

Reliable Dosing of Chemicals

The stepper motor-driven diaphragm dosing pump, the MEMDOS SMART Series from Lutz Jesco, is suitable for highly accurate, demanding dosing tasks and applications.

Its innovative drive enables the pump to process even the smallest volumes with an extremely high degree of accuracy. Asynchronous running with variable speeds of suction stroke and pressure stroke allow for homogeneous and pulse-reduced dosing.

Due to enhanced Slow Mode options, even highly-viscous media can be transferred at great levels of reliability and reproducibility.

Available in eight sizes and four models, the MEMDOS SMART pumps provide a wide range of expanded functionalities.

Capacity ranges cover flows from 0.68 gph at 300 psi, to 48 gph at 60 psi.

Depending on the application, various materials are available. A broad range of accessories are available to ensure optimal dosing results and quick installation.

Wide Range of Applications

The MEMDOS SMART's drive is fully adjustable. The stepper motor with its wear-free belt drive ensures a particularly gentle dosing process. Hydraulic shocks and system maintenance are reduced to a minimum, the useful life of the metering pump system is increased.

Stroke frequency, number of strokes, runtime, batch functionalities and much more can be controlled via the optionally-available Ethernet interface.

Due to its compact design and small footprint, the MEMDOS SMART pumps can easily be integrated into complete dosing systems.

Featuring a large 3.5 inch LCD color display with touch screen and a highly user-friendly graphic UI, the pumps allow for easy and safe operation.

The pump's LCD control panel can optionally be mounted in various directions, the detachable base can be used for wall mounting.



In Short

- Capacity range 0.68 gph at 300 psi to 48 gph at 60 psi
- Available in eight sizes and four models
- 3.5 inch LCD touch screen color display
- Multiple operating modes, including manual control 0% - 100%, pulse control, scalable analog control 0/4 - 20 mA
- Pulse output, scalable analog output 0/4 - 20 mA
- Batch dosing options, including interval- and timer functions, manual and external start
- Slow modes 25%, 50%, 75%
- Diaphragm rupture detection (optional)
- Pump base for standard or wall mounting
- Pump password protection
- Wide-range power supply 100 - 250 VAC
- Multiple UoM and languages supported
- Ethernet interface Modbus RTU (optional)
- Calibration function
- Diaphragm replacement program
- Materials: PVC, PP, PVDF and Stainless Steel
- Vent function
- Software backup of 4 different set points
- Detachable LCD control panel (optional)
- Double ball valves
- CSA and UL certified
- NSF/ANSI/CAN 61 (selected materials and sizes)

Function Overview - Memdos SMART Models

General Functions	LB ^o	LAX	LDX	LPX
Wide-range power supply 100-250 V AC, 50/60Hz	●	●	●	●
Material availability PVC, PP, PVDF, 316 Ti Stainless Steel (1.4571)	●	●	●	●
Vented dosing head (plastic versions)	●	●	●	●
Capacity size 2 - 30 (range 0.68 gph - 8.11 gph)	●	●	●	●
Capacity size 60 - 180 (range 15.45 gph - 48.07 gph)	-	●	●	●
Supply amounts displayed in 7 different units	-	●	●	●
Pump base for standard or wall mounting	-	●	●	●
Password protection with adjustable ranges	-	●	●	●
Alarm status visibility in color display	-	●	●	●
Calibration function	-	●	●	●
3.4" full color graphic display with touch-screen and multi-language support	-	●	●	●
Slow modes 25%/50%/75% for highly-viscous media	-	-	-	●
Diaphragm rupture detection*	-	-	-	●
Diaphragm replacement program	-	-	-	●
Vent function	-	-	-	●
Pump message storage	-	-	-	●
Control panel/display detachable*	-	●	●	●
Control panel/display rotatable*	-	●	●	●
NSF/ANSI/CAN 61 certified (selected materials and sizes)	●	●	●	●
CSA and UL certified	●	●	●	●

Operating Modes and Inputs/Outputs	LB ^o	LAX	LDX	LPX
Manual control 0 - 100 %	●	●	●	●
Release input (external start/stop)	●	●	●	●
Level input with early warning and main alarm	-	●	●	●
Pulse control (constant or dynamic), increase/reduction, pulse water meter, PPM, PERC	-	-	●	●
Pulse output, stroke feedback, alarm ⁺ or pulse forwarding ⁺	-	-	●	● ⁺
Analog control 0/4 - 20mA, scalable	-	●	-	●
Analog output 0/4 - 20mA, scalable	-	●	-	●
Batch dosing, manual start, external start, interval- and timer function	-	-	-	●
Alarm relay output (1 and 2), adjustable	-	-	-	●
Network / Ethernet interface Modbus RTU*	-	-	-	●

* Optional

^o Some information on sizes, flows, pressure ratings, and other technical data does not apply to MEMDOS SMART Model LB. Separate technical literature is available for MEMDOS SMART Model LB.

