

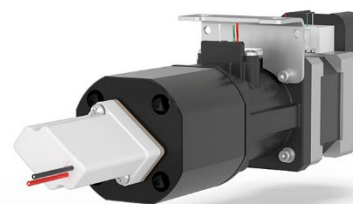
Durable Seal Pump

250µL PUMP

Description

The Durable Seal Pump Series represents a new standard in precision fluid handling for applications where aggressive reagents and harsh chemicals can pose challenges in system durability. Built on the VFP platform using a precision-machined fluidic path that minimizes unswept volume and featuring enhanced seal materials, these pumps are built to last the life of the instrument, requiring no maintenance.

Each pump features a black PEEK head for superior chemical compatibility, a ceramic piston, an optional integrated encoder for position feedback, and is available with optional solenoid valve integration. The seal design has been validated to ensure reliable performance in clinical diagnostics, next-generation sequencing, and low-pressure analytical applications.



Related Parts

Part Number	Description	Encoder	Solenoid Valve
DRB-0250-001	Durable Seal pump, 250µl, black PEEK head, encoder	Yes	No
DRB-0250-002	Durable Seal pump, 250µl, black PEEK head, solenoid valve, encoder	Yes	Yes
DRB-0250-003	Durable Seal pump, 250µl, black PEEK head	No	No
DRB-0250-004	Durable Seal pump, 250µl, black PEEK head, solenoid valve	No	Yes

Chemical Compatibility

Our pumps are compatible with typical life science reagents. The Durable Seal Series has been specifically designed to handle high salt and high detergent concentrations. The energized seal has excellent resistance to salts and detergents at all practical concentrations and temperatures. It has good resistance to acids and bases within the pH range of 2 – 12.

If the pump is configured with a solenoid valve, extra restrictions should be considered. EPDM is compatible with life science reagents, but it should not be used with petroleum-based fluids or organic solvents. The pH range for this material should be 4–10 for optimal service life.

Specifications

Parameter	Specification
Typical Lifetime	5M cycles
Dispense Accuracy	< 1% for a 100% dispense
Stroke Volume	250µl
Precision	1% CV at 2% dispense
Seal	IDEX durable seal design
Wetted Materials	PEEK, UHMWPE, Ceramic, [EPDM if using valve option]
Port Details	Two ports 1/4 x 28 Valve option: Inlet (I - open) and Outlet (O - closed)
Operating Pressure	Up to 1500 PSI max Up to 87 PSI max with solenoid valve option
Home Sensor	OPTEK P/N OPB990T55Z

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Motor Type	NEMA 17; Bipolar (4 leads), Recommended Operation: 24 VDC, 1.2 Amp (See Below)
Full Step Resolution (steps)	4000
Unswep Volume (µl)	41
Encoder (optional)	US Digital E5-400-250-NE-S-H-G-B-S1934
Solenoid Valve (optional)	3-way valve, EPDM seal, 24V SMC P/N: LVM155RHY-5A
Backlash	<1% Full Stroke

ENVIRONMENTAL SPECIFICATIONS

Temperature:

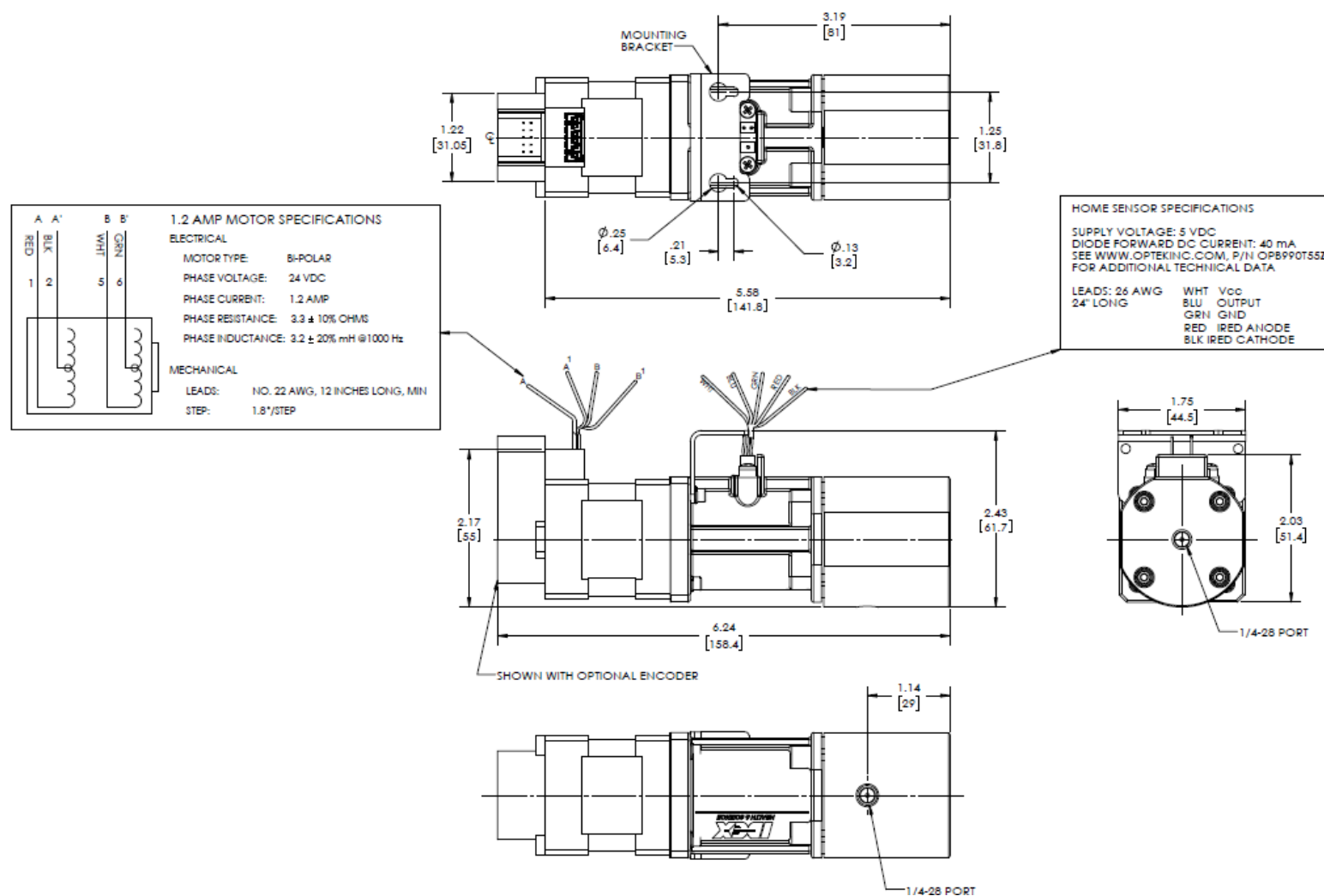
- Operating (°C): +5 to 50 °C
- Storage (°C): -18 to 60 °C

