

Humphrey®

HK5 SERIES DIRECT-ACTING SOLENOID DIAPHRAGM VALVES



HK5 FEATURES

The Humphrey HK5 Series® 2-way and 3-way, single solenoid valve provides outstanding performance, versatility and value. Its inert construction makes it a ideal choice for many types of multi-media use.

Here are a few of its many benefits:

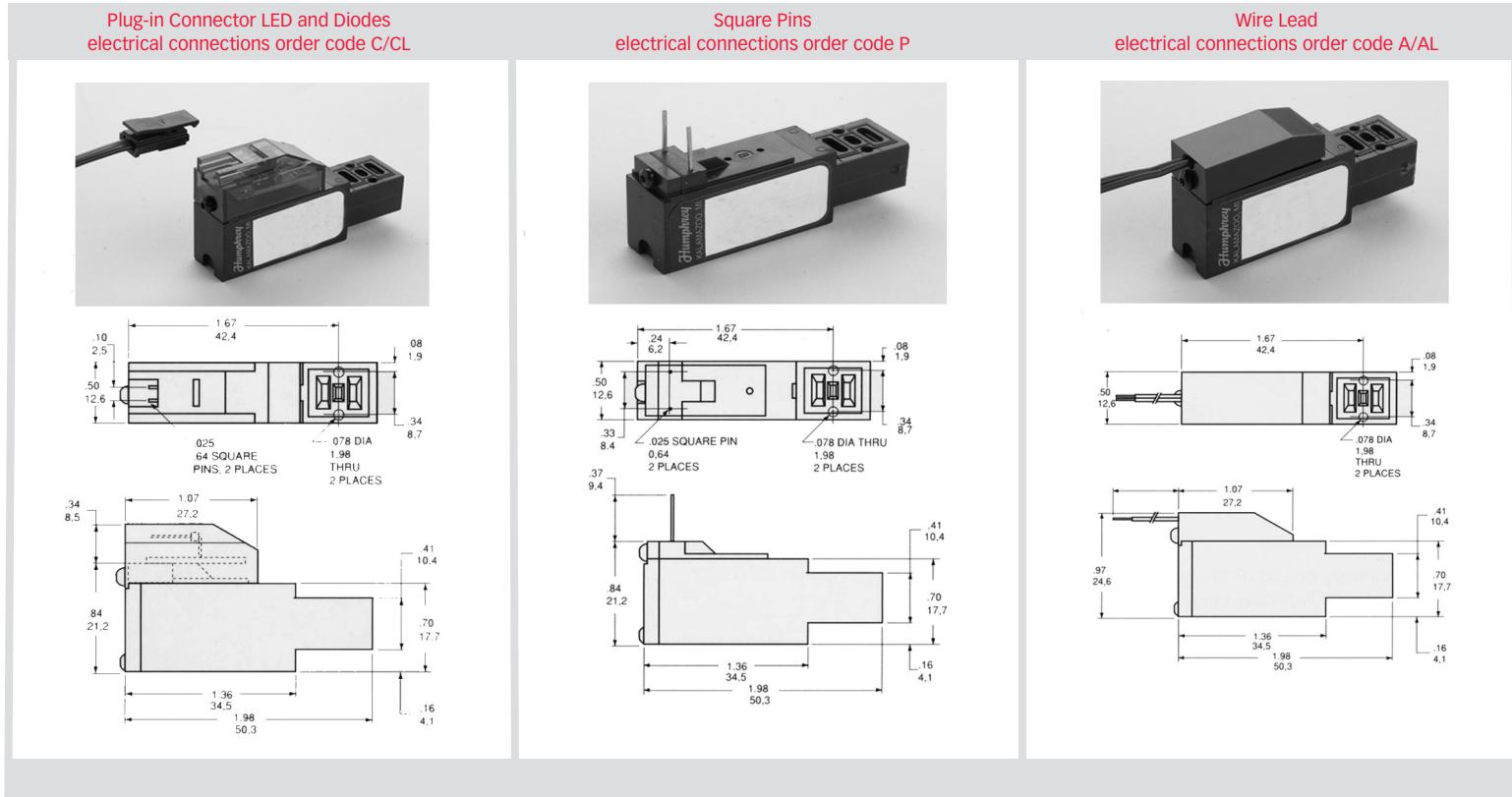
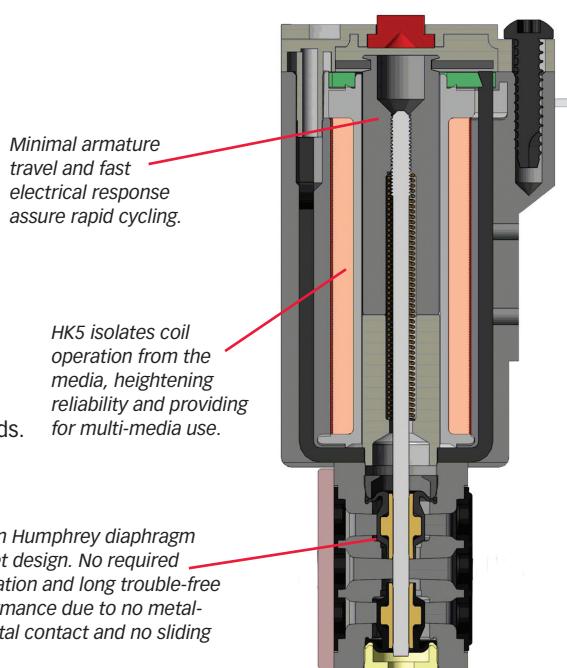
- Diaphragm poppet design.
- Versatile plumbing, electrical and mounting features.
- Quiet operation.
- Multi-function: 2-way or 3-way, normally closed or normally open.
- Excellent flow characteristics for a small, light, compact component: Cv .05 provides 3 scfm @ 100 psig. (85 Lpm).
- Direct operating: functions throughout the spectrum of 28" Hg to 100 psig.
- Multi-million life cycle. Tested to 100 million cycles. Should service ever be necessary, valves can be changed on the spot, in seconds.
- RoHS compliant.
- Made in the USA.

