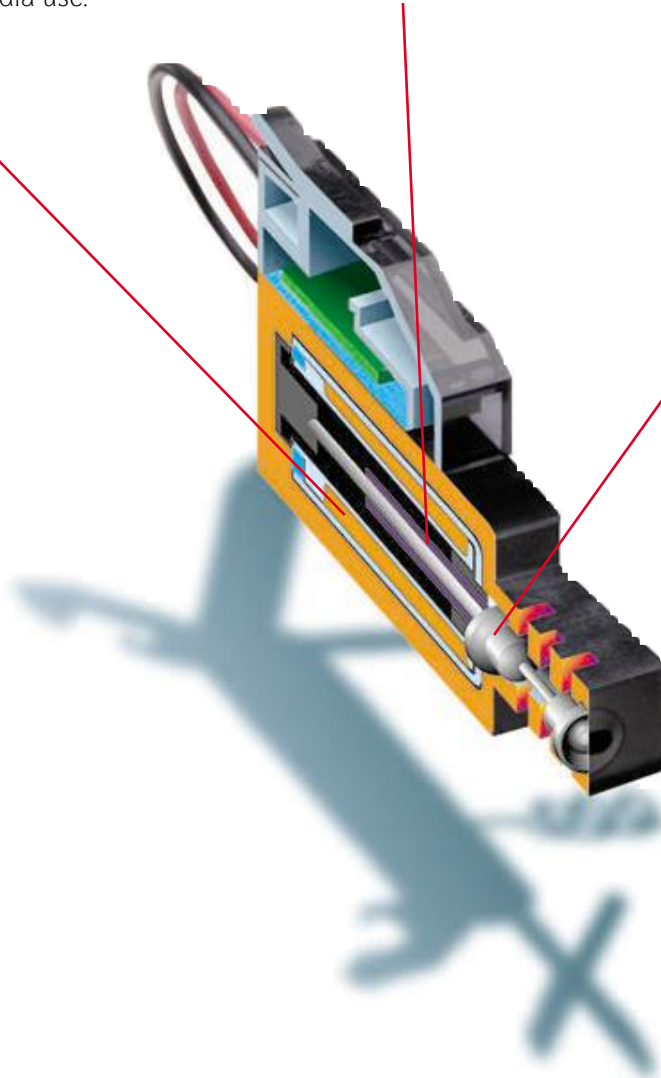


Nereus isolates coil operation from the media, heightening reliability and providing for multi-media use.

Minimal armature travel and fast electrical response assure rapid cycling.

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



The new Humphrey Nereus® 2-way and 3-way, single solenoid valve provides outstanding performance, versatility and value. Designed in response to what our customers told us they needed, Nereus provides what you require in your application.

Here are a few of its many attractive benefits:

- Nereus has versatile plumbing, electrical and mounting features. Nereus conforms to your application, not the other way around.
- Quiet operation. Nereus is ideal where noise may pose a problem.
- Multi-function: 2-way or 3-way, normally closed or normally open. Universal operation: selector, diverter or standard fill/exhaust uses.
- 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 cycle life. In lab tests, we stopped counting at 100 million cycles. Should service ever be necessary, valves can be changed on the spot, in seconds.
- Nereus has clean good looks. Its sleek design adds to the aesthetics of your product.

Typical applications:

