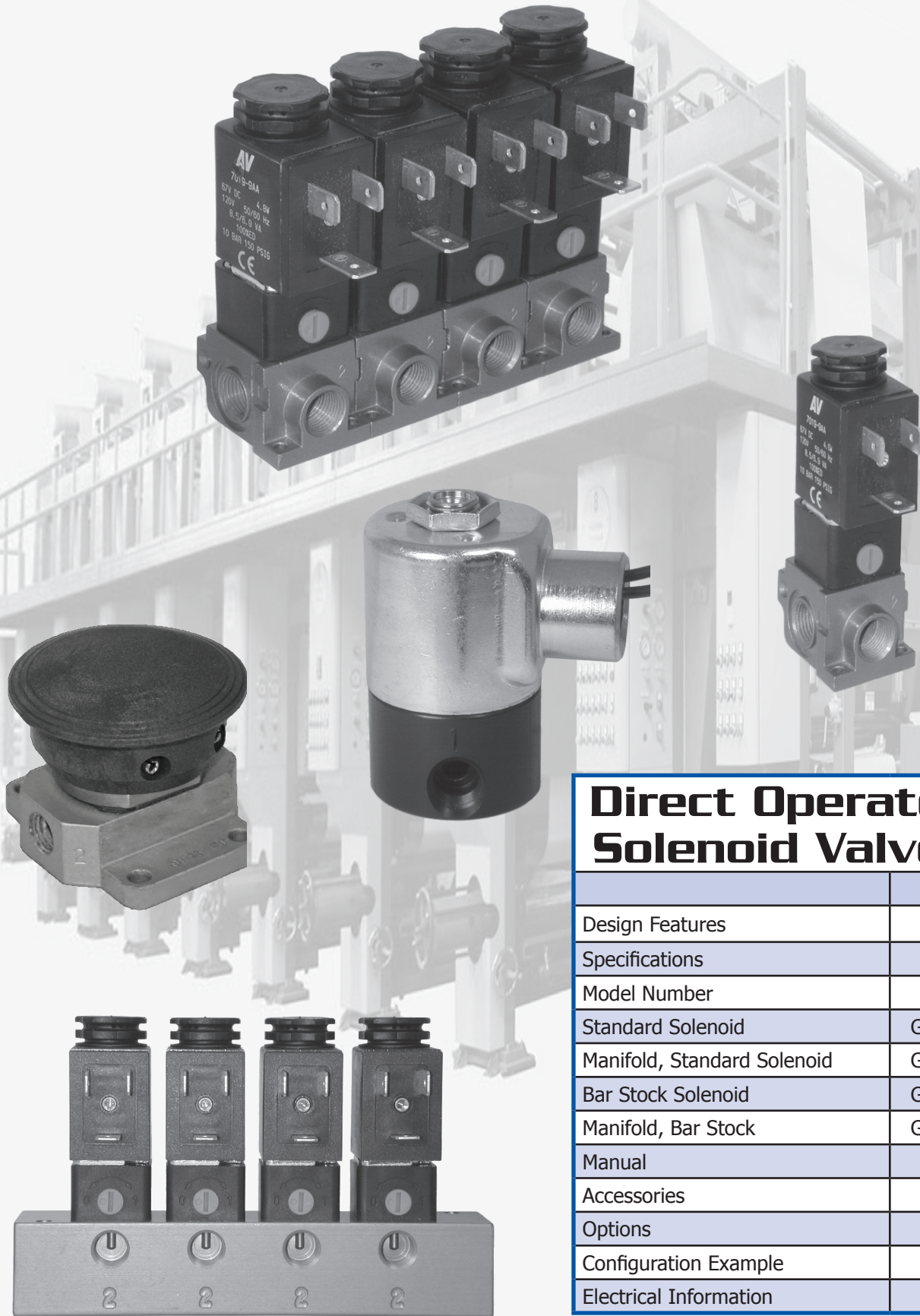


# AV Automatic Valve

A ROSS CONTROLS Company



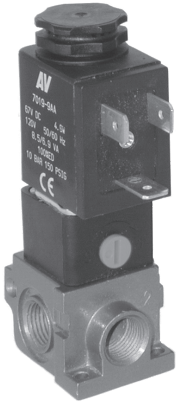
## Direct Operated Solenoid Valves

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# Direct Operated Solenoid Valves Design Features



K0222JAXR-AA



K0302JABR

## Direct Solenoid Valves

- Direct acting solenoid valves for compact, low profile and high performance.
- 2 way or 3 way function.
- Push Turn-Locking Override is standard
- Many options are available to meet your specific requirements: materials, flows, environmental ratings, manifolding. Please consult the factory.
- Specific application needs? Consult the factory. We will build it for you.



K08: 260A-2G

## Manual Valves

- Long life poppet construction.
- Corrosion resistant internals.
- Body design simplifies mounting and piping.
- Optional ring guard available to protect against accidental valve actuation.