The HKL5 diaphragm valve is a compact flexible solution for controlling reagents and corrosive fluids.

- Diaphragm construction for positive separation of media from solenoid.
- All wetted surfaces are inert materials.
- Low leakage (bubble tight available – consult factory.)

Typical applications:

- Remote pilot operation of specialty gas and liquid valves.
- Direct control of air and inert gases.
- Vacuum applications.
- Operation of small bore cylinders.
- Applications in which media must remain unaffected.



Custom Solutions were developed from the HK5.

HK5 SPECIFICATIONS

Mechanical Specs

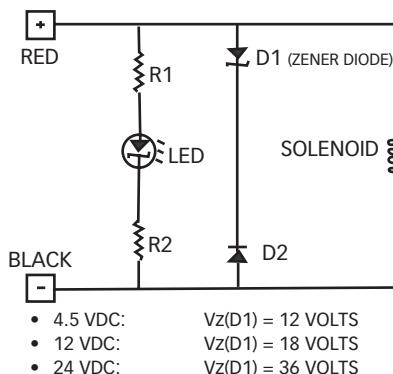
Media	Liquid, air, vacuum or inert gases (consult factory for other gas and liquid media)		
Vacuum/Pressure Range	28" Hg to 100 psig (6.8 bar) 28" Hg to 60 psig (4.1 bar) 28" Hg to 30 psig (2.0 bar)		
Ambient Temp. Range	32° to 125° F (0° to 50° C) 32° to 212° F (0° to 100° C) 32° to 175° F (0° to 80° C)		
Flow @ 100 psig	3.0 SCFM [85 Lpm] standard power		
Flow @ 60 psig	1.5 SCFM [42 Lpm] low power option		
C			
Standard power	.05		
Low power option	.035		
Fill Time [sec.] 0 to 80 psig [standard power]	1 cu.in. .06 sec.	10 cu.in. .60 sec.	100 cu.in. 6.0 sec.
Exhaust Time [sec.] 100 to 20 psig [standard power]	1 cu.in. .10 sec.	10 cu.in. 1.0 sec.	100 cu.in. 10.0 sec.
Leak Rate [Max. Allowed]	Gas: 2 cc/minute; Liquid: Minimal		
Type of Operation	Direct solenoid		
Effective Area	.0020 inch ² standard power .0014 inch ² low power option		
Lubrication	None required (if used, must be compatible with seal materials)		
Filtration	40 Micron Recommended		
Weight	35 gm (1.2 oz)		
Valve Wetted Materials	Thermoset Epoxy, Peek®, 304 and 303 stainless steel, seal material as specified. HKL5: 316 stainless steel stem		
	RoHS compliant		
Valve Function	2-way or 3-way, normally closed or normally open		

