

ASCO SCIENTIFIC®

MICRO-MINIATURE SOLENOID VALVES

General Service Valves

Isolation Valves

Pinch Valves

Manifolds





ASCO SCIENTIFIC®



ASCO Scientific is a leading manufacturer of high quality, Micro-Miniature Isolation, Pinch, and General Service valves for the reliable control of fluids and gases in medical equipment, analytical instrumentation, and industrial applications. Our valves are found in equipment such as:



- Liquid & Gas Chromatographs
- Clinical Diagnostic Equipment
- DNA Sequencers/Synthesizers
- Gas Analyzers
- Oxygen Concentrators/Conservers
- Ventilators
- Dental Equipment
- Environmental Controls

In addition to our comprehensive standard product offering, we have the ability to create customized products that provide the precise solution to meet your fluid control needs.

You can find more information on ASCO Scientific's products on the web at www.ascovalve.com in the product section or contact the sales office nearest you to review your specific application requirements.



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The Series 067 is a 10mm wide manifold mount, miniature, rocker type, isolation valve designed to control the flow of aggressive chemicals or high purity fluids. The Series 067 offers the following benefits:

- Inert materials of construction, such as PEEK and FFKM
- Small internal volume
- Excellent flushability
- Self draining
- Low power consumption

Construction

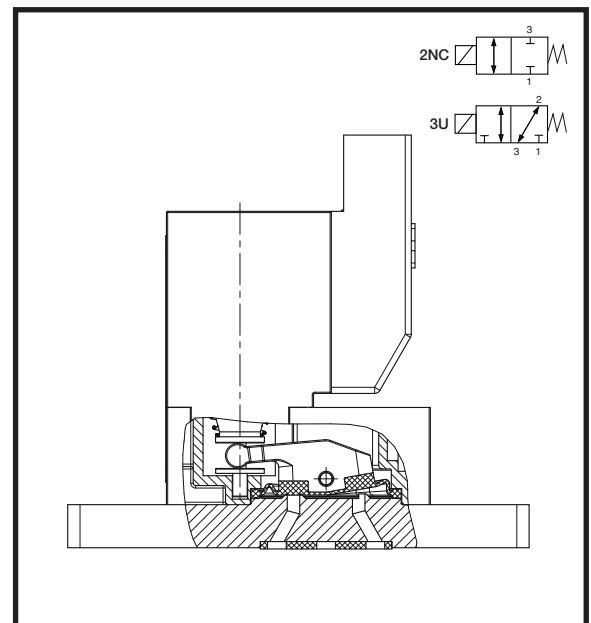
Valve Parts in Contact with Fluids	
Body	PEEK
Diaphragm	FFKM or EPDM or FKM

Electrical

Standard Voltages	12 VDC, 24 VDC
Power Consumption	2.5 W – 1 W* holding (*with power save electronics)
Duty Cycle Rating	Continuous
Electrical Response Time	<10 msec open or close
Ambient Temperature	50°F to 122°F (10°C to 50°C)
Electrical Connection	Spade terminals or lead wires (see Specification Chart for details)
Protection Rating	IP40

Valve

Internal Volume	13µl
Fluid Temperature	25°F to 104°F (-5°C to 40°C)
Vacuum Rating	26 in-Hg at any port



Alternate Construction/Options

Many alternate constructions/options are available, including a variety of voltages, electrical connections, orifice diameters and port connections. ASCO Scientific can also custom design a valve for your specific application.

Specifications

Pipe Size	Orifice Size (ins.)	Flow Coefficient Cv =	Maximum Operating Pressure (psi)			Electrical Connection/Type (*)	Prefix	Basecode	Const. Ref.	Options	
			Vac. (in/Hg)	Max.						EPDM	FKM
				Gases	Liquids						
2/2 NC - Normally Closed											
Manifold	0.023	0.007	26.6	44	44	1	SC	S067A021	1	E	V
						2		S067A022	2		
						3		S067A025	3		
	0.031	0.015	26.6	30	30	1	SC	S067A026	1	E	V
						2		S067A027	2		
						3		S067A030	3		
	0.039	0.023	26.6	22	22	1	SC	S067A031	1	E	V
						2		S067A032	2		
						3		S067A035	3		
	0.053	0.032	26.6	15	15	1	SC	S067A036	1	E	V
						2		S067A037	2		
						3		S067A040	3		
3/2 U - Universal											
Manifold	0.023	0.007	26.6	44	44	1	SC	S067A101	1	E	V
						2		S067A102	2		
						3		S067A105	3		
	0.031	0.015	26.6	30	30	1	SC	S067A106	1	E	V
						2		S067A107	2		
						3		S067A110	3		
	0.039	0.023	26.6	22	22	1	SC	S067A111	1	E	V
						2		S067A112	2		
						3		S067A115	3		
	0.053	0.032	26.6	15	15	1	SC	S067A116	1	E	V
						2		S067A117	2		
						3		S067A120	3		

(*) Types 1 & 2 with LED
 1 = Horizontal width: 5.08 mm
 2 = Vertical width: 5.08 mm
 3 = Flying leads, 0.5 m long, 0.25 mm

Options

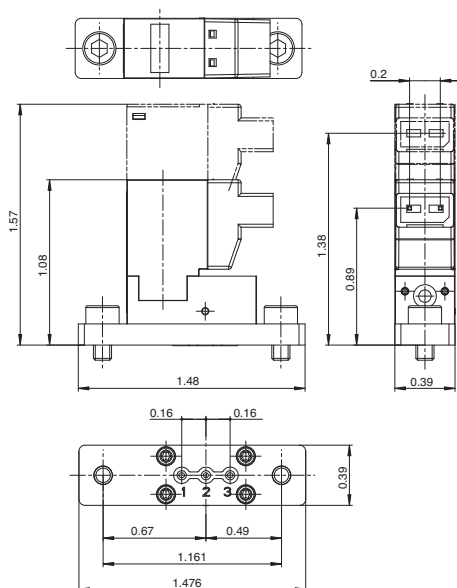
Manual operator (impulse-type)
 Normally open constructions (consult factory)

Installation

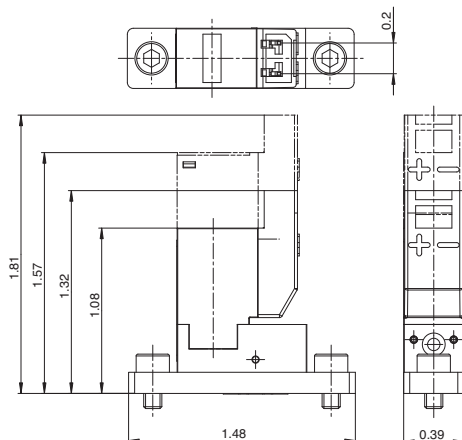
The solenoid valves can be mounted in any position without affecting operation.
 Installation/maintenance instructions are included with each valve.
 Torque specifications for mounting screws is 5 in-lbs.

Dimensions: inches

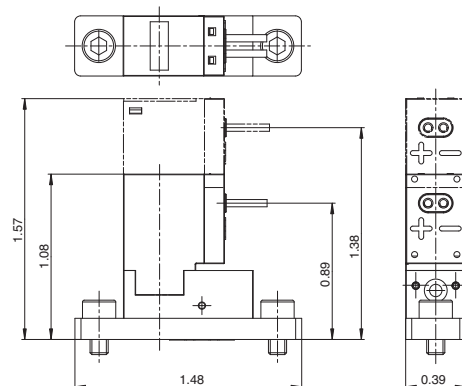
Const. Ref. 1



Const. Ref. 2



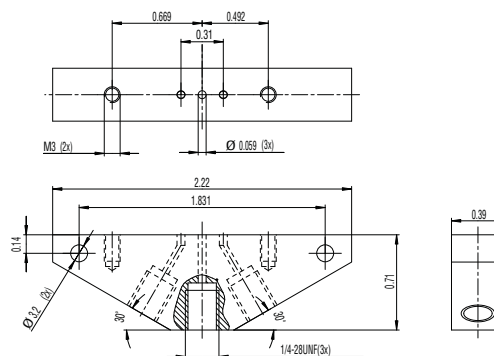
Const. Ref. 3



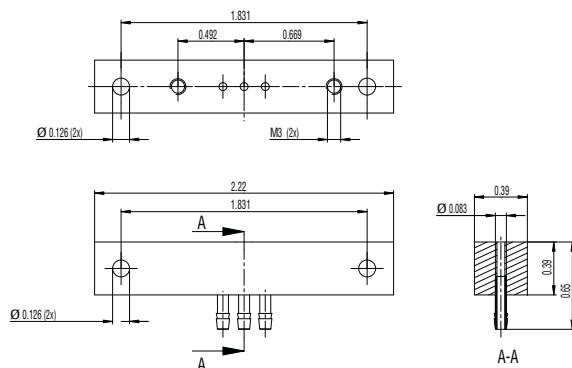
Note: Taller coil for 0.053 orifice versions.

Single Subbases

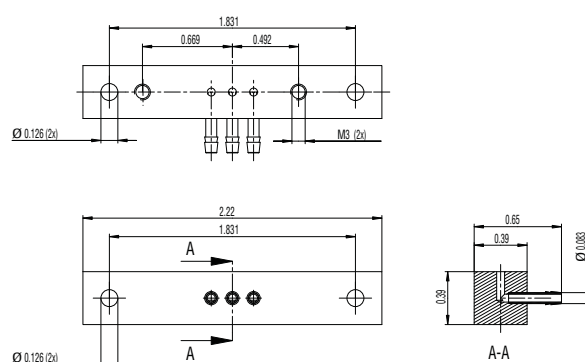
1/4 - 28 UNF thread (P/N 36100040)



Bottom push-in hose connection (P/N 36100042)



Side push-in hose connection (P/N 36100044)



Connectors must be ordered separately, please specify the quantity and codes as necessary.

0.5m long	Code: 881 18 801
1.5m long	Code: 881 18 802
1.5m long	Code: 881 18 803





The Series 385 is a 16 mm wide, manifold mount, miniature isolation valve designed to control the flow of aggressive chemicals or high purity fluids. The Series 385 offers the following benefits:

- Compact manifold design saves space and reduces assembly time
- Prevents contamination of fluid sample, due to excellent flushing characteristics
- Rocker design significantly reduces erratic flow caused by pumping action in poppet style valves
- Available with inert materials of construction, such as PEEK and FFKM to handle aggressive chemicals or high purity media

Construction

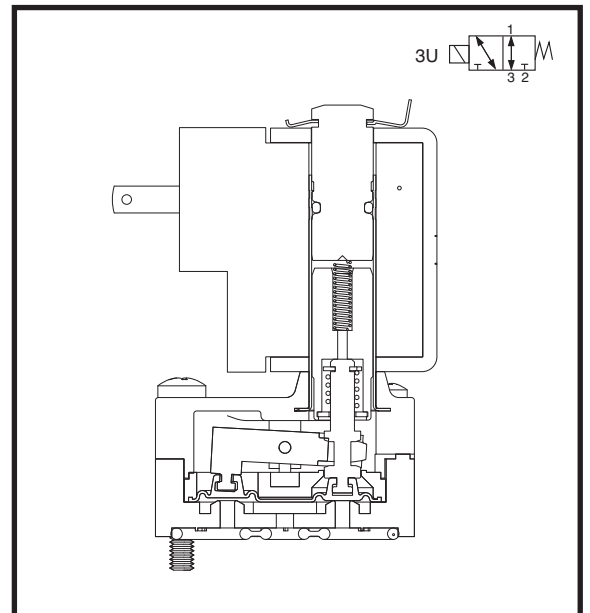
Valve Parts in Contact with Fluids	
Body	PEEK
Diaphragm	FFKM (Perfluoro Elastomer), EPDM or FKM

Electrical

Standard Voltages	12, 24 VDC (+10%, -5%)
Power Consumption	4 Watts
Duty Cycle Rating	Continuous
Coil Insulation	Class F
Ambient Temperature	14°F to 140°F (-10°C to 60°C)
Electrical Connection	15" Lead Wire Assembly, DIN Terminals (2.8mm x .5mm, DIN 46340)
Protection Rating	Watertight (IP65) with DIN Plug Connector

Valve

Response Time	~20 ms (to open or close)
Internal Volume	67µL
Fluid Temperature	14°F to 140°F (-10°C to 60°C)
Vacuum Rating	FFKM: 20" Hg at any port EPDM or FKM: Consult ASCO for use with vacuum.

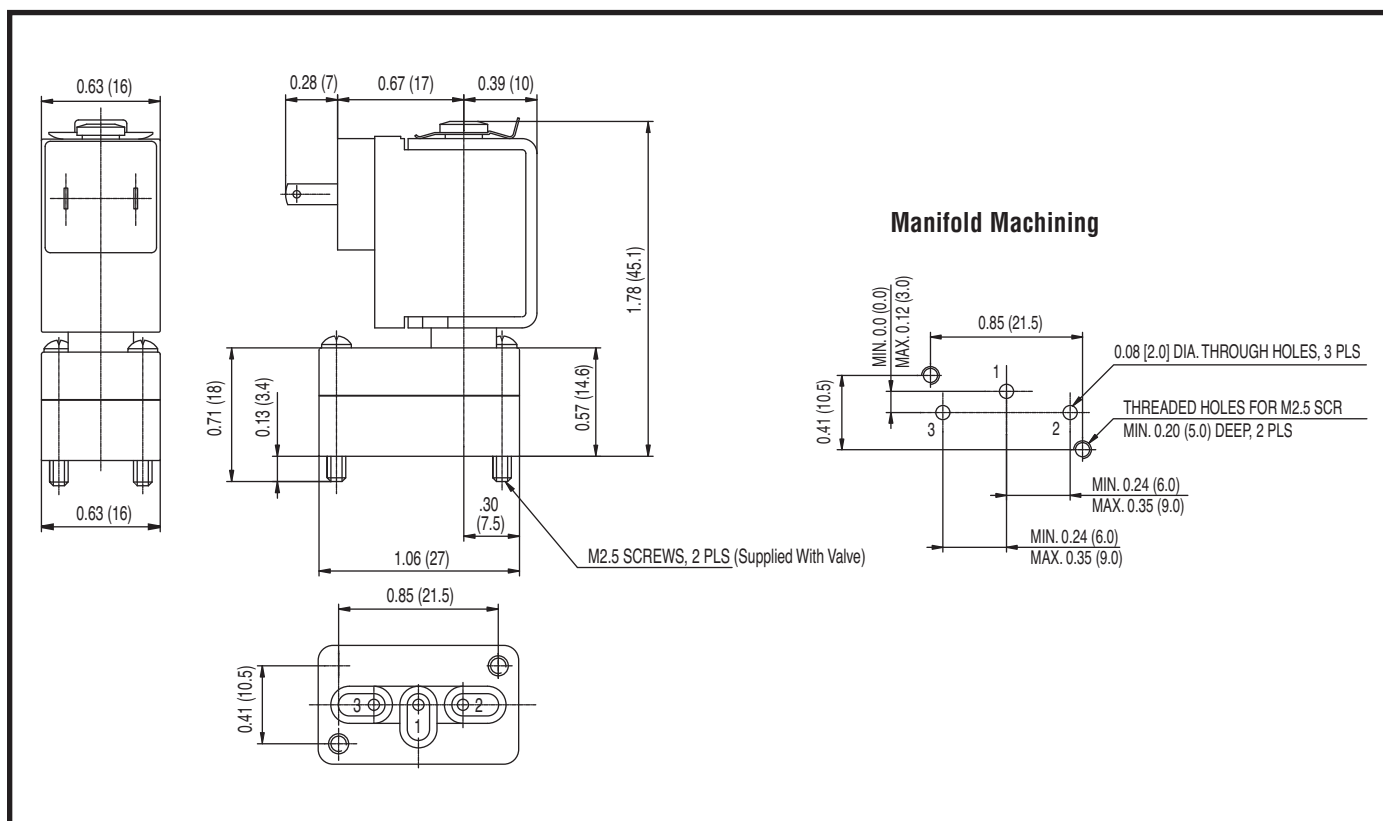


Specifications

Ports	Orifice Size (ins.)	Cv Flow Factor	Differential Pressure (psi)					Diaphragm Material	Catalog Number	Const. Ref.	Power (Watts)	Weight (oz)
			Min.	Max.								
				Gases		Liquids						
				AC	DC	AC	DC					
Valve with Leaded Coil												
Manifold	0.06	0.04	0	-	35	-	35	FFKM	S385A001	1	4	1.4
								EPDM	S385A001E			
								FKM	S385A001V			
1/4-28 UNF FB	0.06	0.04	0	-	35	-	35	FFKM	8385A001	2	4	1.4
								EPDM	8385A001E			
								FKM	8385A001V			
Barb for 3/32" ID Tube	0.06	0.04	0	-	35	-	35	FFKM	H385A001	3	4	1.4
								EPDM	H385A001E			
								FKM	H385A001V			
Valve with DIN Terminal Coil												
Manifold	0.06	0.04	0	-	35	-	35	FFKM	SCS385A001	1	4	1.4
								EPDM	SCS385A001E			
								FKM	SCS385A001V			
1/4-28 UNF FB	0.06	0.04	0	-	35	-	35	FFKM	SC8385A001	2	4	1.4
								EPDM	SC8385A002V			
								FKM	SC8385A001V			
Barb for 3/32" ID Tube	0.06	0.04	0	-	35	-	35	FFKM	SCH385A001	3	4	1.4
								EPDM	SCH385A001E			
								FKM	SCH385A001V			

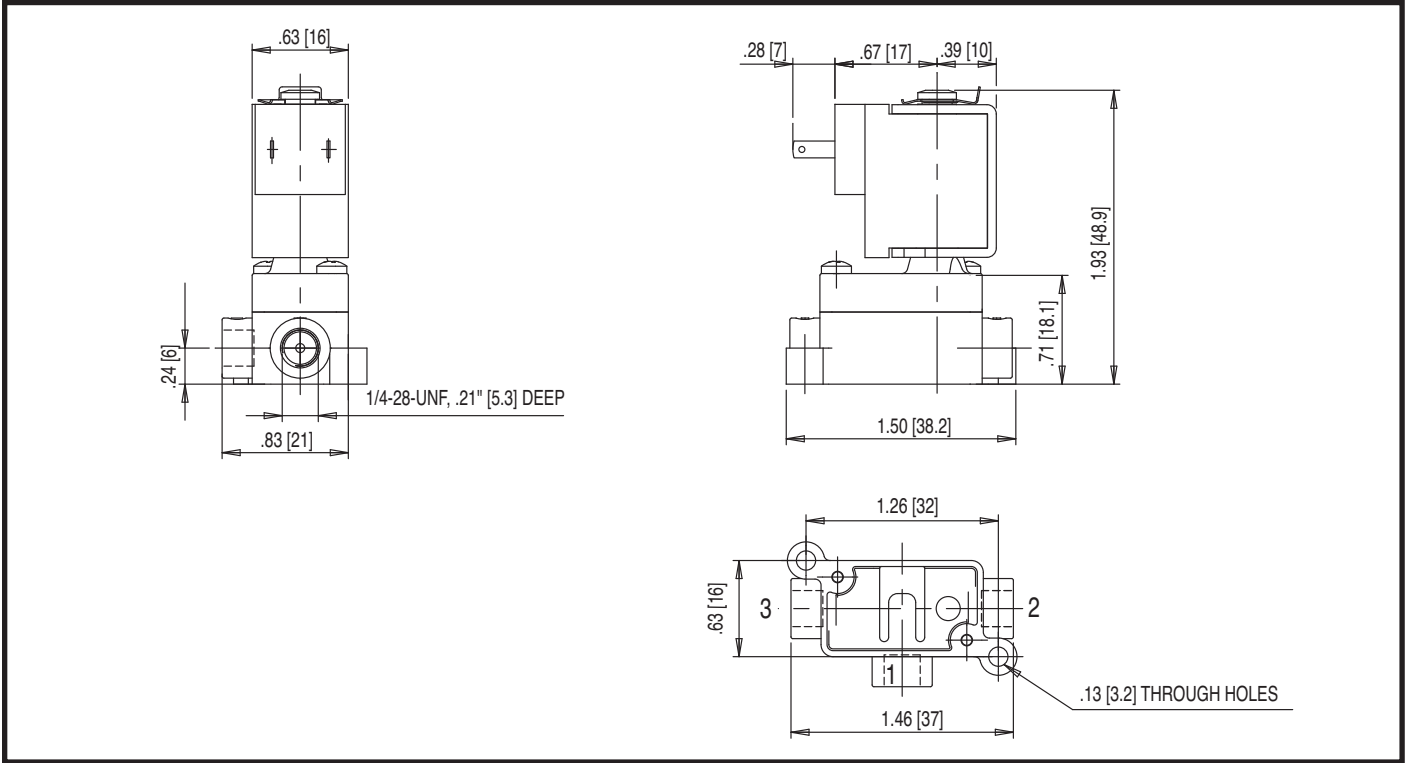
Dimensions: Inches (mm)

Constr. Ref. 1

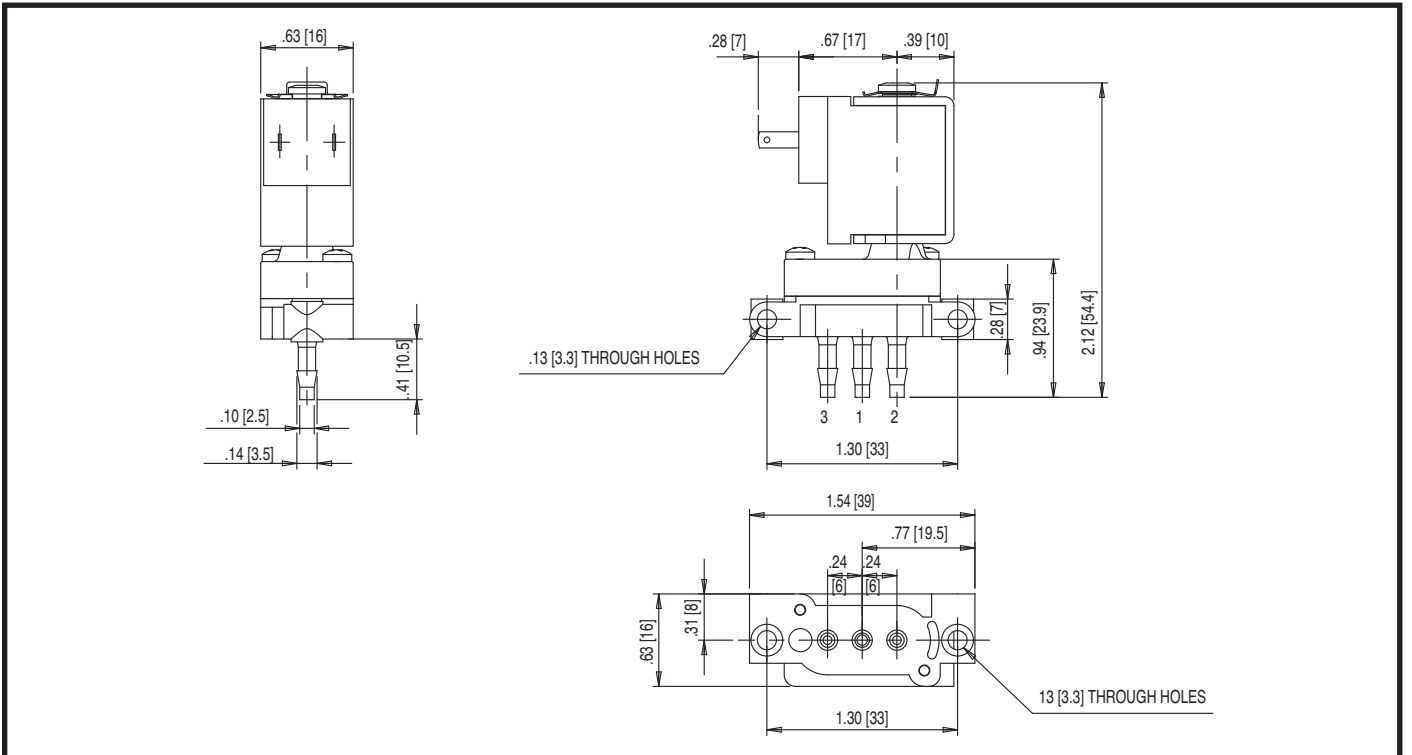


Dimensions: Inches [mm]

Constr. Ref. 2



Constr. Ref. 3



ASCO Scientific's patented Series 458 rocker isolation valves feature a unique rocker diaphragm mechanism that shields the internal components of the solenoid from the fluid. The design forms an easy to flush, low volume internal cavity.

- Suitable for corrosive media that would attack valves designed for general service duty
- Prevents contamination of fluid sample, due to excellent flushing characteristics
- Rocker design significantly reduces erratic flow caused by pumping action in poppet style valves
- Standard built-in manual operator for testing or troubleshooting
- An air operated version is also available. In this version an air cylinder replaces the solenoid as the valve actuator

Construction

Valve Parts in Contact with Fluids	
Flange	PSU or PEEK
Diaphragm	EPDM

Electrical

Standard Voltages	6, 12, 24 VDC +10%, -5% 115 VAC (with rectifier in lead wires)
Power Consumption	2.5 Watts
Duty Cycle Rating	Continuous
Coil Insulation	266°F (130°C)
Electrical Connection	26 gage lead wire

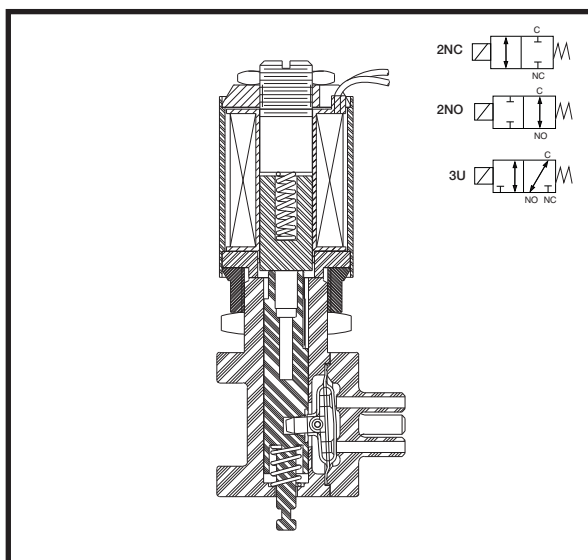
Valve

Response Time	~20 ms at rated voltage
Internal Volume -2-Way -3-Way	51 µL 62 µL
Options	<ul style="list-style-type: none"> • Surface or panel mount • Barbed bib ports for 0.062" ID to 0.082" soft tubing • Threaded-flat bottom ports available with #1/4-28 UNF, #10-32 UNF, or M6 threads • Air Operated version (30 psig pilot pressure required)
Vacuum Rating	29" Hg

Alternative Constructions

Many alternative constructions are available and include a variety of voltages, electrical connectors, and materials of construction. ASCO Scientific can also custom design a valve for your specific application.

Contact your local ASCO sales office for more information.



Temperature Range:

Ambient & Media:
32°F to 114°F (0°C to 45°C) continuous duty

Approvals:

Meets applicable CE directives

Specifications

Ports	Orifice Size (ins.)	Cv Flow Factor	Flange Material	Mount	Maximum Pressure (psi)	Catalog Number	Watt Rating @ 20°C	Weight (oz.)
2-WAY NORMALLY CLOSED (Closed when de-energized)								
Barbed Hose Bib	0.062	0.04	PSU	Surface	35	4581xxx11ES	2.5	2
Barbed Hose Bib	0.062	0.04	PSU	Panel	35	4581xxx11EP	2.5	2
#10-32 UNF FB	0.062	0.04	PEEK	Surface	35	4581xxx22ES	2.5	2
#10-32 UNF FB	0.062	0.04	PEEK	Panel	35	4581xxx22EP	2.5	2
1/4-28 UNF FB	0.062	0.04	PEEK	Surface	35	4581xxx32ES	2.5	2
1/4-28 UNF FB	0.062	0.04	PEEK	Panel	35	4581xxx32EP	2.5	2
M6 FB	0.062	0.04	PEEK	Surface	35	4581xxx42ES	2.5	2
M6 FB	0.062	0.04	PEEK	Panel	35	4581xxx42EP	2.5	2
2-WAY NORMALLY OPEN (Open when de-energized)								
Barbed Hose Bib	0.062	0.04	PSU	Surface	35	4582xxx11ES	2.5	2
Barbed Hose Bib	0.062	0.04	PSU	Panel	35	4582xxx11EP	2.5	2
#10-32 UNF FB	0.062	0.04	PEEK	Surface	35	4582xxx22ES	2.5	2
#10-32 UNF FB	0.062	0.04	PEEK	Panel	35	4582xxx22EP	2.5	2
1/4-28 UNF FB	0.062	0.04	PEEK	Surface	35	4582xxx32ES	2.5	2
1/4-28 UNF FB	0.062	0.04	PEEK	Panel	35	4582xxx32EP	2.5	2
M6 FB	0.062	0.04	PEEK	Surface	35	4582xxx42ES	2.5	2
M6 FB	0.062	0.04	PEEK	Panel	35	4582xxx42EP	2.5	2
3-WAY UNIVERSAL OPERATION (Pressure at any port)								
Barbed Hose Bib	0.062	0.04	PSU	Surface	35	4583xxx11ES	2.5	2
Barbed Hose Bib	0.062	0.04	PSU	Panel	35	4583xxx11EP	2.5	2
#10-32 UNF FB	0.062	0.04	PEEK	Surface	35	4583xxx22ES	2.5	2
#10-32 UNF FB	0.062	0.04	PEEK	Panel	35	4583xxx22EP	2.5	2
1/4-28 UNF FB	0.062	0.04	PEEK	Surface	35	4583xxx32ES	2.5	2
1/4-28 UNF FB	0.062	0.04	PEEK	Panel	35	4583xxx32EP	2.5	2
M6 FB	0.062	0.04	PEEK	Surface	35	4583xxx42ES	2.5	2
M6 FB	0.062	0.04	PEEK	Panel	35	4583xxx42EP	2.5	2
Notes "xxx" Denotes place in catalog number for voltage or air operator designation								

Catalog Number Description and Options

4581	xxx	11ES
Base Catalog Number (1 st Part)	Voltage - 006 (DC) - 012 (DC) - 024 (DC) - 115 (AC) - AIR	Base Catalog Number (2 nd Part)

To Construct Catalog Number

- Select base catalog number
- Insert voltage into the 5th, 6th, and 7th digits denoted by "xxx"

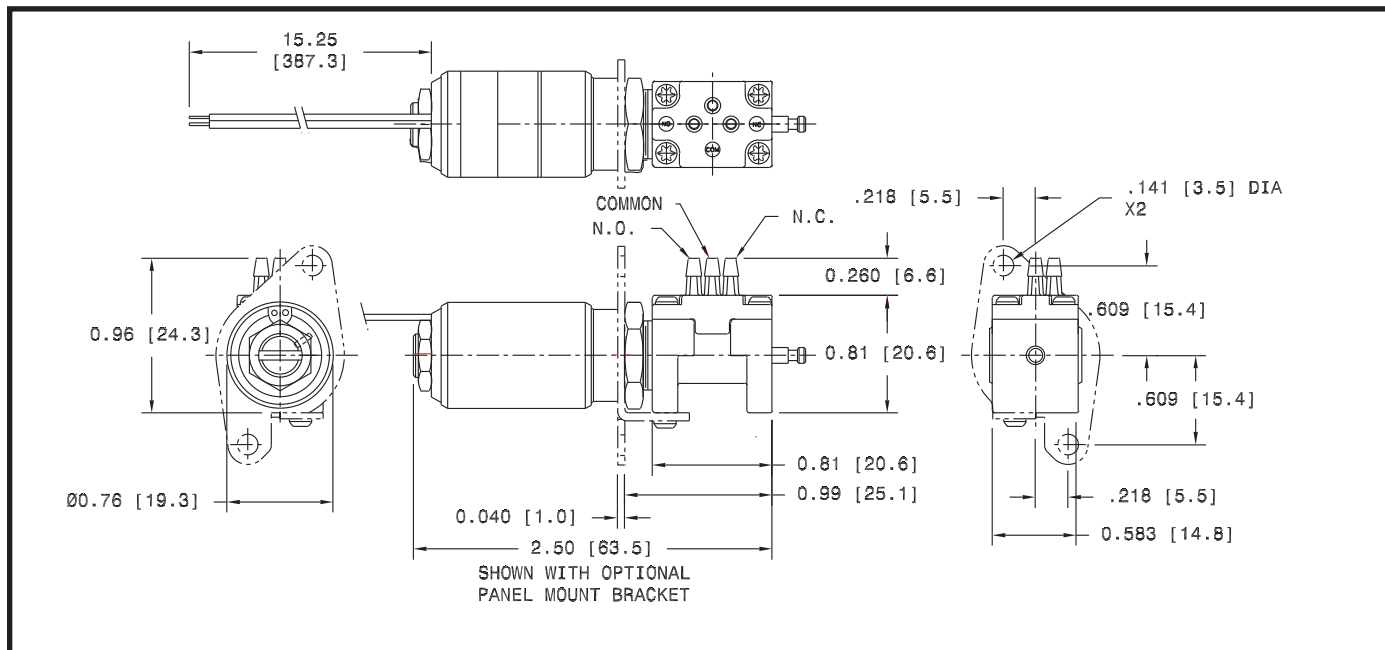
Examples

458103411ES = 2-way normally closed valve with bib ports, PSU flange, surface mounting and a 24 VDC coil

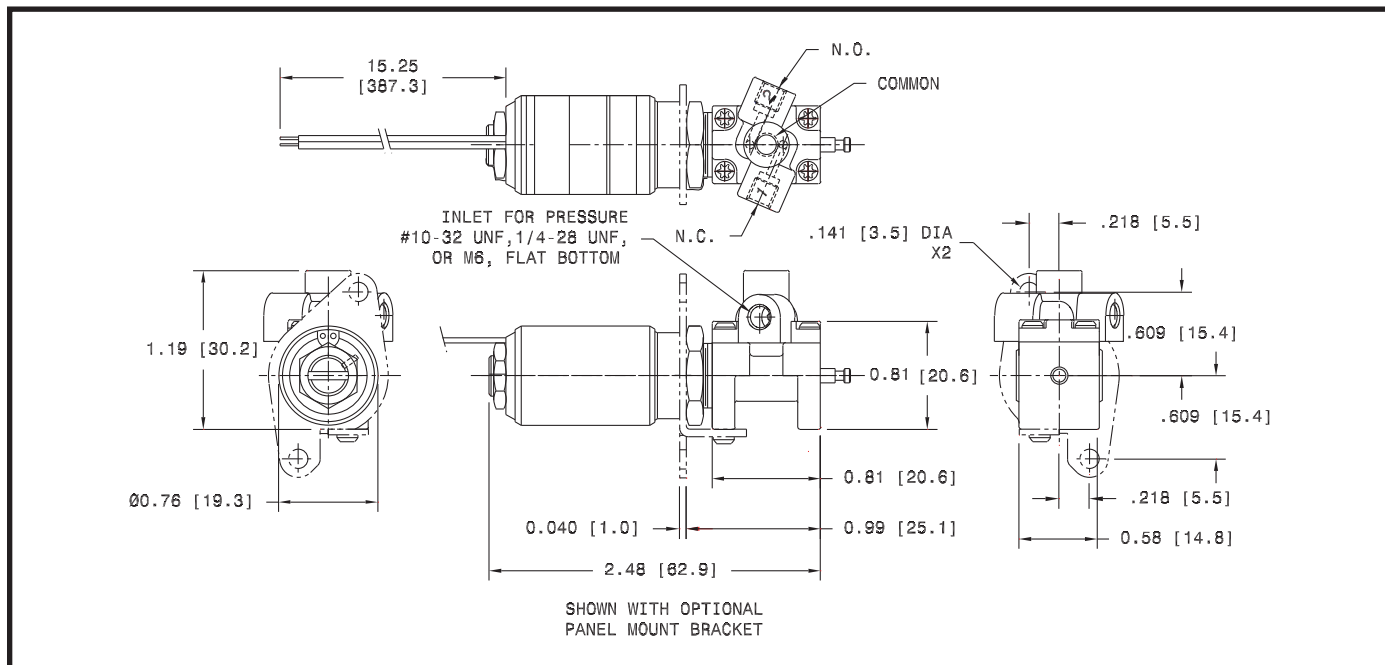
4582AIR22EP = 2-way normally open valve with #10-32 UNF flat bottom ports, PEEK flange, panel mounting and an air operator

458311542ES = 3-way valve with M6 flat bottom ports, PEEK flange, surface mounting and a 115 VAC coil with rectifier

Dimensions Solenoid Operated with Bib Flange: Inches [mm]



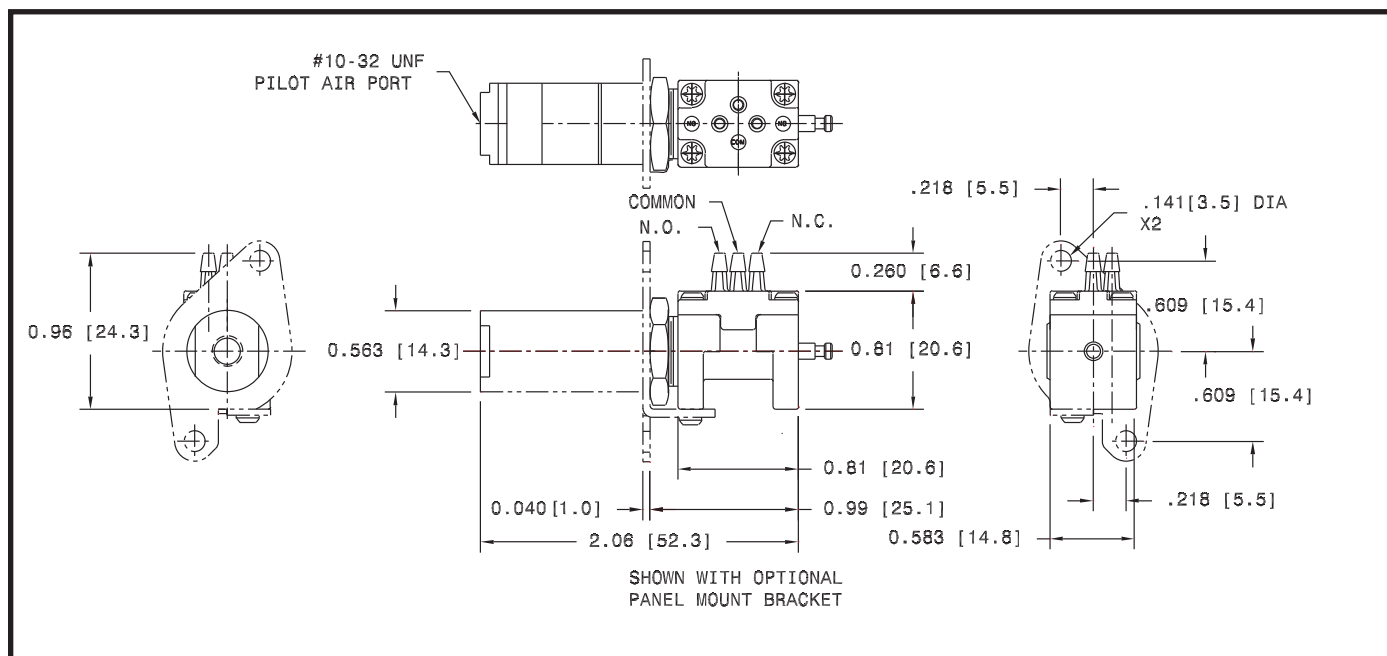
Solenoid Operated with Threaded Flange: Inches [mm]



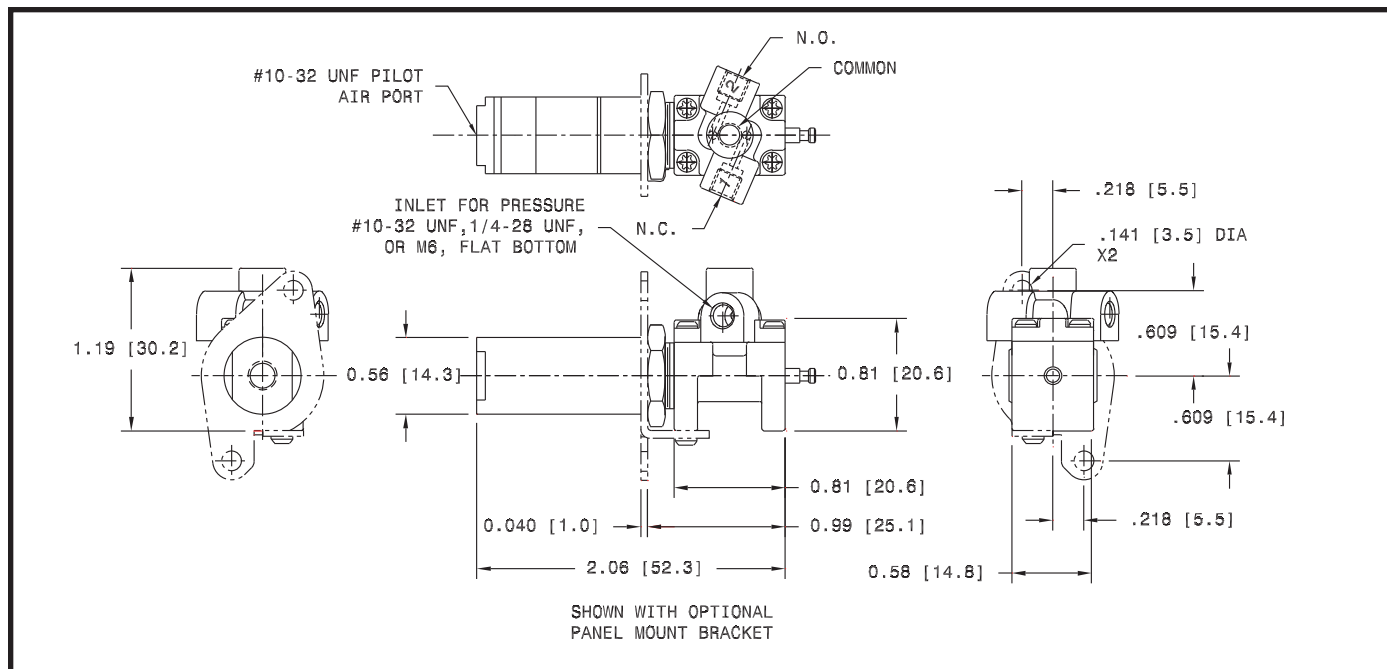
Notes

- 3-way versions shown, 2-way versions are the same except they do not include the middle ports
- Bracket for optional panel mount shown in dashed lines

Air Operated with Bib Flange: Inches [mm]



Air Operated with Threaded Flange: Inches [mm]



Notes

- 3-way versions shown, 2-way versions are the same except they do not include the middle ports
- Bracket for optional panel mount shown in dashed lines

The Series 462 is a 3-way, inert isolation valve designed to control the flow of corrosive or high purity fluids commonly found in analytical instrumentation. Its unique "Resilient-Seal" technology utilizes a soft FFKM (Kalrez*) seal, which virtually eliminates leakage caused by small particulate matter.