## Products Certified To:

- CSA - (C22.2 and UL STD 429)
- Factory Mutual - Explosion Proof Environments
- ATEX - Explosion Proof Environments
- CE - EMF and Low Voltage Directives



# Direct Operated Solenoid Valve Specs & Model Numbers

2/2

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Direct Operated Solenoid Valves

## Specifications

Valve Operation		Valve Operation			
 DE-ENERGIZED IN(1) CYL(2)	 ENERGIZED IN(1)	<b>2/2 Normally Closed</b> <b>De-Energized:</b> Blocks Pressure <b>Energized:</b> Applies Pressure	 DE-ENERGIZED EXH(3) IN(1)	 ENERGIZED EXH(3) IN(1)	<b>3/2 Normally Closed</b> <b>De-Energized:</b> Exhausts Pressure <b>Energized:</b> Applies Pressure
 DE-ENERGIZED IN(1) CYL(2) PLUG	 ENERGIZED IN(1) PLUG	<b>2/2 Normally Open</b> <b>De-Energized:</b> Applies Pressure <b>Energized:</b> Blocks Pressure	 DE-ENERGIZED IN(1) CYL(2)	 ENERGIZED IN(1) EXH(3)	<b>3/2 Normally Open</b> <b>De-Energized:</b> Applies Pressure <b>Energized:</b> Exhausts Pressure
<b>Operating Temperatures</b> 	<b>Solenoid Pilot Operated</b>	<b>Buna-N Seals (NBR) (Standard-K08)</b>	<b>Fluoroelastomer Seals (FPM (FKM)) (Standard-K02; Option A-K03&amp;K08)</b>		
	Standard	-18°C to +50°C (0°F to +123°F)	-18°C to +50°C (0°F to +123°F)		
<b>Operating Pressures</b> 	<b>Solenoid Pilot Operated</b>	<b>Inlet Port</b>		<b>External Pilot Port</b>	
	Standard	K02	AC	100 - 1030 kPa (Vacuum - 150 PSIG)	Not Required
-	K03	DC	100 - 517 kPa (Vacuum - 75 PSIG)		
		AC	100 - 690 kPa (Vacuum - 100 PSIG)		
		K08		100 - 1030 kPa (Vacuum - 150 PSIG)	
<b>Filtration &amp; Lubrication</b> 	<b>Media - Air Or Inert Gas</b> Air Line Lubrication of Automatic Valve products is not required, but is recommended to maximize service life. Oils should be compatible with seal material, have an ISO 32 viscosity, and have an aniline range between 82°C (180°F) and 99°C (210°F). Filter to 50 microns or better. For temperatures below 40°F, air must be dry to prevent formation of ice. Refer to the Maintenance section of this catalog for recommended lubricants.				

## Model Numbers

Series	Base Type	Port Size	Body Type	Body Design	Operator 1	Operator 2	Voltage <sup>1</sup>	Options*
K02	0 Valve Less Base	0 -	G 3 Way NC H 3 Way NO J 2 Way NC K 2 Way NO	A Single	X Weather-Proof Solenoid	R Spring Return	-AA 110/50, 120/60 -AB 220/50, 240/60, 125VDC -DA 22/50, 24/60, 12VDC -DB 24VDC	C Conduit Coil CT Conduit Coil High Temperature G 18" Flying Leads O Exhaust Nut S 303 Stainless Steel Body (Bar Stock only) SS 316 Stainless Steel Body (Bar Stock only) Y Explosion-Proof Coil Z Explosion-Proof Coil 2 Extended Turn-Locking Override 4 No Override
	2 Inline or Manifold	2 1/8						
	2 Sub-Base	3 1/4						
K03	0 Inline	2 1/8			B Weather-Proof Solenoid			A Fluoroelastomer Seals
		3 1/4			D Explosion-Proof Solenoid			F Potted Solenoid T High Temperature Coil

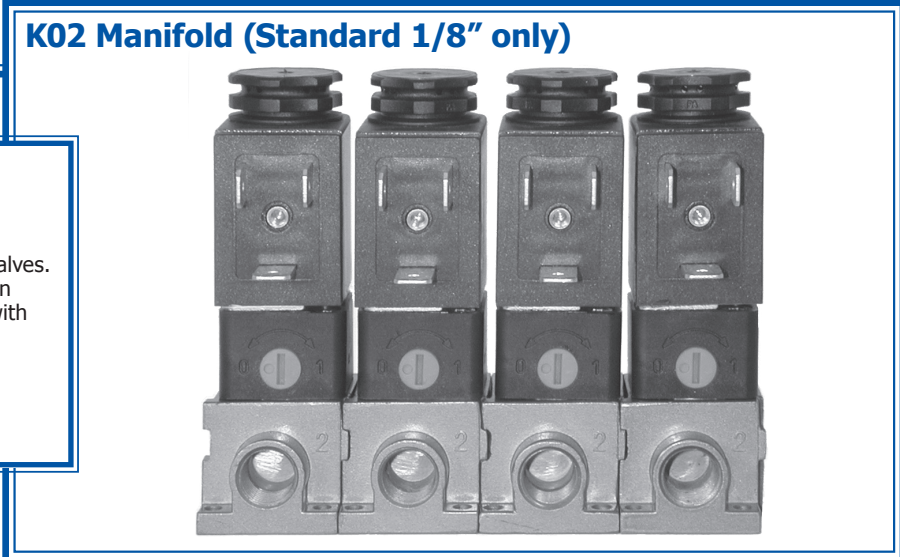
K08 Series	Body Type	Port Size	Function	Options*
260A	Inline	2 1/4	2 Way NC	A Fluoroelastomer Seals B Blue G Green R Red
360A			3 Way NC	

\* Not all Options are available for all models. Refer to "Options" at the end of this Section for additional information.  
<sup>1</sup> Consult the Factory for additional voltages.

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# Direct Operated Solenoid Valve Standard Solenoid & Manifold



## Manifold Model Number

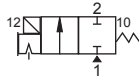
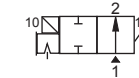
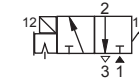

A K02 manifold consists of individual K02 valves. Each Station mounts to the adjacent Station using a single screw and o-ring (included with each individual K02 valve).

