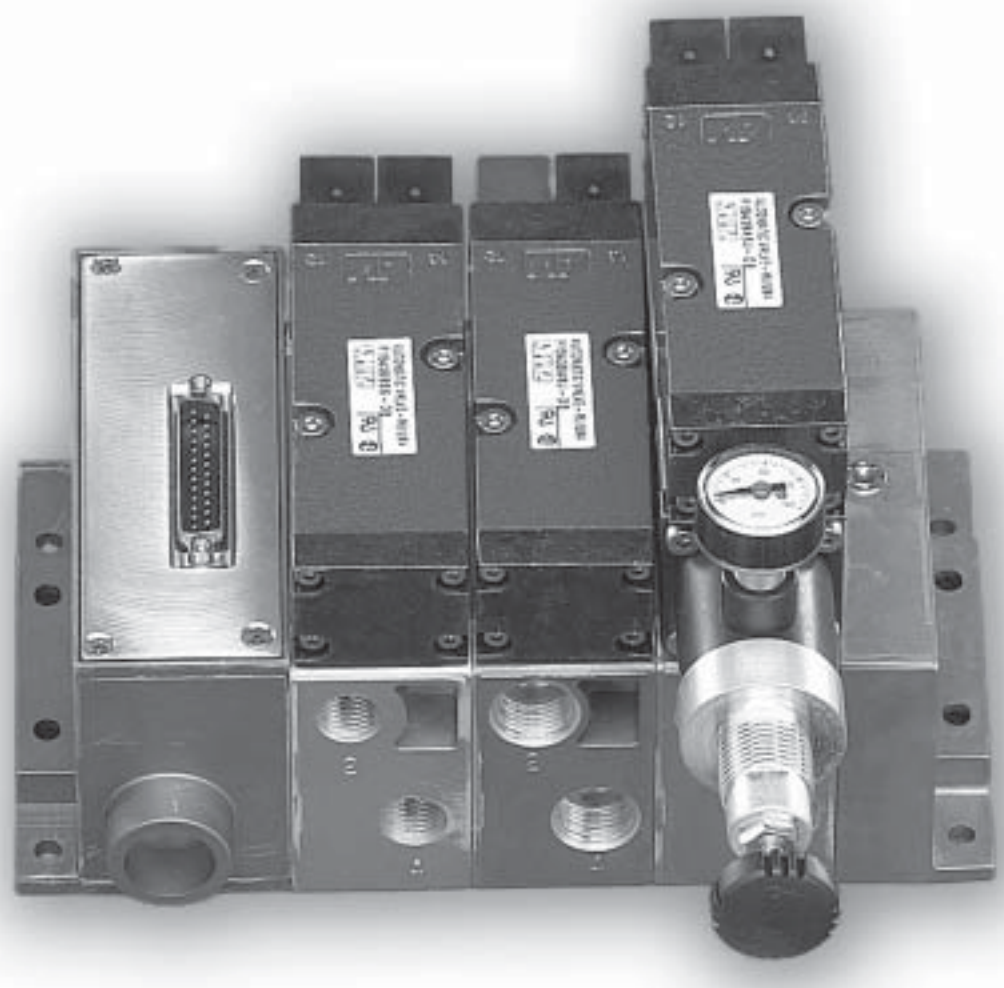
ISO 9001

AUTOMATIC VALVE



FIELD BUS SPOOL VALVES

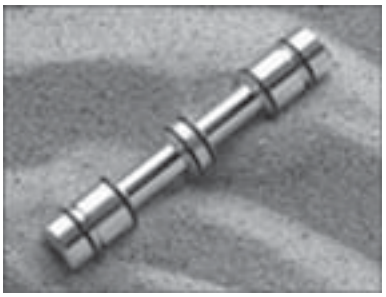
5/2

5/3

DESIGN FEATURES

VALVES

- Modular design allows for solutions tailored exactly to your needs, easy upgrades.
- Circuit boards replace wire tangles.
- Terminal strip, PLC and multiple serial bus electronic interfaces available.
- Pneumatic accessories include interposed regulator with gage port; dual pressure isolated station feeds; pilot operated checks, flow controls and soft start.
- Piped solenoid exhaust is standard.
- Diecast aluminum body, aluminum spool, zamak alloy end caps.
- 1.6 - 2.0 Cv.