- Highly resistant to corrosive fluids, the only materials in contact with the media are PTFE, PEEK, and FFKM (Kalrez*)
- Low internal volume reduces the amount of costly reagents that are wasted
- Compact overall size (1" dia. x 1.6" height) saves valuable space in OEM equipment
- Low power consumption - Less than 3 Watts

Construction

Valve Parts in Contact with Fluids	
Body	PEEK
Disc	FFKM (Kalrez*)
Diaphragm	PTFE
Pin	PEEK

*DuPont Co. trademark

Electrical

Standard Voltages	12, 24 VDC +10%, -15%
Power Consumption	2.8 Watts
Duty Cycle Rating	Continuous
Coil Insulation	356°F (180°C)
Electrical Connection	26 gage lead wire

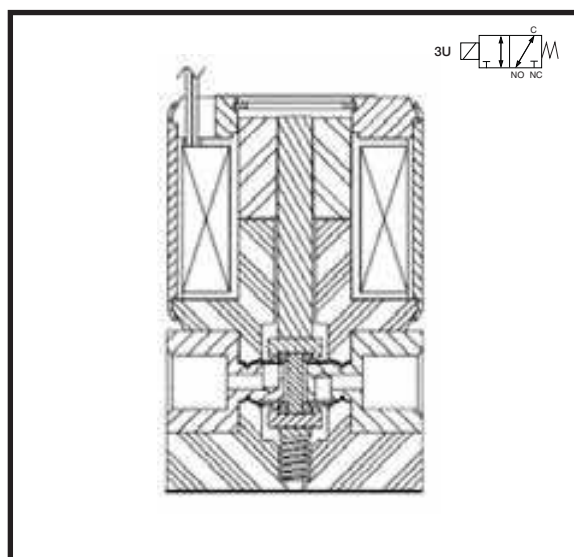
Valve

Response Time	20 ms at rated voltage
Internal Volume	34 µL from NC or NO port to common 12 µL from NC to NO port to seat 46 µL total
Vacuum Rating	29" Hg

Alternative Constructions

Many alternative constructions are available including a wide variety of voltages, electrical connectors, and materials of construction. ASCO Scientific can also custom design a valve for your specific application.

Contact your local ASCO sales office for more information.



Temperature Range:

Ambient & Media:
32°F to 122°F (0°C to 50°C)

Approvals:

Meets applicable CE directives

Specifications

Ports	Orifice Size (ins.)	Cv Flow Factor	Body Material	Maximum Pressure (psi)	Catalog Number	Watt Rating @ 20° C	Weight (oz.)
3-WAY UNIVERSAL OPERATION (Pressure at any port)							
1/4 - 28 UNF Flat Bottom	0.062	0.026	PEEK	30	462312PFxx	2.8	3.2

Notes
"xx" Denotes place in catalog number for voltage, three characters may be used when required.

Catalog Number Description and Options

462312PF	xx
Base Catalog Number	Voltage - 12 (DC) - 24 (DC)

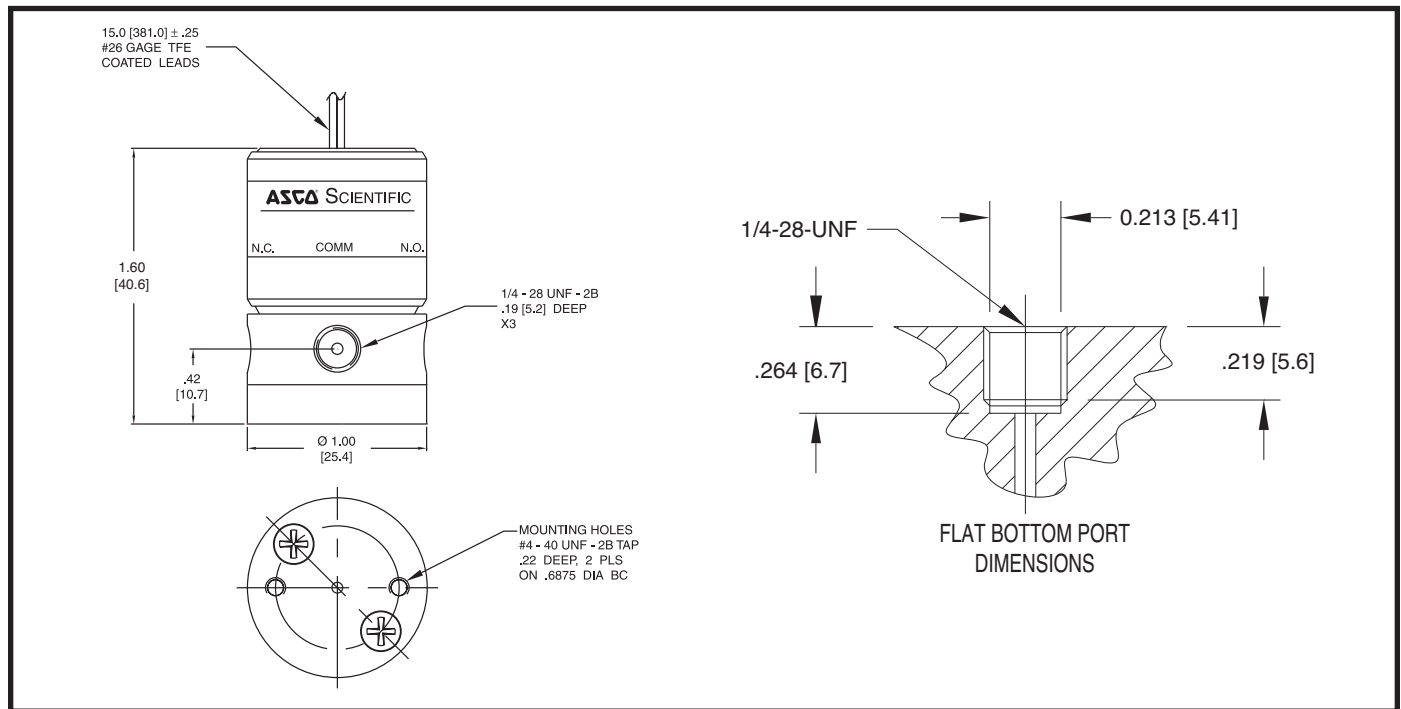
To Construct Catalog Number

- Select base catalog number from table
- Insert voltage into the 9th and 10th digits denoted by "xx"

Example

462312PF24 = 3-way valve with PEEK body, .062" (1.57 mm) orifice, 1/4 - 28 UNF, flat bottom ports and 24 VDC coil

Dimensions: Inches [mm]



The Series 190 & 330 are 2-way, normally closed isolation valves constructed with TFE materials, which makes them virtually impervious to chemical attack. The Series 190 is a single valve while the Series 330 offers the same valve in a 2, 3, or 4 position manifold configuration for use in chromatography, solvent selection, and process sampling.

- PTFE diaphragm shields the internal components of the solenoid from the media to handle the most aggressive fluids
- Compact size saves valuable space in equipment
- Low power consumption

Construction

Valve Parts in Contact with Fluids	
Body	PTFE
Seat	CTFE
Diaphragm	PTFE

Electrical

Standard Voltages	12, 24 VDC+ 10%, -5%
Power Consumption	2.9 - 3.8 Watts (12 watts for latching version)
Duty Cycle Rating	Continuous (Intermittent for latching version)
Coil Insulation	356°F (180°C)
Electrical Connection	26 gage lead wire

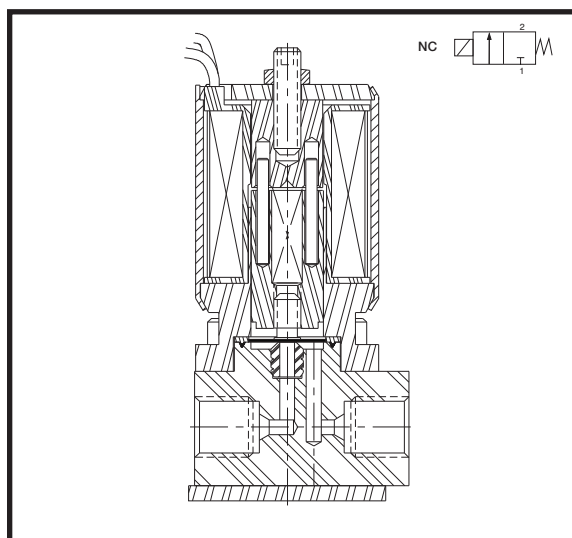
Valve

Response Time	~5 ms at rated voltage (2 watt coil)
Internal Volume	20 µL from port 1 to seat (not including port) 52 µL from port 2 to seat (not including port)
Options	<ul style="list-style-type: none"> • Magnetic Latching • Single valve or 2, 3, and 4 position manifolds
Vacuum Rating	29" Hg

Alternative Constructions

Many alternative constructions are available and include a variety of voltages, electrical connectors, and materials of construction. ASCO Scientific can also custom design a valve for your specific application.

Contact your local ASCO sales office for more information.



Temperature Range:

Ambient & Media:

32°F to 77°F (0°C to 25°C) continuous duty
up to 104°F (40°C) intermittent duty

Approvals:

Meets applicable CE directives

Specifications

Ports	Orifice Size (ins.)	Cv Flow Factor	Maximum Pressure (psi)	Catalog Number	No. of Solenoids	Watt Rating @ 20°C	Weight (oz.)
2-WAY NORMALLY CLOSED (Closed when de-energized)							
1/4 - 28 UNF Flat Bottom	0.062	0.03	30	1902xxS30	1	2.9 (12VDC), 3.8 (24VDC)	2.0
1/4 - 28 UNF Flat Bottom	0.062	0.03	30	3302xxS302	2	2.9 (12VDC), 3.8 (24VDC)	4.1
1/4 - 28 UNF Flat Bottom	0.062	0.03	30	3302xxS303	3	2.9 (12VDC), 3.8 (24VDC)	6.5
1/4 - 28 UNF Flat Bottom	0.062	0.03	30	3302xxS304	4	2.9 (12VDC), 3.8 (24VDC)	9.7
2-WAY LATCHING							
1/4 - 28 UNF Flat Bottom	0.062	0.03	30	1902xxL30	1	12*	2.0
1/4 - 28 UNF Flat Bottom	0.062	0.03	30	3302xxL302	2	12*	4.1
1/4 - 28 UNF Flat Bottom	0.062	0.03	30	3302xxL303	3	12*	6.5
1/4 - 28 UNF Flat Bottom	0.062	0.03	30	3302xxL304	4	12*	9.7
Notes "xx" Denotes place in catalog number for voltage * Latching valves are designed for intermittent duty only. Wattage rating applies to 20 – 30 ms duration required to actuate valve. Once switched no additional power is required to hold the valve in its position.							

Catalog Number Description and Options

3302	xx	S30	2
Base Catalog Number (1 st Part)	Voltage - 12 (DC) - 24 (DC)	Base Catalog Number (2 nd Part)	Number of Solenoids - 2 - 3 - 4

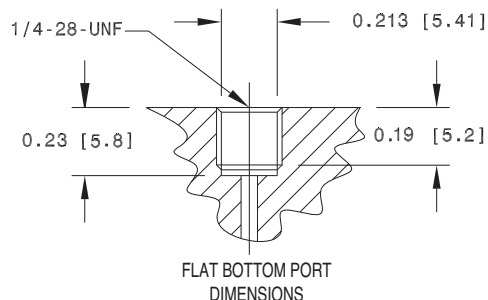
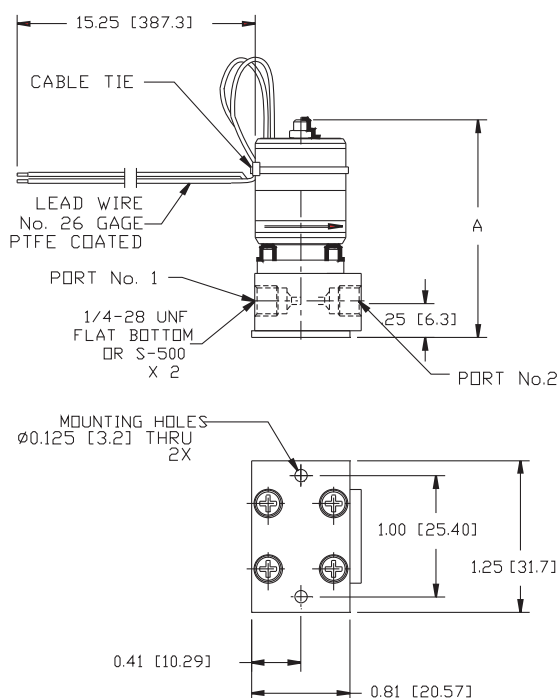
To Construct Catalog Number

- Select base catalog number
- Insert voltage into the 5th and 6th digits denoted by "xx"
- Add number of solenoids (330 series only)

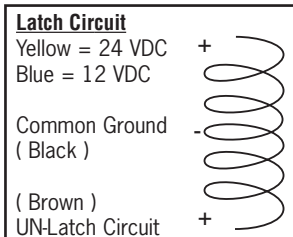
Examples

190212S30 = 2-way normally closed valve with 1/4 - 28 UNF, flat bottom ports and 12 VDC coil rated at 2.9 Watts
 190224L30 = 2-way latching valve with 1/4 - 28 UNF, flat bottom ports and 24 vdc latching coil
 330224S303 = 3, 2-way normally closed valves mounted on a manifold with 1/4 - 28 UNF, flat bottom ports and 24 vdc coil rated at 3.8 Watts

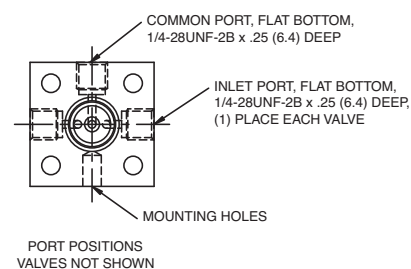
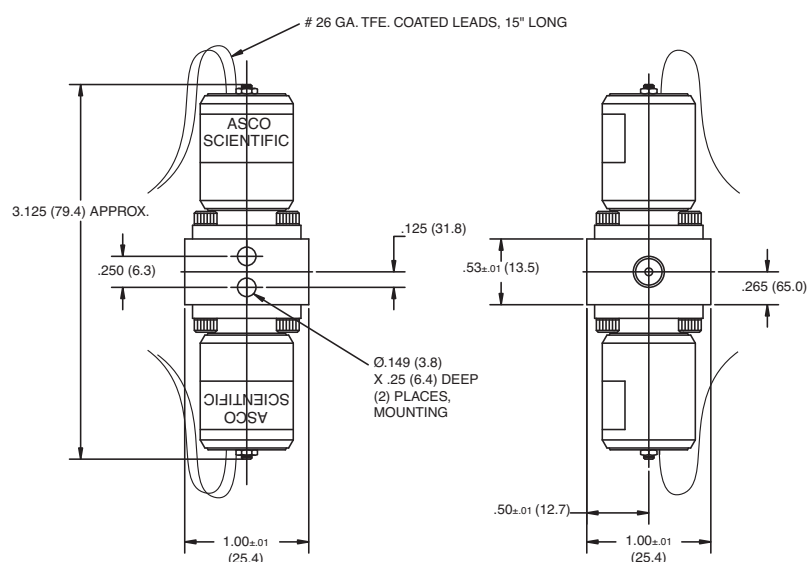
Dimensions Series 190: Inches [mm]



Latching Wiring Diagram

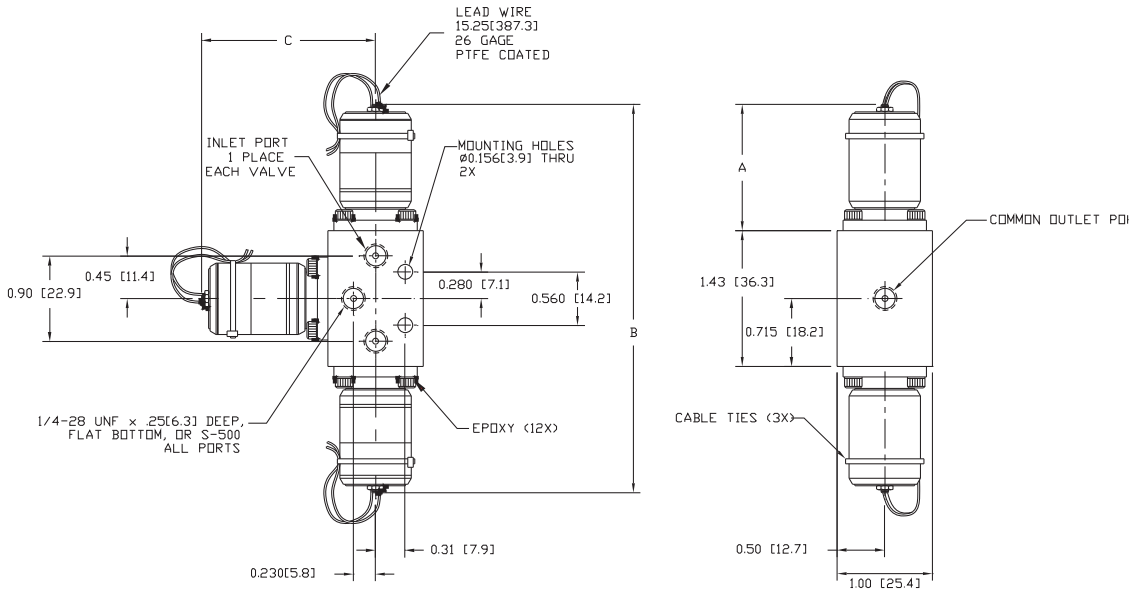


Dimensions Series 330 2 Position Valve Manifold: Inches [mm]



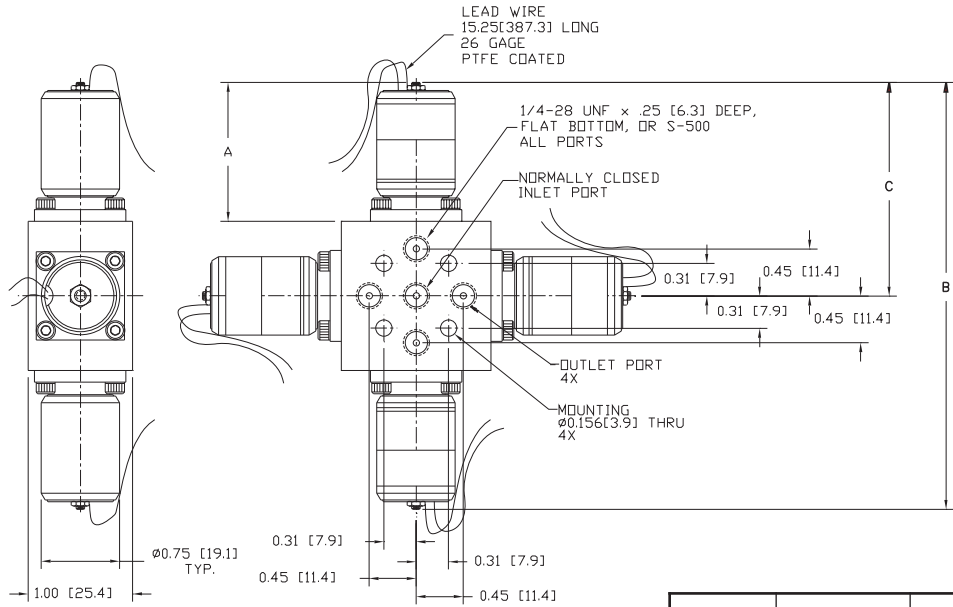
Series 330	Dim. A Inches (mm)	Dim. B Inches (mm)
Standard	1.33 (33.7)	3.19 (mm)
Latching	1.55 (39.3)	3.63 (92.2)

Dimensions Series 330 3 Position Valve Manifold: Inches [mm]



Series 330	Dim. A Inches (mm)	Dim. B Inches (mm)	Dim. C Inches (mm)
Standard	1.33 (33.7)	4.09 (103.8)	1.83 (46.4)
Latching	1.55 (39.3)	4.53 (115.0)	2.05 (52.0)

Dimensions Series 330 4 Position Valve Manifold: Inches [mm]



Series 330	Dim. A Inches (mm)	Dim. B Inches (mm)	Dim. C Inches (mm)
Standard	1.33 (33.7)	4.09 (103.8)	2.05 (52.0)
Latching	1.55 (39.3)	4.53 (115.0)	2.27 (57.6)

The Series 368/364 are 2-way and 3-way isolation valves constructed with TFE materials, which makes them virtually impervious to chemical attack. The Series 368 is a compact construction with a 0.062" orifice to handle standard flow requirements while the Series 364 is a high flow construction with a 0.093" orifice to handle higher flow requirements.

- PTFE diaphragm shields the internal components of the solenoid from the media to handle the most aggressive fluids
- Compact size saves valuable space in equipment
- Low power consumption

Construction

Valve Parts in Contact with Fluids	
Body	ETFE, PTFE
Poppet	PTFE
Diaphragm	PTFE

Electrical

Standard Voltages	12, 24 VDC+ 10%, -5% 115 VAC (with rectifier in lead wires)
Power Consumption	4.5 - 6.8 Watts 12 watts (Model 364)
Duty Cycle Rating	Continuous (Intermittent for latching version)
Coil Insulation	356°F (180°C)
Electrical Connection	22 gage lead wire

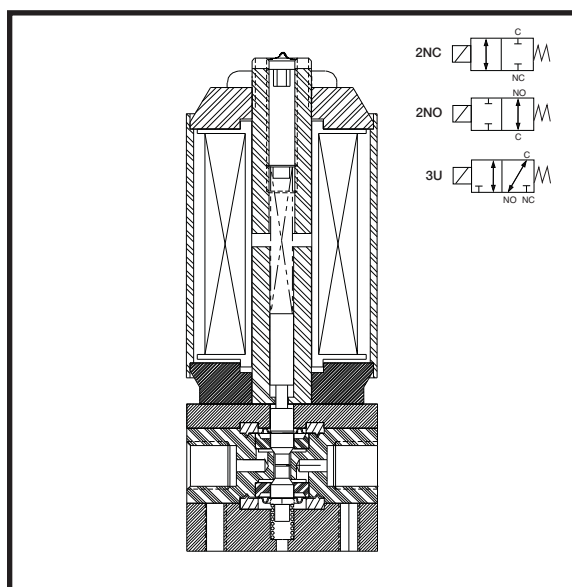
Valve

Response Time	10 to 20 ms at rated voltage
Internal Volume	368 <ul style="list-style-type: none"> • 30 µL from seat to port • 10 µL between poppets
Vacuum Rating	29" Hg

Alternative Constructions

Many alternative constructions are available and include a variety of voltages, electrical connectors, and materials of construction. ASCO Scientific can also custom design a valve for your specific application.

Contact your local ASCO sales office for more information.



Temperature Range:

Ambient & Media:

32°F to 77°F (0°C to 25°C) continuous duty
up to 104°F (40°C) intermittent duty

Approvals:

Meets applicable CE directives

Specifications (English Units)

Ports	Orifice Size (ins.)	Cv Flow Factor	Maximum Pressure (psi)	Catalog Number	Watt Rating @ 20°C	Weight (oz.)
2-WAY NORMALLY CLOSED (Closed when de-energized)						
1/4 - 28 UNF Flat Bottom	0.062	0.03	30*	3682NCxx30	4.5 (12VDC), 5.3 (24VDC), 6.8 (115/50-60 VAC)	4
1/8 NPT	0.093	0.08	30*	3643NCxx30	12 Watts	14
1/4 NPT	0.093	0.08	30*	3644NCxx30	12 Watts	14
2-WAY NORMALLY OPEN (Open when de-energized)						
1/4 - 28 UNF Flat Bottom	0.062	0.03	30*	3682NOxx30	4.5 (12VDC), 5.3 (24VDC), 6.8 (115/50-60 VAC)	4
1/8 NPT	0.093	0.08	30*	3643NOxx30	12 Watts	14
1/4 NPT	0.093	0.08	30*	3644NOxx30	12 Watts	14
3-WAY UNIVERSAL OPERATION (Pressure at any Port)						
1/4 - 28 UNF Flat Bottom	0.062	0.03	30*	36823xx30	4.5 (12VDC), 5.3 (24VDC), 6.8 (115/50-60 VAC)	4
1/8 NPT	0.093	0.08	30*	36433xx30	12 Watts	14
1/4 NPT	0.093	0.08	30*	36443xx30	12 Watts	14
Notes "xx" Denotes place in catalog number for voltage, three characters may be used when required * Common port: vacuum to 30 psig • NC + NO Ports: Vacuum to 10 psig						

Catalog Number Description and Options

3682NC	xx	30
Base Catalog Number (1 st Part) - 368 - 364	Voltage - 12 (DC) - 24 (DC) - 115 (AC)	Base Catalog Number (2 nd Part)

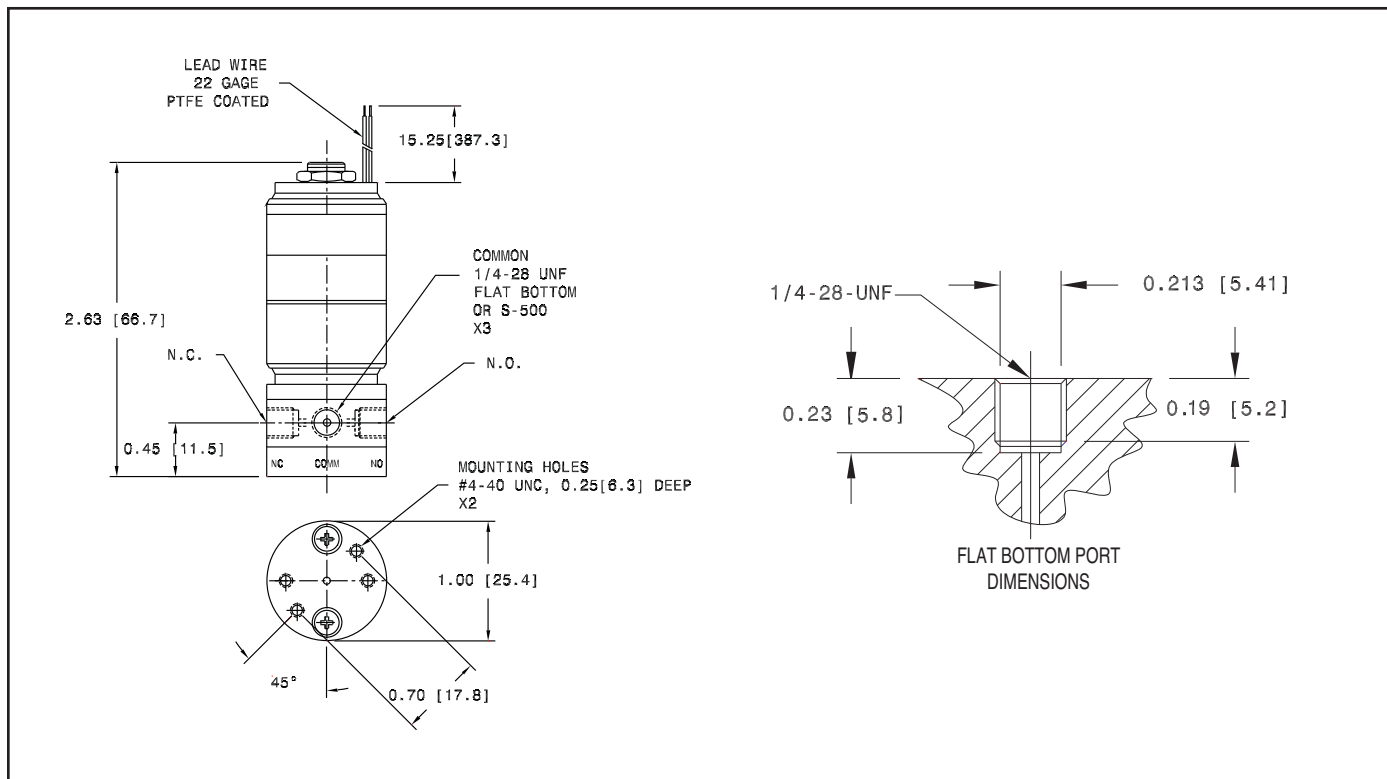
To Construct Catalog Number

- Select base catalog number
- Insert voltage into the 7th and 8th digits denoted by "xx"

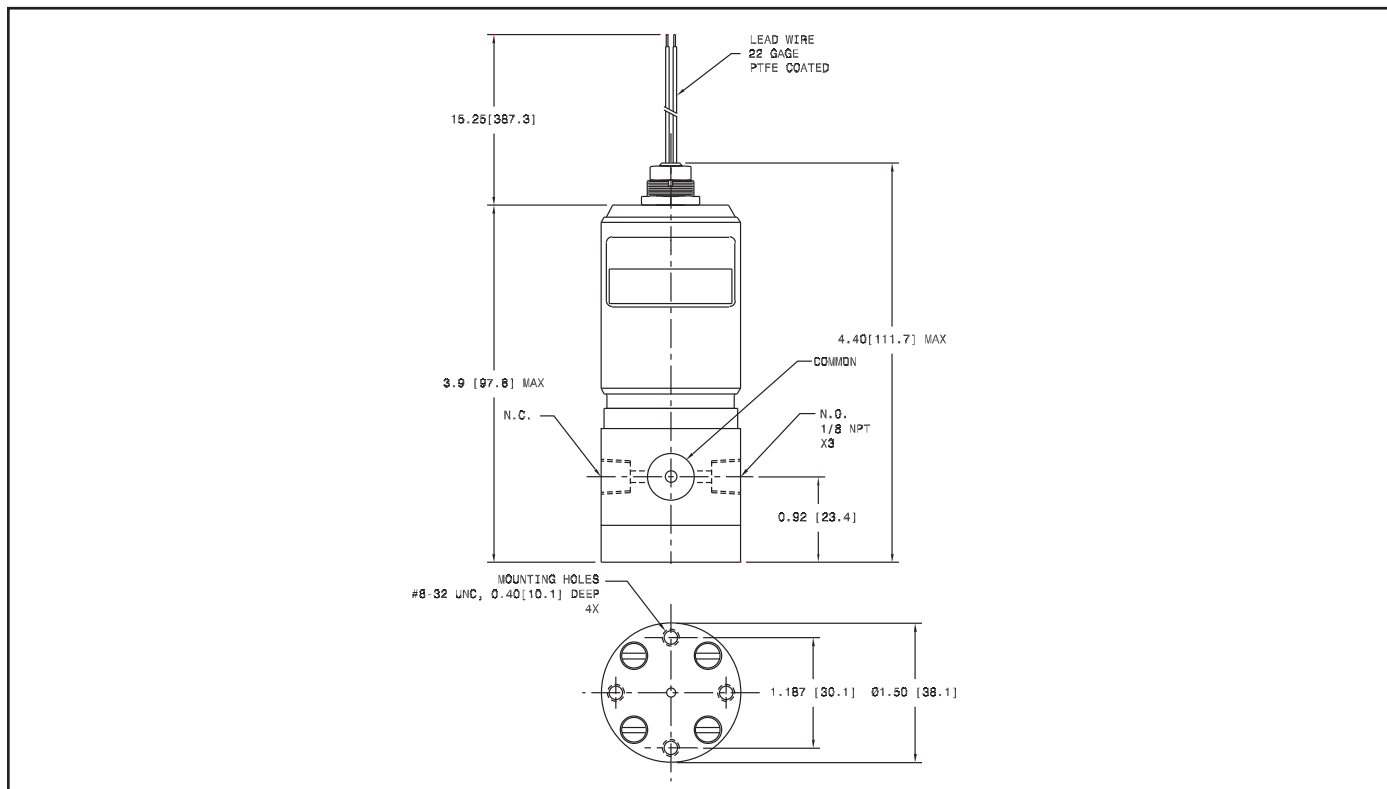
Examples

3682NC1230 = 2-way normally closed valve with a 0.062" orifice, 1/4 - 28 UNF, flat bottom ports and 12 VDC coil rated at 4.5 Watts
 3682311530 = 3-way valve with a 0.062" orifice, 1/4 - 28 UNF, Flat bottom ports and 115/50-60 VAC coil rectifier
 364 3NO2430 = 2-way normally open valves with a 0.093" orifice, 1/8" NPT ports ad 24 VDC coil rated at 12 Watts

Dimensions Series 368: Inches (mm)



Dimensions Series 364: Inches (mm)





The Series 8296 is a 2-way, high flow isolation valve designed to control the flow of aggressive liquids and gases in analytical, semiconductor, and environmental equipment. The Series 8296 offers the following benefits:

- Reliable operation with a wide variety of media due to inert wetted materials such as PEEK, PTFE, stainless steel, and FFKM
- High flow rates of corrosive or high purity fluids
- Higher pressure ratings than typical isolation valves
- Reduced chance of seat leakage with soft FFKM disc

Construction

Valve Parts in Contact with Fluids	
Body	PEEK, (Stainless Steel - consult factory)
Seals	FFKM, (EPDM or FKM - consult factory)
Bellows	PTFE

