

Humphrey[®]

iDP Series



In Control of Your Difficult Media

ISO 9001:2008 Registered
ISO 13485:2003 Registered for Medical Device

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Humphrey iDP

INERT DIAPHRAGM-POPPET VALVES

Introducing **Humphrey iDP**, a series of inert media separation valves, specifically designed for aggressive liquids and gases.



Humphrey iDP 350 SERIES

2-Port Type
Barb or 8mm Porting
Spade or Lead Wire Electrical Entry



Humphrey iDP 300 SERIES

Small 2-Port Type
Inline or Manifold Mount
Pin or Lead Wire Electrical Entry

TYPICAL MARKETS AND APPLICATIONS

- Clinical Diagnostics
- Analytical Chemistry
- Agent Detection
- Environmental Monitoring
- Food and Beverage
- Gaseous Flow Control



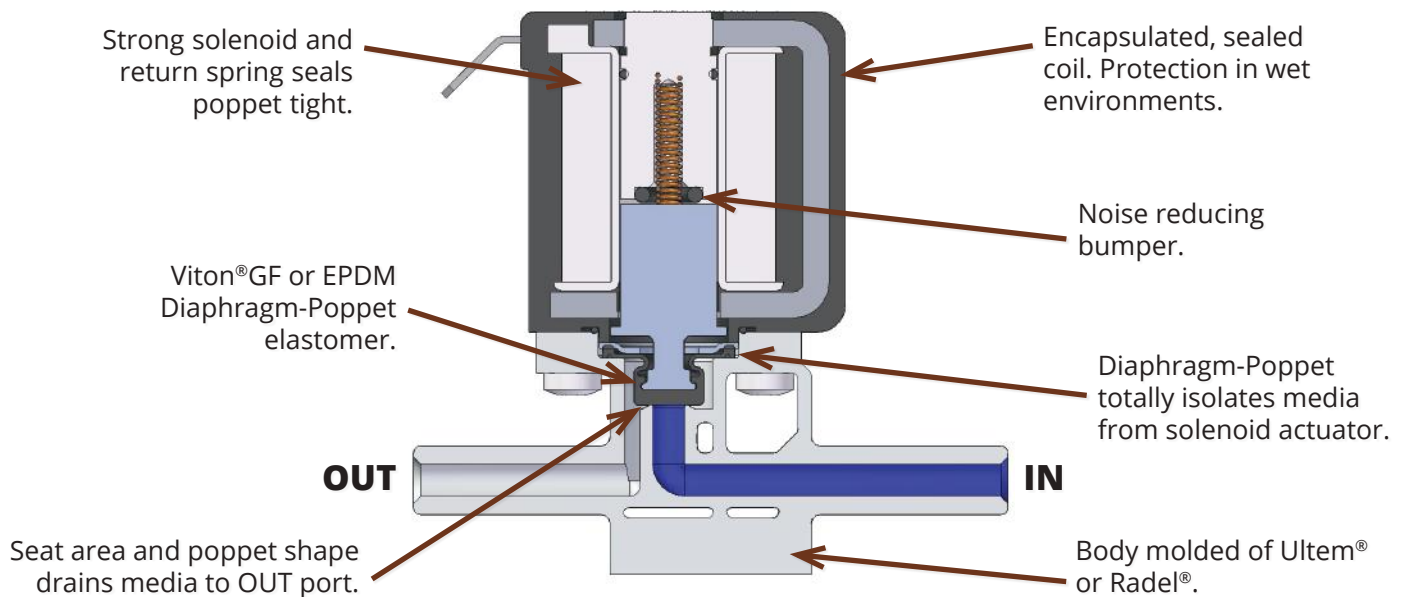
EXAMPLES OF COMPATIBLE MEDIA

Blood and Bio-Fluids	Renaline®
Reagents and Solvents	Formaldehyde
Ultra Pure Water	Saline
Ethyl, Methyl Alcohols	Dextrose/Sugars
Sodium Hypochlorite	Hydrogen Peroxide
Lye (Sodium Hydroxide)	Citric Acid
Ethylene Glycol	Acetic Acid
Formaldehyde	Others
Biological Solutions	
Dialysate	