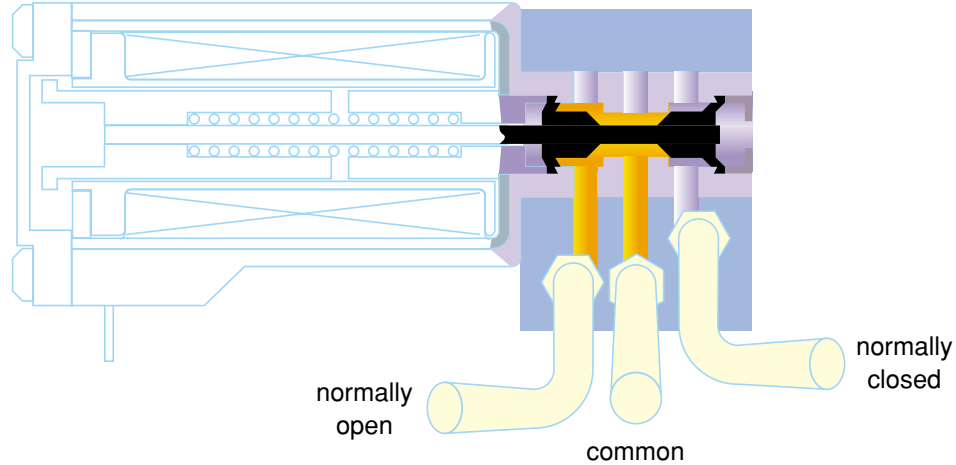
- Remote pilot operation of specialty gas and liquid valves
- Direct control of air and inert gases
- Vacuum applications
- Operation of small bore cylinders
- Applications in which media must remain unaffected
- Diverting media from one channel to another
- Selecting between two media or two pressures
- Many others

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Humphrey®

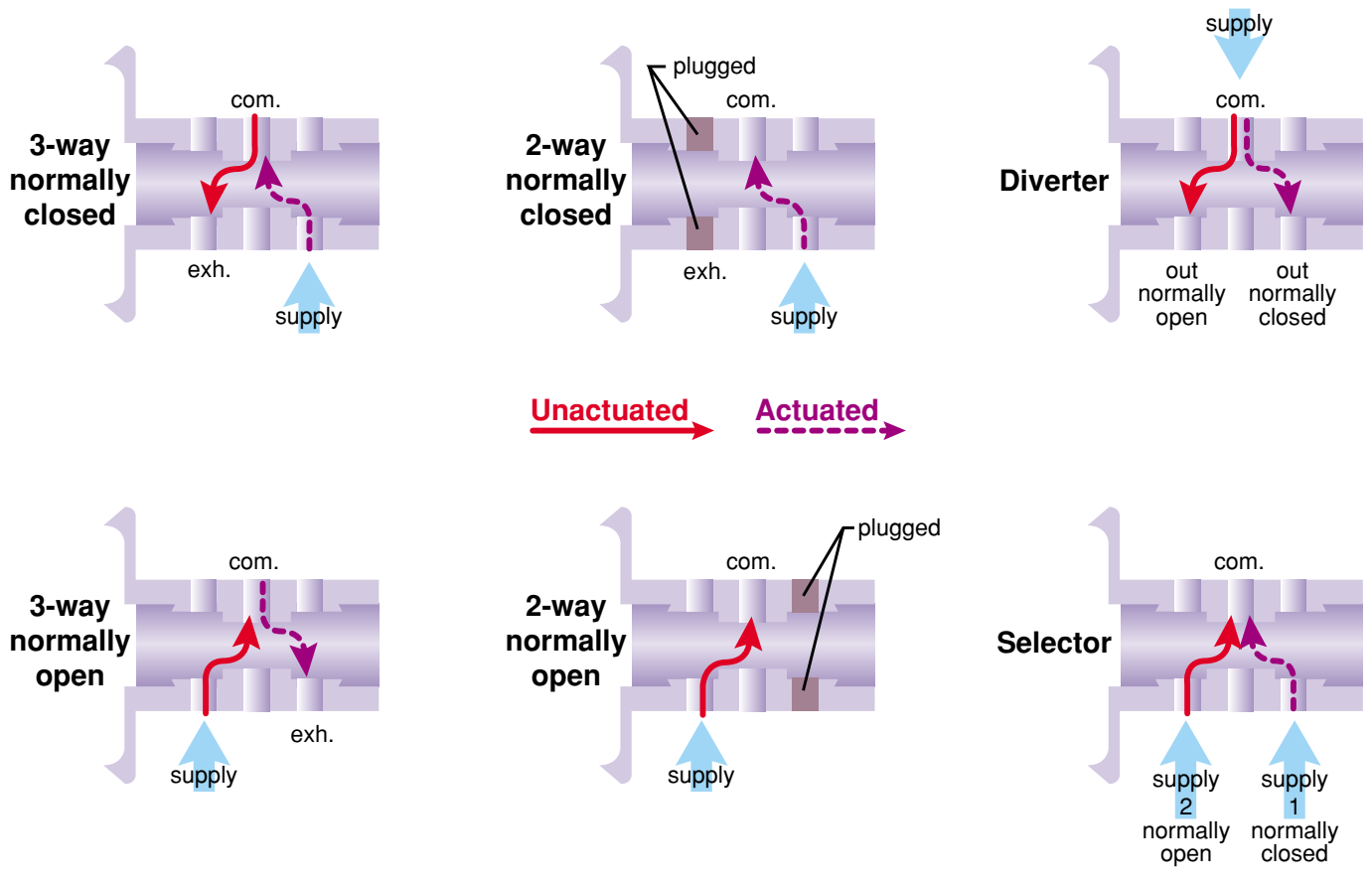
The pioneer in diaphragm-poppet valve design, Humphrey has years of experience in supplying valves of this type to the users of pneumatics. Here are the prime advantages of diaphragm-poppet valves:

