

# iDP Valves



**Humphrey**

## 101 Series

### 10mm, 2-Port Manifold iDP Valve

Introducing Miniature iDP. Just 10 millimeters in width, this diaphragm separated, 2-port aggressive media valve delivers precise control, reliable performance and low internal volume for micro-dosing applications in the medical technology and analytical fields. Applications include the control of fluids and chemical reagents used in microfluidics, DNA analysis, and blood, urine and tissue sampling. This simple, straightforward design delivers trouble-free performance for millions of cycles.

#### FEATURES

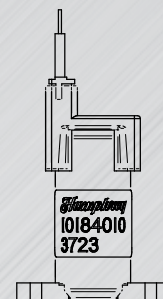
- Inert wetted materials provide broad compatibility:
  - Radel® body
  - FKM or EPDM elastomers
- Low internal volume:
  - 30  $\mu$ L actuated
  - 3.6  $\mu$ L unactuated (under seat)
- Fluid pressures to 30 PSI [2.06 bar]
- Flow rates to 550 mL/min [water]
- Compact subbase mount for easy system integration.
- Tight footprint allows for multiple valves in a small area.
- 12 or 24VDC lead wire plug-in electrical entry.
- Ideal for micro-dosing engineered solution applications.



**10mm**  
2-Port  
Normally Closed



Ø 0.705 [17.91]



Actual Size

#### iDP Valve Family



## How to Order

### 101 Series || 10mm, 2-Port Manifold iDP Valve

101	8	4	0	3	0
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MODEL

SEALS

7: Radel®-FKM  
8: Radel®-EPDM

BODY STYLE (IN-OUT)

4: 2-Port Manifold NC

PORT TYPES

0: Manifold

SOLENOID

1: 12VDC - PIN Connector  
3: 24VDC - PIN Connector

ORDER EXAMPLE

10184030

# iDP Valves

## 101 Series

### 10mm, 2-Port Manifold iDP Valve

SPECIFICATIONS	10MM
TYPE OF OPERATION	Direct Solenoid, Media Separated
FUNCTION	2-Way, Normally Closed
MEDIA	Aggressive Liquids (Gases)
PIPING TYPE	Manifold
WETTED PARTS	Radel® and FKM or EPDM
INLET PRESSURE – PSI (BAR)	0–30 PSI (2.07) <i>Consult factory for higher pressure or vacuum application.</i>
MAX BACK PRESSURE – PSI (BAR)	15 (1.03)
WATER FLOW @ 30 PSI	550 mL/min
AIR FLOW @ 30 PSI	20 SLPM
FLUID TEMPERATURE	EPDM: -4°-203°F (-20°-95°C) FKM: 32°-203°F (0-95°C)
AMBIENT TEMPERATURE	EPDM: -4°-149°F (-20°-65°C) FKM: 32°-149°F (0-65°C)
CYCLES/MIN @ 30 PSI	600
RESPONSE TIME @ 30 PSI	15 msec
ELECTRICAL ENTRY – PLUG-IN	ZHR-3 connector 26 AWG x 18" wire supplied.
VOLTAGES	12VDC, 24VDC
VOLTAGE TOLERANCE	±10%
POWER CONSUMPTION (WATTS)	1.5
WEIGHT (OZ)	0.4

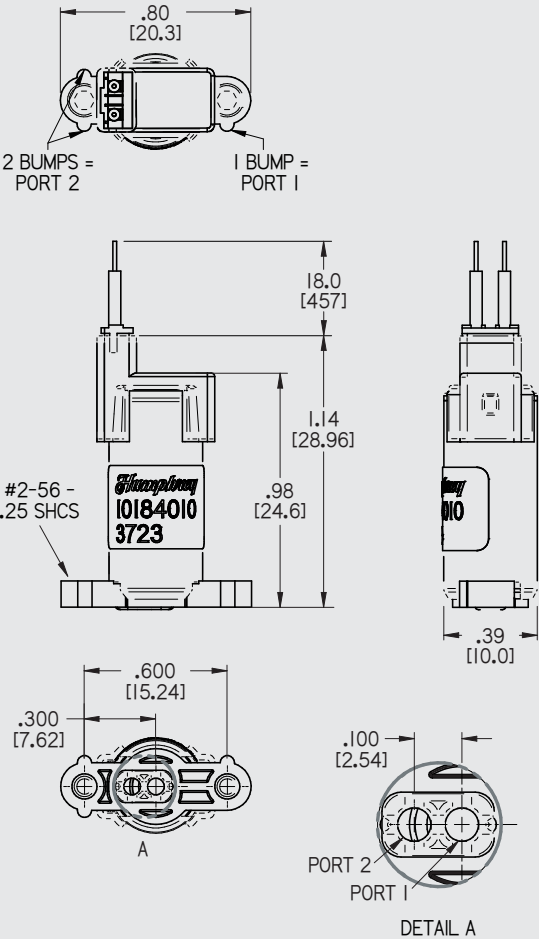
#### MEDIA COMPATIBILITY

- Concentrated Nitric Acid
- Sodium Hydroxide
- Ethylene Diamine
- Ethylene Glycol
- Renaline®
- Formaldehyde
- Biological Solutions
- Sodium Hypochlorite
- Dialysate
- Hydrogen Peroxide
- Bleach/Lye

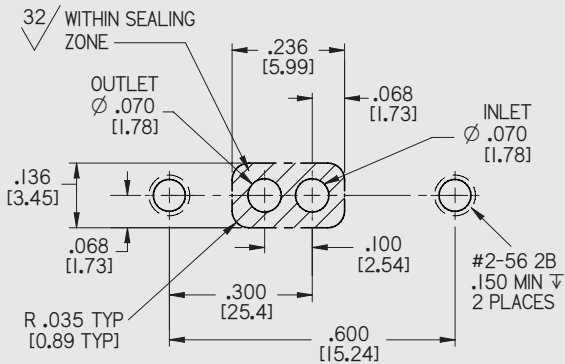
#### APPLICATIONS & MARKETS

- Micro-dosing
- DNA Processing
- Blood, Urine and Tissue Analyzers
- Microfluidics
- Ink Jet Printing

#### DIMENSIONAL DRAWINGS



#### MOUNTING PATTERN



**MOUNTING SCREW** (supplied)  
#2-56 - .25 SHCS  
Suggested torque: 1.5 ± 0.5 in-lbs

[ ] = mm

Certified to the ISO9001:2015 Standard.





