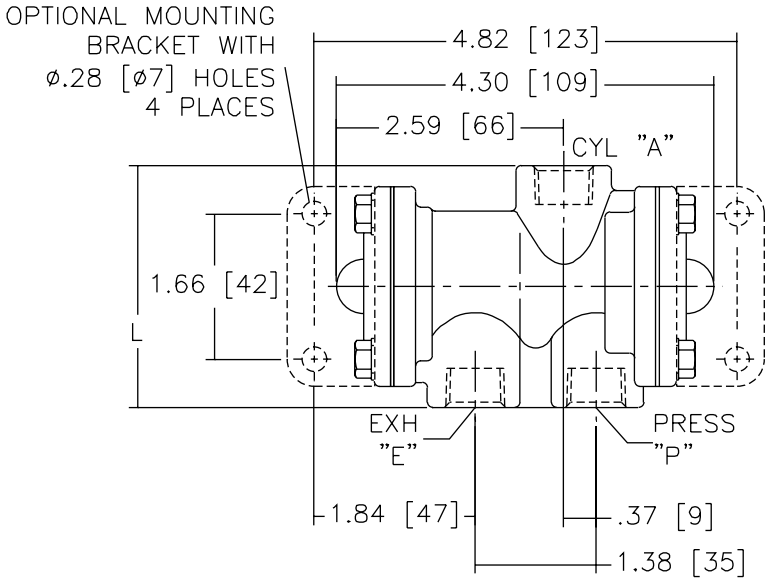
Notes: ① 1 bar Minimum Operating Pressure Differential required. Valve vents to "zero" bar.
② On 50 hertz service, the watt rating for 6.1/F solenoid is 8.1 watts.

Dimensions: inches (mm)

Constr. Ref. No.		H	K	L	P
1	ins.	5.08	3.08	2.76	3.94
	mm	129	78	70	100
2	ins.	5.26	3.15	2.76	4.12
	mm	134	80	70	105

Constr. Refs. 1,2

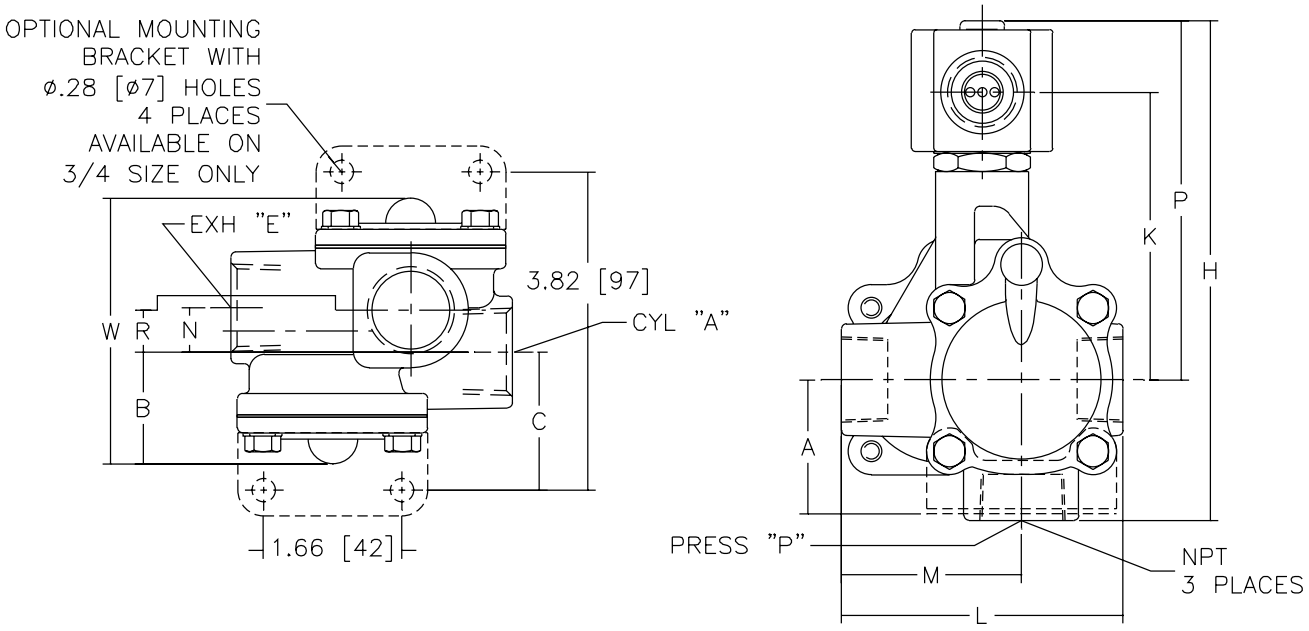




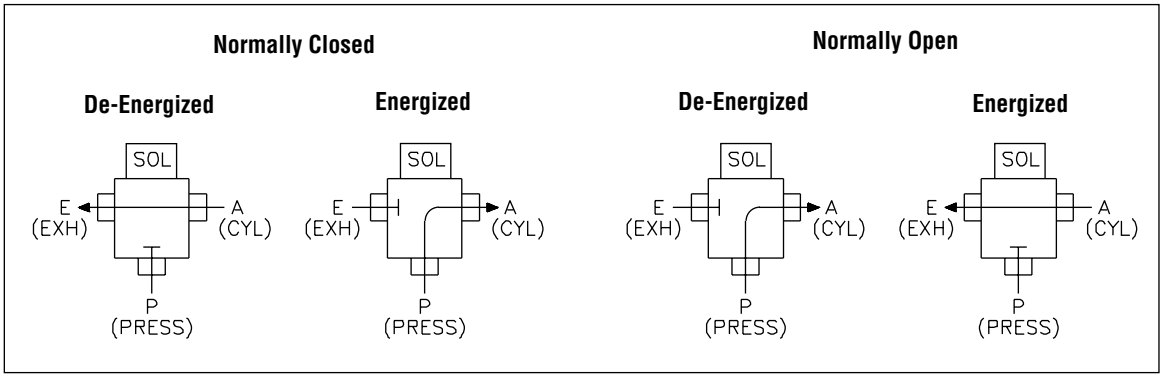
Dimensions: inches (mm)

Constr. Ref. No.		A	B	C	H	K	L	M	N	P	R	W
3	ins.	1.61	1.41	1.66	6.01	3.46	3.38	2.16	.53	4.32	.50	3.31
	mm	41	36	42	153	88	86	55	13	110	13	84
4	ins.	1.61	1.41	1.66	6.19	3.53	3.38	2.16	.53	4.50	.50	3.31
	mm	41	36	42	157	90	86	55	13	114	13	84
5	ins.	X	1.80	X	6.63	3.71	4.44	2.81	.88	4.57	1.74	5.32
	mm	X	46	X	168	94	113	71	22	116	44	135

Constr. Refs. 3, 4, 5



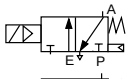
FLOW DIAGRAMS

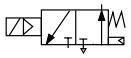


Air Piloted • Spring Return • Shutdown System

Zero Minimum Solenoid Valves

Brass or Stainless Steel Bodies
Air and Inert Gas • 1/4" to 1/2" NPT

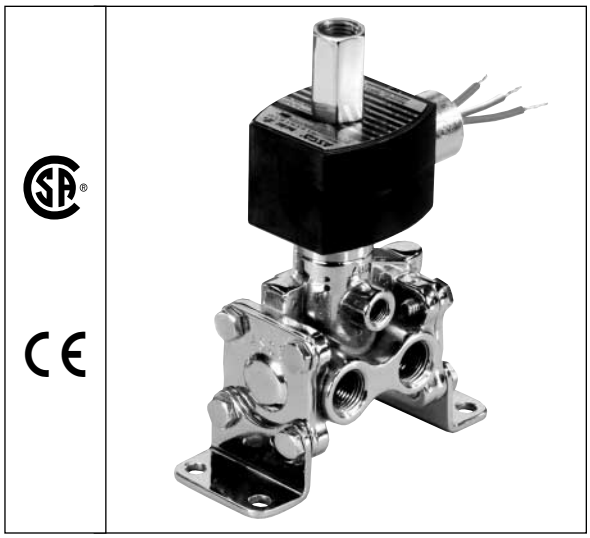
NC 

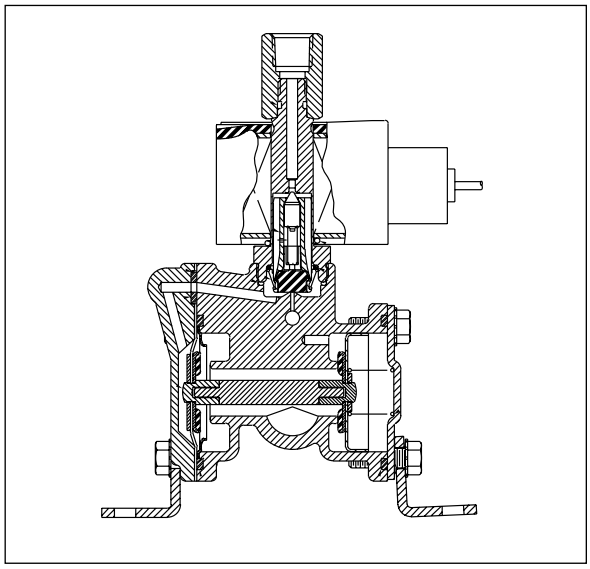
NO 

3/2 SERIES 8316

Features

- Brass body construction for general atmospheres; Stainless Steel for corrosive atmospheres.
- Can be internally piloted, or externally piloted to convert valve to zero minimum operation by flipping a gasket.
- When externally piloted, loss of electrical power or auxiliary air exhausts air from the actuator and shifts process valve to its original position.
- When internally piloted, loss of electric power returns the valve to its original position.
- Also available with Low Power or Intrinsically Safe solenoids.





Construction

Valve Parts in Contact with Fluids		
Body	Brass	316 Stainless Steel
End Plate	304 Stainless Steel	316 Stainless Steel
Seals and Discs	FKM	
Core Tube	305 Stainless Steel	
Core Guide	CA	
Shading Coil	Copper	Silver

Electrical

Standard Coil and Class of Insulation	Watt Rating and Power Consumption				Spare Coil Part No.					
	DC Watts	AC			General Purpose		Explosionproof (EF)		Explosionproof (EV)	
		Watts	VA Holding	VA Inrush	AC	DC	AC	DC	AC	DC
F	11.6	10.1	25	50	238610	238710	238614	238714	274614	274714

Standard Voltages: 24, 120, 240, 480 volts AC, 60 Hz (or 110, 220 volts, AC, 50 Hz). 6, 12, 24, 120, 240 volts DC. Must be specified when ordering. Other voltages are available when required.

Solenoid Enclosures

Brass Body Valves:

Standard: Watertight, Types 1, 2, 3, 3S, 4, and 4X.
Optional: Explosionproof and Watertight, Types 3, 3S, 4, 4X, 6, 6P, 7, and 9. (Add prefix "EF" to catalog number.)

Stainless Steel Valves:

Standard: Explosionproof and Watertight, Types 3, 3S, 4, 4X, 6, 6P, 7, and 9.

Nominal Ambient Temperature Ranges:

Standard Construction: AC: -4˚F to 125˚F (-20˚C to 52˚C)
DC: -4˚F to 104˚F (-20˚C to 40˚C)
-40˚F on certain models

Approvals:

Valves with prefix "EF" or "EV"; UL approved and CSA certified solenoid. Meets applicable CE directives.

Installation:

All valves may be mounted in any position. 316 Stainless Steel mounting brackets available from ASCO.
Add suffix "MB".

Specifications (English units)

Pipe Size (ins.)	Orifice Size (ins.)	Cv Flow Factor	Min.	Max. Air Press. (psi) AC	Max. Air Press. (psi) DC	Catalog Number Brass	Catalog Number Stainless Steel	Constr. Ref. No.	Max. Fluid Temp.˚F AC	Max. Fluid Temp.˚F DC	Watt Rating/ Class of Coil Insulation AC	Watt Rating/ Class of Coil Insulation DC
NORMALLY CLOSED (Closed when de-energized) ①												
1/4	5/16	1.5	②	150	120	8316G1	EV8316G81V	1	180	120	10.1/F	11.6/F
3/8	5/16	1.8	②	150	120	8316G2	EV8316G82V	1	180	120	10.1/F	11.6/F
3/8	5/8	4	②	150	120	8316G3	-	3	180	120	10.1/F	11.6/F
1/2	5/8	4	②	150	120	8316G4	EV8316G84V	3	180	120	10.1/F	11.6/F

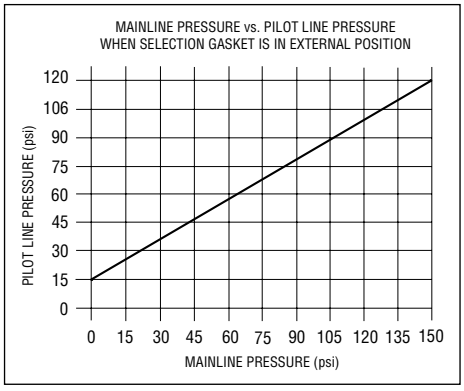
Notes: ① Consult factory for Normally Open and other forms of flow.
② Zero minimum when valve selection gasket is in external position and proper auxiliary air pressure is applied. See graph below for pilot line pressure vs. mainline pressure. Minimum 15 psi (1 bar) operating pressure differential when selection gasket is in the internal position.

IMPORTANT: Internal mode Minimum Operating Pressure Differential must be maintained between the pressure and exhaust ports. Supply and exhaust piping must be full area and unrestricted. ASCO flow controls and similar components must be installed in the cylinder lines only.

