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SKINNER K Series Three-Way Poppet Valves

SPECIFICATIONS

Product Description

K-Series solenoid valves include a broad range of 3- and 4-way models designed to satisfy most pneumatic application requirements. Although small in size, each valve includes features and performance capabilities usually found only on larger, more expensive solenoid valves.

All models are supplied with non-locking manual overrides with either lead wire or plug-in connectors. The valves with plug-in connectors include LED status indicators, reverse voltage protection and surge suppression.

Mechanical Characteristics

Standard Materials of Construction

- Body and Components—Plastic (Acetal and Polyphenylene Sulfide)
- Brass and Stainless Steel
- Seals—NBR
- Subbase and Manifold Body—Aluminum

Compatible Fluids

- Non-lubricated or lubricated air and inert gases.

Pipe Sizes

- All subbases and manifolds—M3 or M5 cylinder ports.

Electrical Characteristics

Voltages

- 5VDC, 6VDC, 12VDC, 24VDC, 48VDC, 24V/60HZ, 120V/60HZ (depending on model).

Allowable Voltage Variation

- AC: +10%–10 rated voltage.
- DC: +10%–15 rated voltage.

Electrical Connections

- 11- inch leaded, 22 gauge as standard. Optional plug-in connector with 19-inch leads.

Current Drain

- 0.5 watt-6 milliamps, 1.8 watts-22 milliamps.

Miscellaneous

Filtration

- Down to 40 microns recommended.

Lubrication

- None required, valves are prelubricated.

Ambient Temperature Rating

- +40 to 120°F

K SERIES K3P, K3H, K3F VALVES–THREE-WAY, POPPET

Pressure Range (PSI)		Cv		Watts		Valve	Electrical*	Response Time (seconds)		Model	Const.
Min.	Max.	P to Cyl.	Cyl. to R	DC	AC	Function	Connections	On	Off	Number	Ref.
0	100	0.01	0.02	0.5	0.5	NC	Lead Wire	0.005	0.005	K3P01	94
0	100	0.01	0.02	0.5	0.5	NC	Plug-in	0.005	0.005	K3P02	94
0	114	0.02	0.02	1.8	1.8	NC	Lead Wire	0.005	0.005	K3P03	94
0	114	0.02	0.02	1.8	1.8	NC	Plug-in	0.005	0.005	K3P04	94
28	100	0.1	0.1	0.5	NA	NO	Lead Wire	0.010	0.020	K3H01	93
28	100	0.1	0.1	0.5	NA	NO	Plug-in	0.010	0.020	K3H02	93
28	100	0.1	0.1	0.5	NA	NC	Lead Wire	0.010	0.020	K3H03	93
28	100	0.1	0.1	0.5	NA	NC	Plug-in	0.010	0.020	K3H04	93
0	100	0.005	0.005	0.5	NA	NC	Lead Wire	0.005	0.005	K3F01	95
0	100	0.005	0.005	0.5	NA	NC	Plug-in	0.005	0.005	K3F02	95

** Lead wire: 11" lead wire. Plug-in: Connector with 19" leads, indicator light and surge suppressor. NC = Normally Closed, NO = Normally Open*

K SERIES VALVE VOLTAGES

Voltage	K3P 0.5 Watt	1.8 Watts	K3H 0.5 Watt	K3F 0.5 Watt
5VDC	*	NA	*	*
6VDC	NA	*	*	*
12VDC	*	*	*	*
24VDC	*	*	*	*
48VDC	NA	NA	*	*
24VAC/60Hz	NA	*	NA	NA
120VAC/60Hz	*	*	NA	NA

