

# The Smart series

**MEMDOS SMART - Stepper motor-driven diaphragm dosing pumps 2.4 – 30.7 l/h up to 20 bar**



## For the reliable dosing of chemicals

The stepper motor-driven diaphragm dosing pump MEMDOS SMART provides a wide range of attractive solutions for demanding dosing tasks. Its innovative drive enables the dosing pump to dose even the smallest of residual volumes with a high degree of accuracy. Asynchronous running with various speeds of the suction and pressure stroke enables homogeneous and pulse-reduced dosing.

Available in four versions, the MEMDOS SMART provides a range of different functionalities. The capacity range covers 2.4 l/h at 20 bar to 30.7 l/h at 3 bar.

Depending on the application, various materials and connections to the pressure and suction side can be used in the dosing range. Accessory sets consisting of a hose, injection nozzle and suction line are available to ensure the best outcomes and quick installation.

## Wide range of applications

The MEMDOS SMART's drive is fully adjustable. The stepper motor with its wear-free tooth belt drive, ensures a particularly gentle dosing process.

The MEMDOS SMART is also available with an optional Ethernet interface. The stroke frequency, number of strokes, runtime, batch and much more can be controlled via the network interface module. Errors and malfunctions are transmitted from the pump.

The compact structure of the MEMDOS SMART means that it requires a small installation surface. This enables its problem-free integration in smaller compact dosing systems. Depending on the requirements, the pump can be fitted in three different positions: standing, oriented to the left or right and fitted on the wall.

## Overview of functions

MEMDOS SMART	LB	LD	LK	LP
Dosing head ventilation (plastic version)	•	•	•	•
Graphic display (*with multi-language menu)	-	•	•*	•*
Password protection	-	•	•	•
Supply amount displayed in various units	-	-	•	•
Slow mode for highly-viscous media	-	-	•	•
Diaphragm replacement programme	-	-	•	•
Calibration function	-	-	•	•
Operating modes	LB	LD	LK	LP
Manual control 0 – 100 %	•	•	•	•
External control with pulse increase and reduction	-	•	•	•
External control with pulse water meter, PPM u. PERC	-	-	•	•
Batch dosing with interval and *timer functions	-	-	•	•*
External control via standard signal 0/4 – 20 mA	-	-	-	•
Inputs and outputs	LB	LD	LK	LP
Release input (external start/stop)	•	•	•	•
Level input with early warning and main alarm	-	•	•	•
Stroke feedback output	-	-	•	•
Alarm relay output	-	-	•	•
Input for flow control	-	-	-	•
Diaphragm rupture detection (optional)	-	-	-	•
Ethernet interface (optional)	-	-	-	•

## Technical data

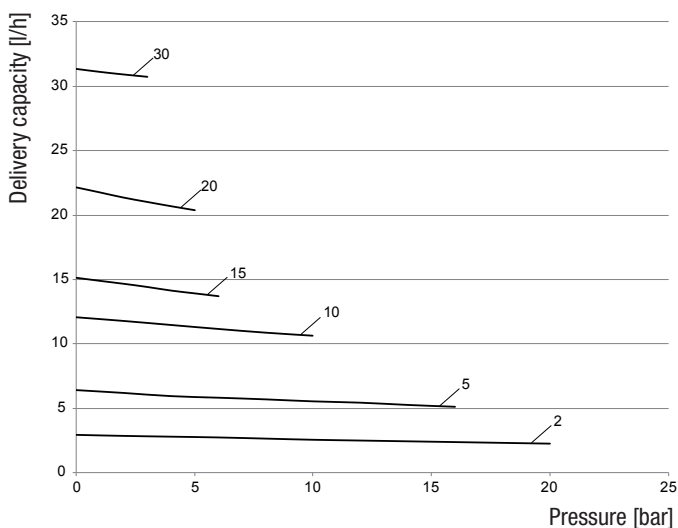
MEMDOS SMART		2	5	10	15	20	30
Delivery capacity at max. backpressure	l/h	2.4	5.1	10.7	13.7	20.4	30.7
	ml/stroke	0.22	0.57	1.19	1.52	2.27	3.41
Maximum delivery pressure	bar	20 (16*)	16	10	6	5	3
Delivery capacity at average backpressure	l/h	2.6	5.7	11.3	14.4	21.2	31
	ml/stroke	0.28	0.63	1.26	1.60	2.36	3.44
Average delivery pressure	bar	10	8	5	3	2.5	1.5
Nominal stroke frequency	rpm	150					
Suction lift for non-gassing media	mWS	3					
Maximum inflow pressure	mbar	800					
Diameter of diaphragm	mm	33	39		54		
Valve size		DN3**/DN4	DN4				
Voltage supply		110 – 240 V, -10 % / +5 %, 50/60 Hz					
Power consumption	W	25					
Protection class		IP65 (with covering caps on the connections)					
Insulation class		F					
Materials		PVC, PP, PVDF, 1.4571					
Weight	PVC, PP, PVDF	kg	~2.2				
	Stainless steel (1.4571)	kg	~3.3				
Approved ambient temperature	°C	5 – 45 (with PVC components 5 – 40)					
Approved media temperature	°C	80 (with PVC parts, 35; with PP parts 60)					