Electrical Specs

Coil Temp. Rise (any voltage single valve on subbase)	45° F (25°C) standard power 32° F (18°C) low power option
Response Time (on/off)	.010/.004 (sec.)
Voltage Tolerance	Plus 10%, minus 15% of rated voltage
Coil Voltages	4.5VDC, 12VDC, 24VDC
Power	1.7 watt Standard .9 watt Low Watt Option

• All coils conform to class B insulation systems.
 • Resistance and current are nominal values.
 • Ensure proper voltage supply per voltage level rating, +10%, -15%.

Surge suppression (zener diodes) available with electrical connections order code C and CL.



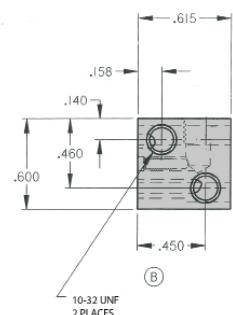
- 4.5 VDC: Vz(D1) = 12 VOLTS
- 12 VDC: Vz(D1) = 18 VOLTS
- 24 VDC: Vz(D1) = 36 VOLTS



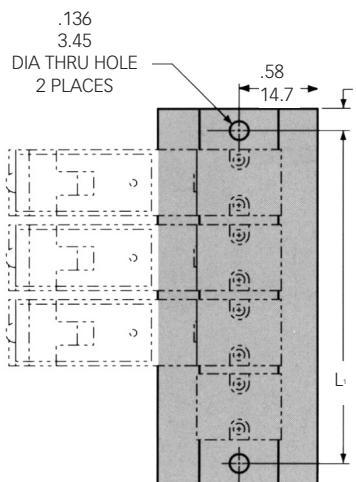
Industries affected by the HK5 Engineered Solutions: medical, laboratories, recycling and more.

MANIFOLDS/SUBBASES

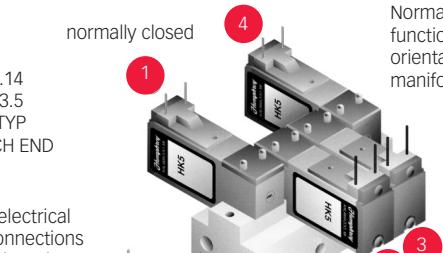
# stations	L1	L2
HK5M04	4	2.480
HK5M06	6	3.582
HK5M08	8	4.684
HK5M10	10	5.786
HK5M12	12	6.888
HK5MM02	2	-
HK5MM03	3	-
		1.25
		1.80