** Valves may be ordered for use with these specific voltages.*

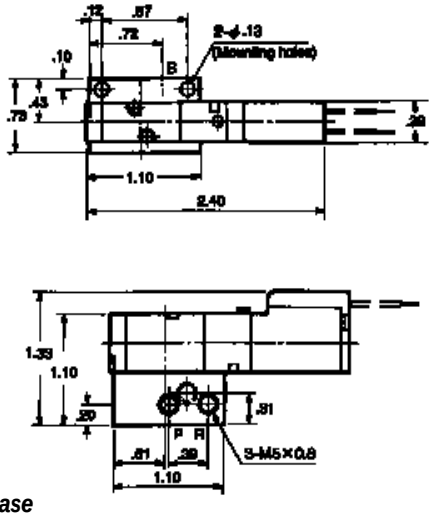
K Series Three-Way Poppet Valves

K SERIES VALVE MANIFOLDS

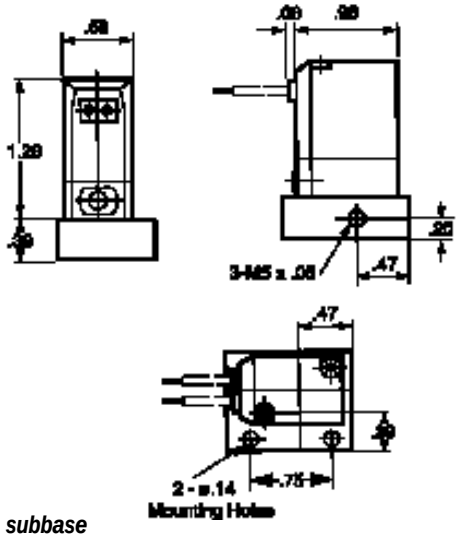
Type	K3P Model Number	K3P Manifold Dimensions P (inches)	K3P Manifold Dimensions L (inches)	K3H Number	K3H Manifold Dimensions P(inches)	K3H Manifold Dimensions L(inches)	K3F Model Number	K3F Manifold Dimensions P(inches)	K3F Manifold Dimensions L(inches)
Subbase	K01-001			KH-01-001	0.87	1.10	KF-01-001	0.30	0.65
2-Station	K01-021	1.61	1.89	KH-01-002	1.28	1.67	KF-01-002	1.08	1.28
3-Station	K01-022	2.24	2.52	KH-01-003	1.69	2.09	KF-01-003	1.50	1.69
4-Station	K01-002	2.87	3.15	KH-01-004	2.11	2.50	KF-01-004	1.91	2.11
5-Station	K01-023	3.50	3.78	KH-01-005	2.52	2.91	KF-01-005	2.32	2.52
6-Station	K01-003	4.13	4.41	KH-01-006	2.93	3.33	KF-01-006	2.74	2.93
7-Station	K01-024	4.76	5.04	KH-01-007	3.35	3.74	KF-01-007	3.15	3.35
8-Station	K01-004	5.39	5.67	KH-01-008	3.76	4.15	KF-01-008	3.56	3.76
9-Station	K01-025	6.02	6.30	KH-01-009	4.17	4.57	KF-01-009	3.98	4.17
10-Station	K01-005	6.65	6.93	KH-01-01-	4.59	4.98	KF-01-010	4.39	4.59
Station Blanking Plate	K16-001	-	-	KH-16-001	-	-	KF-16-001	-	-
Valve Mounting Kit	-	-	-	KH-60-S001	-	-	KF-60-S001	-	-

See dimensional diagrams for inlet and exhaust port sizes.

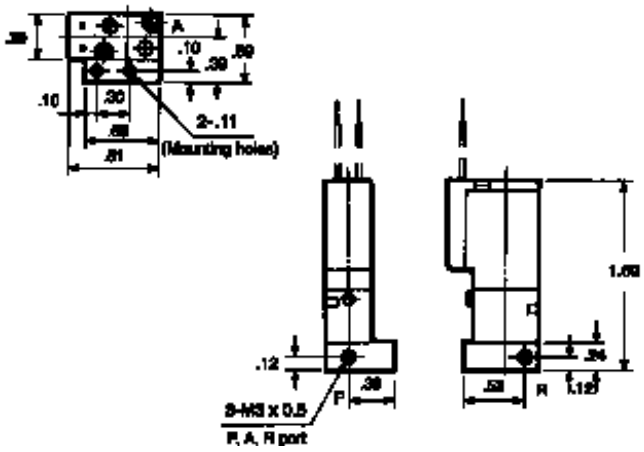
DRAWINGS



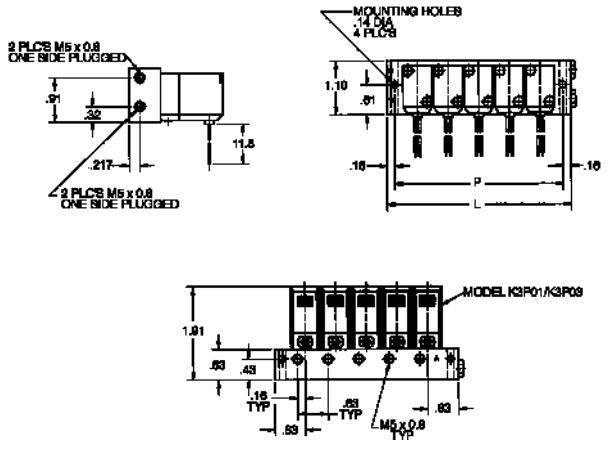
#93 K3H on a subbase



#94 K3P on a subbase



#95 K3F on a subbase



#94A K3P on a subbase

SKINNER K Series Four-Way Valves

SPECIFICATIONS

Mechanical Characteristics

Standard Materials of Construction

- Body and Components–Plastic (Acetal and Polyphenylene Sulfide)
- Brass and Stainless Steel
- Seals–NBR
- Subbase and Manifold Body–Aluminum

Compatible Fluids

- Non-lubricated or lubricated air and inert gases.

Pipe Sizes

- All subbases and manifolds have M5x0.8, 1/8" NPT or 1/4" NPT ports depending on model.

Electrical Characteristics

Voltages

- 5VDC, 6VDC, 12VDC, 24VDC, 48VDC, 24V/60HZ, 120V/60HZ (depending on model).

Allowable Voltage Variation

- AC: +10–10 percent rated voltage.
- DC: +10–15 percent rated voltage.

Electrical Connections

- 11- inch leaded, 22 gauge as standard. Optional plug-in connector with 19-inch leads.