Electrical

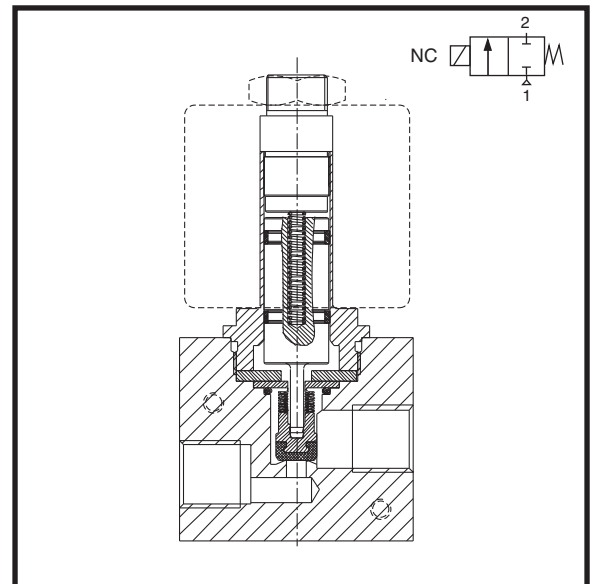
Standard Voltage	24 VDC
Power Consumption	5 & 9 Watts
Duty Cycle Rating	Continuous
Coil Insulation	Class F
Ambient Temperature	14°F to 167°F (-10°C to 75°F)
Electrical Connection	Spade (DIN 46244, ISO 4400)
Protection Rating	IP65 with DIN Plug Connector

Valve

Fluid Temperature	14°F to 194°F (-10°C to 90°C)
Maximum Viscosity	40 cSt
Vacuum Rating	29" Hg

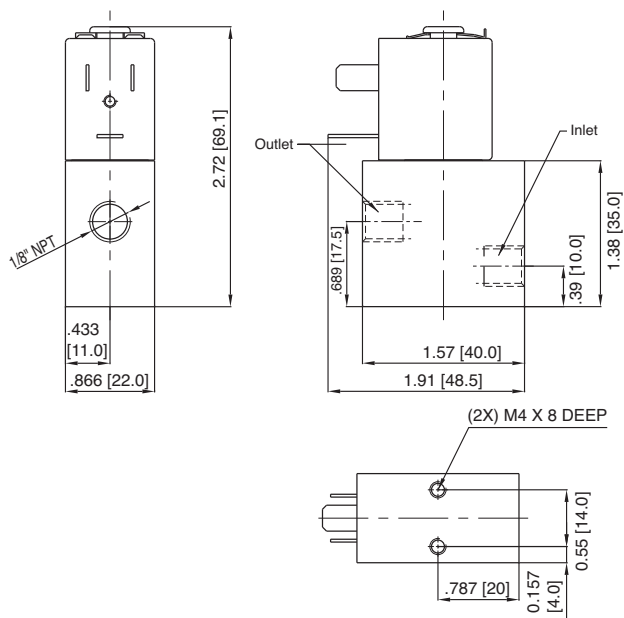
Specifications (English Units)

Ports	Orifice Size (ins.)	Cv Flow Factor	Differential Pressure (psi)			Catalog Number	Constr. Ref.	Power (Watts)	Weight (oz.)
			Min.	Max.					
				Gases	Liquids				
PEEK body with DIN terminal coil									
1/8 NPT	0.079	0.13	0	44	15	SC8296A004	1	5	11
1/8 NPT	0.079	0.13	0	87	73	SC8296A005	2	9	15
1/4 NPT	0.157	0.38	0	58	58	SC8296A006	3	9	15
PEEK body, Coil with 18 inch lead wires									
1/8 NPT	0.079	0.13	0	44	15	8296A004	1	5	11
1/8 NPT	0.079	0.13	0	87	73	8296A005	2	9	15
1/4 NPT	0.157	0.38	0	58	58	8296A006	3	9	15

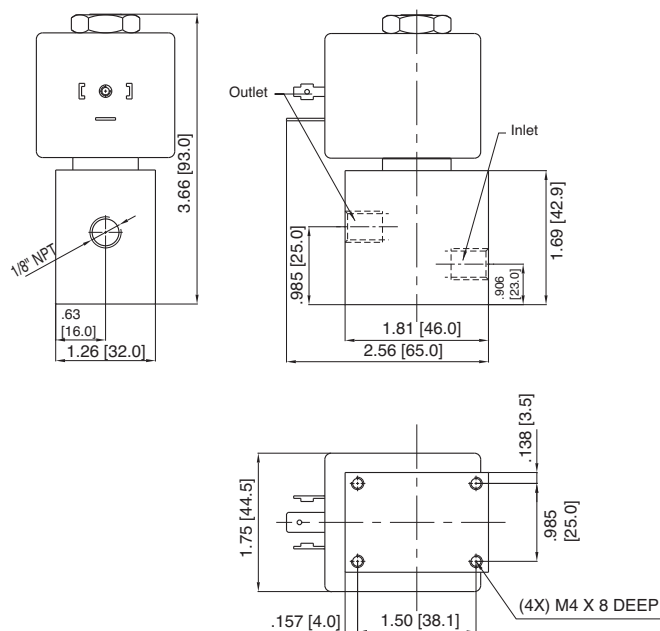


Dimensions: inches [mm]

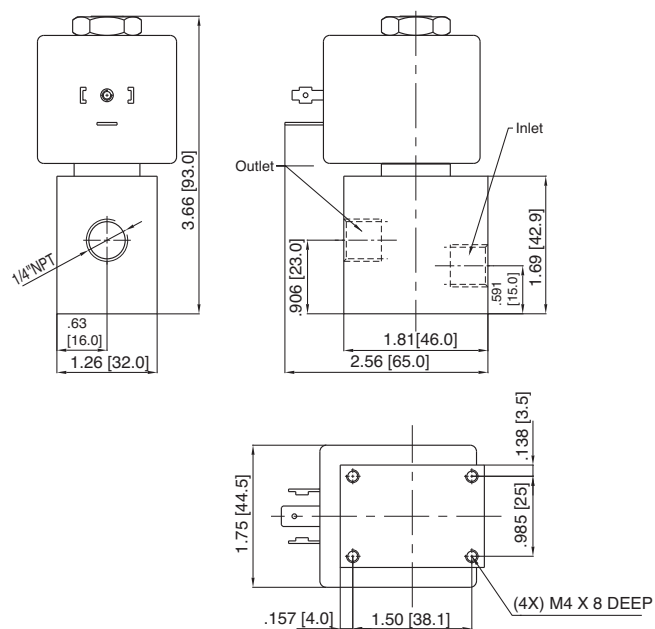
Constr. Ref. 1



Constr. Ref. 2



Constr. Ref. 3





The Series 8396 is a 3-way, high flow isolation valve designed to control the flow of aggressive liquids and gases in analytical, semiconductor, and environmental equipment. The Series 8396 offers the following benefits:

- Reliable operation with a wide variety of media due to inert wetted materials such as PEEK, PTFE, stainless steel, and FFKM
- High flow rates of corrosive or high purity fluids
- Higher pressure ratings than typical isolation valves
- Reduced chance of seat leakage with soft FFKM disc

Construction

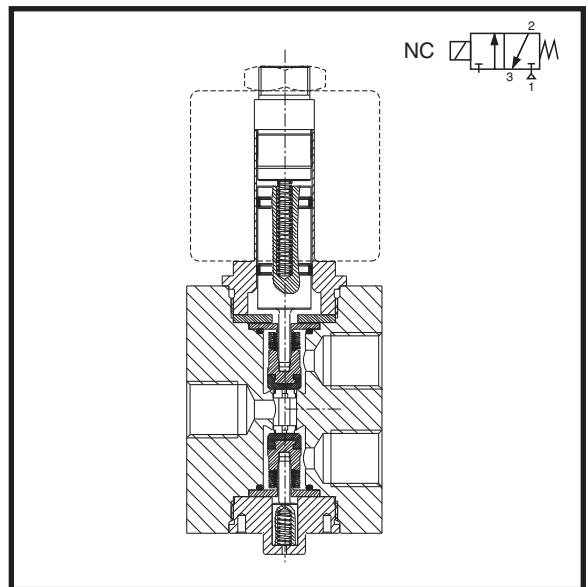
Valve Parts in Contact with Fluids	
Body	PEEK, (Stainless Steel - consult factory)
Seals	FFKM, (EPDM or FKM - consult factory)
Bellows	PTFE

Electrical

Standard Voltage	24 VDC
Power Consumption	9 Watts
Duty Cycle Rating	Continuous
Coil Insulation	Class F
Ambient Temperature	14°F to 167°F (-10°C to 75°F)
Electrical Connection	Spade, (DIN 46244, ISO 4400)
Protection Rating	IP65 with DIN Plug Connector

Valve

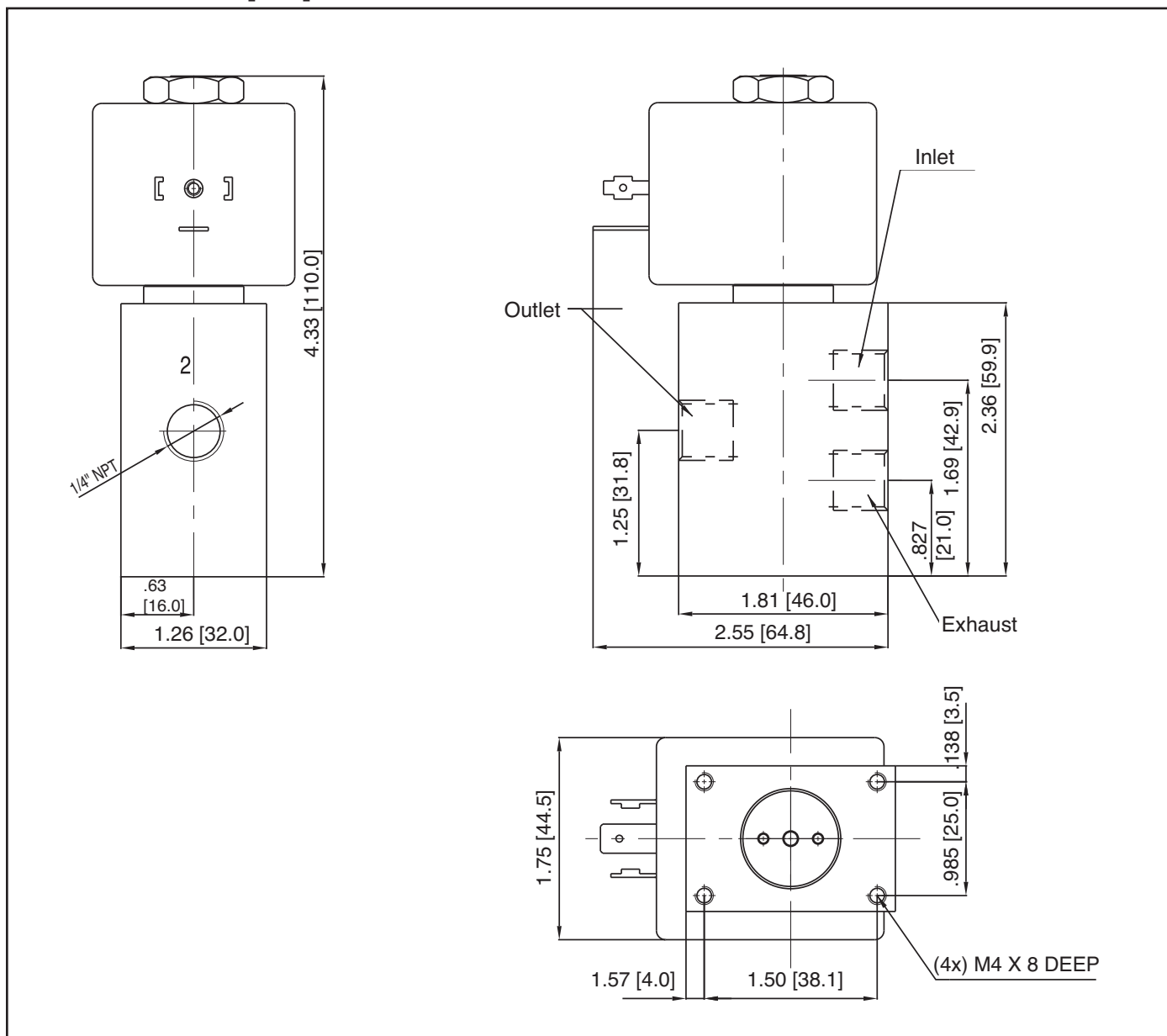
Fluid Temperature	14°F to 194°F (-10°C to 90°C)
Maximum Viscosity	40 cSt
Vacuum Rating	29" Hg



Specifications (English Units)

Ports	Orifice Size (ins.)	Cv Flow Factor	Differential Pressure (psi)			Catalog Number	Power (Watts)	Weight (oz.)
			Min.	Max.				
				Gases	Liquids			
PEEK body with DIN terminal coil								
1/4 NPT	0.157	0.31	0	44	44	SC8396A006	9	17
PEEK body, Coil with 18 inch lead wires								
1/4 NPT	0.157	0.31	0	44	44	8396A006	9	17

Dimensions: inches [mm]





The Series 282 are 2-way, normally closed, high flow isolation valves designed to control the flow of aggressive liquids and gases in analytical instruments, clinical diagnostic analyzers, and bioinstrumentation. The Series 282 offers the following benefits:

- High flow rates for corrosive media service
- Capable of handling a variety of media with several body and diaphragm material options
- Reduced chance of seat leakage with resilient diaphragm materials
- Removable/Rotatable coil for easy service and installation

Construction

Valve Parts in Contact with Fluids	
Body	316 Stainless Steel or PVDF
Seals	PTFE, EPDM, FKM, or Silicone

Electrical

Standard Voltage	12, 24 VDC +10%, -5% 120/60 VAC (A003 only) +10%, -15%
Power Consumption	2.5, 6, 9 Watts
Duty Cycle Rating	Continuous
Coil Insulation	Class F
Ambient Temperature	14°F to 140°F (-10°C to 60°C)
Electrical Connection	DIN Spade Terminals
DIN Connectors (not included with valve see page 75)	
SCE282A001	Size 9.4 mm, Form C
SCG282A003	Size 18 mm, Form A
SCG282A004	Size 11 mm, Form B
Protection Rating	IP65 with DIN Plug Connector

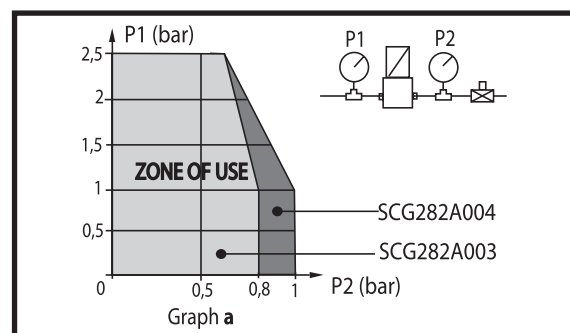
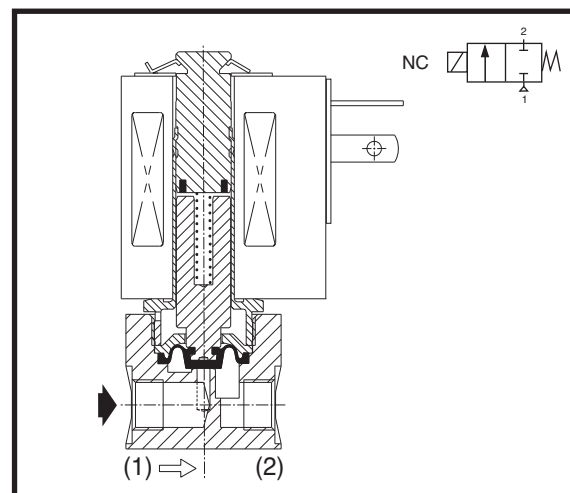
Valve

Fluid Temperature	14° F to 212° F (-10° C to 100° C)
Internal Volume	70 µL (SCE282A001)
Response Time	
SCE282A001	10 ms open or close
SCG282A002	20 ms open or close
SCG282A003	20 ms open or close
Maximum Viscosity	37 cSt

Specifications

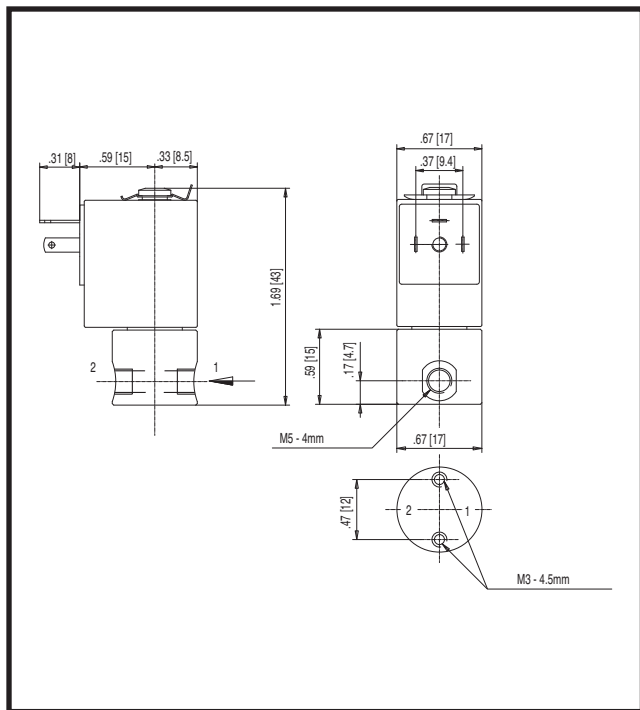
Ports	Orifice Size (ins.)	Cv Flow Factor	Differential Pressure (psi)			Catalog Number	Diaphragm Material	Constr. Ref.	Power (Watts)	Weight (oz.)
			Min.	Max.						
				Gases	Liquids					
316 stainless steel body										
M5	0.062	0.05	0	29	9	SCE282A001	Silicone	1	2.5	3
						SCE282A001E	EPDM			
						SCE282A001V	FKM			
G 1/8	0.079	0.1	0	-	36*	SCG282A004	PTFE	2	6	7
PVDF body										
G 1/8	0.157	0.38	0	36*	36*	SCG282A003	Silicone	3	9	8
						SCG282A003E	EPDM			
						SCG282A003V	FKM			

* The maximum working pressure is a function of the combination of the inlet and outlet pressures. See graph (a) to determine maximum inlet pressure for a given outlet pressure.

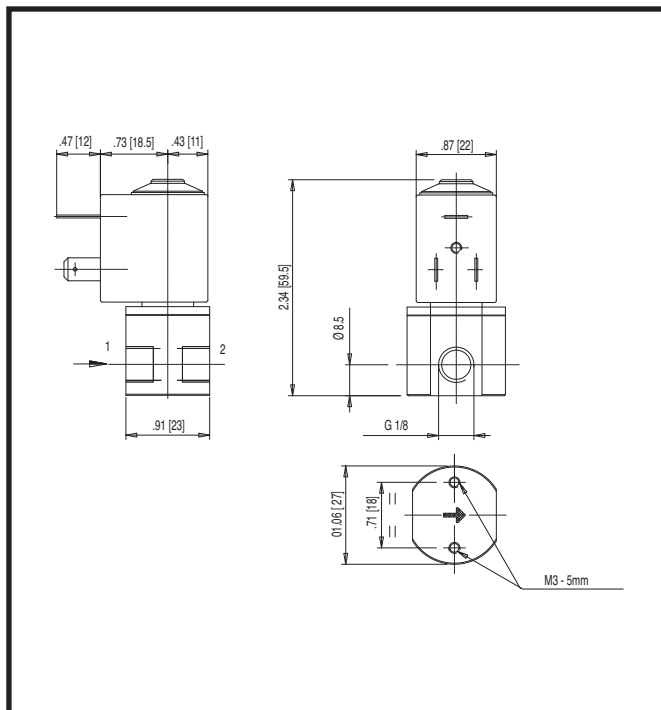


Dimensions: inches [mm]

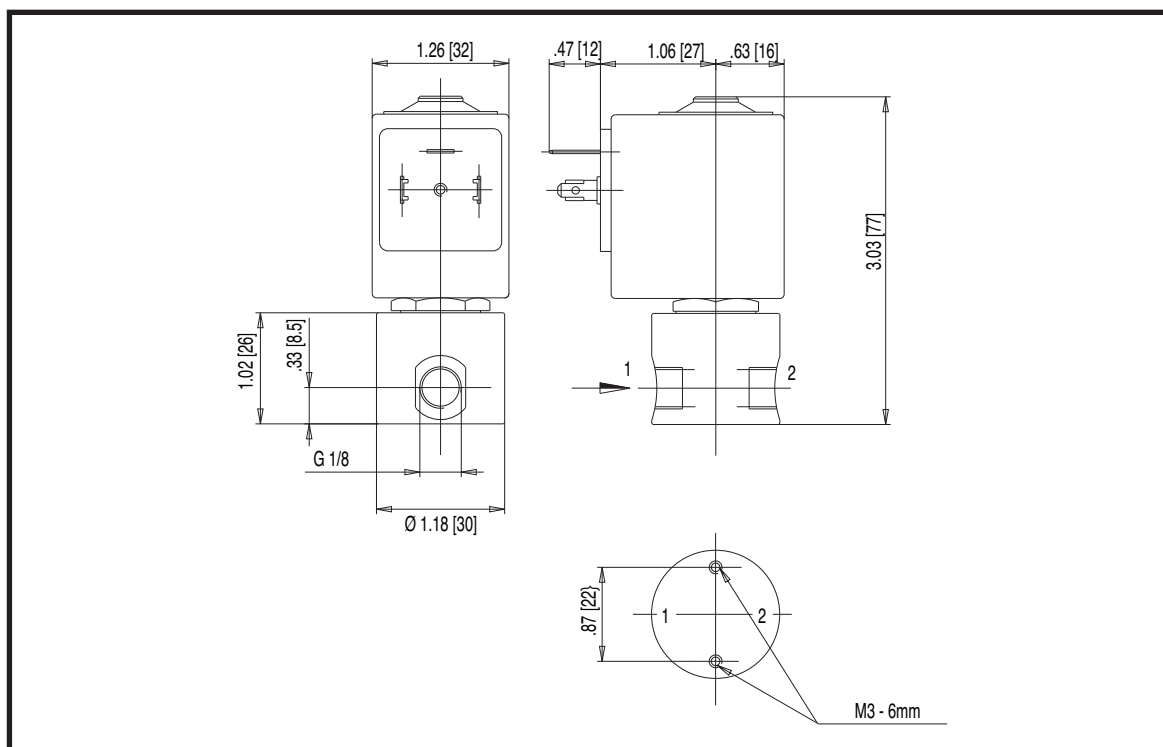
Constr. Ref. 1



Constr. Ref. 2



Constr. Ref. 3





The Series 282 are 2-way, normally closed, high flow isolation valves designed to control the flow of aggressive liquids and gases in analytical instruments, clinical diagnostic analyzers, and bioinstrumentation. The Series 282 offers the following benefits:

- High flow rates for corrosive media service
- Capable of handling a variety of media with several body and diaphragm material options
- Reduced chance of seat leakage with resilient diaphragm materials
- Removable/Rotatable coil for easy service and installation

Construction

Valve Parts in Contact with Fluids	
Body	Glass-Fiber-Reinforced PP
Seals	FKM

Electrical

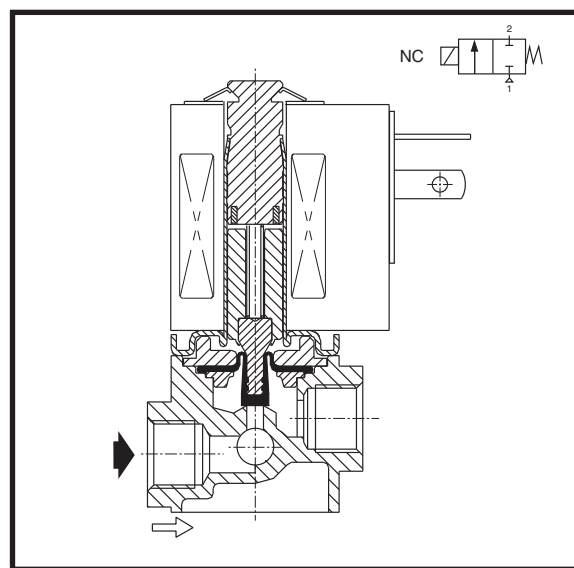
Standard Voltage	12, 24 VDC +10%, -5% 120/60 VAC +10%, -15%
Power Consumption	DC: 9 Watts AC: 8 Watts (23VA Inrush, 14VA Hold)
Duty Cycle Rating	Continuous
Coil Insulation	Class F
Ambient Temperature	14°F to 140°F (-10°C to 60°C)
Electrical Connection	DIN Spade Terminals
DIN Connectors	Size 18 mm, Form A (not included with valve, see page 75)
Protection Rating	IP65 with DIN Plug Connector

Valve

Fluid Temperature	14° F to 212° F (-10° C to 100° C)
Response Time	20 ms open or close
Maximum Viscosity	37 cSt

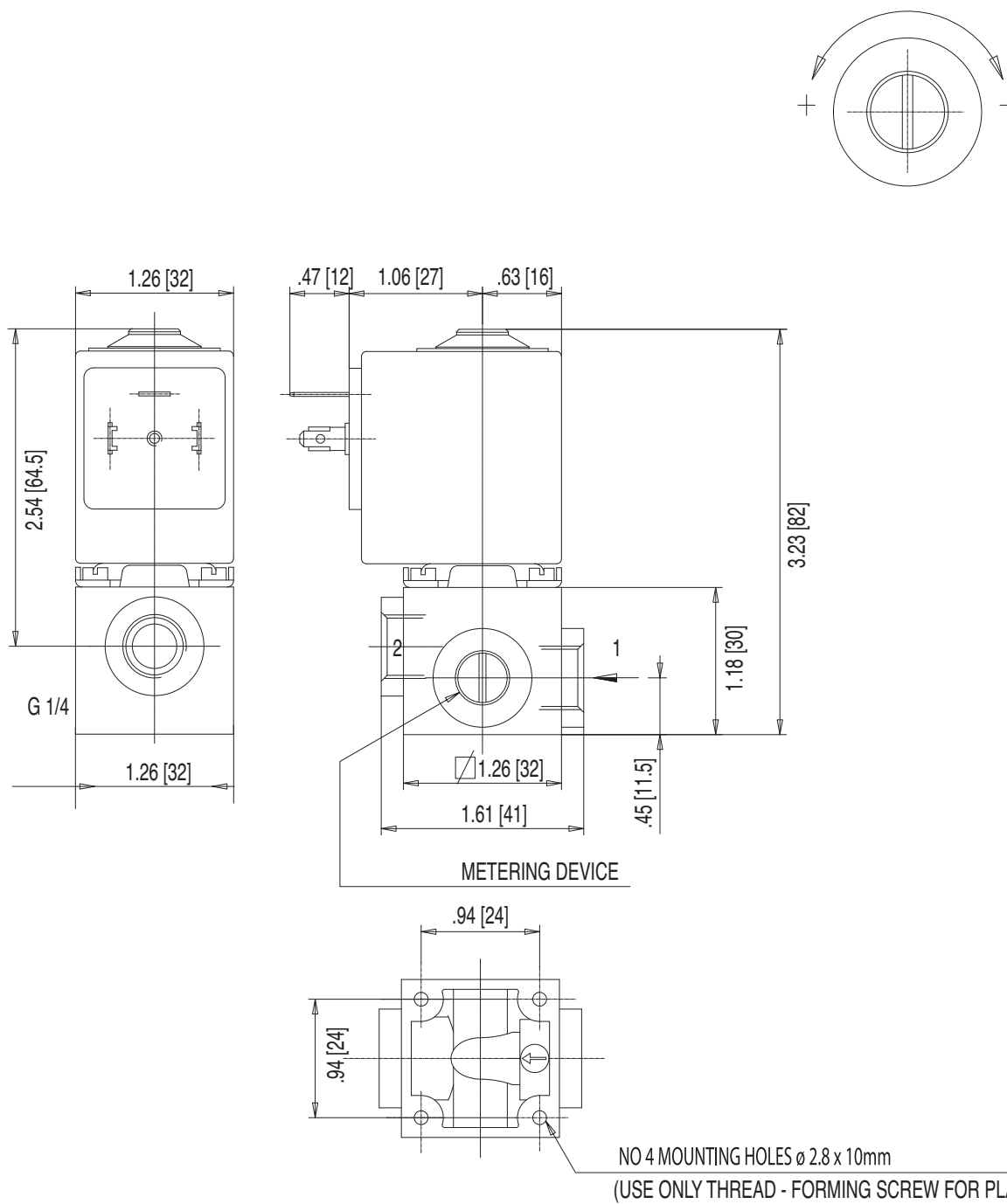
Specifications

Ports	Orifice Size (inches)	Cv Flow Factor	Differential Pressure (psi)			Catalog Number	Diaphragm Material	Power (Watts)	Weight (oz.)
			Min.	Max.					
				Gases	Liquids				
G 1/4	0.177	0.54	0	14.5	14.5	SCG282A005	FKM	9.0	11



Dimensions: inches [mm]

Metering Device Flow Adjustment



The 8260 Series is a 2-way direct acting valve available in a normally closed construction. They are available AC or DC operated with plastic bodies and can handle the challenges of harsh media. There are many optional features available including solenoid enclosures, electrical connections, alternate elastomers, and end connections. Dedicated constructions of the 8260 Series are suitable for the following applications:

- General Service (air, inert gas, water)
- Shielded Core

Construction

Valve Parts in Contact with Fluids	
General Service	
Body	CA, PA, PP
Seals and Disc	NBR
Core Tube	305 Stainless Steel
Core and Plugnut	430F Stainless Steel
Springs	302 Stainless Steel
Shading Coil	Copper
Shielded Core	
Body	CA, PP
Disc and Diaphragm	EPDM

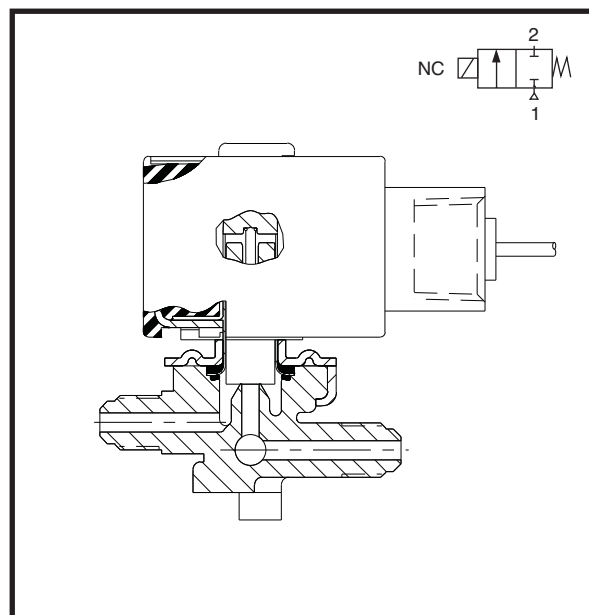
Electrical

Standard Coil Class of Insulation	Watt Rating and Power Consumption				Ambient Temp. °F	Spare Coil Family	
	DC Watts	AC				General Purpose	
		Watts	VA Holding	VA Inrush		AC	DC
B	6.4	-	-	-	32 to 77	-	180555
B	-	6.5	9.2	17.3	32 to 104	174879	-
F	10.6	6.1	16	30	32 to 125	238210	238310

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.

Valve

Vacuum Rating	29" Hg
---------------	--------



Specifications

Connections	Orifice Dia. (ins.)	Cv Flow	Operating Pressure Differential (psi)						Max. Fluid Temp. °F		Plastic	Const. Ref.	Agency		Wattage		Approx. Shipping Weight (lbs.)
			Min.	Max. AC		Max. DC		AC	DC	UL			FM	AC	DC		
				Air-Inert Gas	Water	Air-Inert Gas	Water										
General Service - Normally Closed CA Body with Watertight Enclosure																	
1/4" Male Flare	9/64	0.35	0	120	120	50	50	130	120	8260G042	1	●	-	6.1	10.6	0.8	
Bib for 1/4" ID tubing	9/64	0.35	0	120	120	50	50	130	120	8260G054	2	●	-	6.1	10.6	0.8	
1/4" OD Compression ①	9/64	0.35	0	120	120	50	50	130	120	8260G071	3	●	-	6.1	10.6	0.8	
General Service - Normally Closed PP Body																	
1/4" OD Compression ①	1/16	0.09	0	150	150	60	60	130	120	USM8260 073	4	□	-	6.5	6.4	0.5	
	3/32	0.19	0	100	100	20	20	130	120	USM8260 074	4	□	-	6.5	6.4	0.5	
	1/8	0.31	0	60	60	10	10	130	120	USM8260 075	4	□	-	6.5	6.4	0.5	
	5/32	0.43	0	35	35	5	5	130	120	USM8260 076	4	□	-	6.5	6.4	0.5	
General Service - Normally Closed PA Body																	
3/8" OD Compression ①	5/16	1.3	0	5	5	-	-	130	-	USM8260 089	5	□	-	6.5	-	0.5	
Dispensing Service - NSF listed - Normally Closed PP Body																	
1/4" OD Compression ①	1/16	0.09	0	150	150	60	60	130	120	USM8260 077	4	□	-	6.5	6.4	0.5	
	3/32	0.19	0	100	100	20	20	130	120	USM8260 078	4	□	-	6.5	6.4	0.5	
	1/8	0.31	0	60	60	10	10	130	120	USM8260 079	4	□	-	6.5	6.4	0.5	
	5/32	0.43	0	35	35	5	5	130	120	USM8260 080	4	□	-	6.5	6.4	0.5	
Dispensing Service - NSF listed - Normally Closed PA Body																	
3/8" OD Compression ①	5/16	1.3	0	5	5	-	-	130	-	USM8260 090	5	□	-	6.5	-	0.5	
Shielded Core Valves - Normally Closed CA Body with Watertight Enclosure																	
Bib for 1/4" ID tubing	9/64	0.35	0	6	6	6	6	130	120	D8260G054E	2	-	-	6.1	10.6	0.8	
1/4" OD Compression ①	9/64	0.35	0	6	6	6	6	130	120	D8260G071E	3	-	-	6.1	10.6	0.8	
Shielded Core Valves - Normally Closed PP Body																	
Bib for 1/4" ID tubing	9/64	0.35	0	6	6	6	6	130	120	D8260G053E	2	-	-	6.1	10.6	0.8	
Bib for 1/4" ID tubing	3/16	0.53	0	6	6	6	6	130	120	D8260G056E	2	-	-	6.1	10.6	0.8	
● = General Purpose Valve. □ = Component Solenoid; ① Fittings are not supplied with the valve. Contact ASCO for more information.																	

● = General Purpose Valve. □ = Component Solenoid; ① Fittings are not supplied with the valve. Contact ASCO for more information.

