HUMPHREY SELECTION GUIDE

Organized by Port Size

SOLENOID

2-, 3-way

M3	C_v	10-32	C_v	1/8"	C_v	1/4"	C_v	3/8"	C_v	1/2"	C_v	3/4"	C_v
H010E1	0.01	3E1	0.01	31E1	0.09	(V)062E1	0.12			(VA/VV)500(A)E1	2.16	(VA)590(A)E1	2.56
H041E1	0.08	M3E1	0.01	M31E1	0.06	T062E1	0.11			500E2	2.16	(VA)590(A)E2	2.56
H040 E1	0.08	M3E1-81-MTL	0.01	310	0.12	125E1	0.19			501E1	2.20		
		3E1-PCM	0.01	S310	0.15	T125E1	0.17			501E2	2.20		
		3E1-39-BOU	0.01	M310	0.12	(VA/VV)250(A)E	0.63						
		3E1-TSD	0.01	(VA)125(A)E1L	0.24	250E2	0.63						
		H(V)030E1	0.03	M125E1LW	0.17	320	1.00						
		H110E1	0.23	H181E1	0.57								
		H111E1	0.23										

4-way

M3	C_v	10-32	C_v	1/8"	C_v	1/4"	C_v	3/8"	C_v	1/2"	C_v	3/4"	C_v
H040 4E1	0.08	401	0.05	41E1	0.03	42E1	0.43			501-4E1	1.80		
H040 4E2	0.08	M401	0.05	M41E1	0.03	M42E1	0.39			501-4E2	1.80		
		402	0.04	MC41E1	0.03	42E2	0.43						
		M402	0.04	410	0.14	062-4E1	0.07						
		H030-4E1	0.03	410-70	0.14	125-4E1	0.11						
		H110-4E1	0.23	S410	0.13	T062-4E1	0.07						
		H110-4E2	0.23	S410-70	0.13	T125-4E1	0.11						
		H113-4E2	0.21	M410	0.13	M42E2	0.39						
				M410-70	0.13	250-4E1	0.58						
				H180-4E1	0.57	250-4E2	0.88						
				H180-4E2	0.57	H240-4E1	0.88						
				H183-4E2	0.50	H243-4E2	0.83						
						S420	1.00						
						M420	1.00						

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AIR PILOTED

2-, 3-way

M3	C_v	10-32	C_v	1/8"	C_v	1/4"	C_v	3/8"	C_v	1/2"	C_v	3/4"	C_v
		2P	0.09	31P	0.29	(VA/VV)250A	0.63			(VA)500A	2.20	(VA)590A	3.73
		3P	0.09	(VA)125A	0.22	250AA	0.85			500AB	2.20	590AB	3.73
				125AA	0.23	250AL	0.65			500AG	2.20	590AG	3.73
				125LA	0.15	250AH	0.50			501A	2.41		
				125AH	0.17					501AA	2.49		

4-way

M3	C_v	10-32	C_v	1/8"	C_v	1/4"	C_v	3/8"	C_v	1/2"	C_v	3/4"	C_v
		4P	0.11	41P	0.29	42A	0.38			501-4A	1.89		
		4PP	0.11	41PP	0.28	42A2	0.35			501-4AA	1.89		
		110-4A	0.23	H180-4A	0.50	M42A2	0.32						
		110-4A2	0.23	H180-4A2	0.50	250-4A	0.49						
						250-4AA	0.75						

MANUAL/MECHANICAL

2-, 3-way

M3	C_v	10-32	C_v	1/8"	C_v	1/4"	C_v	3/8"	C_v	1/2"	C_v	3/4"	C_v
		2P	0.09	31P	0.29	250PL	0.83			501V	2.20	590C	3.85
		2V	0.09	31V	0.29	250P	0.84			(V)500C	2.20		
		3P	0.09	125PLG	0.22	250HO	0.83						
		3V	0.09	125P	0.22	250F	0.83						
				125HO	0.22	(V)250C	0.83						
				125B	0.23	250T	0.83						
				125MP	0.22	(V)250V	0.83						
				125MC	0.22								
				125MOC	0.22								
				125C	0.22								
				125T	0.22								
				(V)125V	0.22								