Current Drain

- 0.5 watt - 6 milliamps, 1.8 watts - 22 milliamps.

Miscellaneous

Filtration

- Down to 40 microns recommended.(5 micron for K4M valves).

Lubrication

- None required, valves are prelubricated.

Ambient Temperature Rating

- +40 to 120°F

K SERIES K4H VALVES–FOUR-WAY, PILOT OPERATED, SINGLE AND DOUBLE SOLENOID

Pressure (PSI)							Response Time (seconds)		
Min	Max	Cv	Watts	Porting	Solenoid Model	Electrical Connection #	On	Off	Model Number
28	100	0.1	0.5	Base mounted	Single	Lead wire	0.01	0.02	K4H01
28	100	0.1	0.5	Base mounted	Single	Plug-in	0.01	0.02	K4H02
28	100	0.1	0.5	Base mounted	Single	PCB	0.01	0.02	K4H03
28	100	0.1	0.5	Body ported	Single	Lead wire	0.01	0.02	K4H04
28	100	0.1	0.5	Body ported	Single	Plug-in	0.01	0.02	K4H05
28	100	0.1	0.5	Base mounted	Double	Lead wire	0.01	0.02	K4H06
28	100	0.1	0.5	Base mounted	Double	Plug-in	0.01	0.02	K4H07
28	100	0.1	0.5	Base mounted	Double	PCB	0.01	0.02	K4H08
28	100	0.1	0.5	Base mounted	Single	PCB	0.01	0.02	K4H09*
28	100	0.04	0.5	Base mounted	Double	Plug-in	0.01	0.02	K4H10**

 # Lead wire: 11" lead wire. Plug-in: Connector with 19" leads, indicator light and surge suppressor. PCB: connector with studs.

** K4H09 PCB connector is pointing vertically upwards.*

** K4H10 is a double solenoid. 3-position model with all ports blocked in center position. Models with cylinder ports open to exhaust or open to pressure are available upon request. All models contain captured exhaust porting.*

K4H VALVE VOLTAGES

Voltage	K4H 0.5 Watt
5VDC	*
6VDC	*
12VDC	*
24VDC	*
48VDC	*
24VAC/60Hz	NA
120VAC/60Hz	NA

** Valves may be ordered for use with these specific voltages.*

K4H VALVE MANIFOLDS

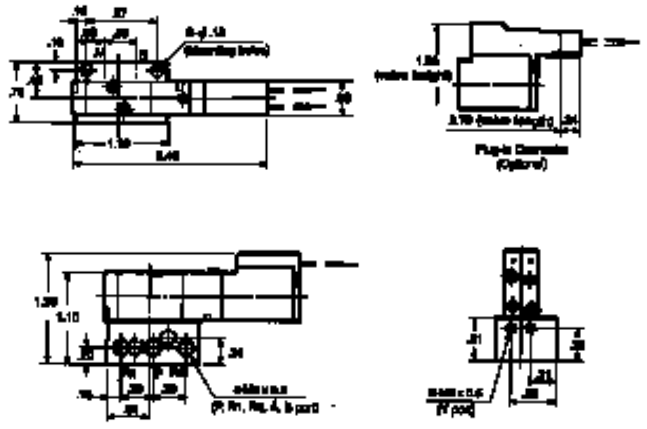
Manifolds		K4H Manifold Dimensions	
Type	K4H Style	P (inches)	L (inches)
Subbase	KH-01-001	0.87	1-1
2-Station	KH-01-002	1.28	1.67
3-Station	KH-01-003	1.69	2.09
4-Station	KH-01-004	2.11	2.5
5-Station	KH-01-005	2.52	2.91
6-Station	KH-01-006	2.93	3.33
7-Station	KH-01-007	3.35	3.74
8-Station	KH-01-008	3.76	4.15
9-Station	KH-01-009	4.17	4.57
10-Station	KH-01-010	4.59	4.98
Station Blanking Plate**	KH-16-001	-	-
Valve Mounting Kit*	KH-60-S001	-	-

** Mounting kits consist of 10 gaskets and 20 mounting screws. See dimensional diagrams for inlet and exhaust port sizes.*

