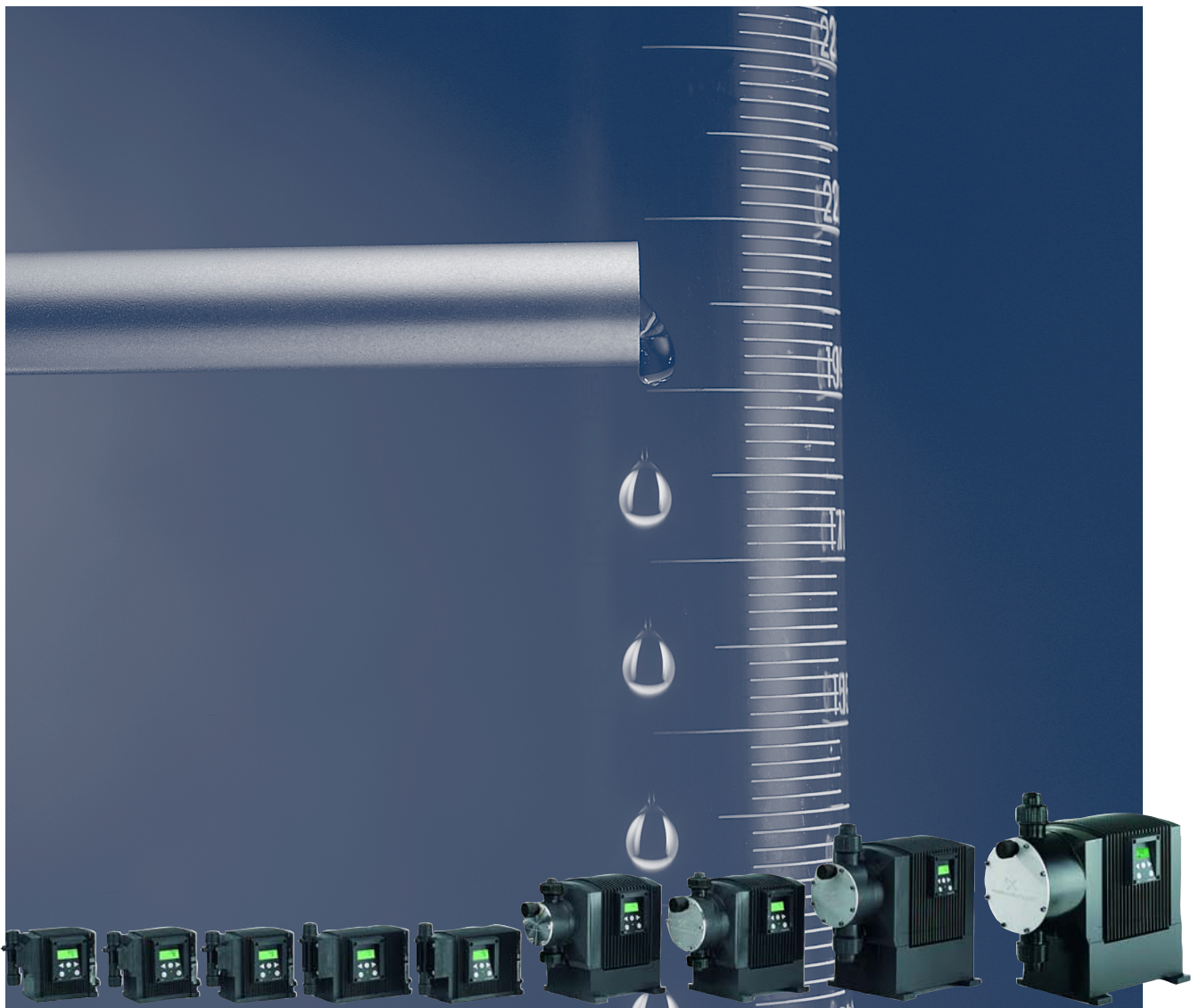


# DME and DMS

Digital Dosing



# Contents

## General data

Performance range, DME	3
Performance range, DMS	3
Digital Dosing	4
Type key	5
Codes	5

## Functions

Overview of functions	6
Capacity range	7

## Functions

Capacity control, DME	8
Capacity control, DMS	9
Control panel	10
Menu	12
Operating modes	13
Dosing monitoring	17
Control panel lock	18
Wiring diagram, DME 2 to 48 and DMS-A (AR)	19
Wiring diagram, DME (60 to 940)	20

## Construction

Sectional drawing, DME (2 to 48)	22
Material specification	22
Sectional drawing, DME (60 to 940)	23
Material specification	23
Sectional drawing, DMS	24
Material specification	24

## Performance curves

DME, DMS, 60 Hz	25
-----------------	----

## Dimensions

Front-fitted control panel DME 2 to 48, DMS	28
Side-fitted control panel DME 2 to 48, DMS	28
DME (60 to 940)	29

## Technical data

DME (2 to 48)	30
DME (60 to 940)	31
DMS	32

## Pump selection

DME 2 to 12 - standard range	33
DME 19 to 48 - standard range	34
DME 60 to 150 - standard range	35
DME 375 to 940 - standard range	36
DMS 2 to 4 - standard range	37
DMS 8 to 12 - standard range	38
Non-standard options	39

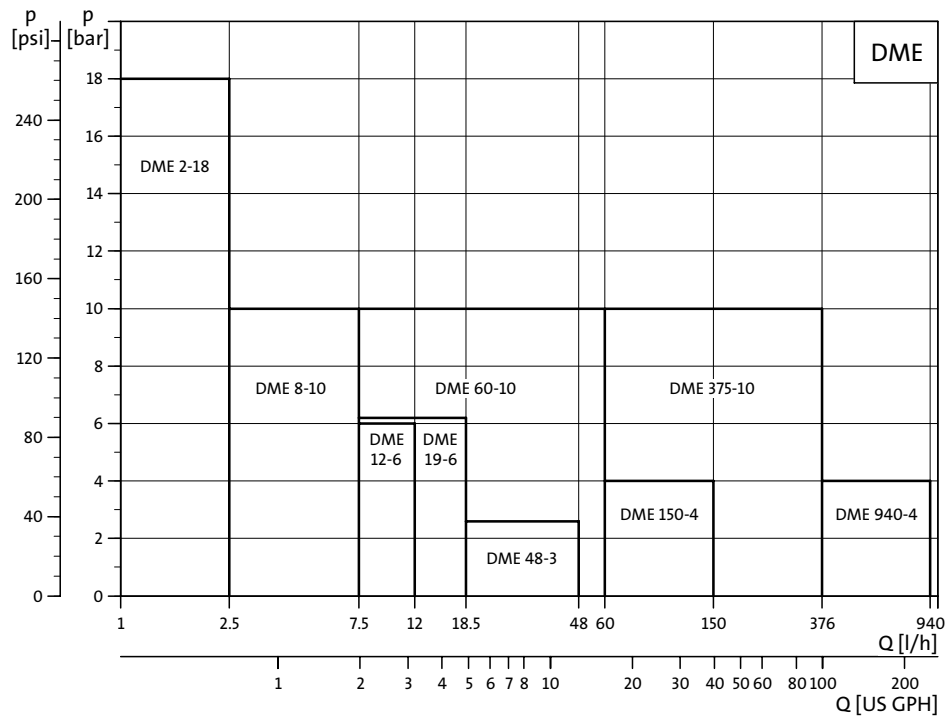
## Pumped liquids

List of pumped liquids	40
------------------------	----

## Accessories

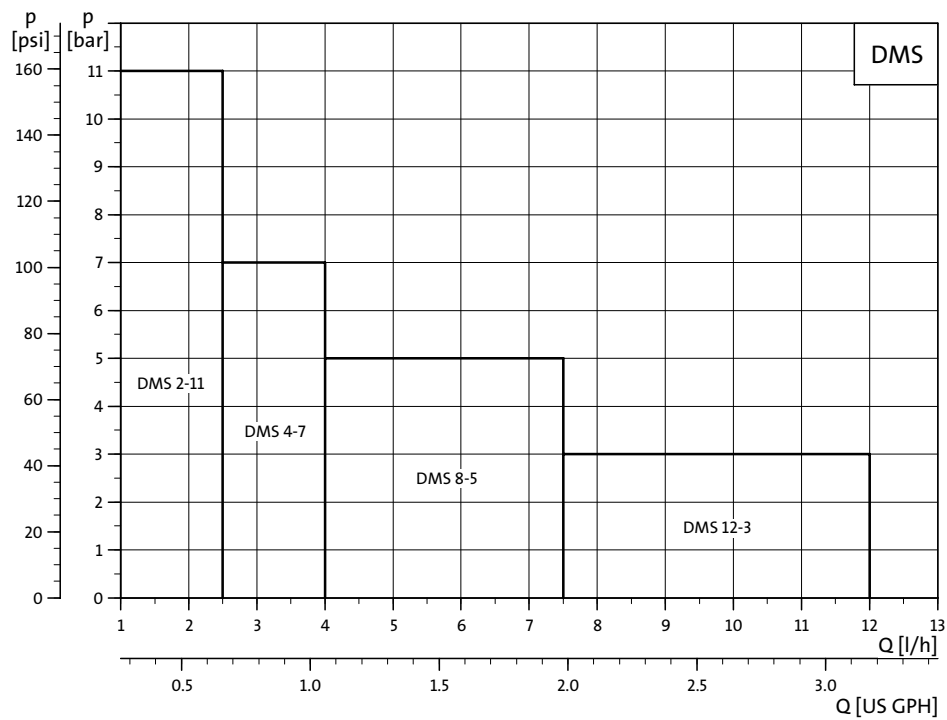
41

## Performance range, DME



TM02 9943 4604

## Performance range, DMS



TM02 9944 4604

## DME and DMS



TIM03 0815 0505

## Digital Dosing

Digital Dosing represents state-of-the-art technology. This patented Grundfos solution sets new standards, including new principles and methods.

### Precise and easy setting

The operator can easily install and set the pump to discharge exactly the quantity of dosing liquid required in the application. Capacity is read on the digital display in GPH, l/h, or ml/h, while icons are used to identify the operation mode.

### Unique technology

A unique drive and microprocessor control ensure that dosing liquids are discharged precisely and with low pulsation even when the pump is operating with high viscosity or degassing liquids. Instead of the conventional stroke length adjustment, the capacity of the DME is regulated by automatic adjustment of the motor speed during the discharge stroke and by fixed suction stroke speed, ensuring optimal and uniform mixing. The capacity of the DMS is regulated by automatic regulation of the stroke frequency.

## Fewer variants to cover all needs

The powerful variable speed motor, a turn-down ratio of 1:1000/1:800 and a complete control interface including

- full pulse control,
- pulse batch control,
- internal timer batch control,
- analog 0/4-20 mA control,
- level control and
- fieldbus communication module

ensure that nine DME pumps cover the range from 0.00066 to 248.3 gallons per hour, up to 261 psi. The switch mode power supply ensures that the same pump is working precisely, irrespective of the power supply (100-240 V; 50-60 Hz).

The DMS version with synchronous motor and a turn-down ratio of 1:100 (consisting of four pump sizes and two control versions) cover the range from 0.0066 to 3.17 GPH. The DMS-A pumps have external pulse, analog 4-20 mA and level control interface; the DMS-B version is without external control interface. The DMS-D is without control and user interface.

The DME and DMS dosing pumps feature diaphragm dosing head with integrated vent valve, suction and discharge ball valves.

The pumps are also fitted with a power cable and plug.

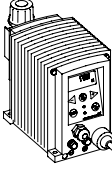

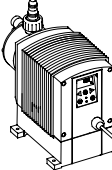
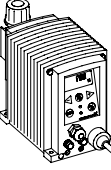
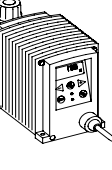
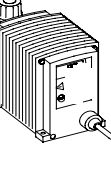
## Type key

Example	DME 2 - 18 - A - PP / E / C - F - 2 1 RR B
Type range	2
Maximum capacity [l/h]	18
Maximum pressure [bar]	A
Control variant	PP / E / C
Dosing head material	F
Gasket material	2
Valve ball material	1
Control panel position	RR
Supply voltage	B
Valves	
Connection suction/ discharge	
Power plug type	

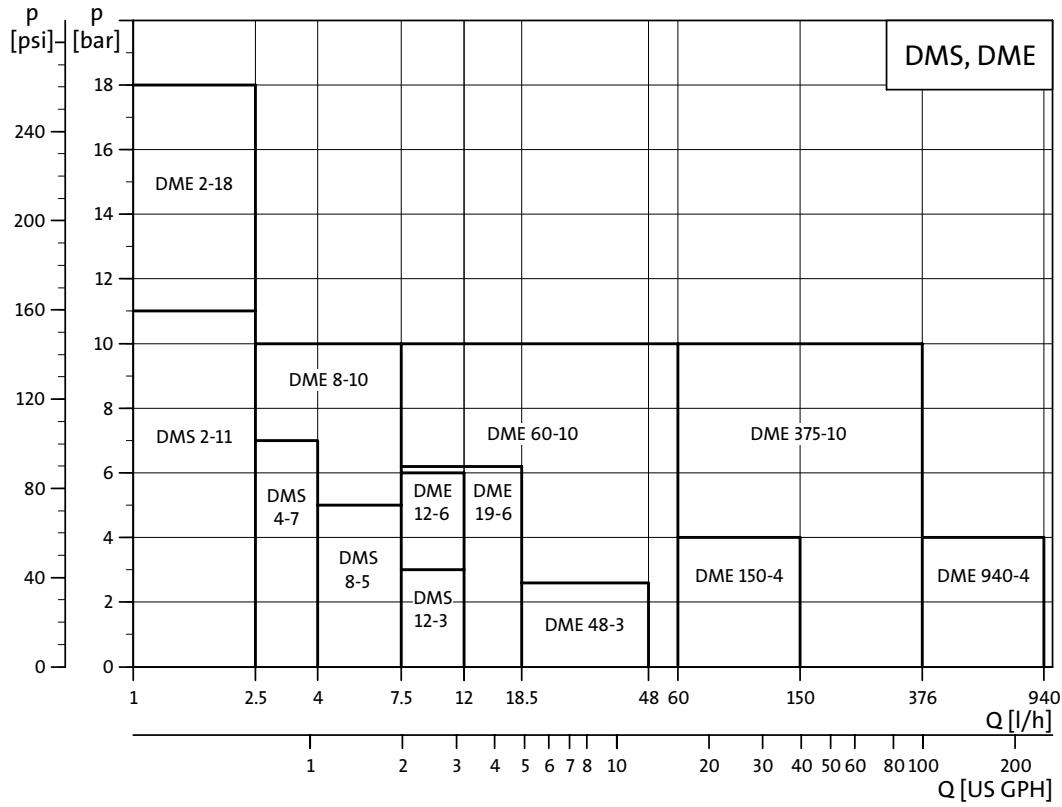
## Codes

Example	A - PP / E / C - 2 - 1 R R B
<b>Control variant</b>	
A	
AG A + Genibus	
AR A + alarm relay	
AP A + Profibus	
B Basic	
D Only on/off	
<b>Dosing head material</b>	
PP Polypropylene	
PV PVDF	
SS Stainless steel	
<b>Gasket material</b>	
E EPDM	
V FKM	
<b>Valve ball material</b>	
C Ceramic	
SS 316 SS	
G Glass	
Y Hastelloy C	
<b>Control panel position</b>	
F Front-fitted	
S Side-fitted	
X No control panel	
<b>Supply voltage</b>	
1 1 x 230 V, 50 Hz	
2 1 x 120 V, 60 Hz	
3 1 x 100-240 V, 50-60 Hz	
6 1 x 110 V, 50 Hz	
8 1 x 100 V, 50/60 Hz	
9 1 x 200 V, 50/60 Hz	
<b>Valves</b>	
1 Standard valve	
2 Spring-loaded valve	
<b>Connection suction/discharge</b>	
Tubing 6/9 mm	
1 Tubing 4/6 mm supplied with the pump	
Tubing 6/9 mm	
2 Tubing 6/12 + 9/12 mm supplied with the pump	
3 Tubing 4/6 mm	
4 Tubing 6/9 mm	
5 Tubing 6/12 mm	
6 Tubing 9/12 mm	
T Tubing 0.17"/0.25"	
R Tubing 0.25"/0.375"	
S Tubing 0.375"/0.5"	
A Threaded Rp 1/4"	
B Threaded Rp 3/8"	
V Threaded NPT 1/4"	
Y Threaded NPT 3/8"	
E Cementing d.10 mm	
F Cementing d.12 mm	
Q Tubing 19/27 + 25/34	
W Tubing 32/41 + 38/48	
A1 Threaded Rp 3/4"	
A2 Threaded Rp 1 1/4"	
A3 Threaded NPT 3/4"	
A4 Threaded NPT 1 1/4"	
<b>Power plug</b>	
F EU (Schuko)	
B USA, Canada (120 V)	
G UK	
I Australia	
E Switzerland	
J Japan	

## Overview of functions

	DME			DMS		
	2 to 48	60 to 940 AR	60 to 940 B	variant A	variant B	variant D
	 TM01 8941 0900	 TM02 8337 4903	 TM02 8338 4903	 TM01 8941 0900	 TM01 8943 0900	 TM02 8973 1304
<b>Capacity control, see page 8</b>						
Internal stroke frequency control	•	•	•	•	•	
Internal stroke speed control	•	•	•			
<b>Control panel, see page 10</b>						
Capacity setting in liters, milliliters or US gallons	•	•	•	•	•	
Display with background light and soft-touch buttons	•	•	•	•	•	
Easy set-up menu with language options	•	•	•	•	•	
On/off button	•	•	•	•	•	
Maximum capacity button (priming)	•	•	•	•	•	
Green indicator light for operating indication	•	•	•	•	•	
Red indicator light for fault indication	•	•	•	•	•	
Control panel lock	•	•	•	•	•	
Side-fitted as an option	•	•	•	•		
<b>Operating modes, see page 13</b>						
Manual control	•	•	•	•	•	
Pulse control	•	•		•		
Analog 0/4-20 mA control	•	•		•		
Timer-based batch control	•	•				
Pulse-based batch control	•	•				
<b>Functions, see page 17</b>						
Dosing monitoring	•	•		•		
Dual-level control	•	•		•		
Calibration of pump to actual installation	•	•	•	•	•	
Anti-cavitation (reduced suction speed)	•	•	•			
Capacity limitation	•	•	•			
Counters for strokes, operating hours and power on/off	•	•	•	•	•	
Fieldbus communication (variants AP and AG)	•	•				
Overload protection		•	•			
Error message in display		•	•			
Leakage sensor		•				
Dosing signal output		•				
<b>Power supply, page 16</b>						
Switch-mode power supply	•	•	•			
<b>Inputs/outputs, see page 19</b>						
Input for pulse control	•	•		•		
Input for analog 0/4-20 mA control	•	•		•		
Input for dual-level control	•	•		•		
Input for external start/stop	•	•		•		
Alarm relay output (variant AR)	•	•		•		
Dosing output		•				
Input for external on/off switch	•	•		•		

## Capacity range



The maximum capacity is available at any counter pressure within the pump's specified range if it has been calibrated to the actual installation.

