

# Product Information Stepper Motor-driven Diaphragm Dosing Pump MEMDOS SMART LP

## Reliable dosing of chemicals

Stepper motor driven diaphragm pumps are particularly suitable for highly accurate, reproducible industrial dosing thanks to their design. Many fluid media can be safely fed into the respective processes using these pumps.

## Precision that inspires

The MEMDOS SMART LP series is available in four capacity ranges that deliver between 5 and 20 l/h against pressures of up to 16 bar.

The compact stepper-motor pump, coupled with its intelligent drive concept, combines the big advantages of a solenoid-driven diaphragm dosing pump with the precision of a motor-driven diaphragm dosing pump.

Several different materials and connections are available for suction and discharge side, depending on the specific applications. By using appropriate and recommended materials, the MEMDOS SMART LP can be used in most process applications.

A matching accessory set with hoses, injection points and suction lines from our comprehensive accessory range means that nothing stands in the way of a quick installation, and you get the best results.

## Wide range of applications

The MEMDOS SMART LP's drive is fully adjustable. The stepper-motor with its wear-free tooth belt drive, ensures a particularly homogeneous and gentle dosing process. This produces an almost constant supply stream, which gives a low-pulsation dosing.

In addition, the MEMDOS SMART LP gives you the possibility to reduce the suction speed in two steps to easily and more precisely supply even viscous dosing media.

The MEMDOS SMART LP doesn't just impress with its elegant design; the graphical display with a multi-language menu as well as the dosing pump's operation using the integrated keyboard simplifies its use.

If required, the dosing pump can be controlled via an analogue or pulse input. For integration into demanding automation networks, a version with an Ethernet-based MODBUS interface is available.

Using position detection in the pump, after an unexpected shut down of the pump, overdosing can be prevented and downtime resulting from this can be excluded.

## In Short

- Capacity range 5 to 20 l/h, up to 16 bar
- Broad-range power supply 110 - 240 V AC, -10% / +5%, 50/60 Hz, IP 65, 25 W
- Suitable for aggressive media
- Graphical display with multi-language menu
- Materials available: PVC, PP, PVDF and stainless steel
- Material consistency for the pumps and accessories
- Dosing head ventilation (plastic version)
- Supplied with connection sets (except stainless steel)
- Wall and floor mounting



- Double-ball valves ensure accurate dosing
- Precise pump settings using the keyboard
- Fully controllable stepper-motor drive
- Asynchronous mode for settings < 100%
- Infinitely adjustable stroke frequency from 0 to 100%
- Calibration function
- Two slow-mode settings for highly-viscous media
- Delivery rate displayed on various units
- Automatic diaphragm change program
- External control via standard signal 0/4 ... 20 mA
- External control with pulse increase and reduction
- Level input with early warning and main alarm
- Release input
- Dosing control input
- Diaphragm rupture input
- Stroke feedback output
- Alarm relay output
- Batch dosing with interval and timer functions
- Ethernet interface (optional)

## Model variants

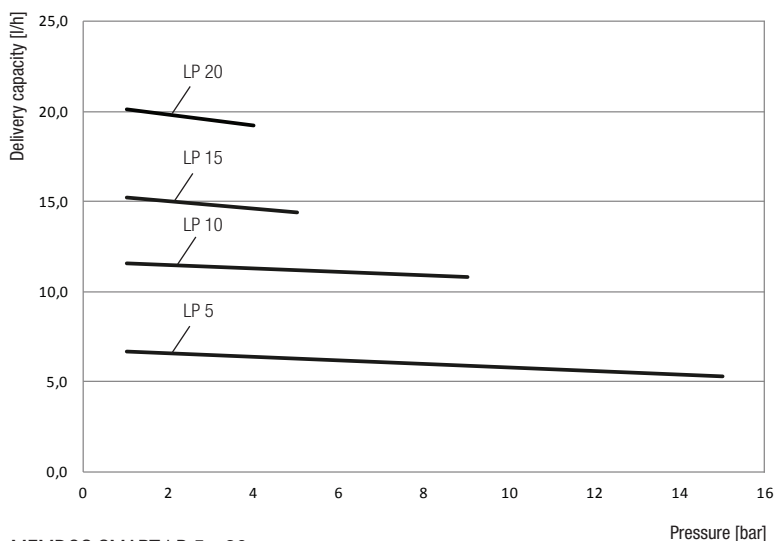
MEMDOS SMART	Material			
	PVC	PP	PVDF	Stainless steel
LP 5	10101004	10101000	10101008	10101012
LP 10	10101005	10101001	10101009	10101013
LP 15	10101006	10101002	10101010	10101014
LP 20	10101007	10101003	10101011	10101015