# iDP Valves

## 300 Series, 2-Port Inert Diaphragm-Poppet Valve



**Humphrey**

Introducing Humphrey's 300 series iDP 2-way inline and 2-way manifold valves. Inert solenoid valves are designed to control aggressive media in most harsh environments. When size and space require a more compact design consider the 300 series iDP. The flexing diaphragm-poppet design isolates the solenoid from media ensuring sustained performance and long life.

### FEATURES

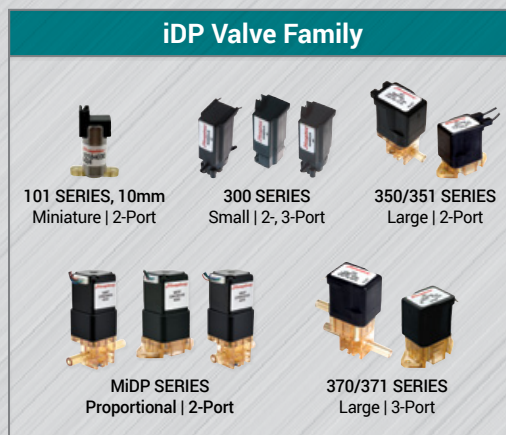
- Inert wetted materials provide broad chemical compatibility:  
Body/Fitting Elements – PEEK (Polyethylethylketone)  
Diaphragm-Poppet/Seals – Viton®-GF or EPDM
- Max pressure: 40 PSI [2.76 bar] standard
- Barb Valve, Flow rates @ 40 PSI: 50 SLPM air or 1.45 SLPM water
- Manifold Valve, Flow Rate @ 40 PSI: 62 SLPM air or 1.83 SLPM water.
- Coil encapsulation protects from corrosive external fluid exposure.
- Various port types and manifold mounting provides design flexibility.
- Robust design; Tested to beyond 20 million cycles.
- 300 Series, 3-Port Inline Barb Valve also available.



**300**  
2-Port  
Inline, Direct Piping



**300**  
2-Port  
Manifold Mount



## How to Order

### iDP 300 Series, 2-Port

300	7	1	1	3	0	ORDER EXAMPLE 30071130
<b>MODEL</b> 300	<b>BODY</b> 7. Viton®GF* 8. EPDM	<b>BODY STYLE (IN-OUT)</b> 1. 2-Port Inline, NC 4. 2-Port Manifold Mt, NC	<b>PORT TYPES</b> 0. Manifold (No Barbs) 1. 1/16" Tube Barbs 2. 3/32" Tube Barbs 3. 1/8" Tube Barbs	<b>SOLENOID</b> 1. 12 VDC – Pin Connector** 3. 24 VDC – Pin Connector** 5. 12 VDC – Wire Leads 7. 24 VDC – Wire Leads		

\* Highly Fluorinated Viton®

\*\* Mating Option: Tyco 640442-2  
Molex 22-01-2027

# iDP Valves

## 300 Series, 2-Port

SPECIFICATIONS	IDP 300 INLINE	IDP 300 MANIFOLD
TYPE OF OPERATION	Direct Solenoid, Media Separated	
NUMBER OF POSITIONS	2	
FUNCTION	Normally Closed	
MEDIA	Aggressive Liquids and Gases	
WETTED PARTS: BODY AND DIAPHRAGM-POPPET	PEEK, Viton®GF or EPDM	
PRESSURE RANGE – PSI (BAR)	Vacuum to 40 PSI (2.76)	
PIPING TYPE	Inline, Direct Piping	Manifold Mount, Sub-base Piping
WATER FLOW @ 40 PSI (TYP)	1.45 SLPM	1.83 SLPM
AIR FLOW @ 40 PSI (TYP)	50 SLPM	62 SLPM
FLUID TEMPERATURE	-4°-203°F (-20°-95°C)	
AMBIENT TEMPERATURE	-4°-149°F (-20°-65°C)	
CYCLES/MIN	300	
RESPONSE TIME @ 40 PSI (TYP)	25 msec	
PORT SIZE	1/16", 3/32" or 1/8"	--
ELECTRICAL ENTRY	Plug-In or Lead Wires	
VOLTAGES	12VDC, 24VDC	
VOLTAGE TOLERANCE	±10%	
POWER CONSUMPTION (WATTS)	3.5	
WEIGHT	0.22 lbs	0.27 lbs

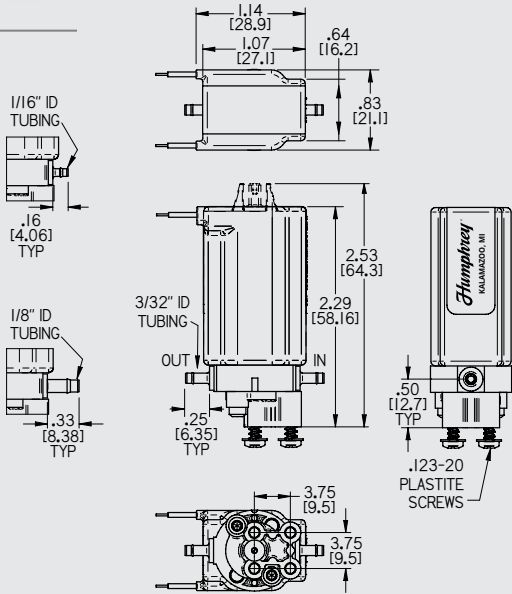
300 SERIES, 2-WAY INTERNAL VOLUMES	1/16" Barb Body	3/32" Barb Body	1/8" Barb Body	Manifold
UNACTUATED UNDER POPPET	0.007in³	0.007in³	0.009in³	0.004in³
ACTUATED	0.013in³	0.014in³	0.017in³	0.012in³