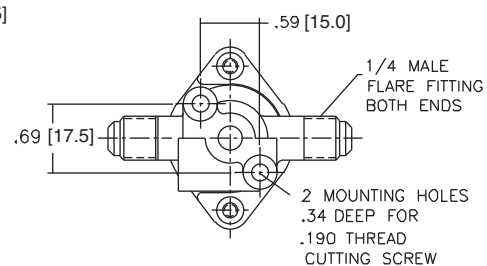
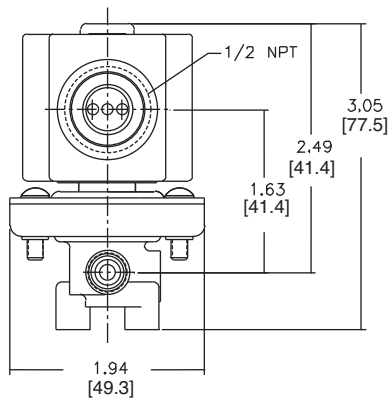
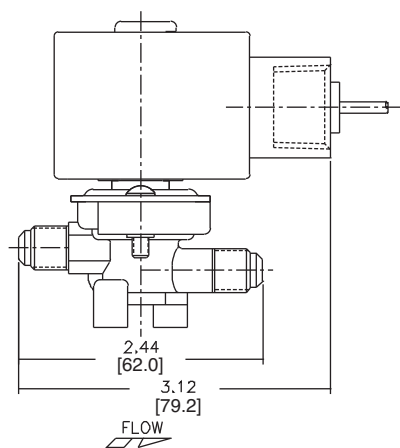
Capabilities Chart

Solenoid Options							Base Catalog Number	Resilient Materials								Other		Standard Rebuild Kit	
NEMA Type 3-9	High Temp.	Wiring Box Screw Terminal	Multipin	DIN	Spade	Open Frame with Leads	Plastic	NBR	FKM	EPDM	Neoprene	Oxygen Service	PTFE	Urethane	Vacuum	Metering	Mounting Bracket	AC	DC
-	HT	JKF	-	SC	OFSF	-	8260G042	●	V	-	-	-	-	-	-	M	-	302971	302977
-	HT	JKF	-	SC	OFSF	-	8260G054	●	V	-	-	-	-	-	-	M	-	302971	302977
-	HT	JKF	-	SC	OFSF	-	8260G071	●	V	-	-	-	-	-	-	M	-	302971	302977
-	-	JKP	-	-	JSP	-	USM8260 073	●	-	E	-	-	-	-	-	M	MB	302973	302979
-	-	JKP	-	-	JSP	-	USM8260 074	●	-	E	-	-	-	-	-	M	MB	302973	302979
-	-	JKP	-	-	JSP	-	USM8260 075	●	-	E	-	-	-	-	-	M	MB	302973	302979
-	-	JKP	-	-	JSP	-	USM8260 076	●	-	E	-	-	-	-	-	M	MB	302973	302979
-	-	JKP	-	-	JSP	-	USM8260 089	●	-	E	-	-	-	-	-	M	MB	302972	302978
-	-	JKP	-	-	JSP	-	USM8260 077	●	-	E	-	-	-	-	-	M	MB	302972	302978
-	-	JKP	-	-	JSP	-	USM8260 078	●	-	E	-	-	-	-	-	M	MB	302972	302978
-	-	JKP	-	-	JSP	-	USM8260 079	●	-	E	-	-	-	-	-	M	MB	302972	302978
-	-	JKP	-	-	JSP	-	USM8260 080	●	-	E	-	-	-	-	-	M	MB	302972	302978
-	-	JKP	-	-	JSP	-	USM8260 090	●	-	E	-	-	-	-	-	M	-	302974	-
-	HT	JKF	-	SC	OFSF	-	D8260G054E	-	V	●	-	-	-	-	-	M	-	302996	304002
-	HT	JKF	-	SC	OFSF	-	D8260G071E	-	V	●	-	-	-	-	-	M	-	302996	306676
-	HT	JKF	-	SC	OFSF	-	D8260G053E	-	V	●	-	-	-	-	-	M	-	302997	304003
-	HT	JKF	-	SC	OFSF	-	D8260G056E	-	V	●	-	-	-	-	-	M	-	302998	304004
● = Standard																			

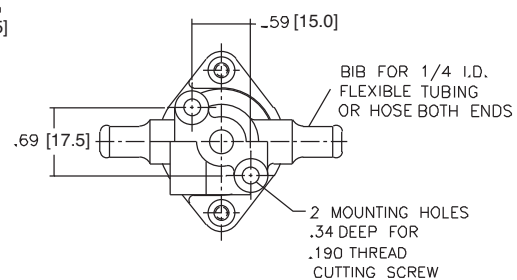
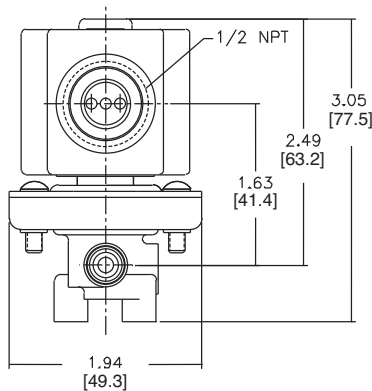
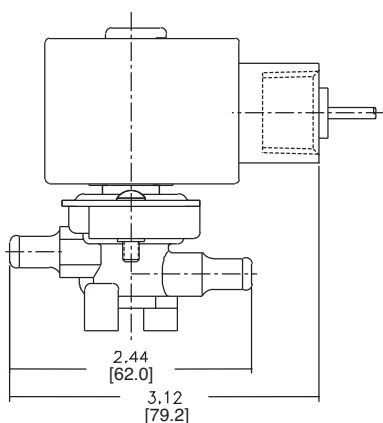
● = Standard

Dimensions: inches [mm]

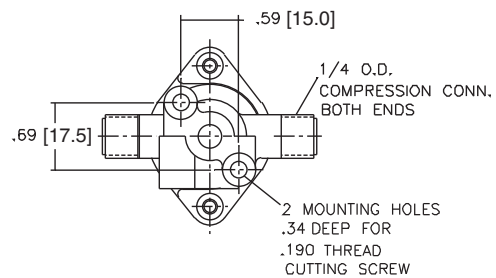
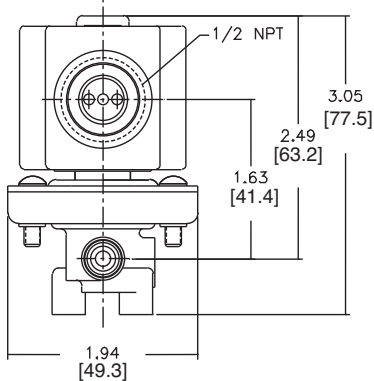
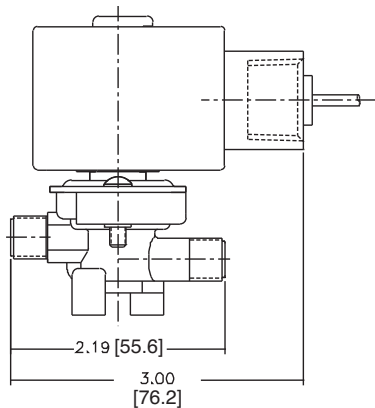
Constr. Ref. 1



Constr. Ref. 2

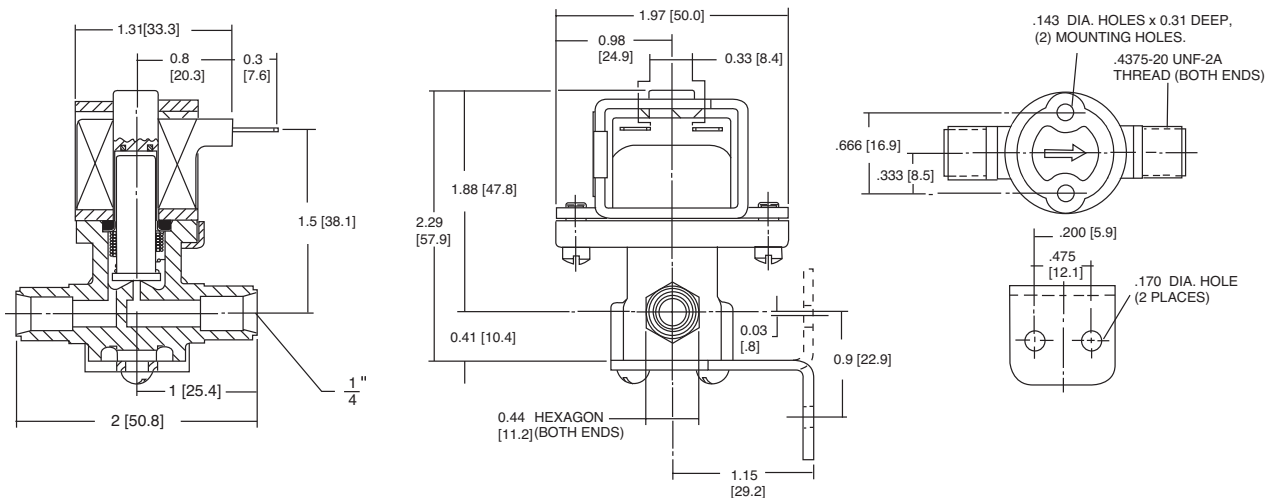


Constr. Ref. 3

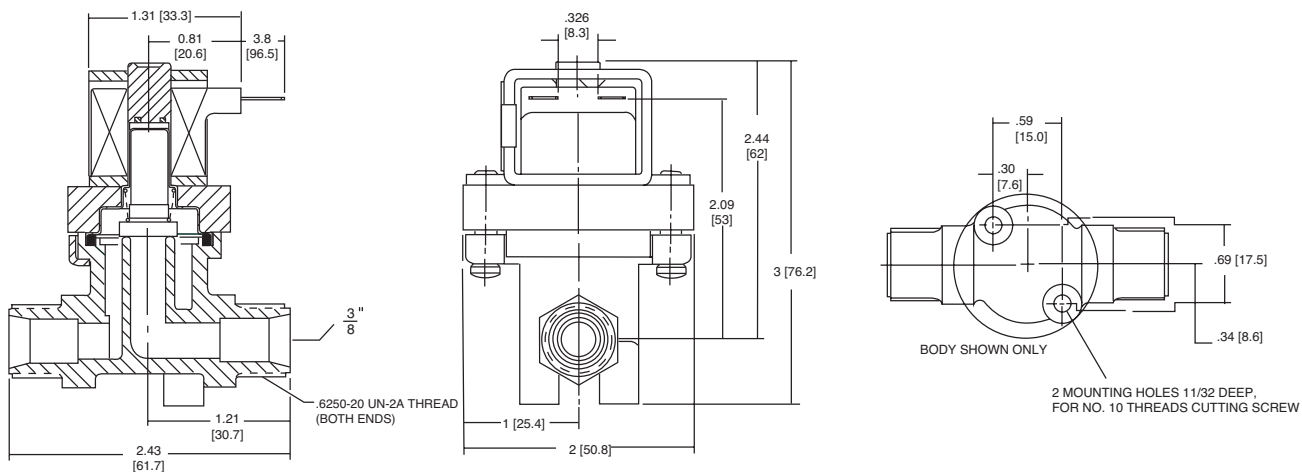


Dimensions: inches [mm]

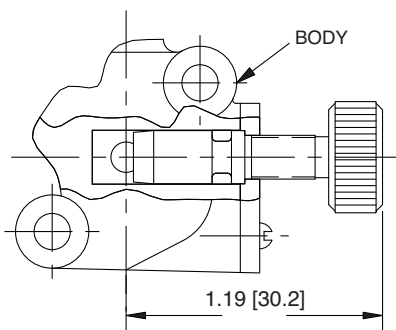
Constr. Ref. 4



Constr. Ref. 5



OPTIONAL METERING DEVICE



The Series 283 are 2-way, normally closed and normally open, high flow isolation valves designed to control the flow of aggressive liquids and gases in analytical instruments, clinical diagnostic analyzers, and bioinstrumentation. The unique lever design of the Series 283 isolates the media from the solenoid components offering the following benefits:

- High flow rates for corrosive media service
- Better at handling media with small particulate than standard isolation valves
- Higher operating pressures
- Capable of handling a variety of media with several body and diaphragm material options
- Reduced chance of seat leakage with resilient diaphragm materials
- Removable/Rotatable coil for easy service and installation

Construction

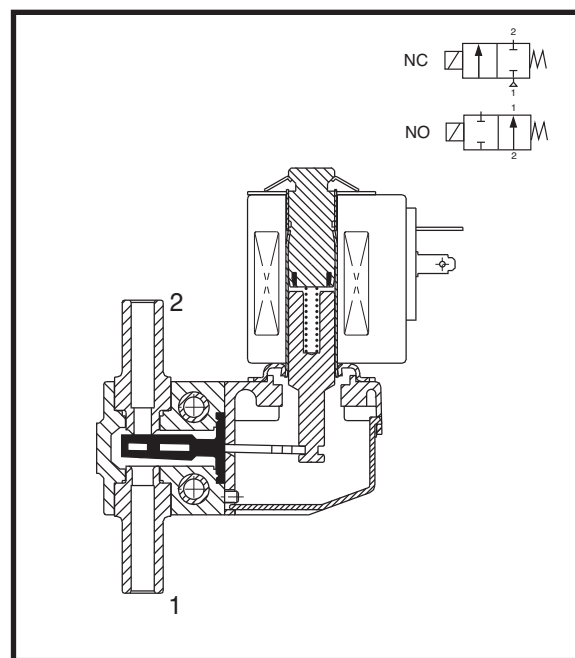
Valve Parts in Contact with Fluids	
Body	PEI (Polyetherimide)
Seals	FKM, EPDM, VMQ(Silicone), SBR(Styrolbutadiene)

Electrical

Standard Voltage	12, 24 VDC +10%, -5% 120/60 VAC +10%, -15%
Power Consumption -DC -AC	6, 9 Watts 6W Coil = 16 VA Inrush, 10 VA Hold 9W Coil = 23 VA Inrush, 14 VA Hold
Duty Cycle Rating	Continuous
Coil Insulation	Class F
Ambient Temperature	14°F to 140°F (-10°C to 60°C)
Electrical Connection	DIN Spade Terminals
DIN Connectors (not included with valve, see page 75)	
- 6 Watt Coil	Size 11 mm, Form B
- 9 Watt Coil	Size 18 mm, Form A
Protection Rating	IP65 with DIN Plug Connector

Valve

Fluid Temperature	14° F to 212° F (-10° C to 100° C)
Response Time	25 ms open or close
Maximum Viscosity	37 cSt
Port Connections	<ul style="list-style-type: none"> • Slip-on for 1/4" or 3/8" I.D. soft tubing • .31" O.D. spigot – 1/4" I.D. tubing • .43" O.D. spigot – 3/8" I.D. tubing

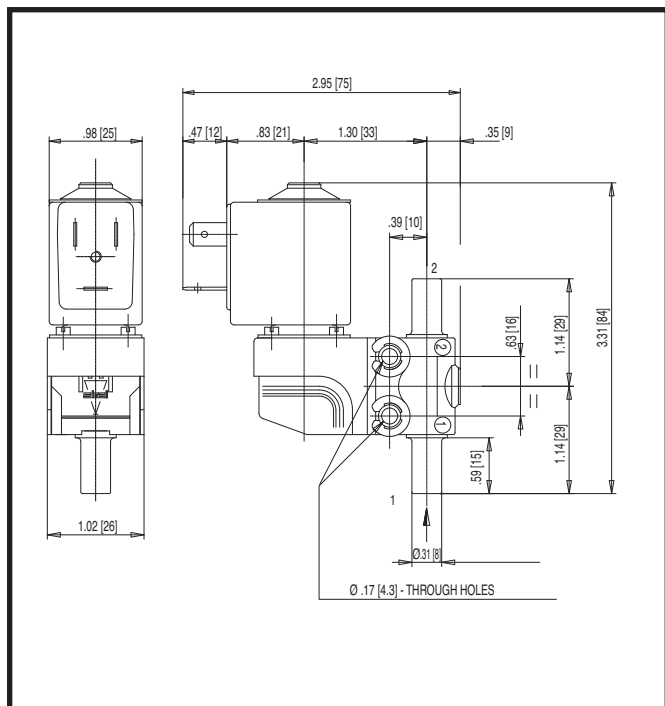


Specifications

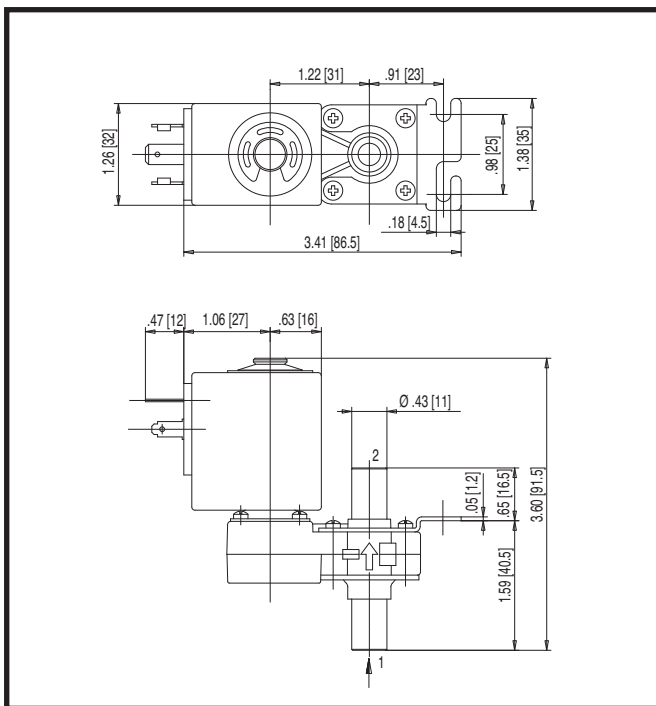
Spigot OD (Inches)	Spigot ID (Inches)	CV Flow	Differential Pressure (psi)					Catalog Number	Diaphragm Material	Constr. Ref. No.	Power (Watts)	Weight (oz.)
			Min.	Max. AC		Max. DC						
				Gasses	Liquids	Gasses	Liquids					
NORMALLY CLOSED												
0.31	0.11	0.27	0	72	72	72	72	SCH283A003	Silicone	1	6	5.3
0.31	0.11	0.27	0	145	145	72	72	SCH283A003E	EPDM	1	6	5.3
0.31	0.11	0.27	0	145	145	72	72	SCH283A003V	FKM	1	6	5.3
0.31	0.13	0.35	0	44	44	44	44	SCH283A004	Silicone	1	6	5.3
0.31	0.13	0.35	0	88	88	44	44	SCH283A004E	EPDM	1	6	5.3
0.31	0.13	0.35	0	88	88	44	44	SCH283A004V	FKM	1	6	5.3
0.43	0.22	0.64	0	65	65	15	15	SCH283A008	SBR	2	9	9
0.43	0.22	0.64	0	65	65	15	15	SCH283A008E	EPDM	2	9	9
0.43	0.22	0.64	0	65	65	15	15	SCH283A008V	FKM	2	9	9
0.43	0.13	0.35	0	22	22	22	22	SCH283A009	Silicone	2	9	9
0.43	0.22	0.64	0	22	22	15	15	SCH283A010	Silicone	2	9	9
NORMALLY OPEN												
0.31	0.13	0.35	0	44	36	44	36	SCH283A016	Silicone	1	6	5.3
0.31	0.13	0.35	0	44	36	44	36	SCH283A016V	FKM	1	6	5.3
0.43	0.22	0.64	0	22	22	15	15	SCH283A018V	FKM	2	9	9

Dimensions: inches [mm]

Constr. Ref. 1



Constr. Ref. 2



The Series 283 are 2-way, normally closed and normally open, high flow isolation valves designed to control the flow of aggressive liquids and gases in analytical instruments, clinical diagnostic analyzers, and bioinstrumentation. The unique lever design of the Series 283 isolates the media from the solenoid components offering the following benefits:

- High flow rates for corrosive media service
- Better at handling media with small particulate than standard isolation valves
- Higher operating pressures
- Capable of handling a variety of media with several body and diaphragm material options
- Reduced chance of seat leakage with resilient diaphragm materials
- Removable/Rotatable coil for easy service and installation

Construction

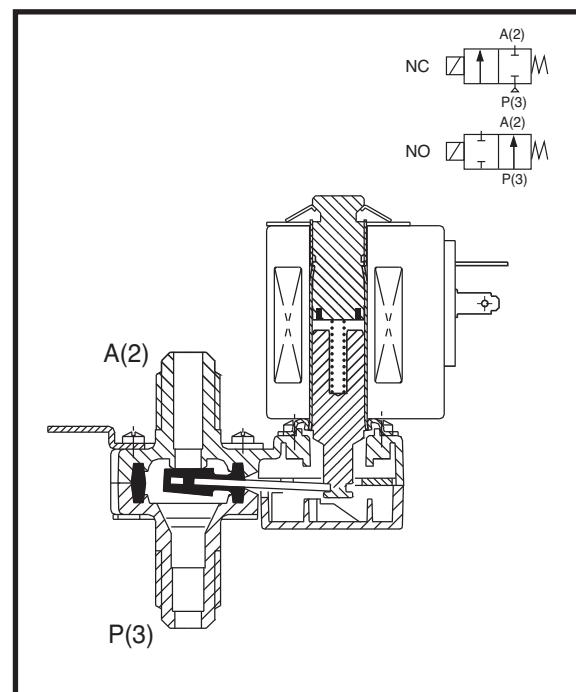
Valve Parts in Contact with Fluids	
Body	G1/4: PEI (Polyetherimide) G1/2: PPS (Polyphenylene sulphide)
Seals	FKM, EPDM, VMQ(Silicone), SBR(Styrolbutadiene)

Electrical

Standard Voltage	12, 24 VDC +10%, -5% 120/60 VAC +10%, -15%
Power Consumption -DC -AC	9, 13 Watts 9W Coil = 23 VA Inrush, 14 VA Hold 13W Coil = 44 VA Inrush, 24 VA Hold
Duty Cycle Rating	Continuous
Coil Insulation	Class F
Ambient Temperature	14°F to 140°F (-10°C to 60°C)
Electrical Connection	DIN Spade Terminals
DIN Connectors (not included with valve, see page 75)	
- 6 Watt Coil	Size 11 mm, Form B
- 9 Watt Coil	Size 18 mm, Form A
Protection Rating	IP65 with DIN Plug Connector

Valve

Fluid Temperature	G 1/4: 14° F to 212° F (-10° C to 100° C) G 1/4: 14° F to 194° F (-10° C to 90° C)
Response Time	G 1/4: 25 ms open or close G 1/2: 30 ms open or close
Maximum Viscosity	37 cSt
Port Connections	Male threaded flare port for use with female flare adapters.

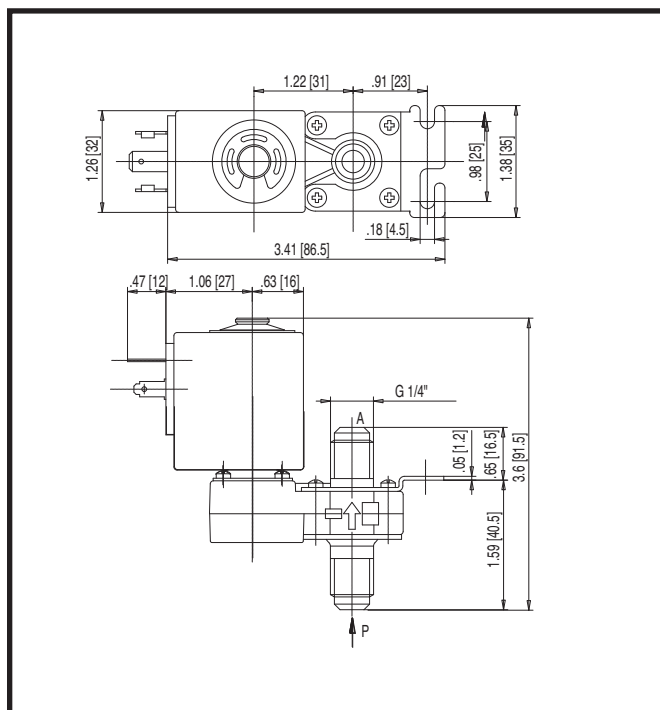


Specifications

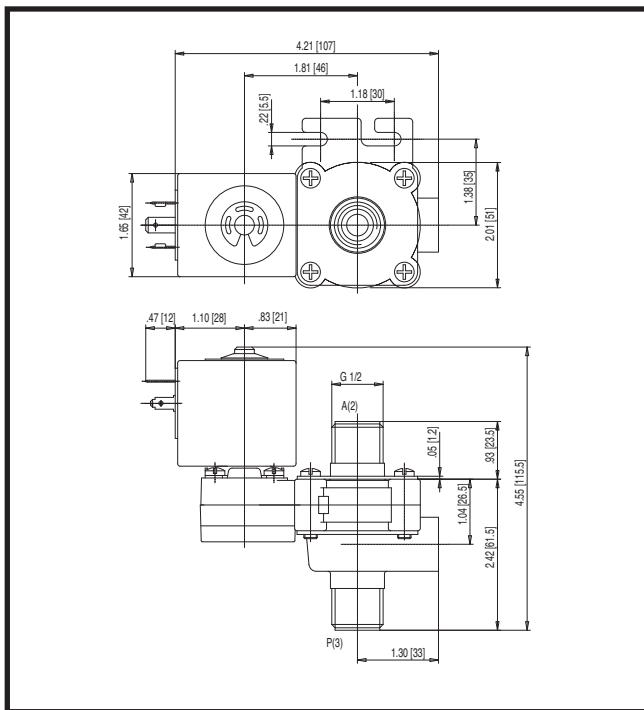
Port Size G=ISO 228	Orifice Size (inches)	CV Flow	Differential Pressure (psi)					Catalog Number	Diaphragm Material	Constr. Ref. No.	Power (Watts)	Weight (oz.)
			Min.	Max. AC		Max. DC						
				Gases	Liquids	Gases	Liquids					
NORMALLY CLOSED												
1/4	0.13	0.35	0	145	145	35	35	SCG283A011	SBR	1	9	9
1/4	0.13	0.35	0	145	145	35	35	SCG283A011E	EPDM	1	9	9
1/4	0.13	0.35	0	145	145	35	35	SCG283A011V	FKM	1	9	9
1/4	0.22	0.64	0	65	65	15	15	SCG283A012	SBR	1	9	9
1/4	0.22	0.64	0	65	65	15	15	SCG283A012E	EPDM	1	9	9
1/4	0.22	0.64	0	65	65	15	25	SCG283A012V	FKM	1	9	9
1/4	0.13	0.35	0	22	22	22	22	SCG283A013	Silicone	1	9	9
1/4	0.22	0.64	0	22	22	15	15	SCG283A014	Silicone	1	9	9
1/2	0.39	1.87	0	23	23	4	4	SCG283B006	SBR	2	13	19
1/2	0.39	1.87	0	23	23	4	4	SCG283B006E	EPDM	2	13	19
1/2	0.39	1.87	0	23	23	4	4	SCG283B006V	FKM	2	13	19
NORMALLY OPEN												
1/4	0.22	0.64	0	13	13	3	3	SCG283A020V	FKM	1	9	9

Dimensions: inches [mm]

Constr. Ref. 1



Constr. Ref. 2



The Series 383 are 3-way, normally closed, normally open and universal, high flow isolation valves designed to control the flow of aggressive liquids and gases in analytical instruments, clinical diagnostic analyzers, and bioinstrumentation. The unique lever design of the Series 383 isolates the media from the solenoid components offering the following benefits:

- High flow rates for corrosive media service
- Better at handling media with small particulate than standard isolation valves
- Higher operating pressures
- Capable of handling a variety of media with several body and diaphragm material options
- Reduced chance of seat leakage with resilient diaphragm materials
- Removable/Rotatable coil for easy service and installation

Construction

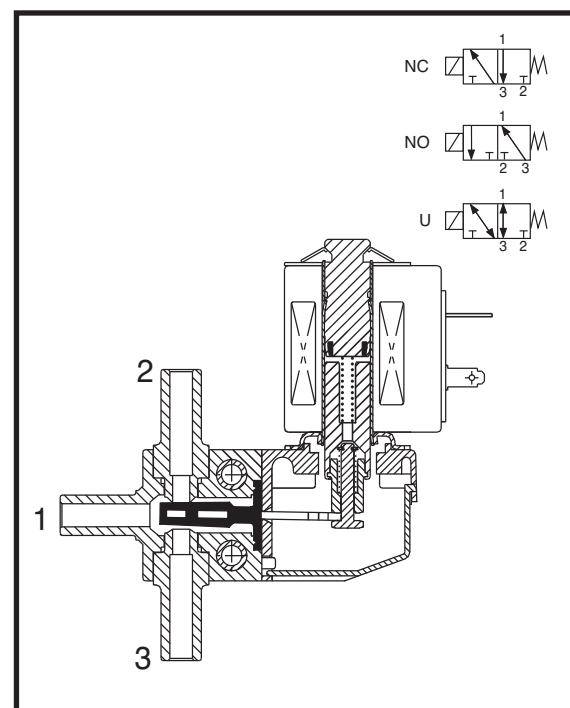
Valve Parts in Contact with Fluids	
Body	PEI (Polyetherimide)
Seals	FKM, EPDM, VMQ(Silicone)

Electrical

Standard Voltage	12, 24 VDC +10%, -5% 120/60 VAC +10%, -15%
Power Consumption -DC -AC	6, 9 Watts 6W Coil = 16 VA Inrush, 10 VA Hold 9W Coil = 23 VA Inrush, 14 VA Hold
Duty Cycle Rating	Continuous
Coil Insulation	Class F
Ambient Temperature	14°F to 140°F (-10°C to 60°C)
Electrical Connection	DIN Spade Terminals
DIN Connectors (not included with valve. See page 75)	
- 6 Watt Coil	Size 11 mm, Form B
- 9 Watt Coil	Size 18 mm, Form A
Protection Rating	IP65 with DIN Plug Connector

Valve

Fluid Temperature	14° F to 212° F (-10° C to 100° C)
Response Time	25 ms open or close
Maximum Viscosity	37 cSt
Port Connections	<ul style="list-style-type: none"> • Slip-on for 1/4" or 3/8" I.D. soft tubing • .31" O.D. spigot – 1/4" I.D. tubing • .43" O.D. spigot – 3/8" I.D. tubing

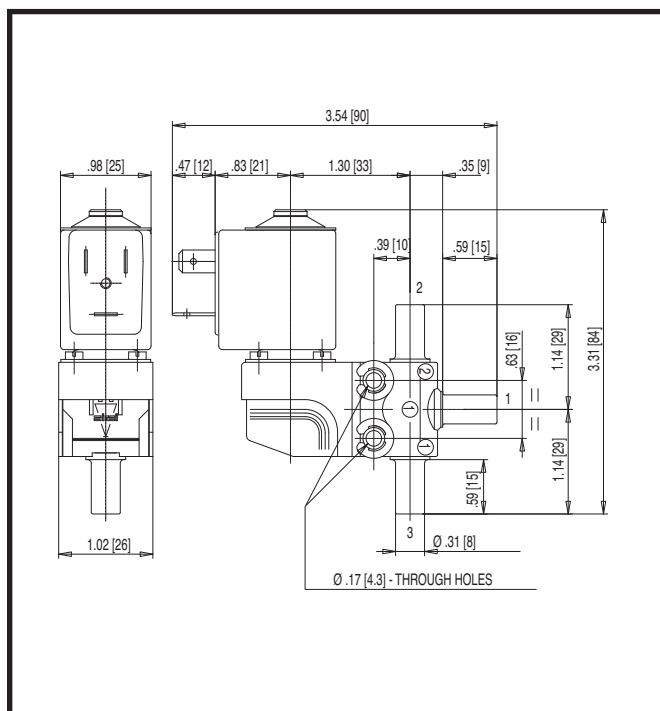


Specifications

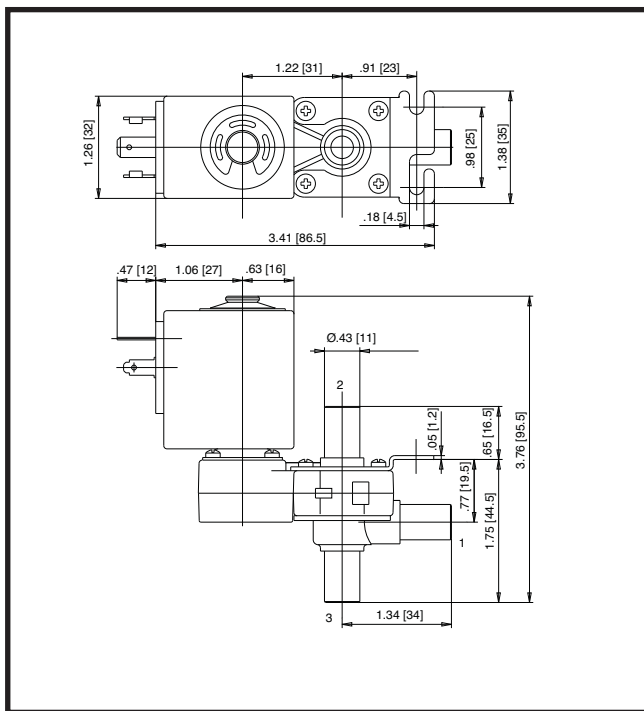
Spigot OD (Inches)	Spigot ID (Inches)	CV Flow	Differential Pressure (psi)					Catalog Number	Diaphragm Material	Construction Reference	Power (Watts)	Weight (oz.)
			Min.	Max. AC		Max. DC						
				Gases	Liquids	Gases	Liquids					
NORMALLY CLOSED												
0.31	0.13	0.35	0	15	15	15	15	SCH383A003	Silicone	1	6	7
0.31	0.13	0.35	0	15	15	15	15	SCH383A003E	EPDM	1	6	7
0.31	0.13	0.35	0	15	15	15	15	SCH383A003V	FKM	1	6	7
NORMALLY OPEN												
0.31	0.13	0.35	0	36	36	29	29	SCH383A004E	EPDM	1	6	7
0.31	0.13	0.35	0	36	36	29	29	SCH383A004V	FKM	1	6	7
UNIVERSAL												
0.43	0.13	0.35	0	22	22	22	22	SCH383A007	Silicone	2	9	12
0.43	0.13	0.35	0	22	22	22	22	SCH383A007E	EPDM	2	9	12
0.43	0.13	0.35	0	22	22	22	22	SCH383A007V	FKM	2	9	12

Dimensions: inches [mm]

Constr. Ref. 1



Constr. Ref. 2





The Series 383 are 3-way, normally closed, normally open and universal, high flow isolation valves designed to control the flow of aggressive liquids and gases in analytical instruments, clinical diagnostic analyzers, and bioinstrumentation. The unique lever design of the Series 383 isolates the media from the solenoid components offering the following benefits:

- High flow rates for corrosive media service
- Better at handling media with small particulate than standard isolation valves
- Higher operating pressures
- Capable of handling a variety of media with several body and diaphragm material options
- Reduced chance of seat leakage with resilient diaphragm materials
- Removable/Rotatable coil for easy service and installation

Construction

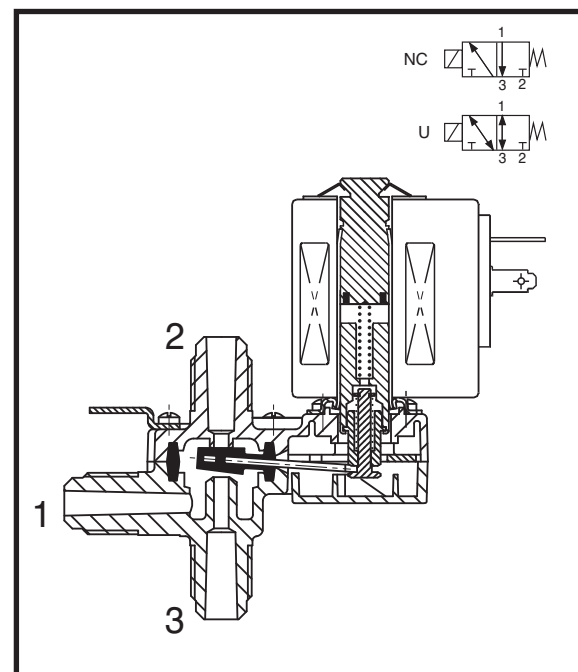
Valve Parts in Contact with Fluids	
Body	G1/4: PEI (Polyetherimide) G1/2: PPS (Polyphenylene sulphide)
Seals	FKM, EPDM, VMQ(Silicone)

Electrical

Standard Voltage	12, 24 VDC +10%, -5% 120/60 VAC +10%, -15%
Power Consumption -DC -AC	9, 13 Watts 9W Coil = 23 VA Inrush, 14 VA Hold 13W Coil = 44 VA Inrush, 24 VA Hold
Duty Cycle Rating	Continuous
Coil Insulation	Class F
Ambient Temperature	14°F to 140°F (-10°C to 60°C)
Electrical Connection	DIN Spade Terminals
DIN Connectors (not included with valve. See page 75)	
- 9 Watt Coil	Size 18 mm, Form B
- 13 Watt Coil	Size 18 mm, Form A
Protection Rating	IP65 with DIN Plug Connector

Valve

Fluid Temperature	G 1/4: 14° F to 212° F (-10° C to 100° C) G 1/2: 14° F to 194° F (-10° C to 90° C)
Response Time	G 1/4: 25 ms open or close G 1/2: 30 ms open or close
Maximum Viscosity	37 cSt
Port Connections	Male threaded flare port for use with female flare adapters.

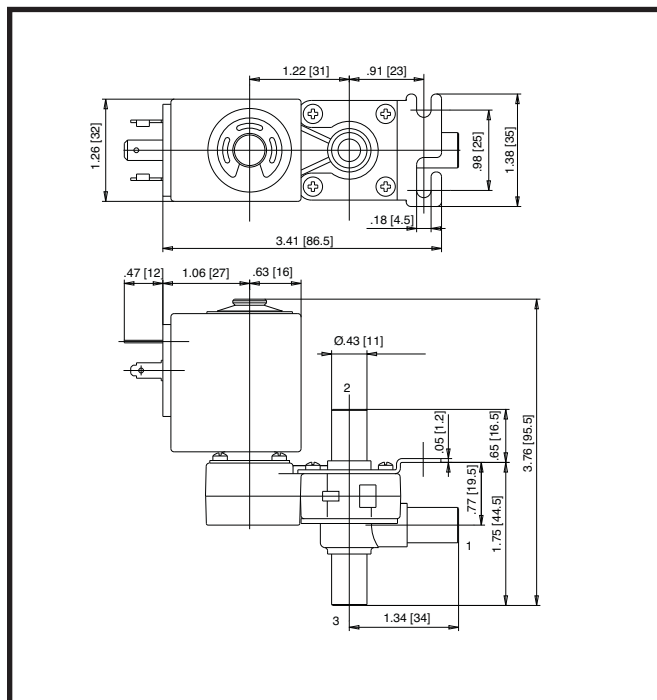


Specifications

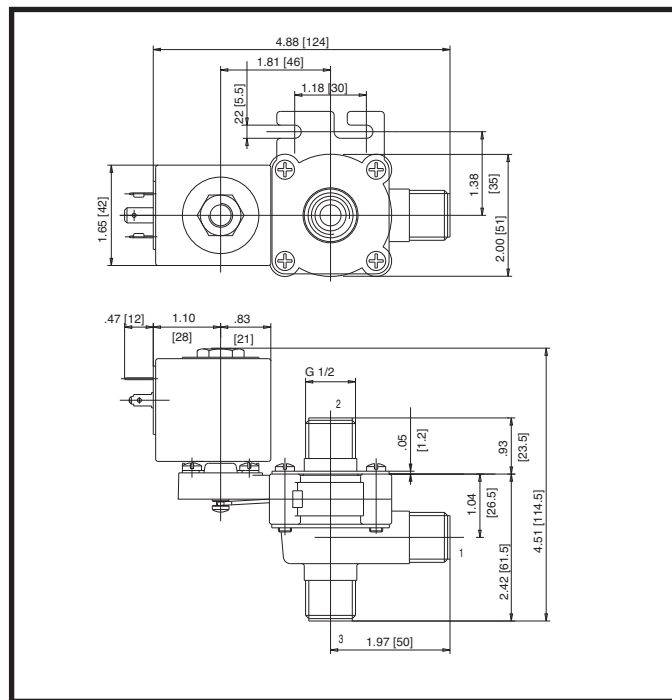
Port Size G=ISO 228	Orifice Size (inches)	CV Flow	Differential Pressure (psi)					Catalog Number	Diaphragm Material	Construction Ref. No.	Power (Watts)	Weight (oz.)
			Min.	Max. AC		Max. DC						
				Gases	Liquids	Gases	Liquids					
UNIVERSAL												
1/4	0.13	0.33	0	22	22	22	22	SCG383A008	Silicone	1	9	12
1/4	0.13	0.33	0	22	22	22	22	SCG383A008E	EPDM	1	9	12
1/4	0.13	0.33	0	22	22	22	22	SCG383A008V	FKM	1	9	12
NORMALLY CLOSED												
1/4	0.22	1.87	0	6	6	3	3	SCG383B006	FKM	2	13	18

Dimensions: inches [mm]

Constr. Ref. 1



Constr. Ref. 2



The Series 284 are 2-way, normally closed and normally open, solenoid operated pinch valves designed to control the flow of corrosive or high purity fluids in medical equipment, analytical instruments, and industrial applications. Pinch valves control fluid flow by locating soft tubing in a mechanism that "pinches" the tubing to block flow and releases to allow flow.