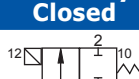
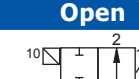
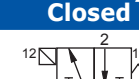

See chart below for K02 model numbers.

Shown (right): Quantity 4 K0222JAXR-AA assembled as a manifold

## Model Numbers

G



Series	Port Size			Flow l/min (Cv)	2/2		3/2		Materials		Wt Kg (lb)
	1	2	3		Normally Closed	Normally Open	Normally Closed	Normally Open	Body	Seal	
											
<b>K02</b>	1/8	1/8	M5	100 (0.1)	<b>K0222JAXR-**</b>	<b>K0222KAXR-**</b>	<b>K0222GAXR-**</b>	<b>K0222HAXR-**</b>	Aluminum	FPM (FKM)	0,14 (0.3)

Series	Port Size			Flow l/min (Cv)	2/2		3/2		Materials		Wt Kg (lb)
	1	2	3		Normally Closed	Normally Open	Normally Closed	Normally Open	Body	Seal	
											
<b>K03</b>	1/8	1/8	1/8	200 (0.2)	<b>K0302JABR-**</b>	<b>K0302KABR-**</b>	<b>K0302GABR-**</b>	<b>K0302HABR-**</b>	Aluminum	NBR	0,57 (1.3)
	1/4	1/4	1/4		<b>K0303JABR-**</b>	<b>K0303KABR-**</b>	<b>K0303GABR-**</b>	<b>K0303HABR-**</b>			

\*\* = Coil Voltage Code. Coils also sold separately. Refer to "Electrical Information" at the end of this Section for additional information.