4-way

M3	C_v	10-32	C_v	1/8"	C_v	1/4"	C_v	3/8"	C_v	1/2"	C_v	3/4"	C_v
		4P	0.11	41P	0.29	42P	0.39						
		4PP	0.11	41PP	0.29	42PP	0.39						
		4PPX	0.29	41PPX	0.29	M42P	0.32						
		4PP/PPX	0.29	41PP/PPX	0.29	M42PP	0.29						
		4V	0.11	41V	0.29	M42PA	0.29						
				41T	0.09	250-4F	0.75						
				41R	0.09	250-4H	0.75						

Humphrey® General Guidelines

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Don't take chances

Compressed air is an extremely powerful medium. Always take maximum precautions when handling any component of a compressed air system.

Never attempt to construct, replace, operate or service any component of a compressed air system unless you have been specifically and properly trained to do so.

Always disconnect the supply air and exhaust the air system before attempting to remove or service a component of that system.

Failure to heed these warnings could result in SERIOUS, EVEN FATAL, PERSONAL INJURY.

Use the right valve

Humphrey valves are general purpose air valves designed for use in general industrial applications in accordance with the limitations described in this catalog for each valve. The specifications of individual products are subject to change without notice. Consult factory for specific information concerning valve/application compatibility

Each Humphrey valve is tested before it leaves our factory to assure the valve's conformance to catalog specifications.

Any use or application which deviates from the valve's specifications will void the warranty unless Humphrey has provided specific and written authorization beforehand.

Use the right lubrication

Except where model specifications state "No lubrication required," all Humphrey valves require appropriate lubrication. Humphrey recommends a non-detergent, 20w or 30w, mineral-based petroleum oil for most of its valves.

Some lubricants may cause swelling or deterioration of the valve's seals, therefore lubricant/seal compatibility must be confirmed. Read specifications carefully. If there is any doubt, consult factory.

Use the right air supply

The valved medium, including the lubricants and other substances it may contain, must be compatible with the materials of which the valve is constructed. Read the specifications carefully; if there is any doubt, consult factory.

Sone valve models are vulnerable to contaminated or moisture-laden compressed air. To promote proper functioning and long life in such instances, appropriate air treatment equipment should be installed. Consult your supplier of air filters, regulators, and lubricators.

Use proper service procedures

Never attempt to service a Humphrey valve or any system component unless you have been properly trained to do so. A properly trained person will never attempt to remove or service a component of a compressed air system unless the compressed air has been disconnected and the system thoroughly exhausted.

Some Humphrey valves can be repaired in the field. Humphrey makes available factory seal repair kits (SRKs) and individual valve components for this purpose. All repaired valves should be tested for conformance to specifications before they are returned to service. Field repairing of Humphrey valves voids their warranty.

Design a proper system

Always strive to design systems which are safe as well as efficient. Either eliminate potential hazards completely or install safety features which neutralize them.

Give special consideration to any potential for accidental actuation of a valve. Either select a model that resists accidental actuation or mount the valve to prevent unintended actuation.

Consider the adverse consequences of individual component failure and design to prevent or minimize these consequences. Design a system that will fail safe under conditions of pressure variation, pressure loss, or other system failures.

Read the component literature carefully. If a model is not completely understood, do not apply it without first consulting the factory.

Size valves properly. A model having a capacity insufficient to the system may cause the entire system to be inefficient. Always note the size of the valve orifice — this is often more important than the pipe connection.

The circuit drawings in this catalog are intended *only* as examples of circuits in which certain components might typically be used. They are not to be considered recommendations of specific applications. The proper, safe functioning of any system must be insured by the system's designer or user.

The following are registered trademarks of the companies indicated: Delrin, Zytel, E.I., duPont; Rylton, Phillips Petroleum.

