

# Alpha

## Features

### Body Ported Valves

Compact, space saving design. Perfect for stand alone and remote valve applications. Ports have ISO identification. Sizes include 1/8", 1/4" and 3/8" NPT.

### Stacking Valves

The lowest cost method of ganging valves, because it eliminates the manifold. Flip out design. Loosen the end plate cap screws to swing the valve up and out. No need to disassemble entire stack to replace one valve. Bodies stack on 1" centers. Circuits can be designed and mounted in a compact area. When stacked, ALPHA becomes a 4-way, 4-ported valve. 3/8" common end plate ports with 1/4" working ports in the valve body.

### Subbase Valves

Replace valves easily! Simply remove three screws, lift off valve and replace. Math made simple! Add or subtract manifolds by removing an end plate and changing the valve stack as needed. No tie rods to make changing manifold lengths difficult. Port sizes of 1/4" and 1/2" with ISO port identifications. Subbase Valves use the same electrical coils and connectors as the ALPHA Body Ported Valve. Both End Plates can be used for common supplies and exhaust in high flow applications.

### "Thin" Manifold Valves

Thin, 1" width means more valves in less space. Faster assembly than stacking style valves. 2, 4, 6, 8, and 10 station manifolds are available. Use optional blanking plates for odd-numbered stations. 1/4" (NPT) models, with 3/8" supply or exhaust ports. Speed controls install directly into manifold, cutting set-up time.

### Versatile Design

- Available in Body Ported, Subbase, Stacking and "Thin" configurations
- Alpha can be ordered as a 2-position or 3-position valve
- 5-Year Warranty
- Valve Body, End Plate and Manifold material is zinc

### Superb Performance

- ALPHA's bonded, precision ground spool resists wear and provides excellent shift response
- Large air passages result in high flow characteristics. Listings detail Cv factor and maximum flow rates

### Numerous Control Options

- Control the valve one of 5 ways: Solenoid/Spring, Solenoid/Solenoid, Solenoid/Pilot, Pilot/Spring or Pilot/Pilot
- External solenoid supply allows operation for vacuum service and low pressure applications (Use kit No. 119306)
- Coils are cURus listed



## Performance Specifications

<b>Pressure Range:</b>	Vacuum to 150 psi (10.2 bar)
<b>Operating Medium:</b>	Compressed Air or inert gas
<b>Lubrication:</b>	None Required
<b>Filtration:</b>	40 Micron recommended
<b>Cycle Rate:</b>	600 Cycles Per Minute
<b>Temperature Rating:</b>	0° to 180°F (-17° to 82°C)
<b>Shift Pressures:</b>	50 psi (3.4 bar) 2-Position Single Solenoid or Single Pilot, Spring Return. 20 psi (1.4 bar) 2-position double pilot or double solenoid. 60 psi (4.0 bar) 3-Position Double Solenoid or Double Pilot, Spring Centered.

### Signal Response Time:

Double Pilot Actuator:	14 ms
Double Solenoid:	20 ms
Single Pilot (Pilot On)	19 ms
Single Pilot (Pilot Off)	26 ms
Single Solenoid (Energized)	22 ms
Single Solenoid (De-energized)	27 ms

### Flow:

#### Body Ported

2-position 1/8" Ports = .9 Cv, 30 SCFM
2-position 1/4" Ports = 1.5 Cv, 50 SCFM
2-position 3/8" Ports = 1.7 Cv, 61 SCFM
3-position 1/8" Ports = .8 Cv, 27 SCFM
3-position 1/4" Ports = 1.4 Cv, 45 SCFM
3-position 3/8" Ports = 1.7 Cv, 61 SCFM
1/8" Ports = 1.3Cv, 43 SCFM
1/4" Ports = 1.6 Cv, 54 SCFM
3/8" Ports = 1.6 Cv, 54 SCFM
1/2" Ports = 1.75 Cv, 57 SCFM

#### Subbase Valves:

#### Stacking Valves:

2-position 1/8" Ports = 1.32 Cv, 43 SCFM
2-position 1/4" Ports = 1.9 Cv, 63 SCFM
3-position 1/8" Ports = 1.2 Cv, 39 SCFM
3-position 1/4" Ports = 1.7 Cv, 57 SCFM
1/4" Ports = 1.2 Cv, 39 SCFM