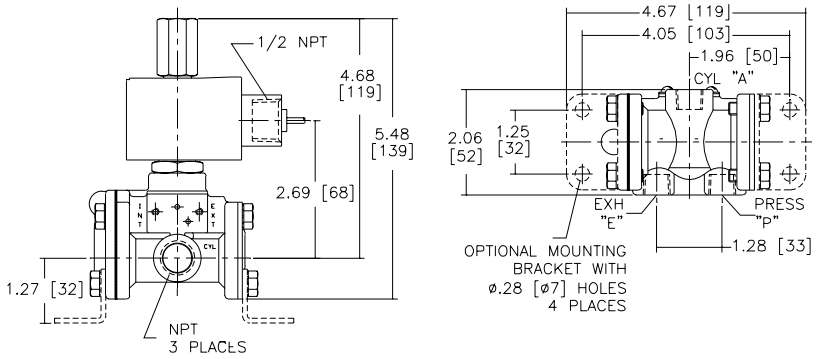
Specifications (Metric units)

Pipe Size (ins.)	Orifice Size (mm)	Kv Flow Factor (m3/h)	Min.	Max. Air Press. (bar) AC	Max. Air Press. (bar) DC	Catalog Number Brass	Catalog Number Stainless Steel	Constr. Ref. No.	Max. Fluid Temp.˚C AC	Max. Fluid Temp.˚C DC	Watt Rating/ Class of Coil Insulation AC	Watt Rating/ Class of Coil Insulation DC
NORMALLY CLOSED (Closed when de-energized)*												
1/4	8	1.29	②	10	8	8316G1	EV8316G81V	1	81.4	48.4	10.1/F	11.6/F
3/8	8	1.54	②	10	8	8316G2	EV8316G82V	1	81.4	48.4	10.1/F	11.6/F
3/8	16	3.43	②	10	8	8316G3	-	3	81.4	48.4	10.1/F	11.6/F
1/2	16	3.43	②	10	8	8316G4	EV8316G84V	3	81.4	48.4	10.1/F	11.6/F

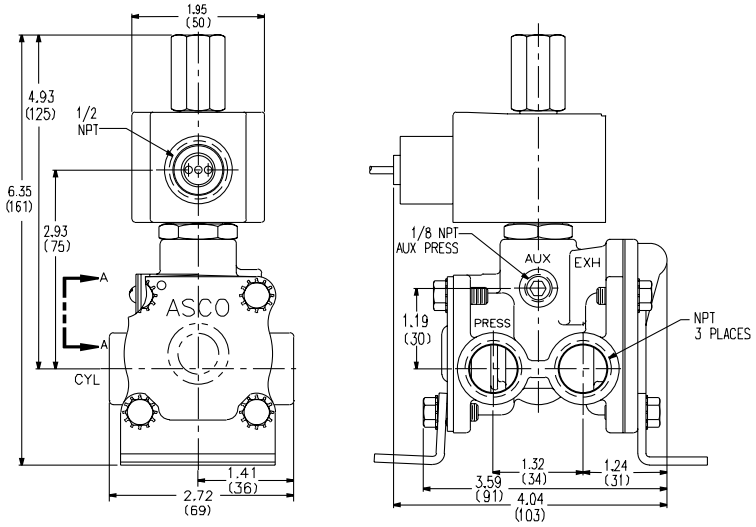
Dimensions: inches (mm)



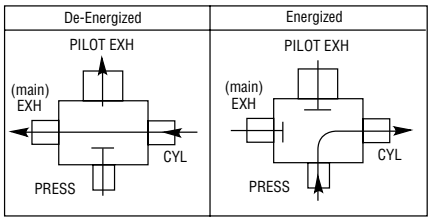
Constr. Refs. 1



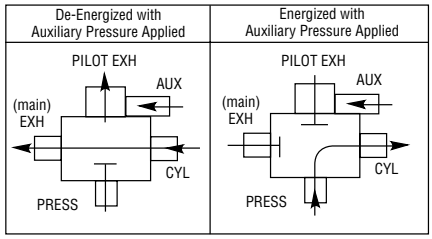
Constr. Refs. 3



INTERNAL PILOTING MODE FLOW DIAGRAMS

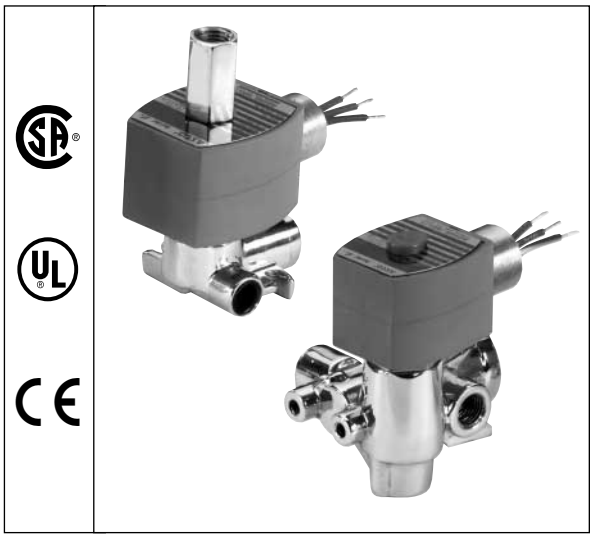


EXTERNAL PILOTING MODE FLOW DIAGRAMS



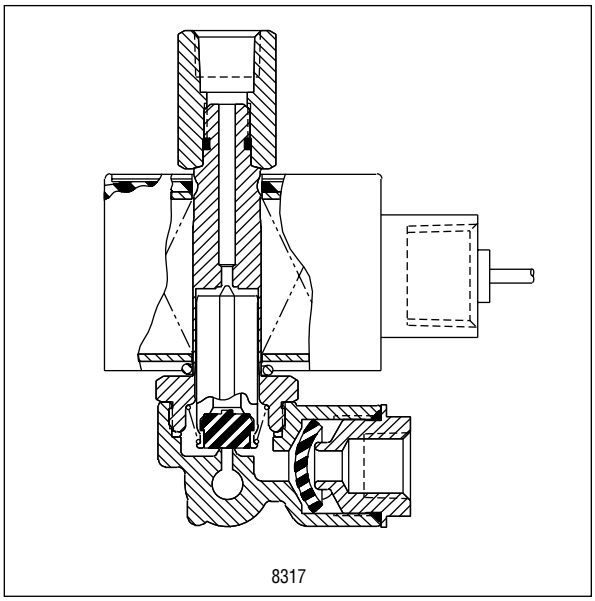
Features

- Designed for quick venting to 0 psi through the exhaust orifice.
- Resilient seated poppets for tight shutoff.
- Air is exhausted to quickly shift control valves.
- Multi-industry applications.
- Mountable in any position.



Construction

Valve Parts in Contact with Fluids		
Body	Brass	304 Stainless Steel
Seals and Disc	NBR (PA upper disc for 8317 Series)	
Diaphragm	CR (8317 Series only)	
Core Tube	305 Stainless Steel	
Core and Plugnut	430F Stainless Steel	
Core Springs	302 and 17-7 PH Stainless Steel	
Shading Coil	Copper	Silver
Pilot Seat Cartridge and Disc-Holder	CA (8321 Series only)	
Piston	Brass and 303 Stainless Steel (8321 only)	



8317

Electrical

Standard Coil and Class of Insulation	Watt Rating and Power Consumption				Spare Coil Part No.			
		AC			General Purpose		Explosionproof	
	DC Watts	Watts	VA Holding	VA Inrush	AC	DC	AC	DC
F	10.6	6.1	16	30	238210	238310	238214	238314
F	11.6	10.1	25	50	238610	238710	238614	238714

Standard Voltages: 24, 120, 240, 480 volts AC, 60 Hz (or 110, 220 volts AC, 50 Hz). 6, 12, 24, 120, 240 volts DC. Must be specified when ordering. Other voltages are available when required.

Nominal Ambient Temperature Ranges:

AC: 32˚F to 125˚F (0˚C to 52˚C)
DC: 32˚F to 104˚F (0˚C to 40˚C)

Approvals:

CSA certified. UL listed General Purpose Valves. Meets applicable CE directives.

Solenoid Enclosures

Standard: Watertight, Types 1, 2, 3, 3S, 4, and 4X.
Optional: Explosionproof and Watertight, Types 3, 3S, 4, 4X, 6, 6P, 7, and 9.
(To order, add prefix "EF" to the catalog number.)

Important:

A Minimum Operating Pressure Differential must be maintained between the pressure and exhaust ports. Supply and exhaust piping must be full area, unrestricted. ASCO flow controls and other similar components must be installed in the cylinder lines only.

Specifications (English units)

Pipe Size (ins.)	Orifice Size (ins.)		Cv Flow Factor		Operating Pressure Differential (psi)							Max. Fluid Temp. ˚F		Brass Body		Stainless Steel Body		Watt Rating/ Class of Coil Insulation ③	
						Max. AC			Max. DC										
	Press.	Exh.	Press.	Exh.	Min. ①	Air-Inert Gas	Water	Lt. Oil ① @45 SSU	Air-Inert Gas	Water	Lt. Oil ① @45 SSU	AC	DC	Catalog Number	Constr. Ref. No.	Catalog Number	Constr. Ref. No.	AC	DC
NORMALLY CLOSED (Pressure at Port 2) / NORMALLY OPEN (Pressure at Port 3)																			
1/4	3/32	1/4	.20	.73	5 ②	80	50	50	40	30	15	180	104	8317G7	2	8317G8	4	10.1/F	11.6/F
NORMALLY CLOSED (Closed when de-energized)																			
1/4	3/32	1/4	.20	.73	5 ②	150	150	95	75	55	30	180	104	8317G35	2	8317G36	4	10.1/F	11.6/F
1/4	9/32	11/32	.80	1.20	10	200	200	200	200	200	200	180	120	8321G1	3	-	-	6.1/F	10.6/F
3/8	9/32	11/32	.80	1.20	10	200	200	200	200	200	200	180	120	8321G2	3	-	-	6.1/F	10.6/F
NORMALLY CLOSED (Closed when de-energized), Air Only - Vents to Atmosphere																			
1/4	3/32	1/4	.20	.73	5	150	-	-	-	-	-	180	-	8317G23	1	8317G24	5	10.1/F	-
NORMALLY OPEN (Open when de-energized)																			
1/4	3/32	1/4	.15	.73	5 ②	160	160	95	75	45	25	180	104	8317G53	2	8317G54	4	10.1/F	11.6/F
1/4	9/32	11/32	.80	1.20	10	200	200	200	200	200	200	180	120	8321G3	3	-	-	6.1/F	10.6/F
3/8	9/32	11/32	.80	1.20	10	200	200	200	200	200	200	180	120	8321G4	3	-	-	6.1/F	10.6/F

Notes: ① Rating for 8321 valves established with 300 SSU light oil. ② Minimum Operating Pressure Differential on light oil is 10 psi (.7 bar).
③ On 50 hertz service, the watt rating for the 6.1/F solenoid is 8.1 watts.

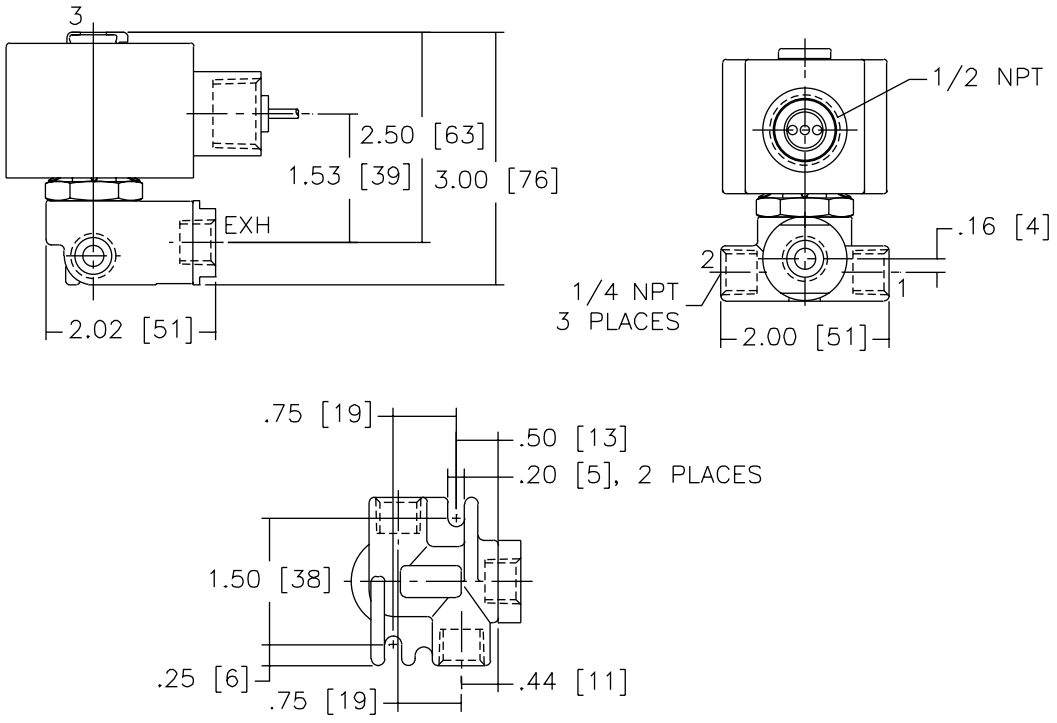
Specifications (Metric units)

Pipe Size (ins.)	Orifice Size (mm)		Kv Flow Factor (m3/h)		Operating Pressure Differential (bar)							Max. Fluid Temp.˚C		Brass Body		Stainless Steel Body		Watt Rating/ Class of Coil Insulation ③	
						Max. AC			Max. DC										
	Press.	Exh.	Press.	Exh.	Min. ①	Air-Inert Gas	Water	Lt. Oil ① @45 SSU	Air-Inert Gas	Water	Lt. Oil ① @45 SSU	AC	DC	Catalog Number	Constr. Ref. No.	Catalog Number	Constr. Ref. No.	AC	DC
NORMALLY CLOSED (Pressure at Port 2) / NORMALLY OPEN (Pressure at Port 3)																			
1/4	2	6	.17	.63	.3 ②	6	3	50	40	30	15	81	40	8317G7	2	8317G8	4	10.1/F	11.6/F
NORMALLY CLOSED (Closed when de-energized)																			
1/4	2	6	.17	.63	.3 ②	10	7	95	75	55	30	81	40	8317G35	2	8317G36	4	10.1/F	11.6/F
1/4	7	9	.69	1.03	.7	14	14	200	200	200	200	81	48	8321G1	3	-	-	6.1/F	10.6/F
3/8	7	9	.69	1.03	.7	14	14	200	200	200	200	81	48	8321G2	3	-	-	6.1/F	10.6/F
NORMALLY CLOSED (Closed when de-energized), Air Only - Vents to Atmosphere																			
1/4	2	6	.17	.63	.3	10	-	-	-	-	-	81	-	8317G23	1	8317G24	5	10.1/F	-
NORMALLY OPEN (Open when de-energized)																			
1/4	2	6	.13	.63	.3 ②	11	11	7	5	3	2	81	40	8317G53	2	8317G54	4	10.1/F	11.6/F
1/4	7	9	.69	1.03	.7	14	14	14	14	14	14	81	48	8321G3	3	-	-	6.1/F	10.6/F
3/8	7	9	.69	1.03	.7	14	14	14	14	14	14	81	48	8321G4	3	-	-	6.1/F	10.6/F

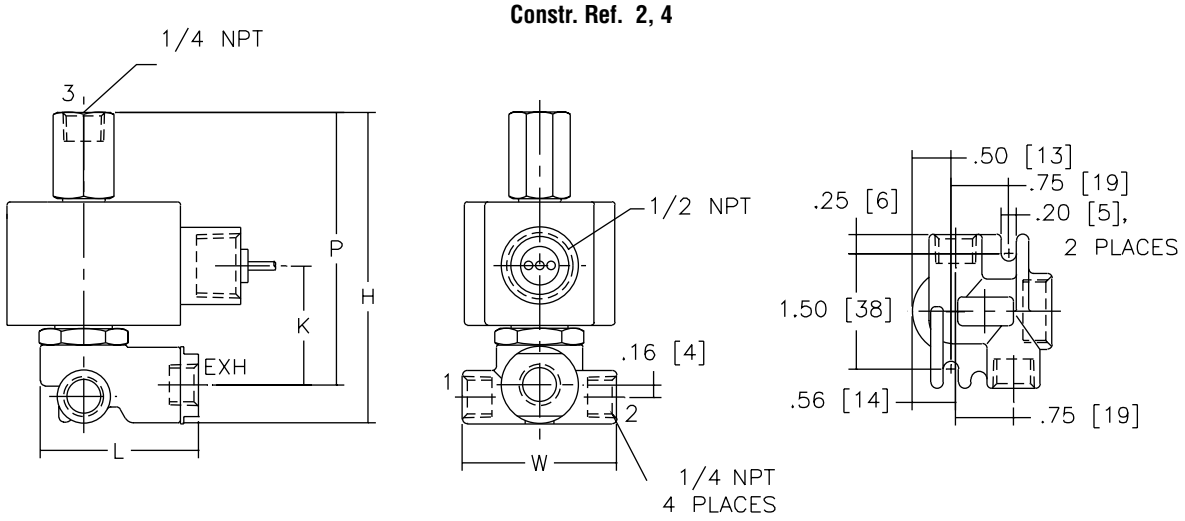
Dimensions: inches (mm)