MEDIA COMPATIBILITY	APPLICATIONS & MARKETS
<ul style="list-style-type: none"> <li>Citric Acid</li> <li>Formaldehyde</li> <li>Biological Solutions</li> <li>Sodium Hypochlorite</li> <li>Dextrose/Sugars</li> <li>Dialysate</li> <li>Hydrogen Peroxide</li> <li>Acetic Acid</li> <li>Bleach/Lye</li> <li>Most aggressive medias</li> </ul>	<ul style="list-style-type: none"> <li>Kidney Dialysis</li> <li>Analytical Chemistry</li> <li>Diagnostic Systems</li> <li>Agent Detection</li> <li>Environmental Monitoring</li> <li>Food and Beverage</li> <li>Gaseous Flow Control</li> <li>Water Purification</li> <li>Clinical Diagnostics</li> </ul>

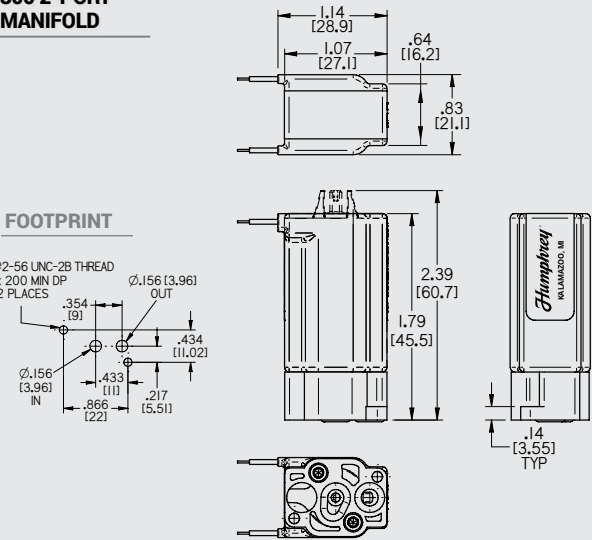


### DIMENSIONAL DRAWINGS

#### 300 2-PORT INLINE



#### 300 2-PORT MANIFOLD



#### RECOMMENDED MOUNTING HARDWARE

**Screws:**  
 SHCS #2-56 x 5/16 with 5/64 Hex Head  
  
**Screw Install Tool:**  
 5/64 Hex Head Ball End Screw Driver  
 (McMaster-Carr 5497A24; Grainger 29RU75)

[ ] = mm

**RECOMMENDED MATING ELECTRICAL CONNECTION** || **For Pins:** Tyco 640442-2; Molex 22-01-2027  
**Lead Wires:** Connect to 22 AWG x 24" length

Certified to the ISO 9001:2015 Standard.



# iDP Valves



**Humphrey®**

## 300 Series, 3-Port Inline Inert Diaphragm-Poppet Valve

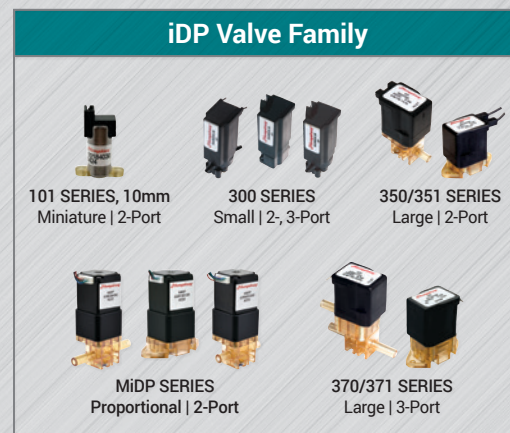
Introducing Humphrey's 300 series iDP 3-way inline valve. Inert solenoid valves are designed to control aggressive media in most harsh environments. When size and space require a more compact design consider the 300 series iDP. The flexing diaphragm-poppet design isolates the solenoid from media ensuring sustained performance and long life.

### FEATURES

- Inert wetted materials provide broad chemical compatibility:
  - Body/Fitting Elements – PEEK (Polyethylethylketone)
  - Diaphragm-Poppet/Seals – Viton®-GF or EPDM
- Max pressure: 40 PSI [2.76 bar] standard
- Flow rates @ 40 PSI: 50 SLPM air or 1.45 SLPM water
- Coil encapsulation protects from corrosive external fluid exposure.
- Various port types and coil inputs provide design flexibility.
- Robust design; Tested to beyond 20 million cycles.
- 300 Series, 2-Port Inline and Manifold Valves also available.