#### "Thin" Valves:

# Alpha

## Ordering

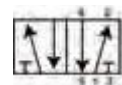
Position	1	2	3	4	5		6		7
Example:	A	X	X	X	XX	-	XXX	-	X

Position 1 Body Style	Position 2 Valve Spool Type	Position 3 Body Style	Position 4 Port Size	Position 5 Actuation/Return*	Position 6 Coil Volage	Position 7 Current Type
<b>A</b> Alpha	<b>2</b> 2-Position, Urethane <b>3</b> 3-Position, Urethane <b>8</b> 3-Position, Viton <small>(3 and 8 are Spring Centered, all ports blocked in neutral. Available only with PD or SD Actuators)</small> <b>4</b> 2-Position, Viton <b>7</b> 3-Position, Urethane <b>9</b> 3-Position, Viton <small>(7 &amp; 9 are Spring Centered, inlet ports blocked (cylinder ports open) in neutral. Available only with PD or SD Actuators)</small>	<b>1</b> 4-Way, Body Ported Valves <b>2</b> 4-Way, Stacking Valves <small>Order End Plates from menu on Page 20. Order Mounting Brackets from Page 20.</small> <b>3</b> 4-Way, Subbase Mounted Valves <small>Order Subbase Manifolds from menu on Page 21.</small> <b>4</b> 4-Way, Alpha Thin Valves <small>Order Alpha Thin Manifolds and Speed Control Kits from menus on Page 21.</small>	<b>1</b> 1/8" NPTF <small>(Available on Body Ported valves only)</small> <b>2</b> 1/4" NPTF <small>(Available on Body Ported or Stacking Valves)</small> <b>3</b> 3/8" NPTF <small>(#3 available on Body Ported Valves only)</small> <b>9</b> NONE <small>(#9 used on Subbase or Alpha Thin Valves)</small>	<b>*PS</b> Pilot/Spring <b>*PD</b> Pilot/Pilot <b>SS</b> Solenoid/Spring <b>SD</b> Solenoid/Solenoid <b>SP</b> Solenoid/Pilot  <small>* Numbering ends here if a non-solenoid (PS or PD) valve is being selected.</small>	<b>000</b> No coil <b>024</b> 24V AC/DC <b>120</b> 120V AC <b>012</b> 12V AC/DC <b>240</b> 240V AC	<b>A</b> AC <b>D</b> DC <b>N</b> No Coil <b>L</b> Low Watt**  <small>** (DC Only, 115 PSI Max.)</small>  <small>If coil option A, D or L is selected, a coil connector must be ordered. See Pg. 69 for coil &amp; connector information. (Low Watt coils work only on valves with low watt option)</small>

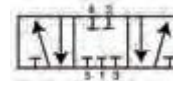
## Ordering Examples

### Body Ported Valve: A212SS-120-A

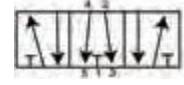
"2" 2-Position Valve, Urethane Spool  
 "1" 4-Way Body Ported Valve  
 "2" 1/4" NPTF Ports  
 "SS" Actuator-Solenoid, Return-Spring  
 "120-A" 120 Volt Coil, AC Current



4-Way, 2-Position



4-Way, 3-Position, all ports blocked in neutral



4-Way, 3-Position, cylinder ports open, inlet port blocked

### "Thin" Valve: A449PS

"4" 2-Position Valve, Viton Spool  
 "4" 4-Way Alpha "Thin" Valve  
 "9" 9 No NPTF Ports  
 "PS" Actuator-Pilot, Return-Spring

### "Thin" Manifold: 118605-4

"11860X-X" Basic Manifold  
 "5" 1/4" NPT Ports  
 "-4" 4-Stations  
 Manifold information on Page 21

### 119306 External Supply Conversion Kit, Page 21.

Use when supply pressure is under 50 PSI or vacuum is used.