Constr. Ref. No		H	K	L	P	W
2	ins.	4.04	1.55	2.05	3.54	2.00
	mm	103	39	52	90	51
4	ins.	4.02	1.53	2.02	3.52	2.00
	mm	102	39	51	89	51

Constr. Ref. 1, 5

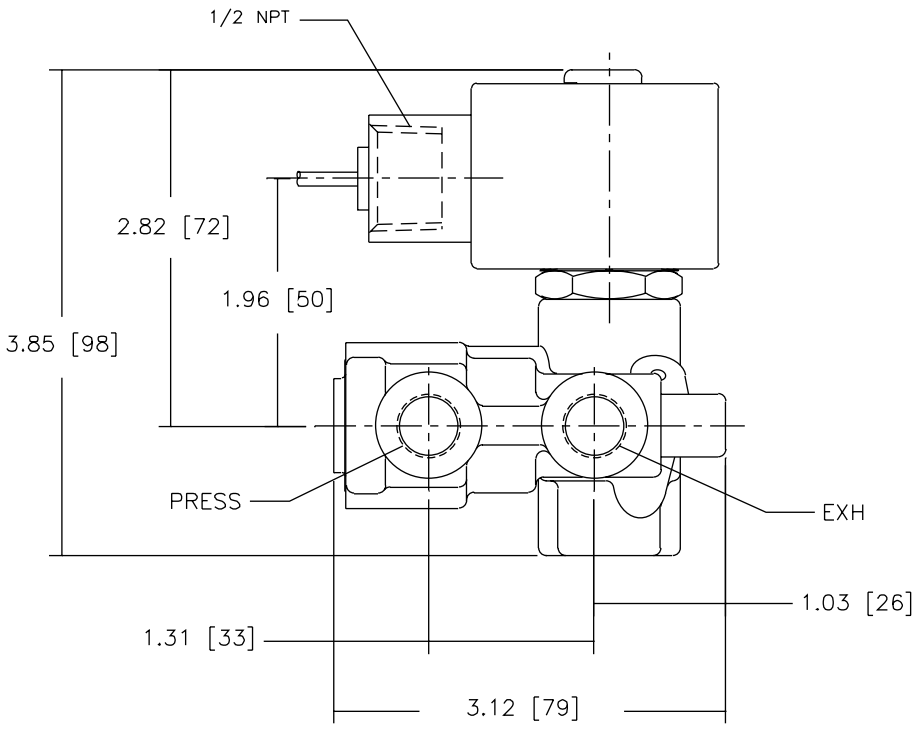


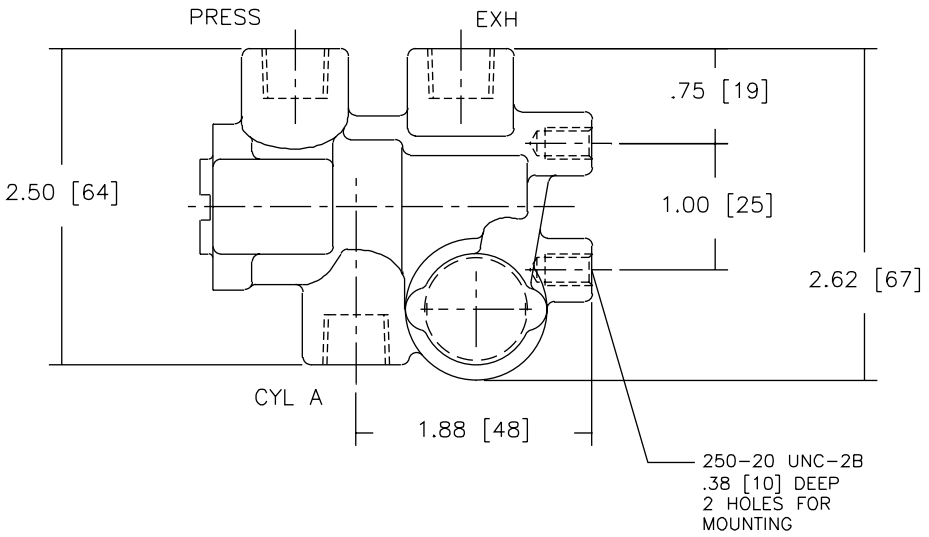
Constr. Ref. 2, 4



Dimensions: inches (mm)

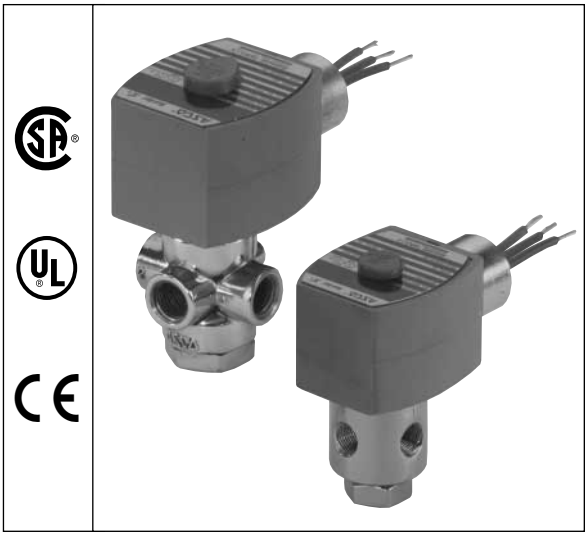
Constr. Ref. 3

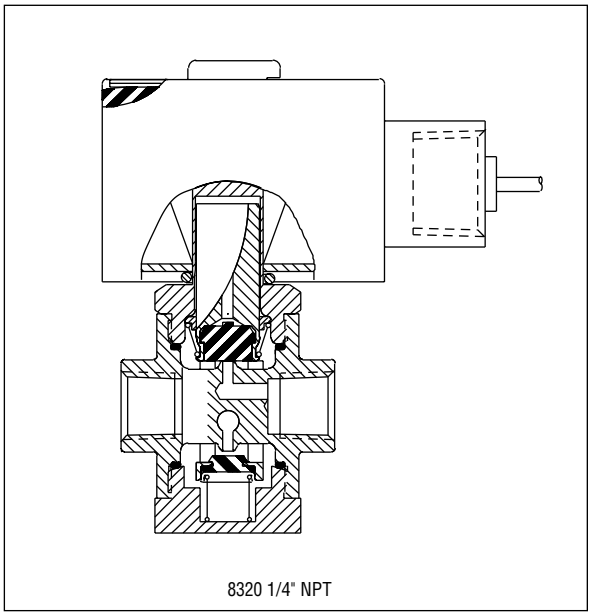




Features

- All NPT connections are in the valve body to allow in-line piping.
- No Minimum Operating Pressure Differential required.
- Sturdy design for long years of reliable service.
- Broadest range of applications.
- Mountable in any position.





8320 1/4" NPT

Construction

Valve Parts in Contact with Fluids		
Body	Brass	303 Stainless Steel
Seals and Discs	NBR or Cast UR, as Listed	
Core Tube	305 Stainless Steel	
Core and Plugnut	430F Stainless Steel	
Core Springs	302 Stainless Steel	
Shading Coil	Copper	Silver
Disc-Holder	CA	
Core Guide	CA (10.1 and 17.1 Watt only)	

Electrical

Standard Coil and Class of Insulation	Watt Rating and Power Consumption				Spare Coil Part No.			
		AC			General Purpose		Explosionproof	
	DC Watts	Watts	VA Holding	VA Inrush	AC	DC	AC	DC
F	10.6	6.1	16	30	238210	238310	238214	238314
F	-	9.1	25	40	238210	-	238214	-
F	11.6	10.1	25	50	238610	238710	238614	238714
F	-	17.1	40	70	238610	-	238614	-

Standard Voltages: 24, 120, 240, 480 volts AC, 60 Hz (or 110, 220, volts AC, 50 Hz). 6, 12, 24, 120, 240 volts DC. Must be specified when ordering. Other voltages are available when required.

Solenoid Enclosures

Standard: Watertight, Types 1, 2, 3, 3S, 4, and 4X.

Optional: Explosionproof and Watertight, Types 3, 3S, 4, 4X, 6, 6P, 7, and 9. (To order, add prefix "EF" to the catalog number.)

Nominal Ambient Temperature Ranges:

AC: 32˚F to 125˚F (0˚C to 52˚C)
AC: 32˚F to 104˚F (0˚C to 40˚C)

Approvals:

CSA certified. UL listed General Purpose Valves.
Meets applicable CE directives.

Specifications (English units)

Pipe Size (ins.)	Orifice Size (ins.)	Cv Flow Factor	Operating Pressure Differential (psi) Max. AC: Air-Inert Gas	Max. AC: Water	Max. AC: Lt. Oil @ 300 SSU	Max. DC: Air-Inert Gas	Max. DC: Water	Max. DC: Lt. Oil @ 300 SSU	Max. Fluid Temp. ˚F: AC	Max. Fluid Temp. ˚F: DC	Brass Body: Catalog Number	Brass Body: Constr. Ref. No.	Stainless Steel Body: Catalog Number	Stainless Steel Body: Constr. Ref. No.	Watt Rating/ Class of Coil Insulation ②: AC	Watt Rating/ Class of Coil Insulation ②: DC
UNIVERSAL OPERATION (Pressure at any port)																
1/8	3/64	.06	175	175	175	125	125	125	140	120	8320G130 ①	1	8320G140 ①	1	9.1/F	10.6/F
1/8	1/16	.09	100	100	100	65	65	65	180	120	8320G1	1	8320G41	1	9.1/F	10.6/F
1/8	3/32	.12	50	50	50	50	50	50	180	120	8320G83	1	8320G87	1	6.1/F	10.6/F
1/8	1/8	.21	30	30	30	20	20	20	180	120	8320G3	1	8320G43	1	9.1/F	10.6/F
1/4	1/16	.09	125	130	130	75	75	75	200	150	8320G172	2	--	--	10.1/F	11.6/F
1/4	3/32	.12	100	100	100	60	60	60	200	150	8320G174	2	8320G200	3	17.1/F	11.6/F
1/4	1/8	.25	50	50	50	25	25	25	200	150	8320G176	2	8320G201	3	17.1/F	11.6/F
1/4	11/64	.35	20	20	20	12	12	12	200	150	8320G178	2	--	--	10.1/F	11.6/F
NORMALLY CLOSED (Closed when de-energized)																
1/8	3/64	.06	200	200	200	200	200	200	180	120	8320G132	1	8320G142	1	6.1/F	10.6/F
1/8	1/16	.09	150	125	125	125	125	125	180	120	8320G13	1	8320G45	1	6.1/F	10.6/F
1/8	3/32	.12	100	100	100	100	100	100	180	120	8320G15	1	8320G47	1	6.1/F	10.6/F
1/8	1/8	.21	40	40	40	40	40	40	180	120	8320G17	1	8320G49	1	6.1/F	10.6/F
1/4	1/16	.09	210	225	225	160	160	160	200	150	8320G182	2	--	--	17.1/F	11.6/F
1/4	3/32	.12	150	150	150	115	115	115	200	150	8320G184	2	8320G202	3	10.1/F	11.6/F
1/4	1/8	.25	85	85	85	60	60	60	200	150	8320G186	2	8320G203	3	10.1/F	11.6/F
1/4	11/64	.35	45	45	45	25	25	25	200	150	8320G188	2	--	--	10.1/F	11.6/F
NORMALLY OPEN (Open when de-energized)																
1/8	3/64	.06	200	200	200	200	200	200	180	120	8320G136	1	8320G146	1	6.1/F	10.6/F
1/8	1/16	.09	150	125	125	125	125	125	180	120	8320G27	1	8320G51	1	6.1/F	10.6/F
1/8	3/32	.12	100	100	100	100	100	100	180	120	8320G29	1	8320G53	1	6.1/F	10.6/F
1/8	1/8	.21	40	40	40	40	40	40	180	120	8320G31	1	8320G55	1	6.1/F	10.6/F
1/4	1/16	.09	250	250	250	160	160	160	200	150	8320G192	2	--	--	17.1/F	11.6/F
1/4	3/32	.12	150	140	140	100	100	100	200	150	8320G194	2	8320G204	3	10.1./F	11.6/F
1/4	1/8	.25	70	70	70	55	55	55	200	150	8320G196	2	8320G205	3	10.1/F	11.6/F
1/4	11/64	.35	40	40	40	30	30	30	200	150	8320G198	2	--	--	10.1/F	11.6/F

Notes: ① Supplied with cast UR disc.
② On 50 hertz service, the watt rating for the 6.1/F solenoid is 8.1 watts; the watt rating for the 9.1/F solenoid is 11.1 watts.

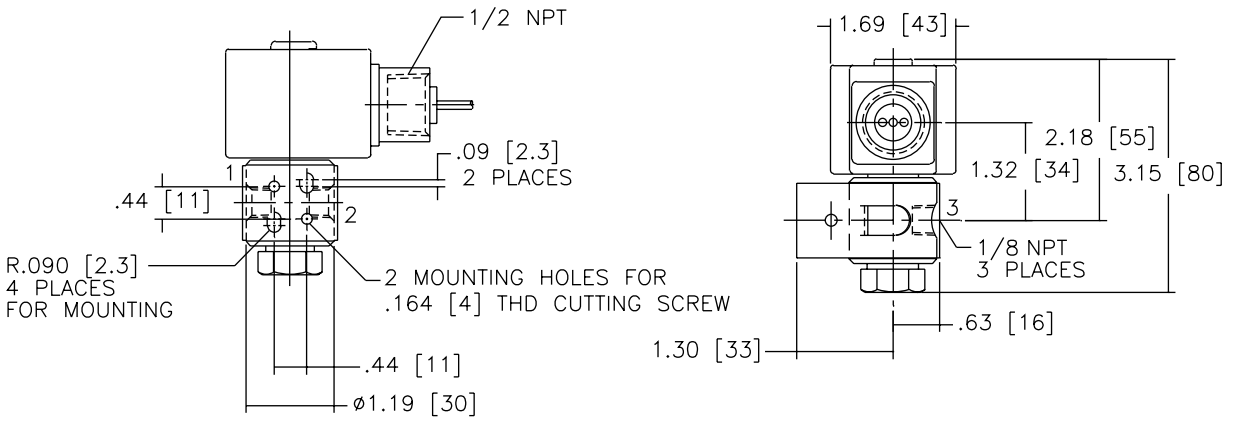
Specifications (Metric units)