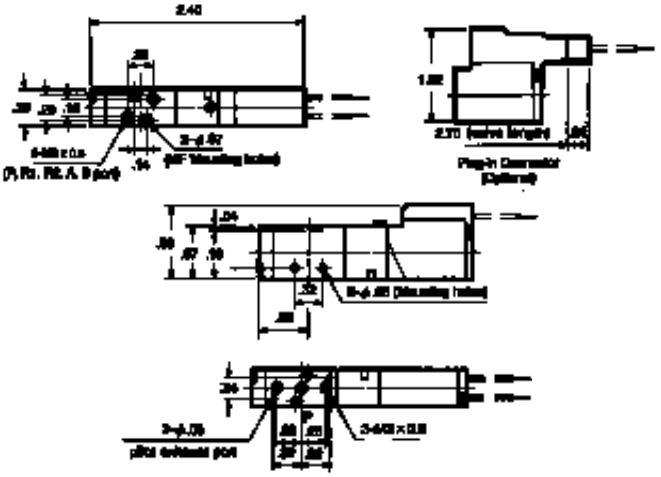
*** Includes plate, gasket, 2 screws.*

K Series Four-Way Valves

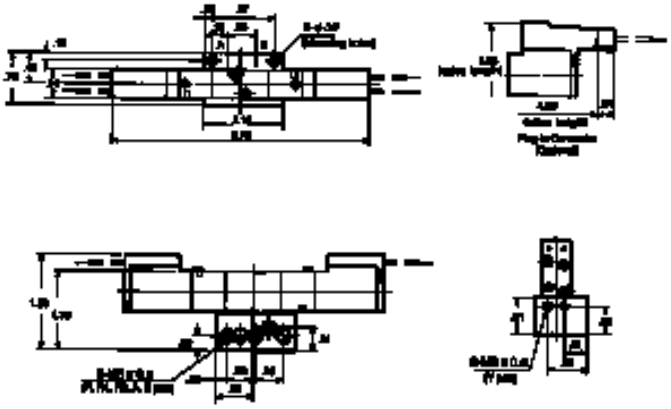
DRAWINGS



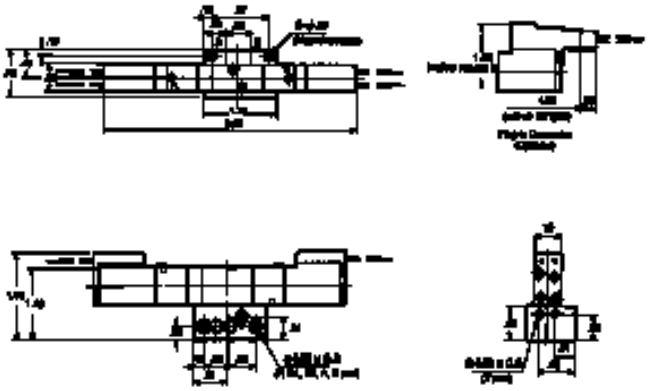
K4H01 on a subbase



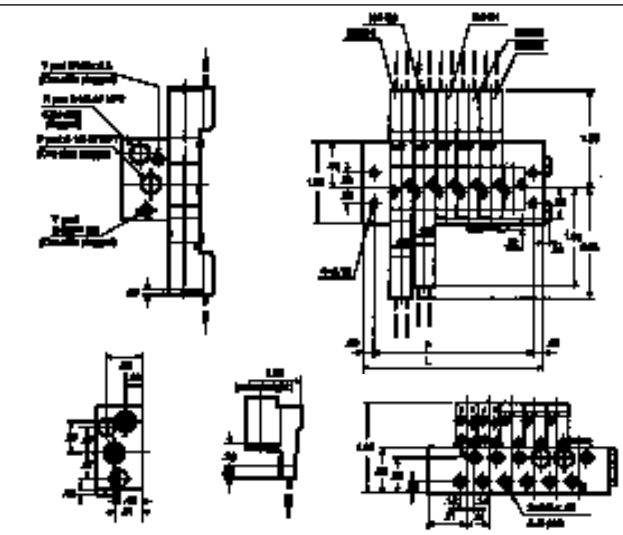
K4H01 on a subbase



K4H06 on a subbase



K4H10 on a subbase



K4H on a manifold

K SERIES K4M VALVES – FOUR-WAY, DIRECT ACTING, SINGLE AND DOUBLE SOLENOID

Pressure (PSI)							Response Time (seconds)		
Min	Max	Cv	Watts	Porting	Solenoid Model	Electrical Connection #	On	Off	Model Number
0	120	0.04	2	Base Mounted	Single	Lead wire	0.005	0.005	K4M01
0	120	0.04	2	Base Mounted	Single	Plug-in	0.005	0.005	K4M02
0	120	0.04	2	Base Mounted	Single	PCB	0.005	0.005	K4M03
0	120	0.04	2	Body Ported	Single	Lead wire	0.005	0.005	K4M04
0	120	0.04	2	Body Ported	Single	Plug-in	0.005	0.005	K4M05
0	120	0.04	2	Base Mounted	Double	Lead wire	0.005	0.005	K4M06
0	120	0.04	2	Base Mounted	Double	Plug-in	0.005	0.005	K4M07
0	120	0.04	2	Base Mounted	Double	PCB	0.005	0.005	K4M08

** Lead wire: 11" lead wire. Plug-in: Connector with 19" leads, indicator light and surge suppressor. PCB: connector with studs.*

K4M VALVE VOLTAGES

Voltage	K4M 2.0 Watt
5VDC	NA
6VDC	NA
12VDC	*
24VDC	*
48VDC	NA
24VAC/60Hz	NA
120VAC/60Hz	NA