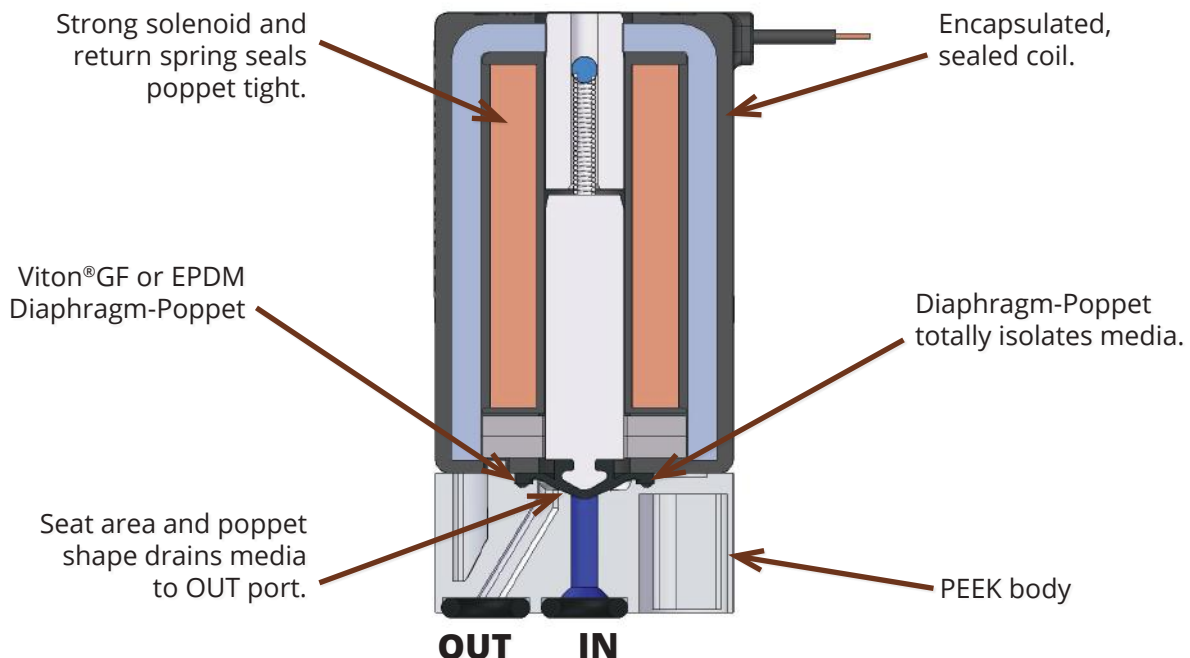


Humphrey iDP are efficient 2-port valves containing features ideal for aggressive media applications. Constructed of material suitable for bodily fluids, aggressive chemicals and cleaning fluids, and elevated fluid temperatures. The flexing diaphragm-poppet design isolates the solenoid from media penetration, while inert body material ensures long life and sustained performance. Three-port models are coming soon.

350 SERIES



300 SERIES



Humphrey iDP

350 SERIES

PRODUCT FEATURES

- Inert wetted materials provide broad chemical compatibility
- Max pressure: 40 PSI (2.76 bar) standard
- Flow rates: 0 – 220 SLPM air or 0 – 5.3 LPM 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; Expect long service life
- Factory testing ensures reliability and repeatability
- Porting and mounting options offer design flexibility