Pipe Size (ins.)	Orifice Size (mm)	Kv Flow Factor (m3/h)	Operating Pressure Differential (bar) Max. AC: Air-Inert Gas	Max. AC: Water	Max. AC: Lt. Oil @ 300 SSU	Max. DC: Air-Inert Gas	Max. DC: Water	Max. DC: Lt. Oil @ 300 SSU	Max. Fluid Temp. ˚C: AC	Max. Fluid Temp. ˚C: DC	Brass Body: Catalog Number	Brass Body: Constr. Ref. No.	Stainless Steel Body: Catalog Number	Stainless Steel Body: Constr. Ref. No.	Watt Rating/ Class of Coil Insulation ②: AC	Watt Rating/ Class of Coil Insulation ②: DC
UNIVERSAL OPERATION (Pressure at any port)																
1/8	1.2	.05	12	12	12	9	9	9	59	48.4	8320G130 ①	1	8320G140 ①	1	9.1/F	10.6/F
1/8	1.6	.08	7	7	7	4	4	4	81	48.4	8320G1	1	8320G41	1	9.1/F	10.6/F
1/8	2.4	.10	3	3	3	3	3	3	81	48.4	8320G83	1	8320G87	1	6.1/F	10.6/F
1/8	3.2	.18	2	2	2	1	1	1	81	48.4	8320G3	1	8320G43	1	9.1/F	10.6/F
1/4	1.6	.08	9	9	9	5	5	5	92	64.9	8320G172	2	--	--	10.1/F	11.6/F
1/4	2.4	.10	7	7	7	4	4	4	92	64.9	8320G174	2	8320G200	3	17.1/F	11.6/F
1/4	3.2	.21	3	3	3	2	2	2	92	64.9	8320G176	2	8320G201	3	17.1/F	11.6/F
1/4	4.4	.30	1	1	1	1	1	1	92	64.9	8320G178	2	--	--	10.1/F	11.6/F
NORMALLY CLOSED (Closed when de-energized)																
1/8	1.2	.05	14	14	14	14	14	14	81	48.4	8320G132	1	8320G142	1	6.1/F	10.6/F
1/8	1.6	.08	10	9	9	9	9	9	81	48.4	8320G13	1	8320G45	1	6.1/F	10.6/F
1/8	2.4	.10	7	7	7	7	7	7	81	48.4	8320G15	1	8320G47	1	6.1/F	10.6/F
1/8	3.2	.18	3	3	3	3	3	3	81	48.4	8320G17	1	8320G49	1	6.1/F	10.6/F
1/4	1.6	.08	14	16	16	11	11	11	92	64.9	8320G182	2	--	--	17.1/F	11.6/F
1/4	2.4	.10	10	10	10	8	8	8	92	64.9	8320G184	2	8320G202	3	10.1/F	11.6/F
1/4	3.2	.21	6	6	6	4	4	4	92	64.9	8320G186	2	8320G203	3	10.1/F	11.6/F
1/4	4.4	.30	3	3	3	2	2	2	92	64.9	8320G188	2	--	--	10.1/F	11.6/F
NORMALLY OPEN (Open when de-energized)																
1/8	1.2	.05	14	14	14	14	14	14	81	48	8320G136	1	8320G146	1	6.1/F	10.6/F
1/8	1.6	.08	10	9	9	9	9	9	81	48	8320G27	1	8320G51	1	6.1/F	10.6/F
1/8	2.4	.01	7	7	7	7	7	7	81	48	8320G29	1	8320G53	1	6.1/F	10.6/F
1/8	3.2	.18	3	3	3	3	3	3	81	48	8320G31	1	8320G55	1	6.1/F	10.6/F
1/4	1.6	.08	17	17	17	11	11	11	92	65	8320G192	2	--	--	17.1/F	11.6/F
1/4	2.4	.10	10	10	10	7	7	7	92	65	8320G194	2	8320G204	3	10.1./F	11.6/F
1/4	3.2	.21	5	5	5	4	4	4	92	65	8320G196	2	8320G205	3	10.1/F	11.6/F
1/4	4.4	.30	3	3	3	2	2	2	92	65	8320G198	2	--	--	10.1/F	11.6/F

Notes: ① Supplied with cast UR disc.
② On 50 hertz service, the watt rating for the 6.1/F solenoid is 8.1 watts; the watt rating for the 9.1/F solenoid is 11.1 watts.

Dimensions: inches (mm)

Constr. Ref. 1



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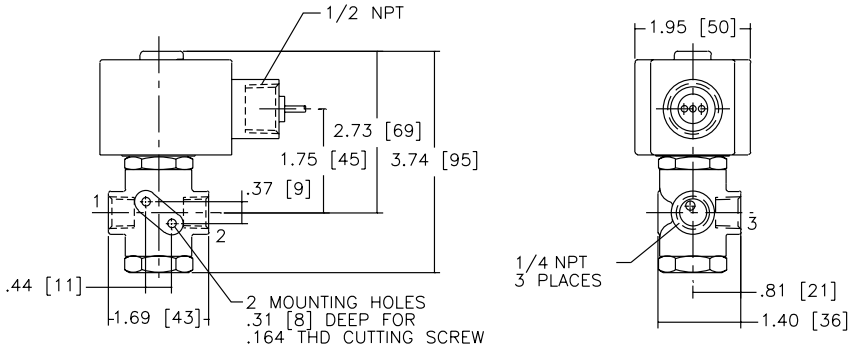

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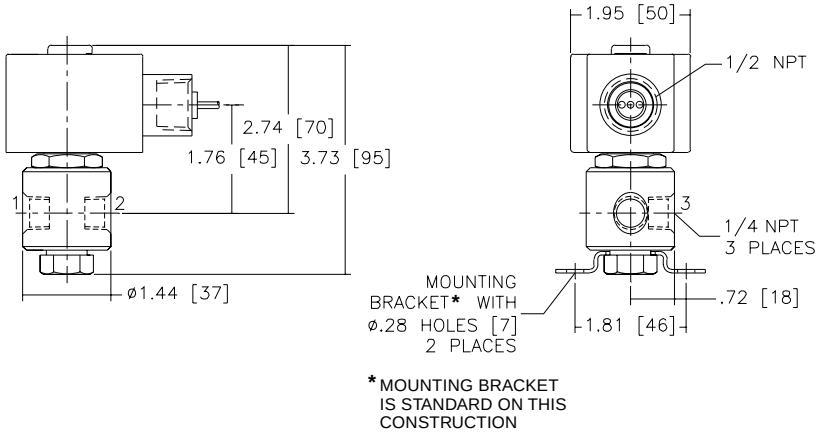
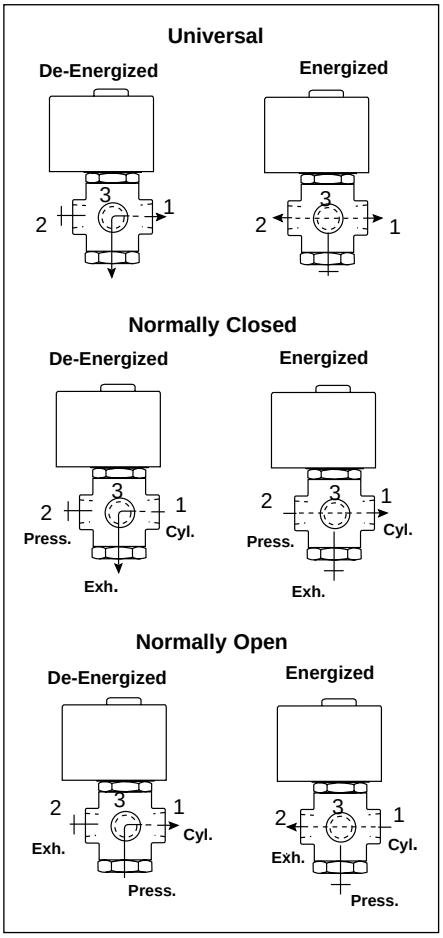
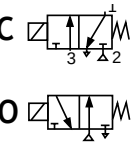
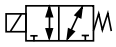


*MOUNTING BRACKET IS STANDARD ON THIS CONSTRUCTION

FLOW DIAGRAMS



Direct Acting
Sub-Miniature Solenoid Valves
Brass, Stainless Steel, or Aluminum Bodies
1/8" NPT

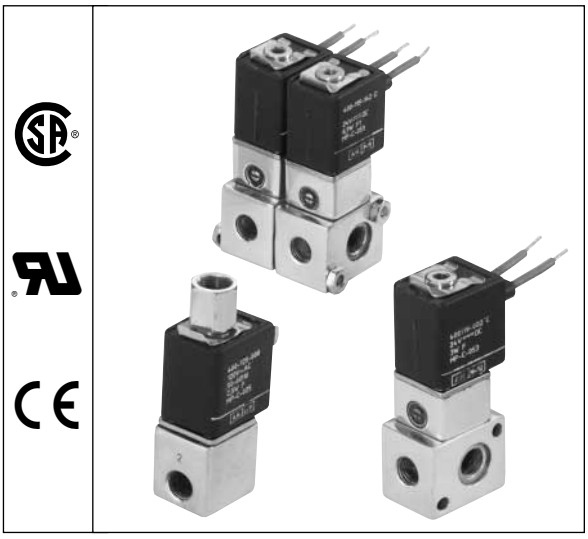
NC  U 

NO

3/2
SERIES
8325
8380

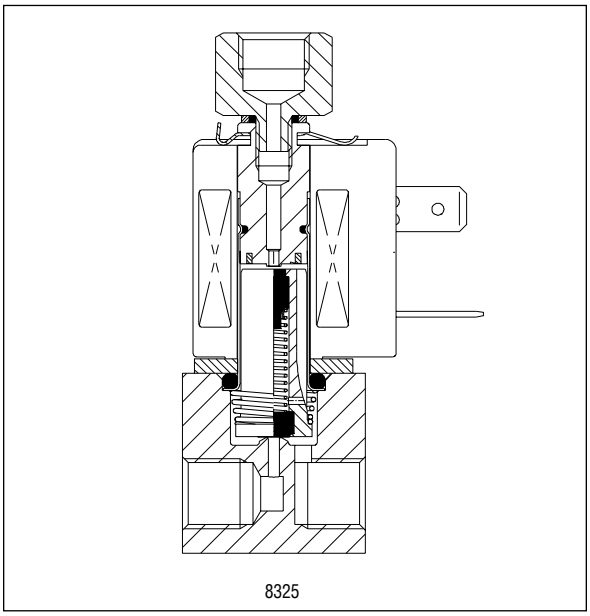
Features

- Smallest poppet valve, suitable for a wide range of inert gasses and liquids.
- Convertible from AC to DC by changing the molded epoxy open frame coil.
- No Minimum Operating Pressure Differential required.
- Ideal valve for OEM applications.
- Group mounted constructions (max. 10 valves) have aluminum bodies and built-in manual operators for air service.
- Mountable in any position.



Construction

Valve Parts in Contact with Fluids		
Body		
Individual Valves	Brass	303 Stainless Steel
Group Mounted	Aluminum	
Seals and Discs	NBR or FKM, as listed	
Core and Plugnut	430F Stainless Steel	
Core Spring	302 Stainless Steel	
Shading Coil	Copper	



8325

Electrical

Standard Coil and Class of Insulation	Watt Rating and Power Consumption				Spare Coil Part No.	
		AC				
	DC Watts	Watts	VA Holding	VA Inrush	AC	DC
F	6.9	6.3	8.8	12.1	400115	400115

Standard Voltages: 24, 120, 240 volts AC, 60 Hz (or 110, 220 volts AC, 50 Hz). 6, 12, 24, 120, 240 volts DC. Must be specified when ordering. Other voltages are available when required.

Solenoid

Standard: Molded epoxy open frame solenoid. Can be converted from AC to DC, or vice versa, by changing the coil.
Optional: 3x DIN 46244 coil; 1/2" threaded conduit hub.
See Optional Feature section for other available options.

Nominal Ambient Temperature Ranges:

AC: 32˚F to 125˚F (0˚C to 52˚C)

DC: 32˚F to 77˚F (0˚C to 25˚C)

Refer to Engineering Section for details.

Approvals:

CSA certified. UL recognized components. Meets applicable CE directives.

Refer to Engineering Section for details.

Specifications (English units)

Pipe Size (ins.)	Orifice Size (ins.)	Cv Flow Factor		Operating Pressure Differential (psi) ①						Max. Fluid Temp. ˚F		Open Frame Solenoid		Watt Rating/ Class of Coil Insulation	
				Max. AC			Max. DC					Brass Body	Stainless Steel Body		
		At Port 2	At Port 3	Air-Inert Gas	Water	Light Oil @ 45 SSU	Air-Inert Gas	Water	Light Oil @ 45 SSU	AC	DC	Catalog Number	Catalog Number	AC	DC
UNIVERSAL OPERATION (Pressure at any port), FKM Disc															
1/8	3/64	.05	.07	100	90	90	65	50	40	180	77	U8325B1V	U8325B31V	6.3/F	6.9/F
1/8	1/16	.09	.07	55	55	55	45	30	25	180	77	U8325B2V	U8325B32V	6.3/F	6.9/F
1/8	3/32	.17	.07	30	30	20	15	15	15	180	77	U8325B3V	U8325B33V	6.3/F	6.9/F
1/8	1/8	.23	.07	15	15	15	12	12	12	180	77	U8325B4V	U8325B34V	6.3/F	6.9/F
NORMALLY CLOSED (Closed when de-energized), FKM Disc															
1/8	3/64	.05	.07	150	150	120	150	150	120	180	77	U8325B5V	U8325B35V	6.3/F	6.9/F
1/8	1/16	.09	.07	110	110	75	110	110	75	180	77	U8325B6V	U8325B36V	6.3/F	6.9/F
1/8	3/32	.17	.07	60	60	40	60	60	40	180	77	U8325B7V	U8325B37V	6.3/F	6.9/F
1/8	1/8	.23	.07	40	35	30	40	35	30	180	77	U8325B8V	U8325B38V	6.3/F	6.9/F
NORMALLY OPEN (Open when de-energized), FKM Disc															
1/8	3/64	.05	.07	110	110	110	110	70	50	180	77	U8325B9V	U8325B39V	6.3/F	6.9/F
1/8	1/16	.09	.07	110	110	110	55	35	30	180	77	U8325B10V	U8325B40V	6.3/F	6.9/F
1/8	3/32	.17	.07	110	110	90	25	20	20	180	77	U8325B11V	U8325B41V	6.3/F	6.9/F
1/8	1/8	.23	.07	75	75	65	15	15	15	180	77	U8325B12V	U8325B42V	6.3/F	6.9/F

Pipe Size (ins.)	Orifice Size (ins.)	Cv Flow Factor		Operating Pressure Differential (psi) ①		Max. Fluid Temp. ˚F		Open Frame Solenoid		Watt Rating/Class of Coil Insulation	
				Max. AC	Max. DC			Operator Only	Sub-Base Construction		
		At Port 2	At Port 3	Air-Inert Gas	Air-Inert Gas	AC	DC	Catalog Number	Catalog Number	AC	DC
GROUP MOUNTING NORMALLY CLOSED (Closed when de-energized), Aluminum Body, NBR Disc											
1/8	3/64	.05	.07	150	150	180	77	U8380B1	8380B2	6.3/F	6.9/F
GROUP MOUNTING UNIVERSAL OPERATION (Pressure at any port), Aluminum Body, NBR Disc											
1/8	3/64	.07	.07	100	100	180	77	-	U8380B3	6.3/F	6.9/F

Notes: ① Ratings are for valves controlling cylinders and diaphragms having dead end flow conditions. When using common pressure to divert flow, valves may be provided to control higher pressure. Consult ASCO for details.