Technical Data^o

MEMDOS SMART - SIZES		2	5	10	20	30	60	100	180	
Delivery capacity at maximum backpressure	gph	0.68	1.47	2.74	5.25	8.11	15.45	26.83	48.07	
	ml/stroke	0.29	0.62	1.15	2.21	3.41	6.5	11.29	20.22	
Max. delivery pressure	psig	300 (250)*	250	175	115	100	150	100	60	
Delivery capacity at medium backpressure	gph	0.79	1.69	2.90	5.52	8.34	17.17	29.77	50.45	
	ml/stroke	0.33	0.71	1.22	2.32	3.51	7.22	12.52	21.22	
Average delivery pressure	psig	145	115	90	60	45	75	60	30	
Max. stroke frequency	spm	150								
Suction lift for non-gassing media	ft. H ₂ O	9.84					16.40			
Max. supply pressure	psig	11.60					7.25			
Diameter of diaphragm	in.	1.29	1.53	2.12		2.67	3.54			
Nominal valve width		DN3**/DN4		DN4			DN6	DN10		
Power supply		100 - 250 V AC, 50/60 Hz								
Power cord length	ft.	5.90 (with power plug)								
Power consumption	W	25					50	70		
Protection class		IP65 (with cover caps on the connections or connected signal lines)								
Insulation class		F								
Materials		PVC, PP, PVDF, 316 Ti Stainless Steel (1.4571)								
Weight	PVC, PP, PVDF	lbs.	~ 8.81				~17.63	~19.84		
	SS (1.4571)		~11.02				~22.04	~30.86		
Max. ambient temperature allowed	PVC	°F	41 - 104***							
	PP, PVDF, SS (1.4571)		41 - 113***							
Max. medium temperature allowed	PVC	°F	32 - 95							
	PP, PVDF	°F	32 - 140							
	SS(1.4571)	°F	32 - 176							
Relative humidity	%	max. 90								
Max. Noise level	dB(A)	51 - 56								
Max. Viscosity	mPas	300/1000****								

* PVC version.

** DN3 double ball valves only.

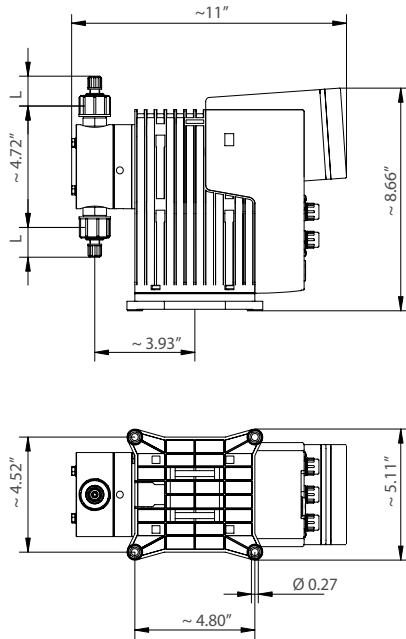
*** For use of the dosing pumps at ambient temperatures below 41 °F (5 °C), consult factory.

**** For viscosities over ~ 300 mPas, use spring-loaded valves, for viscosities over 1000 mPas, consult factory.

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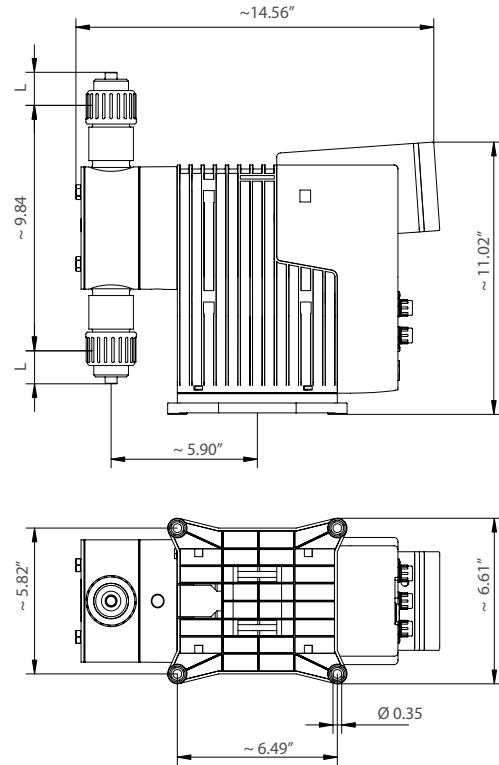
Dimensions

MEMDOS SMART 2 - 30
All dimensions in inches



The L dimensions depend on the type and size of the connection.