## Technical data

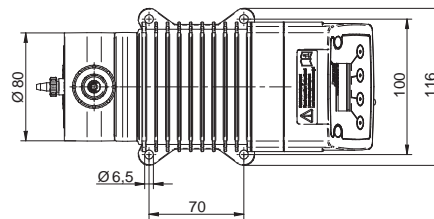
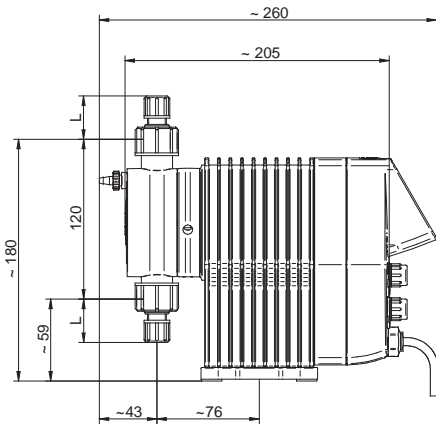
MEMDOS SMART LP			5	10	15	20
Delivery capacity at max. pressure		l/h	5.3	10.8	14.2	19.2
Max. supply pressure		bar	15	9	5	4
Delivery capacity at medium pressure		l/h	6.0	11.3	14.7	19.7
Average back pressure		bar	8	5	3	2
Max. stroke frequency		RPM	150			
Suction head for non-gassing media		mWS	3			
Max. inlet pressure		mbar	800			
Nominal valve width			DN4			
Voltage supply			110 - 240 V AC, -10% / +5%, 50/60 Hz			
Power consumption		W	25			
Protection class			IP 65 (with covering caps on the connections)			
Insulation class			F			
Weight	PVC, PP, PVDF	kg	~ 2.2			
	1.4571		~ 3.3			
Max. ambient temperature		°C	5 - 45 (5 - 40 with PVC parts)			
Max. temperature of the medium		°C	80 (with PVC parts 35; with PP parts 60)			

## Delivery characteristic curves

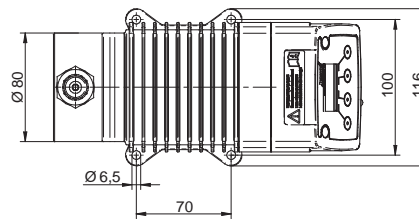
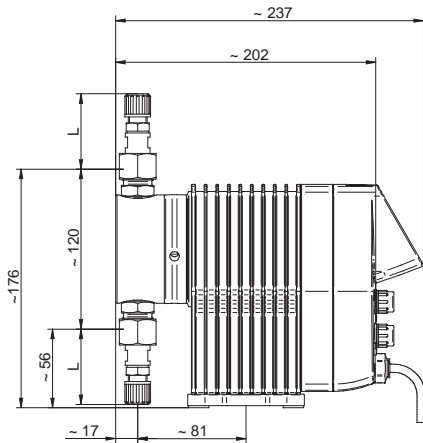
The delivery characteristic curves are valid for 20 °C (68 °F) for water at 100% stroke frequency. The delivery capacity depends on the medium (density and viscosity) and temperature. Dosing pumps must therefore be gauged in litres during application.



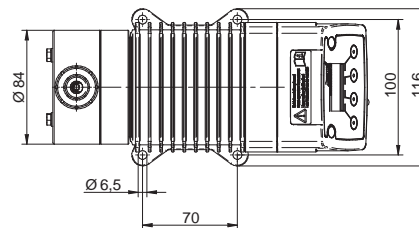
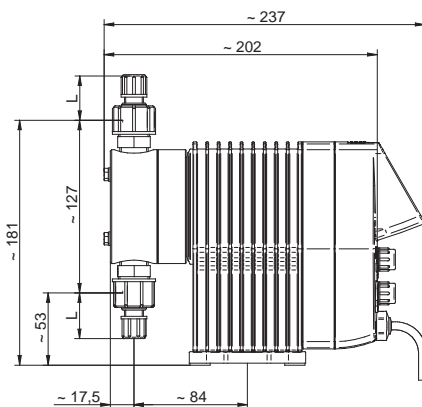
### Dimensions



MEMDOS SMART LP 5 and 10 with dosing head made of PVC, PP or PVDF



MEMDOS SMART LP 5 and 10 with dosing head made of stainless steel



MEMDOS SMART LP 15 and 20 with dosing head made of PVC, PP, PVDF or stainless steel