Specifications (Metric units)

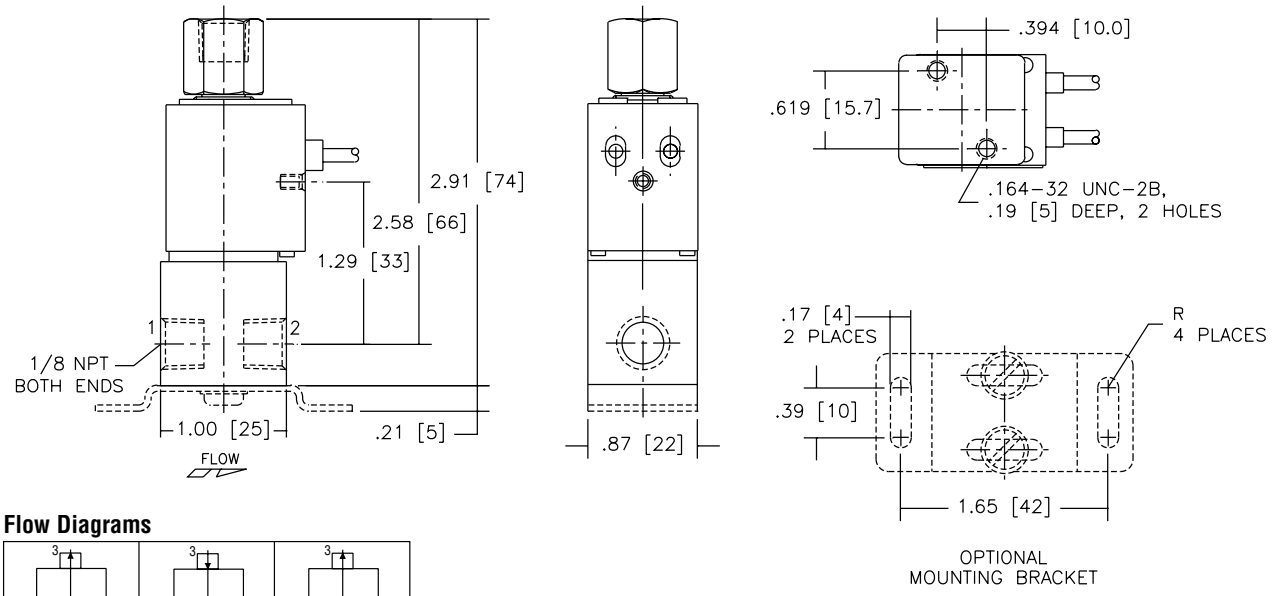
Pipe Size (ins.)	Orifice Size (mm)	Kv Flow Factor (m3/h)		Operating Pressure Differential (bar) ①						Max. Fluid Temp. ˚C		Open Frame Solenoid		Watt Rating/ Class of Coil Insulation	
				Max. AC			Max. DC					Brass Body	Stainless Steel Body		
		At Port 2	At Port 3	Air-Inert Gas	Water	Light Oil @ 45 SSU	Air-Inert Gas	Water	Light Oil @ 45 SSU	AC	DC	Catalog Number	Catalog Number	AC	DC
UNIVERSAL OPERATION (Pressure at any port), FKM Disc															
1/8	1.2	.04	.06	7	6	6	4	3	3	81	25	U8325B1V	U8325B31V	6.3/F	6.9/F
1/8	1.6	.08	.06	4	4	4	3	2	2	81	25	U8325B2V	U8325B32V	6.3/F	6.9/F
1/8	2.4	.15	.06	2	2	1	1	1	1	81	25	U8325B3V	U8325B33V	6.3/F	6.9/F
1/8	3.2	.20	.06	1	1	1	1	1	1	81	25	U8325B4V	U8325B34V	6.3/F	6.9/F
NORMALLY CLOSED (Closed when de-energized), FKM Disc															
1/8	1.2	.04	.06	10	10	8	10	10	8	81	25	U8325B5V	U8325B35V	6.3/F	6.9/F
1/8	1.6	.08	.06	8	8	5	8	8	5	81	25	U8325B6V	U8325B36V	6.3/F	6.9/F
1/8	2.4	.15	.06	4	4	3	4	4	3	81	25	U8325B7V	U8325B37V	6.3/F	6.9/F
1/8	3.2	.20	.06	3	2	2	3	2	2	81	25	U8325B8V	U8325B38V	6.3/F	6.9/F
NORMALLY OPEN (Open when de-energized), FKM Disc															
1/8	1.2	.04	.06	8	8	8	8	5	3	81	25	U8325B9V	U8325B39V	6.3/F	6.9/F
1/8	1.6	.08	.06	8	8	8	4	2	2	81	25	U8325B10V	U8325B40V	6.3/F	6.9/F
1/8	2.4	.15	.06	8	8	6	2	1	1	81	25	U8325B11V	U8325B41V	6.3/F	6.9/F
1/8	3.2	.20	.06	5	5	4	1	1	1	81	25	U8325B12V	U8325B42V	6.3/F	6.9/F

Pipe Size (ins.)	Orifice Size (mm)	Kv Flow Factor (m3/h)		Operating Pressure Differential (bar) ①		Max. Fluid Temp. ˚C		Open Frame Solenoid		Watt Rating/Class of Coil Insulation	
				Max. AC	Max. DC			Operator Only	Sub-Base Construction		
		At Port 2	At Port 3	Air-Inert Gas	Air-Inert Gas	AC	DC	Catalog Number	Catalog Number	AC	DC
GROUP MOUNTING NORMALLY CLOSED (Closed when de-energized), Aluminum Body, NBR Disc											
1/8	1.2	.04	.06	10	10	81	25	U8380B1	8380B2	6.3/F	6.9/F
GROUP MOUNTING UNIVERSAL OPERATION (Pressure at any port), Aluminum body, NBR Disc											
1/8	1.2	.04	.06	7	7	81	25	-	U8380B3	6.3/F	6.9/F

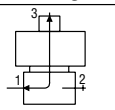
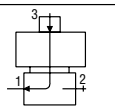
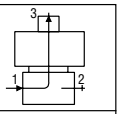
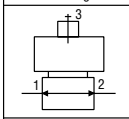
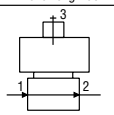
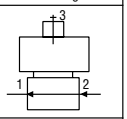
Notes: ① Ratings are for valves controlling cylinders and diaphragms having dead end flow conditions. When using common pressure to divert flow, valves may be provided to control higher pressure. Consult ASCO for details.

Dimensions: inches (mm)

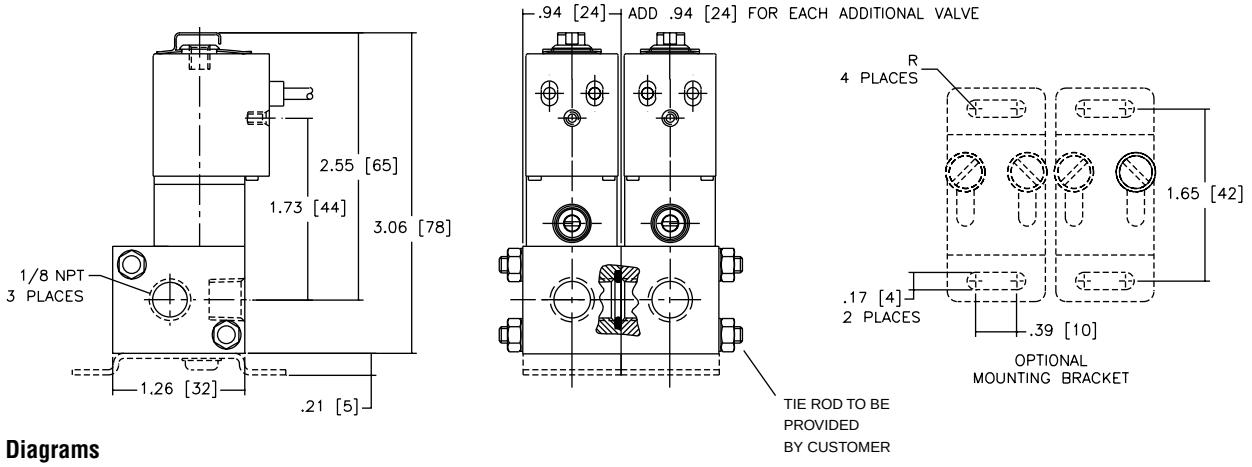
SERIES 8325



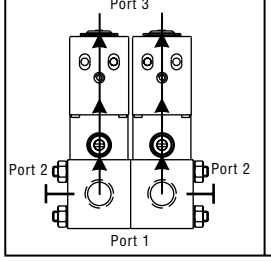
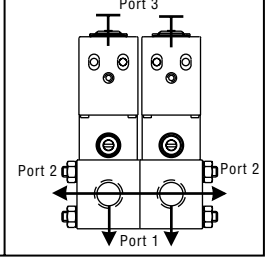
Flow Diagrams

		
De-energized	De-energized	De-energized
		
Energized	Energized	Energized
Universal - Press. at any Port.	Normally Open Pressure at 3.	Normally Closed Pressure at 2.

SERIES 8380



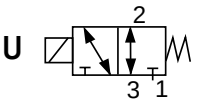
Flow Diagrams

Solenoid De-energized	Solenoid Energized
	

Balanced Poppet Type

High Flow Direct Acting Valves

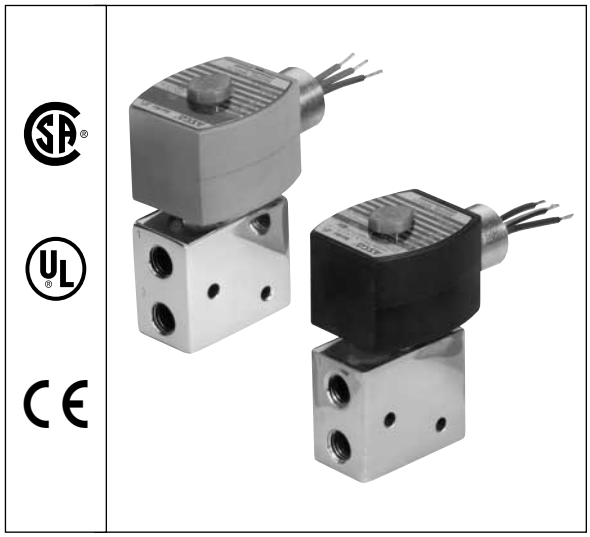
Brass and 316 Stainless Steel Bodies • 1/4" NPT



3/2 SERIES 8327

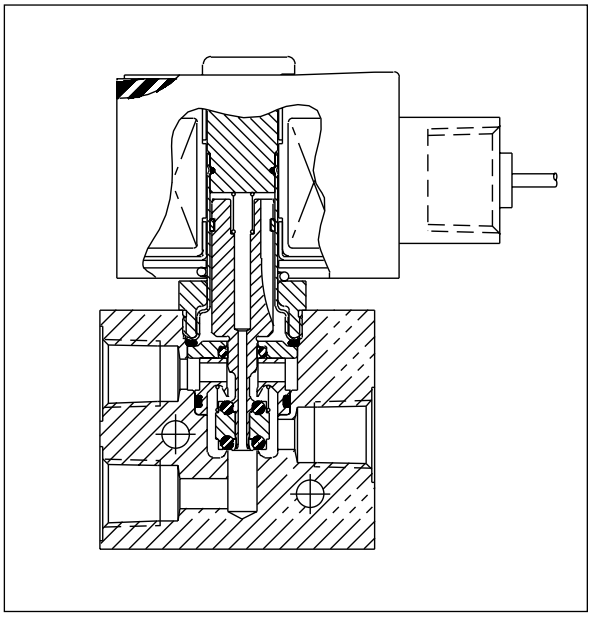
Features

- Designed for high flow piloting with no minimum operating pressure required; e.g., power plants, refineries, chemical processing.
- Balanced Poppet construction for high flow at minimum power levels.
- PTFE rider rings and graphite-filled seals reduce friction and eliminate sticking to provide exceptional service life.
- 316 Stainless Steel construction for highly corrosive atmospheres.
- Available with manual reset. *See Special Service Section.*



Construction

Valve Parts in Contact with Fluids		
Body	Brass	316 Stainless Steel
Core Tube	305 Stainless Steel	
Stem and Insert	303 Stainless Steel	
Core and Plugnut	430F Stainless Steel	
O-ring Holder	430F Stainless Steel	
Springs	302 Stainless Steel	
Seals and Discs	NBR	FKM
	VMQ (Low-Temperature Construction)	
Rider Ring	PTFE	



Electrical

Standard Coil and Class of Insulation	Watt Rating and Power Consumption				Spare Coil Part Number			
		AC			General Purpose		Explosionproof	
	DC Watts	Watts	VA Holding	VA Inrush	AC	DC	AC	DC
F	11.6	15.1	24	24	270110	238710	270114	238714
Standard Voltages: 24/50-60, 120/50-60, 240/50-60, and 480/50-60, or 6, 12, 24, 120, and 240 DC.								

Solenoid Enclosures

Standard: For Brass Valves: Standard Solenoid enclosure is Types, 1, 2, 3, 3S, 4, and 4X.
For 316 Stainless Steel valves: Standard Solenoid enclosure is Explosionproof and Watertight Types 3, 3S, 4, 4X, 6, and 6P.

Optional: Explosionproof and Watertight, Types 3, 3S, 4, 4X, 6, 6P, 7, and 9. (To order, add prefix "EF" or, for Explosionproof Stainless Steel trim and hub on Brass-Bodied valves, add "EV" to catalog number.)

Nominal Ambient Temperature Ranges:

8327G1, -2, -21, -22, -31, -32: -4˚F to 131˚F (-20˚C to 55˚C)

8327G11 and -12: -40˚F to 131˚F (-40˚C to 55˚C)

Approvals:

CSA certified. UL listed General Purpose Valves. Meets applicable CE directives.

Specifications (English units)

Pipe Size (ins.)	Orifice Size (ins.)	Cv Flow Factor Ports 1-2	Cv Flow Factor Ports 2-3	Maximum Operating Pressure Differential (psi) Air-Inert Gas	Water	Light Oil @ 300 SSU	Max. Fluid Temp. °F	Brass Body Catalog Number	316 Stainless Steel Body Catalog Number	Constr. Ref. No.	Watt Rating/ Class of Coil Insulation AC	DC
UNIVERSAL OPERATION (Pressure at any port)												
1/4	1/4	.49	.56	150	150	150	176	8327G1	—	1	15.1/F	11.6/F
1/4	1/4	.49	.56	150	150	150	248	—	EV8327G2	1	15.1/F	11.6/F
UNIVERSAL LOW-TEMPERATURE OPERATION (Pressure at any port)												
1/4	1/4	.49	.56	150	—	—	131	8327G11	—	1	15.1/F	11.6/F
1/4	1/4	.49	.56	150	—	—	131	—	EV8327G12	1	15.1/F	11.6/F

Specifications (Metric units)

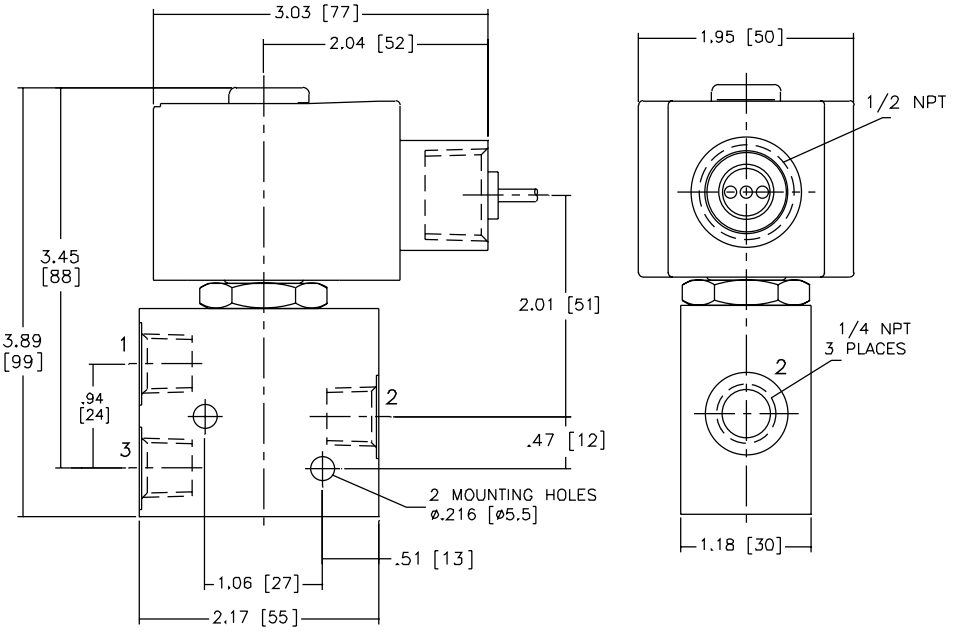
Pipe Size (ins.)	Orifice Size (mm)	Kv Flow Factor m3/h Ports 1-2	Kv Flow Factor m3/h Ports 2-3	Maximum Operating Pressure Differential (bar) Air-Inert Gas	Water	Light Oil @ 300 SSU	Max. Fluid Temp. °C	Brass Body Catalog Number	316 Stainless Steel Body Catalog Number	Constr. Ref. No.	Watt Rating/ Class of Coil Insulation AC	DC
UNIVERSAL OPERATION (Pressure at any port)												
1/4	6	.42	.48	10	10	10	79	8327G1	—	1	15.1/F	11.6/F
1/4	6	.42	.48	10	10	10	119	—	EV8327G2	1	15.1/F	11.6/F
UNIVERSAL LOW-TEMPERATURE OPERATION (Pressure at any port)												
1/4	6	.42	.48	10	—	—	54	8327G11	—	1	15.1/F	11.6/F
1/4	6	.42	.48	10	—	—	54	—	EV8327G12	1	15.1/F	11.6/F

Dimensions: inches (mm)

FLOW DIAGRAMS

OPERATION	DE-ENERGIZED	ENERGIZED
NORMALLY CLOSED PRESSURE AT 3		
NORMALLY OPEN PRESSURE AT 1		
UNIVERSAL PRESSURE AT ANY PORT		

Constr. Ref. 1



IMPORTANT: Valves may be mounted in any position.