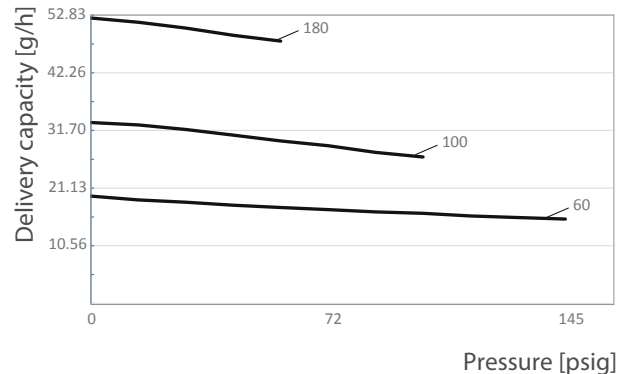
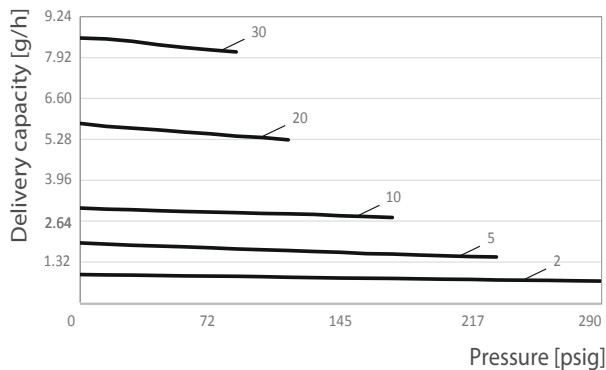
MEMDOS SMART 60 - 180
All dimensions in inches



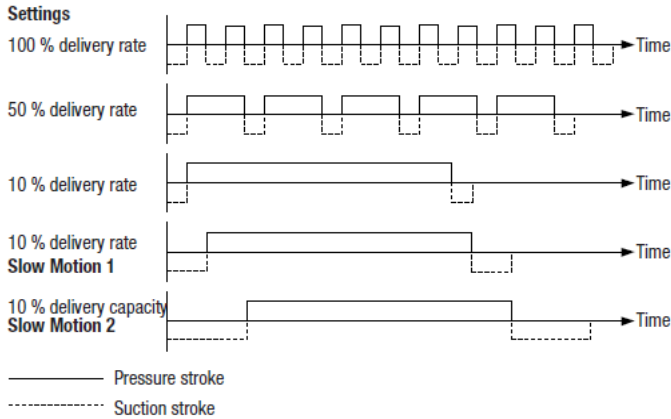
The L dimensions depend on the type and size of the connection.

Flow curves

Delivery capacities determined under lab-test environment. The delivery characteristic curves are valid for water at 68°F (20°C) at 100% stroke frequency. The delivery capacity depends on the medium's density, viscosity and temperature. Since these parameters vary at every installation location, dosing pumps must be re-calibrated as installation conditions change.



Pumping Characteristics of MEMDOS SMART Stepper-Motor Pumps



The MEMDOS SMART stepper-motor pumps are designed to run suction and discharge strokes at different speeds. For low-flow applications, for example, the pump performs the suction stroke at the maximum speed while adjusting the speed of the discharge stroke to match the desired flow rate.

These pumping characteristics result in a constant flow with low pulse. Hydraulic shocks are reduced to a minimum, maintenance and required accessories are largely reduced, the useful life of the metering pump system is increased.

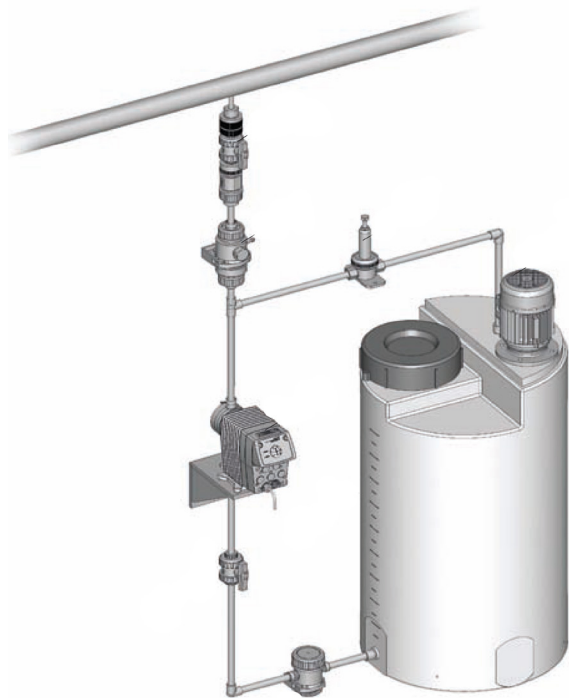
Slow Mode Characteristics

With the three Slow Mode settings of 25%/50%/75%, the Memdos SMART pump has the ability to reduce its suction speed in two steps. Viscous media can thus be conveyed easily and highly accurately.

Accessories

Even the best pump can be improved – simply by adding the appropriate accessories.

Individual accessories as well as complete accessory-sets, consisting of suction/discharge tubing, foot valve and injection nozzle, are available.



Complete Chemical Feed Systems

Turn your dosing pump into an efficient and complete metering pump system, available tank-mounted, floor-mounted, or wall-mounted.

- Suction lines - rigid or flexible styles, including optional integration of tank level monitoring and pre-alarms.
- Injection nozzles - to dose the medium into the main line and to prevent it from flowing back into the pressure line.
- Suction pressure regulators - to prevent medium flow when the dosing pump is not running or to prevent a vacuum being formed in the event of a pipe failure
- Priming aids - to significantly ease priming of dosing pumps with low supply volumes per stroke, for large suction heights, highly viscous dosing media, and for initial priming or when priming after the system has been idle.
- Back pressure and pressure relief valves - to increase dosing accuracy or to protect the system against excessive pressure.

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