**300**  
3-Port  
Inline, Direct Piping



## How to Order

### iDP 300 Series, 3-Port Inline

300	7	3	1	3	0	ORDER EXAMPLE 30073130
<b>MODEL</b> 300	<b>BODY</b> 7. Viton®GF* 8. EPDM	<b>BODY STYLE (IN-OUT)</b> 3. 3-Port Inline	<b>PORT TYPES</b> 1. 1/16" Tube Barbs 2. 3/32" Tube Barbs 3. 1/8" Tube Barbs	<b>SOLENOID</b> 1. 12 VDC – Pin Connector** 3. 24 VDC – Pin Connector** 5. 12 VDC – Wire Leads 7. 24 VDC – Wire Leads		

\* Highly Fluorinated Viton®

\*\* Mating Option: Tyco 640442-2  
Molex 22-01-2027

# iDP Valves

## 300 Series, 3-Port Inline

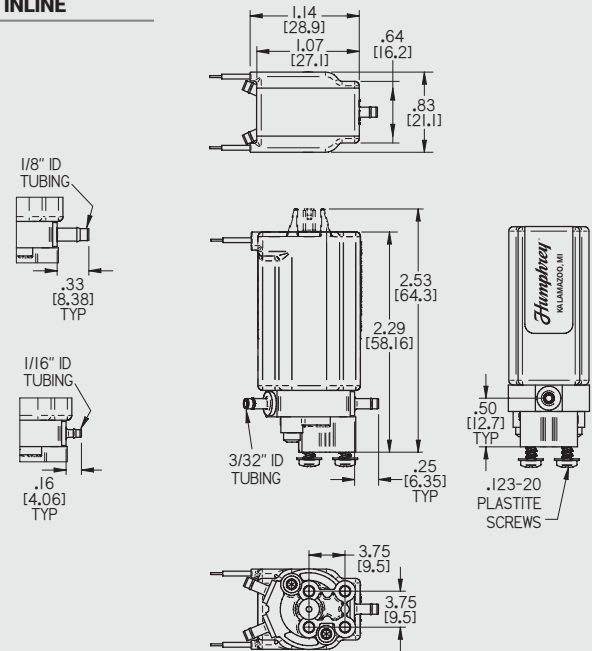
SPECIFICATIONS	IDP 300 3-PORT INLINE
TYPE OF OPERATION	Direct Solenoid, Media Separated
NUMBER OF POSITIONS	2
FUNCTION	Normally Closed
MEDIA	Aggressive Liquids and Gases
WETTED PARTS: BODY AND DIAPHRAGM-POPPET	PEEK, Viton®GF or EPDM
PRESSURE RANGE: DIVERTER – PSI (BAR)	Vacuum to 40 PSI (2.76)
REVERSE PRESSURE RANGE: SELECTOR – PSI (BAR)	Vacuum to 10 PSI (0.7)
PIPING TYPE	Inline, Direct Piping
WATER FLOW @ 40 PSI (TYP)	1.45 SLPM
AIR FLOW @ 40 PSI (TYP)	50 SLPM
FLUID TEMPERATURE	-4°-203°F (-20°-95°C)
AMBIENT TEMPERATURE	-4°-149°F (-20°-65°C)
CYCLES/MIN	300
RESPONSE TIME @ 40 PSI (TYP)	25 msec
PORT SIZE	1/16", 3/32" or 1/8"
ELECTRICAL ENTRY	Plug-In or Lead Wires
VOLTAGES	12VDC, 24VDC
VOLTAGE TOLERANCE	±10%
POWER CONSUMPTION (WATTS)	3.5
WEIGHT	0.22 lbs

300 SERIES, 3-WAY INTERNAL VOLUMES	1/16" Barb Body	3/32" Barb Body	1/8" Barb Body
UNACTUATED (COMMON & NO)	0.010in³	0.012in³	0.014in³
ACTUATED (COMMON & NC)	0.009in³	0.010in³	0.022in³

MEDIA COMPATIBILITY	APPLICATIONS & MARKETS
<ul style="list-style-type: none"><li>Citric Acid</li><li>Formaldehyde</li><li>Biological Solutions</li><li>Sodium Hypochlorite</li><li>Dextrose/Sugars</li><li>Dialysate</li><li>Hydrogen Peroxide</li><li>Acetic Acid</li><li>Bleach/Lye</li><li>Most aggressive medias</li></ul>	<ul style="list-style-type: none"><li>Kidney Dialysis</li><li>Analytical Chemistry</li><li>Diagnostic Systems</li><li>Agent Detection</li><li>Environmental Monitoring</li><li>Food and Beverage</li><li>Gaseous Flow Control</li><li>Water Purification</li><li>Clinical Diagnostics</li></ul>

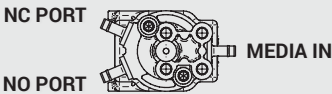
### DIMENSIONAL DRAWINGS

#### 300 3-PORT INLINE

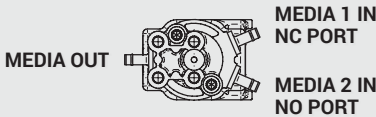


300 Series 3-port may function either as a diverter valve or selector valve at 10 PSI.

As a **DIVERTER VALVE** (up to 40 PSI inlet)



As a **SELECTOR VALVE** (up to 10 PSI either inlet)



[ ] = mm

**RECOMMENDED MATING ELECTRICAL CONNECTION** || For Pins: Tyco 640442-2; Molex 22-01-2027  
Lead Wires: Connect to 22 AWG x 24" length

Certified to the ISO 9001:2015 Standard.





# iDP Valves



**Humphrey**

## 2-Port 350/351 Series Inert Diaphragm-Poppet Valve

Introducing Humphrey 350/351 series iDP valves. These 2-way inert solenoid valves are purposely engineered to control aggressive liquids and gases in the most harsh environments. The flexing diaphragm-poppet design isolates the solenoid from media penetration, while the inert body material ensures long life and sustained performance.