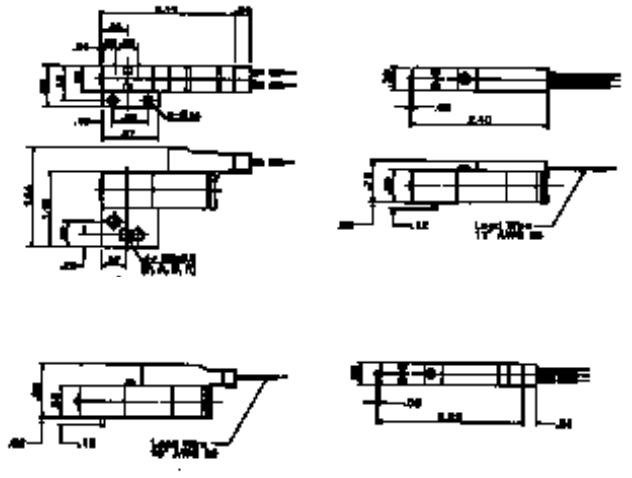
** Valves may be ordered for use with these specific voltages.*

K4M VALVE MANIFOLDS

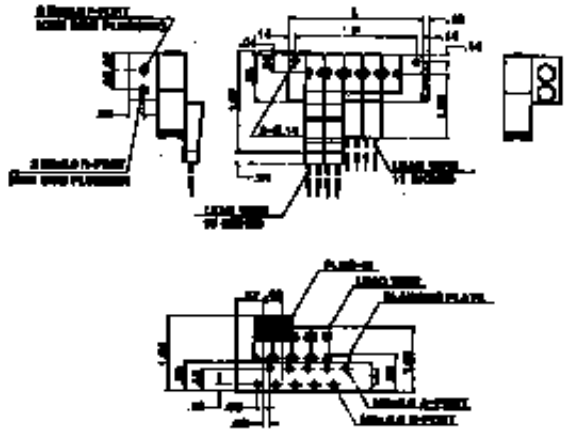
Manifold Type	Cylinder Port Size*		Manifold Assem. Dim. M3 Threads		Manifold Assem. Dim. M5 UNF Threads	
	M3	M5	L (inches)	P (inches)	L (inches)	P (inches)
Subbase	KM-01-001	KM-01-002	-	-	-	-
2-Station	KM-01-003	KM-01-004	1.61	1.34	2.09	1.34
3-Station	KM-01-005	KM-01-006	2.01	1.73	2.48	1.73
4-Station	KM-01-007	KM-01-008	2.40	2.13	2.87	2.13
5-Station	KM-01-009	KM-01-010	2.80	2.52	3.27	2.52
6-Station	KM-01-011	KM-01-012	3.19	2.91	3.66	2.91
7-Station	KM-01-013	KM-01-014	3.58	3.31	4.06	3.31
8-Station	KM-01-015	KM-01-016	3.98	3.70	4.45	3.70
9-Station	KM-01-017	KM-01-018	4.37	4.09	4.84	4.09
10-Station	KM-01-019	KM-01-020	4.76	4.49	5.24	4.49
Station Blanking Plate	KM-16-001	KM-16-001				
Mounting Bracket**	KM-19-001	KM-19-001				
Mounting Spacer for PCB Mounting	See Accessories					
Valve Mounting kit	KM-60-023					

** See dimensional diagrams for inlet and exhaust port sizes.*
*** Supplied on all body ported valves.*

DRAWINGS

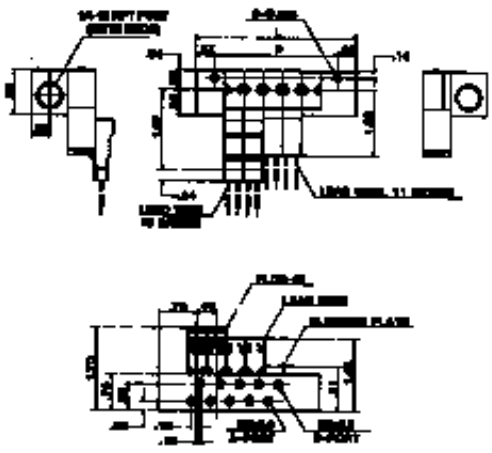


K4M02 on KM-01-022 subbase

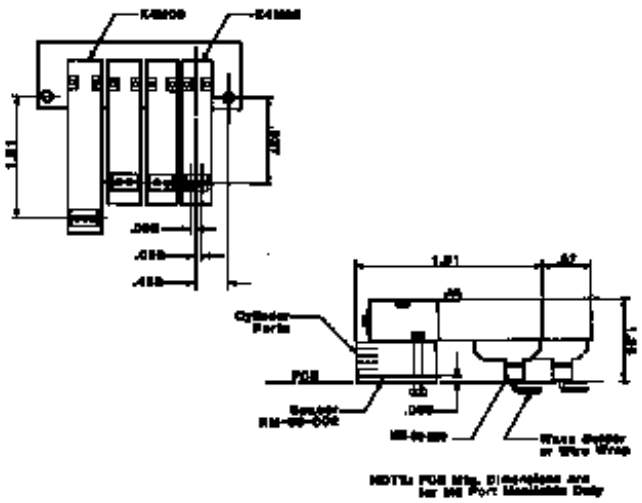


Manifold mounted M3 threads

K Series Four-Way Valves



K4M manifold mounted M5 threads



K4M printed circuit board mounting option (K4M03 and K4M08)