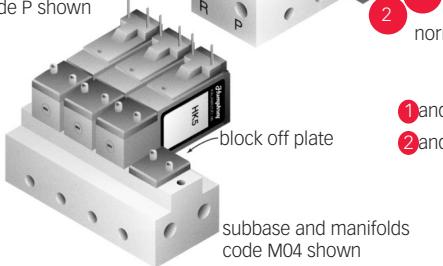
MM02 & MM03



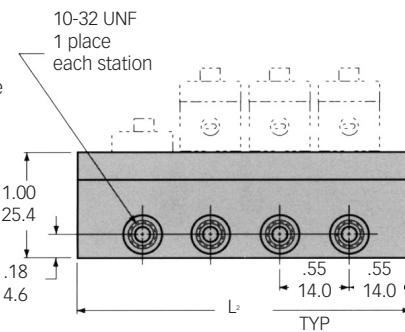
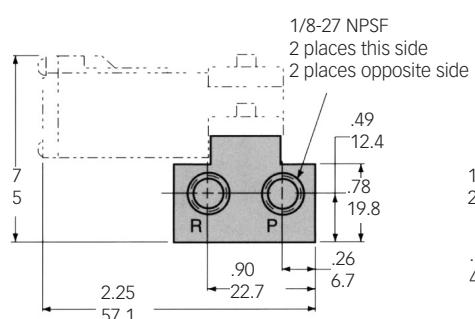
normally closed
.14
3.5
TYP
EACH END



Normally closed or normally open function is determined by the orientation of the valve on the manifold.



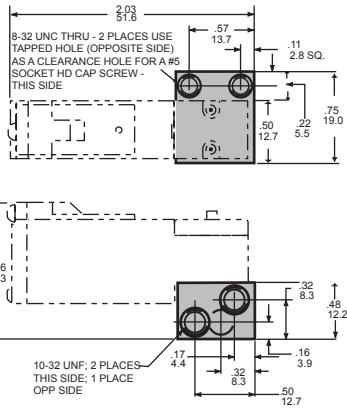
- 1 and 4 are normally closed
- 2 and 3 are normally open



M04–M12

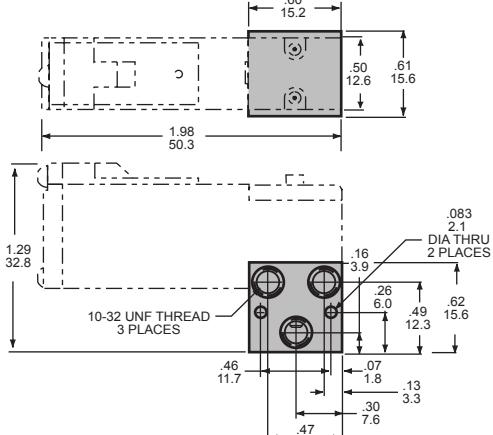
S Subbase

2 or 3 way with 10-32 UNF ports



Y Subbase

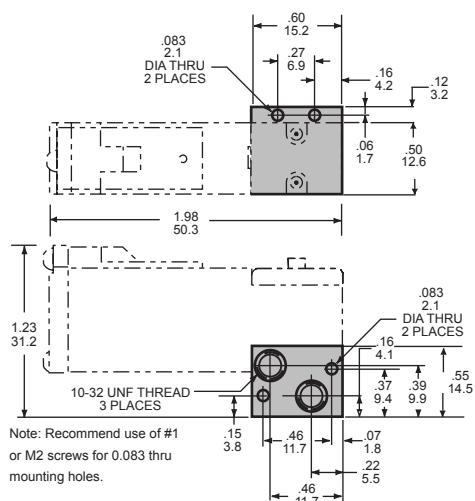
2 or 3 way with 10-32 UNF ports



Shown normally closed. Rotate Valve 180 degrees on subbase for normally open operation.

Z Subbase

2 way with 10-32 UNF ports



Note: Recommend use of #8 or M2 screws for 0.083 thru

Shown normally closed. Rotate Valve 180 degrees on subbase for normally open operation.



