Contamination Free Fluid Handling! Levitronix® Maglev Pump System with Disposable Pumphead!

No Seals, No Bearings, No Contamination!

MPD-200

1.1 bar	*(16 psi)*
22 liters/min	*(5.8 gallons/min)*

Levitronix® MagLev Pump Technology with Disposable Pumphead
Your Solution for Sterile, Aseptic, Low-Shear Pumping

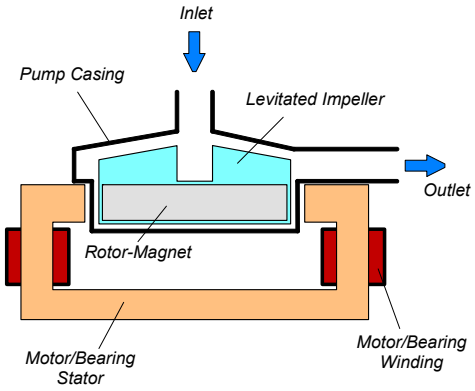

Figure 1: *Schematic of the main elements of the maglev pump.*

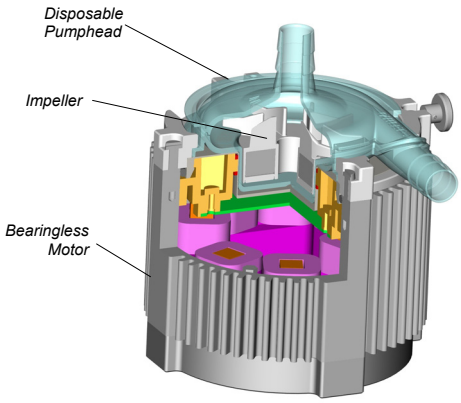

Figure 2: *Maglev pump motor with pumphead.*

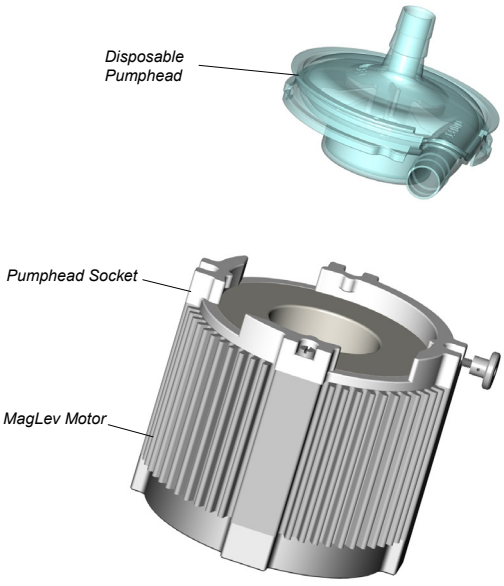

Figure 3: *Motor with detached disposable pumphead*

REVOLUTIONARY MAGNETICALLY LEVITATED PUMP WITH DISPOSABLE PUMPHEAD

The *MPD-200* pump system is a revolutionary pump that has no bearings to wear out or seals to break down and fail. Based on the principles of magnetic levitation, the pump's impeller is suspended, contact-free, inside a sealed casing and is driven by the magnetic field of the motor (*Figure 1*). The impeller and casing are both fabricated with FDA compliant polycarbonate and the pumphead is easily exchangeable. Fluid flow rate and pressure are precisely controlled by electronically regulating the impeller speed.

Two basic system configurations are available. The stand-alone configuration (see *Figure 5*) consists of a controller with an integrated user panel to set the speed manually. The extended version (*Figure 6*) consists of a controller with integrated PLC interface. This allows setting the speed by an external signal and enables precise flow or pressure control in connection with either a flow or a pressure sensor.

SYSTEM BENEFITS

- Reduced risk of contamination due to self-contained design with magnetic bearings
- Very gentle to sensitive fluids due to low-shear design.
- Pump head made of FDA approved materials
- Disposable pumphead with simple exchange procedure
- Extremely low particle generation due to the absence of mechanically contacting parts.
- No narrow gaps and fissures where particles or microorganisms could be become entrapped.
- Small size
- Proven technology in medical (blood pumps) and semiconductor (high-purity pumps) industry (MTBF > 50 years).