- Excellent flow.
- Simple design. Just two diaphragms on a common stem.
- No sliding seals. No lubrication required.
- No metal-to-metal contact. Poppets simply move in and out of valve seats.



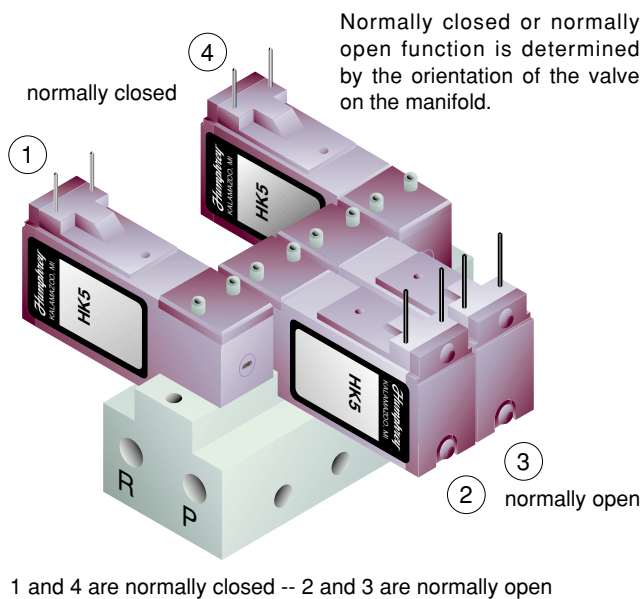
Porting Diagrams

Nereus provides several different porting configurations, as standard. Simply hook it up the way you want to use it.

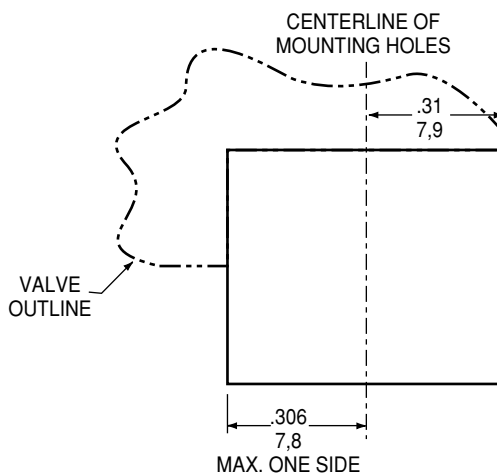
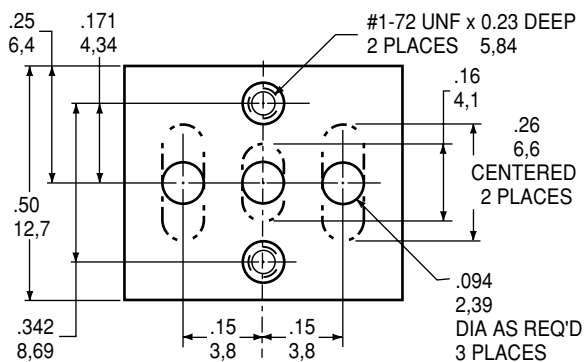


Nereus provides great plumbing, electrical and mounting versatility. Valves can be mounted and plumbed in a variety of different ways to achieve your specific objectives. Various electrical connectors add even more variety.