HOW TO ORDER

HK5
H 2 24 AL NR S R (example)

OPTIONS
 O NORMALLY OPEN - SEE NOTE
 R ROTATED COIL

ASSEMBLED SUBBASSES - SEE NOTE

Y 3 WAY 10-32 UNF PORTS ON ONE SURFACE
 S 3 WAY, 10-32 UNF PORTS ON TWO SURFACES
 Z 2 WAY 10-32 UNF PORTS

OVERRIDES

NR NO OVERRIDE
 NL NON-LOCKING OVERRIDE

ELECTRICAL CONNECTIONS

P .025 SQUARE PINS
 A WIRE LEADS (50 CM)
 AL WIRE LEADS (100 CM)
 C LED W/ZENERS & CONNECTOR (30 CM)
 CL LED W/ZENERS & CONNECTOR (100 CM)

VOLTAGE

04 4.5V DC
 L04 4.5V DC LOW WATT
 12 12V DC
 L12 12V DC LOW WATT
 24 24V DC
 L24 24V DC LOW WATT

PORTING (determines type of gasket supplied with valve)

3 3 WAY, 3 PORT
 2 2 WAY, 2 PORT

SEAL MATERIAL

B NBR [BUNA NITRILE] 32° F TO 125° F (0° C TO 50° C)
 E EPDM [ETHYLENE PROPYLENE] 32° F TO 175° F (0° C TO 80° C)
 F FKM [FLUOROCARBON] 32° F TO 212° F (0° C TO 100° C)
 H HNBR [HIGHLY SATURATED NITRILE] 32° F TO 175° F (0° C TO 80° C)

SUBBASE AND MANIFOLDS

HK5 or HKL5 MO6 (example)

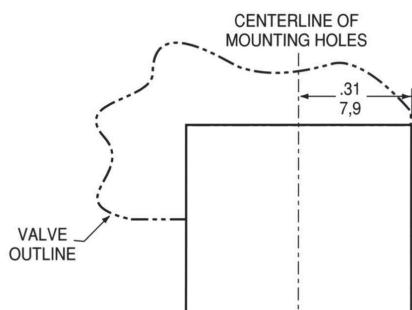
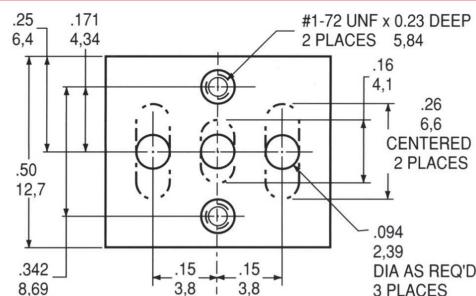
025Y	3 WAY 10-32 UNF PORTS ON ONE SURFACE
025Z	2 WAY 10-32 UNF PORTS
MM02	2 STN MANIFOLD
MO4	4 STN MANIFOLD
MO6	6 STN MANIFOLD
M08	8 STN MANIFOLD
M10	10 STN MANIFOLD
M12	12 STN MANIFOLD
BOP	BLOCK OFF PLATE, NBR GASKET
BOP-HNBR	GASKETS BAG OF 10

ACCESSORIES

ORDER CODE DESCRIPTION

- 35000B NBR GASKET (BOP) BAG OF 10
- 35000E EPDM GASKET (BOP) BAG OF 10
- 35000F FKM GASKET (BOP) BAG OF 10
- 35000H HNBR GASKET (BOP) BAG OF 10
- 35002B NBR GASKET (VALVE, 2-WAY), BAG OF 10
- 35002E EPDM GASKET (VALVE, 2- WAY) BAG OF 10
- 35002F FKM GASKET (VALVE, 2-WAY), BAG OF 10
- 35002H HNBR GASKET (VALVE, 2-WAY), BAG OF 10
- 35003B NBR GASKET (VALVE, 3-WAY), BAG OF 10
- 35003E EPDM GASKET (VALVE, 3-WAY), BAG OF 10
- 35003F FKM GASKET (VALVE, 3-WAY), BAG OF 10
- 35003H HNBR GASKET (VALVE, 3-WAY), BAG OF 10
- 35006 PLUG-IN CONNECTOR (30 CM), ELECTRICAL CONNECTIONS ORDER CODE C
- 35007 PLUG-IN CONNECTOR (100 CM), ELECTRICAL CONNECTIONS ORDER CODE CL
- 35008L .025 SQUARE PINS IDC CONNECTOR WITH 50 CM LEADS, BAG OF 10
- 35008LL .025 SQUARE PINS IDC CONNECTOR WITH 100 CM LEADS BAG OF 10

To adapt valve to your own manifold or subbase, use this porting footprint.