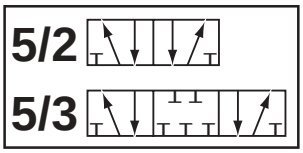


TAPERED FLEX SEAL....COMPACT DESIGN

- Tough, new, inverted NBR Tee-Seal retains the advantages of our standard seals. Eliminates Monday morning sticking problems.
- Abrasion resistant formulation.
- Ability to run with or without lubrication (if lubrication is not started).

INDEX

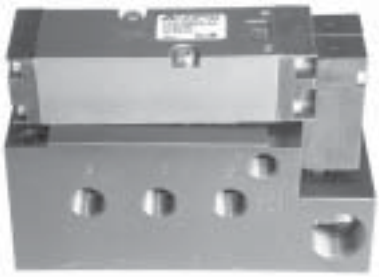
DESIGN FEATURES (continue)



SOLENOID....GUARANTEED AGAINST BURNOUT

- 1.2 watt Nema 4/IP65 solenoid.
- Polarity insensitive.
- LED status indicator - green.
- Internal surge supression.
- Seal material: NBR.
- Three-way pilot uses full air line pressure to shift the valve.
- Pilot is internally supplied when the pressure at port one is 35 to 120 PSIG (240 to 830 KPA).
- Coil is hermetically sealed as an integral watertight molded unit.
- Push non-locking override is standard.

BASE MOUNTED VALVES
5 PORTED 4 WAY 2 AND 3 POSITION Cv 1.6



- Internal wiring eliminated.
- Easy connect terminal strip.
- 1.2 watt solenoid or air pilot.
- Designed to meet Nema 4/IP65 specifications.

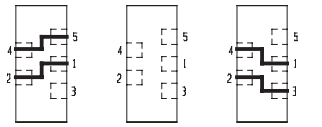
MANIFOLD MOUNTED VALVES
5 PORTED 4 WAY 2 AND 3 POSITION Cv 1.6

- Multipurpose electrical interface cap allows round, conduit or sub-d connection.
- Captured fasteners for easy assembly.
- Easy, flexible connection to serial bus/electronics.
- Push-to-connect cartridge fittings available.
- Station positions may be moved without changes to valves or boards.
- Designed to meet Nema 4/IP65 specifications.

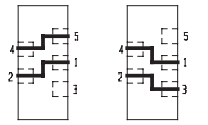
5/2
5/3

SPECIFICATIONS

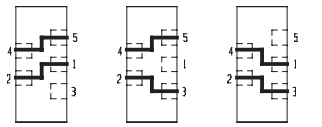
VALVE OPERATION



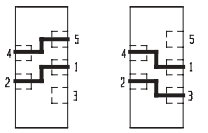
5/3 BLOCK - 4 way 3 position blocked center valves operate like 5/2 double valves except shift when a maintained signal is applied to either 1-2 or 1-4. Valves reset to center position when signal is removed with all ports blocked.



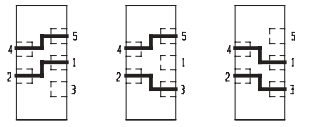
5/2 SINGLE - 4 way 2 position single operator valves shift, apply pressure from port 1 to 4, and exhaust pressure from port 2 to 3 when a maintained signal is applied to operator 1-4. Valves reset, apply pressure from port 1 to 2, exhaust pressure from port 4 to 5 when the signal is removed.



5/3 EXHAUST - 4 way 3 position exhaust center valves operate like 5/2 double valves except shift when a maintained signal is applied to either 1-2 or 1-4. Valves reset to center position when signal is removed with port 2 open to 3, port 4 open to 5, and port 1 blocked.



5/2 DOUBLE - 4 way 2 position double operator valves shift, apply pressure from port 1 to 4,and exhaust pressure from 2 to 3 when a momentary signal is applied to operator 1-4. Valves shift, apply presure from port 1 to 2, and exhaust pressure from 4 to 5 when a momentary signal is applied to operator 1-2.