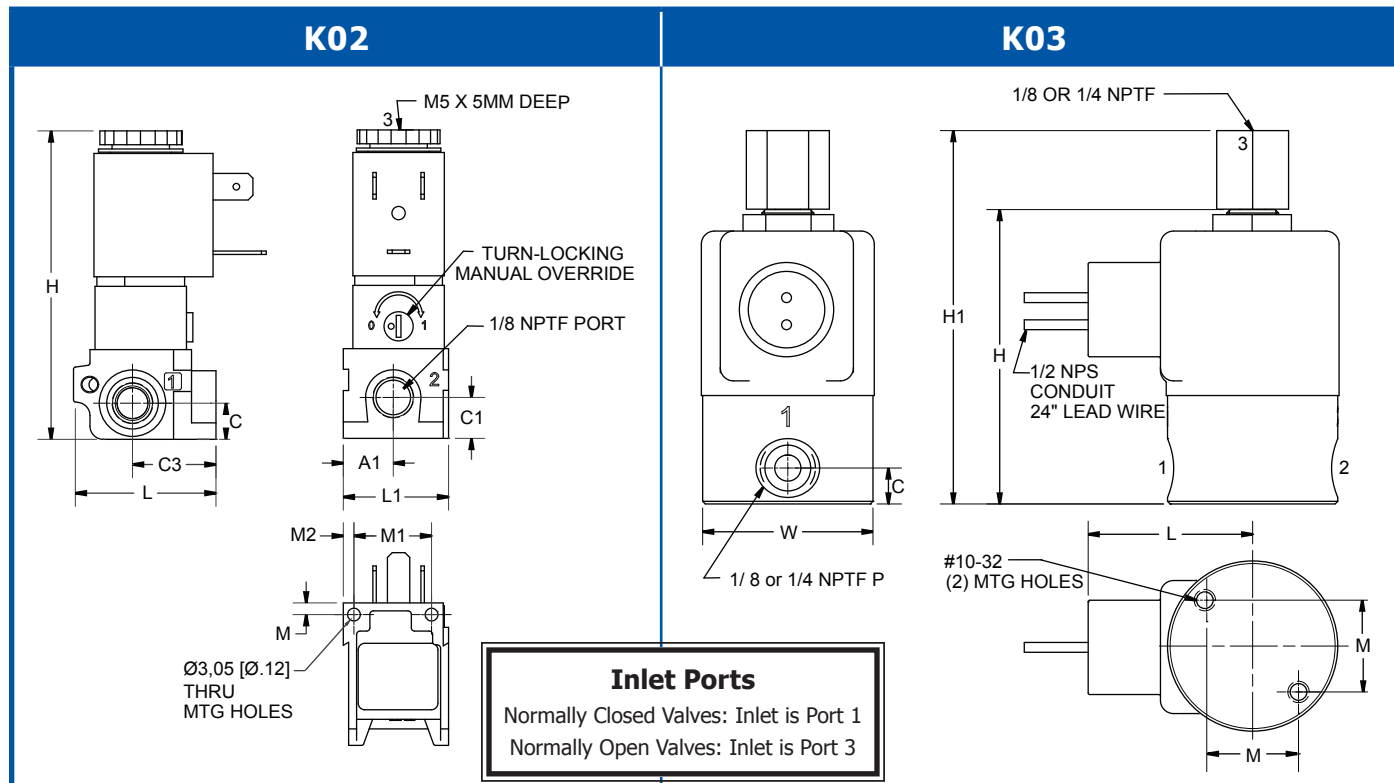


# Direct Operated Solenoid Valve Standard Solenoid & Manifold

2/2   
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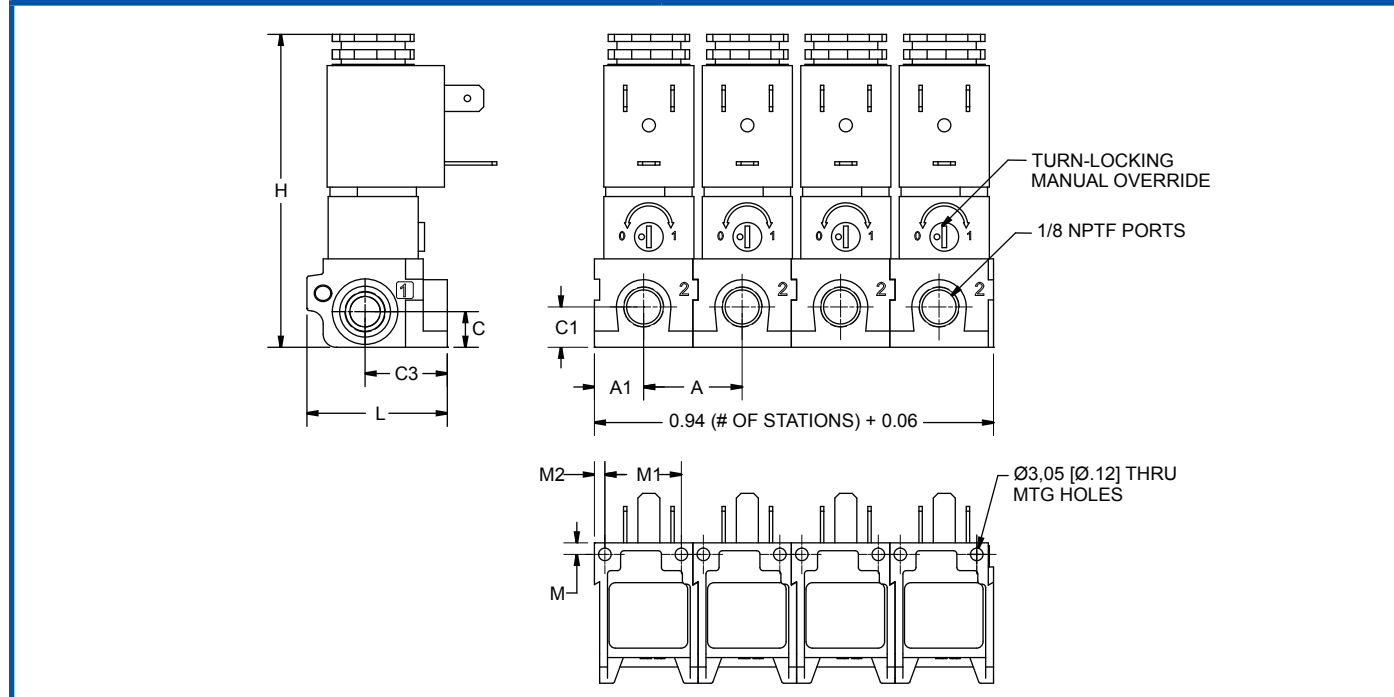
Direct Operated Solenoid Valves

## Dimensional Information



**Inlet Ports**  
Normally Closed Valves: Inlet is Port 1  
Normally Open Valves: Inlet is Port 3

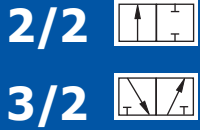
## K02 Manifold



Series	A	A1	C	C1	C3	H	H1	L	L1	M	M1	M2	W
K02	23,88 0.94	11,94 0.47	8,64 0.34	9,78 0.39	19,94 0.79	75,87 2.99	-	33,60 1.32	25,15 0.99	2,79 0.11	18,54 0.73	2,54 0.10	-
K03		-	8,64 0.34	-	-	71,37 2.81	90,53 3.56	39,88 1.57	-	22,25 0.88	-	-	41,28 1.63