\* with a PVC design

\*\* DN3 only for double ball valves

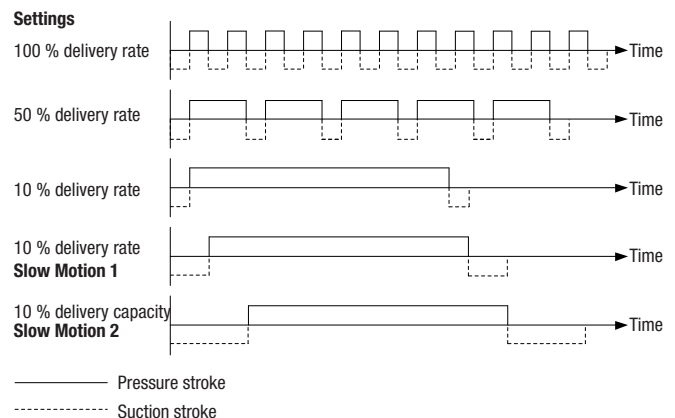
## Delivery characteristic curves

These delivery capacities were determined on the manufacturer's test stands. They apply at 20 °C (68 °F) for water, at 100 % stroke frequency. The delivery capacity depends on the medium (density and viscosity) and temperature. Since these conditions vary at every installation location, you should calibrate the dosing pump.



## Conveying characteristics

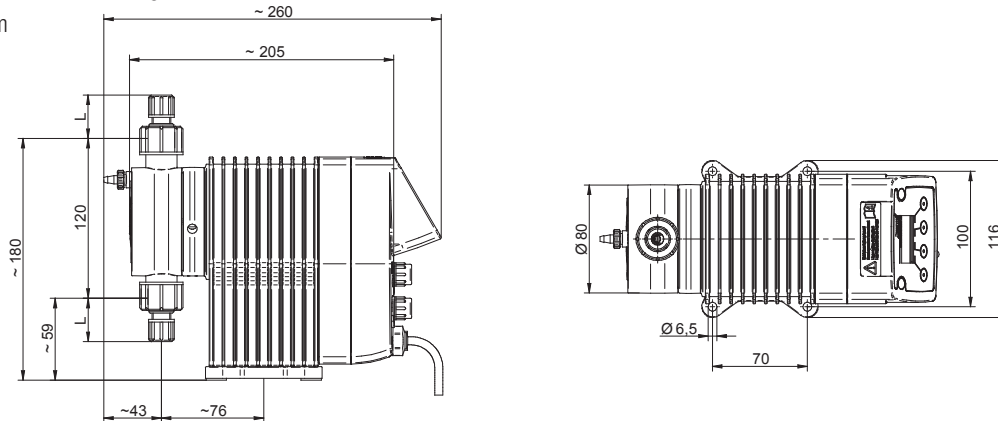
For low supply rates, for example, the dosing pump performs the suction stroke at the maximum speed and adjusts the speed of the pressure stroke to match the desired supply rate. This produces an almost constant supply stream, which enables low-pulsation, low stress dosing.



## Dimensions

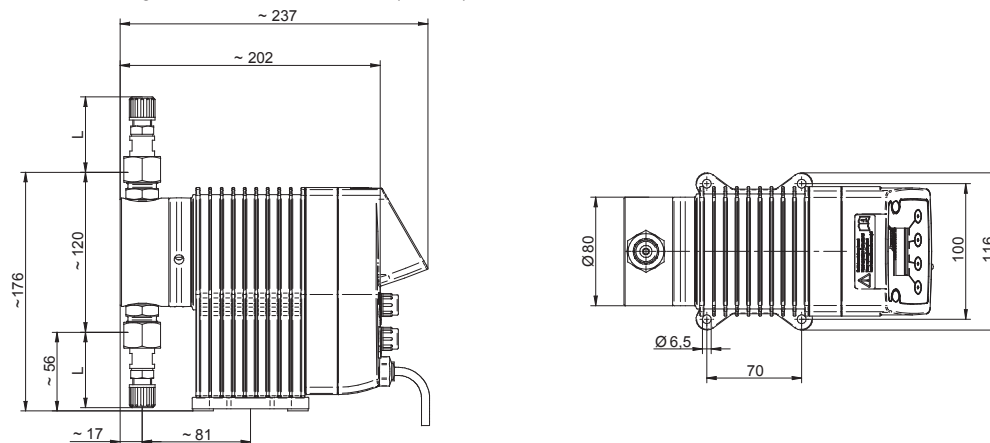
### MEMDOS SMART 2, 5, 10 with dosing head made of PVC, PP or PVDF