- Large open gap for high flow and handling of particulate media
- Zero dead volume prevents cross-contamination
- Electrical connections can be kept separate from fluid area via built-in panel mount bracket
- Built-in manual operator for easy tubing change out and testing
- Removable/Rotatable coil for easy service and installation

Construction

Valve Parts in Contact with Fluids	
Recommended Tubing	VMQ (Silicone), max. hardness 50 Shore A (Not supplied with valve. Sold separately, see page 74)

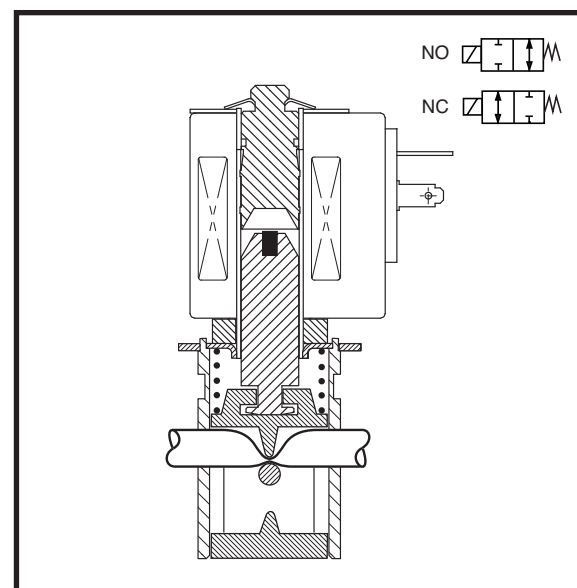
Other Parts	
Body	Anodized Aluminum
Pinch Mechanism	POM (reinforced acetal copolymer)
Internal Solenoid Parts	Stainless Steel
Core Tube	Nickel plated brass

Electrical

Standard Voltage	12, 24 VDC +10%, -5%
Power Consumption	4, 9, 13 Watts
Duty Cycle Rating	Continuous
Coil Insulation	Class F
Ambient Temperature	14°F to 140°F (-10°C to 60°C)
Electrical Connection	DIN Spade Terminals
DIN Connectors (not included with valve. See page 75)	
- 4 Watt Coil	Size 9.4 mm, Form C
- 9 Watt Coil	Size 18 mm, Form A
- 13 Watt Coil	Size 18 mm, Form A
Protection Rating	IP65 with DIN Plug Connector

Valve

Response Time	~ 20 ms
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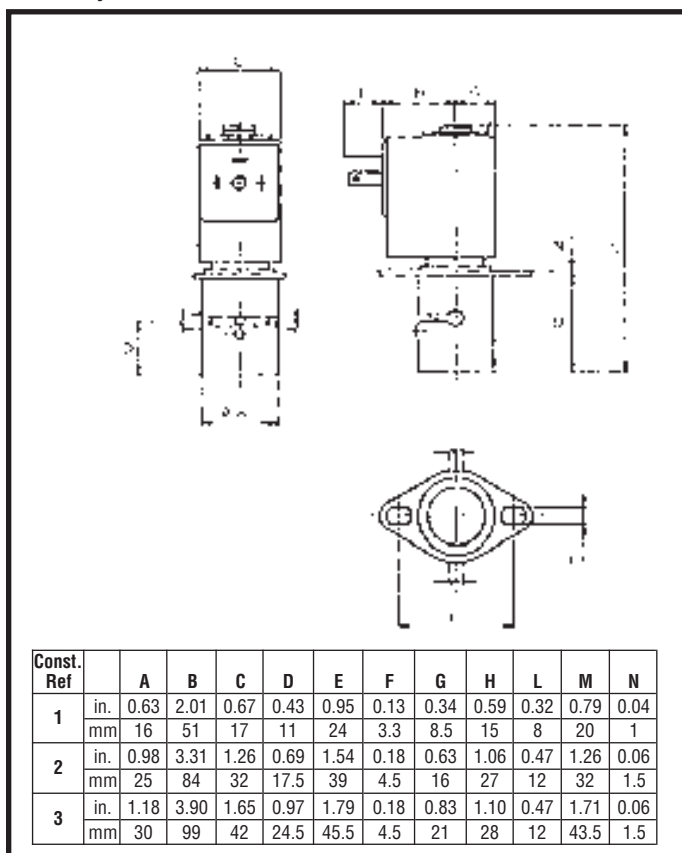


Specifications

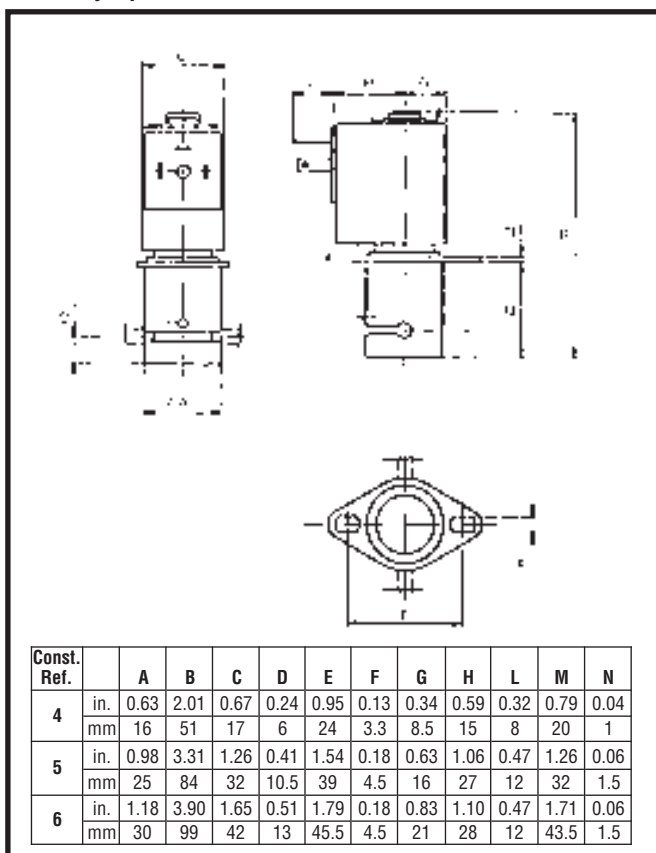
Tubing ID (Inches)	Tubing OD (Inches)	Differential Pressure (psi)					Catalog Number	Constr. Ref. No.	Power (Watts)	Weight (oz.)
		Min.	Max. AC		Max. DC					
			Gases	Liquids	Gases	Liquids				
NORMALLY CLOSED										
0.030	0.065		-	-	15	15	SCH284A001	1	4	1.8
0.040	0.085	0	-	-	15	15	SCH284A002	1	4	1.8
0.062	0.125	0	-	-	15	15	SCH284A003	1	4	1.8
0.078	0.125	0	-	-	15	15	SCH284A004	1	4	1.8
0.104	0.192	0	-	-	15	15	SCH284A005	2	9	9
0.132	0.183	0	-	-	15	15	SCH284A005	2	9	9
0.187	0.313	0	-	-	15	15	SCH284B006	3	13	15
0.250	0.375	0	-	-	15	15	SCH284B007	3	13	15
NORMALLY OPEN										
0.030	0.065	0	-	-	15	15	SCH284A009	4	4	1.8
0.040	0.085	0	-	-	15	15	SCH284A010	4	4	1.8
0.062	0.125	0	-	-	15	15	SCH284A011	4	4	1.8
0.078	0.125	0	-	-	15	15	SCH284A012	4	4	1.8
0.104	0.192	0	-	-	15	15	SCH284A013	5	9	9
0.132	0.183	0	-	-	15	15	SCH284A013	5	9	9
0.187	0.313	0	-	-	15	15	SCH284B014	6	13	15
0.250	0.375	0	-	-	15	15	SCH284B015	6	13	15

Dimensions: inches [mm]

Normally Closed



Normally Open



The Series 384 are 3-way, universal, solenoid operated pinch valves designed to control the flow of corrosive or high purity fluids in medical equipment, analytical instruments, and industrial applications. Pinch valves control fluid flow by locating soft tubing in a mechanism that "pinches" the tubing to block flow and releases to allow flow.

- Large open gap for high flow and handling of particulate media
- Zero dead volume prevents cross-contamination
- Electrical connections can be kept separate from fluid area via built-in panel mount bracket
- Built-in manual operator for easy tubing change out and testing
- Removable/Rotatable coil for easy service and installation

Construction

Valve Parts in Contact with Fluids	
Recommended Tubing	VMQ (Silicone), max. hardness 50 Shore A (Not supplied with valve. Sold separately, see page 74)

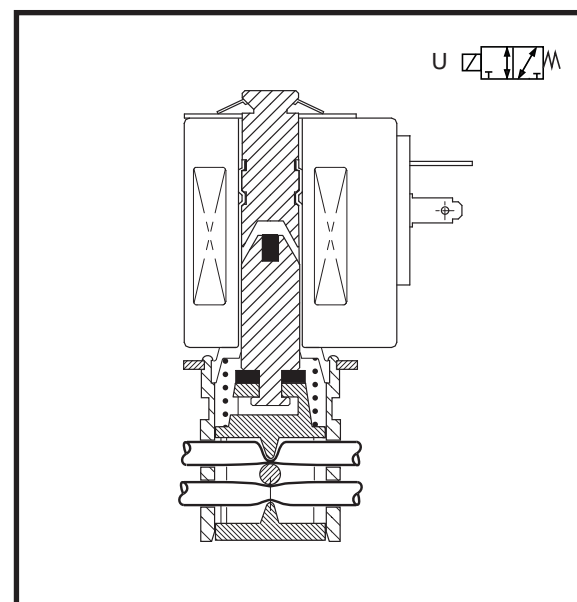
Other Parts	
Body	Anodized Aluminum
Pinch Mechanism	POM (reinforced acetal copolymer)
Internal Solenoid Parts	Stainless Steel
Core Tube	Nickel plated brass

Electrical

Standard Voltage	12, 24 VDC +10%, -5%
Power Consumption	4, 9, 13 Watts
Duty Cycle Rating	Continuous (except where noted otherwise)
Coil Insulation	Class F
Ambient Temperature	14°F to 140°F (-10°C to 60°C)
Electrical Connection	DIN Spade Terminals
DIN Connectors (not included with valve. See page 75)	
- 4 Watt Coil	Size 9.4 mm, Form C
- 9 Watt Coil	Size 18 mm, Form A
- 13 Watt Coil	Size 18 mm, Form A
Protection Rating	IP65 with DIN Plug Connector

Valve

Response Time	~ 20 ms
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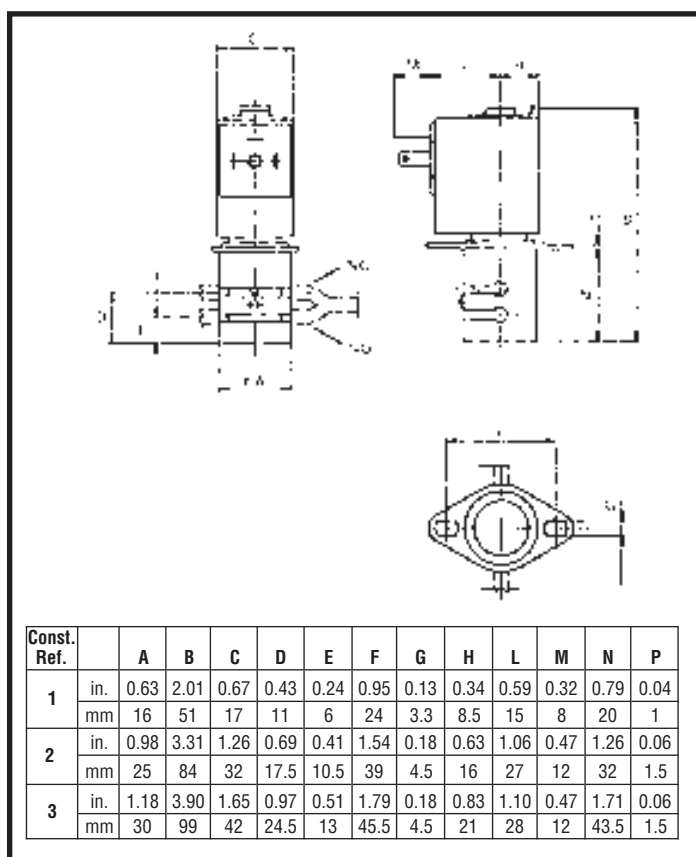


Specifications

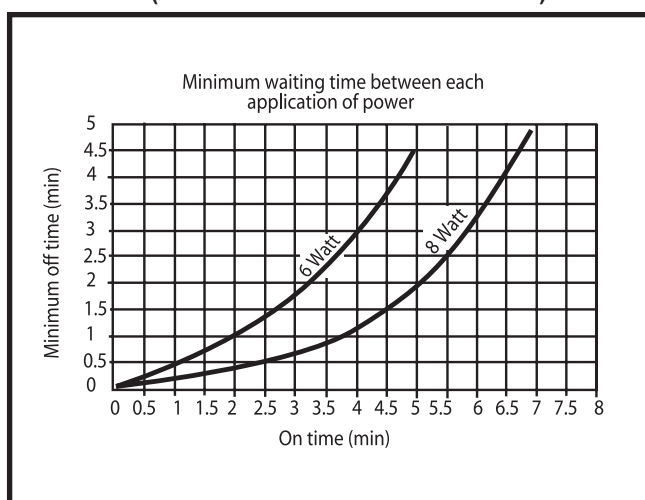
Tubing ID (Inches)	Tubing OD (Inches)	Differential Pressure (psi)					Catalog Number	Constr. Ref. No.	Power (Watts)	Weight (oz.)
		Min.	Max. AC		Max. DC					
			Gases	Liquids	Gases	Liquids				
UNIVERSAL										
0.030	0.065	0	-	-	15	15	SCH384A004	1	4	1.8
0.040	0.085	0	-	-	15	15	SCH384A001	1	4	1.8
0.062	0.125	0	-	-	15	15	SCH384A002 (1)	1	8	1.8
0.078	0.125	0	-	-	15	15	SCH384A003 (1)	1	6	1.8
0.132	0.183	0	-	-	15	15	SCH384A005	2	9	9
0.187	0.313	0	-	-	15	15	SCH384B006	3	13	15
0.250	0.375	0	-	-	15	15	SCH384B007	3	13	15

(1) Intermittent duty coil. See graph of minimum off time vs. on time to determine applicable duty cycle.

Dimensions: Inches [mm]



Minimum Off Time vs. On Time (SCH384A002 & SCH384A003 ONLY)





ASCO Scientific Series 388, 390, 397, and 401 are 2-way, normally closed, normally open and magnetic latching solenoid operated pinch valves designed to control the flow of corrosive or high purity fluids in medical equipment and analytical instruments. Pinch valves isolate the fluid from the valve components by locating soft tubing in a mechanism that "pinches" the tubing to block flow and releases to allow flow.

- Saves space in equipment with compact design
- Low power consumption to reduce power supply requirements
- Large range of tubing sizes available for various flow and pressure requirements
- Magnetic latching construction (Series 397) to maintain valve position with loss of power, eliminate coil heat rise, and extend battery life

Construction

Valve Parts in Contact with Fluids	
Recommended Tubing	Platinum cured silicone Durometer: 55 +/- 5 Shore A (12" tube supplied with each valve. Additional lengths available separately, see page 74).
Other Parts	
Body -390, 397 -388, 401	Glass filled acetal Nickel plated aluminum
Pinch Mechanism	POM
Internal Solenoid Parts	Stainless Steel
Coil Housing	Zinc coated steel

Electrical

Standard Voltage	6, 12, 24 VDC +10%, -5% 115 VAC, 50/60 Hz
Power Consumption -DC -AC -Latching	2.5, 3.2, 4.3, 4.5, 5.3, 10.0 Watts 4.0, 6.8, 12.0 Watts Pull in: 13 Watts momentary Release: 10 Watts momentary
Duty Cycle Rating	Continuous (Intermittent for latching)
Ambient Temperature	32°F to 77°F (0C to 25C)
Electrical Connection -390, 397 -388, 401	15", 26 gage 15", 22 gage



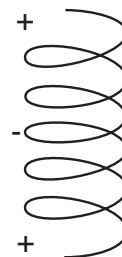
Series 397 Magnetic Latching Coil Schematic

Pull In

Red = 6 VDC

Orange = 12 VDC

Yellow = 24 VDC

Common Ground
(Black)Release
(Brown)

Specifications

Tubing ID (Inches)	Tubing OD (Inches)	Tubing Wall (Inches)	Differential Pressure (psi)			Catalog Number	Constr. Ref. No.	Power (Watts)	Weight (oz.)
			Min.	Max. AC/DC					
				Gases	Liquids				
NORMALLY CLOSED									
1/32"	3/32"	1/32"	0	50	50	390NCxx150	1	2.5 (DC), 4.0 (AC)	2.5
1/32"	5/32"	1/16"	0	50	50	401NCxx250	2	4.5(12DC), 5.3(24DC), 6.8(AC)	4.0
1/16"	1/8"	1/32"	0	30	30	390NCxx330	1	2.5 (DC), 4.0 (AC)	2.5
1/16"	3/16"	1/16"	0	30	30	401NCxx430	2	4.5(12DC), 5.3(24DC), 6.8(AC)	4.0
3/32"	5/32"	1/32"	0	15	15	401NCxx515	2	4.5(12DC), 5.3(24DC), 6.8(AC)	4.0
3/32"	7/32"	1/16"	0	30	30	401NCxx630	2	4.5(12DC), 5.3(24DC), 6.8(AC)	4.0
1/8"	3/16"	1/32"	0	15	15	401NCxx715	2	4.5(12DC), 5.3(24DC), 6.8(AC)	4.0
1/8"	1/4"	1/16"	0	30	30	401NCxx830	2	4.5(12DC), 5.3(24DC), 6.8(AC)	4.0
3/16"	1/4"	1/32"	0	10	10	401NCxx1010	2	4.5(12DC), 5.3(24DC), 6.8(AC)	4.0
1/4"	5/16"	1/32"	0	10	10	388NCxx1110	3	10.0(DC), 12.0(AC)	16.0
1/4"	3/8"	1/16"	0	15	15	388NCxx1215	3	10.0(DC), 12.0(AC)	16.0
NORMALLY OPEN									
1/32"	3/32"	1/32"	0	50	50	390NOxx150	1	2.5 (DC), 4.0 (AC)	2.5
1/32"	5/32"	1/16"	0	50	50	401NOxx250	2	4.5(12DC), 5.3(24DC), 6.8(AC)	4.0
1/16"	1/8"	1/32"	0	30	30	390NOxx330	1	2.5 (DC), 4.0 (AC)	2.5
1/16"	3/16"	1/16"	0	30	30	401NOxx430	2	4.5(12DC), 5.3(24DC), 6.8(AC)	4.0
3/32"	5/32"	1/32"	0	15	15	401NOxx515	2	4.5(12DC), 5.3(24DC), 6.8(AC)	4.0
3/32"	7/32"	1/16"	0	30	30	401NOxx630	2	4.5(12DC), 5.3(24DC), 6.8(AC)	4.0
1/8"	3/16"	1/32"	0	15	15	401NOxx715	2	4.5(12DC), 5.3(24DC), 6.8(AC)	4.0
1/8"	1/4"	1/16"	0	30	30	401NOxx830	2	4.5(12DC), 5.3(24DC), 6.8(AC)	4.0
3/16"	1/4"	1/32"	0	10	10	401NOxx1010	2	4.5(12DC), 5.3(24DC), 6.8(AC)	4.0
1/4"	5/16"	1/32"	0	10	10	388NOxx1110	3	10.0(DC), 12.0(AC)	16.0
1/4"	3/8"	1/16"	0	15	15	388NOxx1215	3	10.0(DC), 12.0(AC)	16.0
MAGNETIC LATCHING SOLENOID									
1/32"	3/32"	1/32"	0	50	50	397xx150	1	13.0(Pull), 10.0(Release)	3.0
1/16"	1/8"	1/16"	0	30	30	397xx330	1	13.0(Pull), 10.0(Release)	3.0

To Construct Catalog Number

- Select base catalog number from specification table above.
- Insert desired voltage in place of "xx".

DC	6, 12, 24 (338 not available in 6DC)
AC	115 (397 not available in AC)

Examples

397**06**150 = 1/32" x 3/32" tubing, magnetic latching, 6DC, 50 psi

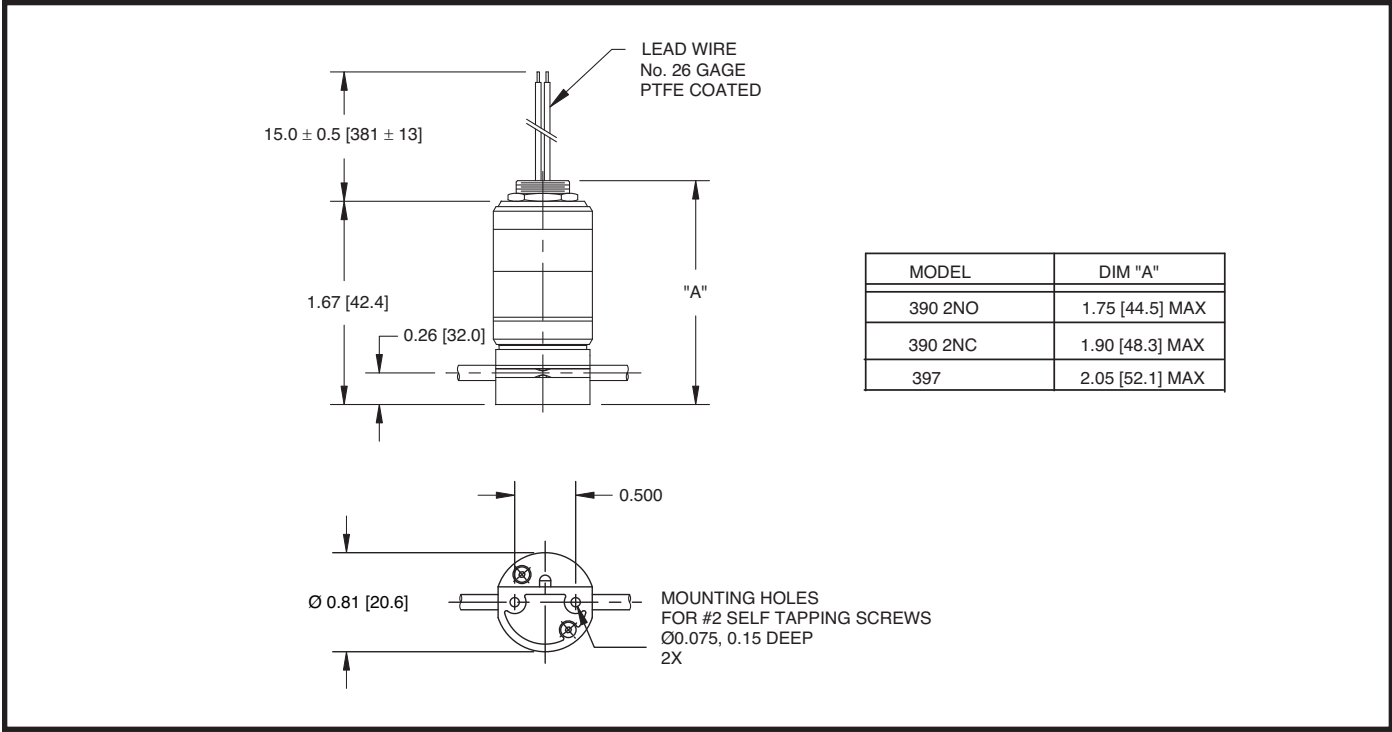
390NO**12**330 = 1/16" x 1/8" tubing, normally open, 12DC, 30 psi

401NC**24**830 = 1/8" x 1/4" tubing, normally closed, 24DC, 30 psi

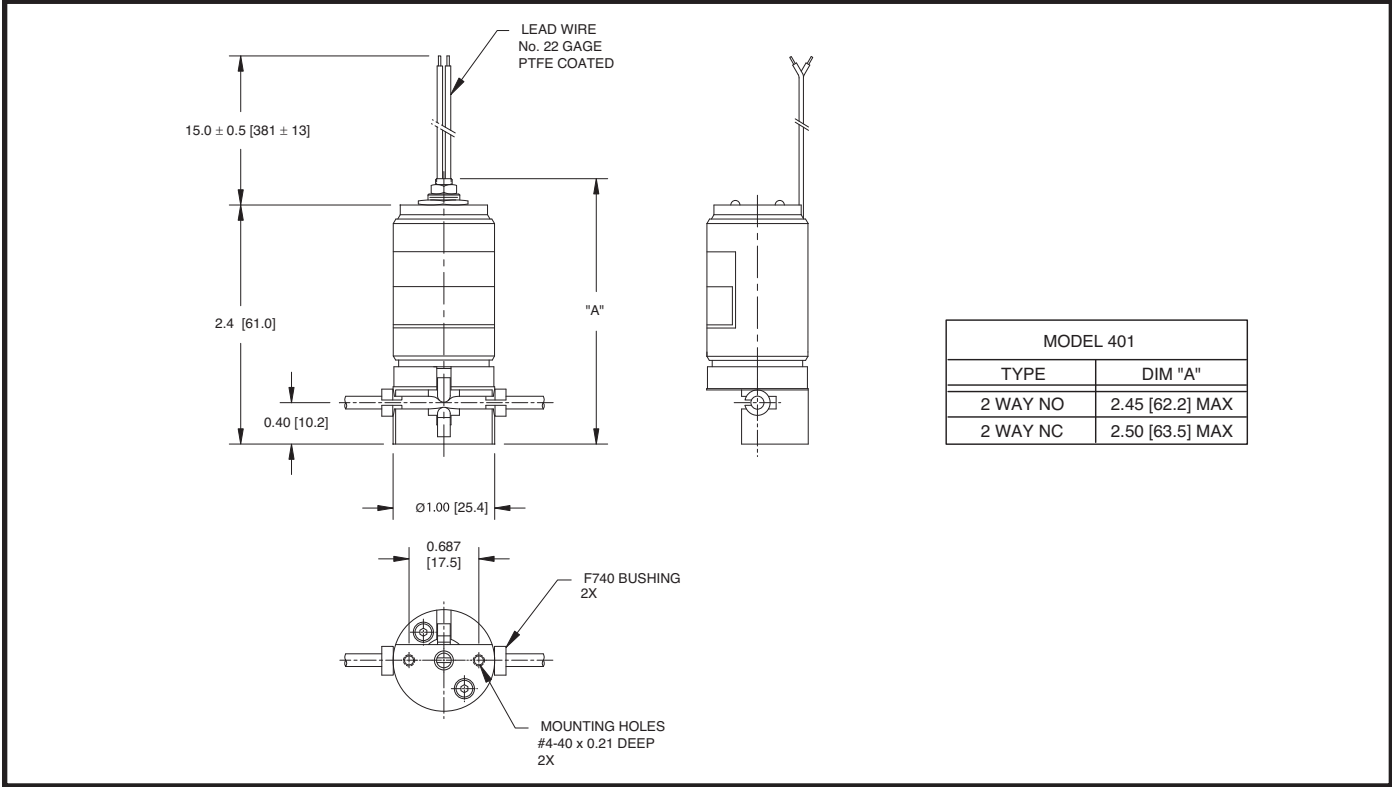
388NC**115**1215 = 1/4" x 3/8" tubing, normally closed, 115AC, 50/60 Hz, 15 psi

Dimensions: Inches [mm]

Constr. Ref. 1



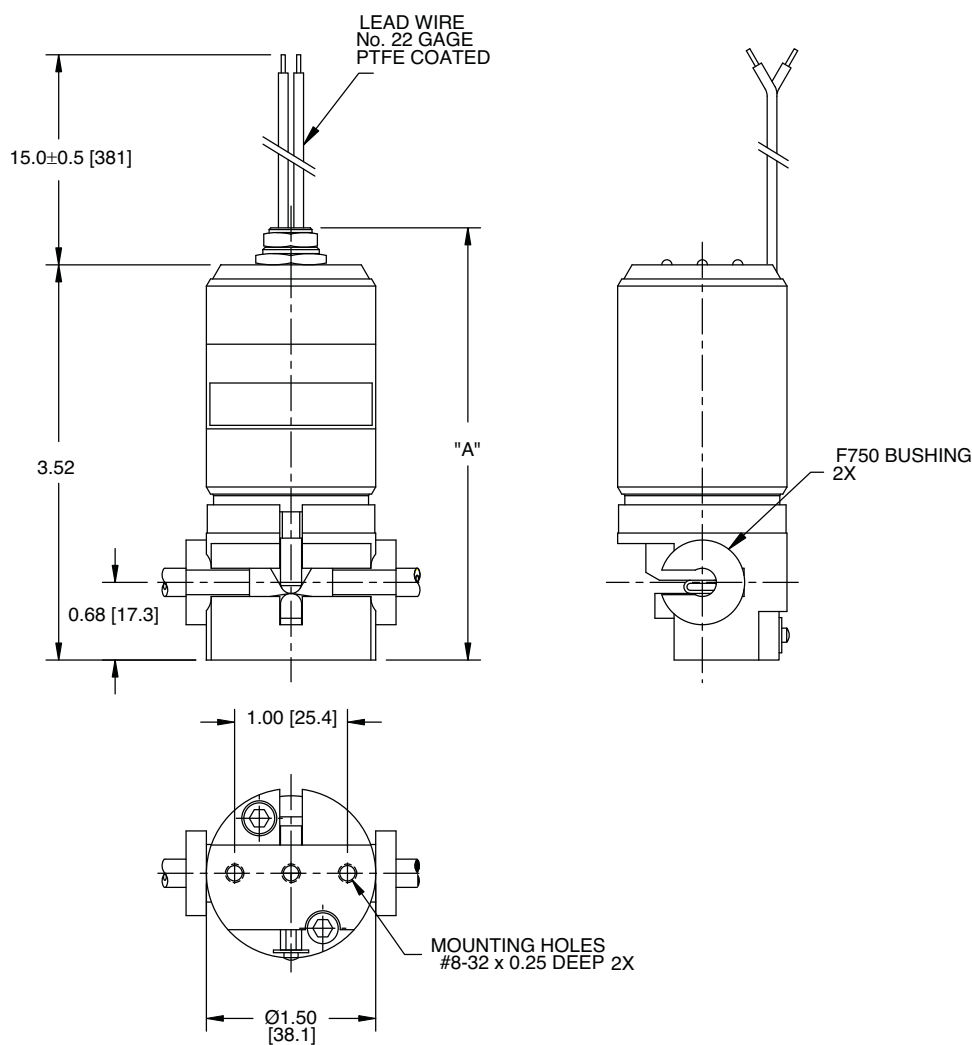
Constr. Ref. 2



Dimensions: Inches [mm]

Constr. Ref. 3

MODEL 388	
TYPE	DIM "A"
2 WAY NO	3.56 [90.4] MAX
2 WAY NC	4.00 [101.6] MAX





ASCO Scientific Series 373 and 443 are patented 3-way solenoid operated pinch valves designed to divert or select the flow of corrosive or high purity fluids in medical equipment and analytical instruments. The fluid is isolated from the valve components by means of silicone tubing and flow is controlled in either direction by the alternating pinching action of the solenoid.

- Saves space in equipment with compact design
- Low power consumption to reduce power supply requirements
- Large range of tubing sizes available for various flow and pressure requirements

Construction

Valve Parts in Contact with Fluids	
Recommended Tubing	Platinum cured silicone Durometer: 55+/-5 Shore A (Two 12" pieces of tubing supplied with each valve. Additional lengths available separately, see page 74)

Other Parts	
Body -443 -373	Glass filled acetal Nickel plated aluminum
Pinch Mechanism	Delrin
Internal Solenoid Parts	Stainless Steel
Coil Housing	Zinc coated steel

Electrical

Standard Voltage	6, 12, 24 VDC +10%, -5% 115 VAC, 50/60 Hz
Power Consumption -DC -AC	2.5, 3.2, 4.3, 4.5, 5.2 Watts 2.4, 6.8 Watts
Duty Cycle Rating	Continuous
Ambient Temperature	32°F to 77°F (0°C to 25°C)
Electrical Connection -443 -373	15", 26 gage 15", 22 gage



Specifications

Tubing ID (Inches)	Tubing OD (Inches)	Tubing Wall (Inches)	Differential Pressure (psi)			Catalog Number	Power (watts)	Weight (oz.)
			Min.	Max. AC/DC				
				Gases	Liquids			
1/32"	3/32"	1/32"	0	50	50	443xx150	3.2(6DC), 2.5(12&24 DC), 2.4(AC)	2.4
1/32"	5/32"	1/16"	0	50	50	373xx250	4.3(6DC), 4.5(12DC), 5.2(24DC), 6.8(AC)	5.0
1/16"	1/8"	1/32"	0	30	30	443xx330	3.2(6DC), 2.5(12&24 DC), 2.4(AC)	2.4
1/16"	3/16"	1/16"	0	30	30	373xx430	4.3(6DC), 4.5(12DC), 5.2(24DC), 6.8(AC)	5.0
3/32"	5/32"	1/32"	0	15	15	373xx515	4.3(6DC), 4.5(12DC), 5.2(24DC), 6.8(AC)	5.0
3/32"	7/32"	1/16"	0	30	30	373xx630	4.3(6DC), 4.5(12DC), 5.2(24DC), 6.8(AC)	5.0
1/8"	3/16"	1/32"	0	15	15	373xx715	4.3(6DC), 4.5(12DC), 5.2(24DC), 6.8(AC)	5.0
1/8"	1/4"	1/16"	0	30	30	373xx830	4.3(6DC), 4.5(12DC), 5.2(24DC), 6.8(AC)	5.0
1/8"	1/4"	1/32"	0	10	10	373xx1010	4.3(6DC), 4.5(12DC), 5.2(24DC), 6.8(AC)	5.0

To Construct Catalog Number

- Select base catalog number from specification table above.
- Insert desired voltage in place of "xx".

DC	6, 12, 24
AC	115

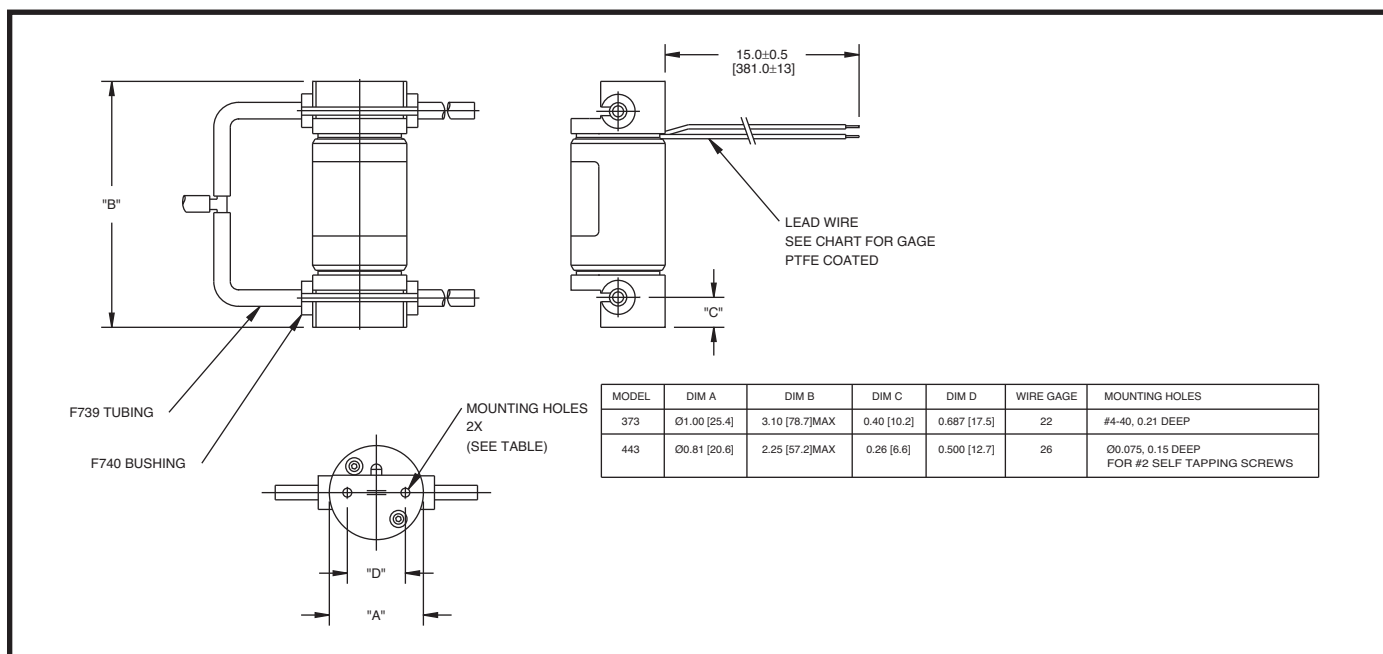
Examples

443**06**150 = 1/32" x 3/32" tubing, 3-way, 6DC, 50 psi

373**12**330 = 1/16" x 1/8" tubing, 3-way, 12DC, 30 psi

373**115**1010 = 3/16" x 1/4" tubing, 3-way, 115AC, 10 psi

Dimensions: inches [mm]



The Series 188 is a 3-way, 10 mm wide micro solenoid valve designed to be used in fluid power applications. Using air or other neutral gasses the Series 188 can be used to pilot other valves or cylinders.