Units of Measure: Top - mm, Bottom - inches

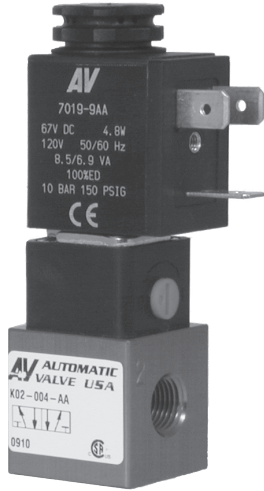




# Direct Operated Solenoid Valve Bar Stock & Manifold

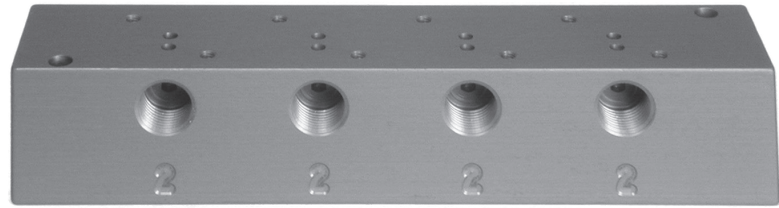


**K02**



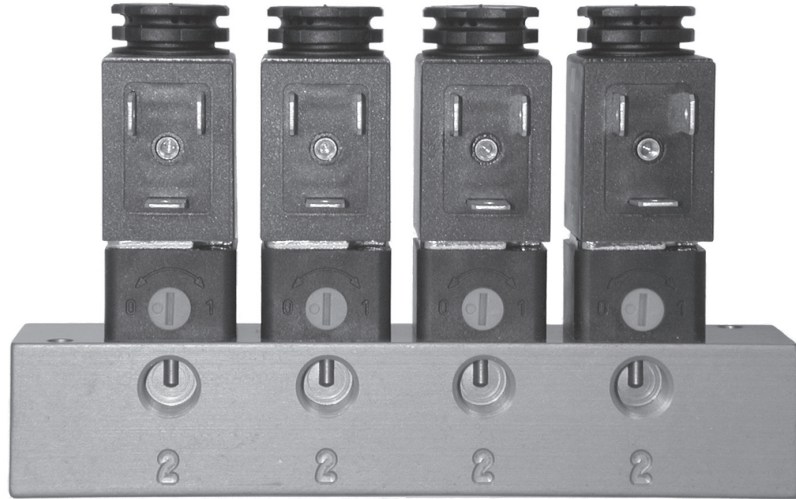
K02-004-AA

**Manifold**



7116-004

**4 K02 on 4 Station Manifold**



Quantity 4 K0200GAXR-AA on a 7116-004

## Model Numbers

Series	Base Type	Port Size			Flow l/min (Cv)	2/2		3/2		Mat'l		Wt Kg (lb)
		1	2	3		Normally Closed	Normally Open	Normally Closed	Normally Open	Body	Seal	
K02	none	-	-	M5	100 (0.1)	K0200JAXR-**	K0200KAXR-**	K0200GAXR-**	K0200HAXR-**	Aluminum <sup>2</sup>	FPM (FKM)	0,2
	Sub <sup>1</sup>	1/8	1/8			K02-006-**	K02-007-**	K02-004-**	K02-005-**			0,14
	Sub <sup>1</sup>	1/4	1/4			K0223JAXR-**	K0223KAXR-**	K0223GAXR-**	K0223HAXR-**			(0.3)

\*\* = Coil Voltage Code. Coils also sold separately. Refer to "Electrical Information" at the end of this Section for additional information.

<sup>1</sup> Can not be used on a manifold; order a valve without a base, see K0200\*AXR-\*\* valves above.

<sup>2</sup> Body Available in 303 or 316 Stainless Steel (Bar Stock only). Refer to "Options" at the end of this Section for additional information.

	No. of Stations	Model Number	Ports		Weight kg (lb)	Accessories
			1	2		Cover Plate
Base	1	7115-013	1/8	1/8	0,04 (0.09)	-
		7115-025	1/4	1/4		-
Manifold*	2	7116-002	1/4	1/8	0,12 (0.26)	A7116-606
	4	7116-004			0,20 (0.44)	
	6	7116-006			0,28 (0.62)	
	8	7116-008			0,36 (0.80)	

\* Seals and Mounting Hardware included.



# Direct Operated Solenoid Valve Bar Stock & Manifold

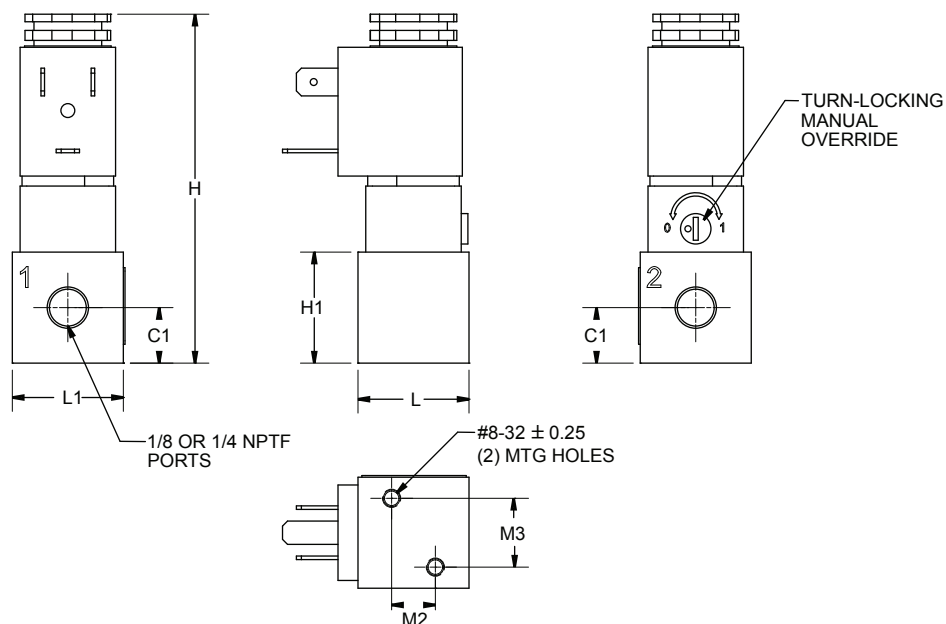
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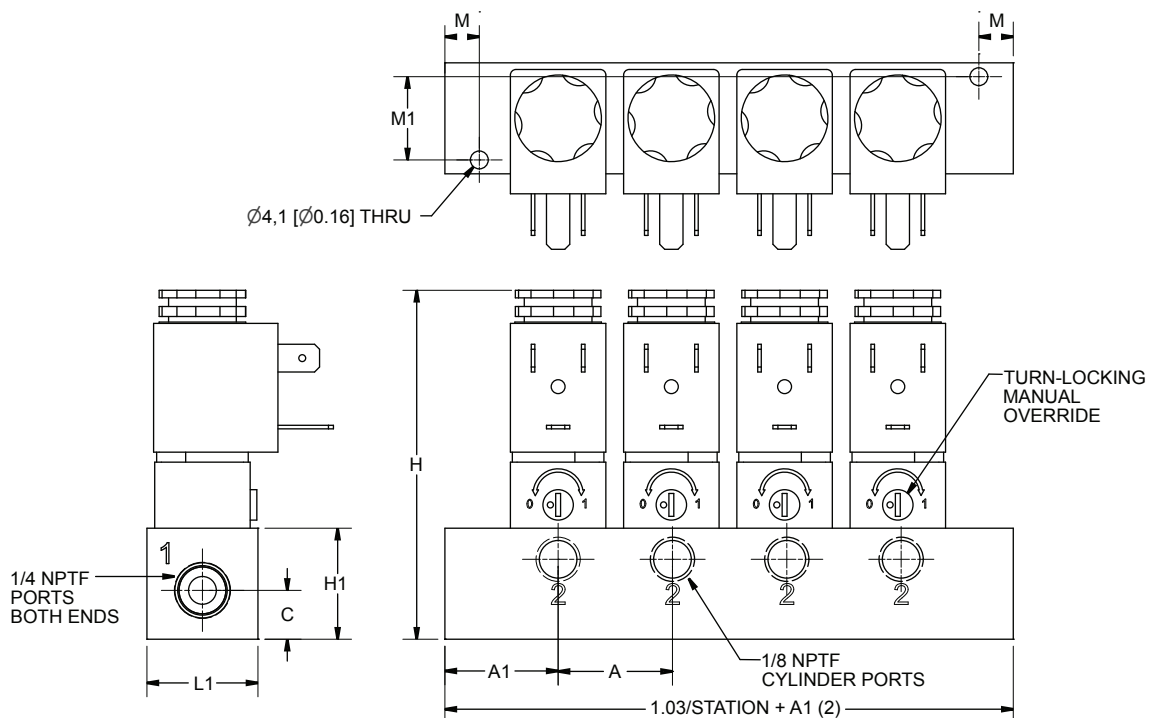
Direct Operated Solenoid Valves