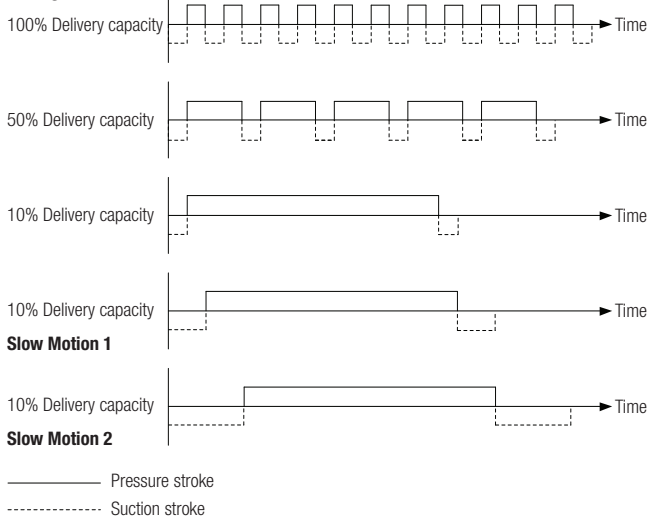
All dimensions in mm

Connection	Material	Size	Nominal diameter	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
	1.4571 / PVDF	4/6 mm	DN4	50 mm
		6/9 mm	DN6	54 mm

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## Conveying characteristics

### Settings



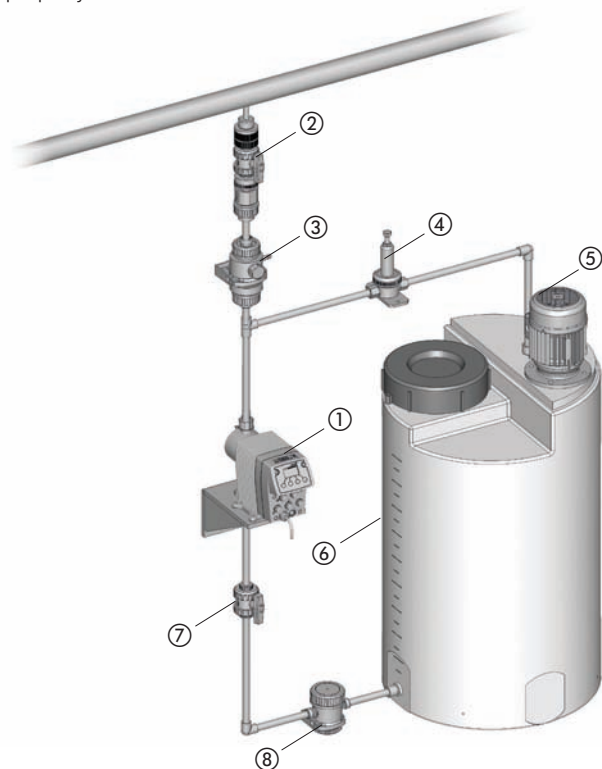
For low supply rates, for example, the dosing pump performs the suction stroke at the maximum speed and adjusts the speed of the pressure stroke to match the desired supply rate. This produces an almost constant supply stream, which gives a low-pulsation dosing.

The dosing pump in Slow Motion mode also has the option of reducing the suction speed in two steps. Thereby, more viscous media can be more easily conveyed and more accurate dosing attained.

## Accessories

Suitable sets of accessories, which consists of a suction line, a pressure line and an injection nozzle, are available for the dosing pumps.

Even the best pump can still be improved - namely by the right technical periphery.



To make your dosing pump into an efficient dosing system, we recommend using the following accessories:

- Injection nozzles – to dose the medium in the main line and to prevent it flowing back into the pressure line
- Pressure loading and relief valves – to increase dosing accuracy or to protect the system against too high a pressure
- Pulsation dampener – to damp supply currents as well as to reduce the flow resistance in long pipelines.
- Priming aids – to significantly ease priming of dosing pumps with low supply volumes per stroke, for large suction heights, for highly-viscous dosing media or for initial priming or when priming after the system has been laying idle
- Suction pressure regulator – to prevent medium flow when the dosing pump is not running or to prevent a vacuum being formed in the event of a pipe burst

For further accessories for your dosing pump, please refer to our dosing pump brochure.

### Legend

- |                                        |                              |
|----------------------------------------|------------------------------|
| ① MEMDOS SMART LP                      | ⑤ Electrical agitator        |
| ② Injection nozzle with shut-off valve | ⑥ Dosing tank                |
| ③ Pulsation dampener                   | ⑦ Shut-off valve             |
| ④ Pressure relief valve                | ⑧ Suction pressure regulator |