- Compact manifold design saves space and reduces assembly time
- Low power consumption
- LED and electrical protection comes standard
- Manual override

Construction

Valve Parts in Contact with Fluids	
Body	Manifold Mount: Polyamide (PA), In-line: Brass
Diaphragm	Nitrile (NBR)
Internal Parts	Brass & Stainless Steel
Manifold	Anodized Aluminum

Electrical

Standard Voltages	12 VDC or 24 VDC
Power Consumption	1 Watt
Duty Cycle Rating	Continuous
Coil Insulation	Class F
Ambient Temperature	41°F to 122°F (5°C to 50°C)
Electrical Connection	Clip type with lead wires, LED and diode protection.
Protection Rating	IP40

Connectors sold separately (see next page)

Valve

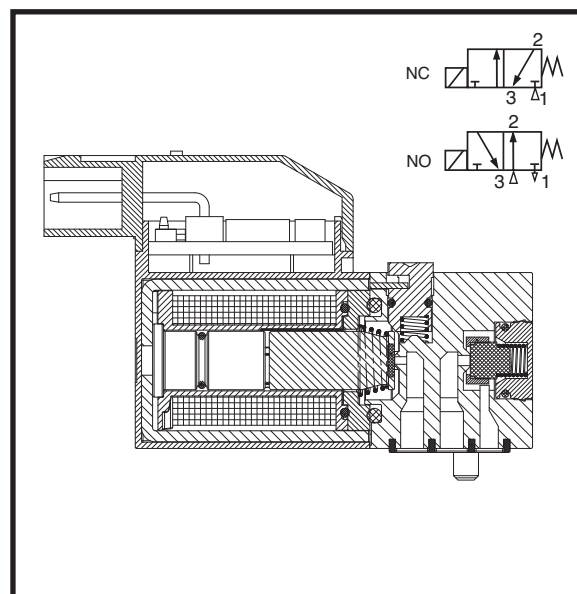
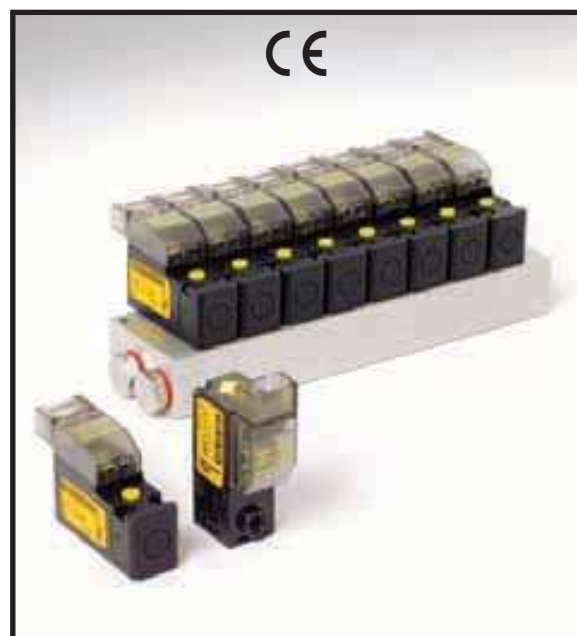
Response Time	Approx. 6 ms on, 8 ms off
Fluid Temperature	41°F to 122°F (5°C to 50°C)

Solenoid Valves Assembled to Manifolds

# of Valves	Cat. No.	# of Valves	Cat. No.	# of Valves	Cat. No.
2	18800054	5	18800057	8	18800060
3	18800055	6	18800058	9	18800061
4	18800056	7	18800059	10	18800062

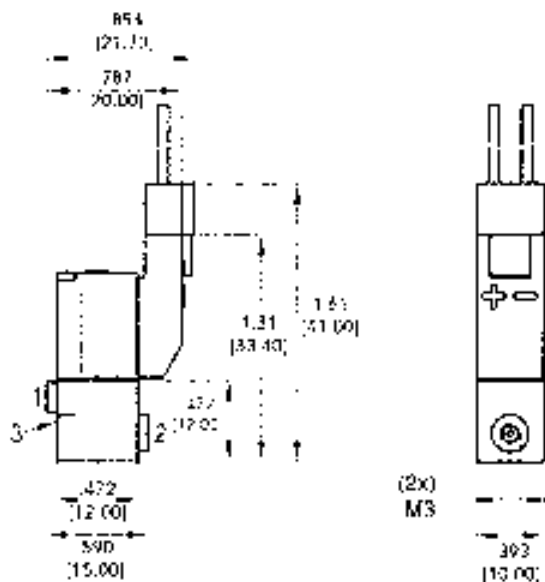
Specifications - Valve only

Ports	Orifice Size (ins.)	Cv Flow Factor	Differential Pressure (psi)				Power (Watts)	Weight (oz)
			Min.	Max.	Max.	Catalog Numbers		
				Gases	Liquids			
In-Line Version								
M3	0.024	0.008	0	115	0	18801004	1.3	0.388
Manifold Mount Version - Normally Closed								
-	0.020	0.008	0	115	0	18801003	1.3	0.388
-	0.031	0.010	0	58	0	18801081	1.3	0.388
-	0.039	0.012	0	36	0	18801086	1.3	0.388
Manifold Mount Version - Normally Open								
-	0.020	0.008	0	87	0	18801063	1.3	0.388
-	0.031	0.010	0	44	0	18801091	1.3	0.388
-	0.039	0.012	0	22	0	18801096	1.3	0.388

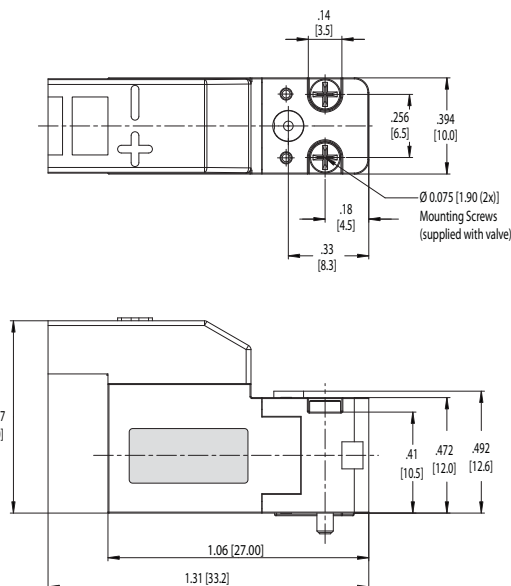


Dimensions: Inches [mm]

In-line Version



Manifold Mount Version

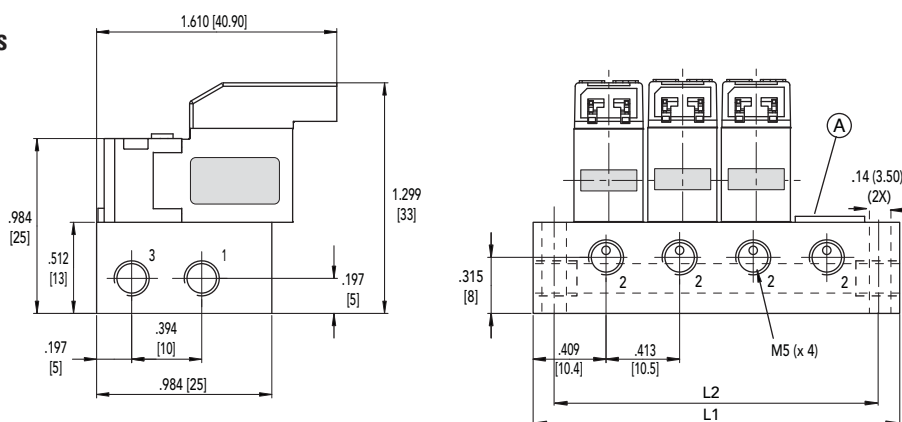


Solenoid valves assembled to manifolds

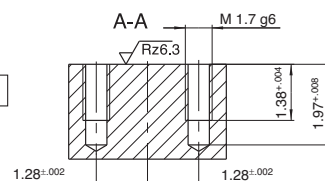
(Normally closed, 0.020" orifice only.
Consult ASCO for alternative configurations)

No. of Valves	Catalog Number	Length		Total Weight (oz)
		L1	L2	
2	18800054	1.32	1.08	2.08
3	18800055	1.73	1.50	3.18
4	18800056	2.15	1.91	4.27
5	18800057	2.56	2.32	5.37
6	18800058	2.97	2.74	6.46
7	18800059	3.39	3.15	7.48
8	18800060	3.80	3.56	8.51
9	18800061	4.21	3.98	9.60
10	18800062	4.63	4.39	10.70

A - Blanking Plate, Catalog # 881 35 305

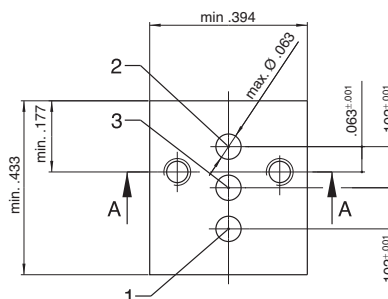


Flange facing



The connectors should be ordered **separately**.
Connectors with 2 lead wires

Length	Catalog Number
0.5m	881 18 801
1.5m	881 18 802
3m	881 18 803



The Series 302 is a 3-way, 15 mm wide, manifold mount solenoid valve designed to control the flow of air or inert gases to small cylinders or actuators. The Series 302 offers the following benefits:

- Compact 15 mm, manifold design saves space and reduces assembly time
- Low power consumption (0.5W)
- Built-in LED for indication of electrical operation
- Built-in surge suppression to protect sensitive equipment
- Manual operator for testing and troubleshooting

Construction

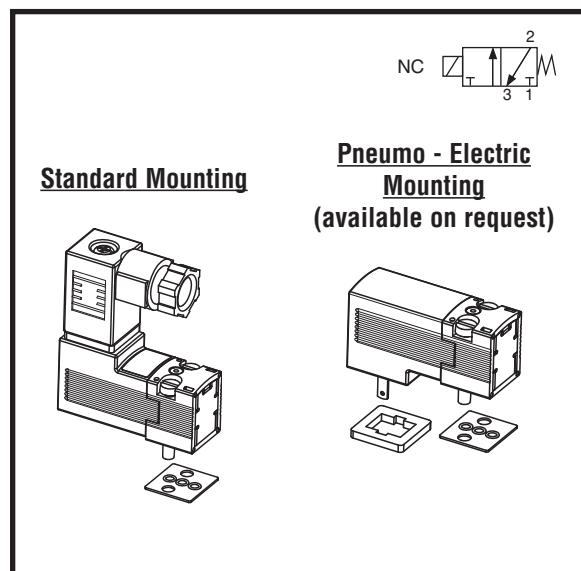
Valve Parts in Contact with Fluids	
Body	IXEF (polyarylamide)
Seals	NBR, FKM
Internal Solenoid Components	POM, PET, stainless steel, brass
Manifold Interface Seal	Hytrel

Electrical

Standard Voltage	5, 12, 24, 48- VDC +10%, -15% (Leaded version available in 24 VDC only. AC voltages available upon request)
Power Consumption	0.5, 1.0, 2.0 Watts (Nominal ratings without LED and surge suppression. Add 0.15W for versions with LED and surge suppression)
Duty Cycle Rating	Continuous
Coil Insulation	Class F
Ambient Temperature	See ambient temperature table.
Electrical Connection	AMP 2.8 x 0.5 with 9.4 mm spacing ISO 15217/DIN 43650C. 12" Lead wires
DIN Connector	Size 9.4 mm, Form C (supplied with valve)
Protection Rating	IP65 with DIN Plug Connector

Valve

Fluid Temperature 0.5 & 2.0 Watt Coil 1.0 Watt Coil	14° F to 104° F (-10° C to 40° C) -13° F to 104° F (-25° C to 40° C)
Suitable Media	Air or inert gases filtered at 50µm, lubricated or not lubricated
Response Time	8 - 15 ms open or close
Manifold Mounting	CNOMO, 15 mm wide
Manual Operators	Momentary – push in and hold Maintained – screw type



Ambient Temperature Ratings

Power	Version	Single Valve or 15mm space between valves	Valves stacked side by side
0.5 W	Standard	14° F to 122° F	14° F to 122° F
0.65 W	LED/Surge	14° F to 122° F	14° F to 122° F
1.0 W	Standard	-13° F to 140° F	-13° F to 140° F
1.15 W	LED/Surge	-13° F to 140° F	-13° F to 140° F
2.0 W	Standard	14° F to 122° F	14° F to 104° F
2.15 W	LED/Surge	14° F to 104° F	-

Specifications

Leaded Coil with LED & Surge Suppression

Orifice Size (ins.)	Cv Flow Factor		Operating Pressure Differential		Catalog Number		Constr. Ref.	Power (Watts)	Weight (oz.)
	182	283	Min.	Max.	Momentary Manual Operator	Sustained Manual Operator			
.024	.014	.030	0	116	30213106	30213107	1	0.65	1.7
.024	.014	.030	0	145	30213109	30213110	1	1.15	1.7
.031	.025	.033	0	116	30213112	30213113	1	1.15	1.7
.043	.036	.062	0	73	30213118	30213119	1	1.5	1.7
.059	.050	.064	0	44	30213124	30213125	1	1.15	1.7

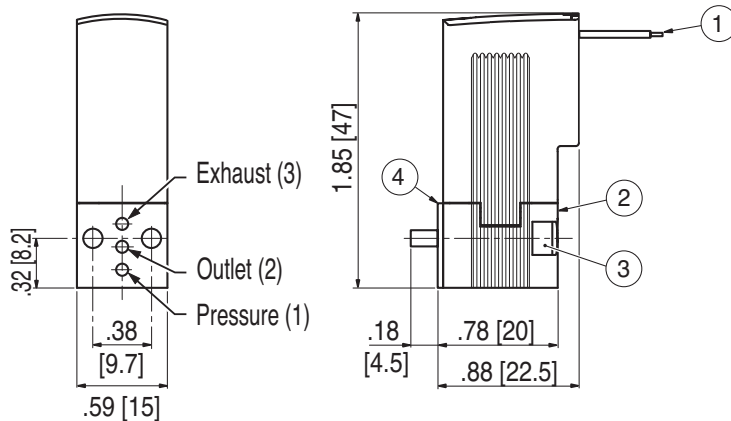
DIN & AMP Spade Terminal Coils

Orifice Size (ins.)	Cv Flow Factor		Operating Pressure Differential		Catalog Number		Constr. Ref.	Power (Watts)	Weight (oz.)
	182	183	Min.	Max.	Momentary Manual Operator	Sustained Manual Operator			
.024	.014	.030	0	116	3021X106--P	3021X107--P	2	0.5	1.7
.024	.014	.030	0	145	3021X109--P	3021X110--P	2	1.0	1.7
.031	.025	.033	0	116	3021X112--P	3021X113--P	2	1.0	1.7
.043	.036	.062	0	73	3021X118--P	3021X119--P	2	1.0	1.7
.043	.036	.062	0	145	3021X121--P	3021X122--P	2	2.0	1.7
.059	.050	.064	0	44	3021X124--P	3021X125--P	2	1.0	1.7
.059	.050	.064	0	87	3021X127--P	3021X128--P	2	2.0	1.7

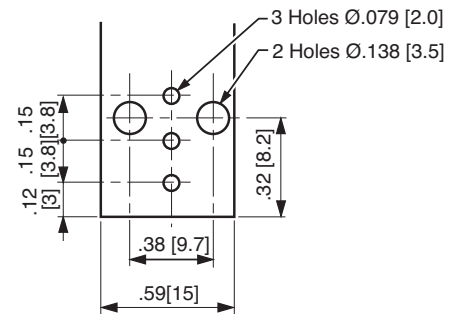
X	
	0 connector ISO 15217/DIN 43650C
	1 connector AMP 2.8x0.5, 9.4 mm spacing
	4 connector ISO 15217/DIN 43650C + LED/Surge
	5 connector AMP 2.8x0.5, 9.4 mm spacing + LED/Surge

Dimensions: Inches [mm]

Constr. Ref. 1

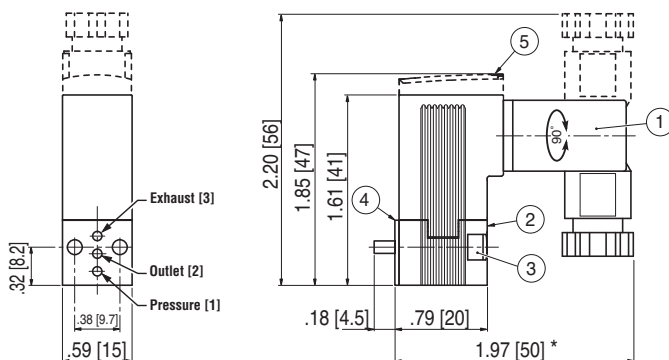


Manifold Machining

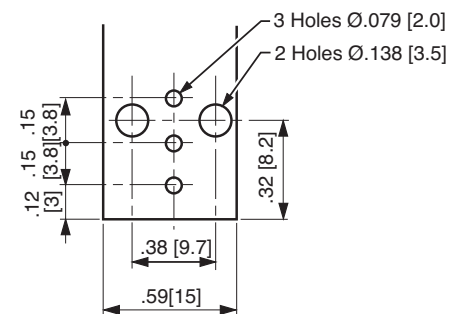


- 1) 2 electrical supply wires, length: 12"
- 2) Manual Operator
- 3) 2 Mounting screw M3 x 20 (supplied)
- 4) Seal (supplied)

Constr. Ref. 2



Manifold Machining



- 1) Standard connector, CM6 (Pg 7P) (Supplied)
 - 2) Manual Operator
 - 3) 2 Mounting screw M3 x 20
 - 4) Seal (supplied)
 - 5) Version with LED and electrical protection
- * + 10mm for connector clearance

Only 1/2" in diameter the Series 407C valves are suitable for a wide range of OEM applications where small size, low power, and light weight are required.

- Corrosion resistant materials of construction
- Bib porting for use with 1/16" soft tubing
- Magnetic latching construction available to maintain valve position with loss of power, eliminate coil heat rise and extend battery life

Construction

Valve Parts in Contact with Fluids	
Body	POM
Disc	NBR or FKM
Gaskets	NBR or FKM
Bobbin/CoreTube	PPS
Core and Plugnut	400 Series Stainless Steel
Springs	300 Series Stainless Steel

Electrical

Standard Voltages	6, 12, 24 VDC+ 10%, -5%
Power Consumption	1.5-2.5 Watts (10 watts for latching version)
Duty Cycle Rating	Continuous (Intermittent for latching version)
Coil Insulation	266°F (130°C)
Electrical Connection	26 gage lead wire

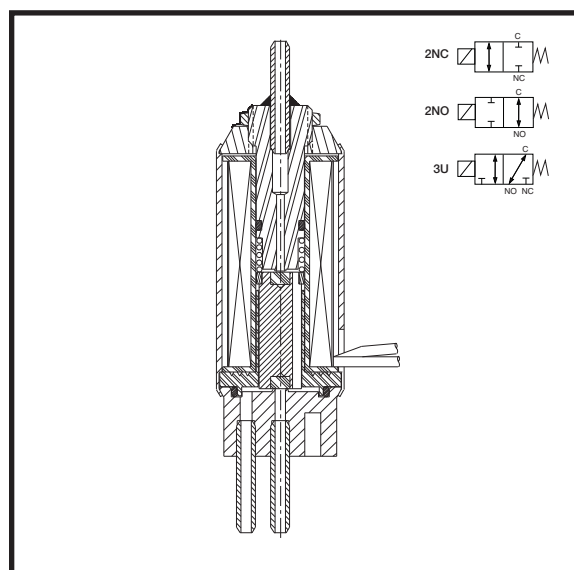
Valve

Response Time	~4 ms at rated voltage
Internal Volume	2-way NC = 90µL, 2-way NO = 110µL, 3-way = 120µL
Mounting Bracket	Optional mounting clip, pin S188-C3 (see drawing)
Options	<ul style="list-style-type: none"> • Oxygen service construction available • Lubricant free construction available
Vacuum Rating	29" Hg

Alternative Constructions

Many alternative constructions are available and include a variety of voltages, electrical connectors, and materials of construction. ASCO Scientific can also custom design a valve for your specific application.

Contact your local ASCO sales office for more information.



Temperature Range:

Ambient & Media:

32°F to 77°F (0°C to 25°C) continuous duty
up to 104°F (40°C) intermittent duty

Approvals:

Meets applicable CE directives

Specifications

Ports	Orifice Size (ins.)	Cv Flow Factor	Maximum Pressure (psi)	Catalog Number	Watt Rating @ 20°C	Weight (oz.)
2-WAY NORMALLY CLOSED (Closed when de-energized)						
Bibs for 1/16" ID Tubing	0.040	0.022	100	407C14xx100N	2.5	.67
Bibs for 1/16" ID Tubing	0.040	0.022	50	407C14xx050N	1.5	.67
2-WAY NORMALLY OPEN (Open when de-energized)						
Bibs for 1/16" ID Tubing	0.038	0.020	100	407C24xx100N	2.5	.67
Bibs for 1/16" ID Tubing	0.038	0.020	50	407C24xx050N	1.5	.67
3-WAY UNIVERSAL OPERATION (Pressure at any port)						
Bibs for 1/16" ID Tubing	0.040/0.038	0.022/0.020	100	407C34xx100N	2.5	.67
Bibs for 1/16" ID Tubing	0.040/0.038	0.022/0.020	50	407C34xx050N	1.5	.67
2-WAY LATCHING						
Bibs for 1/16" ID Tubing	0.040	0.022	100	407C14xx100NL**	10*	.67
Bibs for 1/16" ID Tubing	0.040	0.022	100	407C24xx100NL***	10*	.67
3-WAY LATCHING						
Bibs for 1/16" ID Tubing	0.040/0.038	0.022/0.020	100	407C34xx100NL	10*	.67
Notes "xx" Denotes place in catalog number for voltage * Latching valves are designed for intermittent duty only. Wattage rating applies to 20 – 30 ms duration required to actuate valve. Once switched no additional power is required to hold the valve in its position. ** Flow Path through body (between NC and common ports) *** Flow Path between common port and NO port (top of valve)						

Catalog Number Description and Options

407C34	xx	100	N	L	O
Base Catalog Number	Voltage - 06 (DC) - 12 (DC) - 24 (DC)	Base Catalog Number (2nd Part)	Seals N= NBR V= FKM	Latching Suffix	Options Suffix O = No Lubricant K = Oxygen Service Construction PBT Valve Body, PPS Bobbin, FKM Seals, PFPE Lubricant

To Construct Catalog Number

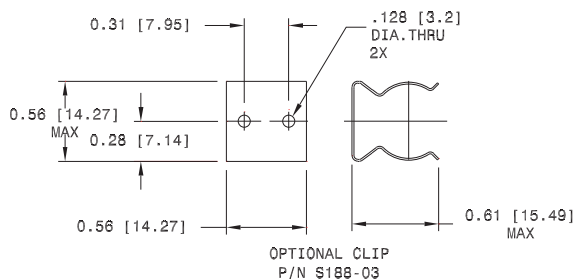
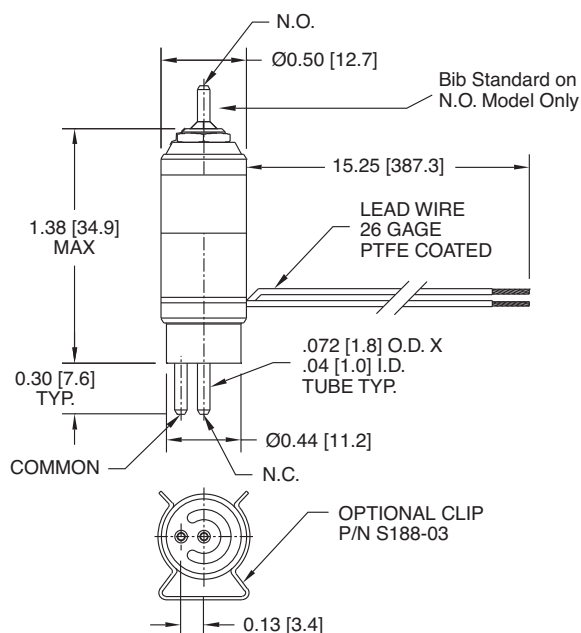
- Select base catalog number
- Insert voltage into the 7th and 8th digits denoted by "xx"
- Insert "N" (NBR) or "V" (FKM) into 12th digit to select seal material
- Add suffix for optional features to end of base catalog number

Examples

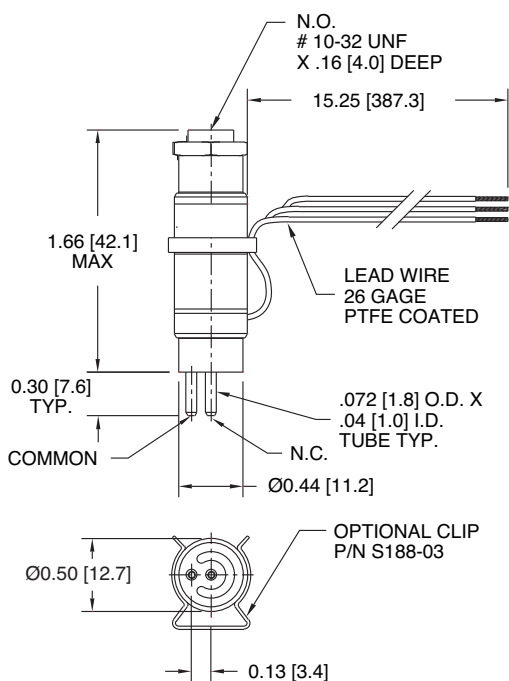
407C1424100N = 2-way normally closed valve with 0.040" orifice, 100 psig maximum pressure rating, and 24 VDC coil rated at 2.5 Watts

407C3406100VLO = 3-way latching valve with 0.040" and 0.038" orifices, 100 psig maximum pressure rating, 6 VDC coil suitable for oxygen service

Dimensions 2 and 3-Way Standard Solenoid: Inches [mm]



Dimensions 2 and 3-Way Latching Solenoid: Inches [mm]



Latching Wiring Diagram

Latch Circuit

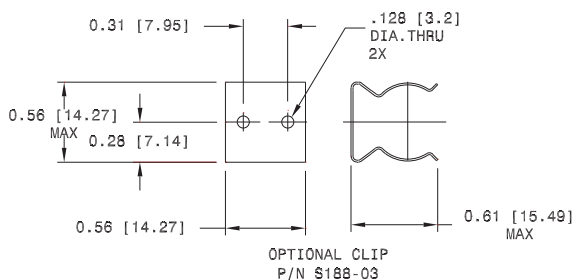
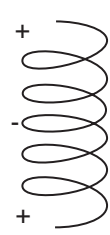
Orange = 24 VDC

Yellow = 12 VDC

Blue = 6 VDC

Common Ground
(Black)

(Brown)
UN-Latch Circuit



Only 1/2" in diameter the Series 407M valves are suitable for a wide range of OEM applications where small size, low power, and light weight are required.

- Manifold mount construction allows for easy assembly
- Corrosion resistant materials of construction
- Magnetic latching construction available to maintain valve position with loss of power, eliminate coil heat rise and extend battery life

Construction

Valve Parts in Contact with Fluids	
Body	300 Series Stainless Steel
Disc	NBR or FKM
Gaskets	NBR or FKM
Bobbin/CoreTube	PPS
Core and Plugnut	400 Series Stainless Steel
Springs	300 Series Stainless Steel

Electrical

Standard Voltages	6, 12, 24 VDC + 10%, -5%
Power Consumption	1.5-2.5 Watts (10 watts for latching version)
Duty Cycle Rating	Continuous (Intermittent for latching version)
Coil Insulation	266°F (130°C)
Electrical Connection	26 gage lead wire

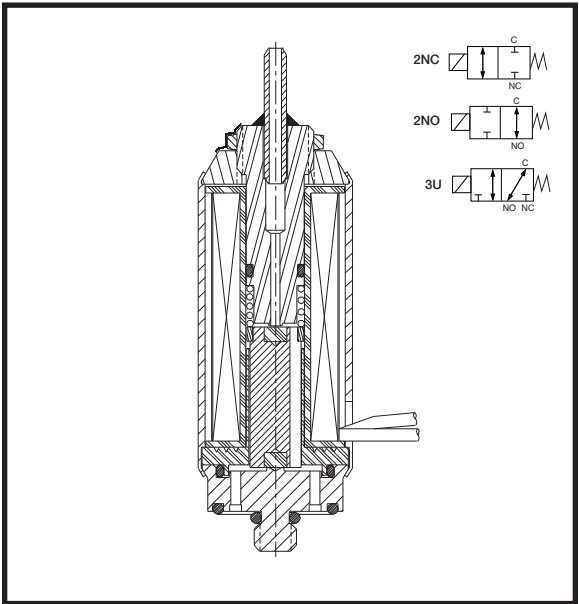
Valve

Response Time	~4 ms at rated voltage
Internal Volume	2-way NC = 70 µ, 2 way NO = 100 µ, 3-way = 110 µ
Options	<ul style="list-style-type: none"> • Oxygen service construction available • Lubricant free construction available
Vacuum Rating	29" Hg

Alternative Constructions

Many alternative constructions are available and include a variety of voltages, electrical connectors, and materials of construction. ASCO Scientific can also custom design a valve for your specific application.

Contact your local ASCO sales office for more information.



Temperature Range:

Ambient & Media:
32°F to 77°F (0°C to 25°C) continuous duty
up to 104°F (40°C) intermittent duty

Approvals:

Meets applicable CE directives

Specifications

Mounting Stud	Orifice Size (ins.)	Cv Flow Factor	Maximum Pressure (psi)	Catalog Number	Watt Rating @ 20° C	Weight (oz.)
2-WAY NORMALLY CLOSED (Closed when de-energized)						
#6-32 UNC	0.040	0.022	100	407M14xx100N	2.5	.7
#6-32 UNC	0.040	0.022	50	407M14xx050N	1.5	.7
2-WAY NORMALLY OPEN (Open when de-energized)						
#6-32 UNC	0.038	0.020	100	407M24xx100N	2.5	.7
#6-32 UNC	0.038	0.020	50	407M24xx050N	1.5	.7
3-WAY UNIVERSAL OPERATION (Pressure at any port)						
#6-32 UNC	0.040/0.038	0.022/0.020	100	407M34xx100N	2.5	.7
#6-32 UNC	0.040/0.038	0.022/0.020	50	407M34xx050N	1.5	.7
2-WAY LATCHING						
#6-32 UNC	0.040	0.022	100	407M14xx100NL**	10*	.7
#6-32 UNC	0.040	0.022	100	407M24xx100NL***	10*	.7
3-WAY LATCHING						
#6-32 UNC	0.040/0.038	0.022/0.020	100	407M34xx100NL	10*	.7
Notes *xx* Denotes place in catalog number for voltage * Latching valves are designed for intermittent duty only. Wattage rating applies to 20 – 30 ms duration required to actuate valve. Once switched no additional power is required to hold the valve in its position. ** Flow Path through body (between NC and common ports) *** Flow Path between common port and NO port (top of valve)						

Catalog Number Description and Options

407M34	xx	100	N	L	O
Base Catalog Number	Voltage - 06 (DC) - 12 (DC) - 24 (DC)	Base Catalog Number (2nd Part)	Seals N= NBR V= FKM	Latching Suffix	Options Suffix O = No Lubricant K = Oxygen Service Construction 300 Series stainless steel body, PPS Bobbin,FKM Seals, PFPE lubricant

To Construct Catalog Number

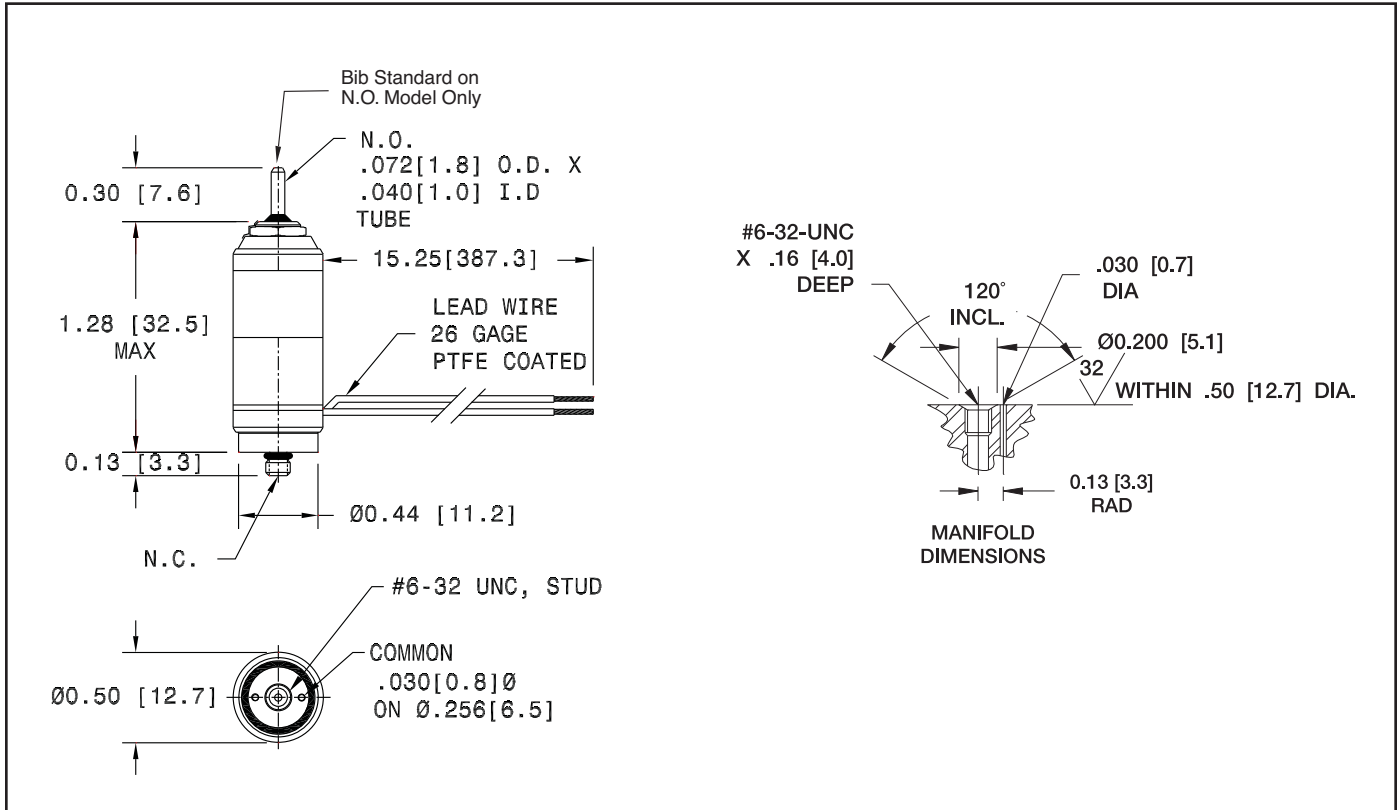
- Select base catalog number
- Insert voltage into the 7th and 8th digits denoted by “xx”
- Insert “N” (NBR) or “V” (FKM) into 12th digit to select seal material
- Add suffix for optional features to end of base catalog number

Examples

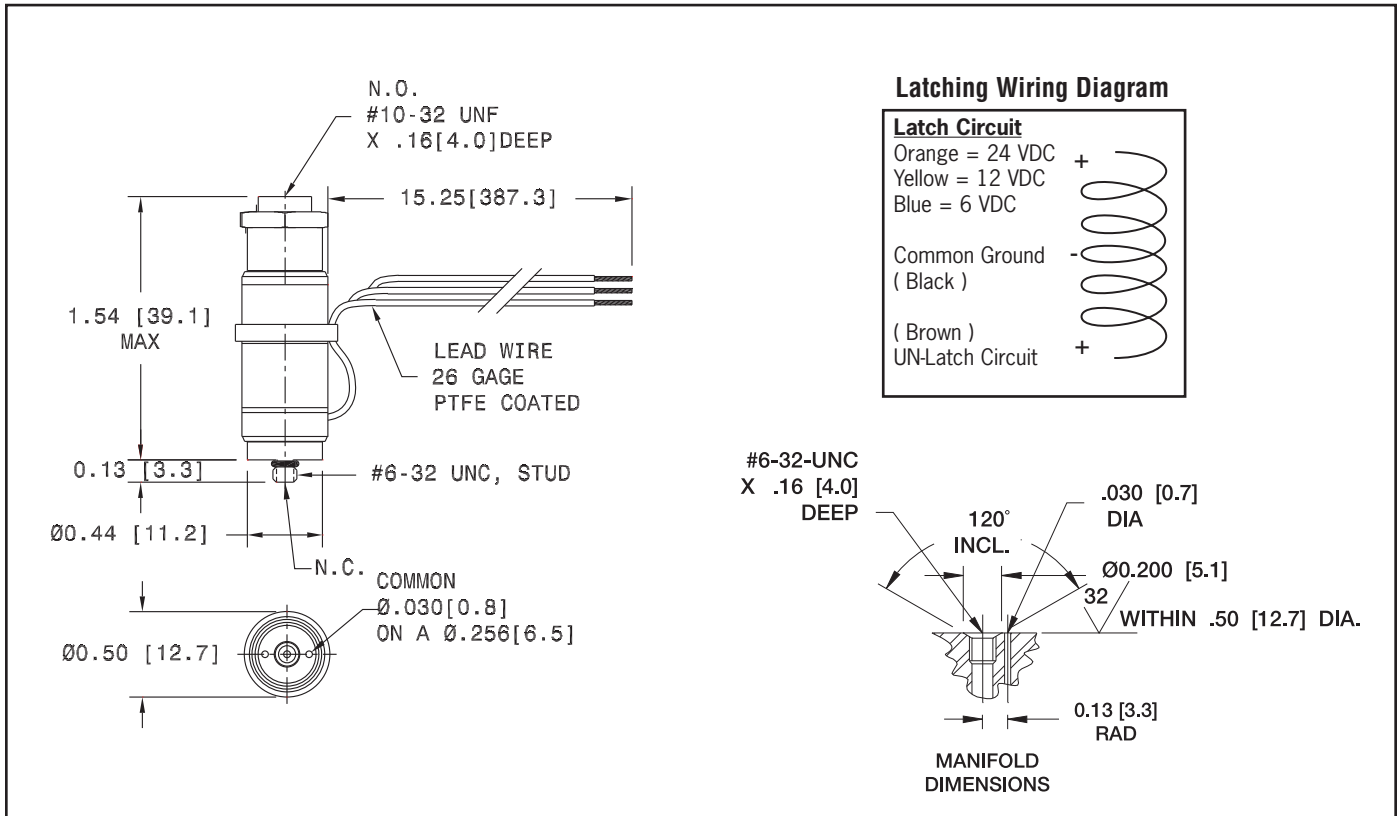
407M1424100N = 2-way Normally Closed valve with 0.040" orifice, 100 psig maximum pressure rating, and 24 VDC coil rated at 2.5 Watts.

407M3406100VLO = 3-way Latching valve with 0.040" and 0.038" orifices, 100 psig maximum pressure rating, 6 VDC coil suitable for oxygen service.

Dimensions 2 and 3-Way Standard Solenoid: Inches [mm]



Dimensions 2 and 3-Way Latching Solenoid: Inches [mm]



The Series AL Valves are suitable for a wide range of OEM applications where small size, low power and long life are a must.