## Dimensional Information

### K02 Bar Stock



### K02 Bar Stock Manifold



Series	A	A1	C	C1	H	H1	L	L1	M	M1	M2	M3
K02	26,2 1.03	25,9 1.02	11,2 0.44	12,7 0.50	79,8 3.14	25,4 1.00	25,4 1.00	25,4 1.00	7,87 0.31	19,1 0.75	9,91 0.39	15,7 0.62

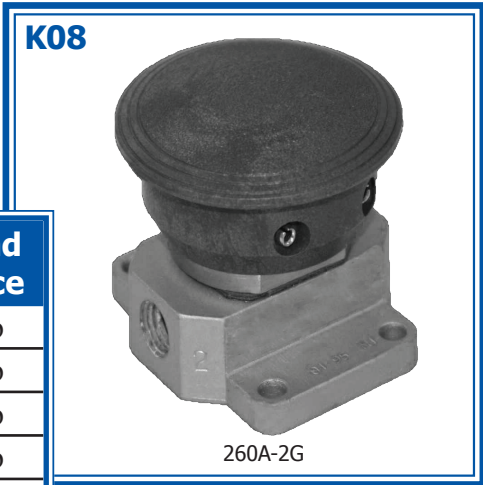
Units of Measure: Top - mm, Bottom - inches



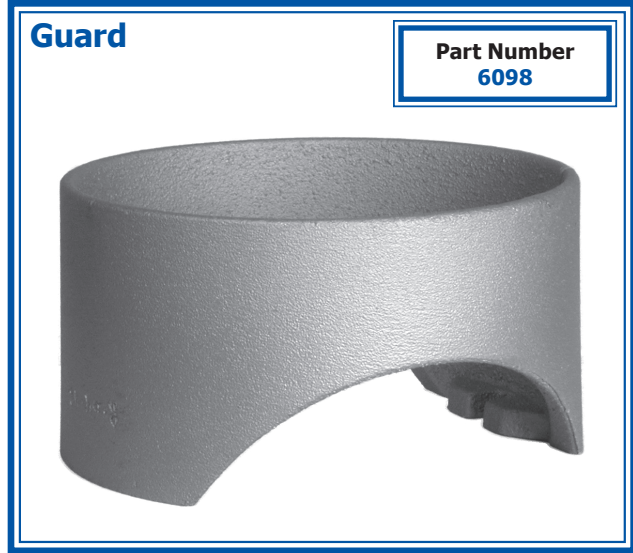
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3/2 

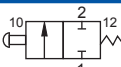
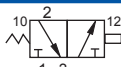
# Direct Operated Solenoid Valve Manual & Accessories