TM02 9945 4604

## Capacity control, DME

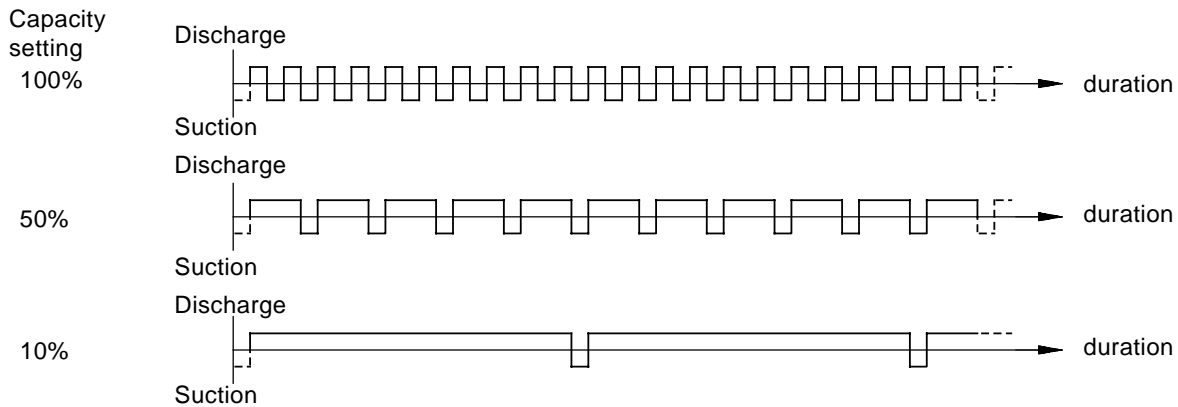
The electronically controlled variable-speed motor of the DME pumps provides optimum control of the stroke speed. As shown in the figure below, the duration of each suction stroke is constant while the duration of each discharge stroke varies according to the capacity set, resulting in optimum discharge flow in any operating situation.

The advantages are as follows:

- The pump is always operating at full stroke length, irrespective of the capacity set, for optimum accuracy, priming and suction.
- A capacity range of 1:1000 (DME 2 to 48) for each pump size.

- A capacity range of 1:800 (DME 60 to 940) for each pump size.
- Even and constant dosing ensuring an optimum mixing ratio at the injection point.
- Significant reduction of pressure surges, preventing mechanical stress on diaphragm, tubes, connections and other dosing parts exposed to leakage and wear.
- The installation is less affected by long suction and discharge lines.
- Easier dosing of highly viscous and gas-containing liquids.

The optimum dosing control shown below takes place in any operating mode.



TM01 8944 0900

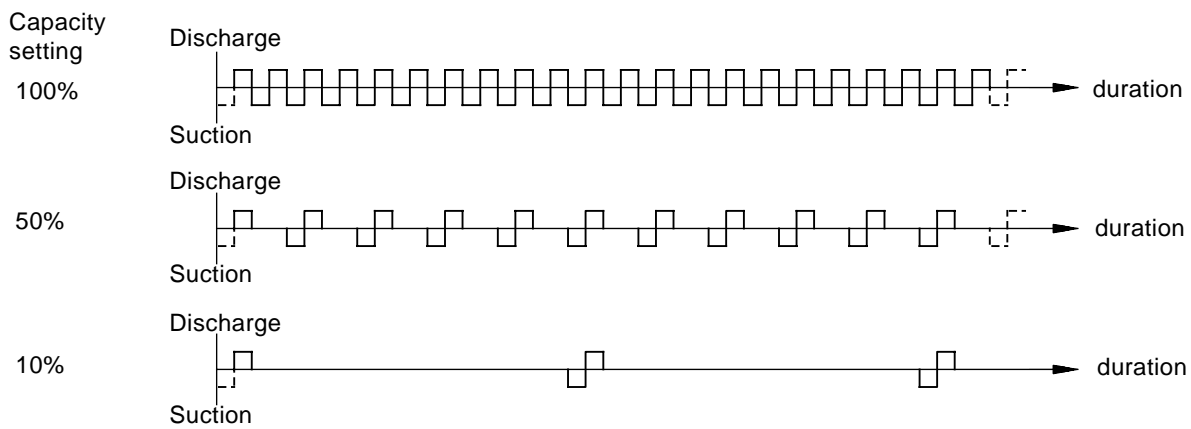


## Capacity control, DMS

The electronically controlled synchronous motor of the DMS offers similar advantages of the DME pumps. As shown in the figure below, the suction and discharge stroke speeds are constant while the stroke frequency varies according to the capacity set.

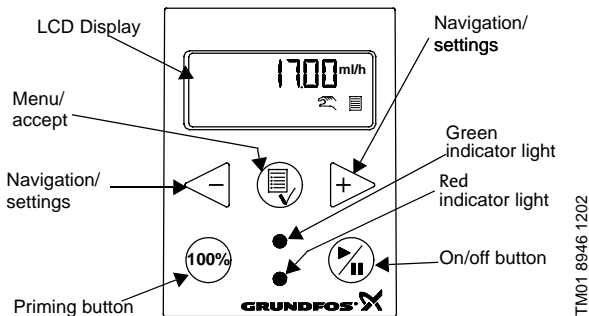
The sinusoidal movement of the diaphragm offers the following advantages:

- The pump is always operating at full stroke length, irrespective of the capacity set, for optimum accuracy, priming and suction.
- A capacity range of 1:100 for each pump size.
- Reduction of pressure surges, preventing mechanical stress on diaphragm, tubes, connections and other dosing parts exposed to leakage and wear.
- The installation is less affected by long suction and discharge lines.
- Easier dosing of highly viscous and gas-containing liquids.

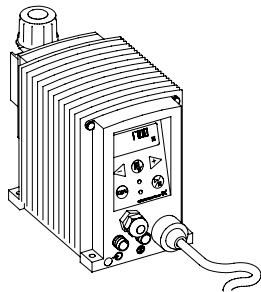


TM01 8945 0900

## Control panel

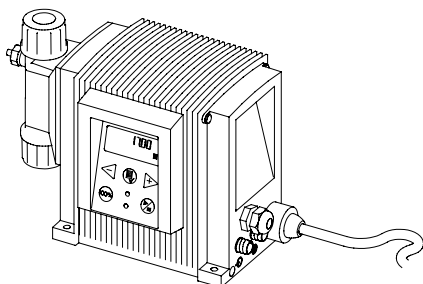


TM01 8946 1202



TM01 8941 0900

Control panel fitted to the front.



TM01 8949 0900

Control panel fitted to the side (not DMS-B).

### Priming button

The pump control panel incorporates a button. Press this button if the maximum capacity is required over a short period, e.g. during start-up. When the button is released, the pump automatically returns to the previous operating mode.

When the buttons and are pressed simultaneously, the pump can be set to run for a specific number of seconds at maximum capacity. The remaining numbers of seconds will appear in the display. This feature is useful when flushing the pump. The maximum value is 300 seconds.

Press to stop the pump before the set time has passed.

## Indicator lights and alarm output (DME 2 to 48, DMS)

The green and red indicator lights on the pump indicate operation or fault.

In control variant AR, the pump can activate an external alarm signal by means of a built-in alarm relay. The alarm signal is activated by means of an internal potential-free contact.

The functions of the indicator lights and the built-in alarm relay appear from the table below.

Condition	Green LED	Red LED	Display	Alarm output★ <sup>1</sup>
Pump running	On	Off	Normal indication	
Pump paused	Flashing	Off	Normal indication	
Pump fault	Off	On	EEPROM	
Supply failure	Off	Off	Off	
Pump running, low chemical level★ <sup>2</sup>	On	On	Normal indication	
Empty tank★ <sup>2</sup>	Off	On	Normal indication	
Analog signal < 2 mA	Off	On	Normal indication	
The pump is not dosing enough according to the signal from the dosing monitor★ <sup>3</sup>	On	On	Normal indication	
More pulses than capacity	On	On	Normal indication	
Overheated	Off	On	MAX TEMP	

★<sup>1</sup> Control variant AR, only.

★<sup>2</sup> Requires connection to level sensors.

★<sup>3</sup> Requires dosing monitor function activated and a dosing monitor device connected to the pump.

## Indicator lights and alarm output (60 to 940)

Condition	Green LED	Red LED	Display	Alarm output★ <sup>1</sup>
Pump running	On	Off	Normal indication	
Set to stop	Flashing	Off	Normal indication	
Pump fault	Off	On	EEPROM	
Supply failure	Off	Off	Off	
Pump running, low chemical level★ <sup>2</sup>	On	On	LOW	
Empty tank★ <sup>2</sup>	Off	On	EMPTY	
Analog signal < 2 mA	Off	On	NO mA	
The dosed quantity is too small according to the signal from the dosing monitor★ <sup>3</sup>	On	On	NO FLOW	
Overheating	Off	On	MAX TEMP	
Internal communication failure	Off	On	INT COM	
Internal Hall Failure★ <sup>4</sup>	Off	On	HALL	
Diaphragm failure (leakage)★ <sup>5</sup>	Off	On	LEAKAGE	
Max. pressure exceeded★ <sup>5</sup>	Off★ <sup>6</sup>	On	OVER-LOAD	
More pulses than capacity	On	On	MAX FLOW	
No detection of motor rotation★ <sup>4</sup>	On	On	ORIGO	

Condition	Green LED	Red LED	Display	Alarm output★ <sup>1</sup>
-----------	-----------	---------	---------	----------------------------

★<sup>1</sup> Control variant AR, only.

★<sup>2</sup> Requires connection to level sensors.


★<sup>3</sup> Requires activation of the dosing monitoring function and connection to a dosing monitor.

★<sup>4</sup> Please contact a Grundfos service centre.

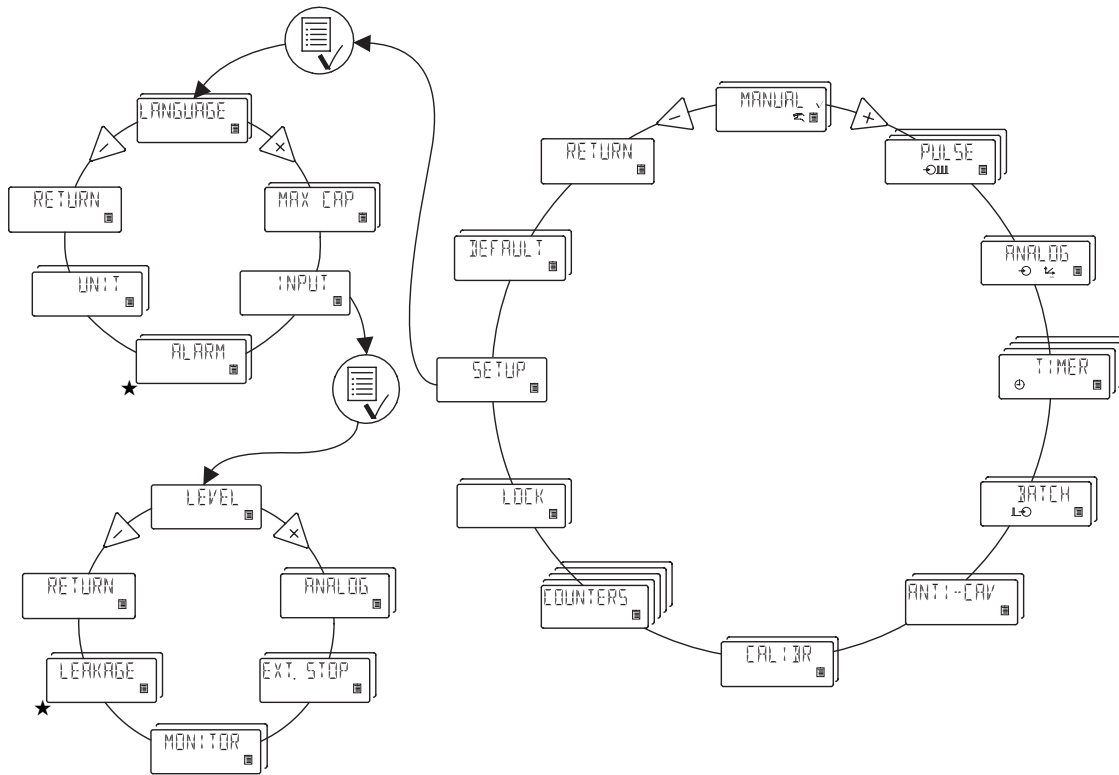
★<sup>5</sup> Alarms can be reset after fault conditions are back to normal.

★<sup>6</sup> The pump will make 10 attempts to restart before going into permanent off mode.

## Menu

The DME and DMS dosing pumps feature a user-friendly menu which is activated by pressing the  button. During start-up, all texts will appear in the English language, but other languages can be selected (see page 16).

The example shown below applies only to DME 60 to 940 pumps.



D688e

## Operating modes

### Manual control

The pump is dosing constantly according to the quantity set in l/h or ml/h by means of the buttons ◀ and ▶. It automatically changes over between the measuring units.

Setting range, DME:

DME	Adjustable Flow Range					
	GPH	to	GPH	ml/h	to	l/h
2-18	0.00066	-	0.66 (0.47*)	2.5	-	2.5 (1.8*)
8-10	0.002	-	1.98 (1.47*)	7.5	-	7.5 (5.6*)
12-6	0.0032	-	3.17 (2.37*)	12	-	12 (9*)
19-6	0.0049	-	4.88 (3.83*)	18.5	-	18.5 (14.5*)
48-3	0.0127	-	12.68 (9.77*)	48	-	48 (37*)
60-10	0.0198	-	15.85	75	-	60
150-4	0.0495	-	39.63	187.5	-	150
375-10	0.1238	-	99.06	468.75	-	375
940-4	0.3104	-	248.32	1175	-	940

★The figures in brackets indicate the maximum capacity when the anti-cavitation function is activated. See page 15 for adjusted DME 60 to 940 capacities.

Setting range, DMS:

DMS	Adjustable Flow Range					
	GPH	to	GPH	ml/h	to	l/h
2	0.0066	-	0.66	2.5	-	2.5
4	0.0105	-	1.05	40	-	4
8	0.0198	-	1.98	75	-	7.5
12	0.0317	-	3.17	120	-	12

### Pulse control

Applies to DME and DMS-A.

The pump is dosing according to an external pulse signal, e.g. from a water meter.

There is no direct relation between pulses and dosing strokes. The pump automatically calculates its optimal speed to ensure the required quantity is dosed for each pulse. The quantity to be dosed is set in ml/pulse. The pump adjusts its speed and/or stroke frequency according to two factors:

- frequency of external pulses and
- the set quantity per pulse.

Setting range, DME:

DME 2-18:	0.000023 ml/pulse -	5.0 ml/pulse
DME 8-10:	0.000069 ml/pulse -	15.0 ml/pulse
DME 12-6:	0.000111 ml/pulse -	24.0 ml/pulse
DME 19-6:	0.000204 ml/pulse -	37.0 ml/pulse
DME 48-3:	0.000530 ml/pulse -	96.0 ml/pulse
DME 60-10:	0.000625 ml/pulse -	120 ml/pulse
DME 150-4:	0.00156 ml/pulse -	300 ml/pulse
DME 375-10:	0.00392 ml/pulse -	750 ml/pulse
DME 940-4:	0.00980 ml/pulse -	1880 ml/pulse.

Setting range, DMS:

DMS 2:	0.00232 ml/pulse -	50 ml/pulse
DMS 4:	0.00370 ml/pulse -	80 ml/pulse
DMS 8:	0.00695 ml/pulse -	150 ml/pulse
DMS 12:	0.01110 ml/pulse -	240 ml/pulse

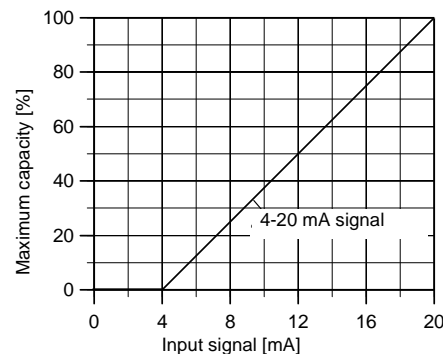
### Analog 4-20 mA control

Applies to DME and DMS-A

The pump is dosing according to an external analog signal. The dosed capacity is proportional to the input value in mA.

4-20 (default):	4 mA = 0%
	20 mA = 100%
20-4:	4 mA = 100%
	20 mA = 0%
0-20:	0 mA = 0%
	20 mA = 100%
20-0:	0 mA = 100%
	20 mA = 0%.

The maximum capacity limitation, see page 15, will influence the capacity. 100% (20 mA) corresponds to the maximum capacity or the set capacity limitation.



TM01 8218 0100

## Timer-based batch control

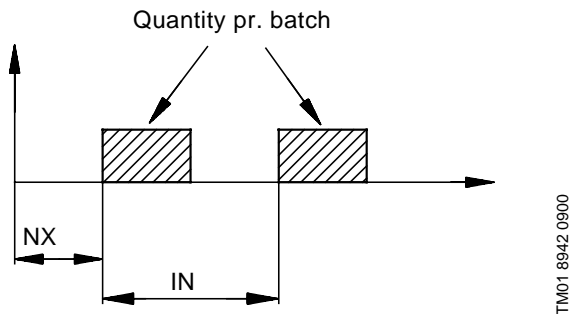
*Applies to DME*

The pump is dosing the set quantity in batches at maximum capacity or the set capacity limitation.

The time until the first dosing (NX) and the following sequences (IN) can be set in minutes, hours and days. The maximum time limit is 9 days, 23 hours and 59 minutes (9:23:59).

The lowest acceptable value is one minute. IN must be higher than the time required to perform one batch. If IN is lower than the time required, the next batch will be ignored. In case of supply failure, the set dosing quantity, the IN time and the remaining NX time are stored.

When the supply is reconnected, the pump will start up with the NX time at the time of the supply failure. This way the timer cycle will continue, but it will be delayed according to the time of the supply failure. This feature is not available on variant "B" pumps.



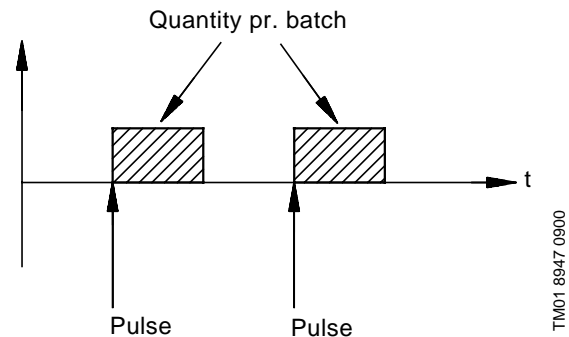
## Pulse-based batch control

*Applies to DME*

The pump is dosing the set quantity in batches at maximum capacity or the set capacity limitation. The quantity is dosed every time the pump receives an external pulse. If the pump receives new pulses before the batch is completed, these pulses will be ignored. However the manually control DME B cannot be controlled externally.

Setting range (applies to DME only):

Timer-based and pulse-based batch control			
DME 2:	0.23 ml/batch	to	5 l/batch
	0.00006 G/batch	to	1.32 G/batch
DME 8:	0.69 ml/batch	to	15 l/batch
	0.00018 G/batch	to	3.96 G/batch
DME 12:	1.11 ml/batch	to	24 l/batch
	0.00029 G/batch	to	6.34 G/batch
DME 19:	2.04 ml/batch	to	37 l/batch
	0.00053 G/batch	to	9.77 G/batch
DME 48:	5.3 ml/batch	to	96 l/batch
	0.0014 G/batch	to	25.4 G/batch
DME 60:	6.25 ml/batch	to	120 l/batch
	0.0017 G/batch	to	31.7 G/batch
DME 150:	15.6 ml/batch	to	300 l/batch
	0.0041 G/batch	to	79.3 G/batch
DME 375:	39.1 ml/batch	to	750 l/batch
	0.01 G/batch	to	198.1 G/batch
DME 940:	97.9 ml/batch	to	1880 l/batch.
	0.025 G/batch	to	496.7 G/batch



## Anti-cavitation (2 to 48)

*Applies to DME*

When this function is selected, the pump extends and smooths its suction stroke, resulting in softer priming.

