

*Humphrey*<sup>®</sup>

**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: C<sub>v</sub> .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.)

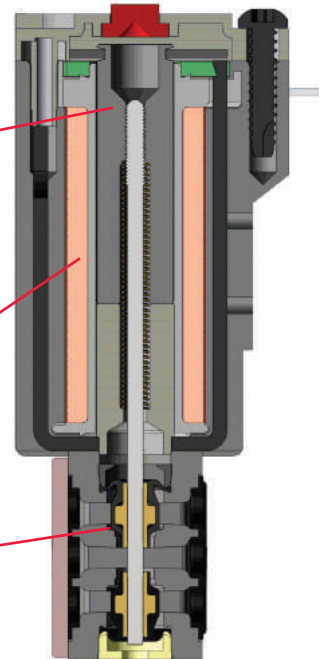
Typical applications:

- 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.

Minimal armature travel and fast electrical response assure rapid cycling.

HK5 isolates coil operation from the media, heightening reliability and providing for multi-media use.

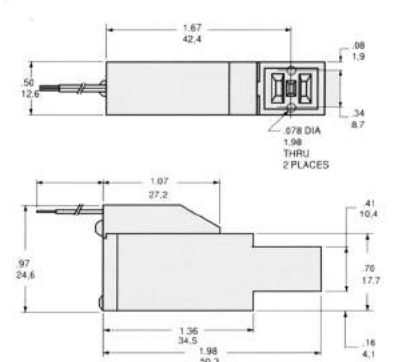
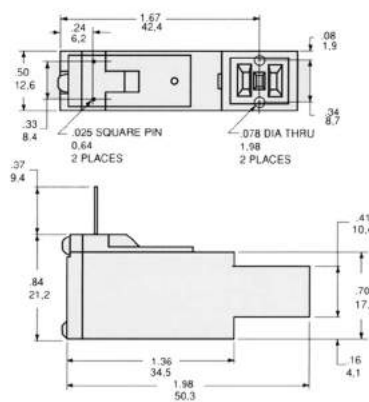
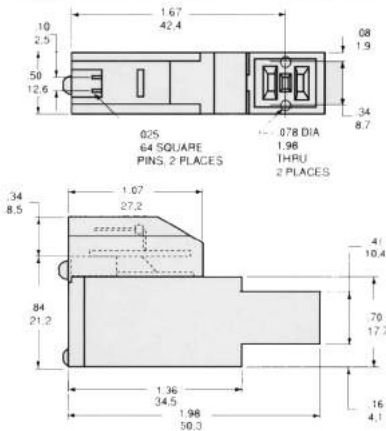
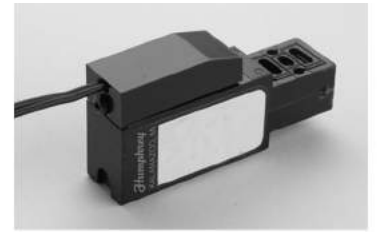
Proven Humphrey diaphragm poppet design. No required lubrication and long trouble-free performance due to no metal-to-metal contact and no sliding seals.



Plug-in Connector LED and Diodes  
electrical connections order code C/C/L

Square Pins  
electrical connections order code P

Wire Lead  
electrical connections order code A/AL



# HK5 SPECIFICATIONS

## Mechanical Specs

**Media** Liquid, air, vacuum or inert gases  
(consult factory for other gas and liquid media)

**Vacuum/Pressure Range**  
 B and H seal material 28" Hg to 100 psig (6.8 bar)  
 E and F seal material 28" Hg to 60 psig (4.1 bar)  
 HKL5 (all elastomers) 28" Hg to 30 psig (2.0 bar)

**Ambient Temp. Range**  
 B seal material 32° to 125° F (0° to 50° C)  
 F seal material 32° to 212° F (0° to 100° C)  
 E and H seal material 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** 1 cu.in. 10 cu.in. 100 cu.in.  
 [standard power] .06 sec. .60 sec. 6.0 sec.

**Exhaust Time [sec.] 100 to 20 psig** 1 cu.in. 10 cu.in. 100 cu.in.  
 [standard power] .10 sec. 1.0 sec. 10.0 sec.

**Leak Rate [Max. Allowed]** Gas: 2 cc/minute; Liquid: Minimal

**Type of Operation** Direct solenoid

**Effective Area** .0020 inch<sup>2</sup> standard power  
 .0014 inch<sup>2</sup> 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.)

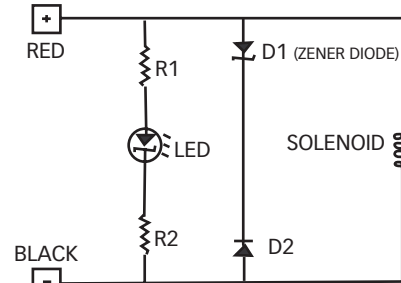
**Voltage Tolerance** Plus 10%, minus 15% of rated voltage

**Coil Voltages** 4.5VDC, 12VDC, 24VDC

**Power** 1.7 watt Standard  
 .9 watt Low Watt Option

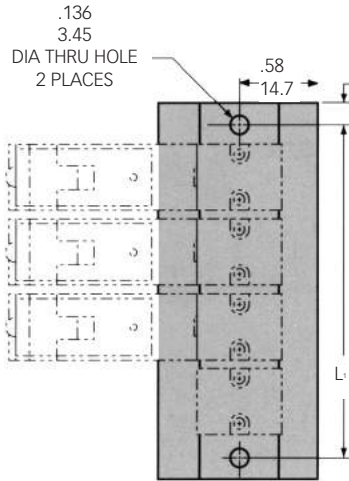
- All coils conform to class B insulation systems.
- Resistance and current are nominal values.
- Ensure proper voltage supply per voltage level rating, +10%, -15%.