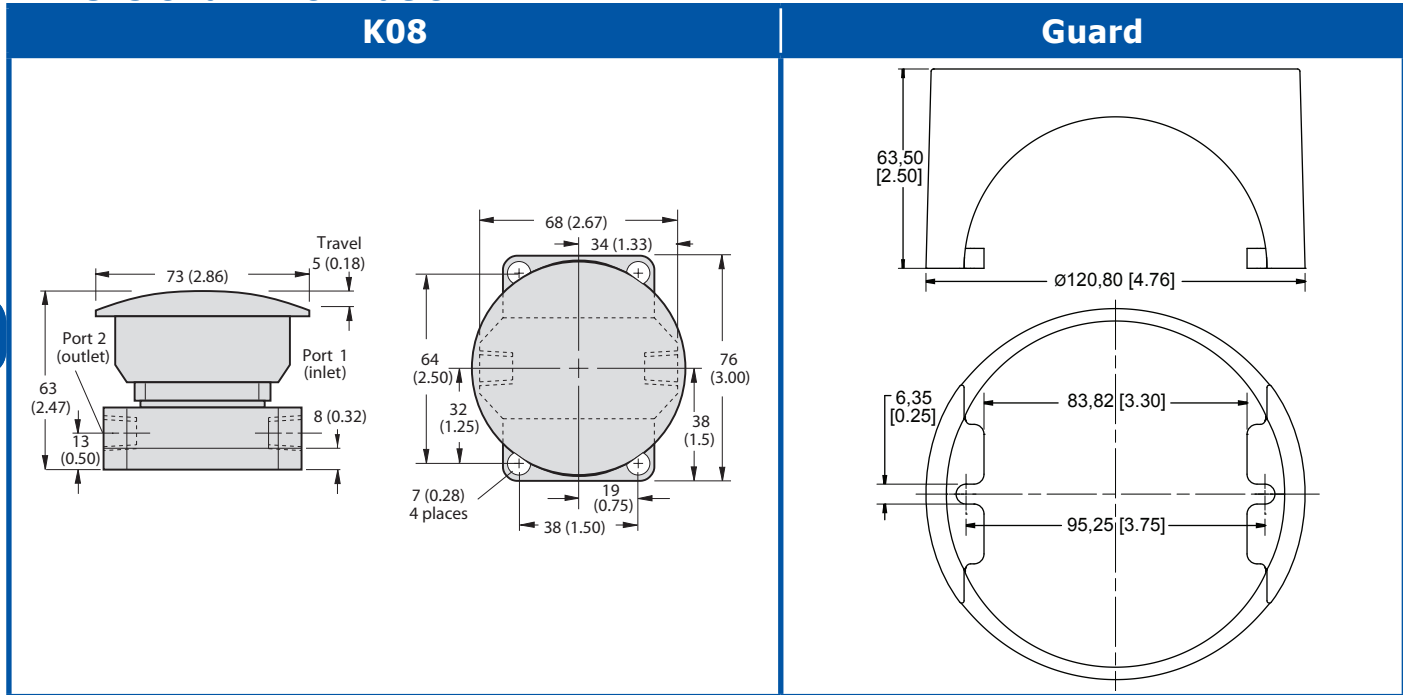
Air Pressure	Hand Force
20 lb	4 lb
40 lb	6 lb
60 lb	8 lb
80 lb	9 lb
100 lb	10 lb



## Model Numbers

Series	Port Size	Port Loc'n	Flow l/min (Cv)	2/2	3/2	Materials		Wt Kg (lb)
						Body	Seal	
K08	1/4	Side	790 (0.8)	<b>260A-2</b>	<b>360A-2</b>	Aluminum	NBR	0,4 (0.9)

## Dimensional Information



## K08 Accessories

Part Number	Description
6098	<b>Guard</b> Ring type shield used to prevent inadvertent valve actuation.



# Direct Operated Solenoid Valve Options

2/2

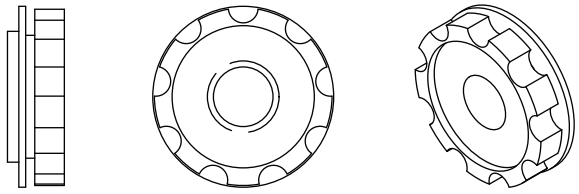


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Direct Operated Solenoid Valves

## K02 Options (Add the suffix to the end of the model number in alpha-numeric order)

Suffix	Option	Description
C	Conduit Coil	Refer to the "Electrical Information" page in this section for details.
CT	Conduit Coil High Temperature	Refer to the "Electrical Information" page in this section for details.
G	Coil With 18" Leads	Refer to the "Electrical Information" page in this section for details.
O	Exhaust Nut	Open-top retainer nut for access to solenoid stem (K02 Only). 
S	303 Stainless Steel	303 Stainless Steel body, all other external parts corrosion resistant; for corrosive environment applications. (K02 Bar Stock Only)
SS	316 Stainless Steel	316 Stainless Steel body, all other external parts corrosion resistant; for corrosive environment applications. (K02 Bar Stock Only)
Y	Explosion-Proof Coil (CSA, FM)	Refer to the "Electrical Information" page in this section for details.
Z	Explosion-Proof Coil (Atex, PTB)	Refer to the "Electrical Information" page in this section for details.
2	Extended Turn-Locking Override	Solenoid cap provides an extended override that is turned to lock in the "on" position.
4	No Override	Solenoid cap does not provide a manual override.

## K03 Options (Add the suffix to the end of the model number in alpha-numeric order)

Suffix	Option	Description
A	Fluoroelastomer Seals	For applications where fluid media or ambient conditions are not compatible with nitrile seals. <i>Note: Fluorocarbon seals do not increase the effective temperature range of the valve. For high temperature applications, consult the factory.</i>
T	High Temperature Coil	Refer to the "Electrical Information" page in this section for details.