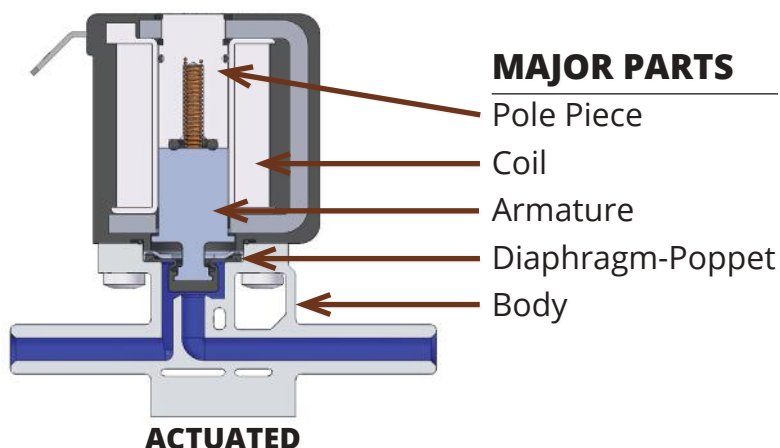
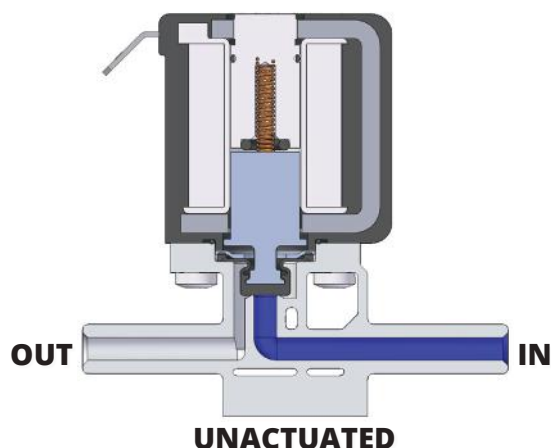
TYPICAL FLUIDS*

Biological Solutions
Dialysate
Renaline®
Formaldehyde

Saline
Dextrose/Sugars
Hydrogen Peroxide
Citric Acid

Acetic Acid
Sodium Hypochlorite

**Consult factory for assistance.*



MAJOR PARTS

- Pole Piece
- Coil
- Armature
- Diaphragm-Poppet
- Body

HOW TO ORDER

Humphrey iDP 350 SERIES



2-Port Inline

350

2

1

5

00

Order Example:
35021500

MATERIAL (BODY - SEALS)

1. Ultem®-EPDM
2. Ultem®-Viton®GF*
3. Radel®-EPDM
4. Radel®-Viton®GF*

* Highly Fluorinated Viton®
** 1/4 inch Terminal

BODY STYLE (IN-OUT)

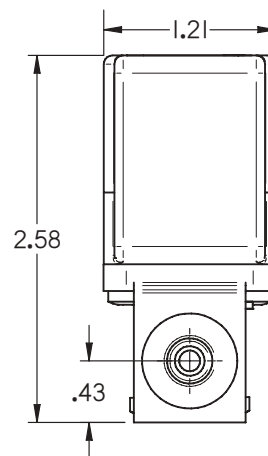
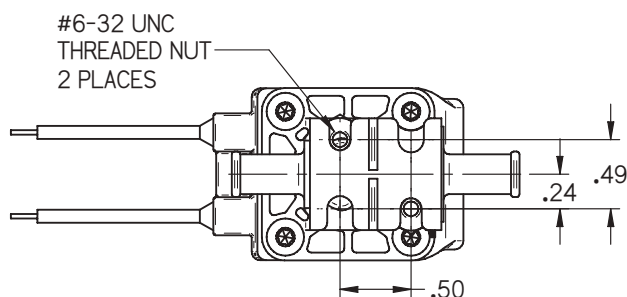
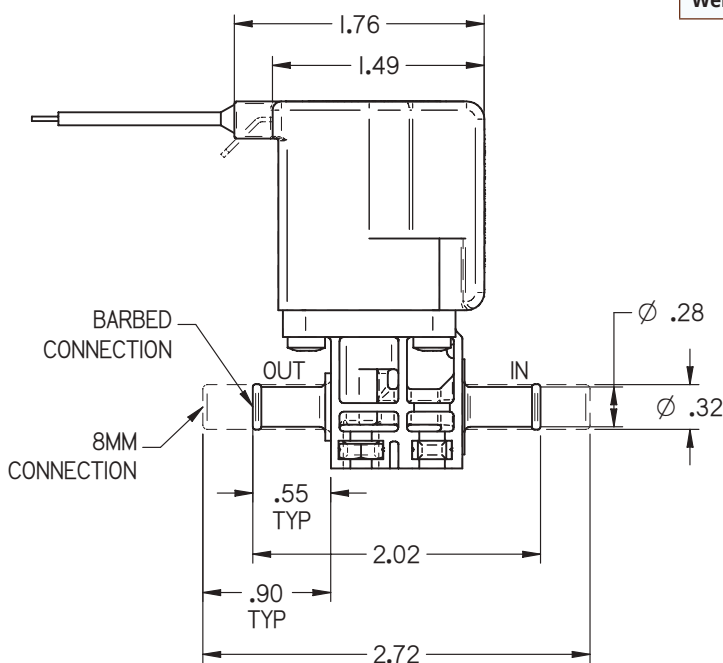
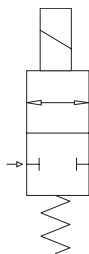
1. Barb-Barb
5. 8mm-8mm (5/16")
(Quick Disconnect)