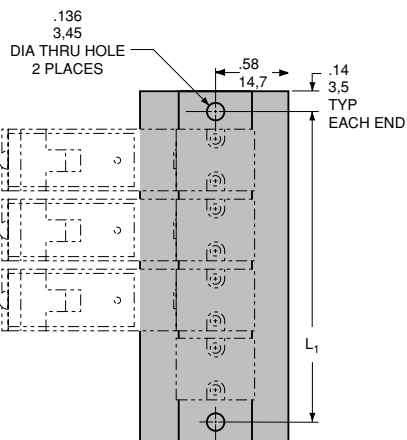
To adapt valve to your own manifold or subbase, use this porting footprint.



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

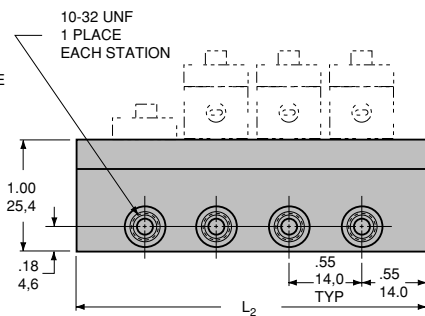
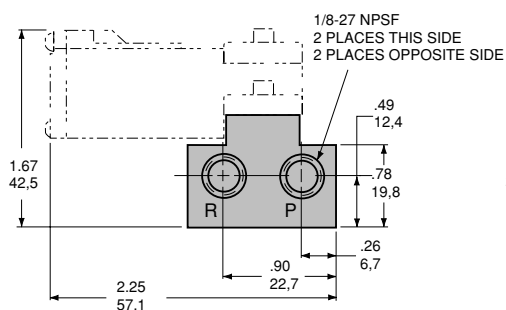
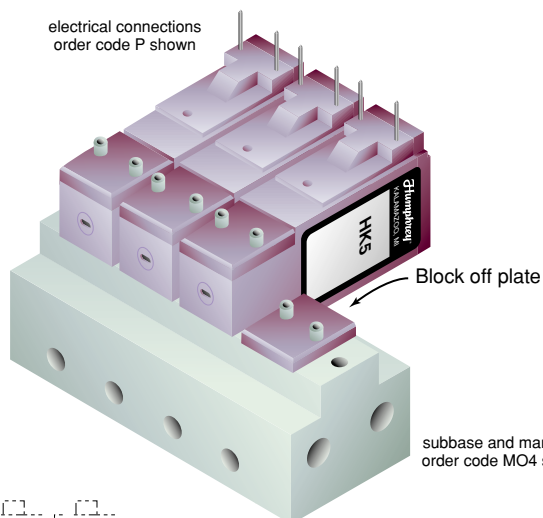


Manifolds



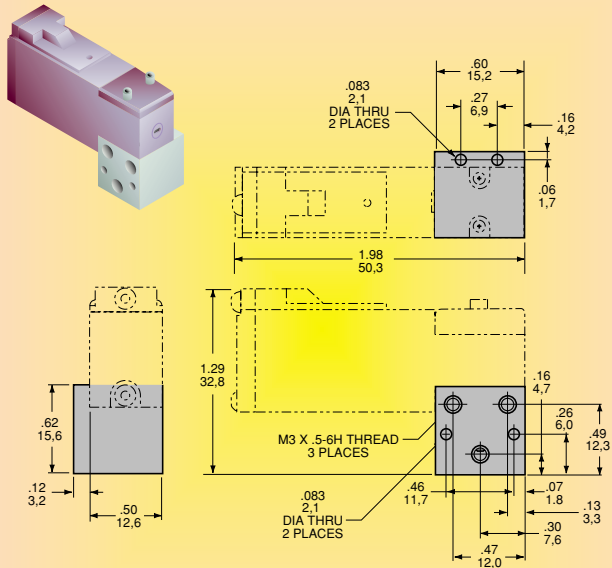
# stations	L ₁	L ₂	
M04	4	2.480	2.76
M06	6	3.582	3.86
M07	7	4.133	4.41
M08	8	4.684	4.96
M10	10	5.786	6.06
M12	12	6.888	7.16
MM02	2	-	1.25
MM03	3	-	1.80