5/3 PRESURE - 4 way 3 position pressure center valves operate like 5/2 double valves except shift when a maintained signal is applied to either 1-2 or 1-4. Valves reset to center position when signal is removed with port 1 open to ports 2 and 4, and ports 3 and 5 are blocked.

OPERATING TEMPERATURES	SOLENOID PILOT OPERATED	TREATED BUNA-N SEALS (TREATED NBR, Standard)
	Standard	-18°C to +52°C (0°F to +125°F)

OPERATING PRESSURES	SOLENOID PILOT OPERATED	INLET PORT	EXTERNAL PILOT PORT
	Standard 2 Position	240 - 830 kPa (35 - 120 PSIG)	Not Required
	Standard 3 Position	345 - 830 kPa (50 - 120 PSIG)	Not Required
	External Pilot (Option B)	Vacuum - 240 kPa (Vacuum - 35 PSIG)	240 - 830 kPa (35 - 120 PSIG)

FILTRATION AND LUBRICATION

MEDIA - AIR OR INERT GAS

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 of 82°C (180°F) and 99°C (210°F). Refer to Maintenance section of catalog for recommended lubricants.

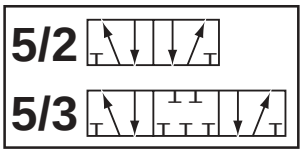
Filter to 50 microns or better.
For temperatures below 40°F, air must be dry to prevent formation of ice.

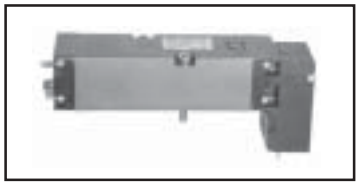
MODEL NUMBER CHART

SERIES	BODY TYPE	PORT SIZE	FUNCTION	BODY DESIGN	OPERATOR 1	CENTER OPERATOR	OPERATOR 2	VOLTAGE	OPTIONS
F15	0 LESS BASE 1 SUB-BASE (SIDE PORTS) 2 SUBBASE (BOTTOM# PORTS) 3 MANIFOLD* (SIDE PORTS) 4 MANIFOLD* (SIDE/BOTTOM PORTS)	0 N/A 3 1/4 4 3/8 G 1/4 BSPP H 3/8 OD PUSH-IN TUBE	B 4 WAY 2 POSITION C 4 WAY 3 POSITION BLOCK D 4 WAY 3 POSITION EXHAUST E 4 WAY 3 POSITION PRESSURE	A SINGLE B DOUBLE	S SOLENOID - PLUG-IN W SOLENOID - DIN	D 3 POSITION SPRING	J AIR SPRING R SPRING ONLY S SOLENOID - PLUG-IN W SOLENOID - DIN	AA 110/50, 120/60 DB 24VDC	B EXTERNAL PILOT CONNECTION Z 2.0 Cv FLOW (BOTTOM PORTS)

*End caps required. See page D8 for information.

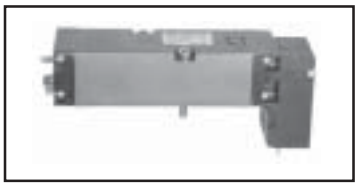
MODEL NUMBER PREFIX





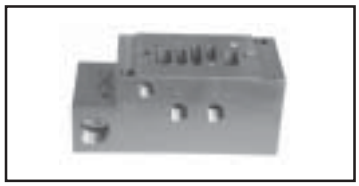
= F1500

VALVE ONLY



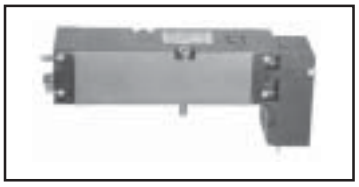
VALVE

+



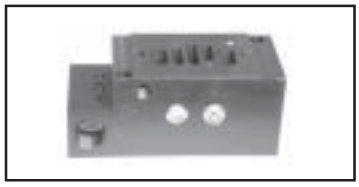
SUB-BASE
(SIDE PORTS)