COIL TYPE & ORIENTATION (IN RELATION TO OUT PORT)

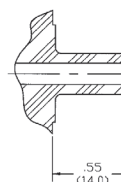
1. Spade Terminal / Standard**
3. Spade Terminal / Rotate 180°**
5. Lead Wire / Standard
7. Lead Wire / Rotate 180°

Humphrey iDP

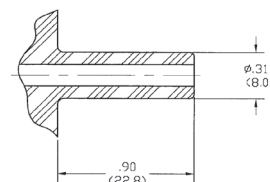
2-PORT INLINE



BODY STYLE OPTIONS



Barb



8mm OD (5/16")
Male

Humphrey 350 SERIES SPECIFICATIONS

Valve Function:	Normally Closed
Wetted Parts (Body & Diaphragm-Poppet):	Ultem® or Radel® and Viton®GF or EPDM
Number of Ports:	2
Number of Positions:	2
Type of Operation:	Direct Solenoid, Media Separated
Piping Type:	Inline, Direct Piping
Media:	Aggressive Liquids (Gases)
Internal Volume (Barb Body):	Unactuated Under Poppet: 0.026in ³ Actuated: 0.062in ³
Internal Volume (8mm Male Body):	Unactuated Under Poppet: 0.026in ³ Actuated: 0.074in ³
Max Flow (Water) @ 40 PSI:	5.3 LPM
Max Flow (Air) @ 40 PSI:	220 LPM
Pressure Range:	Vacuum to 40 PSI
Fluid Temp Range:	-20°C to 95°C
Ambient Temp Range:	-20°C to 65°C
Max Cycles/Min:	300
Response Time:	16msec @ 40 PSI
Port Size:	5/16" Barb; 8mm Quick Disconnection
Electrical Entry:	Spade Terminals or Lead Wires
Voltage:	24VDC
Voltage Tolerance:	±10%
Power Consumption:	8.3W
Weight:	0.38 lbs

RECOMMENDED MATING ELECTRICAL CONNECTION:
Spade Size: 1/4 inch Terminal
Lead Wires: Connect to 20 AWG x 45" length

Humphrey iDP

300 SERIES

PRODUCT FEATURES

- Inert wetted materials provide broad chemical compatibility
Body/Fitting Elements – PEEK (Polyethylethylketone)
Diaphragm-Poppet/Seals – Viton®-GF or EPDM
- Max pressure: 40 PSI [2.4 bar] standard
- Flow: Up to 1830 ml/min of water or similar fluid,
Up to 62 LPM of air or similar gas
- Integral diaphragm-poppet isolates flow path from solenoid
- Coil encapsulation protects from corrosive external fluid exposure
- Suitable for high fluid temperatures – up to 203°F (95°C)
- Various port types and manifold mounting provides design flexibility
- Robust design; Tested to beyond 20 million cycles



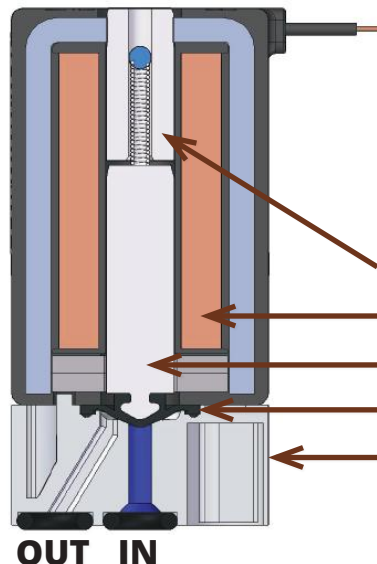
**2-Port
Inline**



**2-Port
Manifold**

TYPICAL FLUIDS

Blood and Bio-fluids
Reagents and Solvents
Ultra Pure Water
Sodium Hypochlorite
Lye (Sodium Hydroxide)
Ethylene Glycol
Formaldehyde
Ethyl, Methyl Alcohols