electrical connections
order code P shown



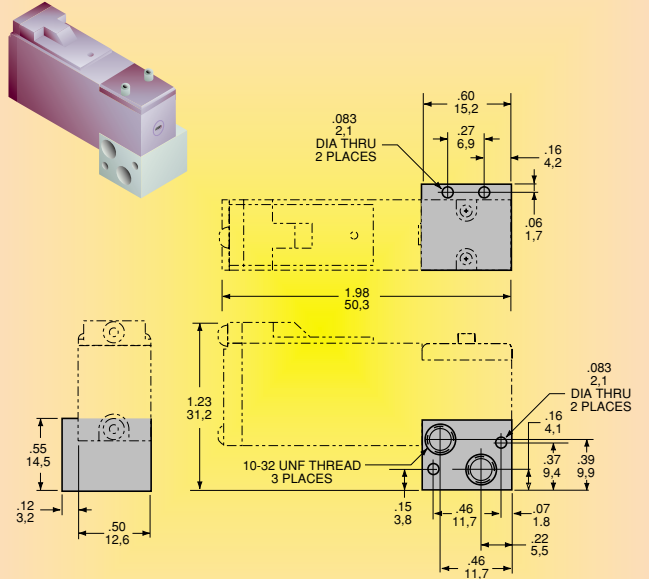
Subbase

M Subbase, 2 or 3 way with M3 ports



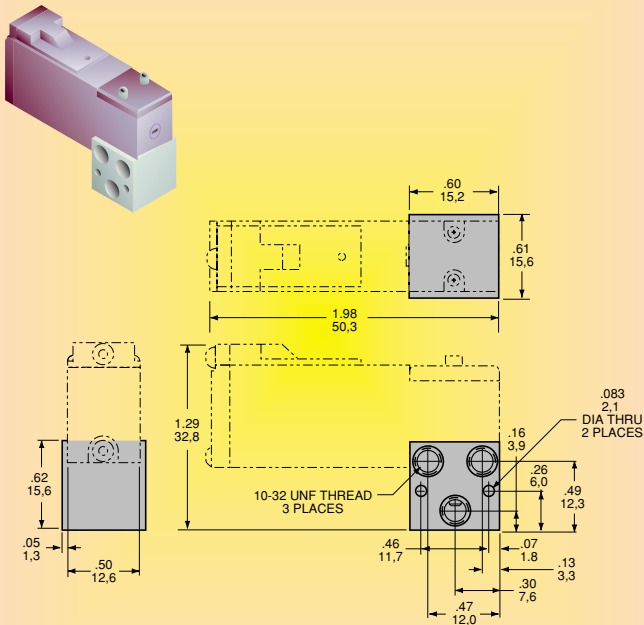
Shown normally closed (Ports will be on the other side for "O" Normally open Option)

Z Subbase, 2 way with 10-32 UNF ports



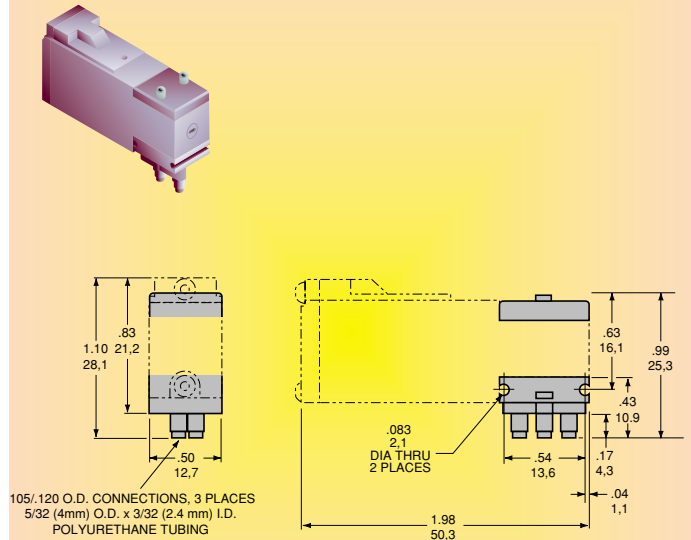
Shown normally open. Rotate valve 180 degrees on subbase for normally closed operation.