# Alpha

## Accessories - Alpha Stacking Valves

### End Plates and Isolator Plates

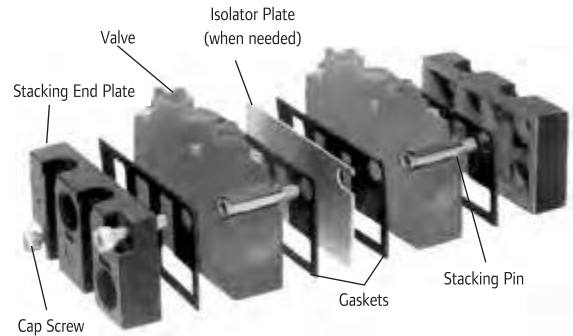
**MKN** One MKN Kit is required to stack 1-to-6 Valves without Isolator Plates. Each contains 2 End Plates, 2 Cap Screws and 1 Gasket.

**MKP** One MKP Kit is required to stack 7-to-12 Valves without Isolator Plates, or 1-to-12 Valves with an Isolator Plate. Each contains 2 End Plates, 2 Cap Screws and 1 Gasket.

**PTN** Isolator Plate. Blocks Supply and Exhaust Ports. Gasket Included.

**PEN** Isolator Plate. Blocks Exhaust Ports. Gasket Included.

**PPN** Isolator Plate. Blocks Supply Ports. Gasket Included.



Typical Stacking Valve Assembly

### Mounting Brackets

Kits include both Brackets and hardware to mount valve stacks to the brackets.

**116710** Tie Bolt Kit

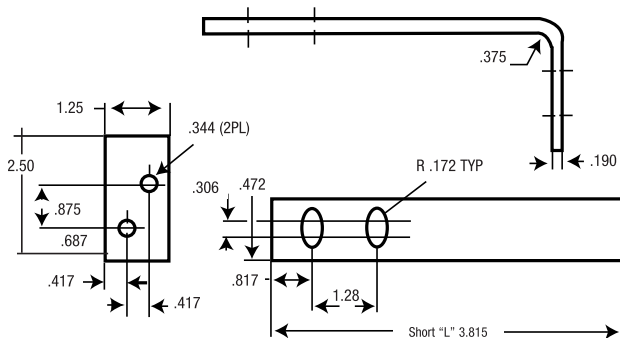
**116808** Short L - 3.75" long

**117987** Short Z - 3" high

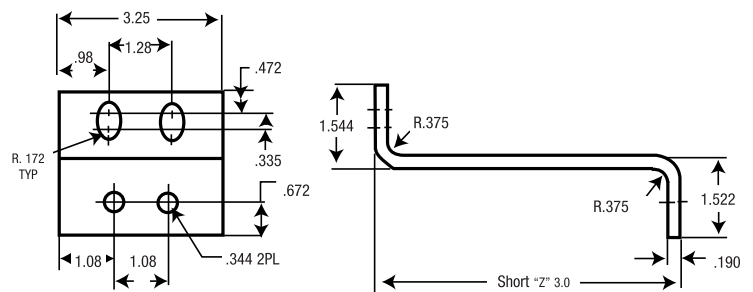


116808 Short L

## Dimensions - Mounting Brackets



"L" Brackets 116808



"Z" Brackets 117987

# Alpha

## Accessories

### Breather Vent, External Supply Plug

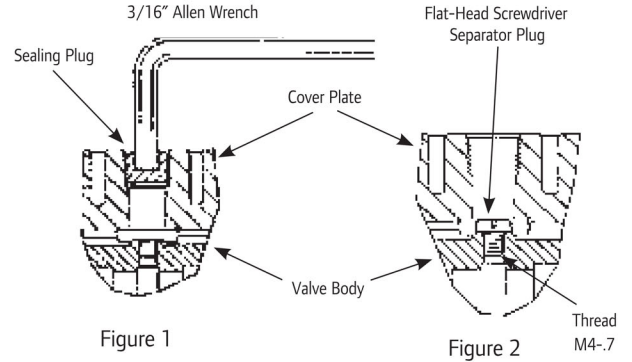
**116464** Solenoid Breather Vent 10-32 Thread Size.