APPLICATIONS

- Bio-processing
- Recirculation in bioreactors
- Filtration
- Perfusion of hollow-fibre reactors
- Sterile and aseptic flow circuits in the pharmaceutical, biotech and food industry
- Pumping of shear-sensitive liquids

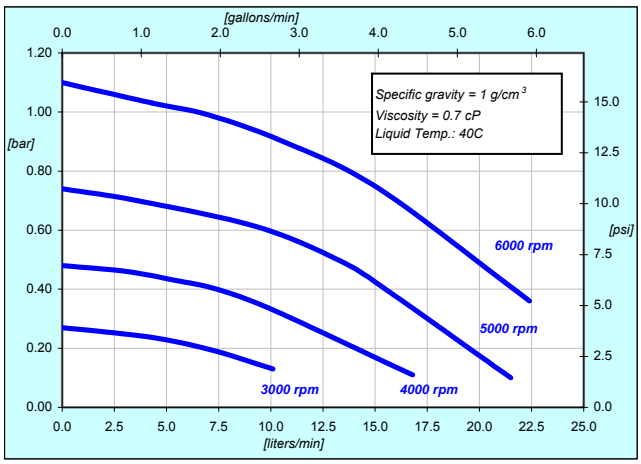

Figure 4: *Pressure/flow curves*

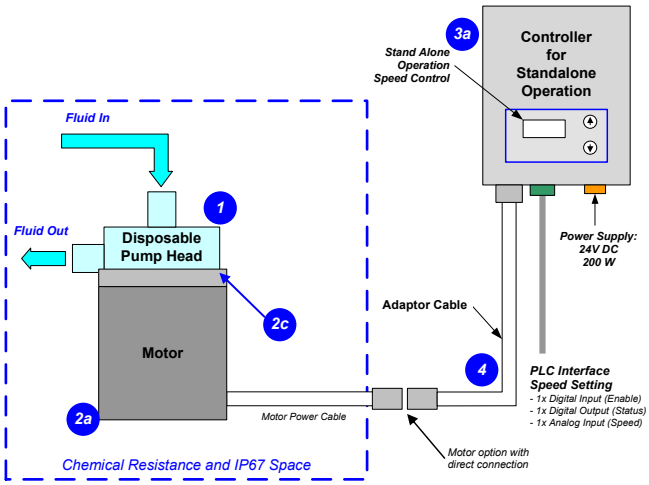

Figure 5: *System configuration for standalone operation (Speed setting with integrated user panel)*