The anti-cavitation function is used:

- when pumping liquids of high viscosity
- when pumping degassing liquids
- in the case of a long suction tube and
- in the case of a high suction lift.

The maximum capacity is reduced when this function is selected, see table below.

Maximum capacity with anti-cavitation function		
DME 2	0.475 GPH	1.8 l/h
DME 8	1.48 GPH	5.6 l/h
DME 12	2.38 GPH	9 l/h
DME 19	14.5 GPH	14.5 l/h
DME 48	9.77 GPH	37 l/h

## Anti-cavitation (60 to 940)

The pump features an anti-cavitation function. When this function is selected, the pump extends and smoothes its suction stroke, resulting in softer priming.

The anti-cavitation function is used:

- when pumping liquids of high viscosity,
- in the case of a long suction tube and
- in the case of a high suction lift.

Depending on the circumstances, during the suction stroke, the motor speed can be reduced by **75%**, **50%** or **25%** compared to the normal motor speed during the suction stroke.

The maximum pump capacity is reduced when the anti-cavitation function is selected

## Anti-cav max capacity (DME 60 to 150)

DME 60 to 940					
DME	Max cap.	75%	50%	25%	
60	g/h. (l/h)	15.9. (60)	11.9. (45)	7.9. (30)	4.0. (15)
150	g/h. (l/h)	39.6. (150)	29.6. (112)	19.8. (75)	10.0. (38)
375	g/h. (l/h)	99.1. (375)	74.2. (281)	49.7. (188)	24.8. (94)
940	g/h. (l/h)	248.3. (940)	186.2. (705)	124.2. (470)	62.1. (235)

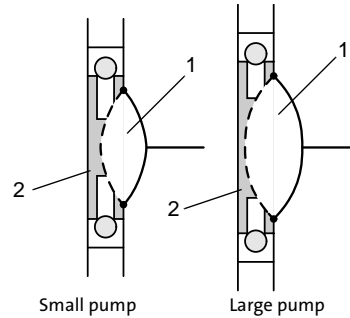
## Maximum capacity limitation

Applies to DME

This function offers the possibility of reducing the maximum capacity (MAX. CAP). It influences the functions in which the pump is normally operating at maximum capacity. Under normal operating conditions, the pump cannot operate at a capacity higher than the one stated in the display. This does not apply to the priming button.

By means of this function, a large pump can be set to act as a much smaller pump. Together with the 1:1000/1:800 capacity range, the purposes of this function are:

1. To utilize the smooth and even dosing characteristics of the pump at low capacities to achieve
  - improved chemical mixing,
  - improved dosing through long discharge tubes and
  - improved dosing of high-viscous liquids.
2. To improve the dosing of gas-containing liquids: In a large pump, as compared to a small pump, the displaced volume (1) is much larger than the non-displaced volume (2).



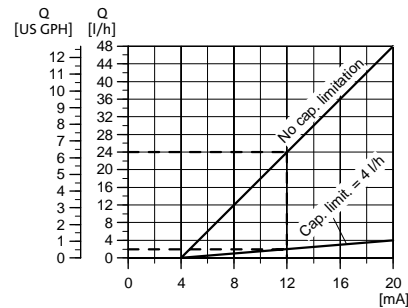
TM02 0158 3301

3. To cover several needs with just one pump size.
4. To adapt the pump to a 4-20 mA signal control with 4 mA corresponding to 0% and 20 mA to the set maximum capacity.

In this way it is possible for instance to use a DME 48 for dosing a very small quantity of liquid without changing the input signal. See example below.

## Example:

A DME 48 receives a 12 mA input signal from a control instrument, resulting in a 50% output (according to the analog curve on page 13) and a capacity of 24 l/h. A new situation occurs where it is only necessary to dose 2 l/h. The maximum capacity limitation is set to 4 l/h. The pump is still receiving a 12 mA signal resulting in a 50% output and a capacity of 2 l/h.



TM02 9942 4604

The maximum capacity limitation will also reduce the pump speed in timer-based batch control, pulse-based batch control and during calibration where the pump is usually operating at maximum capacity.

## Calibration

After start-up, the dosing pumps can be calibrated to the actual installation to ensure that the displayed value (milliliters or liters) is correct. A calibration program in the main menu facilitates this process.

## Counters

The pump can display "non-resettable" counters for:

- **"Quantity"**  
Accumulated dosed quantity in liters or US gallons.
- **"Strokes"**  
Accumulated number of dosing strokes.
- **"Hours"**  
Accumulated number of operating hours (power on).
- **"Power ON"**  
Accumulated number of times the mains supply has been switched on.

## Languages

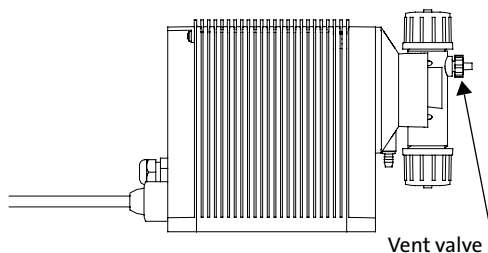
The display text can be displayed in one of the following languages chosen in the set-up menu:

- English
- German
- French
- Italian
- Spanish
- Portuguese
- Dutch
- Swedish
- Finnish
- Danish
- Czech
- Slovak
- Polish
- Russian.

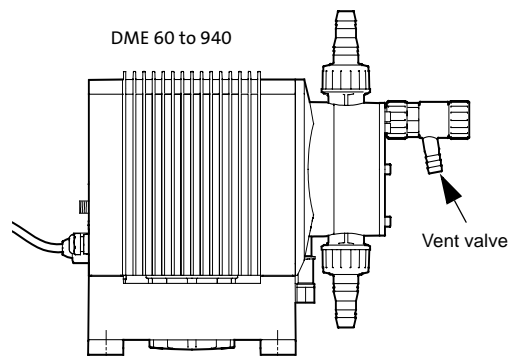
## Integrated venting

The DME and DMS dosing pumps are provided with an integrated vent valve. The valve makes it very easy to prime the pump during start-up:

The vent valve must be connected to the tank by means of 1/4" tubing.



For the larger pumps, the vent valve must be connected to the tank by means of 5/8" ID tubing.



## Switch-mode power supply

*Applies to DME*

The DME pump is incorporates a switch-mode power supply. This makes the pump independent of variations in supply voltage and frequency. Operating range: 1 x 100-240 V, 50-60 Hz.

## Level control

*Applies to DME-A and DMS-A*

The pump can be connected to a level control unit for monitoring of the chemical level in the tank.

The pump can react to two level signals. The following table shows the pump reactions to the sensor signals:

Level sensors	Pump reaction
Upper sensor activated	<ul style="list-style-type: none"> <li>• Red indicator light is on.</li> <li>• Pump <b>running</b>.</li> <li>• Alarm relay activated. ★</li> </ul>
Lower sensor activated	<ul style="list-style-type: none"> <li>• Red indicator light is on.</li> <li>• Pump <b>stopped</b>.</li> <li>• Alarm relay activated. ★</li> </ul>

★ Applies to control variant AR

## Bus communication

*Applies to DME*

The pump is available with an optional built-in module for bus communication with GENIbus (variant AG, DME 2 to 48 only) or PROFIBUS (variant AP) systems. These modules enable remote monitoring and setting via the fieldbus system. All DME features are available via bus communication. The PROFIBUS GDS-file can be downloaded from [www.grundfos.com/dosing](http://www.grundfos.com/dosing).

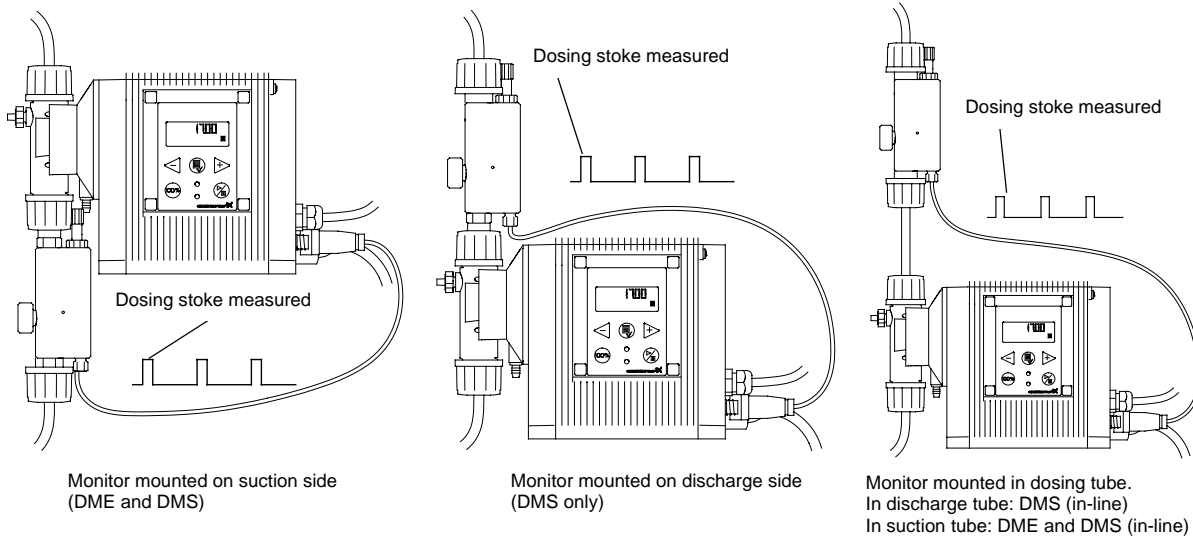
## Diaphragm leakage sensor (DME 60 to 940)

The pump can be fitted with a leak sensor that connects to the drain hole of the pump head. In the event of diaphragm leakage, the sensor will activate the pump's alarm relay.



## Dosing monitoring

Applies to all DME 2 to 48 and DMS AR



TM02 2029 3201 - TM02 2030 3201 - TM02 2031 3201

The dosing monitor is designed to monitor the dosing of liquids which may cause gas accumulation in the pump head, thus stopping the dosing process even if the pump is still operating.

For every measured dosing stroke, the dosing monitor gives a pulse signal to the level input so that the pump can compare performed pump strokes (from internal stroke sensor) with externally measured physical strokes (from the dosing monitor). If an external dosing stroke is not measured together with the internal dosing stroke, this is considered a fault that may have been provoked by an empty tank or gas in the dosing head.

When used together with a **DME pump**, the monitor will only operate if it is mounted on the suction side of the pump.

When used together with a **DMS (A, AR) pump**, the monitor will also operate if it is mounted on the discharge side of the pump.

The dosing monitor should be connected to the level input (pins 2 and 3). This input must be configured to dosing monitoring in the pump's setup menu. Consequently, it cannot be used as level input.

Once the input has been set for dosing monitoring and a dosing monitor has been connected and set, the dosing monitoring function will be active.

### Definitions:

- **Correct dosing stroke:** A pulse from the dosing monitor corresponds to the internal stroke signal within acceptable time.

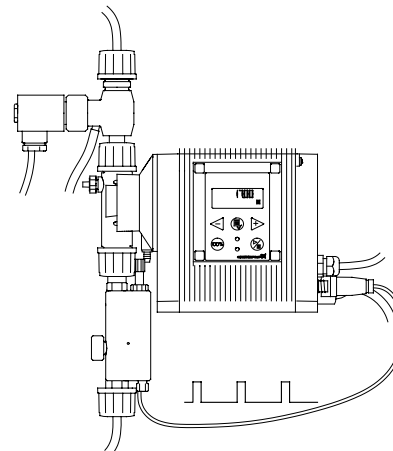
- **Incorrect dosing stroke:** There is no pulse from the dosing monitor corresponding to the internal stroke signal within the acceptable time (the pump is not pumping).

### Logic:

If two incorrect dosing strokes are performed, the pump will continue operating, but it will change over to alarm mode, like in case of "low level". The red indicator light will be on and the alarm output, if any, will be activated (variant AR).

For each correct stroke the counter is reset and the alarm output, if any, is deactivated.

### Operation in connection with vent valve:



TM02 2048 4802

It is possible to add a self-acting solution for liquids that cause gas accumulation by using an automatic vent valve. The solution is the dosing monitor with a pump and an alarm output (control variant AR). The alarm output thus activates the vent valve, which will automatically vent gas accumulated in the dosing head. When the dosing head has been vented, the pump will start pumping again, the alarm output will be deactivated and the vent valve will close.

## Control panel lock

It is possible to lock the buttons on the control panel to prevent maloperation of the pump. The locking function can be set to "ON" or "OFF". The default setting is "OFF".

A PIN code must be entered to change from "OFF" to "ON". When "ON" is selected for the first time, " \_ \_ \_ \_ " will appear in the display. If a code has already been entered, it will appear when an attempt to change to "ON" is made. This code can either be re-entered or changed.

## Units

It is possible to select metric units (liter/milliliter) and US units (gallons).

### Metric measuring units:

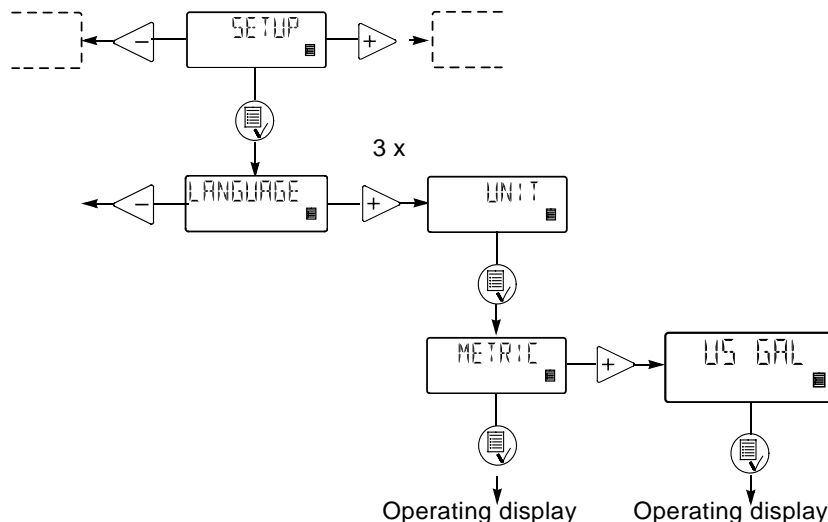
- **In manual and analog modes**, set the quantity to be dosed in liters per hour (l/h) or milliliters per hour (ml/h).

- **In pulse mode**, set the quantity to be dosed in ml/pulse. The actual capacity is indicated in liters per hour (l/h) or milliliters per hour (ml/h).
- **For calibration**, set the quantity to be dosed in ml per 100 strokes.
- **In timer and batch modes**, set the quantity to be dosed in liters (l) or milliliters (ml).
- Under the "QUANTITY" menu item in the "COUNTERS" menu, the dosed quantity is indicated in liters.

### US measuring units:

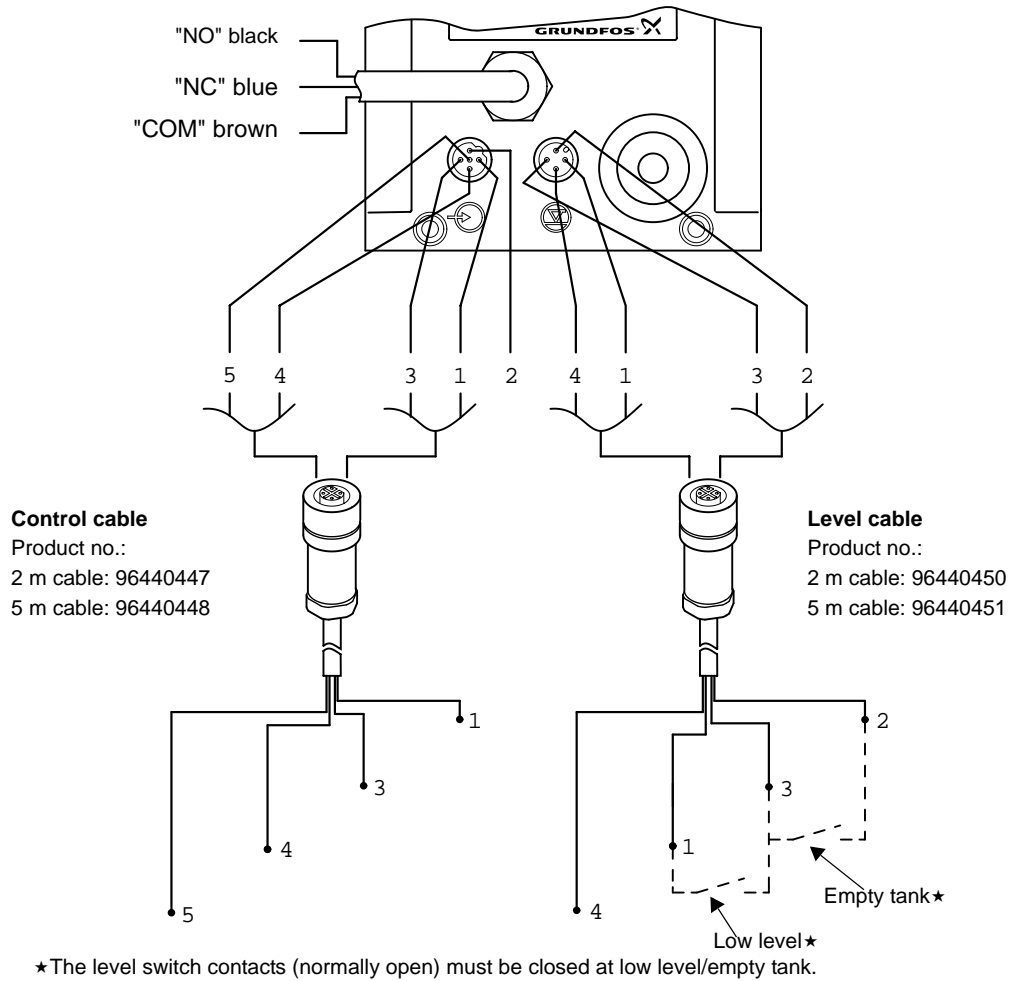
- **In manual and analog modes**, set the quantity to be dosed in gallons per hour (gph).
- **In pulse mode**, set the quantity to be dosed in ml/pulse. The actual capacity is shown in gallons per hour (gph).
- **For calibration**, set the quantity to be dosed in ml per 100 strokes.
- **In timer and batch modes**, set the quantity to be dosed in gallons.
- Under the "QUANTITY" menu item in the "COUNTERS" menu, the dosed quantity is indicated in gallons (gal).

The drawing below shows all possible settings.



## Wiring diagram, DME 2 to 48 and DMS-A (AR)

See pages 30 and 32 for input/output data.