= F151



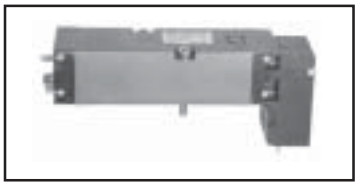
VALVE

+



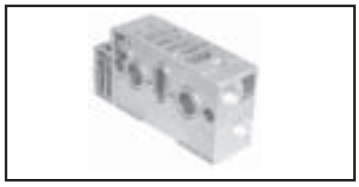
SUB-BASE
(BOTTOM PORTS)

= F152



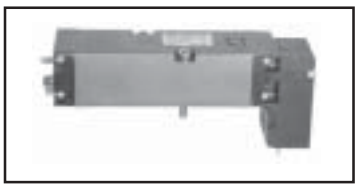
VALVE

+



MANIFOLD
(SIDE PORTS)

= F153



VALVE

+

MANIFOLD
(SIDE / BOTTOM
PORTS)

= F154

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STANDARD
PLUG-IN SOLENOID MODELS

VALVE ONLY

VALVE WITH SUBBASE

VALVE WITH MANIFOLD

MODEL NUMBERS

SERIES Cv (l/min)	BODY TYPE	PORT SIZE	SOL. TYPE	5/2 SINGLE	5/2 DOUBLE	5/3 BLOCK	5/3 EXHAUST	5/3 PRESSURE	BODY MATERIAL	SEAL MATERIAL	Kg (LB)
F15 1.6 (1570)	VALVE ONLY	-	S	F1500BASJ - **	F1500BBSS - **	F1500CBSDS - **	F1500DBSDS - **	F1500EBSDS - **	ALUMINUM	NBR	,25 (.6)
	VALVE WITH SUB-BASE (SIDE PORTS)	1/4 (NPT)	S	F1513BASJ - **	F1513BBSS - **	F1513CBSDS - **	F1513DBSDS - **	F1513EBSDS - **			1,1 (2.4)
		3/8 (NPT)	S	F1514BASJ - **	F1514BBSS - **	F1514CBSDS - **	F1514DBSDS - **	F1514EBSDS - **			
	VALVE WITH SUB-BASE (BOTTOM PORTS)	1/4 (NPT)	S	F1523BASJ - **	F1523BBSS - **	F1523CBSDS - **	F1523DBSDS - **	F1523EBSDS - **			
		3/8 (NPT)	S	F1524BASJ - **	F1524BBSS - **	F1524CBSDS - **	F1524DBSDS - **	F1524EBSDS - **			
	VALVE WITH MANIFOLD (SIDE PORTS)	1/4 (NPT)	S	F1533BASJ - **	F1533BBSS - **	F1533CBSDS - **	F1533DBSDS - **	F1533EBSDS - **			,6 (1.4)
		3/8 (NPT)	S	F1534BASJ - **	F1534BBSS - **	F1534CBSDS - **	F1534DBSDS - **	F1534EBSDS - **			
	VALVE WITH MANIFOLD (SIDE / BOTTOM PORTS)	1/4 (NPT)	S	F1543BASJ - **	F1543BBSS - **	F1543CBSDS - **	F1543DBSDS - **	F1543EBSDS - **			
		3/8 (NPT)	S	F1544BASJ - **	F1544BBSS - **	F1544CBSDS - **	F1544DBSDS - **	F1544EBSDS - **			