Specifications subject to change without notice.
All port connections are available in metric sizes. Specify metric port threads by using letter E as a model number prefix. The bottom number in all drawing dimensions is shown in millimeters.

MH6681 (N)

HUMPHREY PRODUCTS CSA LR41336
KILGORE AND SPRINKLE ROADS P O BOX 2008,
KALAMAZOO MI 49003

The following models are UL RECOGNIZED for component use.

Models 3E1, M3E1 valves; Models DMZ1, MZ1 manifolds.

Models 31E1, 41E1, M31E1, M41E1, MC41E1 valves; Models MM-2 through -7, MMC-2 through -7 manifolds.

Models 062-4E1, 062-4E2, 062E1, 062E2, VO62E1 valves, may be prefixed by T. Models TM-1R through -12R manifolds.

Models 125-4E1, 125E1, V125E1 valves, may be prefixed by T. Models TM-1R through -12R manifolds.

Model 310 may be prefixed by E, EM, ES, ESMP, EV, EVM, EVS, EVSMP, M, S, SMP, V, VM, VS, VSMP, may be suffixed by 2, 21, 39, 50, 81, 87, LL, MOV, RC, or SA, suffixed by UR.

Model 410 may be prefixed by E, EM, ES, ESMP, M, S, SMP, may be suffixed by 21, 39, 50, 70, 81, 87, LL, MOV, RC, or SA, suffixed by UR.

Models 250E1, 250E2.

The following models are UL LISTED for General use.

Model 062-4E1 with or without suffix 21, followed by 36, with or without suffixes 61 and/or 70.

Models 062E1, VO62E1 followed by 2 or 3, followed by 10 or 11, with or without suffix 20 or 21, followed by 36, with or without suffix 61.

Model 125-4E1 may be prefixed by T, with or without suffix 21, followed by 36, with or without suffix 60 or 70,

Model 125E1 may be prefixed by T, suffixed by 2 or 3, followed by 10 or 11, with or without suffix 20 or 21, followed by 36, may be followed by 60.

Model V125E1 followed by 2 or 3, followed by 10 or 11, with or without suffix 20 or 21, followed by 36, may be followed by 60.

Model V125E1 followed by 2 or 3, followed by 10 or 11, with or without suffix 20 or 21, followed by 36.

Models 250-4E1, 250-4E2 with or without suffix 21.

Model 250E1 followed by 2 or 3, followed by 10 or 11, followed by 20 or 21, followed by 36, with or without suffix 61.

Models TM-1L thru -12L manifolds.

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NEW Humphrey 125E1LW Electric Air Valves

Humphrey 125E1LW electric air valves are a new group of solenoid valves combining the advantages of the unique double diaphragm poppet design with low-power operation. These single-solenoid, 3-way valves require no lubrication and feature manual override and either quick-connect electrical spade terminals or the optional Code 39 plug-in electrical connector. 125E1LW valves may be mounted using side or base mount, in-line, with body mounting holes, or manifold mounted on 2- through 10-station manifolds.

125E1LW-81
Model 125E1LW is a single-solenoid, 3-way, normally closed valve.

Model 125E1LW-81 is identical to the 125E1LW but features a rotating locking manual override.

Model 125AE1LW is identical to 125E1LW but is normally closed or normally open for valved pressures in the range of 0 to 125 psig.