K SERIES K4P VALVES – FOUR-WAY, PILOT OPERATED

Pressure Range (PSI)		Cv		Watts		Electrical* Connections	Response Time (seconds)		Model Number
Min	Max	P to Cyl	Cyl to R	DC	AC		On	Off	
21	100	0.02	0.02	0.5	0.5	Lead Wire	0.007	0.008	K4P01
21	100	0.02	0.02	0.5	0.5	Plug-in	0.007	0.008	K4P02
21	114	0.02	0.02	1.8	1.8	Plug-in	0.006	0.008	K4P03
21	114	0.02	0.02	1.8	1.8	Lead Wire	0.006	0.008	K4P04

** Lead wire: 11" lead wire. Plug-in: Connector with 19" leads, indicator light and surge suppressor.*

K4P VALVE VOLTAGES

Voltage	K4P .5 Watt	1.8 Watts
5VDC	*	NA
6VDC	NA	*
12VDC	*	*
24VDC	*	*
48VDC	NA	NA
24VAC/60Hz	NA	*
120VAC/60Hz	*	*

** Valves may be ordered for use with these specific voltages.*

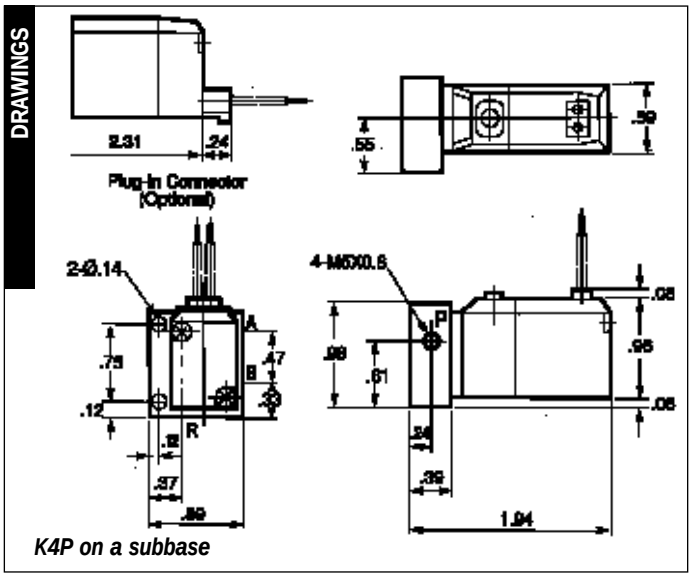
K4P VALVE MANIFOLDS

Type	K4P Catalog Number	K4P Manifold Dimensions	
		P(inches)	L(inches)
Subbase	K01-006	-	-
2-Station	K01-026	1.61	1.89
3-Station	K01-027	2.24	2.52
4-Station	K01-007	2.87	3.15
5-Station	K01-028	3.50	3.78
6-Station	K01-008	4.13	4.41
7-Station	K01-029	4.76	5.04
8-Station	K01-009	5.39	5.67
9-Station	K01-030	6.00	6.30
10-Station	K01-010	6.65	6.93
Station Blanking Plate	K16-001		

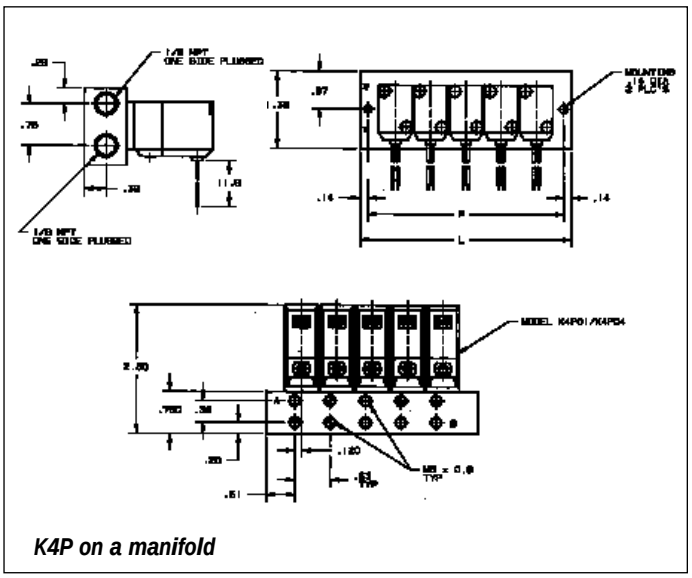
Subbases contain all M5 ports. Multi-station manifolds have common pressure and exhaust ports with 1/8" NPT threads; cylinder ports are M5.