- Cycle life in the hundreds of millions
- Corrosion resistant materials of construction
- In-line porting for use with standard metal or plastic #10-32 UNF fittings
- Magnetic latching construction available to maintain valve position with loss of power, eliminate coil heat rise, and extend battery life

Construction

Valve Parts in Contact with Fluids	
Body	POM or 300 Series Stainless Steel
Disc	FKM
Gaskets	FKM
Bobbin/CoreTube	PBT
Core and Plugnut	400 Series Stainless Steel
Springs	300 Series Stainless Steel

Electrical

Standard Voltages	6, 12, 24 VDC+ 10%, -5% 115 VAC (with rectifier in lead wires)
Power Consumption	0.65-2.0 Watts (10 watts for latching version)
Duty Cycle Rating	Continuous (Intermittent for latching version)
Coil Insulation	266°F (130°C)
Electrical Connection	26 gage lead wire

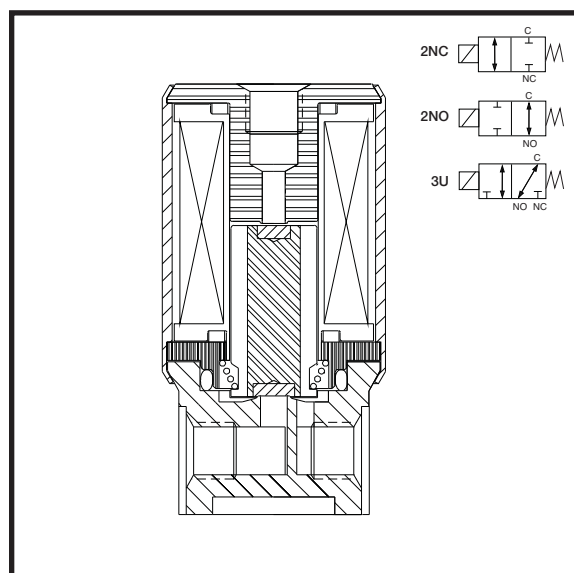
Valve

Response Time	~5 ms at rated voltage (2 watt coil) ~12 ms at rated voltage (0.65 watt coil)
Internal Volume	2-way NC = 330 µL, 2-way NO = 310 µL, 3-way = 370 µL
Mounting Bracket	Optional mounting clip, pin 5188-02 (see drawing)
Options	<ul style="list-style-type: none"> • Oxygen service construction available • Lubricant free construction available
Vacuum Rating	29" Hg

Alternative Constructions

Many alternative constructions are available and include a variety of voltages, electrical connectors, and materials of construction. ASCO Scientific can also custom design a valve for your specific application.

Contact your local ASCO sales office for more information.



Temperature Range:

Ambient & Media:

32°F to 77°F (0°C to 25°C) continuous duty
up to 104°F (40°C) intermittent duty

Approvals:

Meets applicable CE directives

Specifications

Ports	Orifice Size (ins.)	Cv Flow Factor	Maximum Pressure (psi)	Catalog Number	Watt Rating @ 20°C	Weight (oz.)
2-WAY NORMALLY CLOSED (Closed when de-energized)						
#10-32 UNF	0.025	0.015	110	AL11xx	0.65	1.3
#10-32 UNF	0.055	0.038	50	AL21xx	0.65	1.3
#10-32 UNF	0.055	0.038	100	AL31xx	2.0	1.3
#10-32 UNF	0.090	0.07	30	AL41xx	2.0	1.3
2-WAY NORMALLY OPEN (Open when de-energized)						
#10-32 UNF	0.025	0.013	110	AL12xx	0.65	1.3
#10-32 UNF	0.048	0.033	50	AL22xx	0.65	1.3
#10-32 UNF	0.048	0.033	100	AL32xx	2.0	1.3
#10-32 UNF	0.078	0.06	30	AL42xx	2.0	1.3
3-WAY UNIVERSAL OPERATION (Pressure at any port)						
#10-32 UNF	0.025/0.025	0.015/0.013	110	AL13xx	0.65	1.3
#10-32 UNF	0.055/0.048	0.038/0.033	50	AL23xx	0.65	1.3
#10-32 UNF	0.055/0.048	0.038/0.033	100	AL33xx	2.0	1.3
#10-32 UNF	0.090/0.078	0.07/0.06	30	AL43xx	2.0	1.3
2-WAY LATCHING						
#10-32 UNF	0.025	0.015	110	AL11xxL	10*	1.8
#10-32 UNF	0.055	0.038	100	AL31xxL	10*	1.8
#10-32 UNF	0.090	0.07	30	AL41xxL	10*	1.8
3-WAY LATCHING						
#10-32 UNF	0.025/0.025	0.015/0.013	110	AL13xxL	10*	1.8
#10-32 UNF	0.055/0.048	0.038/0.033	100	AL33xxL	10*	1.8
#10-32 UNF	0.090/0.078	0.07/0.06	30	AL43xxL	10*	1.8
Notes *xx* Denotes place in catalog number for voltage, three characters may be used when required. * Latching valves are designed for intermittent duty only. Wattage rating applies to 20 – 30 ms duration required to actuate valve. Once switched no additional power is required to hold the valve in its position.						

Catalog Number Description and Options

AL33	xx	L	O	S
Base Catalog Number	Voltage - 06 (DC) - 12 (DC) - 24 (DC) - 115 (AC)	Latching Suffix	Options Suffix A = AC service (rectifier in lead wire) O = No Lubricant K = Oxygen Service Construction PBT Valve Body, FKM Seals, PFPE lubricant	Optional Body Material S = 300 Series Stainless Steel

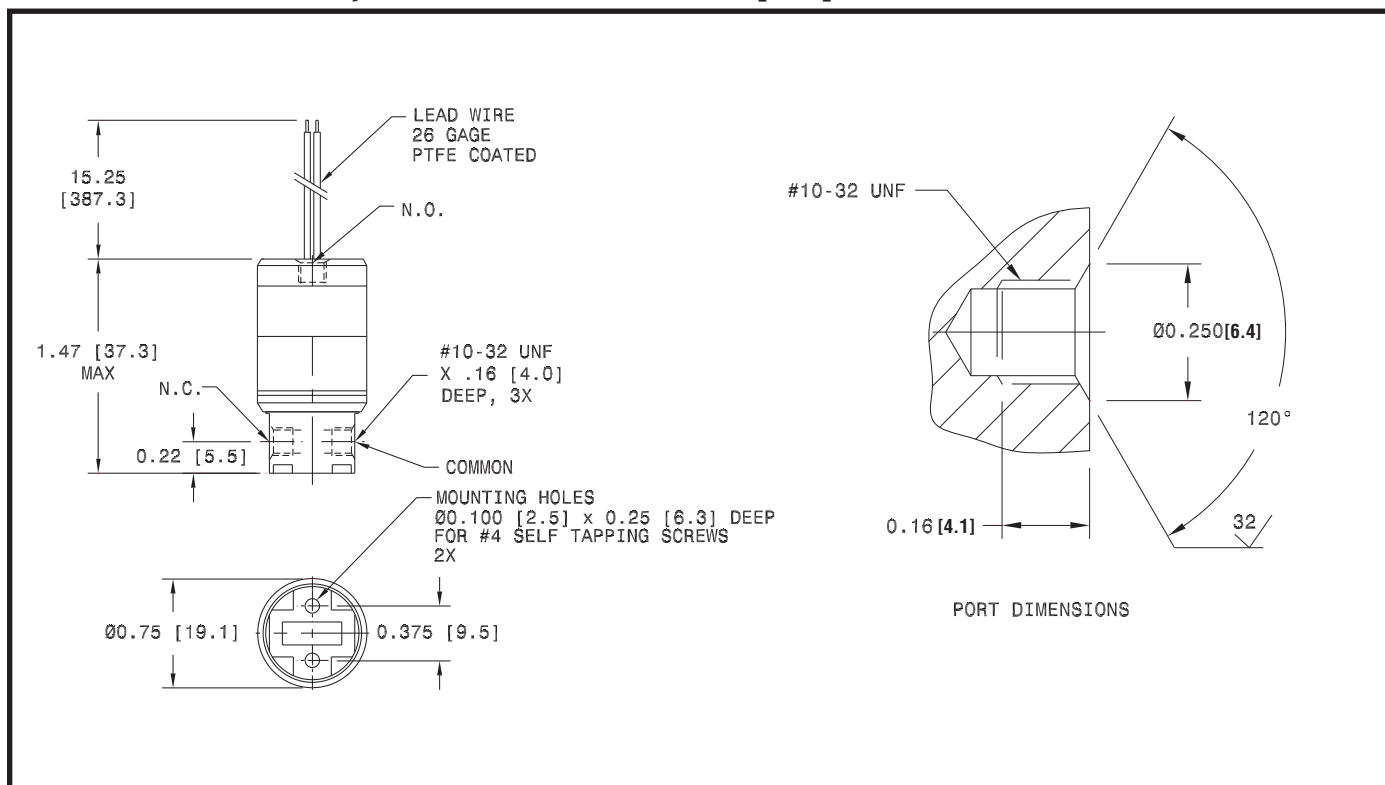
To Construct Catalog Number

- Select base catalog number
- Insert voltage into the 5th, 6th, (and 7th when required), digits denoted by “xx”
- Add suffix for optional features to end of base catalog number

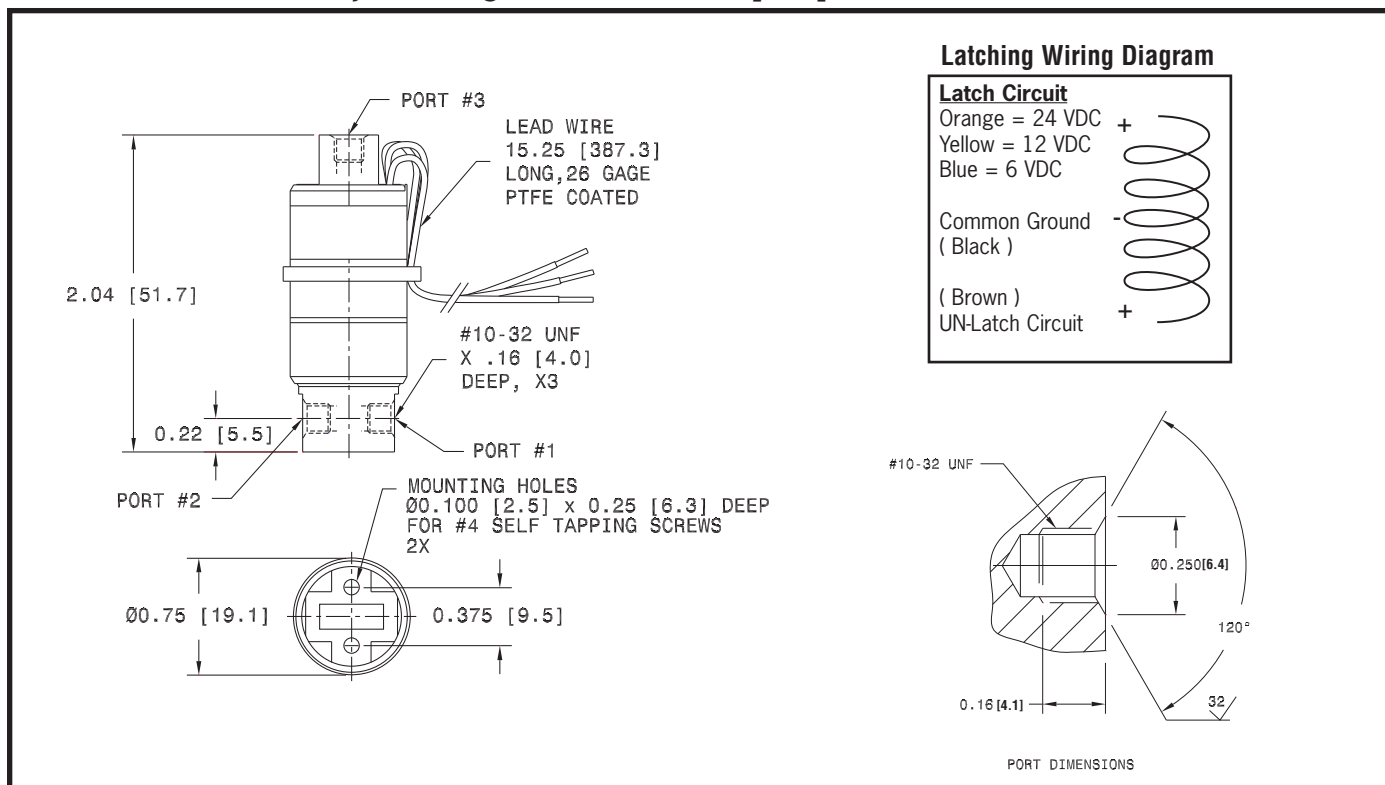
Examples

AL1124 = 2-way normally closed valve with 0.025" orifice, 110 psig max pressure rating, and 24 VDC coil rated at 0.65 watts.
 AL32115A = 2-way normally open valve with 0.048" orifice, 100 psig max pressure rating, and 115 VAC coil with rectifier.
 AL4306LK = 3-way latching valve with 0.090" and 0.078" orifices, 30 psig max pressure rating, 6 VDC coil and suitable for oxygen service.

Dimensions 2 and 3-Way Standard Solenoid: Inches [mm]



Dimensions 2 and 3-Way Latching Solenoid: Inches [mm]



The Series AM Valves are suitable for a wide range of OEM applications where small size, low power, and long life are a must.

- Cycle life in the hundreds of millions
- Corrosion resistant materials of construction
- Manifold mount construction allows for easy assembly
- Magnetic latching construction available to maintain valve position with loss of power, eliminate coil heat rise, and extend battery life

Construction

Valve Parts in Contact with Fluids	
Body	POM/300 Series Stainless Steel or all 300 Series Stainless Steel
Disc	FKM
Gaskets	FKM
Bobbin/CoreTube	PBT
Core and Plugnut	400 Series Stainless Steel
Springs	300 Series Stainless Steel

Electrical

Standard Voltages	6, 12, 24 VDC+ 10%, -5% 115 VAC (with rectifier in lead wires)
Power Consumption	0.65-2.0 Watts (10 watts for latching version)
Duty Cycle Rating	Continuous (Intermittent for latching version)
Coil Insulation	266°F (130°C)
Electrical Connection	26 gage lead wire

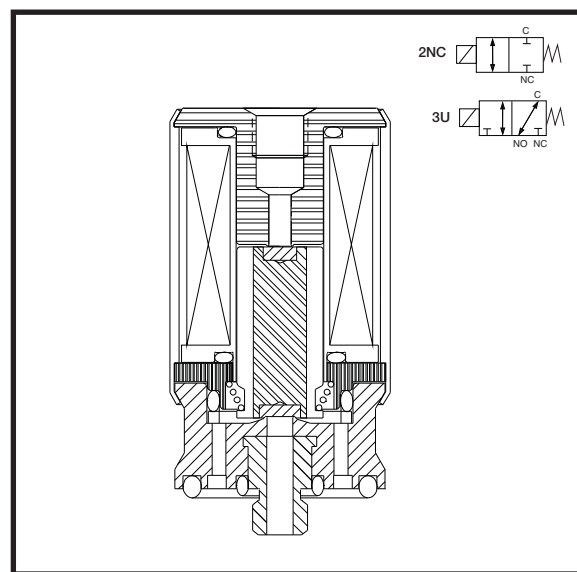
Valve

Response time	~5 ms at rated voltage (2 watt coil) ~12 ms at rated voltage (0.65 watt coil)
Internal Volume	2-way NC = 360 µL, 2-way NO = 400 µL, 3-way = 400 µL
Options	<ul style="list-style-type: none"> • Oxygen service construction available • Lubricant free construction available
Vacuum Rating	29" Hg

Alternative Constructions

Many alternative constructions are available and include a variety of voltages, electrical connectors, and materials of construction. ASCO Scientific can also custom design a valve for your specific application.

Contact your local ASCO sales office for more information.



Temperature Range:

Ambient & Media:

32°F to 77°F (0°C to 25°C) continuous duty
up to 104°F (40°C) intermittent duty

Approvals:

Meets applicable CE directives

Specifications

Mounting Stud	Orifice Size (ins.)	Cv Flow Factor	Maximum Pressure (psi)	Catalog Number	Watt Rating @ 20°C	Weight (oz.)
2-WAY NORMALLY CLOSED (Closed when de-energized)						
#10-32 UNF	0.025	0.015	110	AM11xx	0.65	1.3
#10-32 UNF	0.055	0.038	50	AM21xx	0.65	1.3
#10-32 UNF	0.055	0.038	100	AM31xx	2.0	1.3
#10-32 UNF	0.090	0.07	30	AM41xx	2.0	1.3
3-WAY UNIVERSAL OPERATION (Pressure at any port)						
#10-32 UNF	0.025/0.025	0.015/0.013	110	AM13xx	0.65	1.3
#10-32 UNF	0.055/0.048	0.038/0.033	50	AM23xx	0.65	1.3
#10-32 UNF	0.055/0.048	0.038/0.033	100	AM33xx	2.0	1.3
#10-32 UNF	0.090/0.078	0.07/0.06	30	AM43xx	2.0	1.3
2-WAY LATCHING						
#10-32 UNF	0.025	0.015	110	AM11xxL	10*	1.8
#10-32 UNF	0.055	0.038	100	AM31xxL	10*	1.8
#10-32 UNF	0.090	0.07	30	AM41xxL	10*	1.8
3-WAY LATCHING						
#10-32 UNF	0.025/0.025	0.015/0.013	110	AM13xxL	10*	1.8
#10-32 UNF	0.055/0.048	0.038/0.033	100	AM33xxL	10*	1.8
#10-32 UNF	0.090/0.078	0.07/0.06	30	AM43xxL	10*	1.8
Notes *xx* Denotes place in catalog number for voltage, three characters may be used when required. * Latching valves are designed for intermittent duty only. Wattage rating applies to 20 – 30 ms duration required to actuate valve. Once switched no additional power is required to hold the valve in its position. NOTE - Normally Open - Consult Factory.						

Catalog Number Description and Options

AM33	xx	L	O	S
Base Catalog Number	Voltage - 06 (DC) - 12 (DC) - 24 (DC) - 115 (AC)	Latching Suffix	Options Suffix A = AC service (rectifier in lead wire) O = No Lubricant K = Oxygen Service Construction PBT Valve Body, FKM Seals, PFPE lubricant	Optional Body Material S= 300 Series Stainless Steel

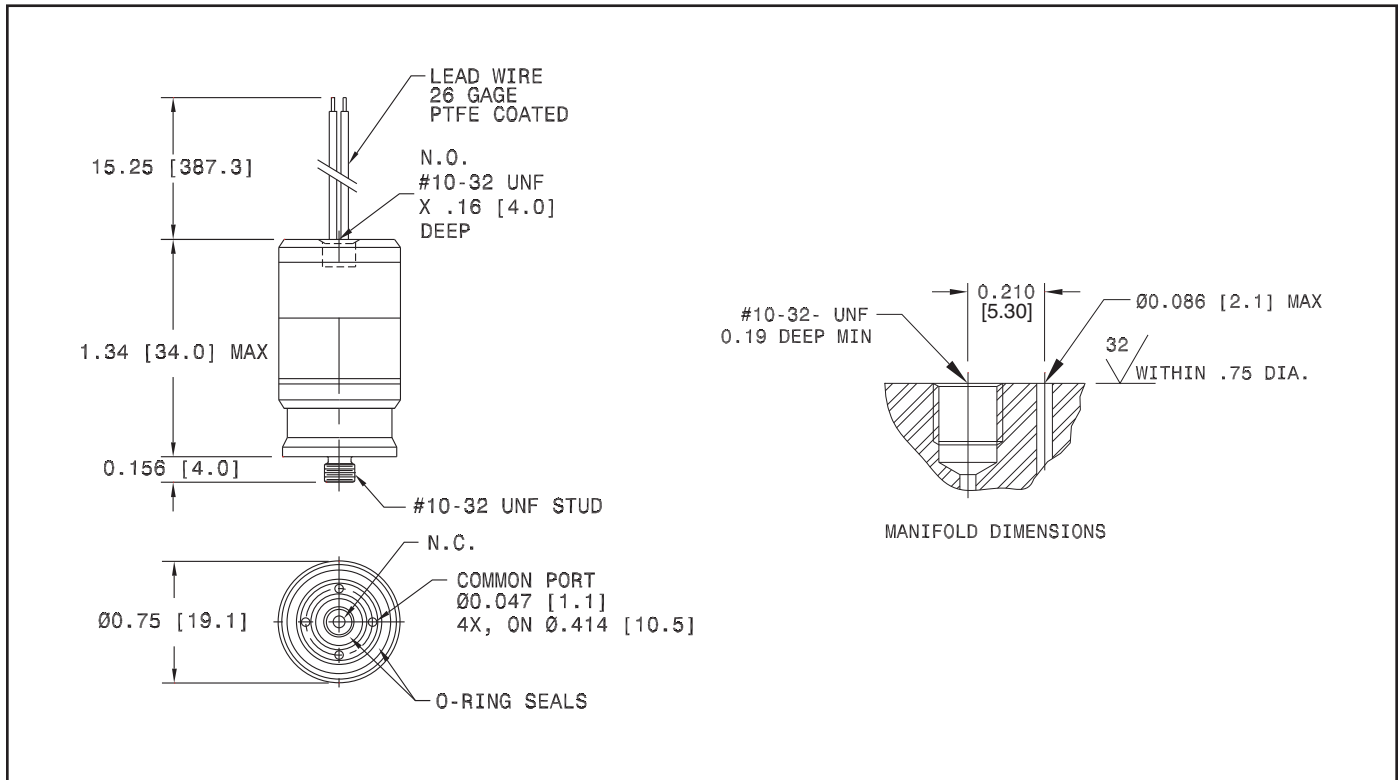
To Construct Catalog Number

- Select base catalog number
- Insert voltage into the 5th, 6th, (and 7th when required), digits denoted by “xx”
- Add suffix for optional features to end of base catalog number

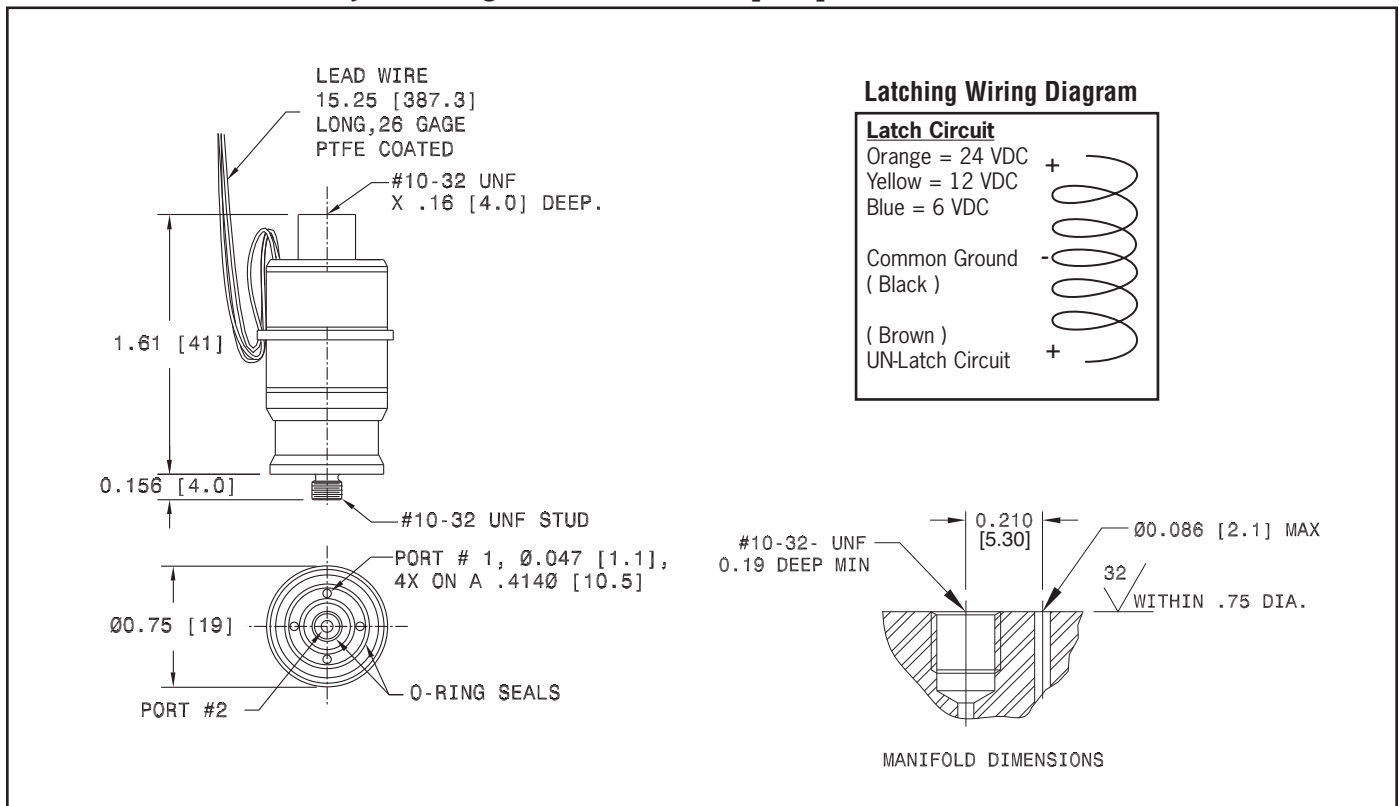
Examples

AM1124 = 2-way Normally Closed valve with 0.025" orifice, 110 psig max pressure rating, and 24 VDC coil rated at 0.65 watts.
 AM32115A = 2-way Normally Open valve with 0.048" orifice, 100 psig max pressure rating, and 115 VAC coil with rectifier.
 AM4306LK = 3-way Latching valve with 0.090" and 0.078" orifices, 30 psig max pressure rating, 6 VDC coil and suitable for oxygen service.

Dimensions 2 and 3-Way Standard Solenoid: Inches [mm]



Dimensions 2 and 3-Way Latching Solenoid: Inches [mm]



The Series 202 Posiflow® valves are 2-way, normally closed, micro solenoid valves designed to proportionally control the flow of air or other gases by varying the electrical input to the coil. They are available as stand alone valves with M5 thread ports or pad mount versions for manifold mounting.

- Ideal to precisely control flow rates in medical equipment and analytical instrumentation
- Compact construction saves valuable space in OEM equipment
- Low power consumption of 3 Watts
- Low hysteresis, excellent repeatability, and high sensitivity for precise flow control

Construction

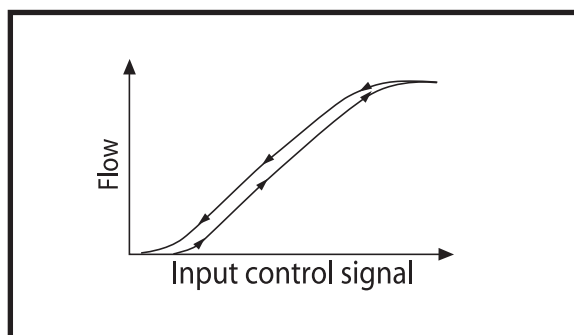
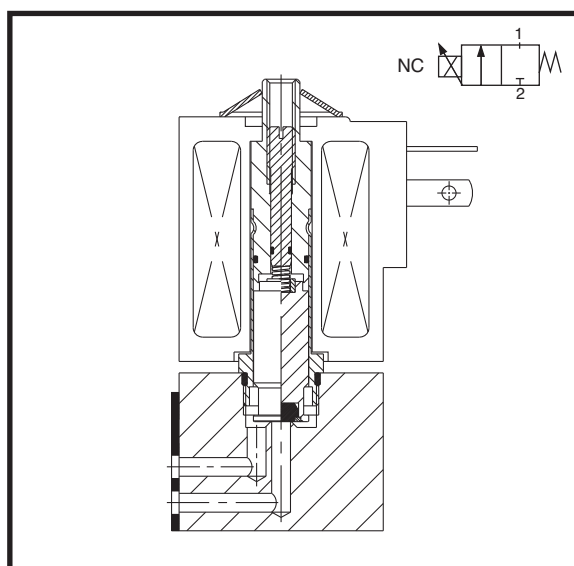
Valve Parts in Contact with Fluids	
Body	Brass
Core Tube	Brass
Core and Plugnut	Stainless Steel
Springs	Stainless Steel
Seat	Brass
Disc and Seals	FKM

Electrical

Standard Voltage	12, 24 VDC
Electrical Coil Input	0 24 VDC
Power Consumption	3 Watts
Opening Current 12 VDC 24 VDC	Max. 175 mA Max. 125 mA
Recommended PWM Frequency	1000 Hz
Hysteresis	<5%
Repeatability	<3%
Sensitivity	<2%
Coil Insulation	Class F
Ambient Temperature	32°F to 140°F (0°C to 60°C)
Electrical Connection	Spade, (DIN 46244, ISO 4400)
DIN Connectors	(See Electrical Connectors page 75) Size 9.4 mm, Form C
Protection Rating	IP65 with DIN Plug Connector

Valve

Fluid Temperature	32° F to 212° F (0° C to 100° C) to 194°F
Vacuum Rating	29" Hg

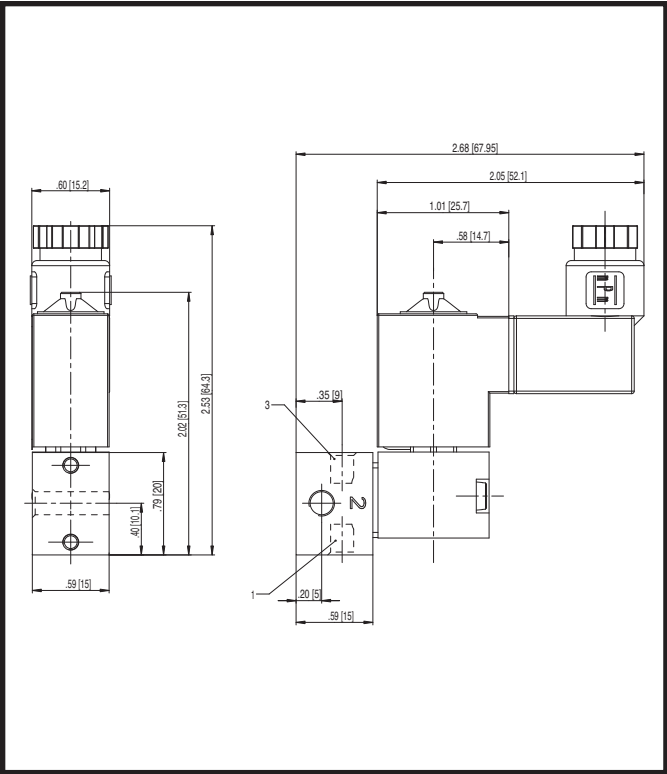


Specifications

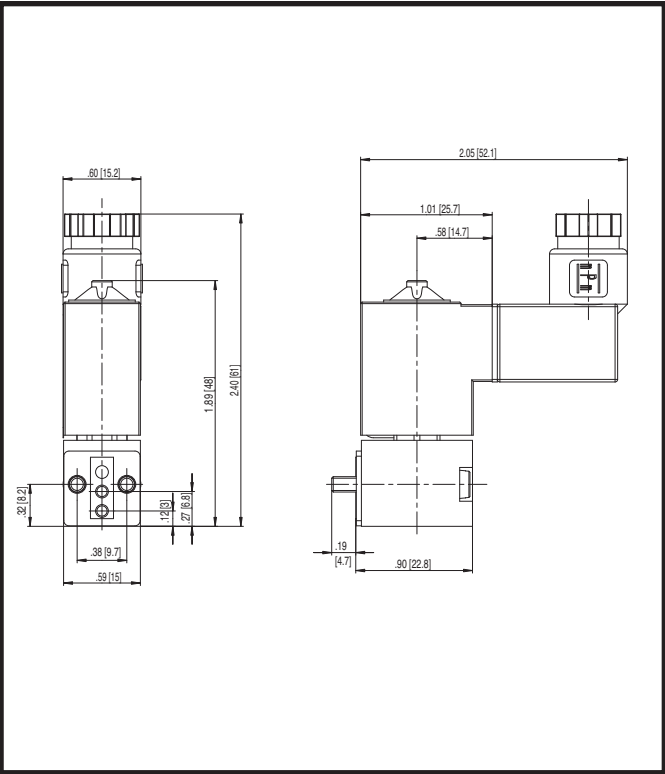
Ports	Orifice Size (ins.)	Cv Flow Factor	Differential Pressure (psi)		Catalog Number	Constr. Ref.	Power (Watts)	Weight (oz.)
			Minimum	Maximum				
M5 Threaded Ports								
M5	0.031	0.023	0	174	SCE202A105V	1	3	4
M5	0.047	0.059	0	101	SCE202A106V	1	3	4
M5	0.062	0.094	0	58	SCE202A107V	1	3	4
M5	0.079	0.117	0	36	SCE202A108V	1	3	4
Pad Mount Construction								
-	0.031	0.023	0	174	SCS202A101V	2	3	3
-	0.047	0.059	0	101	SCS202A102V	2	3	3
-	0.062	0.094	0	58	SCS202A103V	2	3	3
-	0.079	0.117	0	36	SCS202A104V	2	3	3

Dimensions: inches [mm]

Constr. Ref. 1



Constr. Ref. 2



Posiflow® Proportional Solenoid Valves

Brass or Stainless Steel Bodies

1/8" to 1/2" NPT

ASCO SCIENTIFIC®

The 8202/8203 Series is a 2-way proportional valve available in a normally closed construction only. They are available as 24 VDC operated only with brass or stainless steel bodies. Flow rates are adjustable between 0% and 100% of rating. There are many optional features available including an ASCO electronic control unit and electrical connections. Dedicated constructions of the 8202/8203 Series are suitable for the following applications.

- General Service (air, inert gas, water, light oil)

Construction

Valve Parts in Contact with Fluids		
Body	Brass	303 Stainless Steel
Seals and Disc/Diaphragm	FKM or NBR	
Core Tube	305 Stainless Steel	
Core and Plugnut	430F Stainless Steel	
Springs	302 Stainless Steel	
Rider Rings	PTFE	
Breaker Piece	Brass	303 Stainless Steel

Electrical

Standard voltage: 24 VDC

Coil: Molded Class F (standard)

Coil resistance: 25 Ohm at 68°F (20°C)

Operating current: 100 - 500 mA

Electrical coil input: 0 - 24 VDC

Recommended PWM frequency: 300 Hz Air/Gas;

200 Hz Water/Light Oil

Hysteresis: <5% ① (<7.5% for 8203 Valves)

Repeatability: <3% (<1% for 1/8" NPT Valves)①

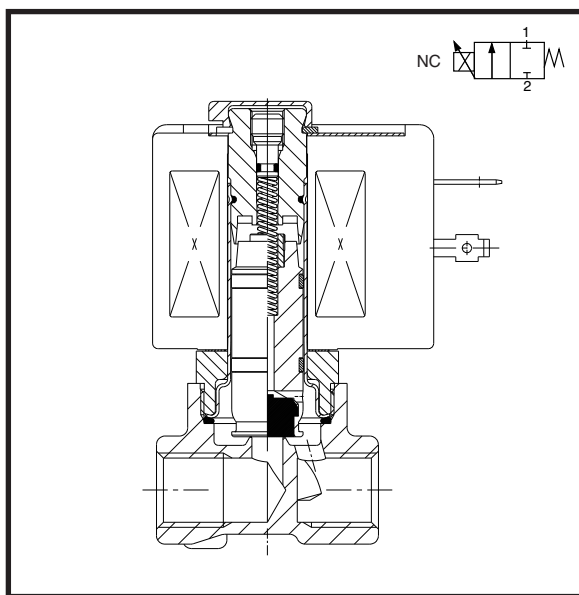
Sensitivity: <2% (<1% for 1/8" NPT Valves)①

① Percentage of max. value with 24 VDC, PWM,
300 Hz voltage supply at constant differential pressure.

Nominal Ambient Temperature Ranges:

14°F to 104°F (-10°C to 40°C) for 22.6 watt solenoid.

32°F to 104°F (0°C to 40°C) for 8.6 watt solenoid.



Specifications

Pipe Size (ins.)	Orifice Size (ins.)	Cv Flow	Operating Pressure Differential (psi)			Max. Fluid Temp. °F	Brass	Const. Ref.	Agency		Stainless Steel	Const. Ref.	Agency		Wattage ①	Approx. Shipping Weight (lbs.)
			Min.	Maximum					UL	FM			UL	FM		
				Air- Inert Gas ②	Liquid											
8202 Series																
1/8	3/64	.04	0	115	75	180	SC8202A201V	1	□	-	SC8202A205V	1	□	-	8.6	0.8
1/8	1/16	.06	0	90	60	180	SC8202A202V	1	□	-	SC8202A206V	1	□	-	8.6	0.8
1/8	3/32	.14	0	60	45	180	SC8202A203V	1	□	-	SC8202A207V	1	□	-	8.6	0.8
1/8	1/8	.20	0	35	35	180	SC8202A204V	1	□	-	SC8202A208V	1	□	-	8.6	0.8
1/4	3/64	.06	0	230	-	150	8202G001V	2	●	-	8202G011V	3	○	-	22.6	1.4
1/4	3/64	.06	0	-	230	150	8202G051V	2	●	-	8202G061V	3	○	-	22.6	1.4
1/4	3/32	.14	0	115	-	150	8202G002V	2	●	-	8202G012V	3	○	-	22.6	1.4
1/4	3/32	.14	0	-	115	150	8202G052V	2	●	-	8202G062V	3	○	-	22.6	1.4
1/4	1/8	.28	0	60	-	150	8202G003V	2	●	-	8202G013V	3	○	-	22.6	1.4
1/4	1/8	.28	0	-	60	150	8202G053V	2	●	-	8202G063V	3	○	-	22.6	1.4
1/4	5/32	.50	0	35	-	150	8202G004V	2	●	-	8202G014V	3	○	-	22.6	1.4
1/4	5/32	.50	0	-	35	150	8202G054V	2	●	-	8202G064V	3	○	-	22.6	1.4
1/4	7/32	.85	0	20	-	150	8202G006V	2	●	-	8202G016V	3	○	-	22.6	1.4
1/4	7/32	.85	0	-	20	150	8202G056V	2	●	-	8202G066V	3	○	-	22.6	1.4
1/4	9/32	1.06	0	15	-	150	8202G007V	2	●	-	8202G017V	3	○	-	22.6	1.4
1/4	9/32	1.06	0	-	15	150	8202G057V	2	●	-	8202G067V	3	○	-	22.6	1.4
3/8	1/8	.28	0	60	-	150	8202G023V	4	●	-	8202G033V	5	○	-	22.6	1.8
3/8	1/8	.28	0	-	60	150	8202G073V	4	●	-	8202G083V	5	○	-	22.6	1.8
3/8	5/32	.50	0	35	-	150	8202G024V	4	●	-	8202G034V	5	○	-	22.6	1.8
3/8	5/32	.50	0	-	35	150	8202G074V	4	●	-	8202G084V	5	○	-	22.6	1.8
3/8	7/32	.85	0	20	-	150	8202G026V	4	●	-	8202G036V	5	○	-	22.6	1.8
3/8	7/32	.85	0	-	20	150	8202G076V	4	●	-	8202G086V	5	○	-	22.6	1.8
3/8	9/32	1.06	0	15	-	150	8202G027V	4	●	-	8202G037V	5	○	-	22.6	1.8
3/8	9/32	1.06	0	-	15	150	8202G077V	4	●	-	8202G087V	5	○	-	22.6	1.8
8203 Series																
3/8	1/2	2.43	5	-	150	150	8203G001	6	-	-	-	-	-	-	22.6	2.4
1/2	1/2	2.43	5	-	150	150	8203G002	6	-	-	-	-	-	-	22.6	2.4
● = General Purpose Valve; ○ = Safety Shutoff Valve (Component Solenoid only with prefix SC, SD, or SV) □ = Component Solenoid																
① Varies with duty cycle; 22.6 watt is 8.5 @ 500 mA with ambient temp. 104 F; 8.6 watt is 6.8 cold/9.1 hot @ 450 mA with ambient temp. 69°F																
② Suitable for low vacuum.																