CONSTRUCTION

Pole Piece
Coil
Armature
Diaphragm-Poppet
Body

HOW TO ORDER

Humphrey iDP 300 SERIES



**2-Port
Inline**

**2-Port
Manifold**

300

7

1

1

3

0

Order Example:
30071130

DIAPHRAGM MATERIAL

- 7. Viton®GF*
- 8. EPDM

VALVE TYPE

- 1. 2-Port Inline,
Normally Closed
- 4. 2-Port Manifold Mt,
Normally Closed

PORT TYPES

- 0. Manifold (No Barbs)
- 1. 1/16" Tube Barbs
- 2. 3/32" Tube Barbs
- 3. 1/8" Tube Barbs

SOLENOID

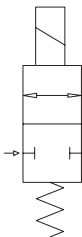
- 1. 12 VDC – Pin Connector**
- 3. 24 VDC – Pin Connector**
- 5. 12 VDC – Wire Leads
- 7. 24 VDC – Wire Leads

* Highly Fluorinated Viton®

** Tyco 640442-2; Molex 22-01-2027

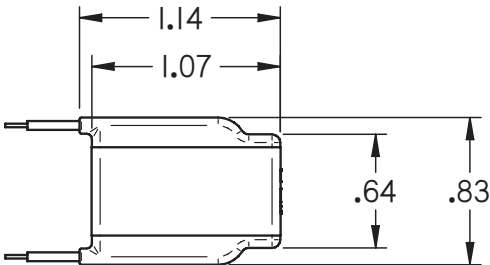
Humphrey iDP

2-PORT MANIFOLD

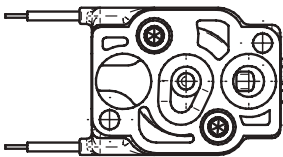
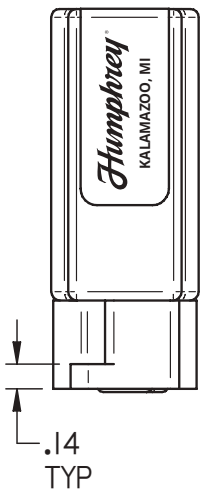
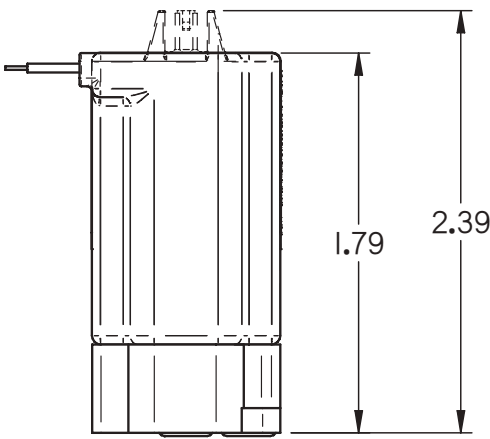
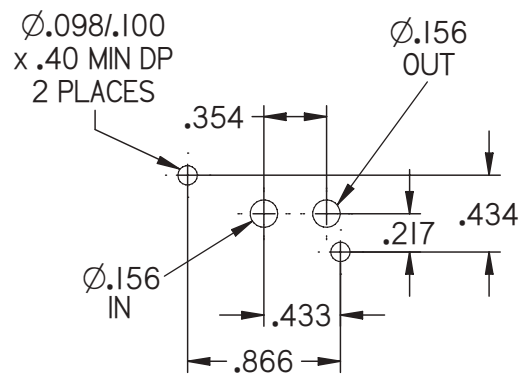