K Series Four-Way Valves

DRAWINGS



K4P on a subbase



K4P on a manifold

K SERIES K4R, K4RL VALVES

Pressure (PSI)		Cv	Watts	Exhaust Porting*	Electrical Connection#	Response Time (seconds)		Model Number
Min	Max					On	Off	
Single Solenoid, 2-position								
28	100	0.2	0.5	STD	Lead wire	0.02	0.02	K4R01
28	100	0.2	0.5	STD	Plug-in	0.02	0.04	K4R02
28	100	0.2	0.5	I	Lead wire	0.02	0.02	K4R03
28	100	0.2	0.5	I	Plug-in	0.02	0.04	K4R04
Double Solenoid, 2-Position								
28	100	0.2	0.5	STD	Lead wire	0.015	0.015	K4R05
28	100	0.2	0.5	STD	Plug-in	0.015	0.015	K4R06
28	100	0.2	0.5	I	Lead wire	0.015	0.015	K4R07
28	100	0.2	0.5	I	plug-in	0.015	0.015	K4R08
Latching, Single Solenoid, 2-position								
28	100	0.2	1.8	STD	Lead wire	0.02**	0.02	K4RL01##
28	100	0.2	1.8	STD	Plug-in	0.02	0.02	K4RL02##

** I= individual tapped exhaust in valve body. STD=Standard exhaust through base.*
 # Lead wire: 11" lead wire. Plug-in: Connector with 19" leads, indicator light and surge suppressor.
*** Minimum energization time for K4RL valves is 0.05 seconds.*
K4RL valves suitable for 5V, 12V and 24VDC service only.

K SERIES K5R VALVES

Pressure (PSI)		Cv	Watts	Exhaust Porting*	Electrical Connection#	Response Time (seconds)		Model Number
Min	Max					On	Off	
Double Solenoid, 3-position, all ports blocked in center position								
28	100	0.14	0.5	STD	Lead wire	0.02	0.03	K5R01
28	100	0.14	0.5	STD	Plug-in	0.02	0.04	K5R02
Double Solenoid, 3-Position, cylinder ports open to exhaust in center position								
28	100	0.14	0.5	STD	Lead wire	0.02	0.03	K5R03
28	100	0.14	0.5	STD	Plug-in	0.02	0.04	K5R04
Double Solenoid, 3-Position, cylinder ports open to pressure in center position								
28	100	014	0.5	STD	Lead wire	0.02	0.03	K5R05
28	100	0.14	0.5	STD	Plug-in	0.02	0.04	K5R06

** =individual tapped exhaust in valve body. STD=Standard exhaust through base.*
 # Lead wire: 11" lead wire. Plug-in: Connector with 19" leads, indicator light and surge suppressor.

K Series Four-Way Valves

K4R, K4RL, K5R VALVE VOLTAGES

Voltage	K4R .5 Watt	K4RL 1.8 Watts	K5R 0.5 Watt
5VDC	*	*	*
6VDC	NA	NA	NA
12VDC	*	*	*
24VDC	*	*	*
48VDC	NA	NA	NA
24VAC/60Hz	*	NA	*
120VAC/60Hz	*	NA	*

** Valves may be ordered for use with these specific voltages.*

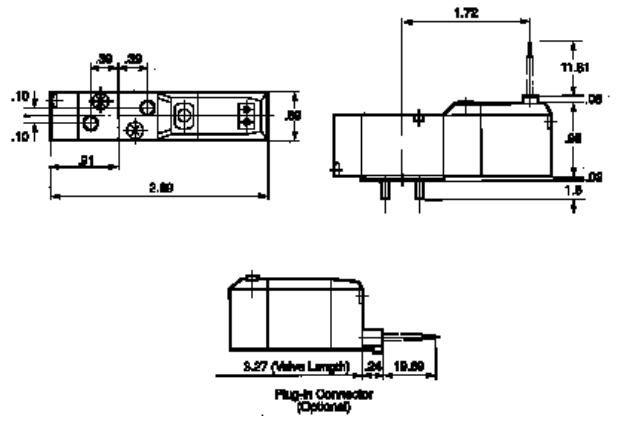
K4R, K4RL, K5R VALVE MANIFOLDS

K4R/K5R Manifolds			Manifold Dimensions	
Type	Standard Porting	Individual Porting	P(inches)	L(inches)
Subbase	KR-01-001	Not Available	0.94	1.42
2-Station	KR-01-002	KR-01-011	1.61	1.89
3-Station	KR-01-003	KR-01-012	2.24	2.52
4-Station	KR-01-004	KR-01-013	2.87	3.15
5-Station	KR-01-005	KR-01-014	3.50	3.78
6-Station	KR-01-006	KR-01-015	4.13	4.41
7-Station	KR-01-007	KR-01-016	4.76	5.04
8-Station	KR-01-008	KR-01-017	5.39	5.66
9-Station	KR-01-009	KR-01-018	6.02	6.30
10-Station	KR-01-010	KR-01-019	6.65	6.93
Station Blanking Plate	KR-16-001	KR-16-001	-	-
Valve Mounting Kit*	KR-60-S001	KR-60-S001	-	-