**Specify Voltage AA (120/60) DB (24VDC)

DIMENSIONAL INFORMATION

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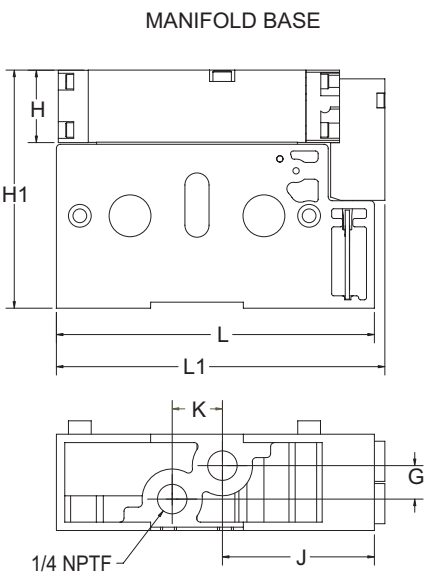
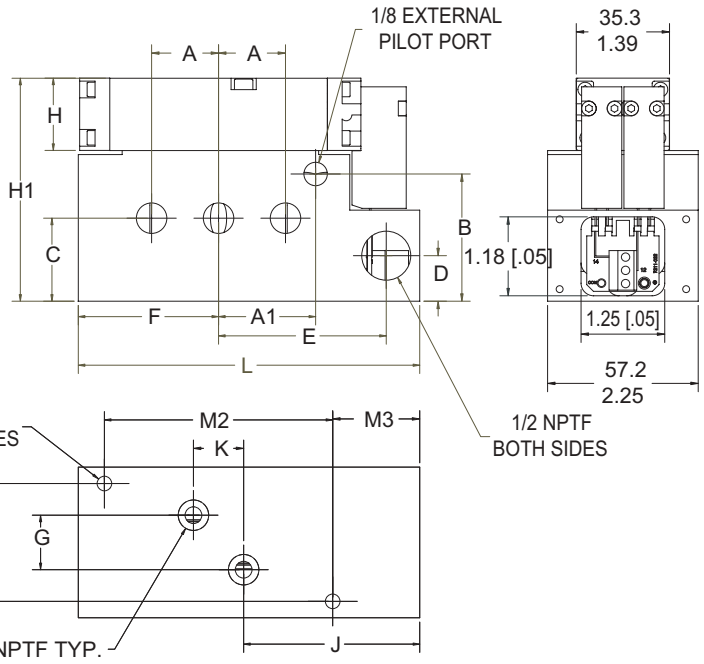
MANIFOLD BASE

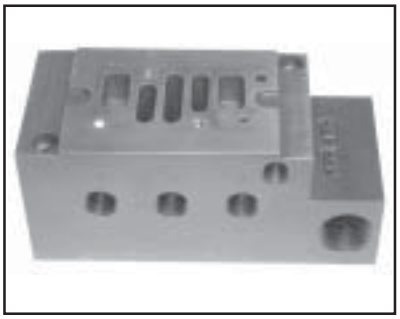


SUB-BASE

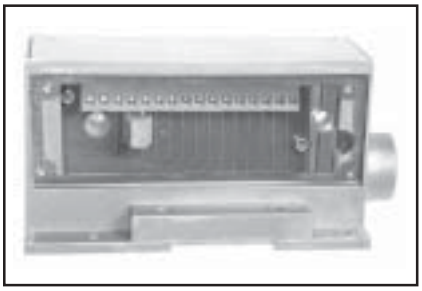


DESCRIPTION	A	A1	B	C	D	E	F	G	H	H1	J	K	L	L1	M	M1	M2	M3
VALVE ONLY	-	-	-	-	-	-	-	-	27.4 1.08	-	-	-	-	12.5 4.90	-	-	-	-
VALVE WITH SUBBASE	25.4 (1.00)	36.8 1.45	48.3 1.90	31.5 1.24	17.3 .68	63.8 2.51	53.3 2.10	20.6 .81	-	84.6 3.33	66.8 2.63	19.0 .75	129 5.10	-	5.6 .22	44.7 1.76	86.6 3.41	33.0 1.30
VALVE WITH MANIFOLD	-		-	-	-	-	-	12.7 .50	-	90.4 3.56	57.7 2.27	19.0 .75	121 4.75	-	-	-	-	-

SUB-BASE AND MANIFOLDS



MANIFOLD



MANIFOLD END PLATE
WITH TERMINAL STRIP
(SHOWN WITH COVER REMOVED)