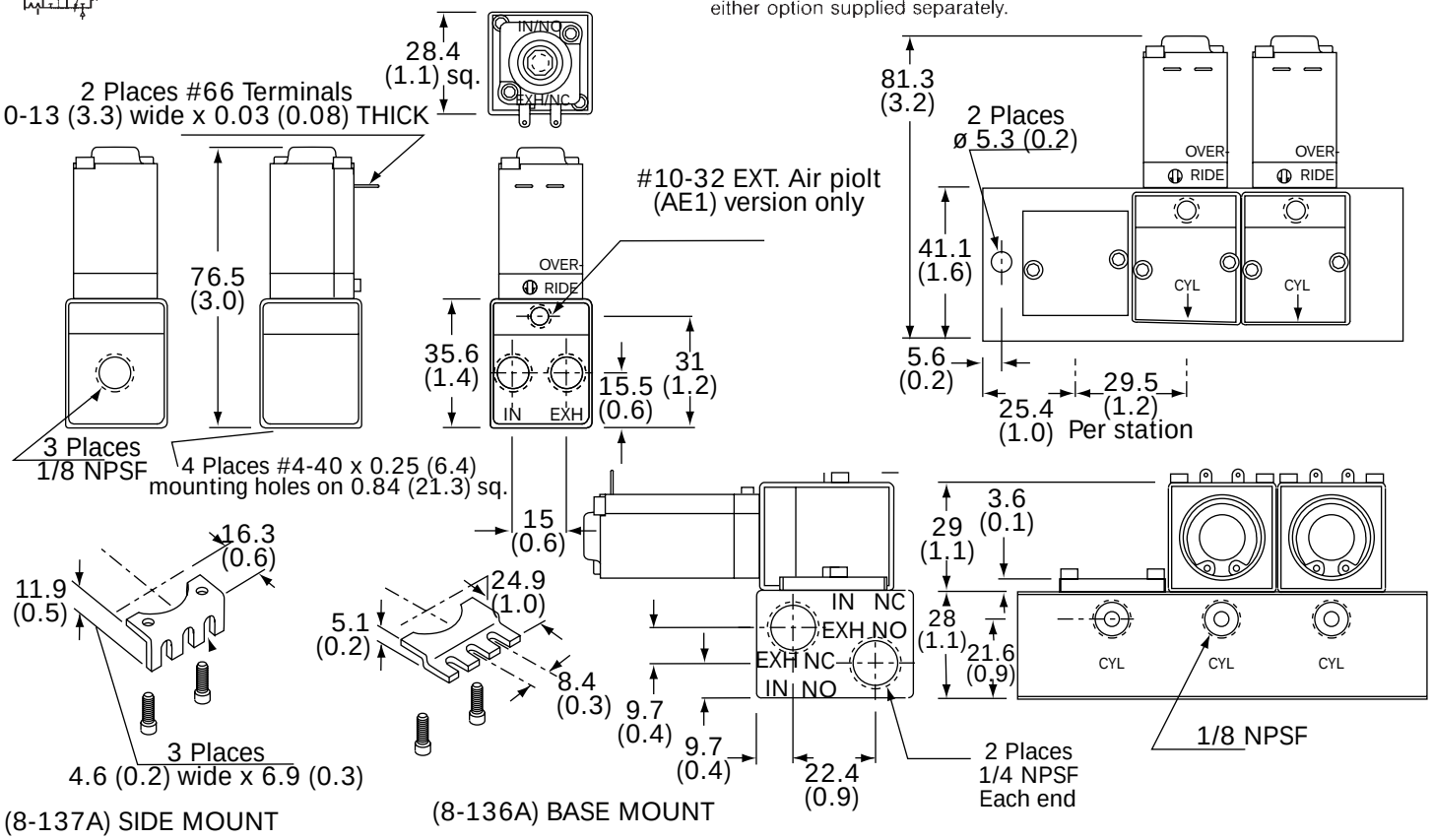
M125E1LW
Model M125E1LW is a version of the 125E1LW valve for mounting on manifolds.

Model M125AE1LW is a version of the 125AE1LW valve for mounting on manifolds.

M125E1LW-38-81
M125E1LW-38-81 is a version of 125E1LW for mounting on M Series Manifolds. Code 38 features 18″ (457mm) 22AWG stranded wire, extending from the coil for electrical connection. Longer, non-standard 72″ (1830mm) leads are available as special order. Consult factory. Code 81 is a rotating locking manual override.

This valve is available with either option supplied separately.