### FEATURES

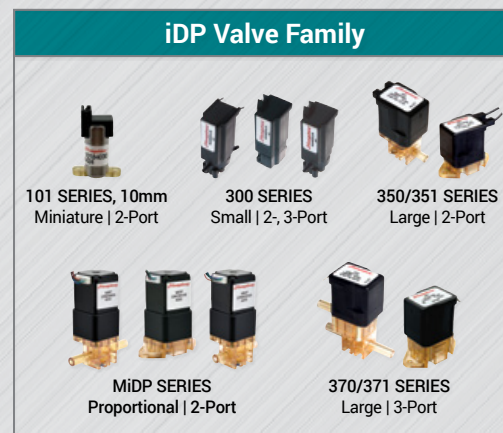
- Offering EPDM, Viton™GF or FFKM elastomers ensures multi-levels of chemical protection.
- Inert wetted materials provide broad chemical compatibility.
- Pressure: 0-40 PSI (2.76 bar) standard  
28"Hg - 40 PSI optional
- Flow rates @ 40 PSI: 220 SLPM air or 5.3 SLPM water
- Integral diaphragm-poppet isolates flow path from solenoid.
- Continuous-duty encapsulated coil for operation in wet environments.
- Suitable for high fluid temperatures – up to 203°F (95°C)
- Robust design; Long service life
- 100% factory tested.
- Porting and mounting options offer design flexibility.



**350**  
2-Port  
Inline, Direct Piping



**351**  
2-Port  
Manifold Mount



## How to Order iDP 350/351 Series

350	3	1	5	1	0	ORDER EXAMPLE 35031510
<b>MODEL</b> 350: Inline 351: Manifold	<b>BODY/SEALS</b> 3: Radel®-EPDM 4: Radel®-Viton™GF 5: Radel®-FFKM	<b>BODY STYLE (IN-OUT)</b> 0: Manifold (No Barbs) 1: Barb-Barb 5: 8mm-8mm (5/16") (Quick Disconnect)	<b>COIL TYPE &amp; ORIENTATION</b> (In Relation to OUT/P2 Port) 1: 1/4" Spade Terminal/Standard* 3: 1/4" Spade Terminal/Rotate 180° 5: Lead Wire/Standard* 7: Lead Wire/Rotate 180°	<b>PRESSURE TYPE</b> 0: Standard 0-40 PSI 1: VAC (28"Hg) to 40 PSI		

\* Manifold Options

## iDP Valves

### 2-Port 350/351 Series

SPECIFICATIONS	IDP 350	IDP 351
TYPE OF OPERATION	Direct Solenoid, Media Separated	
FUNCTION	2-Way, Normally Closed	
MEDIA	Aggressive Liquids (Gases)	
WETTED PARTS: BODY AND SEALS (DIAPHRAGM-POPPET)	Radel® and FFKM, Viton™ GF or EPDM	
PRESSURE RANGE – PSI (BAR)	Standard: 0-40 PSI (2.76) Optional: VAC 28"Hg - 40 PSI <i>Consult factory for higher pressure.</i>	
PIPING TYPE	Inline, Direct Piping	Manifold Mount
INTERNAL VOLUME: BARB BODY	Unactuated Under Poppet: 0.026in³ Actuated: 0.062in³	Unactuated Under Poppet: 0.004in³ Actuated: 0.037in³
WATER FLOW @ 40 PSI (TYP)	5.3 SLPM	
AIR FLOW @ 40 PSI (TYP)	220 SLPM	
FLUID TEMPERATURE	EPDM: -20°C to 95°C   FKM, FFKM: 0-95°C	
AMBIENT TEMPERATURE	EPDM: -20°C to 65°C   FKM, FFKM: 0-65°C	
CYCLES/MIN	300	
RESPONSE TIME @ 40 PSI (TYP)	16 msec	
PORT SIZE	5/16" Barb; 8mm Quick Disconnection	--
ELECTRICAL ENTRY	Spade Terminals or Lead Wires	
VOLTAGE	24VDC	
VOLTAGE TOLERANCE	±10%	
POWER CONSUMPTION (WATTS)	8.3	
WEIGHT	0.38 lbs	0.39 lbs

## MEDIA COMPATIBILITY

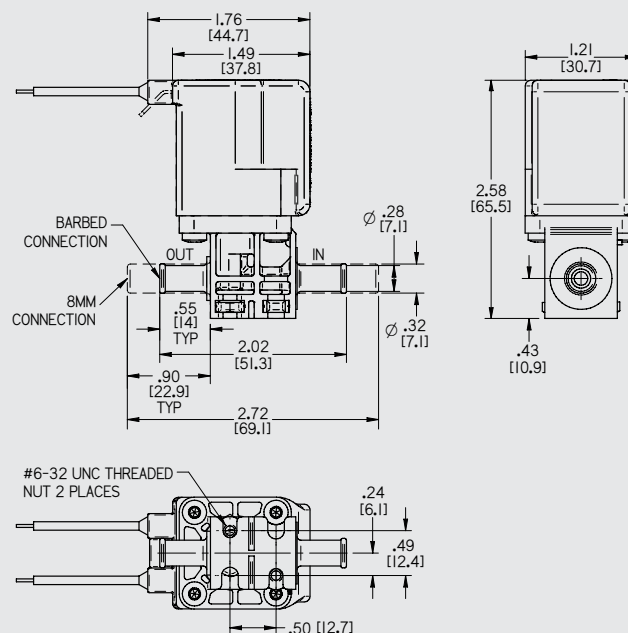
- Concentrated Nitric Acid
- Sodium Hydroxide
- Ethylene Diamine
- Ethylene Glycol
- Renaline®
- Acetic/Citric Acids
- Formaldehyde
- Biological Solutions
- Sodium Hypochlorite
- Dextrose/Sugars
- Dialysate
- Hydrogen Peroxide
- Bleach/Lye
- Most other media; consult factory for your compatibility.