Y Subbase, 2 or 3 way with 10-32 UNF ports



Shown normally closed (Ports will be on the other side for "O" Normally open Option)

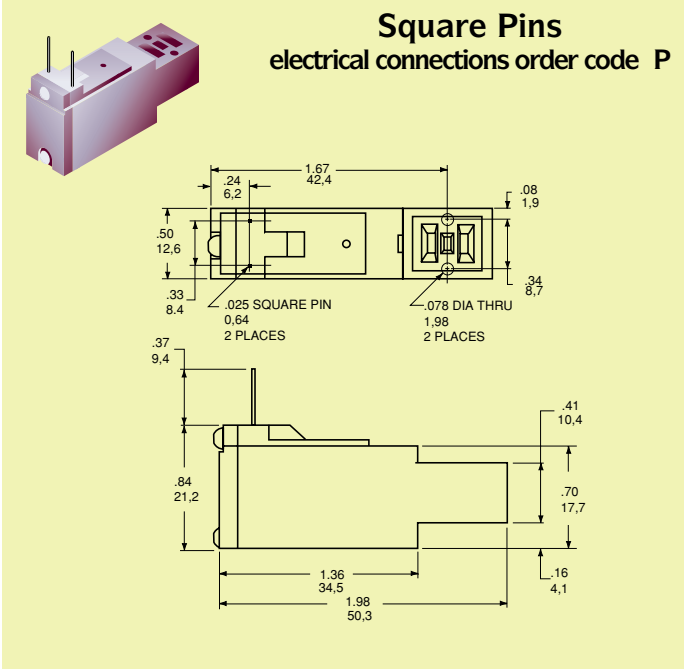
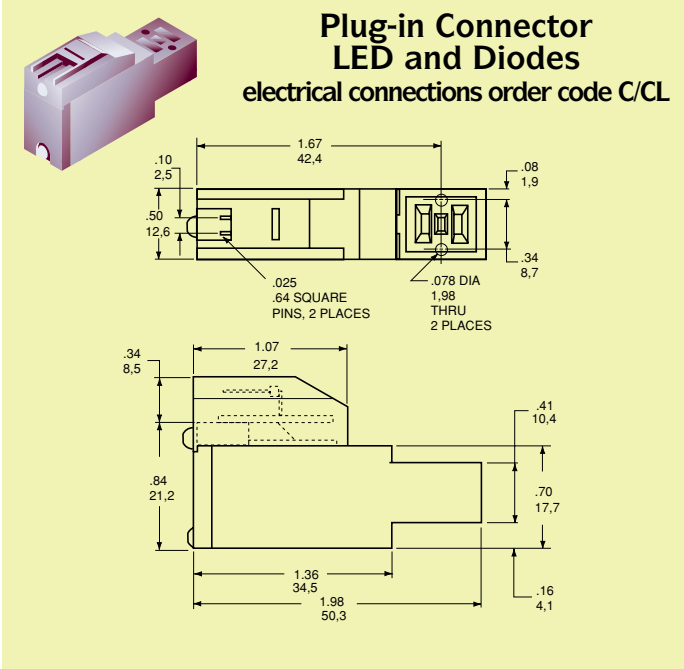
T Subbase, 2 or 3 way tubing cover