Humidity

- Operating, non-condensing: 20% to 85%
- Storage, non-condensing: 20% - 95%

Dimensional Drawings

DRB-0250-001 & DRB-0250-003:

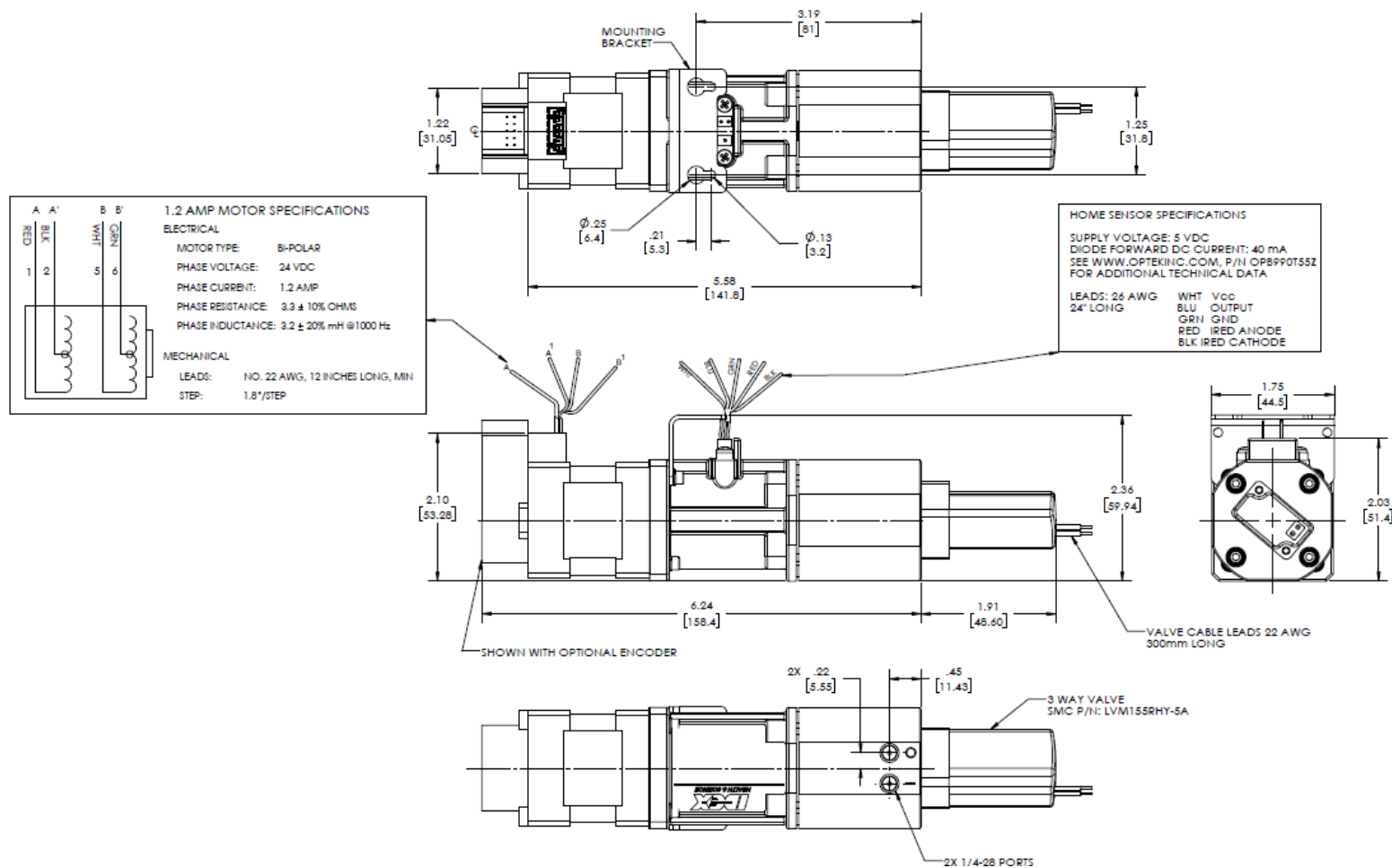


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DRB-0250-002 & DRB-0250-004:



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Optional Encoder Specifications:

Pin	Description
1	Ground
2	None
3	Channel A
4	5VDC
5	Channel B

Home Sensor Specifications:

Wire Color	Description
White	Vcc
Blue	Output
Green	Ground
Red	Red Anode
Black	Red Cathode

Regulatory Compliance Information

This product is compliant with current RoHS & REACH regulations.

Country of Origin

Manufactured and assembled in the USA.