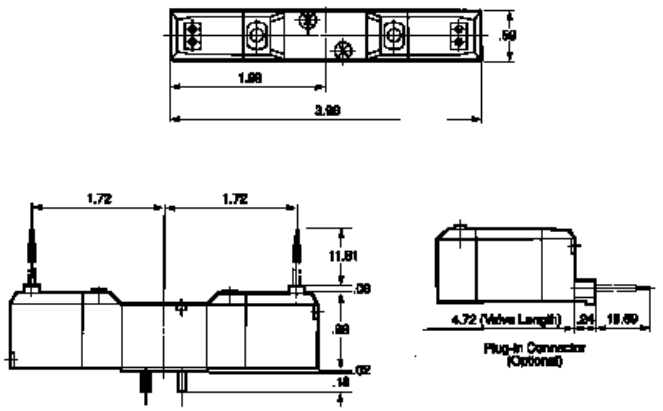
** Mounting kits consist of 10 gaskets and 20 mounting screws.*

Subbases contain all M5 ports. Multi-station manifolds have common pressure and exhaust ports with 1/8" NPT threads; cylinder ports are M5 x 0.8.

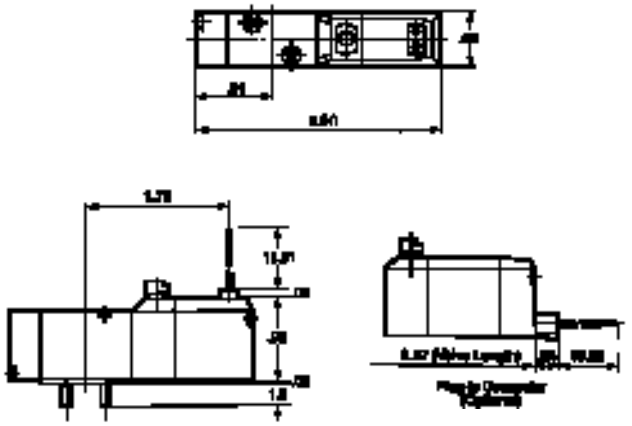
DRAWINGS



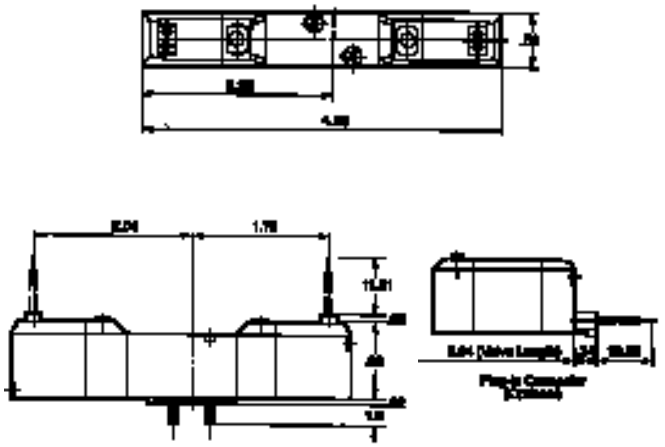
Single solenoid K4R valve



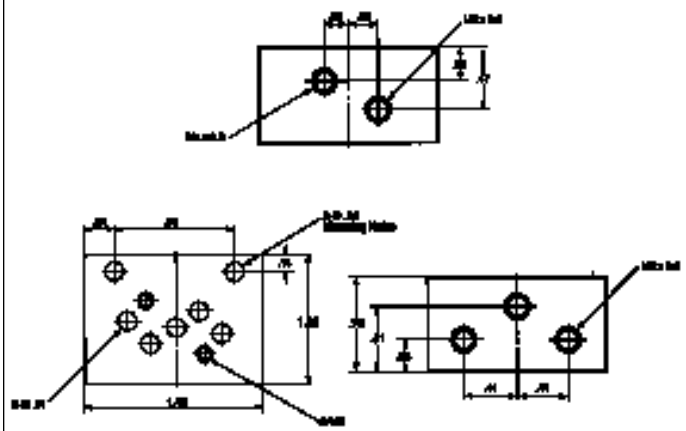
Double solenoid K4R valve



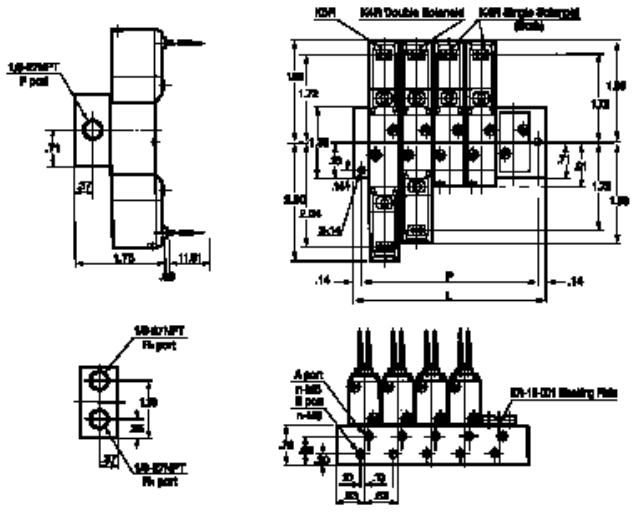
K4RL valve



K5R valve



KR-01-001 subbase



K5R and K4R valves on a manifold

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