G

## K08 Options (Add the suffix to the end of the model number in alpha-numeric order)

Suffix	Option	Description
A	Fluoroelastomer Seals	For applications where fluid media or ambient conditions are not compatible with nitrile seals. <i>Note: Fluorocarbon seals do not increase the effective temperature range of the valve. For high temperature applications, consult the factory.</i>
B	Blue	Button is Blue
G	Green	Button is Green
R	Red	Button is Red

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# Direct Operated Solenoid Valve Configuration Example



Valve With W-Solenoid Cap + Coil = Valve With Coil



**K0223GAXR**

+



NEMA 4x with DIN  
43650 Form B  
Connection

**7019-9\*\***

=



**K0223GAXR-\*\***



**K0223GAXR**

+



NEMA 4x with  
18" Leads

**7019-9\*\*G**

=



**K0223GAXR-\*\*G**



**K0223GAXR**

+



NEMA 4x 1/2" Conduit  
with 30" Leads

**7019-9\*\*C**

=



**K0223GAXR-\*\*C**



**K0223GAXR**

+



Explosion-Proof 1/2"  
Conduit with 24" Leads

**7019-9\*\*Y**

=



**K0223GAXR-\*\*Y**



**K0223GAXR**

+



ATEX Explosion-Proof  
with 39" Cable

**7152-9\*\***

=



**K0223GAXR-\*\*Z**



# Direct Operated Solenoid Valve

## Electrical Information

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Direct Operated Solenoid Valves

### Part Numbers

Description	Series	Operator Type	Instructions	Wt. Kg (lb)	Coil Part Number **=Voltage
<b>Weather-Proof</b> DIN 43650 Industrial Form B Connection NEMA 4X	K02	X	Order coil separately (specify voltage code from below)	0,05 (0.12)	<b>7019-9**</b>
<b>Weather-Proof</b> 18" Leads NEMA 4X	K02	X	Order coil separately (specify voltage code from below)	0,05 (0.12)	<b>7019-9**G</b>
<b>Weather-Proof</b> 1/2" Conduit with 30" Leads NEMA 4X	K02	X	Order coil separately (specify voltage code from below)	0,05 (0.12)	<b>7019-9**C</b> <b>7019-9**CT</b> (high temp 82°C max)
<b>Explosion-Proof</b> 1/2" Conduit with 24" Leads CSA & FM Approved CL. I; Zone 1 Exm II T4; AExm II CL. I; Div.1; GR. A, B, C, D CL. II; GR. E, F, G CL. III T4 Ta=-20°C to +60°C NEMA 4, 4X, 7C, 7D, 9	K02	X	Order coil separately (specify voltage code from below)	0,20 (0.44)	<b>7019-9**Y</b>
<b>Explosion-Proof</b> 3m Cable & Strain Relief Ex m II T5 PTB 03 ATEX2018 X Ex II 2 G EEx m II T5 Ex II 2 D IP65 T95°C	K02	Z	Order coil separately (specify voltage code from below)	0,36 (0.78)	<b>7152-9**</b>
<b>Weather-Proof</b> 1/2" Conduit with 24" Leads NEMA 4x	K03	B	Coil included (specify voltage code from below)	0,27 (0.61)	<b>A5983-**F</b>
<b>Explosioin-Proof</b> 1/2" Conduit with 24" Leads CL. I; Div.2; GR. A & B. CL. I; Div.1; GR. C & D CL. II; Div.1; GR. E, F, G	K03	D	Coil included (specify voltage code from below)	0,48 (1.05)	<b>A6454-**F</b>

### Voltage Codes (Lower wattage options available, consult factory)

K02	Current (Amps)				Resistance (OHMS @ 25°C)				Power (AC=VA, DC=Watts)					
	Inrush		Holding		X		Z		X		Z			
	Operator Type:	X	Z	X	Z	X	Z	X	Z	X	Z			
** Code	Volt. +/-10%	NEMA	Atex	NEMA	Atex	NEMA	Atex	NEMA	Atex	NEMA	Atex			
4	7,9&Z	4	7,9	4	7,9	4	7,9	4	7,9	4	7,9			
DA	24/50 24/60	-	.36	-	-	.24	-	-	32	-	-	6.9	-	-
AA	120/50 120/60	120/60	.08	.10	-	.05	.05	-	840	530	-	6.9	6.5	-
AB	230/50 230/60	240/60	.04	.05	-	.03	.03	-	3310	2345	-	6.4	6.8	-
DA	12VDC	12VDC	.38	.38	-	.38	.38	-	32	32	-	4.8	4.5	-
DB	24VDC	24VDC	.20	.19	.05	.20	.19	.05	121	128	275	4.8	4.5	1.6
AB	125VDC	-	.04	-	-	.04	-	-	3310	-	-	5.9	-	-

K03	Current (Amps)				Resist. (OHMS @ 25°C)				Power (Watts)		
	Inrush		Holding		B		D		B	D	
	Operator Type:	B	D	B	D	B	D	B	D		
** Code	Volt. ±10%		NEMA								
4	7,9	4	7,9	4	7,9	4	7,9	4	7,9	4	7,9
AA	100/50 120/60	120/60	.26	.26	.16	.16	156	156	8.7	7.3	
AB	208/50 240/60	240/60	.13	.13	.08	.08	636	636	8.7	7.3	
DA	12VDC	12VDC	.80	.80	.80	.80	15.1	15.1	9.5	9.5	
DB	24VDC	24VDC	.39	.39	.39	.39	62	62	9.5	9.5	

### Connectors (Not polarity dependent)

DIN 43650 Industrial Form B	Strain Relief without Cord		Strain Relief with Light		1/2" Conduit without Cord	Molded with 6' Cord	Strain Relief with Light & 6' Cord	
	100-240 AC 48-120 DC		6-48 AC/DC				100-240 AC 48-120 DC	
Part Number	<b>7020-001</b>	<b>7020-AA</b>	<b>7020-DB</b>	<b>7039-001</b>	<b>7020-006</b>	<b>7094-006</b>	<b>7094-007</b>	