SUB-BASE

MODEL NUMBERS

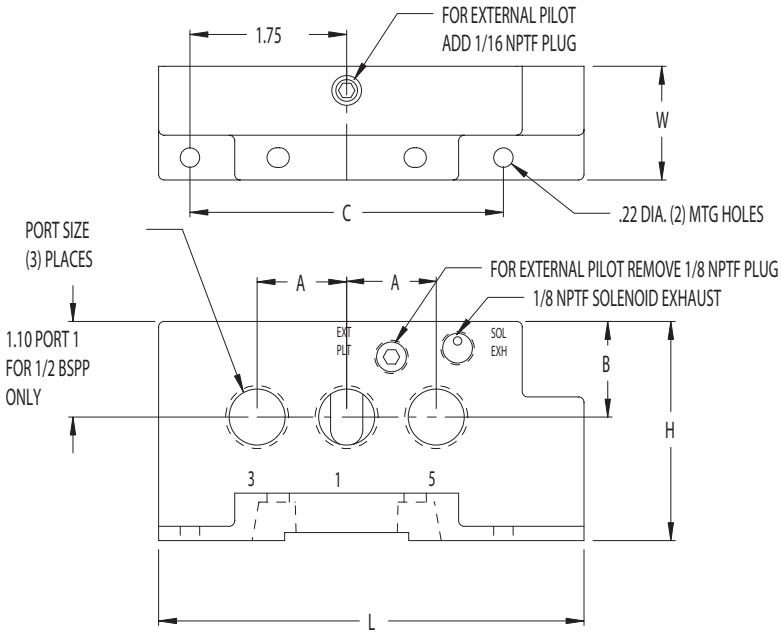
SERIES		SUB-BASE		MANIFOLD	
F15	DESCRIPTION	MODEL NUMBER	PORT SIZE 2,4	MODEL NUMBER	PORT SIZE 2,4
	SIDE PORTS	B7209-033 B7209-034	1/4 NPTF 3/8 NPTF	B7209-140 B7209-142	1/4 NPTF 3/8 NPTF
				B7209-141 B7209-143	1/4 BSPP 3/8 OD TUBE
	SIDE/BOTTOM PORTS	B7209-091 B7209-092	1/4 NPTF 3/8 NPTF	B7209-144 B7209-146	1/4 NPTF 3/8 NPTF
				B7209-145 B7209-147	1/4 BSPP 3/8 OD TUBE

MANIFOLD END PLATES			
TERMINAL STRIP		25 PIN SUB-D	
MODEL * NUMBER	PORT SIZE 1,3,5	MODEL* NUMBER	PORT SIZE 1,3,5
B7209-069 B7209-073	1/2 NPTF 1/2 BSPP	B7209-070 B7209-071	1/2 NPTF 1/2 BSPP

* ADD OPTION LETTER B FOR EXTERNAL PILOT

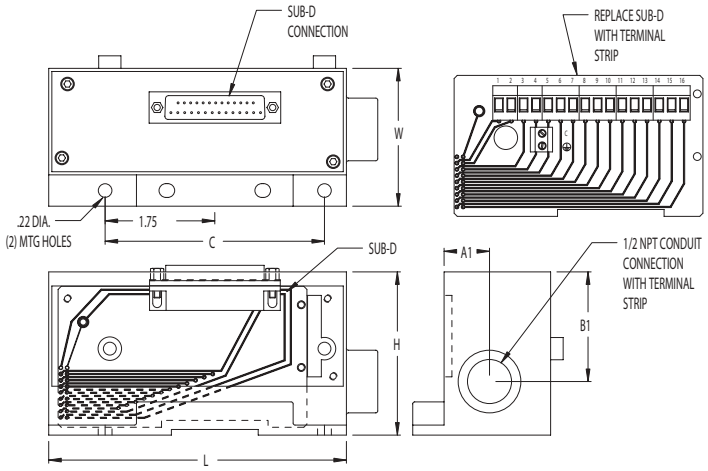
DIMENSIONAL INFORMATION

PNEUMATIC END (1) PER MFD



DESCRIPTION	PORT SIZE	A	B	C	H	L	W
PNEUMATIC	1/2 NPTF	25.4 1.00	27.2 1.07	88.9 3.50	62.2 2.45	121 4.75	32.3 1.27
PNEUMATIC	1/2 BSPP	34.8 1.37	32.0 1.26	88.9 3.50	62.9 2.48	121 4.75	43.2 1.70