## APPLICATIONS & MARKETS

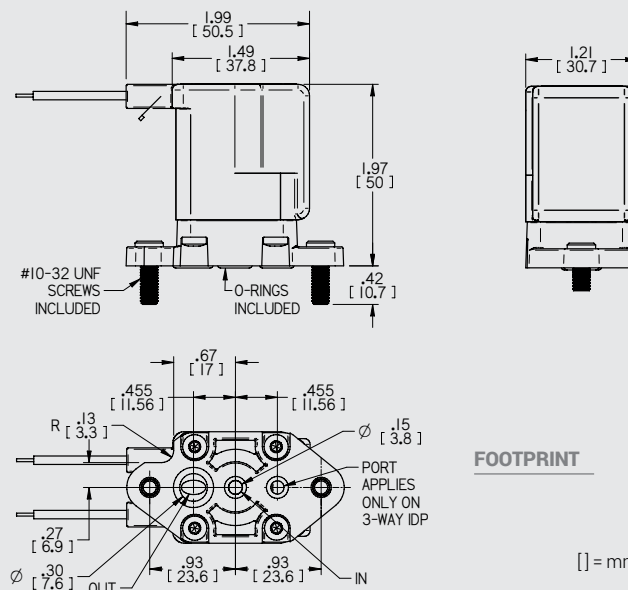
- Kidney Dialysis
- Analytical Chemistry
- Diagnostic Systems
- Agent Detection
- Environmental Monitoring
- Food and Beverage
- Gaseous Flow Control
- Water Purification
- Clinical Equipment Waste Systems

## DIMENSIONAL DRAWINGS

## 350 SERIES

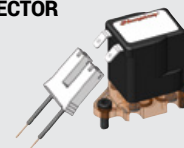


## 351 SERIES



### OPTIONAL TERMINAL COIL CONNECTOR

Part No.	Wire Length
100445	12"
100446	24"
100447	36"



Certified to the ISO 9001:2015 Standard.





# iDP Valves



**Humphrey**

## 3-Port 370/371 Series Inert Diaphragm-Poppet Valve

Introducing Humphrey 370/371 series iDP valves. These 3-way inert solenoid valves are purposely engineered to control aggressive liquids and gases in the most harsh environments. The flexing diaphragm-poppet design isolates the solenoid from media penetration, while the inert body material ensures long life and sustained performance. The 370/371 series of valves may be used as a selector valve or diverter valve. In a selector application the rated pressure will be 30 PSI Max.

### FEATURES

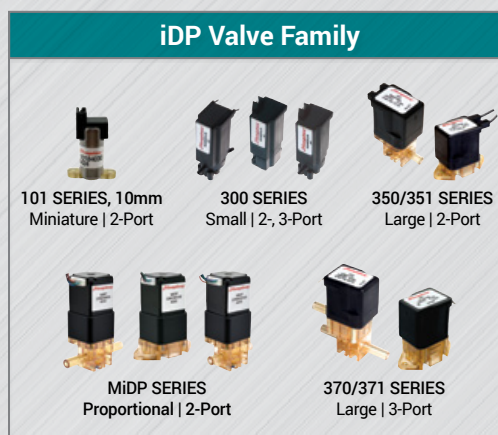
- Offering EPDM, Viton® or FFKM elastomers ensures multi-levels of chemical protection.
- Inert wetted materials provide broad chemical compatibility.
- Max Pressure: 40 PSI (2.76 bar) standard
- Flow rates @ 40 PSI: 220 SLPM air or 5.3 SLPM water
- Integral diaphragm-poppet isolates flow path from solenoid.
- Continuous-duty encapsulated coil for operation in wet environments.
- Suitable for high fluid temperatures – up to 203°F (95°C)
- Robust design; Long service life
- 100% factory tested.
- Porting and mounting options offer design flexibility.



**370**  
3-Port  
Inline, Direct Piping



**371**  
3-Port  
Manifold Mount



## How to Order iDP 370/371 Series

370	3	1	5	1	0	ORDER EXAMPLE 37031510
<b>MODEL</b> 370: Inline 371: Manifold	<b>BODY/SEALS</b> 3: Radel®-EPDM 4: Radel®-Viton®GF 5: Radel®-FFKM	<b>BODY STYLE (IN-OUT)</b> 0: Manifold (No Barbs) 1: Barb-Barb 5: 8mm-8mm (5/16") (Quick Disconnect)	<b>COIL TYPE &amp; ORIENTATION</b> (In Relation to OUT/P2 Port) 1: 1/4" Spade Terminal/Standard* 3: 1/4" Spade Terminal/Rotate 180° 5: Lead Wire/Standard* 7: Lead Wire/Rotate 180°	<b>N.O. PORT</b> 0: Manifold* 1: Inline 5: Rotate 180°		

\* Manifold Options

# iDP Valves

## 3-Port 370/371 Series

SPECIFICATIONS	IDP 370	IDP 371
TYPE OF OPERATION	Direct Solenoid, Media Separated	
FUNCTION	3-Way, Normally Closed	
MEDIA	Aggressive Liquids (Gases)	
WETTED PARTS: BODY AND SEALS (DIAPHRAGM-POPPET)	Radel® and FFKM, Viton®GF or EPDM	
PRESSURE RANGE – PSI (BAR)	0–40 PSI (2.76) <i>Consult factory for higher pressure or vacuum application.</i>	
PIPING TYPE	Inline, Direct Piping	Manifold Mount
INTERNAL VOLUME: BARB BODY	Unactuated Under Poppet: 0.026in <sup>3</sup> Actuated: 0.062in <sup>3</sup>	Unactuated Under Poppet: 0.004in <sup>3</sup> Actuated: 0.037in <sup>3</sup>
WATER FLOW @ 40 PSI (TYP)	5.3 SLPM	
AIR FLOW @ 40 PSI (TYP)	220 SLPM	
FLUID TEMPERATURE	EPDM: -20°C to 95°C FKM: 0-95°C   FFKM: 0-95°C	
AMBIENT TEMPERATURE	EPDM: -20°C to 65°C FKM: -10°C to 65°C   FFKM: 10-65°C	
CYCLES/MIN	300	
RESPONSE TIME @ 40 PSI (TYP)	20 msec	
PORT SIZE	5/16" Barb; 8mm Quick Disconnection	--
ELECTRICAL ENTRY	Spade Terminals or Lead Wires	
VOLTAGE	24VDC	
VOLTAGE TOLERANCE	±10%	
POWER CONSUMPTION (WATTS)	8.3	
WEIGHT	0.40 lbs	0.42 lbs