**119306** External Solenoid Supply Plug Kit  
Changes ALPHA valves from internal to external solenoid air source.

**Step #1:** Remove all air supply sources, remove sealing plug. Figure 1.

**Step #2:** Install separator plug by threading plug into valve body with a flat-head screwdriver. Figure 2.

**Step #3:** Connect the external pilot air supply to the valve with an 1/8" NPT connector.



## Alpha "Thin" Valves

### Alpha Thin Manifolds

Position	1		2
Example:	118605	-	X

Position 1 Port Size	Position 2 Number of Stations	
1/4" NPT	2	2 Station
	4	4 Station
	6	6 Station
	8	8 Station
	10	10 Station



11860X-X ALPHA Thin Manifold Stack



118618 Speed Control Kit

### Alpha Thin Speed Controls

Control speed directly from the manifold. Kits allow you to control only the cylinder direction needed.

**118618** Includes both 119230 (Port #2) and 119231 (Port #4) control kits.

**118612** Station blanking kit.

## Sub-base Valves

### Manifold and End Plate Kits

- Manifold Kits are required when ordering Sub-base valves.
- One End Plate Kit is needed for each valve stack.
- Manifold Kits include the Manifold, one Gasket and two Screws.
- End Plate Kits include two End Plates, one Gasket and two Screws.