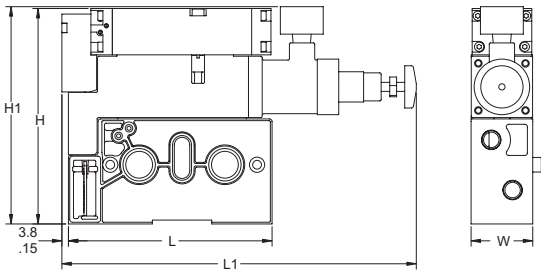
ELECTRICAL END (1) PER MFD



DESCRIPTION	PORT SIZE	A1	B1	C	H	L	W
ELECTRICAL	-	18.5 .73	4.44 1.75	88.9 3.50	62.0 2.60	121 4.75	55.9 2.20

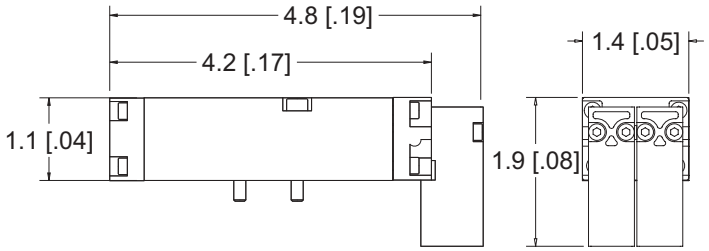
ACCESSORIES

INTERPOSED REGULATOR

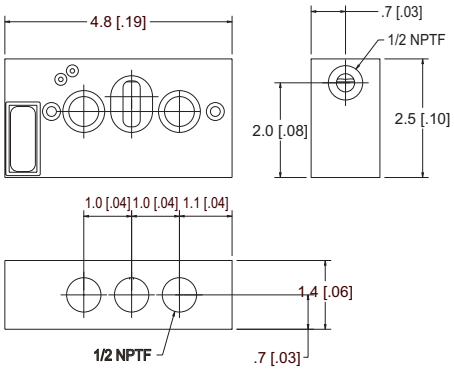


- Diecast aluminum and zamak alloys, NBR seals.
- Common regulation to both cylinder ports.
- Manual pressure adjustment on three pressure ranges.

MODEL NUMBER AND DIMENSIONS							
PRESSURE RANGE	MODEL NUMBER WITH GAUGE	MODEL NUMBER WITHOUT GAUGE	H mm (Inches)	H1 mm (Inches)	L mm (Inches)	L1 mm (Inches)	W mm (Inches)
14kPa - 138 kPa (2 - 20 psi)	B7209-054	B7209-055	128 (5.02)	129 (5.06)	121 (4.75)	210 (8.25)	56,6 (1.44)
28kPa - 310 kPa (4 - 45 psi)	B7209-056	B7209-057	128 (5.02)	129 (5.06)	121 (4.75)	210 (8.25)	56,6 (1.44)
69 kPa - 759 kPa (10 - 110 psi)	B7209-058	B7209-059	128 (5.02)	129 (5.06)	121 (4.75)	210 (8.25)	56,6 (1.44)



BLANK STATION COVER



DUAL PRESSURE INLET ISOLATION

MANIFOLD ACCESSORIES			
BLANK STATION COVER		DUAL PRESSURE INLET ISOLATION	
MODEL NUMBER	PORT SIZE	MODEL NUMBER	PORT SIZE
A7209-043	-	A7209-060	1/2 NPTF

OPTIONS

(LISTED AT THE END OF THE MODEL NUMBER IN ALPHA-NUMERIC ORDER)

B - EXTERNAL PILOT
For solenoid applications when the pressure to port one is less than 35 PSIG (240 kPa). See example below for field conversion.

FIELD CONVERSION

- REMOVE 1/8 PIPE PLUG FROM TOP OF CAP.
- ADD 1/16 NPTF PIPE PLUG IN SAME LOCATION OF 1/8 PLUG.
- REINSTALL 1/8 PIPE PLUG.
- REMOVE 1/8 PIPE PLUG FROM FRONT OF CAP FOR EXTERNAL PIPE PLUG CONNECTION.