### MEDIA COMPATIBILITY

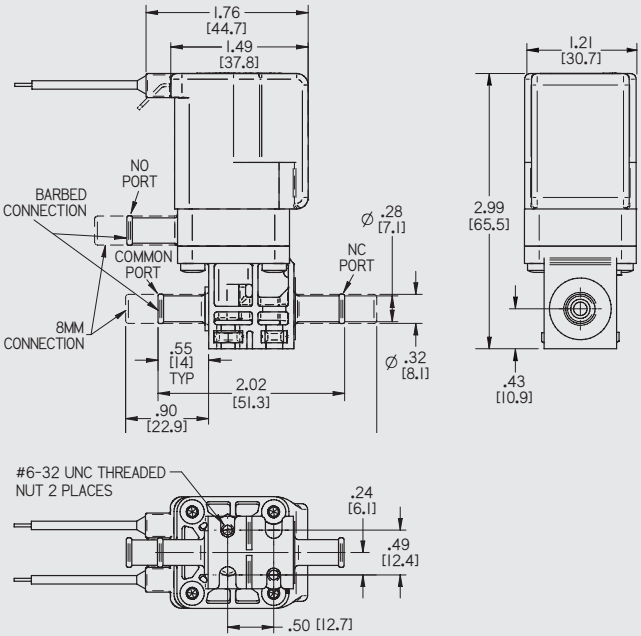
- Citric Acid
- Formaldehyde
- Biological Solutions
- Sodium Hypochlorite
- Dextrose/Sugars
- Dialysate
- Hydrogen Peroxide
- Acetic Acid
- Bleach/Lye
- Most aggressive medias

### APPLICATIONS & MARKETS

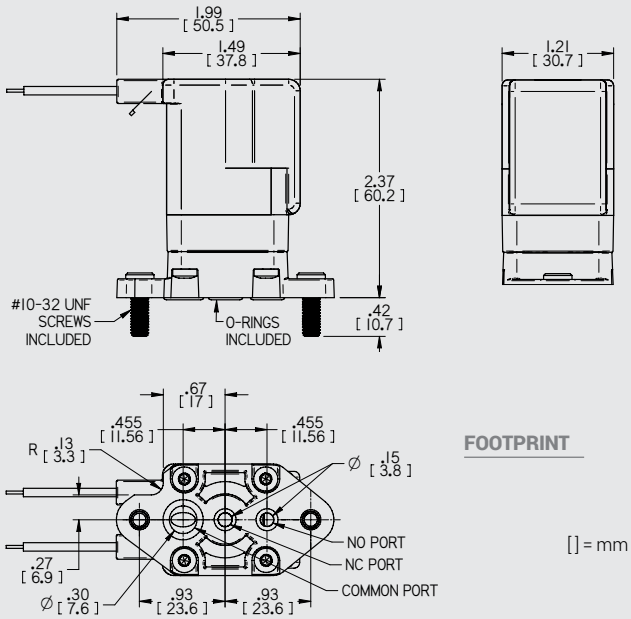
- Kidney Dialysis
- Analytical Chemistry
- Diagnostic Systems
- Agent Detection
- Environmental Monitoring
- Food and Beverage
- Gaseous Flow Control
- Water Purification
- Clinical Equipment Waste Systems

### Dimensional Drawings

#### 370 SERIES



#### 371 SERIES

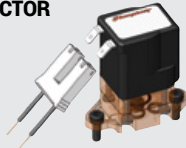


### FOOTPRINT

[ ] = mm

### OPTIONAL TERMINAL COIL CONNECTOR

Part No.	Wire Length
100445	12"
100446	24"
100447	36"



Certified to the ISO 9001:2015 Standard.





# MiDP Valves



**Humphrey**

## 2-Port S390/S391 Stepper Operated Inert Diaphragm Poppet Proportional Valves

Introducing Humphrey MiDP Series Proportional Valves, designed to precisely control flow of a wide range of aggressive liquids and gases. The wetted flow path utilizes Humphrey's 350 Series diaphragm isolated design with medical industry proven reliability (20+ years), including applications such as kidney dialysis and endoscope reprocessing. Safely isolated from the media is Humphrey's new stepper motor operator delivering precise positioning and control of flow, with outstanding repeatability and low hysteresis.

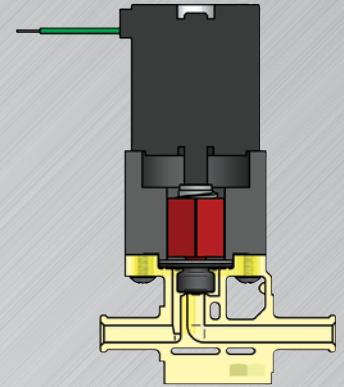
A perfluoroelastomer (FFKM) highlights the range of diaphragm materials available, housed within an inert Radel® body.

### FEATURES

- Field proven and reliable diaphragm separated body construction of the Humphrey 350 Series iDP Valves.
- Inert wetted flow path of a Radel® body and either FFKM, EPDM, or Viton™GF diaphragms ensures broad chemical and temperature compatibility.
- Extremely repeatable variable flow control. Expect 2% or less of full scale.
- Precise. Hysteresis measured at <2%. Open loop control applications are possible.
- Not susceptible to cavitation / water hammer (liquids).
- Low or zero holding current when positioned.
- Long life. Expect >1 million cycles.
- Custom performance configurations are available (consult factory).
- Inline/direct piping and manifold/subbase mount bodies available.