TM01 8422 5001

### Control input

Number/color Function	Plug					Description
	1/brown	2/white	3/blue	4/black	5/grey	
Manual	2		2			
Pulse	1		1			
Pulse + external on/off	1		1 + 2		2	
Analog★				-	+	mA signal
Analog + external on/off★	2		2	-	+	mA signal
Timer + external on/off	2		2			
Batch	1		1			

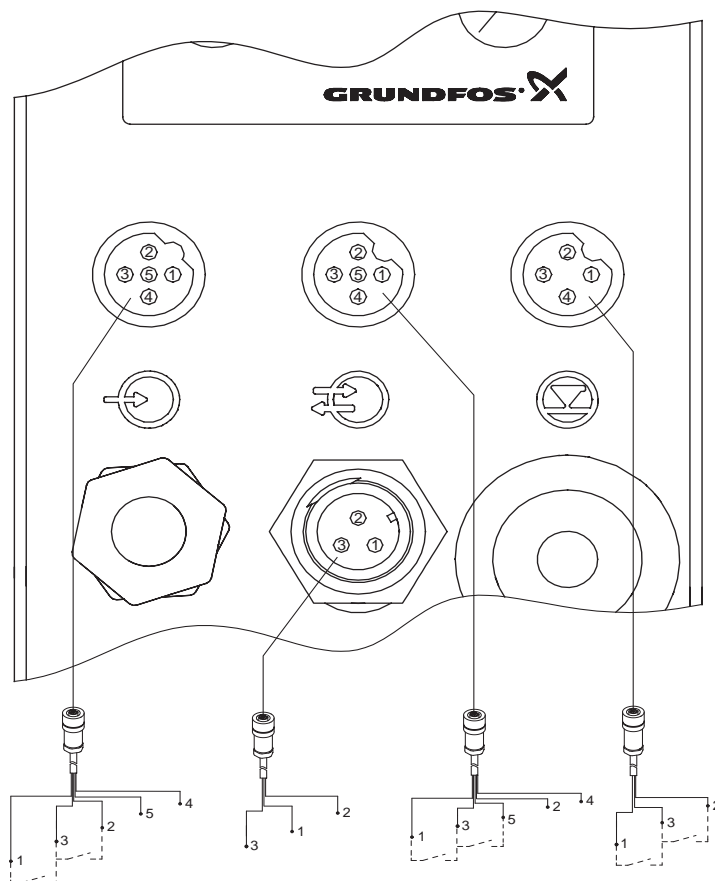
1 = Contact for pulse signal / 2 = Contact for external on/off

★ Pumps in analog mode cannot be connected in series.

### Level input

Number/color	Plug			
	1/brown	2/white	3/blue	4/black
Low level			Low level	
Function		Empty tank	Empty tank	
	Low level	Empty tank	Low level + empty tank	
		Dosing monitoring	Dosing monitoring	

## Wiring diagram, DME (60 to 940)



**Analog/Pulse/Leakage cable**

Product no.:  
2 m cable: 96440447  
5 m cable: 96440448

**Relay cable**

Product no.:  
2 m cable: 96534214  
5 m cable: 96534215

**Stop dosing cable**

Product no.:  
2 m cable: 96527109  
5 m cable: 96527111

**Level cable**

Product no.:  
2 m cable: 96440450  
5 m cable: 96440451

TMO 27069 2503

**Cable 1: Analog, pulse and leakage input**

Number/color	1/brown	2/white	3/blue	4/black	5/grey
<b>Function</b>					
Analog input 4-20 mA				(-) 4-20 mA input	(+) 4-20 mA input
Pulse	potential-free		potential-free		
Pulse	5 V			Gnd	
Leakage		potential-free	potential-free		
Leakage		5 V		Gnd	

**Cable 2: Output for alarm relay**

Number/color	1/brown	2/white	3/blue
<b>Function</b>			
Alarm relay output	Common	Normally open	Normally closed

**Table 3: Stop dosing input and dosing monitor or dosing output**

Number/color	1/brown	2/white	3/blue	4/black	5/grey
<b>Function</b>					
Stop input	5 V			Gnd	
Stop input	potential-free		potential-free		
Dosing monitor			potential-free		potential-free
Dosing monitor				Gnd	5 V
Dosing output (pump running)		Open collector (NPN) ★		Gnd	

★ Open collector (NPN) can be used for a relay or a lamp.

Useful when the load (e.g. a relay) has one side connected to a power supply which is not the same one as connected to the sensor.

When the dosing output is activated, the output provides the Gnd to the load.

Recommended supply: max. 24 VDC.

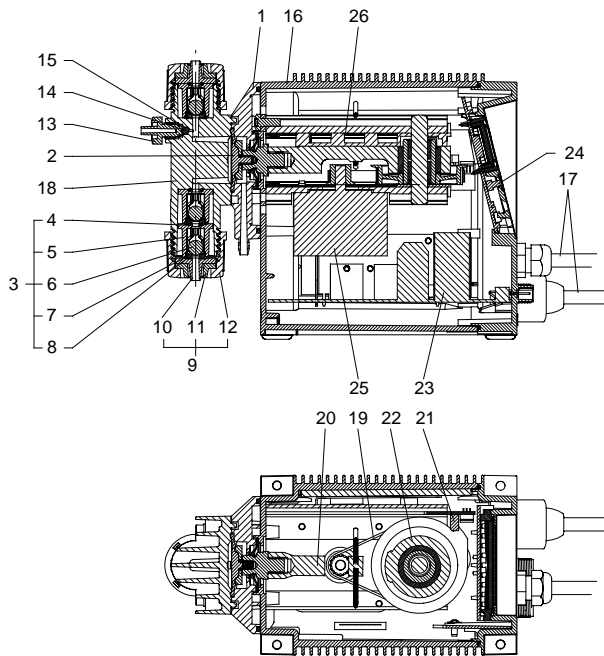
Max. current: 100 mA.

**Table 4: Level input**

Number/color	1/brown	2/white	3/blue	4/black
<b>Function</b>				
Empty tank input	potential-free*		potential-free*	
Empty tank input	5 V			Gnd
Low level input		potential-free*	potential-free*	
Low level input		5 V		Gnd

★ The function for the potential-free contact sets can be chosen from the display (NO = Normally Open and NC = Normally Closed).

## Sectional drawing, DME (2 to 48)



TM01 9994 3600

### Construction

The DME pump is a motor-driven diaphragm dosing pump consisting of the following main parts:

**Dosing head:** Designed with a minimum of clearance space to optimise the priming and deaerating capabilities. The dosing head has built-in valve housings.

**Valves:** Double-ball suction valve and single-ball discharge valve. Spring-loaded valves are available as an option.

**Vent valve:** For priming and deaeration complete with connection for a 1/4" tubing.

**Connections:** Sturdy and easy-to-use connections for various sizes of tubing, pipe thread or pipe cementing.

**Diaphragm:** PTFE-coated, textile-reinforced EPDM diaphragm designed for long life.

**Backplate:** With separation chamber, safety diaphragm and drain hole.

**Drive unit:** With diaphragm connecting rod, crank, belt-drive and stepper motor, all mounted on a sturdy frame.

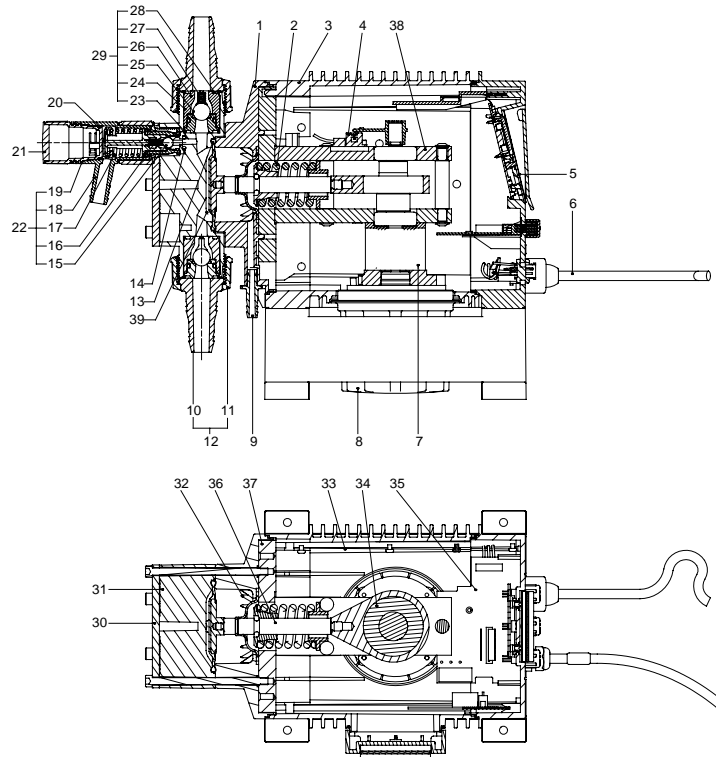
**Cabinet:** Containing drive unit, electronics, control panel and various electrical connections.

\* The pump can be supplied with spring-loaded valves.  
Spring material: Hastelloy.  
The spring is not shown in the sectional drawing.

### Material specification

Pos.	Description	Material options
1	Backplate	20% glass-filled PP
2	Diaphragm	Textile-reinforced EPDM, PTFE-coated
3	Valve assembly	Includes items 4 to 8
4	O-ring	EPDM/FKM
5*	Valve casing	PP/PVDF/316 SS
6	Valve ball	Ceramic/316 SS
7	Valve seat disk	EPDM/FKM
8	Valve seat ring	PP/PVDF/316 SS
9	Connection assembly	Includes items 10 to 12
10	Cone/thread piece	PP/PVDF/316 SS
11	Clamping ring	PP/PVDF
12	Union nut	PP/PVDF/316 SS
13	Vent valve screw	PP/PVDF
14	Vent valve ball	Ceramic/316 SS
15	Vent valve O-ring	EPDM/FKM
16	Cabinet	20% glass filled PP
17	Power/alarm cable	Rubber
18	Dosing head	PP/PVDF/316 SS
19	Drive belt	Rubber, polyamide-reinforced
20	Connecting rod	Steel
21	Origo sensor	-
22	Crank shaft	Steel
23	Power PCB	-
24	Operation PCB	-
25	Stepper motor	-
26	Drive frame	Aluminium

## Sectional drawing, DME (60 to 940)



TMO 28599 0604

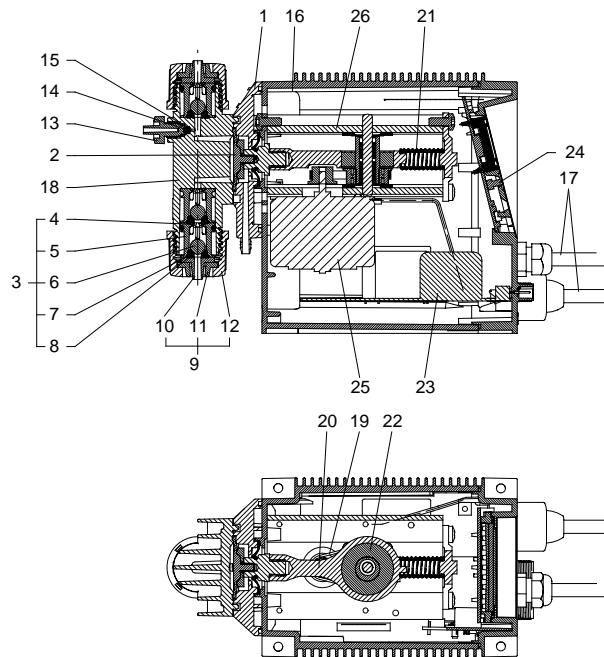
## Material specification

Pos.	Description	Material options
1	Backplate	20% glass-filled PP
2	Spring	DIN 17223 TYPE C
3	Cabinet	20% glass-filled PP
4	Origo sensor	
5	Operation PCB (printed circuit board)	
6	Power cable	Rubber
7	Gear	
8	BLDC motor	
9	Drain hole or leakage sensor	
10	Threaded connection	PVC
11	Union nut	PP/PVDF
12	Connection assembly	
13	O-ring	EPDM/FKM
14	O-ring	EPDM/FKM
15	Venting valve ball	Ceramic
16	Spring	Hastelloy C
17	Spring	Hastelloy C
18	Venting valve house	PP/PVDF
19	Venting valve tap	PP/PVDF
20	O-ring	EPDM/FKM
21	End cover	Steel
22	Venting valve complete	
23	O-ring	EPDM/FKM

24	Valve seat	PP/PVDF/SS
25	Valve ball	Ceramic/Glass/SS/ Hastelloy C
26	Valve casing	PP/PVDF/SS
27*	Spring	Hastelloy C
28	O-ring	EPDM/FKM
29	Valve assembly	
30	Steel plate	Steel
31	Dosing head	PP/PVDF/SS
32	Safety membrane	
33	Power PCB (printed circuit board)	
34	Crank shaft	Steel
35	I/O PCB (printed circuit board)	
36	Connecting rod	Steel
37	Steel plate	Steel
38	Steel frame	Steel
39	Diaphragm	Textile-reinforced EPDM, PTFE-coated

★ The pump is available with spring-loaded valves.  
Spring material: Hastelloy.  
The spring is not shown in the sectional drawing.

## Sectional drawing, DMS



TM01 9995 3600

### Construction

The DMS pump is a motor-driven diaphragm dosing pump consisting of the following main parts:

**Dosing head:** Designed with a minimum of clearance space to optimise the priming and deaerating capability. The dosing head has built-in valve housings.

**Valves:** Double-ball suction valve and single-ball discharge valve. Spring-loaded valves are available as an option.

**Vent valve:** For priming and deaeration complete with connection for a 1/4" tubing.

**Connections:** Sturdy and easy-to-use connections for various sizes of tubing, pipe thread or pipe cementing.

**Diaphragm:** PTFE-coated, textile-reinforced EPDM diaphragm designed for long life.

**Backplate:** With separation chamber, safety diaphragm and drain hole.

**Drive unit:** With diaphragm connecting rod, crank, belt-drive and synchronous motor, all mounted on a sturdy frame.

**Cabinet:** Containing drive unit, electronics, control panel and various electrical connections (DMS-A).

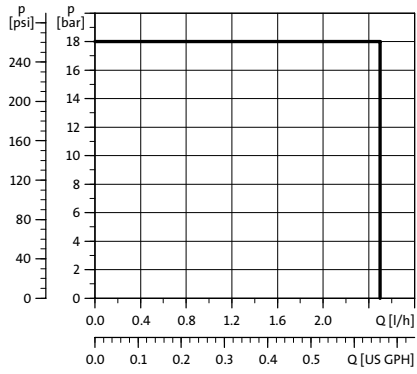
\* The pump is available with spring-loaded valves.  
Spring material: Hastelloy.  
The spring is not shown in the sectional drawing.

### Material specification

Pos.	Description	Material options
1	Backplate	20% glass-filled PP
2	Diaphragm	Textile-reinforced EPDM, PTFE-coated
3	Valve assembly	Contains items 4 to 8
4	O-ring	EPDM/FKM
5*	Valve casing	PP/PVDF/Stainless steel
6	Valve ball	Ceramic/316 SS
7	Valve seat disk	EPDM/FKM
8	Valve seat O-ring	PP/PVDF/316 SS
9	Connection assembly	Contains items 10 to 12
10	Cone/thread piece	PP/PVDF/316 SS/PVC
11	Clamping ring	PP/PVDF
12	Union nut	PP/PVDF/316 SS
13	Vent valve screw	PP/PVDF
14	Vent valve ball	Ceramic/316 SS
15	Vent valve O-ring	EPDM/FKM
16	Cabinet	20% glass-filled PP
17	Power/alarm cable	Rubber
18	Dosing head	PP/PVDF/316 SS
19	Drive belt	Rubber, polyamide-reinforced
20	Connecting rod	Steel
21	Dosing stroke auxiliary spring	-
22	Crank shaft	Steel
23	Power PCB	-
24	Operation PCB	-
25	Synchronous motor	-
26	Drive frame	Aluminium