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USA

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Fax (205) 988-9675

Alaska
Contact Southern CA office

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Contact Southern CA office

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Contact Eastern OK office

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Connecticut (Southern)
Contact NJ office

Delaware
Contact NJ office

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Contact Alabama office,
toll-free (800) 531-2019

Georgia
Contact Alabama office

Hawaii
Contact Southern CA office

Idaho (Northern)
Contact Southern CA office

Idaho (Southern)
Contact Colorado office

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Indianapolis, IN 46268
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Fax (317) 293-0281

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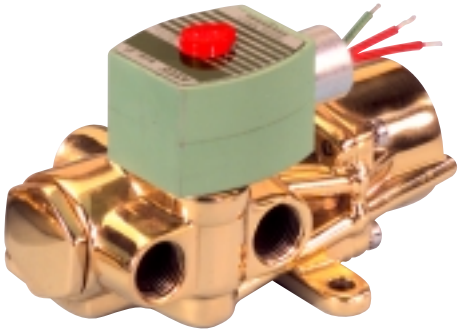
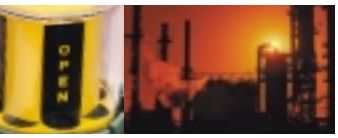
Fluid Control Products





ASCO® A Constant Flow Of Ideas

4 Way Inline Valves

T A B L E O F C O N T E N T S

Four ported valves are generally used to operate double-acting cylinders or actuators. They have four or five pipe connections, commonly called ports:

- One pressure inlet.
- Two cylinder ports providing pressure to the double-acting cylinder or actuator.
- One or two outlets to exhaust pressure from the cylinders.

In a de-energized position, pressure is connected to one cylinder port; the other port is connected to the exhaust. In an energized position, pressure and exhaust are reversed.

Four ports means less piping is required. With five ports, independent speed controls can be mounted in each port.

Three Types of Constructions Apply:

Single Solenoid

When the solenoid is energized, the valve shifts, then returns to the original position when de-energized.

Dual Solenoid

When one solenoid is energized, the valve shifts, then returns when the other solenoid is energized. They may be energized momentarily or continuously, but never concurrently. Some valves, both single and dual solenoid, may change position on loss of fluid pressure.

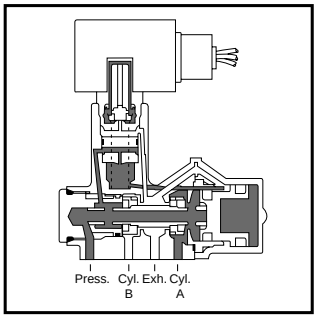
Single Air Operator

When the operator is pressurized, the valve shifts, then returns when the pressure is removed.

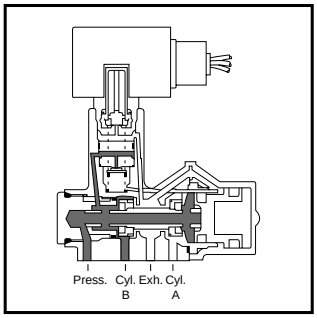
Standard and Optional Features:

Solenoid valves are supplied, as listed, with either Red-Hat II® molded epoxy solenoids or Red-Hat® solenoids with metal enclosures (except for Series 8401). Red-Hat II valves are identified by the letter “G” or “H” in their catalog numbers; e.g., 8344G27. Many optional features may be added to your valves; e.g., high-temperature Class H molded coils and manual operators.

4 and 5 Ported Valves Flow Diagrams

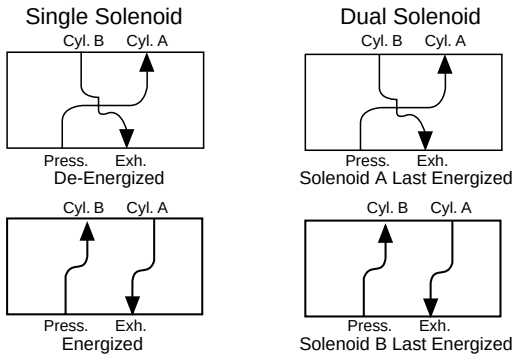


De-Energized

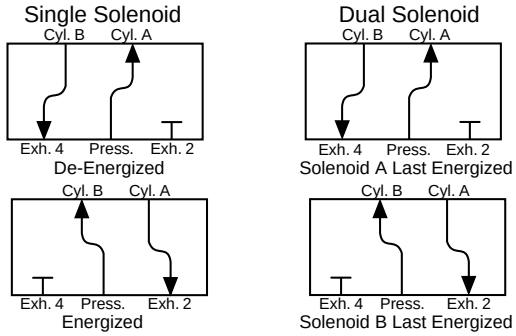


Energized

Typical 4 Ported



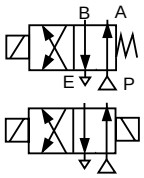
Typical 5 Ported



Direct Acting

General Service Solenoid Valves

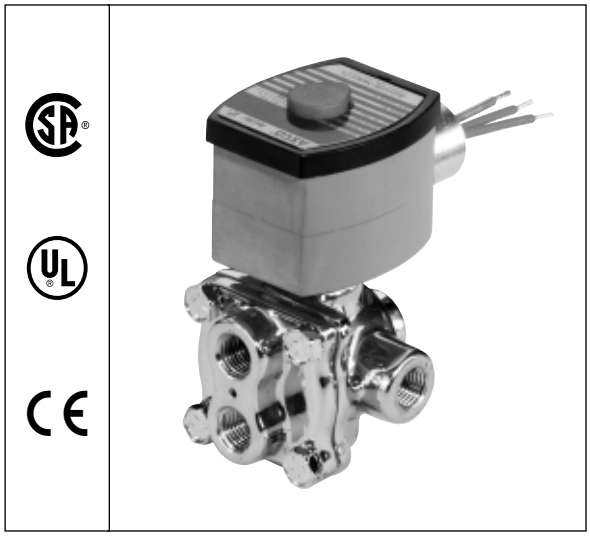
Brass or Stainless Steel Bodies
1/4" and 3/8" NPT



4/2
SERIES
8342

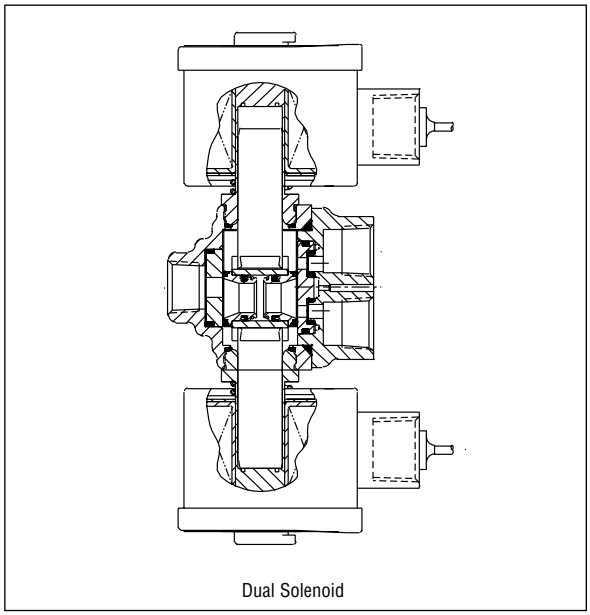
Features

- Direct acting operation and high flow construction.
- Direct acting, high flow slide-style valve.
- Optional flow control regulates cylinder speed independently, in either direction.
- Mechanical detent on dual solenoids holds last position, even after loss of electric power, pneumatics or pressure.
- No Minimum Operating Pressure Differential required to shift valve.
- Dual solenoid operation: solenoid may be energized momentarily (1/10 second) or continuously.
- Mountable in any position.



Construction

Valve Parts in Contact with Fluids		
Body	Brass	304 Stainless Steel
Seals and Discs	NBR and FKM	
Core Tube	305 Stainless Steel	
Core and Plugnut	430F Stainless Steel	
Springs	302 Stainless Steel / 17-7 PH Stainless Steel	
Shading Coil	Copper	
Sleeve	PA	
Seats	Graphite-filled PTFE	



Dual Solenoid

Electrical

Standard Coil and Class of Insulation	Watt Rating and Power Consumption			Spare Coil Part No.	
	AC			General Purpose	Explosionproof
	Watts	VA Holding	VA Inrush	AC	AC
F	16.1	35	115	272610	272614
F	20.1	45	140	272610	272614

Standard Voltages: 24, 120, 240, 480 volts AC, 60 Hz. 24, 110, 115, 220, 230 volts AC, 50 Hz. Other voltages are available when required.

Note: No combination 120/60, 110/50 coil available. Must order either 120/60 or 110/50, etc.

Nominal Ambient Temperature Ranges:

Standard Class F insulation: 32˚F to 125˚F (0˚C to 52˚C)
Optional Class H insulation: 32˚F to 140˚F (0˚C to 60˚C)

Solenoid Enclosures

Standard: Watertight, Types 1, 2, 3, 3S, 4, and 4X.
Optional: Explosionproof and Watertight, Types 3, 3S, 4, 4X, 6, 6P, 7, and 9. (To order, add prefix "EF" to catalog number.)

Approvals:

CSA certified. UL listed as General Purpose Valves. Meets applicable CE directives.

Specifications (English units)

Pipe Size (ins.)	Orifice Size (ins.)	Cv Flow Factor ①	Operating Pressure Differential (psi) Maximum AC			Max. Fluid. Temp. ˚F	Brass Body		Stainless Steel Body		Watt Rating/ Class of Coil Insulation
			Air-Inert Gas	Water	Lt. Oil @ 300 SSU	AC	Catalog Number	Constr. Ref. No.	Catalog Number	Constr. Ref. No.	AC
SINGLE SOLENOID CONSTRUCTION											
1/4	3/16	.70	125	100	100	160	8342G1	1	8342G701	2	20.1/F
3/8	3/16	.70	125	100	100	160	8342G3	1	8342G703	2	20.1/F
DUAL SOLENOID CONSTRUCTION											
1/4	3/16	.70	125	125	125	160	8342G20	3	8342G720	4	16.1/F
3/8	3/16	.70	125	125	125	160	8342G22	3	8342G722	4	16.1/F

Notes: ① With built-in flow control (Suffix "M"), the Cv is 0.44 and an 0.5 psi minimum operating pressure is required.

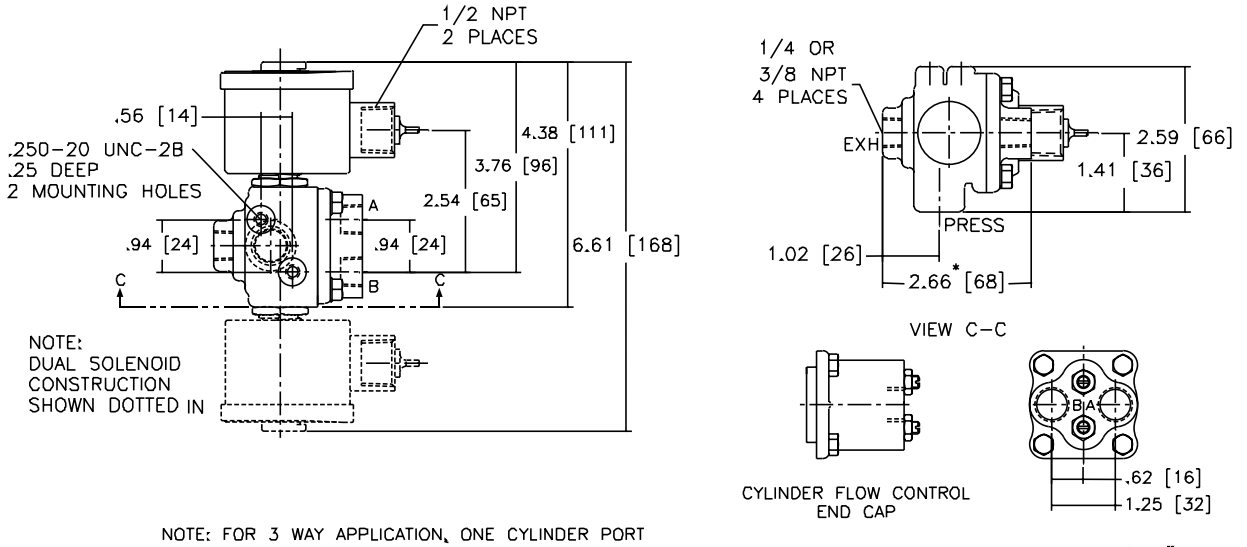
Specifications (Metric units)

Pipe Size (ins.)	Orifice Size (mm)	Kv Flow Factor (m3/h) ①	Operating Pressure Differential (bar) Maximum AC			Max. Fluid. Temp. ˚C	Brass Body		Stainless Steel Body		Watt Rating/ Class of Coil Insulation
			Air-Inert Gas	Water	Lt. Oil @ 300 SSU	AC	Catalog Number	Constr. Ref. No.	Catalog Number	Constr. Ref. No.	AC
SINGLE SOLENOID CONSTRUCTION											
1/4	4.8	.60	9	7	7	70	8342G1	1	8342G701	2	20.1/F
3/8	4.8	.60	9	7	7	70	8342G3	1	8342G703	2	20.1/F
DUAL SOLENOID CONSTRUCTION											
1/4	4.8	.60	9	9	9	70	8342G20	3	8342G720	4	16.1/F
3/8	4.8	.60	9	9	9	70	8342G22	3	8342G722	4	16.1/F

Notes: ① With built-in flow control (Suffix "M"), the Kv is 0.38 and an 0.03 bar minimum operating pressure is required.