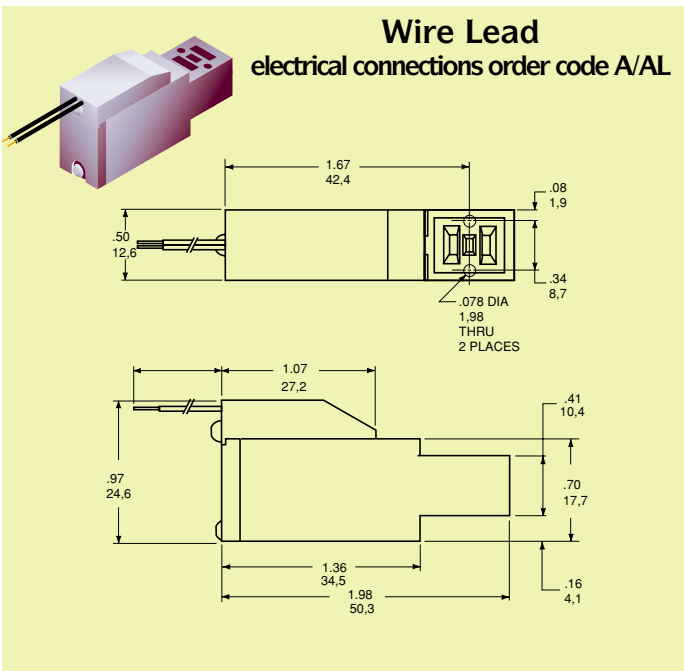
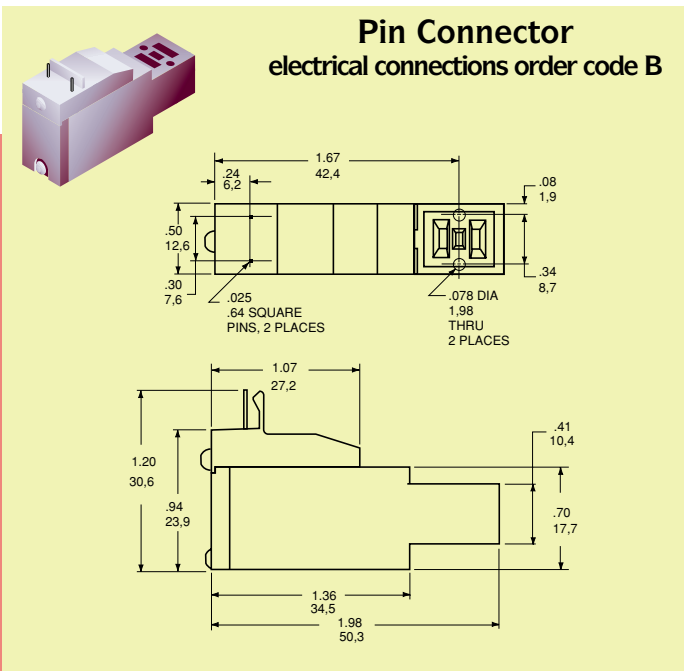
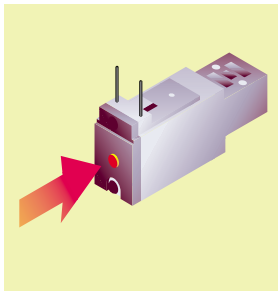
Note: Recommend use of #1 or M2 screws for 0.083 thru mounting holes.

Dimensions = 0.00 in. 0.0 mm

Electrical Options, Dimensional Specifications



Override
Order code NL



Nereus Model HK5 Specifications

- 2-way or 3-way
- Multi-purpose: selector, diverter or universal (connect media to any port)
- Normally closed or normally open
- Air, inert gas or vacuum

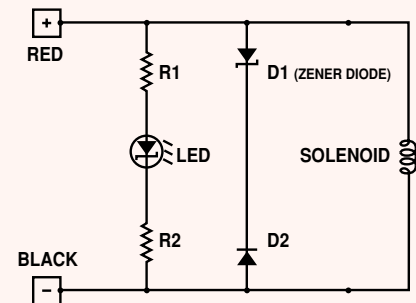
Media	Air, vacuum or inert gases (consult factory for other gas and liquid media)		
Vacuum/Pressure Range	28" Hg to 100 psig (6.8 bar)		
B and H seal material	28" Hg to 100 psig (6.8 bar)		
F seal material	28" Hg to 60 psig (4.1 bar)		
Ambient Temp. Range	32° to 125°F (0° to 50°C)		
B seal material	32° to 212°F (0° to 100°C)		
F seal material	32° to 175°F (0° to 80°C)		
H seal material	32° to 175°F (0° to 80°C)		
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		
Flow @ 100 psig	3.0 SCFM [85 Lpm] standard power		
Flow @ 60 psig	1.5 SCFM [42 Lpm] low power option		
C_v			
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)	2 cc/minute		
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, Radel R®, 304 and 303 stainless steel, seal material as specified		