Port Size	Manifold Kit	End Plate Kit
1/4"	115455-1	116916-1
1/2"	116899-1	-

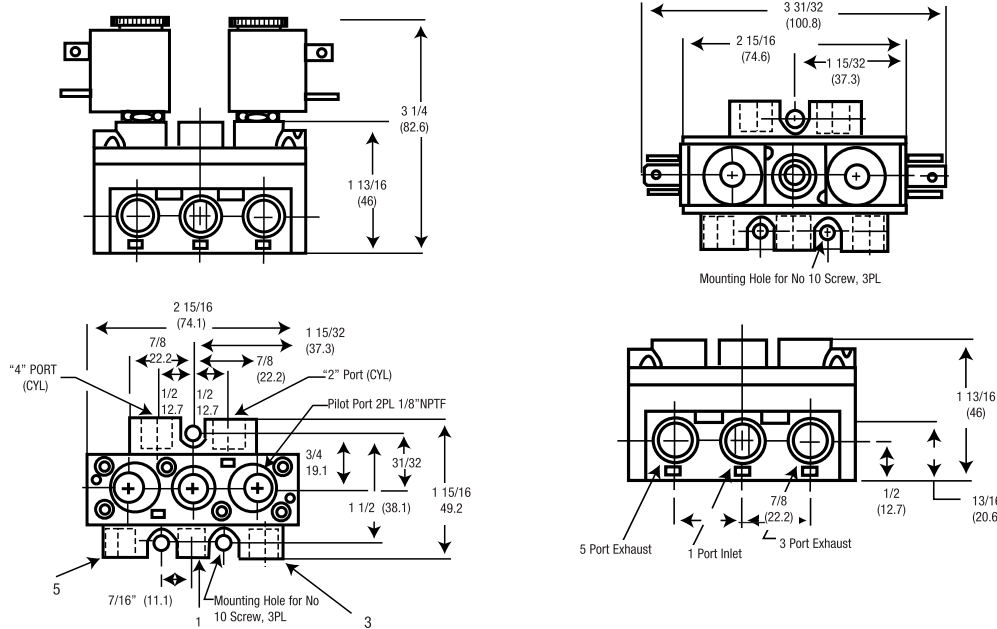


Subbase Valve Manifolds & End Plates

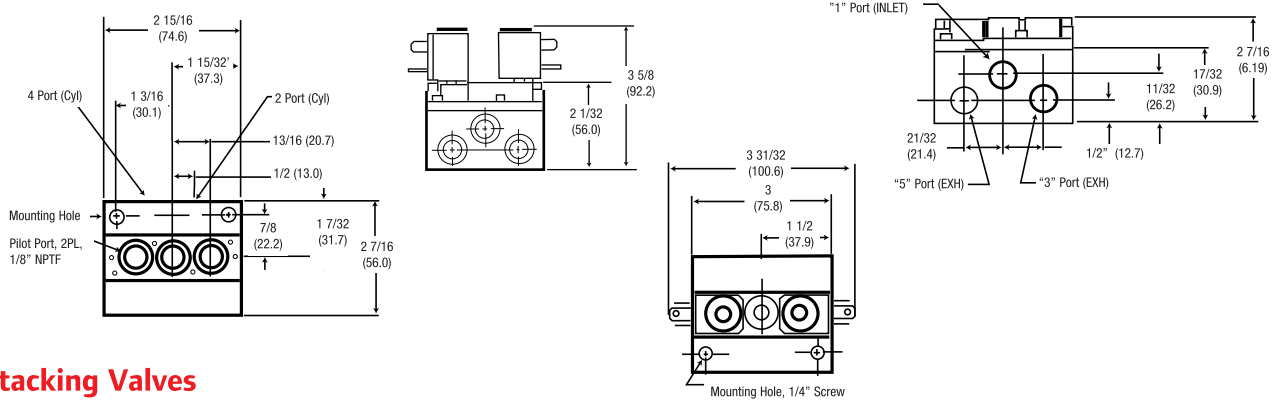
# Alpha

➤ **Dimensions** Dimensions given in Inches and (Millimeters)