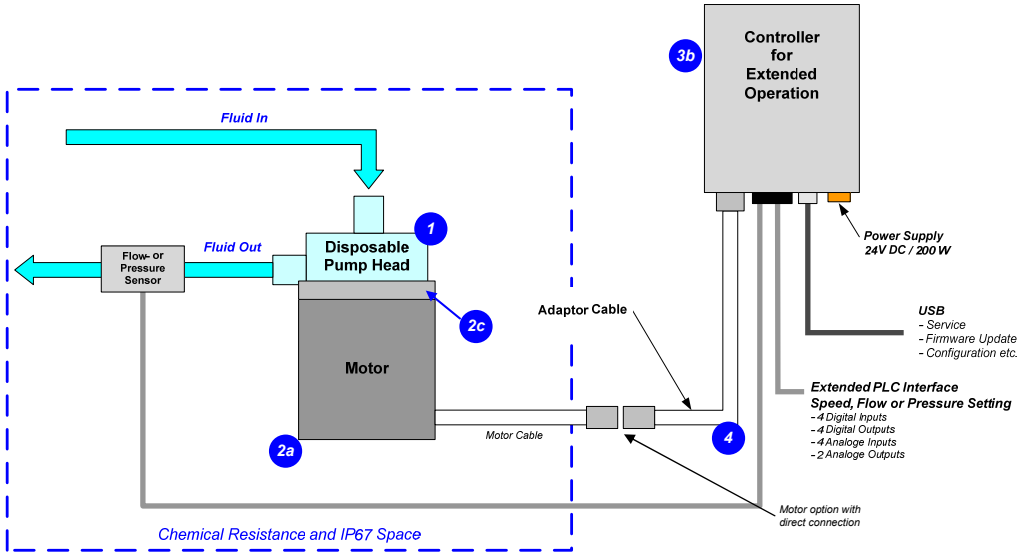

Figure 6: *Extended operation (flow or pressure control) with extended controller*