125E1LW-39
Model 125E1LW-39 is identical to 125E1LW. Code 39 is an optional plug-in (DIN) electrical connector.



(8-137A) SIDE MOUNT

(8-136A) BASE MOUNT

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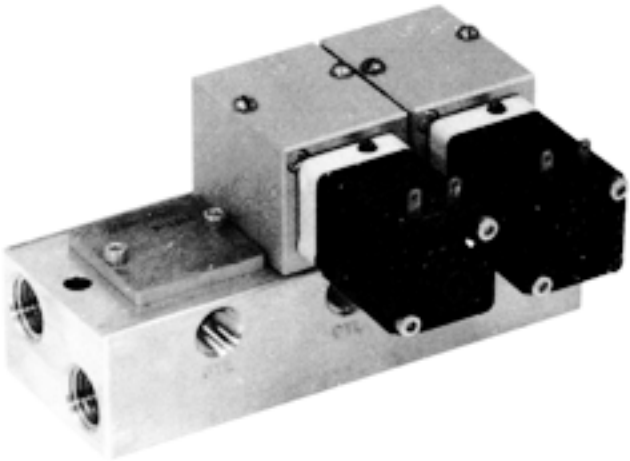


8-138A Block-Off Plate
For suspending use of any station or providing for future addition of valves.

8-137A Side Mount
For use as a valve mounting bracket.

8-136A Mounting Base
For use as a valve mounting base.

M125E1LW-39
Model M125E1LW-39 is identical to 125E1LW-39 for mounting on M Series Manifolds.

M Series Manifolds

Manifolds permit centralized location of control valves, simplify plumbing, and reduce installation and maintenance costs. Valves and manifold can be sub-assembled and placed in the end-product as a complete, unitized control unit, thereby saving the time and labor involved in installing valves individually.

M series Manifolds are available in models for one through twelve stations (M1 - M12) and accept any combination of 125E1LW prefix-M valves. The sturdy, one-piece extruded aluminum unit features a common inlet with a common captured exhaust. Captured exhaust is desirable when the exhausting medium must be piped away to avoid contamination of the ambient area, as in clean rooms.

Valves may be mounted in either of two positions, and the position of the electrical connection may be changed by either reversing the valve on the manifold or by rotating the molded coil.

Specifications

MEDIA:
Compressed Air (Consult factory for others)

PRESSURE RANGE:
125E1: 30 to 100 psig (2.1 to 7.0 bars)
125AE1: 0 to 125 psig (0 to 8.6 bars) (body), 30 to 100 psig (2.1 to 7.0 bars) (pilot)
External pilot pressure (AE1LW): Equal to valved pressure, 30 psig (2.1 bars) Minimum
VA125AE1: 0 to 29.5" Hg (body), 0 to 100 psig (0 to 7.0 bars) (pilot)

TEMPERATURE RANGE:
–0 to 150°F (–17.8 to 65.6°C)

OPERATING SPEEDS:
To 600 CPM

MATERIALS:
Aluminum, Brass, Stainless Steel, Epoxy Molded Coil, Zytel, Zinc Plated Steel, Buna N

LUBRICATION . . . . . Not required

FILTRATION . . . . . Recommended, 40 Microns Minimum

Air Flow to Atmosphere

MODEL	25 PSIG CFM	(1.7 BARS) LPM	125 PSIG CFM	(8.6 BARS) LPM
125E1LW	3.0	84.9	13.0	367.9

Weight

ACTUAL LBS	KGS
0.30	0.14

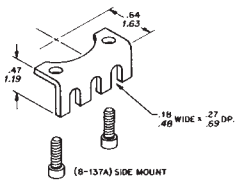
Electrical Specifications

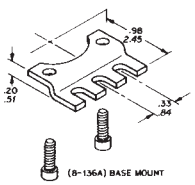
MODEL	VOLTAGE	COIL NUMBER	WATTS	AMPS	OHMS	HEAT RISE (°C)	ON TIME SECONDS	OFF TIME SECONDS
125E1LW	24 DC	46-601	0.5	0.021	1152	11.3	0.005	0.006
	120 AC	46-600	1.0	0.012	5832	16.8	0.005	0.020

See Electric Air Valves Introduction, Continuous Duty Coils, for additional voltages.