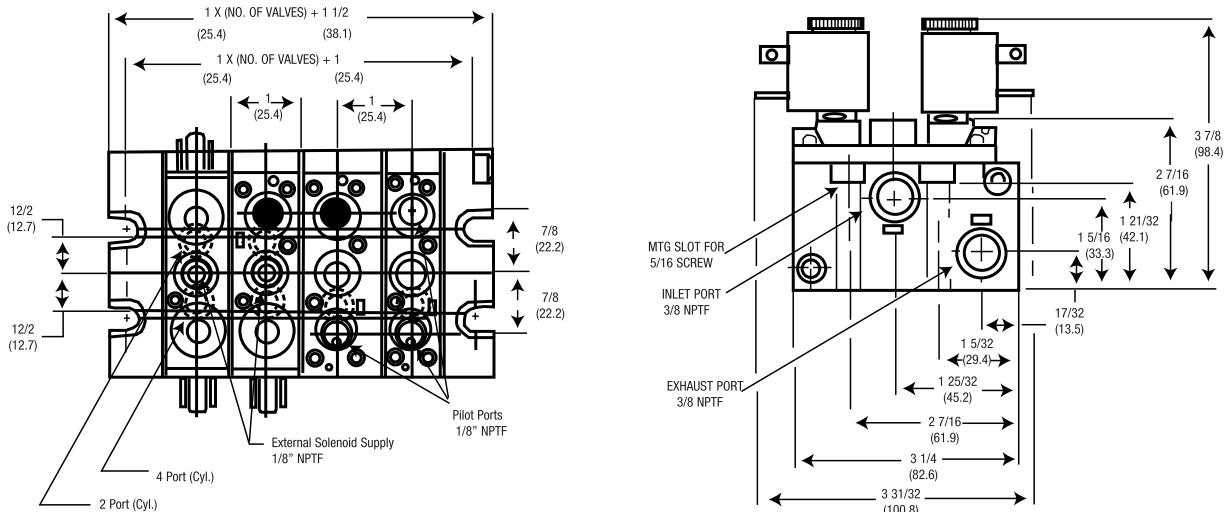
## 1/8" and 1/4" Body Ported



## 3/8" Body Ported Valves



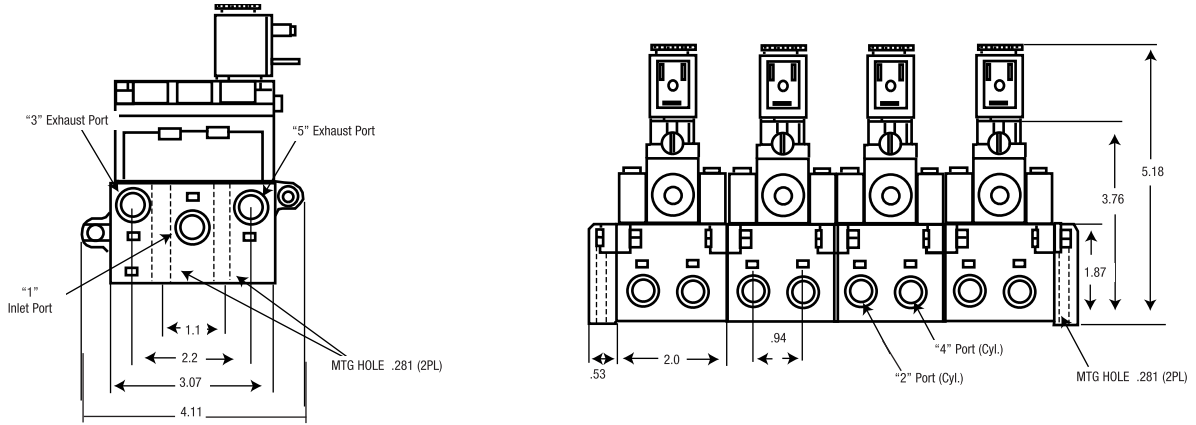
## Stacking Valves



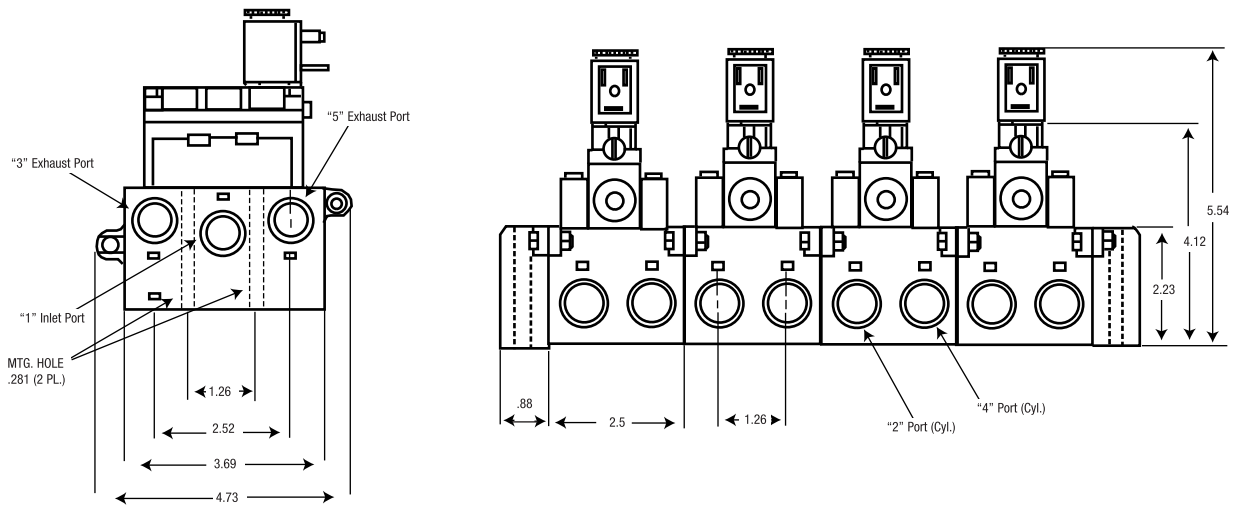
# Alpha

Dimensions given in Inches and (Millimeters)