Dimensions: inches (mm)

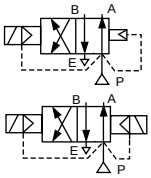
Constr. Ref. 1, 2, 3, 4



Pilot Operated

Piston/Poppet Solenoid Valves

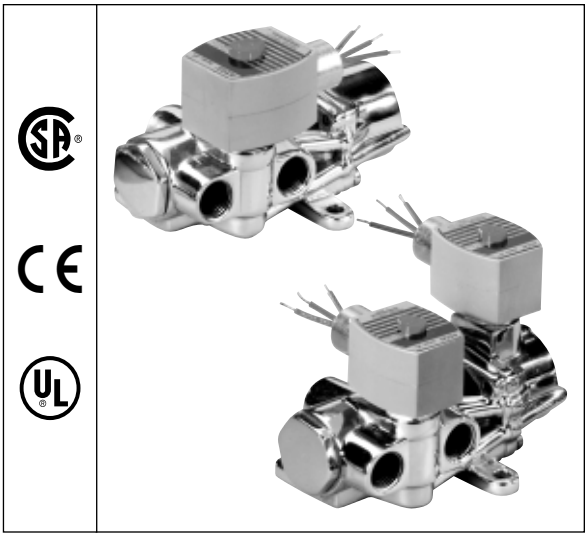
Brass Body • 1/4" to 1" NPT

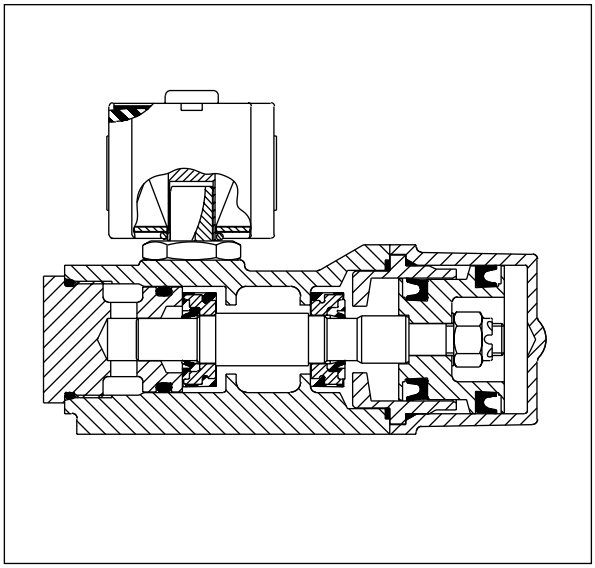


4/2
SERIES
8344

Features

- Sturdy, solid construction.
- Piston-operated poppet design provides high flow.
- Can use air or water for piloting control valves.
- Wide range of sizes and flow rates.
- Single or dual solenoid construction.
- Dual solenoid can be shifted with a momentary signal and remain in position even if electrical power is lost.
- Mountable in any position.





Construction

Valve Parts in Contact with Fluids	
Body	Brass
Seals and Disc	NBR
Core Tube	305 Stainless Steel
Core and Plugnut	430F Stainless Steel
Springs	302 Stainless Steel and 17-7PH Stainless Steel
Shading Coil	Copper
Pilot Seat Cartridge and Disc-Holder	CA
Shaft Gasket	Lead/Copper

Electrical

Standard Coil and Class of Insulation	Watt Rating and Power Consumption				Spare Coil Part No.			
	DC Watts	AC			General Purpose		Explosionproof	
		Watts	VA Holding	VA Inrush				
F	10.6	6.1	16	30	238210	238310	238214	238314
F	11.6	10.1	25	50	238610	238710	238614	238714
F	22.6	17.1	40	70	238610	238710	238614	238714

Dual Solenoid Operation: Minimum coil on-time for dual solenoid valves is 0.3 seconds on air service and 1.0 seconds on liquids.

Caution: Do not energize both solenoids simultaneously.

Standard Voltages: 24, 120, 240, 480 volts AC, 60 Hz (or 110, 220 volts AC, 50 Hz). 6, 12, 24, 120, 240 volts DC. Must be specified when ordering. Other voltages are available when required.

Solenoid Enclosures

Standard: Watertight, Types 1, 2, 3, 3S, 4, and 4X.

Optional: Explosionproof and Watertight, Types 3, 3S, 4, 4X, 6, 6P, 7, and 9. (To order, add prefix "EF" to the catalog number.)

Nominal Ambient Temperature Ranges:

AC: 32˚F to 125˚F (0˚C to 52˚C)
DC: 32˚F to 104˚F (0˚C to 40˚C)

Approvals:

CSA certified. UL listed as General Purpose Valve. Meets applicable CE directives.

Important:

A Minimum Operating Pressure Differential must be maintained between the pressure and exhaust ports. Supply and exhaust piping must be full area, unrestricted. ASCO flow controls and other similar components must be installed in the cylinder lines only.

Specifications (English units)

Pipe Size (ins.)	Orifice Size (ins.)	Cv Flow Factor		Operating Pressure Differential (psi)							Max. Fluid Temp. °F		Brass Body		Watt Rating/ Class of Coil Insulation	
					Max. AC			Max. DC								
		Press.	Exh.	① Min.	Air-Inert Gas	Water	Lt. Oil @ 300 SSU	Air-Inert Gas	Water	Lt. Oil @ 300 SSU	AC	DC	Catalog Number	Constr. Ref. No.	AC	DC
SINGLE SOLENOID																
1/4	1/4	.80	1.0	10	150	125	125	125	125	125	180	150	8344G70	1	10.1/F	11.6/F
1/4	1/4	.80	1.0	10	250 ②	250 ②	250 ②	250 ②	250 ②	250 ②	180	180	8344G0	1	17.1/F	22.6/F
3/8	3/8	1.4	2.2	10	150	125	125	125	125	125	180	150	8344G72	2	10.1/F	11.6/F
3/8	1/4	.80	1.0	10	250 ②	250 ②	250 ②	250 ②	250 ②	250 ②	180	180	8344G1	1	17.1/F	22.6/F
1/2	3/8	1.4	2.2	10	150	125	125	125	125	125	180	150	8344G74	2	10.1/F	11.6/F
1/2	3/8	1.4	2.2	10	250 ②	250 ②	250 ②	250 ②	250 ②	250 ②	180	180	8344G27	2	17.1/F	22.6/F
3/4	3/4	5.2	5.6	10	150	125	125	125	125	125	180	150	8344G76	3	10.1/F	11.6/F
3/4	3/4	5.2	5.6	10	250 ②	250 ②	250 ②	250 ②	250 ②	250 ②	180	180	8344G29	3	17.1/F	22.6/F
1	3/4	5.2	5.6	10	150	125	125	125	125	125	180	150	8344G78	3	10.1/F	11.6/F
1	3/4	5.2	5.6	10	250 ②	250 ②	250 ②	250 ②	250 ②	250 ②	180	180	8344G31	3	17.1/F	22.6/F
DUAL SOLENOID ③																
1/4	1/4	.80	1.0	10	250	200	125	125	125	100	180	120	8344G44	4	6.1/F	10.6/F
3/8	3/8	1.4	2.2	10	250	200	125	125	125	100	180	120	8344G80	6	6.1/F	10.6/F
3/8	3/8	1.4	2.2	10	300	300	200	-	-	-	180	-	8344G50	7	10.1/F	-
1/2	3/8	1.4	2.2	10	250	200	125	125	125	100	180	120	8344G82	6	6.1/F	10.6/F
3/4	3/4	5.2	5.6	10	300	300	200	125	125	100	180	120	8344G54	8	10.1/F	10.6/F
1	3/4	5.2	5.6	10	300	300	200	125	125	100	180	120	8344G56	8	10.1/F	10.6/F

Notes: ① 25 psi (1.7 bar) minimum on light oil service.
② For best results, do not use valve rated 250 psi (17 bar) on mainline pressure of less than 125 psi (9 bar).
③ On 50 hertz service, the watt rating for the 6.1/F solenoid is 8.1 watts.

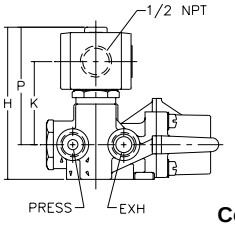
Specifications (Metric units)

Pipe Size (ins.)	Orifice Size (mm)	Kv Flow Factor (m3/h)		Operating Pressure Differential (bar)							Max. Fluid Temp. °C		Brass Body		Watt Rating / Class of Coil Insulation	
					Max. AC			Max. DC								
		Press.	Exh.	① Min.	Air-Inert Gas	Water	Lt. Oil @ 300 SSU	Air-Inert Gas	Water	Lt. Oil @ 300 SSU	AC	DC	Catalog Number	Constr. Ref. No.	AC	DC
SINGLE SOLENOID																
1/4	6	.69	.86	0.7	10	9	9	9	9	9	81	65	8344G70	1	10.1/F	11.6/F
1/4	6	.69	.86	0.7	17 ②	17 ②	17 ②	17 ②	17 ②	17 ②	81	81	8344G0	1	17.1/F	22.6/F
3/8	10	1.2	1.89	0.7	10	9	9	9	9	9	81	65	8344G72	2	10.1/F	11.6/F
3/8	6	.69	.86	0.7	17 ②	17 ②	17 ②	17 ②	17 ②	17 ②	81	81	8344G1	1	17.1/F	22.6/F
1/2	10	1.2	1.89	0.7	10	9	9	9	9	9	81	65	8344G74	2	10.1/F	11.6/F
1/2	10	1.2	1.89	0.7	17 ②	17 ②	17 ②	17 ②	17 ②	17 ②	81	81	8344G27	2	17.1/F	22.6/F
3/4	19	4.5	4.80	0.7	10	9	9	9	9	9	81	65	8344G76	3	10.1/F	11.6/F
3/4	19	4.5	4.80	0.7	17 ②	17 ②	17 ②	17 ②	17 ②	17 ②	81	81	8344G29	3	17.1/F	22.6/F
1	19	4.5	4.80	0.7	10	9	9	9	9	9	81	65	8344G78	3	10.1/F	11.6/F
1	19	4.5	4.80	0.7	17 ②	17 ②	17 ②	17 ②	17 ②	17 ②	81	81	8344G31	3	17.1/F	22.6/F
DUAL SOLENOID ③																
1/4	6	.69	.86	0.7	17	14	9	9	9	7	81	48	8344G44	4	6.1/F	10.6/F
3/8	10	1.2	1.89	0.7	17	14	9	9	9	7	81	48	8344G80	6	6.1/F	10.6/F
3/8	10	1.2	1.89	0.7	21	21	14	-	-	-	81	-	8344G50	7	10.1/F	-
1/2	10	1.2	1.89	0.7	17	14	9	9	9	7	81	48	8344G82	6	6.1/F	10.6/F
3/4	19	4.5	4.80	0.7	21	21	14	9	9	7	81	48	8344G54	8	10.1/F	10.6/F
1	19	4.5	4.80	0.7	21	21	14	9	9	7	81	48	8344G56	8	10.1/F	10.6/F

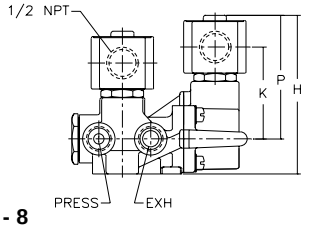
Dimensions: inches (mm)

Constr. Ref. No.		ØD	E	F	G	H	J	K	L	N	P	W	X	Y	Z	Exhaust Pipe Size
1	ins.	Ø.28	.56	2.41	1.88	4.08	1.03	2.15	3.13	.72	3.12	4.75	1.41	1.56	.81	3/8
	mm	Ø7.1	14	61	48	104	26	55	80	18	79	121	36	40	21	3/8
2	ins.	Ø.34	.75	3.12	2.63	4.06	1.50	1.97	3.18	.83	2.94	6.06	1.88	1.90	.84	1/2
	mm	Ø8.6	19	79	67	103	38	50	81	21	75	154	47	48	21	1/2
3	ins.	Ø.34	1.34	3.81	3.88	4.86	2.09	2.34	4.56	1.56	3.31	8.25	2.12	2.63	1.16	1
	mm	Ø8.6	34	97	99	123	53	59	116	39	84	210	54	67	30	1
4	ins.	Ø.28	.56	2.41	1.88	4.34	1.03	2.52	3.13	.72	3.38	4.81	1.41	1.56	.81	3/8
	mm	Ø7.1	14	61	48	110	26	64	80	18	86	122	36	40	21	3/8
6	ins.	Ø.34	.75	3.12	2.63	4.50	1.50	2.52	3.18	.83	3.38	6.06	1.88	1.90	.84	1/2
	mm	Ø8.6	19	79	67	114	38	64	81	21	86	154	47	48	21	1/2
7	ins.	Ø.34	.75	3.12	2.63	4.68	1.50	2.59	3.18	.83	3.56	6.06	1.88	1.90	.84	1/2
	mm	Ø8.6	19	79	67	119	38	66	81	21	90	154	47	48	21	1/2
8	ins.	Ø.34	1.34	3.81	3.88	5.56	2.09	3.03	4.56	1.55	4.00	8.25	2.12	2.63	1.16	1
	mm	Ø8.6	34	97	99	141	53	77	116	39	102	210	54	67	30	1

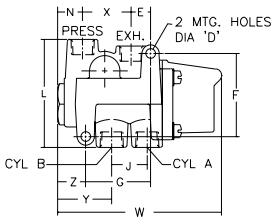
Constr. Ref 1 - 3



Constr. Ref. 4 - 8

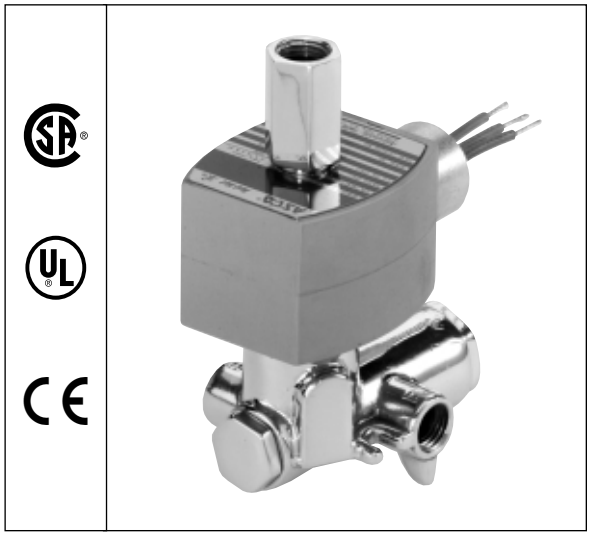


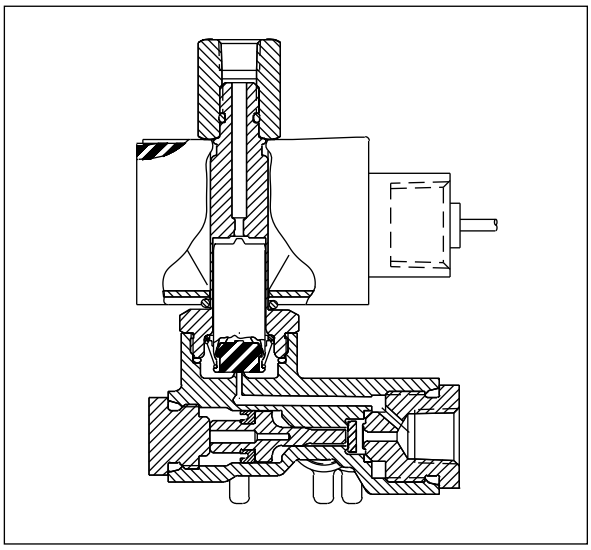
Constr. Ref 1 - 8



Features

- Compact valves for general service applications.
- Low-cost, 4 way valve when low flow is sufficient.
- Mountable in any position.