ELECTRICAL INFORMATION

DESCRIPTION	WHEN THE 8TH CHARACTER OF MODEL NUMBER IS:	INSTRUCTIONS	COIL PART NUMBER ** = VOLTAGE
NEMA 4 WITH CIRCUIT BOARD CONNECTION	S	COIL INCLUDED WITH VALVE (SPECIFY VOLTAGE FROM BELOW)	7211-9**

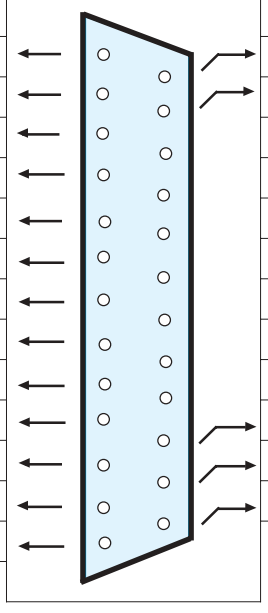
VOLTAGE +/- 10%	** CODE	CURRENT (AMPS)		RESISTANCE	POWER (AC=VA DC=WATTS)
		INRUSH	HOLDING		
110/50 120/60	AA	.016	.012	3700	1.4
24VDC	DB	.05	.05	570	1.2

PIN MAPPING

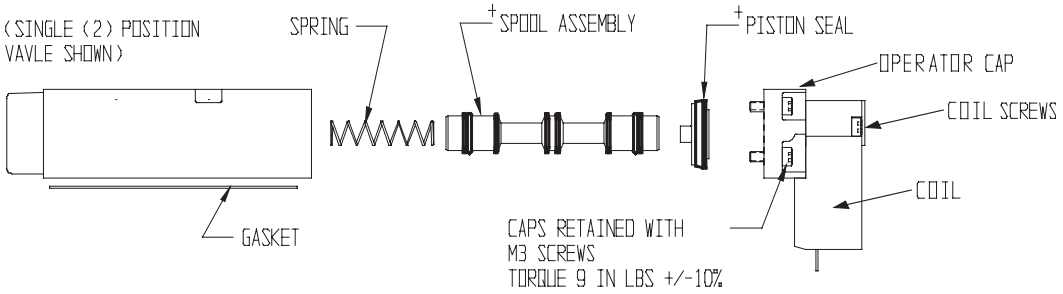
POSITION ON MANIFOLD

- All addressing starts from the electrical cap on the manifold.
- The right solenoid position on the first manifold adjacent to the electrical end cap is Station 1.
- This address extends from Station 1 through Station 16, regardless of whether the station is used.
- Field bus channels used correspond to used pins only. The first active pin is mapped to Channel 1, the next is to Channel 2, etc.
- Please consult Factory for manifold requirements above 8 stations/16 solenoids.

SUB 'D' CONNECTOR CALLOUT			
PIN NUMBER	ADDRESS NUMBER	PIN NUMBER	ADDRESS NUMBER
13	13	25	GROUND
12	12	24	COMMON
11	11	23	
10	10	22	
9	9	21	
8	8	20	
7	7	19	
6	6	18	
5	5	17	
4	4	16	16
3	3	15	15
2	2	14	14
1	1		



SERVICE KIT INFORMATION



SERVICE KIT INSTALLATION

I. Remove screws from the coils.

1. Remove screws from cap of operator.
2. Remove cap.
3. Remove existing serviceable components.
4. Replace with kit components. **+All seals must be lubricated with Magnalube-G or equivalent.**
5. Align pilot hole in body with pilot hole in cap.
6. Torque screws as shown above.

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 or lighter viscosity, and have an aniline point between 82°C (180°F) and 99°C (210°F). Refer to Maintenance section of catalog for recommended lubricants.

SERIES	FUNCTION			
	SINGLE		DOUBLE	
	PART NUMBER	DESCRIPTION	PART NUMBER	DESCRIPTION
F15	K-F15-SGL	Spool Assembly (1) Piston Seal (1) Spring (1) Gasket (1)	K-F15-DBL-B K-F15-DBL-C DBL-D DBL-E	Spool Assembly (1) Piston Seal (2) Gasket (1)

NOTES