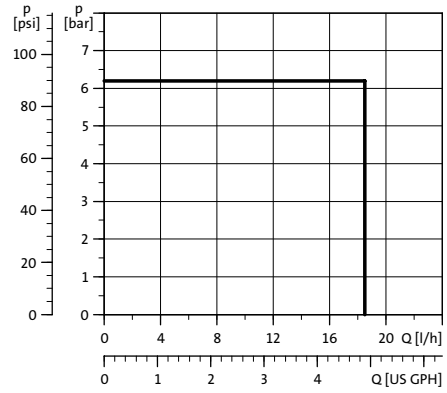


**DME 2-18**



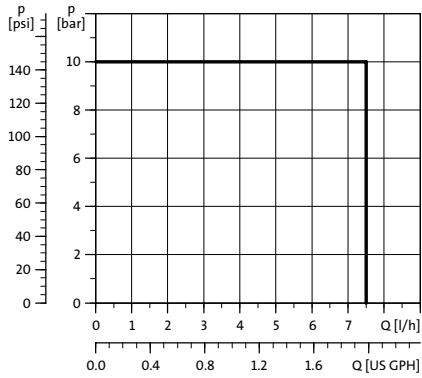
TM02 9946 4604

**DME 19-6**



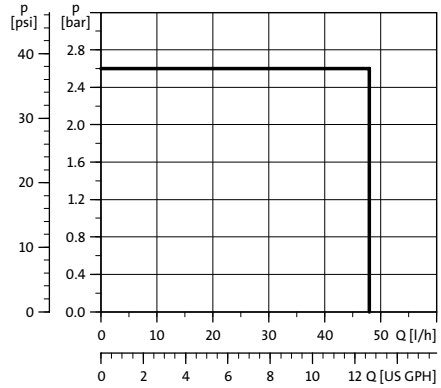
TM02 9946 4604

**DME 8-10**



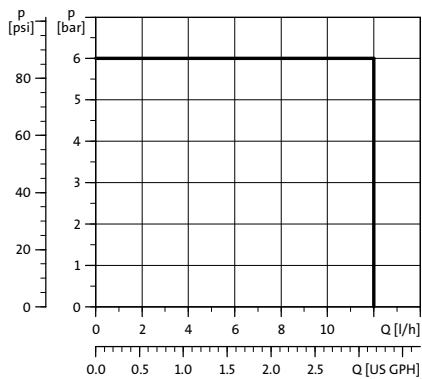
TM02 9947 4604

**DME 48-3**



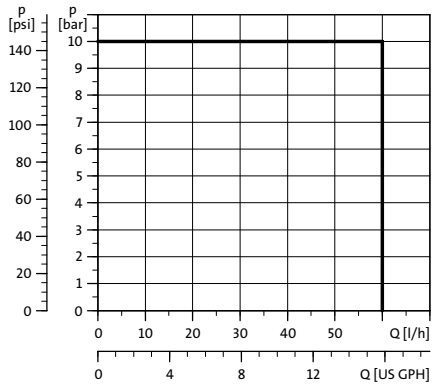
TM02 9950 4604

**DME 12-6**



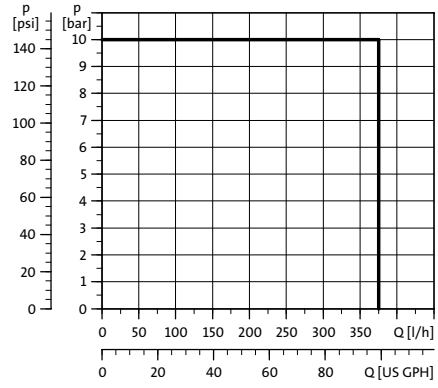
TM02 9948 4604

**DME 60-10**



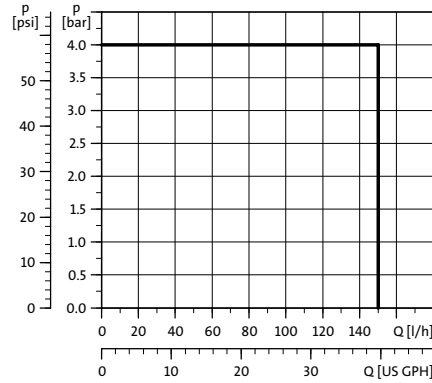
TM02 9951 4604

**DME 375-10**



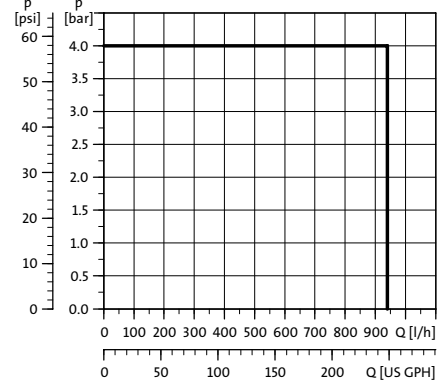
TM02953604

**DME 150-4**



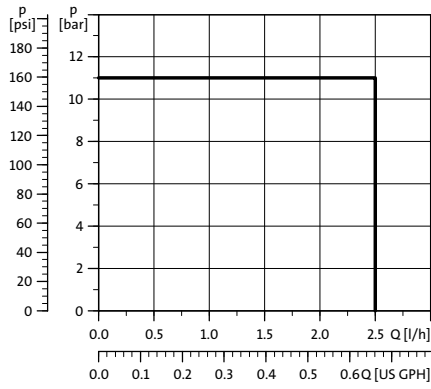
TM02 9952 4604

**DME 940-4**



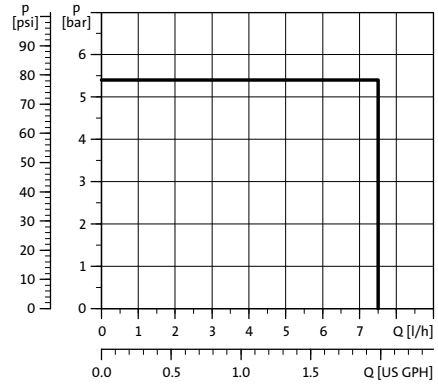
TM02 9954 4604

**DMS 2-11**



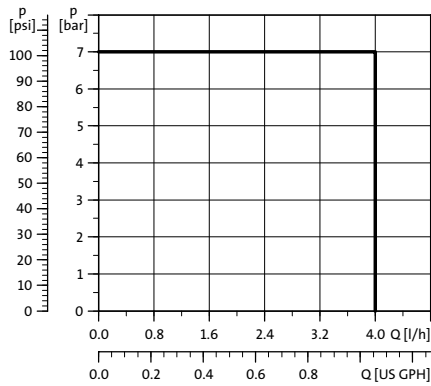
TM02 9955 4604

**DMS 8-5**



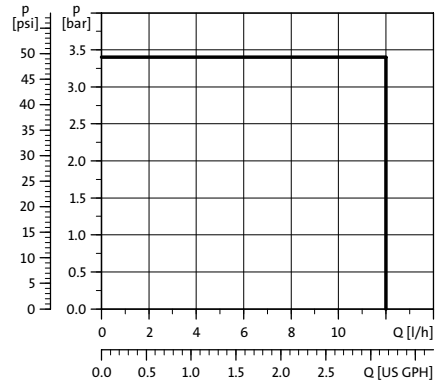
TM02 9957 4604

**DMS 4-7**



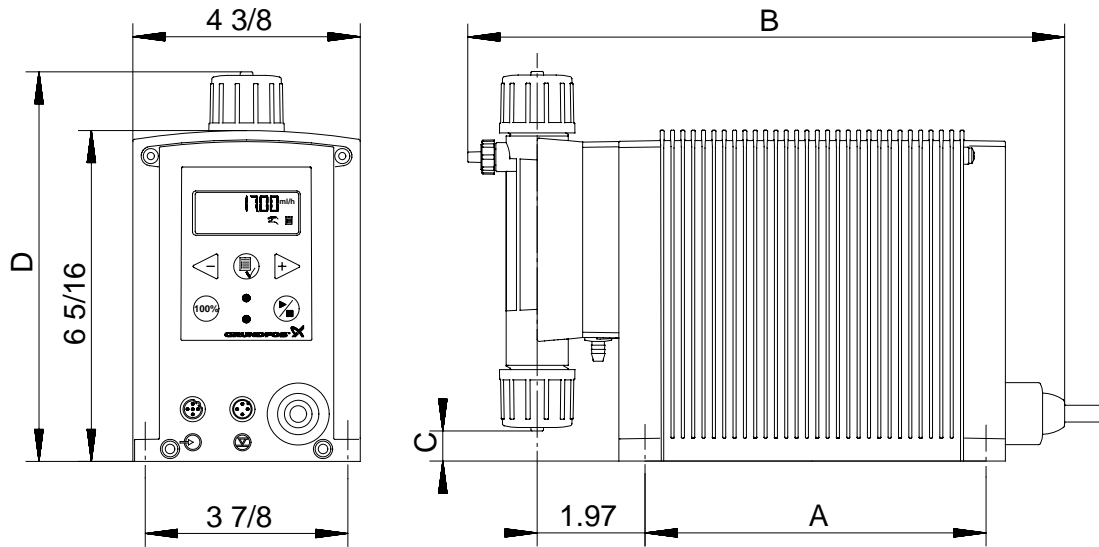
TM02 9955 4604

**DMS 12-3**



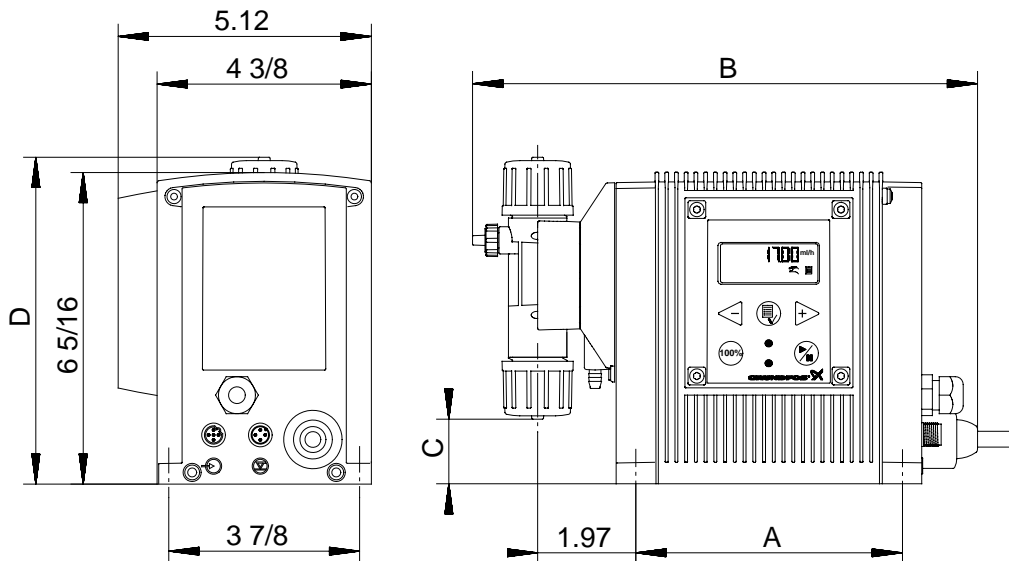
TM02 9958 4604

## Front-fitted control panel DME 2 to 48, DMS



TM03 0239 4604

## Side-fitted control panel DME 2 to 48, DMS

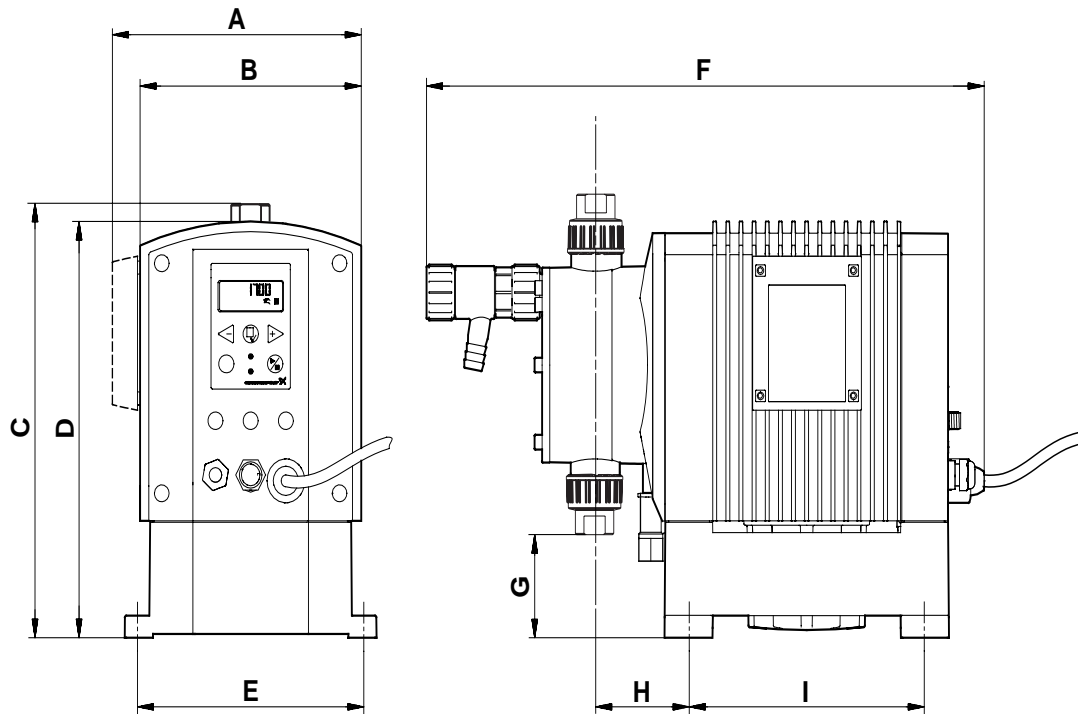


TM03 0239 4604

Dimensions are in inches (mm)

Pump type	DME 2 DMS 2	DMS 4	DME 8 DMS 8	DME 12 DMS 12	DME 19	DME 48
A		5.4 (137)			7.56 (192)	
B		9.4 (239)			11.57 (294)	
C		1.4 (36)			0.59 (15)	
D		6.6 (168)			7.40 (188)	

## DME (60 to 940)



TM03 0589 0305

Dimensions are in inches (mm)

	DME 60		DME 150		DME 375		DME 940	
A	6.93	(176)	6.93	(176)	9.37	(238)	9.37	(238)
B	7.8	(198)	7.8	(198)	8.58	(218)	8.58	(218)
C	13.03	(331)	13.58	(345)	18.54	(471)	19.53	(496)
D	11.18	(284)	11.18	(284)	14.33	(364)	14.33	(364)
E	7.09	(180)	7.09	(180)	9.06	(230)	9.06	(230)
F	17.48	(444)	17.48	(444)	21.26	(540)	21.22	(539)
G	1.61	(41)	1.10	(28)	1.22	(31)	0.24	(6)
H	2.91	(74)	2.91	(74)	3.74	(95)	3.74	(95)
I	7.36	(187)	7.36	(187)	9.69	(246)	9.69	(246)

## DME (2 to 48)

Pump		DME 2	DME 8	DME 12	DME 19	DME 48	
Mechanical data	Maximum capacity without anti-cavitation ★ <sup>1</sup>	[l/h]	2.5	7.5	12	18.5	48
		[GPH]	0.66	1.98	3.17	4.88	12.68
	Maximum capacity with anti-cavitation ★ <sup>1</sup>	[l/h]	1.8	5.6	9	14.5	37
		[GPH]	0.49	1.48	2.78	3.66	9.51
	Maximum pressure	[bar]	18	10	6	6.2	2.6
		[psi]	261	145	87	90	38
	Maximum stroke frequency ★ <sup>2</sup> [stroke/min]		180	180	180	151	151
	Maximum wet/primed suction lift [ft (m)]		19.7 (6)				
	Maximum suction lift when priming with wet valves [m]		5.9 (1.8)	9.8 (3)	9.8 (3)	9.8 (3)	9.8 (3)
	Maximum viscosity with spring-loaded valves ★ <sup>3</sup> [cps]		500	500	500	500	100
	Maximum viscosity without spring-loaded valves ★ <sup>3</sup> [cps]		200	200	200	200	100
	Maximum liquid temperature [F (°C)]		122 (50)				
	Minimum liquid temperature [F (°C)]		32 (0)				
	Maximum ambient temperature [F (°C)]		113 (45)				
	Minimum ambient temperature [F (°C)]		32 (0)				
	Accuracy of repeatability		±1%				
Weight and size	Weight [lb (kg)]	5 (2.3)	5 (2.3)	5 (2.3)	7.5 (3.4)	7.5 (3.4)	
	Diaphragm diameter [in (mm)]	1.1 (28)	1.5 (38)	1.7 (43.5)	2.2 (55)	3.03 (77)	
	Supply voltage [V]	1 x 100-240 V, 50-60 Hz					
Electrical data	Maximum current consumption [A]	at 100 V	0.27			0.35	
		at 230 V	0.16			0.26	
	Maximum power consumption P <sub>1</sub> [W]	16.2			22.1		
	Enclosure class	IP 65					
Insulation class	F						
Signal input	Voltage in level sensor input [VDC]	5					
	Voltage in pulse input [VDC]	5					
	Minimum pulse-repetition period [ms]	3.3					
	Impedance in analog 0/4-20 mA input [Ω]	250					
	Maximum loop resistance in pulse signal circuit [Ω]	350					
	Maximum loop resistance in level signal circuit [Ω]	350					
Signal output	Maximum load of alarm relay output, at ohmic load [A]	2					
	Maximum voltage, alarm relay output [V]	250					
Sound pressure	The sound pressure level of the pump is lower than 70 db(A).						
Approvals	CE, VDE, cUL, UL, METI						

★<sup>1</sup> At any back-pressure within the pump's specified range when calibrated to the actual installation.

★<sup>2</sup> The maximum stroke frequency varies according to calibration.

★<sup>3</sup> Maximum suction lift: 3 ft.

## DME (60 to 940)

Pump		DME 60	DME 150	DME 375	DME 940
Pump	Maximum capacity [GPH (l/h)]	15.9, (60)	39.6, (150)	99.1, (375)	248.3, (940)
	Minimum capacity [GPH (ml/h)]	0.0198 (75)	0.0495 (187.5)	0.1238 (468.75)	0.3104 (1175)
	Maximum capacity with anti-cavitation 75% [l/h]	11.9, (45)	29.6, (112)	74.2, (281)	186.2, (705)
	Maximum capacity with anti-cavitation 50% [l/h]	7.9, (30)	19.8, (75)	49.7, (188)	124.2, (470)
	Maximum capacity with anti-cavitation 25% [l/h]	4.0, (15)	10.0 (38)	24.8, (94)	62.1, (235)
	Maximum pressure [psi (bar)]	145, (10)	58, (4)	145, (10)	58, (4)
	Maximum stroke frequency [stroke/min]	160			
	Maximum wet/primed suction lift [ft (m)]	19.7 (6)			
	Maximum suction lift when priming with wet valves [ft (m)]	4.9 (1.5)			
	Maximum viscosity with spring-loaded valves $\star^1$ [cps]	3000 cps at 50% capacity			
Maximum viscosity without spring-loaded valves $\star^1$ [cps]	200				
Maximum liquid temperature [F, °C]	122 (50)				
Minimum liquid temperature [F, °C]	32 (0)				
Maximum ambient temperature [F, °C]	113 (45)				
Minimum ambient temperature [F, °C]	14 (-10)				
Accuracy of repeatability	±1%				
Weight and size	Weight [lbs, (kg)]	25.1, (11.4)	26, (11.8)	46.3, (21)	49.6, (22.5)
	Diaphragm diameter [in, (mm)]	3.1, (79)	4.2, (106)	4.9, (124)	6.8, (173)
Electrical data	Supply voltage [V]	1 x 100-240 V, 50-60 Hz			
	Maximum current consumption [A]	at 100 V	1.25	2.40	
		at 230 V	0.67	1.0	
	Maximum power consumption P <sub>1</sub> [W]	67.1	240		
Enclosure class	IP 65				
Insulation class	B				
Cable data	Power supply cable [ft, (m)]	4.9, (1.5)			
	Voltage in level sensor input [VDC]	5			
Signal input	Voltage in pulse input [VDC]	5			
	Minimum pulse-repetition period [ms]	3.3			
	Impedance in analog 0/4-20 mA input [ $\Omega$ ]	250			
	Maximum loop resistance in pulse signal circuit [ $\Omega$ ]	350			
	Maximum loop resistance in level signal circuit [ $\Omega$ ]	350			
Signal output	Maximum load of alarm relay output, at ohmic load [A]	2			
	Maximum voltage, alarm relay output [V]	42			
Approvals	CE, CB, VDE, PSE, CSA				
Sound pressure level	The sound pressure level of the pump is lower than 70 dB (A).				

$\star^1$  Maximum suction lift: 3ft.

## DMS

Pump		DMS 2	DMS 4	DMS 8	DMS 12	
Mechanical data	Maximum capacity ★ <sup>1</sup>	DMS-A and AR, B [l/h]	2.5	4	7.5	12
		[gph]	0.66	1.05	1.98	3.17
		DMS-D (50 Hz) [l/h]	3.3 ± 20%	5.7 ± 18%	8.7 ± 8%	13.7 ± 6%
		[GPH]	0.87 ± 20%	1.5 ± 18%	2.3 ± 8%	3.6 ± 6%
		DMS-D (60 Hz) [l/h]	3.9 ± 20%	6.9 ± 18%	10.4 ± 8%	16.4 ± 6%
		[GPH]	1.03 ± 20%	1.82 ± 18%	2.75 ± 8%	4.33 ± 6%
	Maximum pressure	[bar]	11	7	5.4	3.4
		[psi]	160	102	78	49
	Maximum stroke frequency ★ <sup>2</sup> [stroke/min]	DMS-A and AR, B	180			
		DMS-D (50 Hz)	187.5			
	DMS-D (60 Hz)	225				
Maximum wet/primed suction lift [ft, (m)]		19.7 (6)				
Maximum suction lift when priming with wet valves [ft, (m)]		5.9 (1.8)	6.6 (2)	9.8 (3)	9.8 (3)	
Maximum viscosity with spring-loaded valves ★ <sup>3</sup> [mPas] (= cP)		500				
Maximum viscosity without spring-loaded valves ★ <sup>3</sup> [mPas] (= cP)		200				
Maximum liquid temperature [F, °C]		122 (50)				
Minimum liquid temperature [F, °C]		32 (0)				
Maximum ambient temperature [F, °C]		113 (45)				
Minimum ambient temperature [F, °C]		32 (0)				
Accuracy of repeatability		±1%				
Weight and size	Weight [lbs, (kg)]	5, (2.3)				
	Diaphragm diameter [in, (mm)]	1.1 (28)	1.3 (32)	1.5 (38)	1.8 (42.5)	
Electrical data	Supply voltage	1 x 230 V -13%/+10%, 50/60 Hz				
		1 x 120 V -12%/+8%, 60 Hz				
		1 x 100 V ±6%, 50/60 Hz				
	Maximum current consumption [A]	at 100 V	0.2			
		at 120 V	0.17			
at 230 V		0.09				
Maximum power consumption P <sub>1</sub> [W]		20				
Enclosure class		IP 65				
Insulation class		F				
Signal input	Voltage in level sensor input [VDC]	5				
	Voltage in pulse input [VDC]	5				
	Minimum pulse-repetition period [ms]	3.3				
	Impedance in 0/4-20 mA analog input [Ω]	250				
	Maximum loop resistance in pulse signal circuit [Ω]	350				
	Maximum loop resistance in level signal circuit [Ω]	350				
Signal output	Maximum load of alarm relay output at ohmic load [A]	2				
	Maximum voltage, alarm relay output [V]	250				
Sound pressure	The sound pressure level of the pump is lower than 70 db(A).					
Approvals	CE, VDE cUL, UL, METI ★ <sup>4</sup>					

★<sup>1</sup> At any back-pressure within the pump's specified range when calibrated to the actual installation.