Nereus Model HK5 Electrical Specifications

Voltage	Resistance (Ohms)	Current (Amps)	Power (Watts)
4.5VDC	13.5	.333	1.50
4.5VDC w/LED	13.2	.340	1.53
4.5VDC LOW POWER	28.1	.160	.72
4.5VDC LOW POWER w/LED	26.9	.167	.75
12VDC	88.0	.136	1.63
12VDC w/LED	83.9	.143	1.72
12VDC LOW POWER	169	.071	.85
12VDC LOW POWER w/LED	154	.078	.94
24VDC	367	.065	1.55
24VDC w/LED	333	.072	1.73
24VDC LOW POWER	726	.033	.79
24VDC LOW POWER w/LED	600	.040	.96

- All coils conform to class B insulation systems.
- Resistance and current are nominal values.
- Valve assemblies are "hi-pot" tested at 1,000VAC for one second.
- 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: V_z (D1) = 12 VOLTS
- 12 VDC: V_z (D1) = 18 VOLTS
- 24 VDC: V_z (D1) = 36 VOLTS

Order Codes

VALVES

H K 5 H 2 24 AL NR S R (example)

OPTIONS

- A FACTORY ASSEMBLED TO MULTIPLE STATION MANIFOLD
- O NORMALLY OPEN - SEE NOTE
- R ROTATED COIL

ASSEMBLED SUBBASES - SEE NOTE

- M 3 WAY, M3 PORTS
- S 3 WAY, 10-32 UNF PORTS ON TWO SURFACES
- T 3 WAY TUBE COVER
- Y 3 WAY 10-32 UNF PORTS ON ONE SURFACE
- 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)
- B .025 SQUARE PIN HEADER
- 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

H K 5 MO6 (example)

- 025M 3 WAY, M3 PORTS
- 025S 3 WAY, 10-32 UNF PORTS
- 025T 3 WAY TUBE COVER WITH 20MM SCREWS AND NUTS
- 025Y 3 WAY 10-32 UNF PORTS ON ONE SURFACE
- 025Z 2 WAY 10-32 UNF PORTS
- MM02 2 STN MANIFOLD
- MM02A 2 STN MANIFOLD, ASSEMBLED
- MM03 3 STN MANIFOLD
- MM03A 3 STN MANIFOLD, ASSEMBLED
- M04 4 STN MANIFOLD
- M04A 4 STN MANIFOLD, ASSEMBLED - SEE NOTE
- M06 6 STN MANIFOLD
- M06A 6 STN MANIFOLD, ASSEMBLED - SEE NOTE
- M08 8 STN MANIFOLD
- M08A 8 STN MANIFOLD, ASSEMBLED - SEE NOTE
- M10 10 STN MANIFOLD
- M10A 10 STN MANIFOLD, ASSEMBLED - SEE NOTE
- M12 12 STN MANIFOLD
- M12A 12 STN MANIFOLD, ASSEMBLED - SEE NOTE
- BOP BLOCK OFF PLATE, NBR GASKET
- BOPA BLOCK OFF PLATE, NBR GASKET, ASSEMBLED
- BOPF BLOCK OFF PLATE, FKM GASKET
- BOPFA BLOCK OFF PLATE, FKM GASKET, ASSEMBLED
- BOPH BLOCK OFF PLATE, HNBR GASKET
- BOPHA BLOCK OFF PLATE, HNBR GASKET, ASSEMBLED

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
- 35008 .025 SQUARE PINS IDC CONNECTOR, BAG OF 10, ELECTRICAL CONNECTIONS ORDER CODE B
- 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

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



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570 Alden Road, Unit 10
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Phone 905-479-3633 Fax 905-479-3755

**For the name of your local distributor
call 1-800-477-8707**

***We invite you to visit us on the
Internet. Our Internet address is
<http://www.humphrey-products.com>***