Construction

Valve Parts in Contact with Fluids		
Body	Brass	316 Stainless Steel
Seals and Discs	NBR and PA	FKM, PA and UR
Core Tube	305 Stainless Steel	
Core and Plugnut	430F Stainless Steel	
Springs	302 Stainless Steel	
Shading Coil	Copper	
Piston	PA	

Electrical

Standard Coil and Class of Insulation	Watt Rating and Power Consumption				Spare Coil Part No.					
		AC			General Purpose		Explosionproof (EF)		Explosionproof (EV)	
	DC Watts	Watts	VA Holding	VA Inrush	AC	DC	AC	DC	AC	DC
F	11.6	10.1	25	50	238610	238710	238614	238714	274614	274714

Standard Voltages: 24, 120, 240, 480 volts AC, 60 Hz (or 110, 220 volts AC, 50 Hz). 6, 12, 24, 120, 240 volts DC. Must be specified when ordering. Other voltages are available when required.

Solenoid Enclosures

Standard: Watertight, Types 1, 2, 3, 3S, 4, and 4X.

Optional: Explosionproof and Watertight, Types 3, 3S, 4, 4X, 6, 6P, 7, and 9. (To order, add prefix "EF" or, for Explosionproof Stainless Steel trim and hub on Brass-Bodied valves, add "EV" to catalog number.)

Nominal Ambient Temperature Ranges:

AC: 32˚F to 125˚F (0˚C to 52˚C)

DC: 32˚F to 104˚F (0˚C to 40˚C)

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Approvals:

CSA certified. UL listed as General Purpose Valve. Meets applicable CE directives.

Important:

A Minimum Operating Pressure Differential must be maintained between the pressure and exhaust ports. Supply and exhaust piping must be full area, unrestricted. ASCO flow controls and other similar components must be installed in the cylinder lines only..

Specifications (English units)

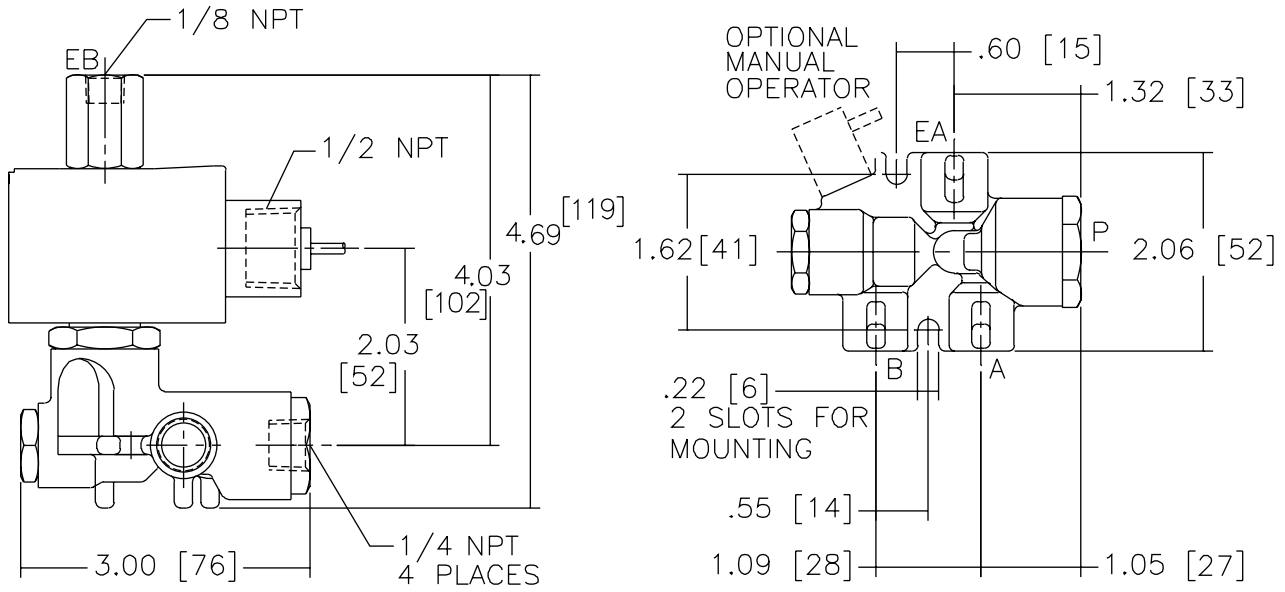
Pipe Size (ins.)	Orifice Size (ins.)		Cv Flow Factor		Operating Pressure Differential (psi)							Max. Fluid Temp. ˚F		Brass Body	316 Stainless Steel Body		Watt Rating/ Class of Coil Insulation	
						Max. AC			Max. DC									
	Pressure	Exhaust	Inlet	Exhaust	Min.	Air-Inert Gas	Water	Lt. Oil @ 50 SSU	Air-Inert Gas	Water	Lt. Oil @ 50 SSU	AC	DC	Catalog Number	Catalog Number	Constr. Ref. No.	AC	DC
SINGLE SOLENOID																		
1/4	1/16	3/32	.09	.09	10	150	150	150	100	100	100	180	104	8345G1	EV8345G81	1	10.1/F	11.6/F
SINGLE SOLENOID AIR-ONLY CONSTRUCTION - Exhaust to Atmosphere																		
1/4	1/16	3/32	.09	.09	10	150	-	-	100	-	-	180	104	8345H3	-	2	10.1/F	11.6/F

Specifications (Metric units)

Pipe Size (ins.)	Orifice Size (mm)		Kv Flow Factor (m3/h)		Operating Pressure Differential (bar)							Max. Fluid Temp. ˚C		Brass Body	316 Stainless Steel Body		Watt Rating/ Class of Coil Insulation	
						Max. AC			Max. DC									
	Pressure	Exhaust	Inlet	Exhaust	Min.	Air-Inert Gas	Water	Lt. Oil @ 50 SSU	Air-Inert Gas	Water	Lt. Oil @ 50 SSU	AC	DC	Catalog Number	Catalog Number	Constr. Ref. No.	AC	DC
SINGLE SOLENOID																		
1/4	2	2	.08	.08	0.7	10	10	10	7	7	7	82	40	8345G1	EV8345G81	1	10.1/F	11.6/F
SINGLE SOLENOID AIR-ONLY CONSTRUCTION - Exhaust to Atmosphere																		
1/4	2	2	.08	.08	0.7	10	-	-	7	-	-	82	40	8345H3	-	2	10.1/F	11.6/F

Dimensions: inches (mm)

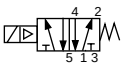
Constr. Ref. 1, 2

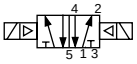


Single or Dual Solenoid • Pilot Operated

Stainless Steel Valves

For In-line Applications • 1/4" NPT

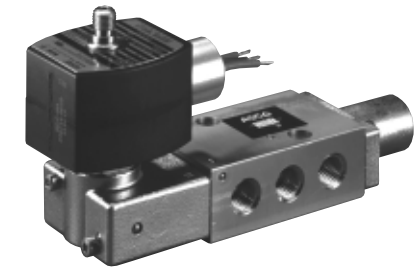
Single Solenoid 

Dual Solenoid 

5/2 SERIES 8551

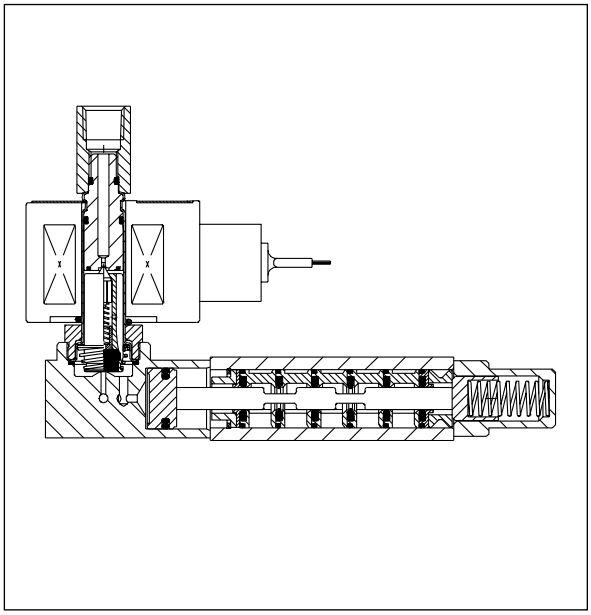
Features

- Unique sealing technology combines hard T-seals and flexible o-rings for bubble tight shutoff, dirt resistance, and multimillion cycle life.
- Designed for use in corrosive atmospheres.
- Single or dual solenoids.
- Mountable in any position.
- Dual solenoid operation: solenoid may be energized momentarily (1/10 second) or continuously.
- Low Power and Intrinsically Safe constructions are avaiable.



Construction

Valve Parts in Contact with Fluids	
Body	316 Stainless Steel
Seals and Discs	NBR and PUR
Core and Plugnut	430F Stainless Steel
Core Tube	305 Stainless Steel
Springs	302 Stainless Steel
Shading Coil	Copper
End Covers	316 Stainless Steel
Spool	316 Stainless Steel
Internal Parts	Zamak, Steel, CA, Brass



Electrical

Standard Coil and Class of Insulation	Watt Rating and Power Consumption				Spare Coil Part No.			
		AC			General Purpose		Explosionproof (EV)	
	DC Watts	Watts	VA Holding	VA Inrush	AC	DC	AC	DC
F	11.6	10.1	25	50	238610	238710	274614	274714

Standard Voltages: 24, 120, 240, 480 volts AC, 60 Hz (115 - 230 volts AC, 50 Hz). 6, 12, 24, 120, 240 volts DC. Must be specified when ordering. Other voltages available when required.

Nominal Ambient Temperature Ranges:

AC: -4˚F to 125˚F (-20˚C to 52˚C)
DC: -4˚F to 104˚F (-20˚C to 40˚C)

Solenoid Enclosures

Standard: Watertight, Types 1, 2, 3, 3S, 4, and 4X.

Optional: Explosionproof and Watertight, Types 3, 3S, 4, 4X, 6, 6P, 7, and 9. (For Stainless Steel trim and conduit hub, add prefix “EV” to catalog number.)

Approvals:

UL listed for General Purpose valve.
UL recognized components for “SC” prefix (open frame version).

Meets applicable CE directives. Optional "EV" solenoid is CSA certified and UL listed..

Specifications (English units)

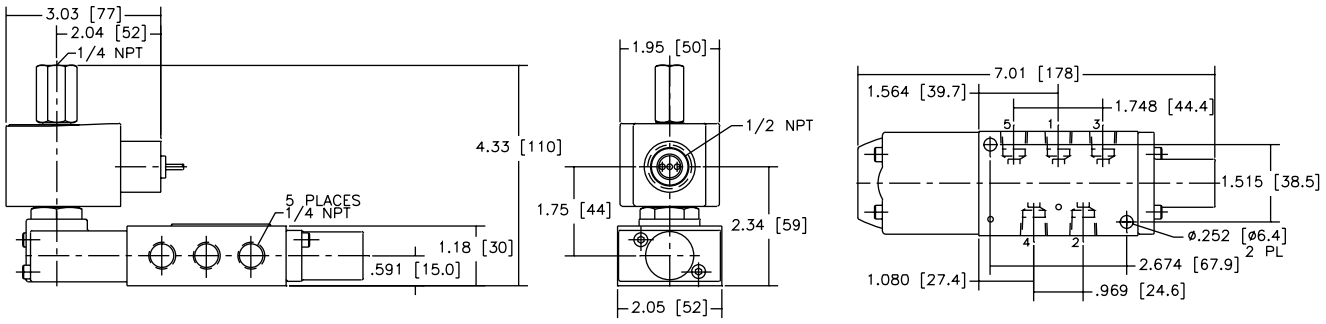
Pipe Size (ins.)	Orifice Size (ins.)	Cv Flow Factor	Single Solenoid							Dual Solenoid							Watt Rating/ Class of Coil Insulation	
			Operating Pressure Differential (psi)			Max. Fluid Temp. ˚F		Stainless Steel	Constr. Ref. No.	Operating Pressure Differential (psi)			Max. Fluid Temp. ˚F		Stainless Steel	Constr. Ref. No.		
				Max.							Max.							
			Min.	AC	DC	AC	DC	Catalog Number		Min.	AC	DC	AC	DC	Catalog Number		AC	DC
1/4	1/4	.84	35	150	120	140	120	8551G453	1	20	150	120	140	120	8551G455	2	10.1/F	11.6/F

Specifications (Metric units)

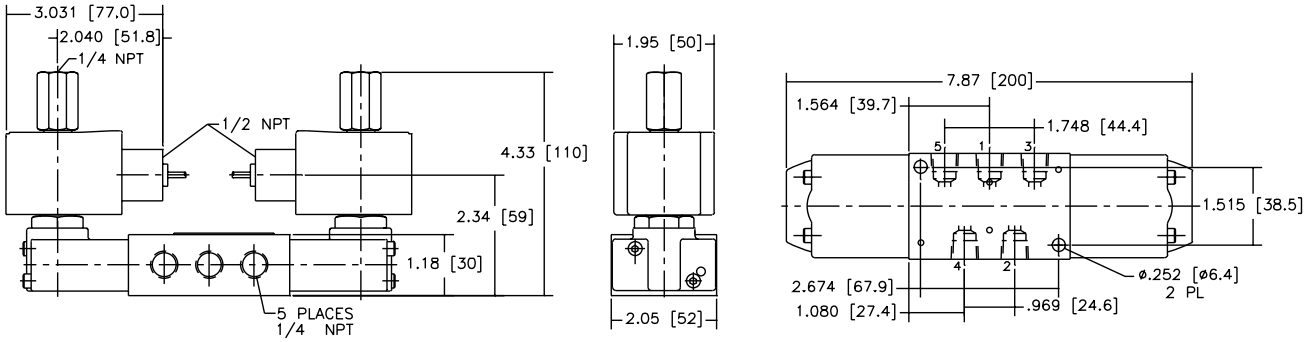
Pipe Size (ins.)	Orifice Size (mm)	Kv Flow Factor (m3/h)	Single Solenoid							Dual Solenoid							Watt Rating/ Class of Coil Insulation	
			Operating Pressure Differential (bar)			Max. Fluid Temp. ˚C		Stainless Steel	Constr. Ref. No.	Operating Pressure Differential (bar)			Max. Fluid Temp. ˚C		Stainless Steel	Constr. Ref. No.		
				Max.							Max.							
			Min.	AC	DC	AC	DC	Catalog Number		Min.	AC	DC	AC	DC	Catalog Number		AC	DC
1/4	6	.72	2	10	8	59	48	8551G453	1	1	10	8	59	48	8551G455	2	10.1/F	11.6/F

Dimensions: inches (mm)

SINGLE SOLENOID Constr. Ref. 1



DUAL SOLENOID Constr. Ref. 2



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