★<sup>2</sup> The maximum stroke frequency varies according to calibration.

★<sup>3</sup> Maximum suction lift: 3 ft.

★<sup>4</sup> DMS-D: only CE and VDE.



## DME 2 to 12 - standard range

DME, 50/60 Hz, 100-240V with US 120V Plug

Pump Head Material	Control Variant	Valve Ball Material	Connections,Suction/ Discharge [in]	Gasket Material	Control Position	Model	Product Number	Ship Weight [lbs]
<b>DME 2-18 0.66 GPH (2.5 l/h) up to 261 psi (18 bar)</b>								
PP	A	Ceramic	1/4 or 3/8*	EPDM	Front	DME2-18 A-PP/E/C-F-21RRB	96470128	5.0
					Side	DME2-18 A-PP/E/C-S-21RRB	96470129	
					Front	DME2-18 A-PP/V/C-F-21RRB	96470130	
					Side	DME2-18 A-PP/V/C-S-21RRB	96470131	
					Front	DME2-18 AR-PP/E/C-F-21RRB	96470135	
					Side	DME2-18 AR-PP/E/C-S-21RRB	96470136	
	AR	Front	DME2-18 AR-PP/V/C-F-21RRB	96470137				
		Side	DME2-18 AR-PP/V/C-S-21RRB	96470138				
		Front	DME2-18 A-PV/V/C-F-21RRB	96470133				
		Side	DME2-18 A-PV/V/C-S-21RRB	96470134				
		Front	DME2-18 AR-PV/V/C-F-21RRB	96462440				
		Side	DME2-18 AR-PV/V/C-S-21RRB	96470150				
PVDF	A	Ceramic	1/4 or 3/8*	FKM	Front	DME2-18 A-SS/V/SS-F-21VVB	96470153	
					Side	DME2-18 A-SS/V/SS-S-21VVB	96470154	
					Front	DME2-18 AR-SS/V/SS-F-21VVB	96470151	
	AR				Side	DME2-18 AR-SS/V/SS-S-21VVB	96470152	
					Front	DME2-18 A-SS/V/SS-F-21VVB	96470153	
					Side	DME2-18 A-SS/V/SS-S-21VVB	96470154	
<b>DME 8-10 1.98 GPH (7.5 l/h) up to 145 psi (10 bar)</b>								
PP	A	Ceramic	1/4 or 3/8*	EPDM	Front	DME8-10 A-PP/E/C-F-21RRB	96470158	5.0
					Side	DME8-10 A-PP/E/C-S-21RRB	96470159	
					Front	DME8-10 A-PP/V/C-F-21RRB	96470160	
					Side	DME8-10 A-PP/V/C-S-21RRB	96470161	
					Front	DME8-10 AR-PP/E/C-F-21RRB	96470219	
					Side	DME8-10 AR-PP/E/C-S-21RRB	96470224	
	AR	Front	DME8-10 AR-PP/V/C-F-21RRB	96462441				
		Side	DME8-10 AR-PP/V/C-S-21RRB	96470230				
		Front	DME8-10 A-PV/V/C-F-21RRB	96470217				
		Side	DME8-10 A-PV/V/C-S-21RRB	96470218				
		Front	DME8-10 AR-PV/V/C-F-21RRB	96470243				
		Side	DME8-10 AR-PV/V/C-S-21RRB	96470248				
PVDF	A	Ceramic	1/4 or 3/8*	FKM	Front	DME8-10 A-SS/V/SS-F-21VVB	96470268	
					Side	DME8-10 A-SS/V/SS-S-21VVB	96470272	
					Front	DME8-10 AR-SS/V/SS-F-21VVB	96470251	
	AR				Side	DME8-10 AR-SS/V/SS-S-21VVB	96470255	
					Front	DME8-10 A-SS/V/SS-F-21VVB	96470268	
					Side	DME8-10 A-SS/V/SS-S-21VVB	96470272	
<b>DME 12-6 3.17 GPH (12 l/h) up to 89.9 psi (6.2 bar)</b>								
PP	A	Ceramic	1/4 or 3/8*	EPDM	Front	DME12-6 A-PP/E/C-F-21RRB	96470274	5.0
					Side	DME12-6 A-PP/E/C-S-21RRB	96470275	
					Front	DME12-6 A-PP/V/C-F-21RRB	96470276	
					Side	DME12-6 A-PP/V/C-S-21RRB	96470279	
					Front	DME12-6 AR-PP/E/C-F-21RRB	96470293	
					Side	DME12-6 AR-PP/E/C-S-21RRB	96470294	
	AR	Front	DME12-6 AR-PP/V/C-F-21RRB	96470296				
		Side	DME12-6 AR-PP/V/C-S-21RRB	96470297				
		Front	DME12-6 A-PV/V/C-F-21RRB	96470284				
		Side	DME12-6 A-PV/V/C-S-21RRB	96470288				
		Front	DME12-6 AR-PV/V/C-F-21RRB	96470328				
		Side	DME12-6 AR-PV/V/C-S-21RRB	96470329				
PVDF	A	Ceramic	1/4 or 3/8*	FKM	Front	DME12-6 A-SS/V/SS-F-21VVB	96470331	
					Side	DME12-6 A-SS/V/SS-S-21VVB	96470332	
					Front	DME12-6 AR-SS/V/SS-F-21VVB	96470330	
	AR				Side	DME12-6 AR-SS/V/SS-S-21VVB	96462476	
					Front	DME12-6 A-SS/V/SS-F-21VVB	96470331	
					Side	DME12-6 A-SS/V/SS-S-21VVB	96470332	

**WEIGHTS:** Shipping weights are approximate.

\* 1/4" = 0.17 ID x 0.25 OD; 3/8" = 0.25 ID x 0.375 OD; 1/2" = 0.375 ID x 0.5 OD

## DME 19 to 48 - standard range

DME, 50/60 Hz, 100-240V with US 120V Plug

Pump Head Material	Control Variant	Valve Ball Material	Connections, Suction/ Discharge [in]	Gasket Material	Control Position	Model	Product Number	Ship Weight [lbs]
<b>DME 19-6 4.88 GPH (18.5 l/h) up to 87 psi (6 bar)</b>								
PP	A	Ceramic	3/8 or 1/2*	EPDM	Front	DME19-6 A-PP/E/C-F-21SSB	96470333	7.5
					Side	DME19-6 A-PP/E/C-S-21SSB	96470334	
					Front	DME19-6 A-PP/V/C-F-21SSB	96470350	
					Side	DME19-6 A-PP/V/C-S-21SSB	96470351	
	AR				Front	DME19-6 AR-PP/E/C-F-21SSB	96462477	
					Side	DME19-6 AR-PP/E/C-S-21SSB	96470354	
					Front	DME19-6 AR-PP/V/C-F-21SSB	96470355	
					Side	DME19-6 AR-PP/V/C-S-21SSB	96470356	
PVDF	A	Ceramic	3/8 or 1/2*	FKM	Front	DME19-6 A-PV/V/C-F-21SSB	96470352	
					Side	DME19-6 A-PV/V/C-S-21SSB	96470353	
	AR				Front	DME19-6 AR-PV/V/C-F-21SSB	96470357	
					Side	DME19-6 AR-PV/V/C-S-21SSB	96470358	
					Front	DME19-6 A-SS/V/SS-F-21YYB	96470361	
					Side	DME19-6 A-SS/V/SS-S-21YYB	96470362	
SS	A	SS	3/8" NPT	FKM	Front	DME19-6 AR-SS/V/SS-F-21YYB	96470359	
	AR				Side	DME19-6 AR-SS/V/SS-S-21YYB	96470360	
<b>DME 48-3 12.68 GPH (48 l/h) up to 37.7 psi (2.6 bar)</b>								
PP	A	Ceramic	3/8 or 1/2*	EPDM	Front	DME48-3 A-PP/E/C-F-21SSB	96470363	7.5
					Side	DME48-3 A-PP/E/C-S-21SSB	96470364	
					Front	DME48-3 A-PP/V/C-F-21SSB	96470365	
					Side	DME48-3 A-PP/V/C-S-21SSB	96470366	
	AR				Front	DME48-3 AR-PP/E/C-F-21SSB	96470370	
					Side	DME48-3 AR-PP/E/C-S-21SSB	96470371	
					Front	DME48-3 AR-PP/V/C-F-21SSB	96470372	
					Side	DME48-3 AR-PP/V/C-S-21SSB	96470373	
PVDF	A	Ceramic	3/8 or 1/2*	FKM	Front	DME48-3 A-PV/V/C-F-21SSB	96470367	
					Side	DME48-3 A-PV/V/C-S-21SSB	96470369	
	AR				Front	DME48-3 AR-PV/V/C-F-21SSB	96470374	
					Side	DME48-3 AR-PV/V/C-S-21SSB	96462491	
					Front	DME48-3 A-SS/V/SS-F-21YYB	96470377	
					Side	DME48-3 A-SS/V/SS-S-21YYB	96470378	
SS	A	SS	3/8" NPT	FKM	Front	DME48-3 AR-SS/V/SS-F-21YYB	96470375	
	AR				Side	DME48-3 AR-SS/V/SS-S-21YYB	96470376	

**WEIGHTS:** Shipping weights are approximate.

\* 1/4" = 0.17 ID x 0.25 OD; 3/8" = 0.25 ID x 0.375 OD; 1/2" = 0.375 ID x 0.5 OD

## DME 60 to 150 - standard range

DME, 50/60 Hz, 100-240V with US 120V Plug

Pump Head Material	Control Variant	Valve Ball Material	Connections, Suction/ Discharge	Gasket Material	Control Position	Model	Product Number	Ship Weight [lbs]
<b>DME 60-10 15.85 GPH (60 l/h) up to 145 psi (10 bar)</b>								
PP	AR	Ceramic	3/4" FNPT	EPDM	Front	DME60-10 AR-PP/E/C-F-21A3A3B	96528925	25
					Side	DME60-10 AR-PP/E/C-S-21A3A3B	96528926	
	FKM				Front	DME60-10 AR-PP/V/C-F-21A3A3B	96528927	
					Side	DME60-10 AR-PP/V/C-S-21A3A3B	96528928	
	B				Front	DME60-10 B-PP/E/C-F-21A3A3B	96528973	
					Side	DME60-10 B-PP/E/C-S-21A3A3B	96528974	
PVDF	AR	Ceramic	3/4" FNPT	FKM	Front	DME60-10 B-PP/V/C-F-21A3A3B	96528975	
					Side	DME60-10 B-PP/V/C-S-21A3A3B	96528976	
	B				Front	DME60-10 AR-PV/V/C-F-21A3A3B	96528929	
					Side	DME60-10 AR-PV/V/C-S-21A3A3B	96528970	
	FKM				Front	DME60-10 B-PV/V/C-F-21A3A3B	96528977	
					Side	DME60-10 B-PV/V/C-S-21A3A3B	96528978	
SS	AR	SS	3/4" FNPT	FKM	Front	DME60-10 AR-SS/V/SS-F-21A3A3B	96528971	
					Side	DME60-10 AR-SS/V/SS-S-21A3A3B	96528972	
	B				Front	DME60-10 B-SS/V/SS-F-21A3A3B	96528980	
					Side	DME60-10 B-SS/V/SS-S-21A3A3B	96528981	
<b>DME 150-4 39.6 GPH (150 l/h) up to 58 psi (4 bar)</b>								
PP	AR	Ceramic	3/4" FNPT	EPDM	Front	DME150-4 AR-PP/E/C-F-21A3A3B	96528982	26
					Side	DME150-4 AR-PP/E/C-S-21A3A3B	96528983	
	FKM			Front	DME150-4 AR-PP/V/C-F-21A3A3B	96528984		
				Side	DME150-4 AR-PP/V/C-S-21A3A3B	96528985		
	B			Front	DME150-4 B-PP/E/C-F-21A3A3B	96528990		
				Side	DME150-4 B-PP/E/C-S-21A3A3B	96528991		
PVDF	AR	Ceramic	3/4" FNPT	FKM	Front	DME150-4 B-PP/V/C-F-21A3A3B	96528994	
					Side	DME150-4 B-PP/V/C-S-21A3A3B	96528996	
	B			Front	DME150-4 AR-PV/V/C-F-21A3A3B	96528986		
				Side	DME150-4 AR-PV/V/C-S-21A3A3B	96528987		
	FKM			Front	DME150-4 B-PV/V/C-F-21A3A3B	96528998		
				Side	DME150-4 B-PV/V/C-S-21A3A3B	96528999		
SS	AR	SS	3/4" FNPT	FKM	Front	DME150-4 AR-SS/V/SS-F-21A3A3B	96528988	
					Side	DME150-4 AR-SS/V/SS-S-21A3A3B	96528989	
	B				Front	DME150-4 B-SS/V/SS-F-21A3A3B	96529001	
					Side	DME150-4 B-SS/V/SS-S-21A3A3B	96529003	

**WEIGHTS:** Shipping weights are approximate.

## DME 375 to 940 - standard range

DME, 50/60 Hz, 100-240V with US 120V Plug

Pump Head Material	Control Variant	Valve Ball Material	Connections, Suction/Discharge	Gasket Material	Control Position	Model	Product Number	Ship Weight [lbs]			
<b>DME 375-10 99.06 GPH (375 l/h) up to 145 psi (10 bar)</b>											
PP	AR	Glass	1 1/4" FNPT	EPDM	Front	DME375-10 AR-PP/E/G-F-21A4A4B	96529006	47			
					Side	DME375-10 AR-PP/E/G-S-21A4A4B	96529114				
	FKM				Front	DME375-10 AR-PP/V/G-F-21A4A4B	96529116				
					Side	DME375-10 AR-PP/V/G-S-21A4A4B	96529117				
	B				EPDM	Front	DME375-10 B-PP/E/G-F-21A4A4B		96529123		
					Side	DME375-10 B-PP/E/G-S-21A4A4B	96529124				
FKM	Front	DME375-10 B-PP/V/G-F-21A4A4B	96529125								
Side	DME375-10 B-PP/V/G-S-21A4A4B	96529126									
PVDF	AR	Glass	1 1/4" FNPT	FKM	Front	DME375-10 AR-PV/V/G-F-21A4A4B	96529118				
					Side	DME375-10 AR-PV/V/G-S-21A4A4B	96529119				
	B				Front	DME375-10 B-PV/V/G-F-21A4A4B	96529128				
					Side	DME375-10 B-PV/V/G-S-21A4A4B	96529130				
	SS				AR	SS	1 1/4" FNPT	FKM	Front	DME375-10 AR-SS/V/SS-F-21A4A4B	96529120
					Side				DME375-10 AR-SS/V/SS-S-21A4A4B	96529121	
B	Front	DME375-10 B-SS/V/SS-F-21A4A4B	96529132								
	Side	DME375-10 B-SS/V/SS-S-21A4A4B	96529135								
<b>DME 940-4 248.3 GPH (940 l/h) up to 58 psi (4 bar)</b>											
PP	AR	Glass	1 1/4" FNPT	EPDM	Front				DME940-4 AR-PP/E/G-F-21A4A4B	96529137	50
					Side	DME940-4 AR-PP/E/G-S-21A4A4B	96529139				
	FKM				Front	DME940-4 AR-PP/V/G-F-21A4A4B	96529151				
					Side	DME940-4 AR-PP/V/G-S-21A4A4B	96529155				
	B				EPDM	Front	DME940-4 B-PP/E/G-F-21A4A4B	96529163			
					Side	DME940-4 B-PP/E/G-S-21A4A4B	96529164				
FKM	Front	DME940-4 B-PP/V/G-F-21A4A4B	96529165								
Side	DME940-4 B-PP/V/G-S-21A4A4B	96529166									
PVDF	AR	Glass	1 1/4" FNPT	FKM	Front	DME940-4 AR-PV/V/G-F-21A4A4B	96529158				
					Side	DME940-4 AR-PV/V/G-S-21A4A4B	96529160				
	B				Front	DME940-4 B-PV/V/G-F-21A4A4B	96529167				
					Side	DME940-4 B-PV/V/G-S-21A4A4B	96529168				
	SS				AR	SS	1 1/4" FNPT	FKM	Front	DME940-4 AR-SS/V/SS-F-21A4A4B	96529161
					Side				DME940-4 AR-SS/V/SS-S-21A4A4B	96529162	
B	Front	DME940-4 B-SS/V/SS-F-21A4A4B	96529169								
	Side	DME940-4 B-SS/V/SS-S-21A4A4B	96529170								