Capabilities Chart

Solenoid Options							Base Catalog Number		Resilient Materials							Other		Standard Rebuild Kit				
NEMA Type 3-9	High Temp.	Wiring Box Screw Terminal	Multipin	DIN	Spade	Open Frame with Leads	Brass	Stainless Steel	NBR	FKM	EPDM	Neoprene	Oxygen Service	PTFE	Urethane	Vacuum	Manual Operator	Mounting Bracket	Brass AC	Brass DC	Stainless Steel AC	Stainless Steel DC
-	-	-	-	●	-	-	SC8202A201V	SC8202A205V	-	●	E	J	N	-	-	-	-	-	-	-	-	-
-	-	-	-	●	-	-	SC8202A202V	SC8202A206V	-	●	E	J	N	-	-	-	-	-	-	-	-	-
-	-	-	-	●	-	-	SC8202A203V	SC8202A207V	-	●	E	J	N	-	-	-	-	-	-	-	-	-
-	-	-	-	●	-	-	SC8202A204V	SC8202A208V	-	●	E	J	N	-	-	-	-	-	-	-	-	-
EF	HB	JKP	-	SD	OFSP	-	8202G001V	8202G011V	-	●	E	J	N	-	-	-	-	-	-	-	-	-
EF	HB	JKP	-	SD	OFSP	-	8202G051V	8202G061V	-	●	E	J	N	-	-	-	-	-	-	-	-	-
EF	HB	JKP	-	SD	OFSP	-	8202G002V	8202G012V	-	●	E	J	N	-	-	-	-	-	-	-	-	-
EF	HB	JKP	-	SD	OFSP	-	8202G052V	8202G062V	-	●	E	J	N	-	-	-	-	-	-	-	-	-
EF	HB	JKP	-	SD	OFSP	-	8202G003V	8202G013V	-	●	E	J	N	-	-	-	-	-	-	-	-	-
EF	HB	JKP	-	SD	OFSP	-	8202G053V	8202G063V	-	●	E	J	N	-	-	-	-	-	-	-	-	-
EF	HB	JKP	-	SD	OFSP	-	8202G004V	8202G014V	-	●	E	J	N	-	-	-	-	-	-	-	-	-
EF	HB	JKP	-	SD	OFSP	-	8202G054V	8202G064V	-	●	E	J	N	-	-	-	-	-	-	-	-	-
EF	HB	JKP	-	SD	OFSP	-	8202G006V	8202G016V	-	●	E	J	N	-	-	-	-	-	-	-	-	-
EF	HB	JKP	-	SD	OFSP	-	8202G056V	8202G066V	-	●	E	J	N	-	-	-	-	-	-	-	-	-
EF	HB	JKP	-	SD	OFSP	-	8202G007V	8202G017V	-	●	E	J	N	-	-	-	-	-	-	-	-	-
EF	HB	JKP	-	SD	OFSP	-	8202G057V	8202G067V	-	●	E	J	N	-	-	-	-	-	-	-	-	-
EF	HB	JKP	-	SD	OFSP	-	8202G023V	8202G033V	-	●	E	J	N	-	-	-	-	-	-	-	-	-
EF	HB	JKP	-	SD	OFSP	-	8202G073V	8202G083V	-	●	E	J	N	-	-	-	-	-	-	-	-	-
EF	HB	JKP	-	SD	OFSP	-	8202G024V	8202G034V	-	●	E	J	N	-	-	-	-	-	-	-	-	-
EF	HB	JKP	-	SD	OFSP	-	8202G074V	8202G084V	-	●	E	J	N	-	-	-	-	-	-	-	-	-
EF	HB	JKP	-	SD	OFSP	-	8202G026V	8202G036V	-	●	E	J	N	-	-	-	-	-	-	-	-	-
EF	HB	JKP	-	SD	OFSP	-	8202G076V	8202G086V	-	●	E	J	N	-	-	-	-	-	-	-	-	-
EF	HB	JKP	-	SD	OFSP	-	8202G027V	8202G037V	-	●	E	J	N	-	-	-	-	-	-	-	-	-
EF	HB	JKP	-	SD	OFSP	-	8202G077V	8202G087V	-	●	E	J	N	-	-	-	-	-	-	-	-	-
EF	HB	JKP	-	SD	OFSP	-	8203G001	-	●	V	E	J	N	-	-	-	-	-	-	-	-	-
EF	HB	JKP	-	SD	OFSP	-	8203G002	-	●	V	E	J	N	-	-	-	-	-	-	-	-	-
● = Standard																						

● = Standard

Electronic Control Unit (sold separately)

Component Material

Housing Assembly	PA + FV
Cover	PA + FV
Screw	Zinc plated steel
Gasket	NBR
Connector Specification	ISO 4400
Protection	IP 65

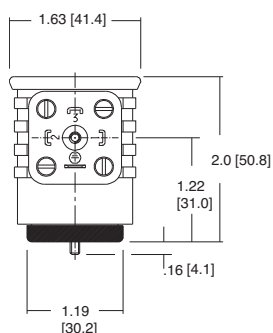
Attribute

Supply Voltage	24VDC +/- 10% (10% max. ripple)
Power Consumption	0.8 Watts
Max. Full-Load Current	1100 mA (pre-set to 500 mA)
Input Control Signal	0-10 VDC, 0-20 mA, or 4-20 mA
Switch-Off Current	<2% of max. Input Control Signal
Ramp Time	On (adjustable 0.1-3 sec.) or Off
Adjustable PWM Frequency	40-700 Hz
Adjustable Off-set	15-50% of PWM voltage
Adjustable Full-load	30-100% of PWM voltage

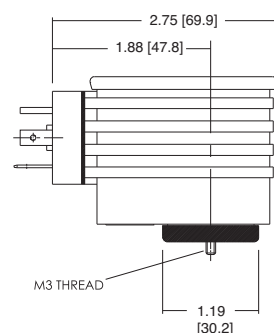
Control

Supply Voltage	24VDC +/- 10% (10% max. ripple)
Power Consumption	0.8 Watts
Max. Full-Load Current	1100 mA (pre-set to 500 mA)
Input Control Signal	0-10 VDC, 0-20 mA, or 4-20 mA
Switch-Off Current	<2% of max. Input Control Signal
Ramp Time	On (adjustable 0.1-3 sec.) or Off
Adjustable PWM Frequency	40-700 Hz
Adjustable Off-set	15-50% of PWM voltage
Adjustable Full-load	30-100% of PWM voltage

Dimensions: inches

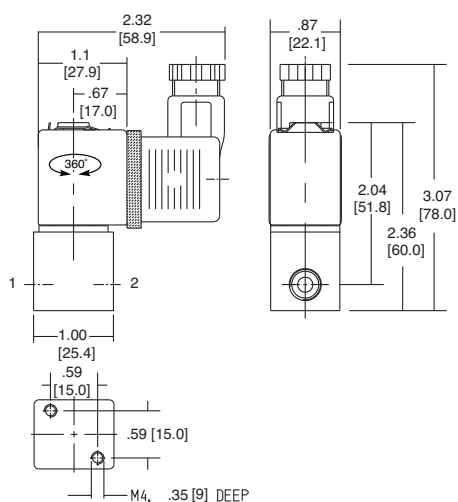
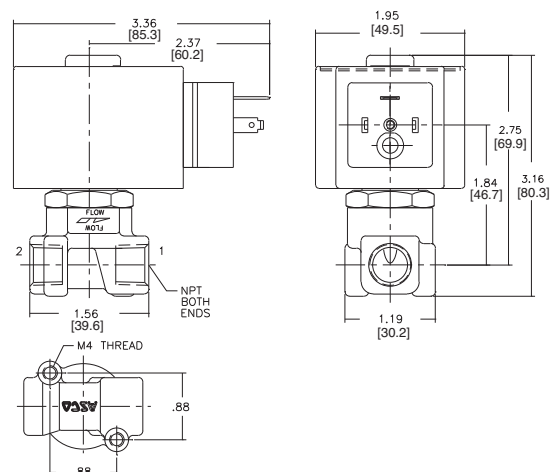


Pipe Size
1/8"
1/4" to 1/2"

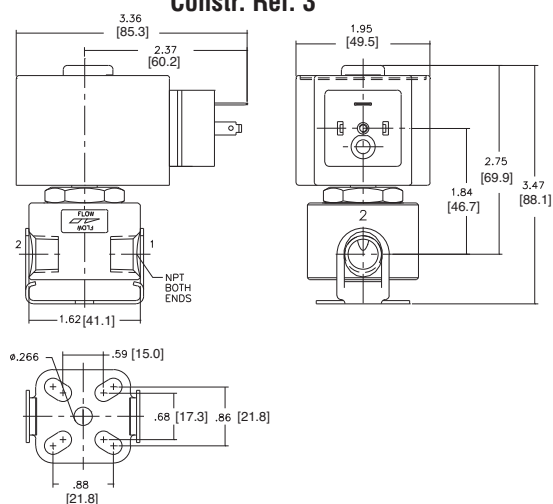
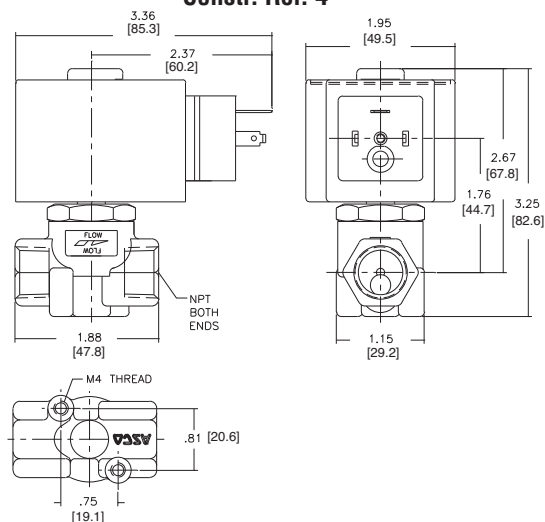
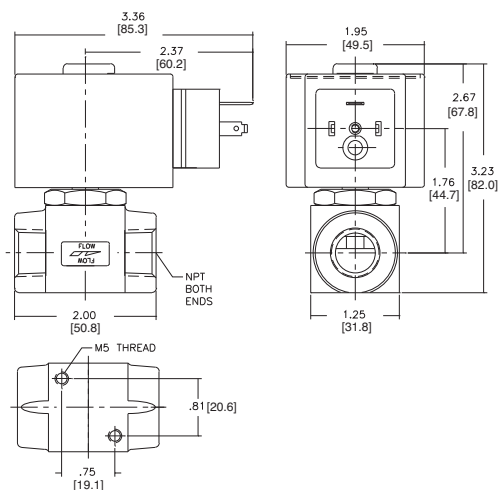
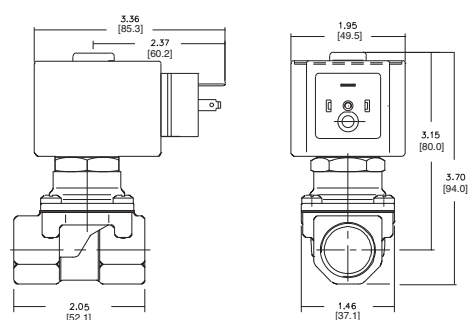


Part Number
8908A001
8908A003

Dimensions: Inches [mm]

Constr. Ref. 1**Constr. Ref. 2**

Constr. Ref. 3

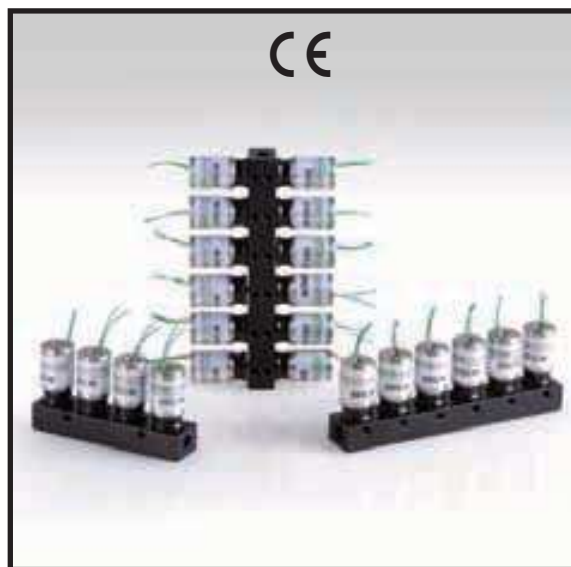
**Constr. Ref. 4****Constr. Ref. 5****Constr. Ref. 6**

The Series 451 are anodized aluminum manifolds to be used with ASCO Scientific's Series AM solenoid valves. The manifolds are available separately or as complete valve/manifold assemblies as listed below.

- Valves easily thread into manifold, reducing assembly time, eliminating potential leak points, and avoiding plumbing errors associated with tubing together stand alone valves
- Manifolds are constructed of corrosion resistant anodized aluminum
- Standard manifolds feature #10-32 ports to mate with metal or plastic fittings

Construction

Valve Parts in Contact with Fluids	
Manifold Material	Anodized Aluminum
NC Manifold Ports	Brass
Common Manifold Ports	1/8" NPT



Manifold Assemblies & Manifold Only Part Numbering

Number of Stations	Valves Assembled to Manifolds	Manifolds Only
4	451A04xxxxxx	4510017-01
6	451A06xxxxxx	4510017-02
8	451A08xxxxxx	4510017-03
12	451A12xxxxxx	4510017-04

Manifold Assembly Catalog Number Construction

Construct catalog number for valves assembled to manifold as follows:

- 1) Select generic catalog number from table above based on number of stations required.
- 2) Insert catalog number of Series AM valve required (see page 61) in place of xxxxxx.

Examples

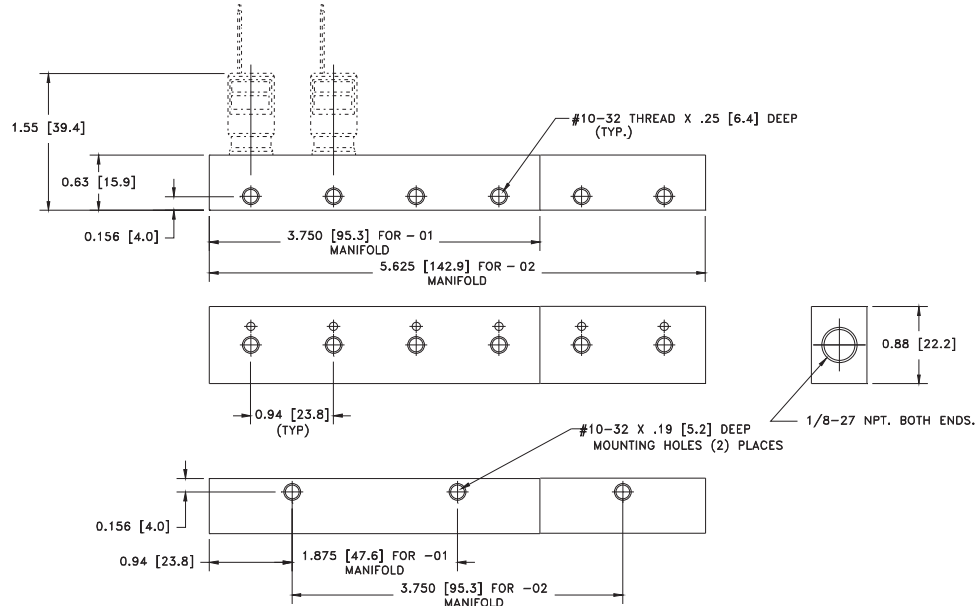
6 station manifold with six AM4124 valves assembled

Generic manifold assembly number 451A06 + valve catalog number AM4124

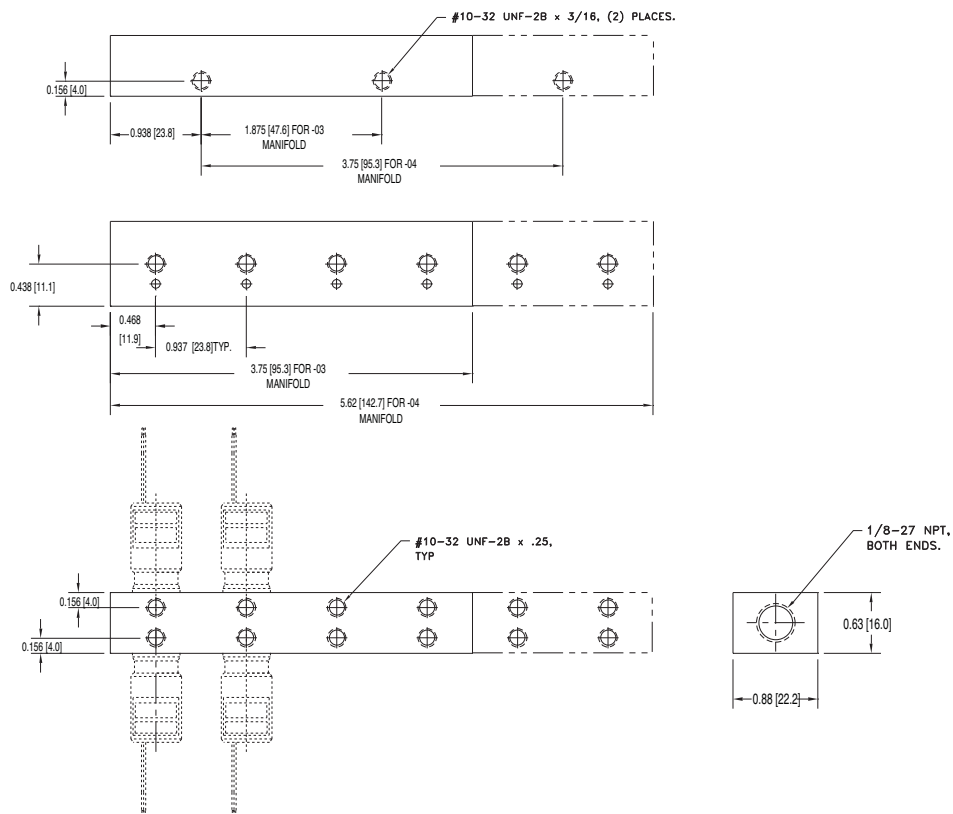
Complete catalog number = 451A06AM4124

Dimensions: Inches [mm]

4 and 6 Station Manifolds



8 and 12 Station Manifolds





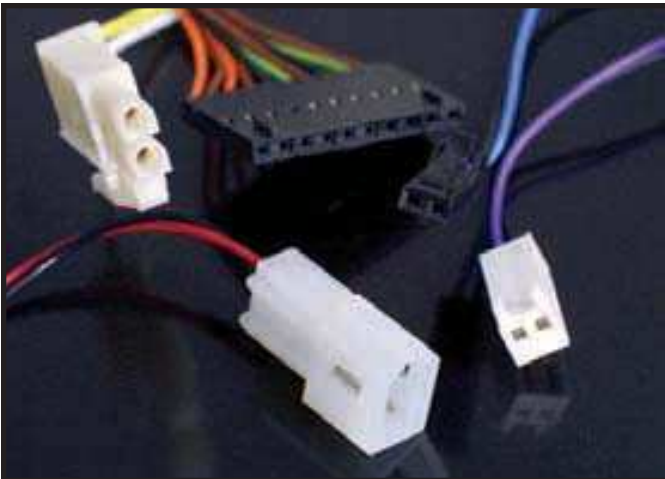
Custom Manifolds & Assemblies

ASCO Scientific has the ability to work with you to design a custom manifold for your specific fluid control requirements. We can design manifolds that include our solenoid valves as well as other components such as fittings, pressure sensors, relief valves, etc. We can also provide drawings in electronic formats such as Autocad or Pro E. Once the design is finalized, we can supply the complete assembly tested and ready for installation into your equipment.



Special body configurations and materials

To fit in a tight space or mount exactly in your equipment, ASCO Scientific can create custom body configurations. In addition, we can supply our existing products lines with various body and elastomer materials based on your fluid compatibility requirements.



Electrical Connectors/Special Voltage

To simplify your wiring and reduce labor to install solenoid valves, we can provide our valves with any electrical connector you desire. We routinely provide valves with various connectors made by AMP, Molex, and other connector manufacturers.

Also, we can provide our valves in non-standard voltages and lower power consumption based on your specific application requirements.



Customer specific testing and cleaning

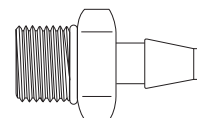
To ensure that our products perform as expected in your equipment, we can develop test procedures based on your exact requirements. Also, we can specially clean our valves and components to prevent contamination of the media in your equipment.

Barbed Fittings for Series AL Valves

Barbed Fittings for #10-32 UNF ports and Soft Tubing

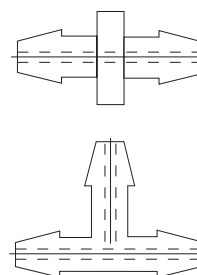
Thread Size	Barb Size	Fitting Material	Seal Material	Part Number
#10-32	1/16" I.D. Tubing	Polypropylene	FKM	F714-12*
#10-32	1/8" I.D. Tubing	Polypropylene	FKM	F714-11*
#10-32	1/16" I.D. Tubing	Brass	FKM	F765-2*
#10-32	1/8" I.D. Tubing	Brass	FKM	F765-1*

Asterisk (*) is part of fitting number



Connectors and Tees for Soft Tubing

Fitting Type	Barb Size	Fittings Material	Part Number
Connector	1/16" to 1/16"	Polypropylene	F614-1
Connector	1/8" to 1/8"	Polypropylene	F614-2
Connector	1/16" to 1/8"	Polypropylene	F614-3
Tee	1/16"	Polypropylene	F612-1
Tee	1/8"	Polypropylene	F611-1



Pinch Valve Tubing & Accessories

For use with Series 284, 384, 373, 388, 390, 397, 401 and 443 Pinch valves

ASCO SCIENTIFIC®

Tubing

ASCO Scientific offers silicone tubing to be used with the Series 284, 384, 373, 388, 390, 397, 401, and 443 pinch valves. It is available in various sizes as listed below.

Specifications

Tubing Material	Platinum Cured Silicone
Durometer	55 +/-5 Shore "A" in accordance with ASTM D-2240
Standards	Meets requirements of U.S. Pharmacopoeia XX, Class VI-Plastic Containers

Tubing Catalog Numbers

Tubing for Series 373, 388, 390, 397, 401, and 443

Tubing Size (inches)			Tubing Catalog Number
ID	OD	Wall	
1/32	3/32	1/32	F739-01
1/32	5/32	1/16	F739-02
1/16	1/8	1/32	F739-03
1/16	3/16	1/16	F739-04
3/32	5/32	1/32	F739-05
3/32	7/32	1/16	F739-06
1/8	3/16	1/32	F739-07
1/8	1/4	1/16	F739-08
3/16	1/4	1/32	F739-10
1/4	5/16	1/32	F739-11
1/4	3/8	1/16	F739-12
3/8	1/2	1/16	F739-13



Tubing for Series 284, 384

Tubing Size (inches)			Tubing Catalog Number
ID	OD	Wall	
.030	.065	.017	TB030X065SI1P
.040	.085	.022	TB040X085SI1P
.062	.095	.017	TB062X095SI1P
.062	.125	.031	TB062X125SI1P
.078	.125	.031	TB078X125SI1P
.104	.192	.044	TB104X192SI1P
.132	.183	.026	TB132X183SI1P
.187	.313	.063	TB187X313SI1P
.250	.375	.062	TB250X375SI1P

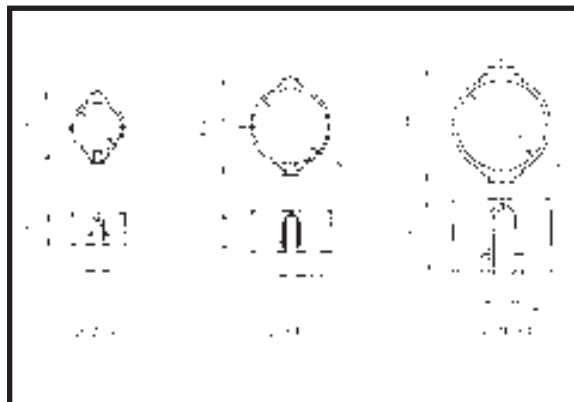
Tubing Guide

ASCO Scientific offers plastic tubing guides that slide easily onto the valve body of the Series 284 & 384 pinch valves to retain small OD tubing in the pinch valve body.

Tubing Guide Cat. No	Max OD of Tubing (inches)	Valves Applicable
2597801	.085	SCH284A001
		SCH284A002
		SCH284A003
		SCH284A004
		SCH284A009
		SCH284A010
		SCH284A011
		SCH284A012
		SCH384A001
		SCH384A002
		SCH384A003
		SCH384A004
2598401	.138	SCH284A005
		SCH284A013
		SCH394A005
2599501	.236	SCH284B006
		SCH284B007
		SCH284B014
		SCH284B015
		SCH384B006
		SCH384B007



Tubing Guide Dimensions mm [ins.]



ASCO's electrical connection devices are designed using the DIN 43650/ISO 4400 or DIN 46244 (Pg 9P) form standards consistent with our solenoid valve coil designs and permitting industry interchangeability. Each size is available for user wiring or factory prewired installations. Other options include 1/2" conduits, and LED/VDR models.

Features

- Glass fiber reinforced polyamide housing and lid
- IP65 protection against moisture entry and washdown when properly installed with gaskets
- LED: Light Emitting Diode. A solid-state diode that emits light to indicate power to the connector
- VDR: Varistor absorbing the self-inductance of the coil. The VDR is there to protect the coil or controller against supply over-voltage or peak
- Maximum voltage 240 Volts



Size 11 mm, Form B

Part Number	Description	Orientation	Rotatable	Figure
88122403	1/2" conduit	Ground Down	180°	A
97500200	1/2" conduit with LED/VDR	Ground Down	180°	A
88122404*	PG 9 cable gland	Ground Down	180°	B
88122407	PG 9 cable gland with LED/VDR 120/AC-DC	Ground Down	180°	B
88122410	PG 9 cable gland with LED/VDR 240/AC-DC	Ground Down	180°	B
88122405	PG 9 cable gland with LED/VDR 24/AC-DC	Ground Down	180°	B
E1090-04-59**	4.5' leads with LED 120/AC-DC PVC	Ground Up	No	B
E1090-02-59**	4.5' leads with LED 24/AC-DC PVC	Ground Up	No	B
AP2004-02**	6' leads with stripped ends	Ground Down	180°	B

Available in 10 pack; part number 226061-001-

**Also available in 9', 16', and 33' lengths. Consult factory.

Figure A

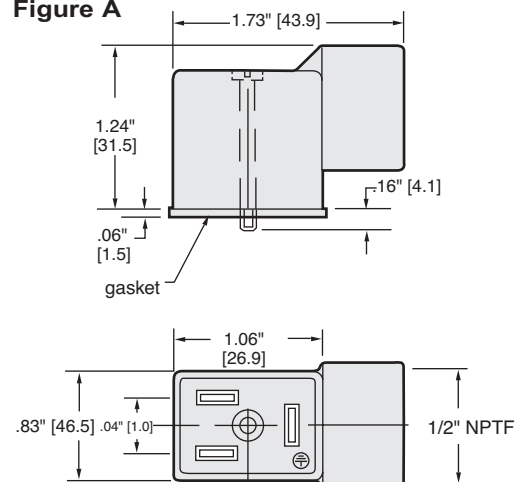
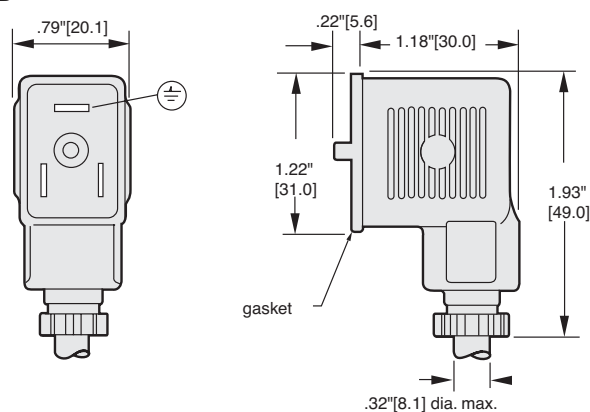


Figure B



Accessories

Electrical Connectors



Size 18 mm, Form A

Part Number	Description	Orientation	Rotatable	Figure
88122601	1/2" conduit	Ground Up	90°	C
97500015	1/2" conduit with LED	Ground Up	90°	C
88122602*	PG 11 cable gland	Ground Up	90°	D
88122605	PG 11 cable gland with LED/VDR 120/AC-DC	Ground Up	90°	D
88122608	PG 11 cable gland with LED/VDR 240/AC-DC	Ground Up	90°	D
88122603	PG 11 cable gland with LED/VDR 24/AC-DC	Ground Up	90°	D
88122604	PG 11 cable gland with LED/VDR 48/AC-DC	Ground Up	90°	D
E1089-04-59**	4.5' leads with LED 120/AC-DC PVC	Ground Up	No	D
E1089-06-59**	4.5' leads with LED 240/AC-DC PVC	Ground Up	No	D
E1089-02-59**	4.5' leads with LED 24/AC-DC PVC	Ground Up	No	D
272852	6' leads with North American outlet plug	Ground Up	No	D
272852-003	6' leads with North American outlet plug (rotated 90 degrees)	Ground Up	No	D
AP2003-03**	6' leads with stripped ends	Ground Up	No	D

*Available in 50 pack; part number 266615.

**Also available in 9', 16', and 33' lengths. Consult factory.

Figure C

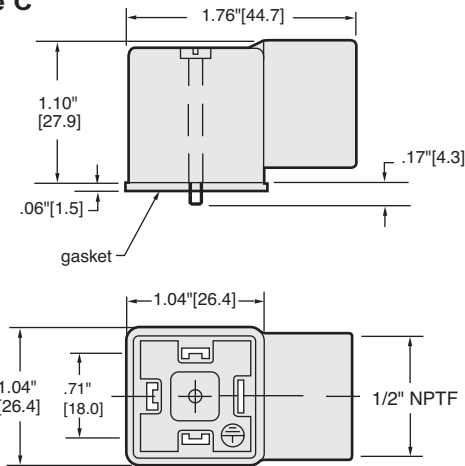
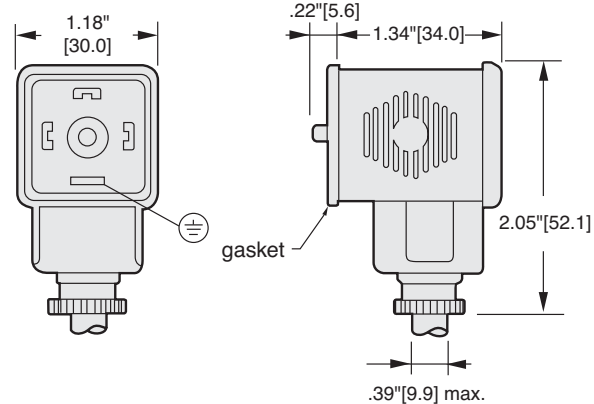


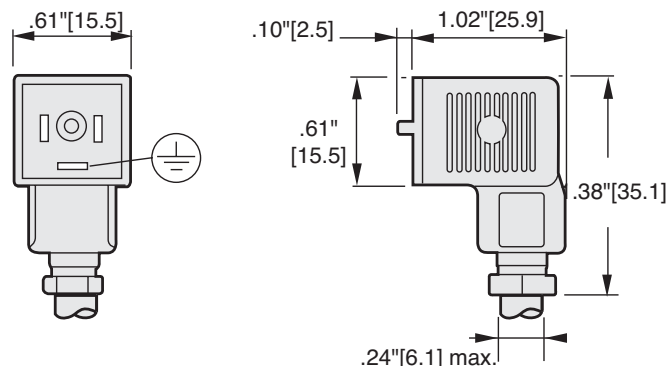
Figure D



Size 9.4 mm, Form C

Part Number	Description	Orientation	Rotatable
88143581	PG 7 cable gland	Ground Up	180°
AP2002-01	PG 7 cable gland LED/VDR 120-240/AC 50/60	Ground Up	180°
AP2002-05	PG 7 cable gland LED/VDR 48-120/AC 50/60	Ground Up	180°
AP2002-03	PG 7 cable gland LED/VDR 48-120/DC	Ground Up	180°
97500024	PG 7 cable gland LED/VDR 6-48/AC-DC	Ground Up	180°
E1091-04-59**	4.5' leads with LED 120/AC-DC PVC	Ground Up	No
E1091-02-59**	4.5' leads with LED 24/AC-DC PVC	Ground Up	No
88143567**	6' leads	Ground Up	No

**Also available in 9', 16', and 33' lengths. Consult factory.



The following is general information for materials that are commonly used in ASCO Scientific solenoid valves. This information is not intended as a specific recommendation; factors beyond our control could affect valve operation or material properties of the components used in ASCO Scientific's valves may be different than the general material properties listed below.

Elastomers

NBR (nitrile, Buna-n)

NBR has excellent compatibility for most air, water and light oil applications. The standard compound is suitable for service in petroleum oils, air, water, mild acids, acetylene, kerosene, lime solutions, liquified petroleum gases and turpentine. Not recommended for highly aromatic gasolines or acids. It has a useful temperature range of -4°F to 185°F (-20°C to 85°C).

FKM (fluorocarbon elastomer, Viton¹)

FKM has a rather wide range of chemical compatibility. It is a fluorocarbon elastomer, which was primarily developed for handling hydrocarbons such as jet fuels, gasolines, and solvents that normally caused detrimental swelling to NBR. FKM is not suitable for ketones, halogenated hydrocarbons or freon. FKM has a high temperature range similar to EPDM, but has the advantage of being somewhat more resistant to "dry heat". It has a useful temperature range of 0°F to 350°F (-18°C to 177°C).

EPDM, EPR (ethylene propylene)

Ethylene propylene is suitable for applications above the NBR temperature range, such as handling hot water and steam. It has a wide range of fluid compatibility and its useful temperature range is -10°F to 300°F (-23°C to 149°C). Ethylene propylene is not compatible with petroleum based fluids.

FFKM (perfluoroelastomer, Kalrez¹)

FFKM has virtually universal chemical resistance. It is extremely resistant to swelling, a cause of most seal failures. Because of the elasticity (soft seal) associated with FFKM, a virtually unsurpassed seal is created. FFKM will retain elasticity even after long term exposure to temperatures up to 600°F (316°C).

VMQ (silicone)

Known as the only elastomer, which under certain conditions, can be utilized for both high and low temperature. Also handles hydrogen peroxide and some acids. VMQ is not suitable for steam service. Fluorosilicone compounds are noted to have better fuel resistance.

Plastics

POM (acetal, Celcon²)

Acetal resin type thermoplastics, which are extremely rigid but not brittle. They provide good toughness, tensile strength, stiffness and long life. They are odorless, tasteless, non-toxic and resistant to most solvents.

PBT (Valox³)

PBT is a crystalline thermoplastic polyester with excellent chemical resistance. It has outstanding dimensional stability with high heat resistance and low moisture absorption. PBT also has a high surface gloss with an inherent lubricity.

PPS (polyphenylene sulfide, Ryton⁴)

This resin has outstanding chemical resistance and no known solvents below 200°C. It has low friction, good wear resistance and high tensile strength.

PSU (polysulfone)

Known as one of the most heat resistant thermoplastics. It has excellent chemical resistance when used for inorganic acids, alkalies and aliphatic hydrocarbons.

PEI (polyetherimide, Ultem³)

This resin has good heat deflection characteristics. Good chemical resistance to non-oxidizing acids and polar solvents. Questionable usage on alkaline solutions.

PEEK (polyetheretherketone)

High performance thermoplastic that has a continuous working temperature of 250°C. It has an excellent resistance to a wide variety of chemicals and solvents. PEEK has excellent flexural, tensile, and impact properties combined with outstanding fatigue resistance.

PTFE (Teflon¹)

PTFE is virtually unattacked by any fluid. It has a very wide temperature range. PTFE is not easily fabricated and is known to have objectionable "cold flow" characteristics, which may contribute to objectionable leakage, particularly on gases.

ETFE (ethylene tetrafluoroethylene, Tefzel¹)

ETFE is a fluoropolymer resin with a chemical resistance similar to PTFE. It is a more rugged material than PTFE making it more suitable for valve bodies with threaded ports.

CTFE (chlorotrifluoroethylene, Kel-f⁵)

Thermoplastic known for its excellent chemical resistance. It has near-zero absorption rate and a low coefficient of thermal expansion. This polymer structure can be used in temperatures ranging from -240°C to 200°C. It is nonflammable and liquid oxygen compatible.

Notes:

1. Dupont Co. trademark
2. Celanese Plastics Co. trademark
3. GE Plastics trademark
4. Phillips 66 trademark
5. Daikin Industries trademark