Humphrey 300 MANIFOLD SPECIFICATIONS

Valve Function:	Normally Closed
Wetted Parts (Body and Diaphragm-Poppet):	PEEK, Viton®GF or EPDM
Number of Ports:	2
Number of Positions:	2
Type of Operation:	Direct Solenoid, Media Separated
Piping Type:	Manifold, Sub-base Piping
Media:	Aggressive Liquids (Gases)
Internal Volume:	Unactuated Under Poppet: 0.004in ³ Actuated: 0.012in ³
Max Flow (Water) @ 40 PSI:	1.83 LPM
Max Flow (Air) @ 40 PSI:	62 LPM
Pressure Range:	Vacuum to 40 PSI
Fluid Temp Range:	-20°C to 95°C
Ambient Temp Range:	-20°C to 65°C
Max Cycles/Min:	300
Response Time:	25 milliseconds
Electrical Entry:	Plug-In or Lead Wires
Available Voltages:	12VDC, 24VDC
Voltage Tolerance:	±10%
Power Consumption:	3.5W
Weight:	3.5 oz



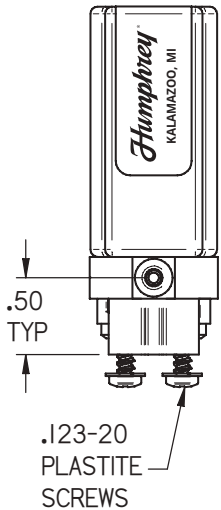
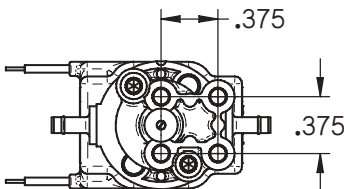
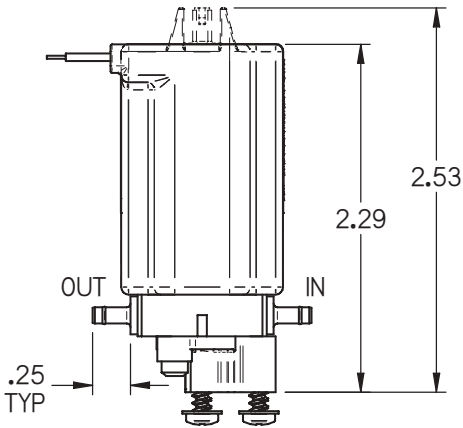
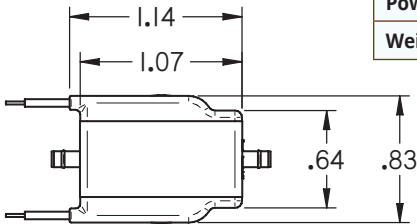
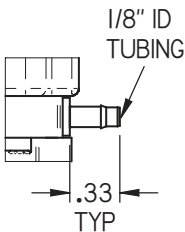
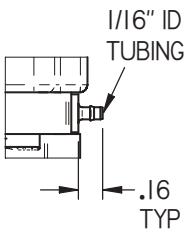
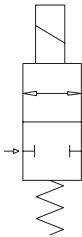
FOOTPRINT



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

Humphrey iDP

2-PORT INLINE



Humphrey 300 INLINE SPECIFICATIONS

Valve Function:	Normally Closed
Wetted Parts (Body and Diaphragm-Poppet):	PEEK, Viton®GF or EPDM
Number of Ports:	2
Number of Positions:	2
Type of Operation:	Direct Solenoid, Media Separated
Piping Type:	Inline, Direct Piping
Media:	Aggressive Liquids and Gases
Internal Volume (1/16" Barb Body):	Unactuated Under Poppet: 0.007in ³ Actuated: 0.013in ³
Internal Volume (3/32" Barb Body):	Unactuated Under Poppet: 0.007in ³ Actuated: 0.014in ³
Internal Volume (1/8" Barb Body):	Unactuated Under Poppet: 0.009in ³ Actuated: 0.017in ³
Max Flow (Water) @ 40 PSI:	1.45 LPM
Max Flow (Air) @ 40 PSI:	50 LPM
Pressure Range:	Vacuum to 40 PSI
Fluid Temp Range:	-20°C to 95°C
Ambient Temp Range:	-20°C to 65°C
Maximum Cycles/Min:	300
Response Time:	25 milliseconds
Port Size (Barbs, Tubing ID):	1/16", 3/32" or 1/8"
Electrical Entry:	Plug-In or Lead Wires
Available Voltages:	12VDC, 24VDC
Voltage Tolerance:	±10%
Power Consumption:	3.5W
Weight:	3.5 oz

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