**WEIGHTS:** Shipping weights are approximate.

## DMS 2 to 4 - standard range

DMS, 60 Hz, 120V with US 120V Plug

Pump Head Material	Control Variant	Valve Ball Material	Connections, Suction/Discharge [in]	Gasket Material	Control Position	Model	Product Number	Ship Weight [lbs]					
<b>DMS 2-11 0.66 GPH (2.5 l/h) up to 160 psi (11 bar)</b>													
PP	A	Ceramic	1/4 or 3/8**	EPDM	Front	DMS2-11 A-PP/E/C-F-21RRB	96469328	5,0					
					Side	DMS2-11 A-PP/E/C-S-21RRB	96469358						
					Front	DMS2-11 A-PP/V/C-F-21RRB	96469376						
					Side	DMS2-11 A-PP/V/C-S-21RRB	96469377						
					Front	DMS2-11 AR-PP/E/C-F-21RRB	96469391						
					Side	DMS2-11 AR-PP/E/C-S-21RRB	96469392						
	AR				B	Ceramic	1/4 or 3/8**		EPDM	Front	DMS2-11 AR-PP/V/C-F-21RRB	96469394	5,0
										Side	DMS2-11 AR-PP/V/C-S-21RRB	96469399	
										Front	DMS2-11 B-PP/E/C-F-21RRB	96469451	
										Front	DMS2-11 B-PP/V/C-F-21RRB	96469456	
										None	DMS2-11 D-PP/E/C-X-21RRB	96508016	
										None	DMS2-11 D-PP/V/C-X-21RRB	96508017	
PVDF	A	Ceramic	1/4 or 3/8**	FKM	Front			DMS2-11 A-PV/V/C-F-21RRB		96469378	5,0		
					Side			DMS2-11 A-PV/V/C-S-21RRB		96469390			
					Front			DMS2-11 AR-PV/V/C-F-21RRB		96469403			
					Side			DMS2-11 AR-PV/V/C-S-21RRB		96469408			
					Front			DMS2-11 B-PV/V/C-F-21RRB		96469467			
					None			DMS2-11 D-PV/V/C-X-21RRB		96508019			
	AR				B	Ceramic	1/4 or 3/8**	FKM	Front	DMS2-11 A-SS/V/SS-F-21VVB		96469419	5,0
									Side	DMS2-11 A-SS/V/SS-S-21VVB		96469424	
									Front	DMS2-11 AR-SS/V/SS-F-21VVB		96469411	
									Side	DMS2-11 AR-SS/V/SS-S-21VVB		96469414	
									Front	DMS2-11 B-SS/V/SS-F-21VVB		96462492	
									None	DMS2-11 D-SS/V/SS-X-21VVB		96508090	
SS	A	SS	1/4" NPT	FKM	Front				DMS2-11 A-SS/V/SS-F-21VVB	96469419	5,0		
					Side				DMS2-11 A-SS/V/SS-S-21VVB	96469424			
					Front				DMS2-11 AR-SS/V/SS-F-21VVB	96469411			
					Side				DMS2-11 AR-SS/V/SS-S-21VVB	96469414			
					Front				DMS2-11 B-SS/V/SS-F-21VVB	96462492			
					None				DMS2-11 D-SS/V/SS-X-21VVB	96508090			
	AR				B	SS	1/4" NPT	FKM	Front	DMS2-11 A-SS/V/SS-F-21VVB		96469419	5,0
									Side	DMS2-11 A-SS/V/SS-S-21VVB		96469424	
									Front	DMS2-11 AR-SS/V/SS-F-21VVB		96469411	
									Side	DMS2-11 AR-SS/V/SS-S-21VVB		96469414	
									Front	DMS2-11 B-SS/V/SS-F-21VVB		96462492	
									None	DMS2-11 D-SS/V/SS-X-21VVB		96508090	
D*	A	SS	1/4" NPT	FKM	Front				DMS2-11 A-SS/V/SS-F-21VVB	96469419	5,0		
					Side				DMS2-11 A-SS/V/SS-S-21VVB	96469424			
					Front				DMS2-11 AR-SS/V/SS-F-21VVB	96469411			
					Side				DMS2-11 AR-SS/V/SS-S-21VVB	96469414			
					Front				DMS2-11 B-SS/V/SS-F-21VVB	96462492			
					None				DMS2-11 D-SS/V/SS-X-21VVB	96508090			
	AR				B	SS	1/4" NPT	FKM	Front	DMS2-11 A-SS/V/SS-F-21VVB		96469419	5,0
									Side	DMS2-11 A-SS/V/SS-S-21VVB		96469424	
									Front	DMS2-11 AR-SS/V/SS-F-21VVB		96469411	
									Side	DMS2-11 AR-SS/V/SS-S-21VVB		96469414	
									Front	DMS2-11 B-SS/V/SS-F-21VVB		96462492	
									None	DMS2-11 D-SS/V/SS-X-21VVB		96508090	
D*	A	SS	1/4" NPT	FKM	Front				DMS2-11 A-SS/V/SS-F-21VVB	96469419	5,0		
					Side				DMS2-11 A-SS/V/SS-S-21VVB	96469424			
					Front				DMS2-11 AR-SS/V/SS-F-21VVB	96469411			
					Side				DMS2-11 AR-SS/V/SS-S-21VVB	96469414			
					Front				DMS2-11 B-SS/V/SS-F-21VVB	96462492			
					None				DMS2-11 D-SS/V/SS-X-21VVB	96508090			
	AR				B	SS	1/4" NPT	FKM	Front	DMS2-11 A-SS/V/SS-F-21VVB		96469419	5,0
									Side	DMS2-11 A-SS/V/SS-S-21VVB		96469424	
									Front	DMS2-11 AR-SS/V/SS-F-21VVB		96469411	
									Side	DMS2-11 AR-SS/V/SS-S-21VVB		96469414	
									Front	DMS2-11 B-SS/V/SS-F-21VVB		96462492	
									None	DMS2-11 D-SS/V/SS-X-21VVB		96508090	
D*	A	SS	1/4" NPT	FKM	Front				DMS2-11 A-SS/V/SS-F-21VVB	96469419	5,0		
					Side				DMS2-11 A-SS/V/SS-S-21VVB	96469424			
					Front				DMS2-11 AR-SS/V/SS-F-21VVB	96469411			
					Side				DMS2-11 AR-SS/V/SS-S-21VVB	96469414			
					Front				DMS2-11 B-SS/V/SS-F-21VVB	96462492			
					None				DMS2-11 D-SS/V/SS-X-21VVB	96508090			
	AR				B	SS	1/4" NPT	FKM	Front	DMS2-11 A-SS/V/SS-F-21VVB		96469419	5,0
									Side	DMS2-11 A-SS/V/SS-S-21VVB		96469424	
									Front	DMS2-11 AR-SS/V/SS-F-21VVB		96469411	
									Side	DMS2-11 AR-SS/V/SS-S-21VVB		96469414	
									Front	DMS2-11 B-SS/V/SS-F-21VVB		96462492	
									None	DMS2-11 D-SS/V/SS-X-21VVB		96508090	
D*	A	SS	1/4" NPT	FKM	Front				DMS2-11 A-SS/V/SS-F-21VVB	96469419	5,0		
					Side				DMS2-11 A-SS/V/SS-S-21VVB	96469424			
					Front				DMS2-11 AR-SS/V/SS-F-21VVB	96469411			
					Side				DMS2-11 AR-SS/V/SS-S-21VVB	96469414			
					Front				DMS2-11 B-SS/V/SS-F-21VVB	96462492			
					None				DMS2-11 D-SS/V/SS-X-21VVB	96508090			
	AR				B	SS	1/4" NPT	FKM	Front	DMS2-11 A-SS/V/SS-F-21VVB		96469419	5,0
									Side	DMS2-11 A-SS/V/SS-S-21VVB		96469424	
									Front	DMS2-11 AR-SS/V/SS-F-21VVB		96469411	
									Side	DMS2-11 AR-SS/V/SS-S-21VVB		96469414	
									Front	DMS2-11 B-SS/V/SS-F-21VVB		96462492	
									None	DMS2-11 D-SS/V/SS-X-21VVB		96508090	
D*	A	SS	1/4" NPT	FKM	Front				DMS2-11 A-SS/V/SS-F-21VVB	96469419	5,0		
					Side				DMS2-11 A-SS/V/SS-S-21VVB	96469424			
					Front				DMS2-11 AR-SS/V/SS-F-21VVB	96469411			
					Side				DMS2-11 AR-SS/V/SS-S-21VVB	96469414			
					Front				DMS2-11 B-SS/V/SS-F-21VVB	96462492			
					None				DMS2-11 D-SS/V/SS-X-21VVB	96508090			
	AR				B	SS	1/4" NPT	FKM	Front	DMS2-11 A-SS/V/SS-F-21VVB		96469419	5,0
									Side	DMS2-11 A-SS/V/SS-S-21VVB		96469424	
									Front	DMS2-11 AR-SS/V/SS-F-21VVB		96469411	
									Side	DMS2-11 AR-SS/V/SS-S-21VVB		96469414	
									Front	DMS2-11 B-SS/V/SS-F-21VVB		96462492	
									None	DMS2-11 D-SS/V/SS-X-21VVB		96508090	
D*	A	SS	1/4" NPT	FKM	Front				DMS2-11 A-SS/V/SS-F-21VVB	96469419	5,0		
					Side				DMS2-11 A-SS/V/SS-S-21VVB	96469424			
					Front				DMS2-11 AR-SS/V/SS-F-21VVB	96469411			
					Side				DMS2-11 AR-SS/V/SS-S-21VVB	96469414			
					Front				DMS2-11 B-SS/V/SS-F-21VVB	96462492			
					None				DMS2-11 D-SS/V/SS-X-21VVB	96508090			
	AR				B	SS	1/4" NPT	FKM	Front	DMS2-11 A-SS/V/SS-F-21VVB		96469419	5,0
									Side	DMS2-11 A-SS/V/SS-S-21VVB		96469424	
									Front	DMS2-11 AR-SS/V/SS-F-21VVB		96469411	
									Side	DMS2-11 AR-SS/V/SS-S-21VVB		96469414	
									Front	DMS2-11 B-SS/V/SS-F-21VVB		96462492	
									None	DMS2-11 D-SS/V/SS-X-21VVB		96508090	
D*	A	SS	1/4" NPT	FKM	Front				DMS2-11 A-SS/V/SS-F-21VVB	96469419	5,0		
					Side				DMS2-11 A-SS/V/SS-S-21VVB	96469424			
					Front				DMS2-11 AR-SS/V/SS-F-21VVB	96469411			
					Side				DMS2-11 AR-SS/V/SS-S-21VVB	96469414			
					Front				DMS2-11 B-SS/V/SS-F-21VVB	96462492			
					None				DMS2-11 D-SS/V/SS-X-21VVB	96508090			
	AR				B	SS	1/4" NPT	FKM	Front	DMS2-11 A-SS/V/SS-F-21VVB		96469419	5,0
									Side	DMS2-11 A-SS/V/SS-S-21VVB		96469424	
									Front	DMS2-11 AR-SS/V/SS-F-21VVB		96469411	
									Side	DMS2-11 AR-SS/V/SS-S-21VVB		96469414	
									Front	DMS2-11 B-SS/V/SS-F-21VVB		96462492	
									None	DMS2-11 D-SS/V/SS-X-21VVB		96508090	

**WEIGHTS:** Shipping weights are approximate.

\* See pg 32 for DMS D capacity range.

\*\* 1/4" = 0.17 ID x 0.25 OD; 3/8" = 0.25 ID x 0.375 OD; 1/2" = 0.375 ID x 0.5 OD.

## DMS 8 to 12 - standard range

DMS, 60 Hz, 120V with US 120V Plug

Pump Head Material	Control Variant	Valve Ball Material	Connections, Suction/ Discharge [in]	Gasket Material	Control Position	Model	Material Number	Ship Weight [lbs]				
<b>DMS 8-5 1.98 GPH (7.5 l/h) up to 78.3 psi (5.4 bar)</b>												
PP	A	Ceramic	1/4 or 3/8**	EPDM	Front	DMS8-5 A-PP/E/C-F-21RRB	96469516	5.0				
					Side	DMS8-5 A-PP/E/C-S-21RRB	96469523					
					Front	DMS8-5 A-PP/V/C-F-21RRB	96469529					
					Side	DMS8-5 A-PP/V/C-S-21RRB	96469534					
					Front	DMS8-5 AR-PP/E/C-F-21RRB	96462494					
					Side	DMS8-5 AR-PP/E/C-S-21RRB	96469637					
	AR				B	FKM	1/4 or 3/8**		EPDM	Front	DMS8-5 AR-PP/V/C-F-21RRB	96469638
										Side	DMS8-5 AR-PP/V/C-S-21RRB	96469651
										Front	DMS8-5 B-PP/E/C-F-21RRB	96469676
										Front	DMS8-5 B-PP/V/C-F-21RRB	96469678
										None	DMS8-5 D-PP/E/C-X-21RRB	96508095
										None	DMS8-5 D-PP/V/C-X-21RRB	96508097
PVDF	A	Ceramic	1/4 or 3/8**	FKM	Front	DMS8-5 A-PV/V/C-F-21RRB	96469537	5.0				
					Side	DMS8-5 A-PV/V/C-S-21RRB	96469636					
					Front	DMS8-5 AR-PV/V/C-F-21RRB	96469656					
					Side	DMS8-5 AR-PV/V/C-S-21RRB	96469659					
					Front	DMS8-5 B-PV/V/C-F-21RRB	96469682					
					None	DMS8-5 D-PV/V/C-X-21RRB	96508098					
	AR				B	SS	1/4" NPT		FKM	Front	DMS8-5 A-SS/V/SS-F-21VVB	96469672
										Side	DMS8-5 A-SS/V/SS-S-21VVB	96469675
										Front	DMS8-5 AR-SS/V/SS-F-21VVB	96469663
										Side	DMS8-5 AR-SS/V/SS-S-21VVB	96469668
										Front	DMS8-5 B-SS/V/SS-F-21VVB	96462686
										None	DMS8-5 D-SS/V/SS-X-21VVB	96508099
<b>DMS 12-3 3.17 GPH (12 l/h) up to 49.3 psi (3.4 bar)</b>												
PP	A	Ceramic	1/4 or 3/8**	EPDM	Front	DMS12-3 A-PP/E/C-F-21RRB	96469700	5.0				
					Side	DMS12-3 A-PP/E/C-S-21RRB	96469703					
					Front	DMS12-3 A-PP/V/C-F-21RRB	96469707					
					Side	DMS12-3 A-PP/V/C-S-21RRB	96469711					
					Front	DMS12-3 AR-PP/E/C-F-21RRB	96469722					
					Side	DMS12-3 AR-PP/E/C-S-21RRB	96469726					
	AR				B	FKM	1/4 or 3/8**		EPDM	Front	DMS12-3 AR-PP/V/C-F-21RRB	96469730
										Side	DMS12-3 AR-PP/V/C-S-21RRB	96469734
										Front	DMS12-3 B-PP/E/C-F-21RRB	96469775
										Front	DMS12-3 B-PP/V/C-F-21RRB	96469777
										None	DMS12-3 D-PP/E/C-X-21RRB	96508100
										None	DMS12-3 D-PP/V/C-X-21RRB	96508101
PVDF	A	Ceramic	1/4 or 3/8**	FKM	Front	DMS12-3 A-PV/V/C-F-21RRB	96469714	5.0				
					Side	DMS12-3 A-PV/V/C-S-21RRB	96469718					
					Front	DMS12-3 AR-PV/V/C-F-21RRB	96469735					
					Side	DMS12-3 AR-PV/V/C-S-21RRB	96462495					
					Front	DMS12-3 B-PV/V/C-F-21RRB	96469786					
					None	DMS12-3 D-PV/V/C-X-21RRB	96508103					
	AR				B	SS	1/4" NPT		FKM	Front	DMS12-3 A-SS/V/SS-F-21VVB	96469766
										Side	DMS12-3 A-SS/V/SS-S-21VVB	96469771
										Front	DMS12-3 AR-SS/V/SS-F-21VVB	96469763
										Side	DMS12-3 AR-SS/V/SS-S-21VVB	96469764
										Front	DMS12-3 B-SS/V/SS-F-21VVB	96469791
										None	DMS12-3 D-SS/V/SS-X-21VVB	96508104

**WEIGHTS:** Shipping weights are approximate.

\* See pg 32 for DMS D capacity range.

\*\* 1/4" = 0.17 ID x 0.25 OD; 3/8" = 0.25 ID x 0.375 OD; 1/2" = 0.375 ID x 0.5 OD.

## Non-standard options

Option	Available with
Spring-loaded check valves	DME, DMS
Profibus	DME
GENibus	DME 2 to 48
PTFE check valves with Ceramic or PTFE balls	DME 2 to 48, DMS
PTFE balls in PP or PVDF check valves	DME 2 to 48, DMS
SS balls in PP or PVDF check valves	DME, DMS
1/2" NPT connections on PP or PVDF pumps	DME 2 to 48, DMS
Metric inlet/discharge connection	DME, DMS
International supply voltages/plug types	DME, DMS
PTFE gaskets	DME 60 to 940
Hastelloy C balls	DME 60 to 940

**Please contact the factory for ordering information.**

## List of pumped liquids

The resistance table below is intended as a general guide for material resistance (at room temperature), and does not replace testing of the chemicals and pump materials under specific working conditions.

The data shown are based upon information from various sources available, but many factors (purity, temperature, abrasive particles, etc.) may affect the chemical resistance of a given material. Note: Some of the liquids in this table may be toxic, corrosive or hazardous.

**Please be careful when handling these liquids.**

Pumped liquid 20°C	Concentration %	Materials											
		Pump housing				Gasket					Ball		
		PP	PVDF	316 SS	PVC	FKM	EPDM	CSM	PTFE	Centellen C	Ceramic	Glass	
Acetic acid	CH <sub>3</sub> COOH	25	●	●	●	●	-	●	○	●	●	●	●
		60	●	●	●	●	-	○	-	●	○	●	●
		85	●	●	●	-	-	-	-	●	○	●	●
Aluminium chloride	AlCl <sub>3</sub>	40	●	●	-	●	●	●	●	●	●	●	
Aluminium sulphate	Al <sub>2</sub> (SO <sub>4</sub> ) <sub>3</sub>	60	●	●	●	●	●	●	●	●	●	●	
Ammonia, aqueous	NH <sub>4</sub> OH	28	●	●	●	●	-	●	●	●	○	●	-
Calcium hydroxide★ <sup>7</sup>	Ca(OH) <sub>2</sub>		●	●	●	●	●	●	●	●	●	●	-
Calcium hypochlorite	Ca(OCl) <sub>2</sub>	20	○	●	-	●	●	●	●	●	●	●	●
		10	●	●	●	●	●	●	●	●	●	●	●
		30	-	●	-	●	●	○	●	●	○	●	●
Chromic acid★ <sup>5</sup>	H <sub>2</sub> CrO <sub>4</sub>	40	-	●	-	●	-	●	●	●	○	●	●
		50	-	●	-	●	●	-	●	●	○	●	●
Copper sulphate	CuSO <sub>4</sub>	30	●	●	●	●	●	●	●	●	●	●	●
Ferric chloride★ <sup>3</sup>	FeCl <sub>3</sub>	100	●	●	-	●	●	●	●	●	●	●	●
Ferric sulphate★ <sup>3</sup>	Fe <sub>2</sub> (SO <sub>4</sub> ) <sub>3</sub>	100	●	●	●	●	●	●	●	●	●	●	●
Ferrous chloride	FeCl <sub>2</sub>	100	●	●	-	●	●	●	●	●	●	●	●
Ferrous sulphate	FeSO <sub>4</sub>	50	●	●	●	●	●	●	●	●	●	●	●
Hydrochloric acid	HCl	< 25	●	●	-	●	○	●	●	●	●	●	●
		25-37	●	●	-	●	-	●	●	○	●	●	●
Hydrogen peroxide	H <sub>2</sub> O <sub>2</sub>	30	○	●	●	●	●	○	●	●	●	●	●
		10	●	●	●	●	●	●	●	●	●	●	●
Nitric acid	HNO <sub>3</sub>	30	●	●	●	●	●	●	●	●	-	●	●
		40	○	●	●	●	●	●	-	●	-	●	●
		70	-	●	●	-	●	-	-	●	-	●	●
Peracetic acid	CH <sub>3</sub> COOOH	5	○	●	-	●	-	○	●	●	●	●	●
Potassium hydroxide	KOH	50	●	-	●	●	-	●	●	●	○	●	-
Potassium permanganate	KMnO <sub>4</sub>	10	●	●	●	●	-	●	●	●	●	●	●
Sodium chlorate	NaClO <sub>3</sub>	30	●	●	●	●	○	●	●	●	●	●	●
Sodium chloride	NaCl	30	●	●	-	●	●	●	●	●	●	●	●
Sodium chlorite	NaClO <sub>2</sub>	20	●	○	-	-	●	●	●	●	●	●	●
		20	●	○	●	●	○	●	●	●	○	●	-
		30	●	-	●	●	○	●	●	●	○	●	-
Sodium hypochlorite	NaOCl	20	○	●	-	●	●	●	●	●	●	●	●
Sodium sulphide	Na <sub>2</sub> S	30	●	●	●	●	●	●	●	●	●	●	-
Sodium sulphite★ <sup>6</sup>	Na <sub>2</sub> SO <sub>3</sub>	20	●	●	●	●	●	●	●	●	●	●	-
Sulphurous acid	H <sub>2</sub> SO <sub>3</sub>	6	●	●	●	●	●	●	●	●	●	●	○
Sulphuric acid★ <sup>4</sup>	H <sub>2</sub> SO <sub>4</sub>	< 80	●	●	-	○	●	○	●	●	○	●	○
		80-98	○	●	-	-	●	-	-	●	●	●	-

● Suitable.

○ Limited.

- Not suitable.

★<sup>3</sup> Risk of crystallisation.