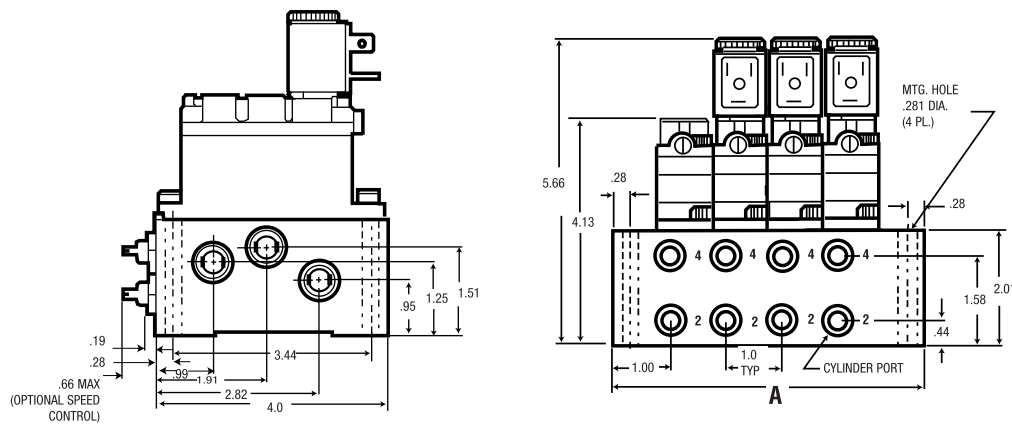
## Subbase Valves with 1/4" Cylinder Ports



## Subbase Valves with 1/2" Cylinder Ports



## Thin Manifolds with 1/4" Cylinder Ports



No. of Stations	A
2	3.57
4	5.57
6	7.57
8	9.57
10	11.57

# Solenoid Accessories

## Features

### Coils

- Coils are Class F rated for 100% duty cycle (311°F/155°C) applications.
- AC and DC coils are interchangeable on the same solenoid stem.
- Low “inrush” and “holding” current keeps heat rise to a minimum. This maximizes coil life and reduces power consumption.

Code / Voltage	Code / Voltage
31 = 12V AC	38 = 24V AC or 12V DC
33 = 120V AC	(22mm Coils only)
35 = 240V AC	39 = 24V DC



### Connectors

- Protect electrical connections from humidity and moisture. Meet NEMA 4 classifications
- Each is its own junction box, eliminating need to wire solenoid to another box.

### Hazardous Location Coil

Coils are CSA certified and meet the requirements for use in hazardous locations.

**Environmental Code:** Division 1, Class I, II, III, Group A-G

**FM Certification:** 3006713

**Electrical Entry:** 1/2" - 14 NPT-1 w/24" Lead Wires  
Class “H” rated, 100% duty cycle

Available in 120V AC & 24V DC only



## Ordering

### Coils

(Replace XX on model number with coil voltage required.)

#### 115046-XX Cable Coil (NEMA 4, 22mm)

10' AWG UL-listed elastomer cable. No solenoid connector needed.

#### 115064-XX Low Watt Coil (DC only) (NEMA 4, 22mm)

Low DIN coil. DC only, for use with 3-prong connectors.  
12 and 24V DC only. Used only on valves ordered as low wattage.

#### 116218-XX Standard Coil cURus listed (NEMA 4, 22mm)

AC or DC DIN coil for use with 3-prong connectors.

#### 116647-XX Coil with Molded Leads cURus listed (NEMA 4, 22mm)

AC or DC lead wire coil with 18" molded leads. No solenoid connector needed.

#### \*119690-XX Oversize (NEMA 4, 30 mm)

High Flow Cat Valve and 2-way Valve coil.  
Available in -32, -33, -35, -38 and -39 voltages

#### 117345-XX ATEX

- NEC/CEC: Class I & II, Div 1 & 2, Group A-D
- ATEX: Zone 1&2, 21&22

\* NOTE: -38 option is 12 VDC only on 30mm coils. 24 VAC is not available  
See Page 70 for Voltage Operating Ranges and Voltage Ratings.

### Connectors

#### 22-mm Connectors:

(Replace XXX with voltage and type from chart below)

- CHW** Straight connector with cable (36") located on top.
- CBW** Straight connector with cable (36") located on back.
- CHL-XXX** Straight connector (36") with indicator light located on back.
- CSN** Strain Relief, without indicator light or cable.
- CSL-XXX** Strain Relief with indicator light located on back.
- CDN** 1/2" Conduit without lights or lead wires.
- CDW** 1/2" Conduit without lights, 18" lead wires.
- CDL-XXX** 1/2" Conduit with light and 18" lead wires.

#### 30-mm Connectors:

Use with High Flow Cat & 2-way valves

- CDW-30** Connector with wire.
- CSN-30** Connector, strain relief.
- CHW-30** Connector, molded cable.