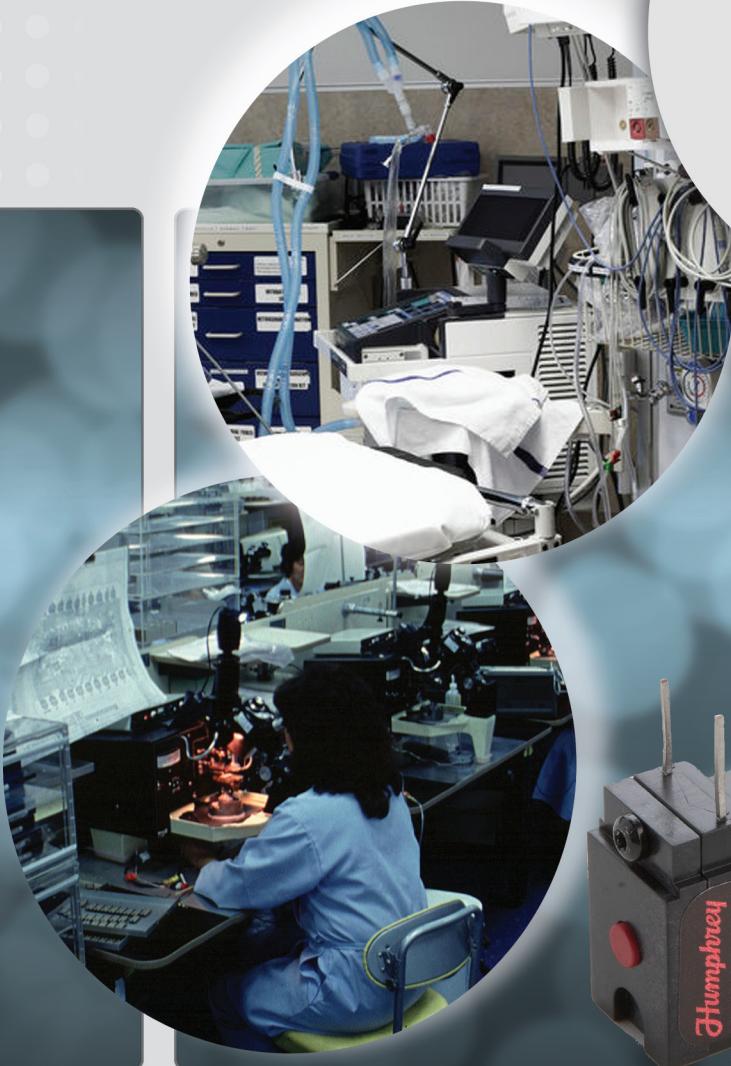


NOTE: ALL VALVES ARE ASSEMBLED NORMALLY CLOSED TO MANIFOLDS AND SUBBASES, UNLESS OPTION "O", NORMALLY OPEN, IS SPECIFIED.



The Humphrey Engineered Solutions team has utilized HK5 Series® 2-way and 3-way, single solenoid valves to develop numerous successful custom products. While the medical, analytical instrumentation and health care industries have achieved optimum results from the valves' flexible features, the HK5 valves will work for many other market segments. Its flexible design along with its inert construction, fast response time, compact size, low leakage and compatibility for several forms of media make it the key to many Engineered Solutions successes. For more information on Engineered Solutions, please visit www.humphrey-products.com.

Your Engineered Solution



Humphrey®

BUILD ON OUR EXPERIENCE

A privately owned US company since 1901.