Fill/Exhaust Times (Seconds)

	SUPPLY PRESSURE							
	At 50 psig (3.5 bars)				At 100 psig (7.0 bars)			
	Chamber Fill 0-40 psig (0-2.8 bars)		Exhaust 50-10 psig (3.5-.7 bars)		Chamber Fill 0-80 psig (0-5.5 bars)		Exhaust 100-20 psig (7.0-1.4 bars)	
	10 Cubic Inches (164cc)		100 Cubic Inches (1640cc)		10 Cubic Inches (164cc)		100 Cubic Inches (1640cc)	
MODEL	FILL	EXHAUST	FILL	EXHAUST	FILL	EXHAUST	FILL	EXHAUST
125E1LW	0.152	0.132	1.360	1.190	0.144	0.152	1.280	1.300





Options for 125E1LW electric air valves

- Fluoroelastomer diaphragms for main body only for resistance to mild chemicals.

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125LW Series
1/8-inch ports, 2-way, 3-way

125LW VALVES

	2 Way	3 Way	Norm. Closed	Norm. Open "NO"	w/Out Mount. Base	With Mount. Base	Spade Terminals	Flying Leads (18")	DIN Con-nector	Manual Override non-locking	Manual Override locking	FKM** Seals Body Only	Voltage 5VDC, 12 VDC, 24VDC, 24VAC/50/60, 120VAC/50/60 240VAC/50/60
Option Code				NO				38	39	80	81	w/VAI	Specify Voltage
Model 125E1LW	*	STD	STD	NA	STD	OS	STD	SP	SP	SP	SP	SP	N/C
125AE1LW	*	STD	STD	N/C	STD	OS	STD	SP	SP	SP	SP	SP	N/C
VA125AE1LW	*	STD	STD	NA	STD	OS	STD	SP	SP	SP	SP	SP	N/C
M125E1LW	*	STD	STD	NA	NA	NA	STD	SP	SP	SP	SP	SP	N/C
M125AE1LW	*	STD	STD	N/C	NA	NA	STD	SP	SP	SP	SP	SP	N/C
VAM125AE1LW	*	STD	STD	NA	NA	NA	STD	SP	SP	SP	SP	SP	N/C

*Plug one port **Fluoroelastomer
NOTE: Only M/125AE1LW valves are available normally open. Specify "NO."

MANIFOLDS

Model	
M1	**M7**
M2	**M8**
M3	**M9**
M4	**M10**
M5	**M11**
M6	**M12**

M1=1 station. M7=7 stations; etc.

ACCESSORIES

Model	Description
8-136A	Mounting Base (In-Line).
8-137A	Side Mount (In-Line).
8-138A	Block-Off Plate (M Series).
HS-2	DIN Connector for use with Code 39 valves.
HS-2L	DIN Connector with Light (DC Only) for use with Code 39 valves.

NOTE: Valves, Manifolds, and Accessories are shipped detached, ready to be mounted according to specific application requirements.

HOW TO ORDER

Starting with Model Number specify options in order from left to right.

Example: To Order Model 125E1LW-38-81 24VDC

3-Way Operation	(125E1LW)
18" Flying Leads	(125E1LW-38)
Locking Manual Override	(125E1LW-38-81)
Voltage 24VDC	(125E1LW-38-81 24VDC)

Remember: Option Codes marked STD and NA are not used as part of the Model Number when ordering. N/C indicates no charge but Option Code must be included in the Model Number. OS indicates that Option must be ordered separately and is not used as part of the Model Number.

N/C=No charge
NA =Not available
OS =Order separately, additional charge for this option

STD=Standard
SP=Specify, additional charge for this option