Voltage XXX)	
012 = 12V AC/DC	120 = 120V AC
024 = 24V AC/DC	240 = 240V AC/DC

# Solenoid Accessories

## Performance Specifications

### Coils

#### Voltage Operating Ranges

Coil Voltage Ratings	Operating Range AC	Operating Range ±10% DC
12	11-13	11-13
24	22-26	22-26
120	108-132	108-132
240	216-264	--
380	342-418	--

22 mm Coil	Current (Amps)	Watts
12 DC	0.38	5.4
24 DC	0.20	5.4
120 DC	0.04	5.4
12, 24 DC	.05	1.1

30 mm Coil	Current (Amps)	Watts
12 DC	0-.62	15
24 DC	0.62	15
24 DC	(Hazardous Duty)	5

#### 22 mm Coil Voltage Ratings

Coil Voltage Rating	50/60 Hz Current (Amps)		50/60 Hz Volt-Amps, Holding	
	Inrush	Holding	Inrush	Holding
12AC	.70/.63	.50/.42	8.4/7.5	6.0/5.0
24AC	.46/.40	.36/.27	11.0/9.4	8.4/6.5
120AC	.09/.08	.07/.05	11.0/9.4	8.4/6.5
240AC	.05/.04	.04/.03	11.0/9.4	8.4/6.5
380AC	.03/.026	.024/.019	11.4/9.9	9.1/6.9

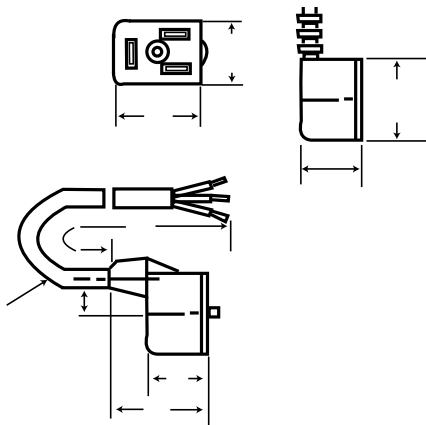
#### 30 mm Coil Voltage Ratings

Coil Voltage Rating	50/60 Hz Current (Amps)		50/60 Hz Volt-Amps, Holding	
	Inrush	Holding	Inrush	Holding
24AC	--	--	23	20
120AC	--	--	23	20
120AC	(Hazardous Duty)		11.5	8.5

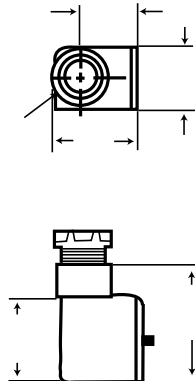
## Dimensions Dimensions given in Inches and (Millimeters)

### Connectors

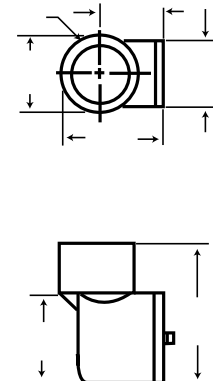
Straight Connectors



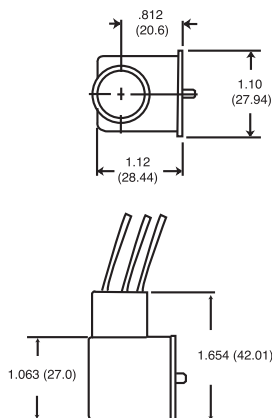
CSN 22 mm Strain Relief



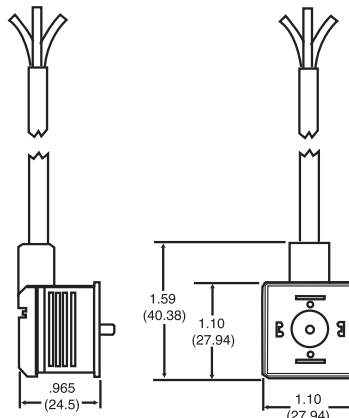
1/2" Conduit Connector



CDW-30



CHW-30



CSN-30 30 mm Strain Relief