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

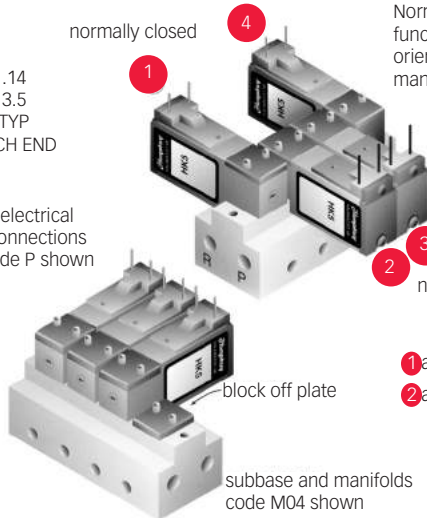


- 4.5 VDC: Vz(D1) = 12 VOLTS
- 12 VDC: Vz(D1) = 18 VOLTS
- 24 VDC: Vz(D1) = 36 VOLTS

| # 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  | -     |

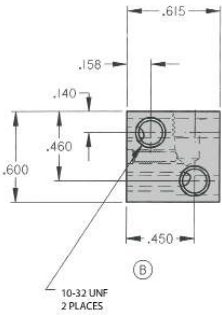


Normally closed or normally open function is determined by the orientation of the valve on the manifold.

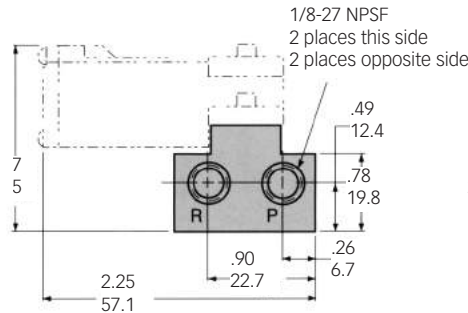


1 and 4 are normally closed  
2 and 3 are normally open

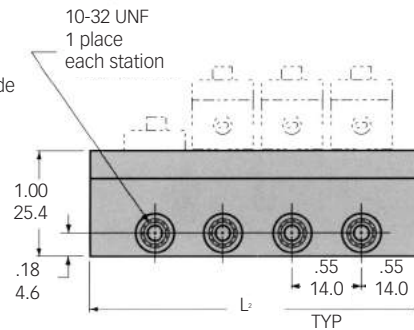
subbase and manifolds code M04 shown



**MM02 & MM03**

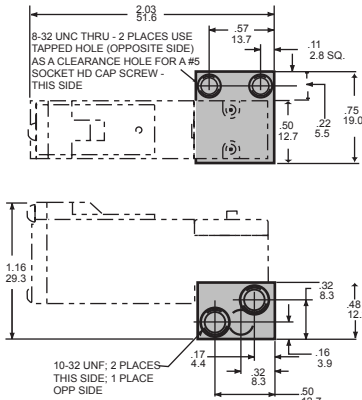


**M04-M12**



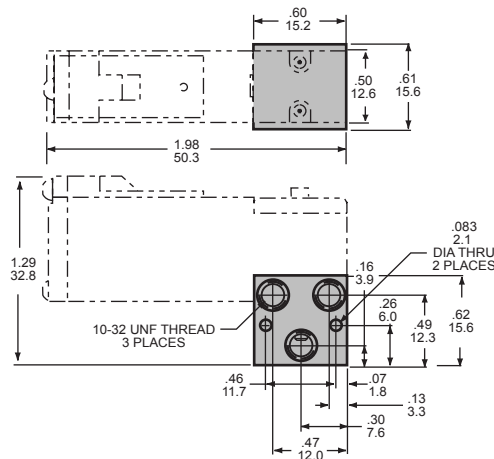
## S Subbase

2 or 3 way with 10-32 UNF ports



## Y Subbase

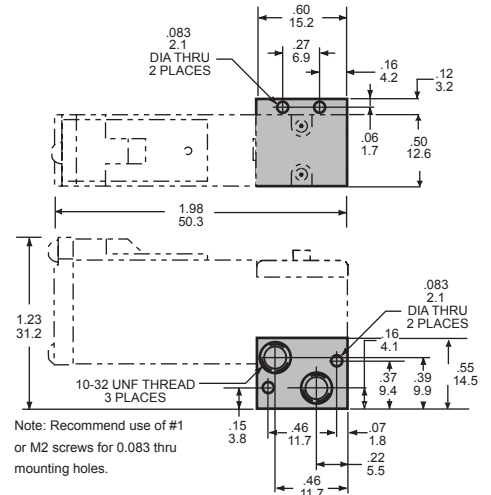
2 or 3 way with 10-32 UNF ports



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 #1 or M2 screws for 0.083 thru mounting holes.

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