All dimensions in mm



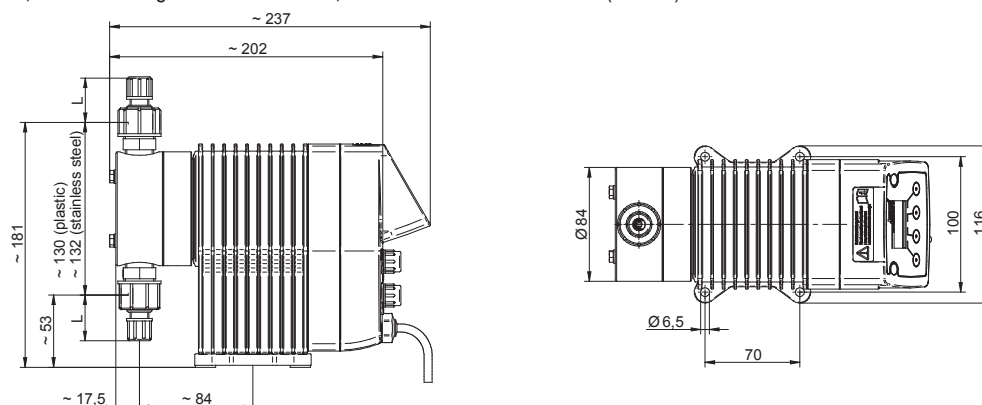
### MEMDOS SMART 2, 5, 10 with dosing head made stainless steel (1.4571)

All dimensions in mm



### MEMDOS SMART 15, 20, 30 with dosing head made of PVC, PP or PVDF or stainless steel (1.4571)

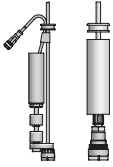
All dimensions in mm



Connection	Material	Scale	Nominal width	L
Hose clamp connection	PVC, PP, PVDF	4/6 mm	DN4	31 mm
		1/4x3/8"	1/4"	34 mm
		6/9 mm	DN6	34 mm
		6/12 mm	DN6	15 mm
	Stainless steel (1.4571), PVDF	4/6 mm	DN4	50 mm
		6/9 mm	DN6	54 mm

Further connection methods for your dosing pumps are available upon request.

## MEMDOS SMART Standard - accessories



### Suction lines

Type SL-2 with ceramic reinforcement piece, cable length 3,000 mm, tube length 2,500 mm. Level monitoring and pre-alarm with 2 switching points, switching distance approx. 50 mm. Switching function: Closer on rising level, electrical connection to dosing pump via plug connector M12x1.

Flexible suction line, SA model with foot valve and load part made from ceramic and 2500 mm tube length.



### Injection nozzles

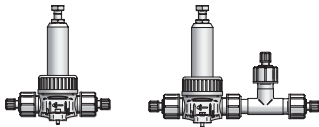
To connect the dosing line to the dosing point.

Injection nozzle type R, spring loaded, opening pressure 0.1 bar.



### Suction and pressure tube

Permissible operating pressure at 20 °C in accordance with DIN EN ISO 7751, chemical resistance and correct connection are assumed.



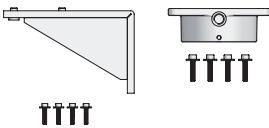
### Back-pressure and pressure relief valves

Back-pressure valves to be mounted in the dosing line.

Adjustable pressure 1 – 16 bar.

Pressure-relief valves to be mounted in the dosing line.

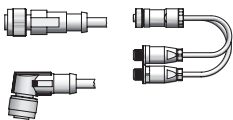
Settable pressure: plastic 1 – 16 bar, stainless steel 1 – 25 bar



### Wall bracket and spacer

Wall console including mounting material for mounting pumps. Material: PP

Spacer and mounting hardware required to fit the pump to a water meter. Material: Cast aluminium, coated



### Various cables, plugs and adapters

Cable for: external release pulse output A coded, 0/4 – 20 mA and pulse input A coded, fault message B coded, level control A coded, Ethernet network connection D coded.

Terminal connection: for retrofitting existing suction lines or level monitors.

Adapter: when using older suction lines with a 3.5 mm jack plug; when using a suction line with M12x1 plug connector.