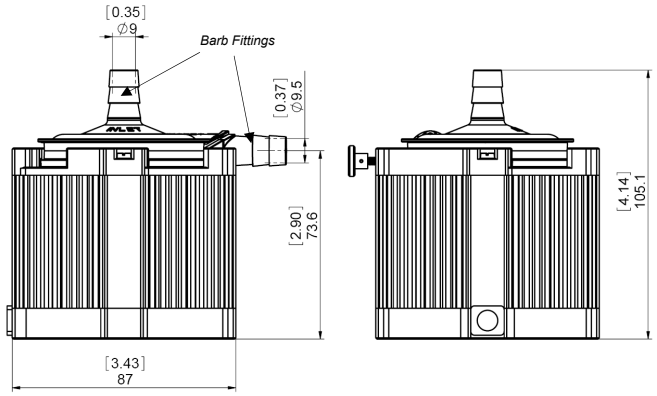

Figure 7: *Basic dimensions of motor with pumphead*

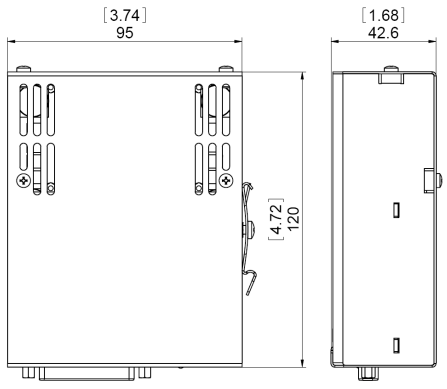

Figure 8: *Basic dimensions of controllers*

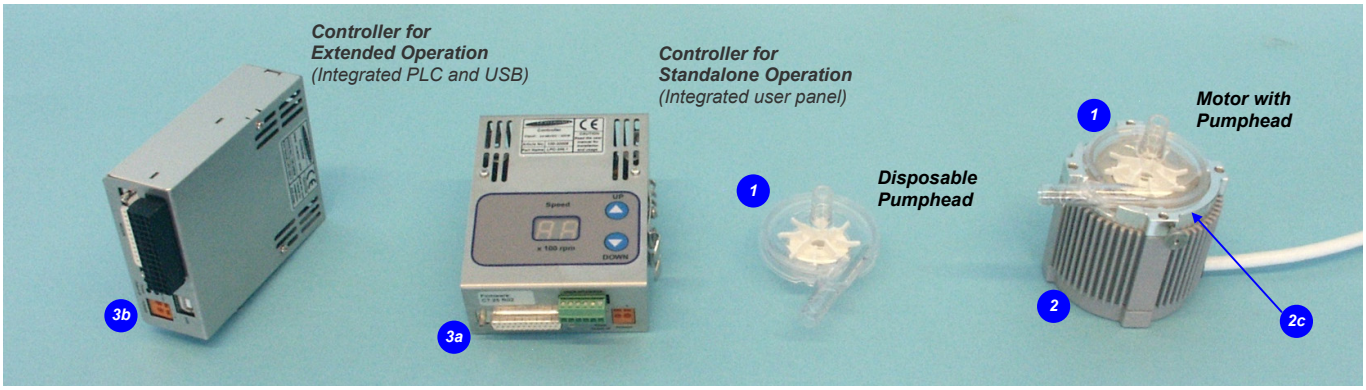

Figure 9: *Standard components*

Pos.	Component	Article Name	Article #	Characteristics	Value / Feature
1a	Disposable Pumpheads	DCP-1.2 *(Not sterilized)*	100-90203	Materials / Fittings	*Polycarbonate (ultrasonic welded parts) / barb fittings*
				Max. Flow / Max. Pressure Max. Viscosity Max. Liquid Temperature	*22 liters/min (5.8 gallons/min) / 1.1 bar (16 psi)* *25 cP* *70°C / 158°F*
				Packaging	*Open blister*
				Biocompatibility	*- All materials compliant with US FDA 21 CFR 177.2510* *- All materials meet UPS class VI standard*
1b		DCP-1.4 *(Not sterilized)*	100-90274	Materials / Fittings	*Polycarbonate (glued parts) / barb fittings*
				Hydraulic Performance	*Same as DCP-1.2*
1c		DCP-1.4-ES *(sterilized with ethylene-oxide)*	100-90275	Packaging	*Cleanroom packaged blister with tyvek cover*
				Biocompatibility	*- All materials compliant with US FDA 21 CFR 177.2510* *- All materials meet UPS class VI standard* *- Packaged pumphead is tested according to ISO10993*
2a	Motor	BSM-1.3	100-10004	Housing	*ETFE coated Aluminum*
				Cable / Connectors	*1x 2m cables with FEP jacket / circular IP-67 (needs Pos. 4)*
2b	Motor	BSM-1.4	100-10005	Cable / Connectors	*1x 5m cables with FEP jacket / D-SUB* *(direct connection to controller, no adaptor cable needed)*
2c	Pumphead Socket	PHS-1.2	900-15039	Socket Type / Material	*Bayonet (with locking screw) / Anodized Aluminum*
3a	Standalone Controller (User Panel)	LPC-200.1	100-30008 (Controller with Enable connector incl. in 100-90335)	Electrical Power / Voltage	*200 W / 24 V DC*
				Interfaces for Standalone Controller	*Panel to set speed with automatic storage on internal EEPROM*
					PLC with — *1x analog input ("Speed")* — *4 - 20 mA* *1x digital input ("Enable")* — *0 - 24 V (optocoupler)* *1x digital output ("Status")* — *0 - 24 V (relais)*
3b	Extended Controller (PLC and USB)	LPC-200.2	100-30009 (Controller with PLC connector incl. in 100-90336)	Interfaces for Extended Controller	*PLC with* — *- up to 4 digital inputs* — *0 - 24V (optocoupler)* *- up to 4 digital outputs* — *0 - 24 V (relais)* *- up to 2 analog inputs* — *4 - 20mA* *- up to 2 analog inputs* — *0 – 10 V* *- up to 2 analog outputs* — *0 – 5 V*
					USB interface (for service and system monitoring)
4	Extension Adaptor Cable	MCA-1.2-05 (0.5m) MCA-1.2-30 (3m) MCA-1.2-50 (5m) MCA-1.2-70 (7m) MCA-1.2-100 (10m)	190-10147 190-10092 190-10128 190-10148 190-10149	Jacket and Connectors	*FEP-jacket and circular Hummel to D-SUB connector*

Table 1: *Specification of standard components*

System Name	Article #	Motor + Socket	Controller	Note
MPD-200.1	100-90338	BSM-1.3 + PHS-1.2	LPC-200.1	*Adaptor/Extension cable (0.5 - 10m) have to be ordered as separate article according to Table 1*
MPD-200.2	100-90339	BSM-1.3 + PHS-1.2	LPC-200.2	
MPD-200.3	100-90340	BSM-1.4 + PHS-1.2	LPC-200.1	--
MPD-200.4	100-90341	BSM-1.4 + PHS-1.2	LPC-200.2	

Table 2: *Standard system configurations (disposable pumphead to be ordered separately)*

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