**S390**  
2-Port  
Inline, Direct Piping



**S391**  
2-Port  
Manifold Mount



## How to Order

### MiDP S390/S391 Series

S390	4	1	0	5	0
<b>MODEL</b> S390: Inline S391: Manifold	<b>BODY/SEALS</b> 3: Radel®-EPDM 4: Radel®-Viton™GF 5: Radel®-FFKM	<b>BODY STYLE (IN-OUT)</b> 0: Manifold (No Barbs) 1: Barb-Barb 5: 8mm-8mm (5/16") (Quick Disconnect)	<b>ORIFICE</b> 0: Inline (0.150") 1: Manifold STD (0.150")	<b>ORIENTATION</b> 5: Standard 7: Rotate 180°	<b>OPTIONS</b> 0: Standard

### ORDER EXAMPLE

S39041050

# MiDP Valves

## 2-Port S390/S391 Series

SPECIFICATIONS	MiDP S390, MiDP S391
TYPE OF OPERATION	Stepper Motor, Media Isolated
MEDIA	Aggressive Liquid or Gas
PRESSURE RANGE – PSI (BAR)	0 - 60 (0 - 4.1)
TYPICAL HYSTERESIS	< 2%
TYPICAL FLOW RANGE @ 60 PSI (0.150" ORIFICE)	WATER: 0-8.5 SLPM* AIR: 0-390 SLPM
TYPICAL FLOW ADJUSTMENT PER STEP @ 60 PSI (0.150" ORIFICE)	AIR: 6.2 SLPM
Cv (0.150" ORIFICE)	0.31
AMBIENT TEMPERATURE	0-122°F (0-50°C)
FLUID TEMPERATURE	0-176°F (0-80°C)
CYCLE TIME (TYP) – OPEN TO CLOSE OR CLOSE TO OPEN	2 seconds
CYCLE LIFE (TYP)	> 1 million
STEP RESPONSE TIME (TYP)	< 40 milliseconds
REPEATABILITY (TYP)	< 2% of full scale
STROKE / TRAVEL (in)	0 - 0.034
POSITION RESOLUTION (in)	0.0004 / STEP
WETTED MATERIAL	Radel® and EPDM, Viton™ GF, FFKM
POWER CONSUMPTION (WATTS)	2.6 MAX
CURRENT / PHASE	600 mA standard; Consult factory for other.
DRIVER (CUSTOMER SUPPLIED)	Chopper or linear driver required.

\* Typical flow ranges vary per application and are determined by the usable travel.

### MEDIA COMPATIBILITY

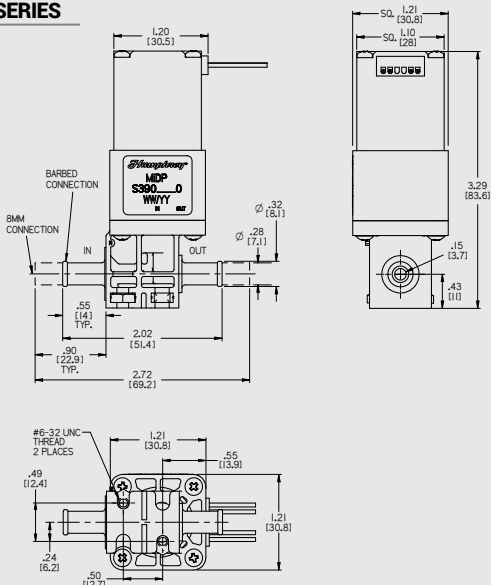
- Citric Acid
- Formaldehyde
- Biological Solutions
- Sodium Hypochlorite
- Dextrose/Sugars
- Dialysate
- Hydrogen Peroxide
- Acetic Acid
- Bleach/Lye
- Most aggressive medias

### APPLICATIONS & MARKETS

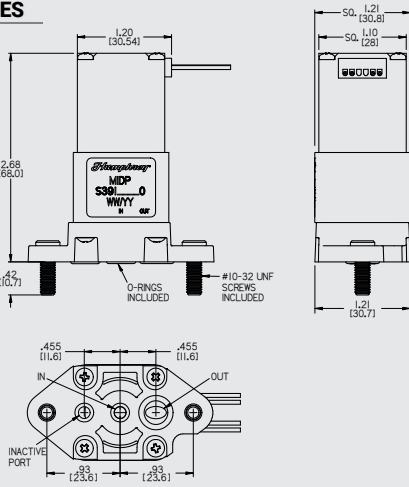
- Kidney Dialysis
- Diagnostic Systems
- Environmental Monitoring
- Food and Beverage
- Gaseous Flow Control
- Water Purification
- Clinical Equipment Waste Systems
- Ratio Control of Mixing Multiple Liquids
- Dosing Additives for Process Control

### DIMENSIONAL DRAWINGS

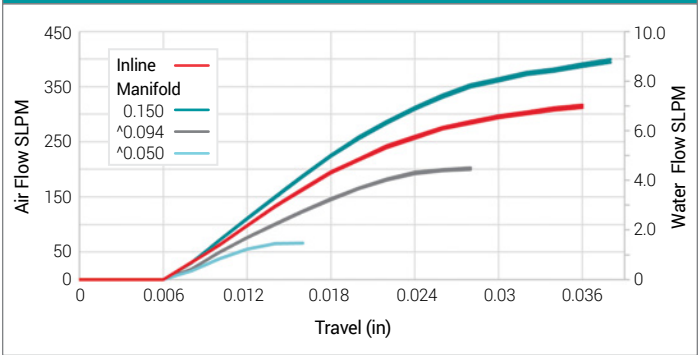
#### S390 SERIES



#### S391 SERIES



MiDP S390/S391 Typical Flow vs. Stroke by Orifice Size @ 60 PSI



^ Curves .050 and .094 are Engineered Solutions. Consult factory for options.

Certified to the ISO 9001:2015 Standard.