★<sup>4</sup> Reacts violently with water and generates much heat. (Pump should be absolutely dry before dosing sulphuric acid.)

★<sup>5</sup> Must be fluoride-free when glass balls are used.

★<sup>6</sup> In neutral solutions.

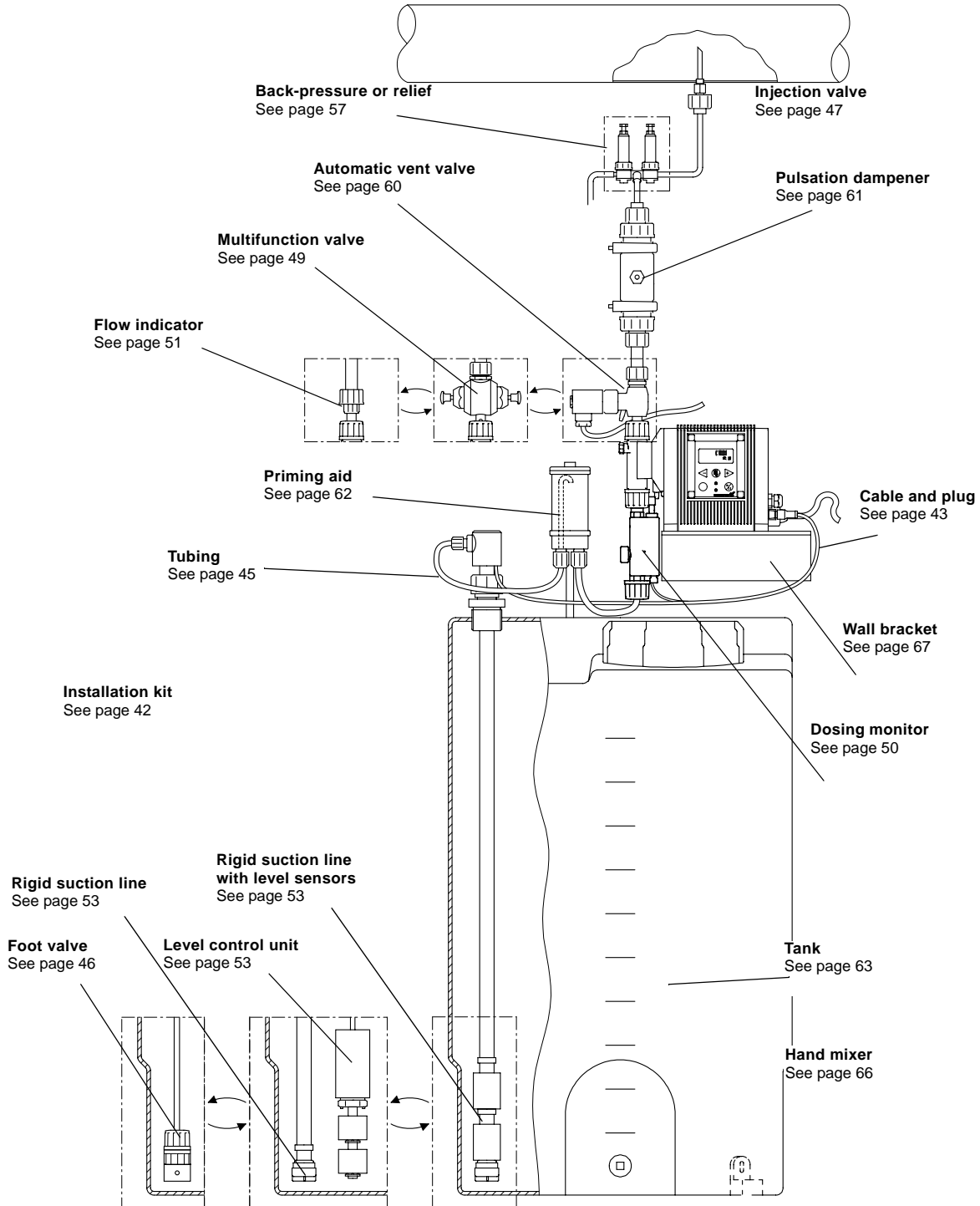
★<sup>7</sup> Saturated solution 0.1%.



## Accessories

Grundfos offers a comprehensive range of accessories covering every need when dosing with Grundfos dosing pumps.

### Overview



TM02 2089 3301

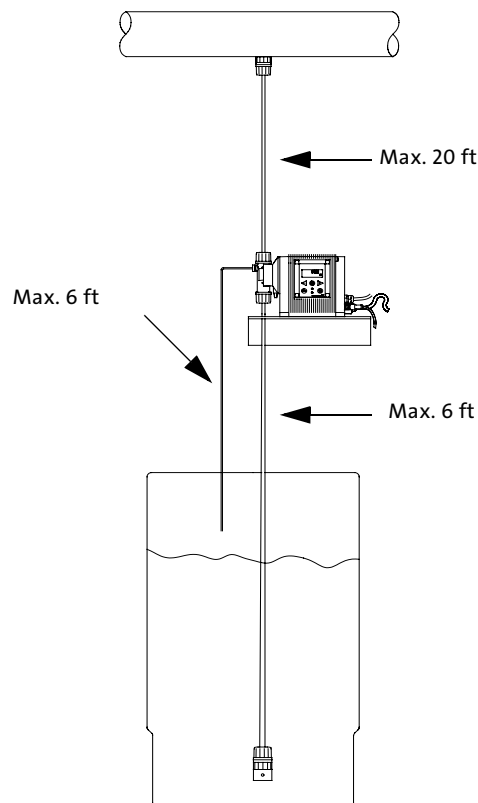
### Installation kit

The installation kit includes:

- foot non-return valve with strainer and weight
- injection non-return valve, spring-loaded
- 20 ft PE discharge tubing
- 6 ft m PVC suction tubing
- 6 ft m PVC vent tubing.



TM01 8956 0900



TM02 21083401

Pump type	Materials			Tubing Connections		Product Number
	Housing	Ball	Gasket	Suction	Vent	
DME 2 to 48 DMS	PP	EPDM	Ceramic	1/4"	1/4"	96480670
				3/8"	1/4"	96479881
				1/2"	1/4"	96479947
		1/4"		1/4"	96480674	
		3/8"		1/4"	96479898	
		1/2"		1/4"	96479948	
	PVDF	FKM	Ceramic	1/4"	1/4"	96480675
				3/8"	1/4"	96479899
				1/2"	1/4"	96479949
				1/2"	1/4"	96479949

### Inner/Outer tubing diameter sizes

Tube size	ID	OD
1/4"	0.17"	1/4"
3/8"	1/4"	3/8"
1/2"	3/8"	1/2"

### Cable and plug

Cable and plug for connection of pump to external control devices, such as process controllers, flow meters, start/stop contacts, and level sensors.

Grundfos level control units are factory-fitted with cable and plug connection for Grundfos dosing pumps.

The cables and plugs fit all dosing pumps, types DME and DMS-A.

Cable material: PUR (0.34 mm<sup>2</sup>)

Plug type: M12.



TM01 8955 0900

Signal	Number of poles	Type	Cable length [ft]	Product number
Pulse, 0/4-20 mA, start/stop	5	Control cable with plug	6.5	96440447
			16	96440448
		Plug terminal without cable	-	96440449
Dual-level or stop signal	4	Control cable with plug	6.5	96440450
		Control cable with plug	16	96449451
		Plug terminal without cable	-	96440452
		Extension cable	6.5	96483235
Stop dosing input and output*	5	Control cable with plug	6.5	96527109
		Control cable with plug	16	96527111
Alarm Relay Cable*	3	Relay cable with plug	6.5	96534214
		Relay cable with plug	16	96534215

\* Only DME 60 to 940

**Note** - DME 2 to 48 and DMS AR versions have alarm relay cable hard-wired to pump.

### Diaphragm leakage sensor (DME 60 to 940)

Optoelectronic leakage sensor to be inserted in the drain hole behind the diaphragm for sensing diaphragm breakage or leakage.

The sensor unit consists of:

- Transmitter receiver
- Holder for fitting sensor in the backplate
- M12 plug and wire to transmit signal to pump.

When the liquid gets into contact with the sensor, the light refraction changes, causing the sensor to emit a signal.

The signal emitted from the sensor triggers the pump to stop dosing and give pump output alarm.



GR 8211p

Pump type	Size	Type	Cable length [m]	Product number
DME 60-940 (l/h)	M12	Leakage sensor M12	0.5 m	96534443

### Tubing

Tubing in various materials, sizes and lengths.



TM01 8958 0900

Inner/outer diameter (in)	Material	Maximum pressure (psi)	Length (ft)	Product Number
0.17 x 1/4	PVC	85	20	91127749
	PVC	73	100	91127750
1/4 x 3/8	PE	192	20	91127825
			100	91127751
	ETFE	290	100	91127753
3/8 x 1/2	PE	123	20	91127826
			100	91127752

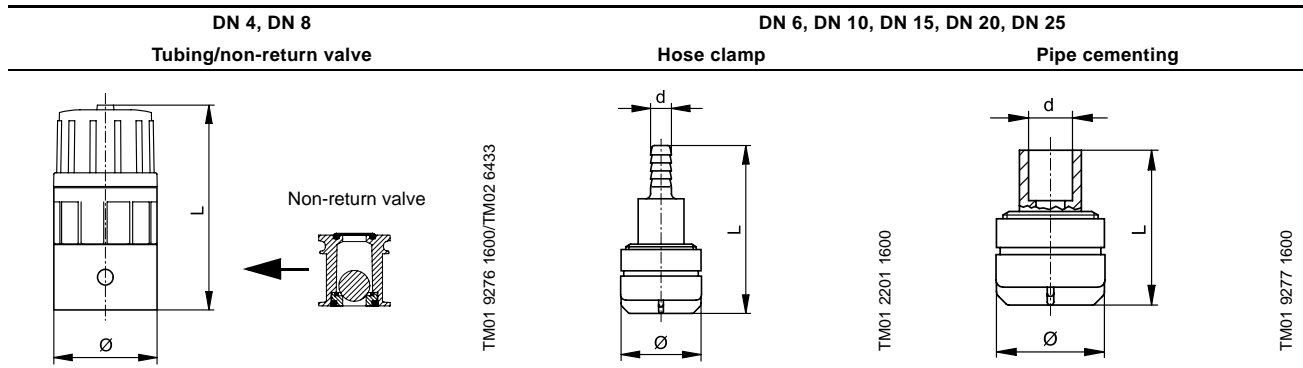
### Foot valve

Foot valve complete with non-return valve, strainer and tube or pipe connection.



TM01 9285 1600/GR8109

### Dimensions



Max flow rate GPH (l/h)	Size	Materials			Connection		Dimensions		Product Number
		Housing	Gasket	Ball	Type	ID/OD or NPT	ø (in)	L (in)	
4 (15)	DN 4	PP	EPDM	Ceramic	Tubing	0.17" x 1/4"	1.4	2.8	96480503
						1/4" x 3/8"			96479782
						0.17" x 1/4"			96480589
		PVDF	FKM	Ceramic	Tubing	1/4" x 3/8"			96479784
						0.17" x 1/4"			96480589
						1/4" x 3/8"			96479784
12.7 (48)	DN 6	SS	CSM	SS	NPT	1/4"	1.3	1.5	96479794
19 (72)	DN 8	PP	EPDM	Ceramic	Tubing	1/4" x 3/8"	1.4	2.8	96480621
						3/8" x 1/2"			96479798
						1/4" x 3/8"			96480622
		PVDF	FKM	Ceramic	Tubing	3/8" x 1/2"			96480623
						1/4" x 3/8"			96480624
						1/4" x 3/8"			96479801
39.6 (150)	DN 10	SS	CSM	SS	NPT	1/2"	2	2.2	96480625
99.1 (375)	DN 15	SS	CSM	SS	NPT	1/2"	2.5	3.7	96480627
248.3 (940)	DN 25	SS	CSM	SS	NPT	1"	3.5	4.7	96480628
248.3 (940)	NPT 3/4"	PP	EPDM	Ceramic	NPT	3/4"	3/4"	96566136	
			FKM					96566138	
		PVDF	FKM	96566139					
			SS	FKM				SS	96537921
248.3 (940)	NPT 1 1/4"	PP	EPDM	Glass	NPT	1 1/4"	1 1/4"	96566145	
		PP	FKM					96566146	
		PVDF	FKM					96566147	
		SS	FKM					SS	96537970

### Injection valve

Injection valve complete with spring-loaded non-return valve, injection pipe and tube or pipe connection.  
Spring material: Hastelloy

Opening pressure:

DN 4, DN 8: 10 psi (0.7 bar)  
DN 6, DN 10,  
DN 15, DN 25: 16 psi (1.1 bar).

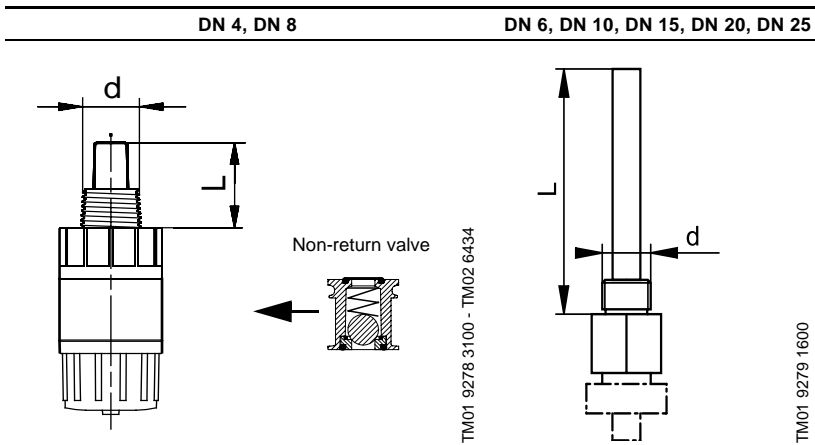
Maximum temperature:

PP, PVDF: 122 F (50 °C)  
PVC: 104 F (40 °C)  
Stainless steel: 176 F (80 °C).



GR8107 - GR7098

### Dimensions



Max flow rate GPH. (l/h)	Size	Materials			Connection		Dimensions		Product Number
		Housing	Gasket	Ball	Type	ID/OD or NPT	d (in)	L (in)	
3.2 (12)	DN 4	PP	EPDM	Ceramic	Tubing	0.17" x 1/4"	1/2" NPT	1.3	96480641
						1/4" x 3/8"			96479805
			FKM	Ceramic	Tubing	0.17" x 1/4"			96480642
		1/4" x 3/8"				96479806			
		0.17" x 1/4"				96480643			
		19 (72)	DN 6 DN 6	SS	AF	SS			NPT
1/2"	96480629								
19 (72)	DN 8	PP	EPDM	Ceramic	Tubing	1/4" x 3/8"	1/2" NPT	1.3	96480644
						3/8" x 1/2"			96480645
			FKM	Ceramic	Tubing	1/4" x 3/8"			96480646
		3/8" x 1/2"				96479808			
		1/4" x 3/8"				96480647			
		39.6 (150)	DN 10	PVC	FKM	Glass			Tubing
SS	CSM			SS	NPT	3/8"	1" NPT	3.9	96480640
248.3 (940)	NPT 3/4"	PP	EPDM	Ceramic	NPT	3/4"	3/4" NPT		96566142
			FKM						96566143
		PVDF	FKM	SS	96566144				
					96537923				
248.3 (940)	NPT 1 1/4"	PP	EPDM	Glass	NPT	1 1/4"	1 1/4" NPT		96566148
			FKM						96566149
		PVDF	FKM	SS					96566152
									96537971

### Hot injection valve

The hot injection valve kit is a complete assembly with shut-off valve, pipe, and tubing connection fitting for chemical injection into steam and hot water applications.

It allows for direct dosing into systems with a maximum liquid temperature of 302 F (150 °C) at the point of injection.

The hot injection valve kit is delivered non-assembled to facilitate adaptation to the actual application.



GR 7506

#### Materials:

Shut-off ball valve	316 SS
Pipe	316 SS
Pipe connection	316 SS
Tubing connection	PVDF
Max. injection point temperature	302 F (150 °C)

#### Dimensions:

Shut-off ball valve	1/2"
Pipe	8/10 mm
Pipe connection	1/2"
Tubing connection	3/8" ID 1/2" OD.

Max. flow rate GPH [l/h]	Size	Material			Connection		Product number
		Connection	Gasket	Ball	Type	Tubing diameter	
5.3 (20)	DN 4	PVDF	FKM	Ceramic	Tubing	3/8" / 1/2"	96567703



### Multifunction valve

Compact valve unit for direct mounting on the pump discharge connection. The valve has four functions:

1. Constant counter-pressure
2. Anti-siphoning
3. Pump protection
4. Manual pressure relief.

Relief pressure: 160 psi (11 bar)

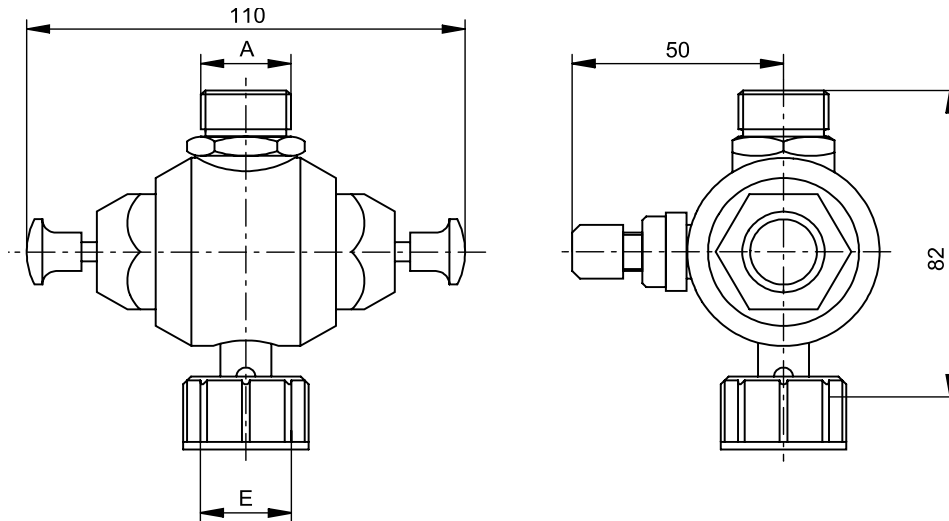
Constant counter pressure: 22 psi (1.5 bar)

Maximum volume: 13 GPH (50 l/h).



TM01 9583 2100 - TM01 8961 0900

### Dimensions (mm)



TM01 2220 1498

Pump type	Materials			Dimensions		Product Number
	Housing	Gasket	Diaphragm	A	E	
SS DME, DMS*	PVDF	FKM	PTFE	M28 x 2	M28 x 2	96497411
		EPDM	PTFE	M30 x 3.5	M30 x 3.5	96440584
DME 2 to 48 DMS	PP	FKM	PTFE	M30 x 3.5	M30 x 3.5	96440585
		PVDF	FKM	PTFE	M30 x 3.5	M30 x 3.5
	PVC	EPDM	PTFE	M30 x 3.5	M30 x 3.5	96496470
		FKM	PTFE	M30 x 3.5	M30 x 3.5	96446752

\* M28 x 2 fits stainless steel pump heads

### Dosing monitor

The dosing monitor is used in connection with the dosing monitoring function of DME 2 to 48, and DMS-A, AR pumps.

The monitor sends a pulse signal (closed contact) for every measured dosing stroke.

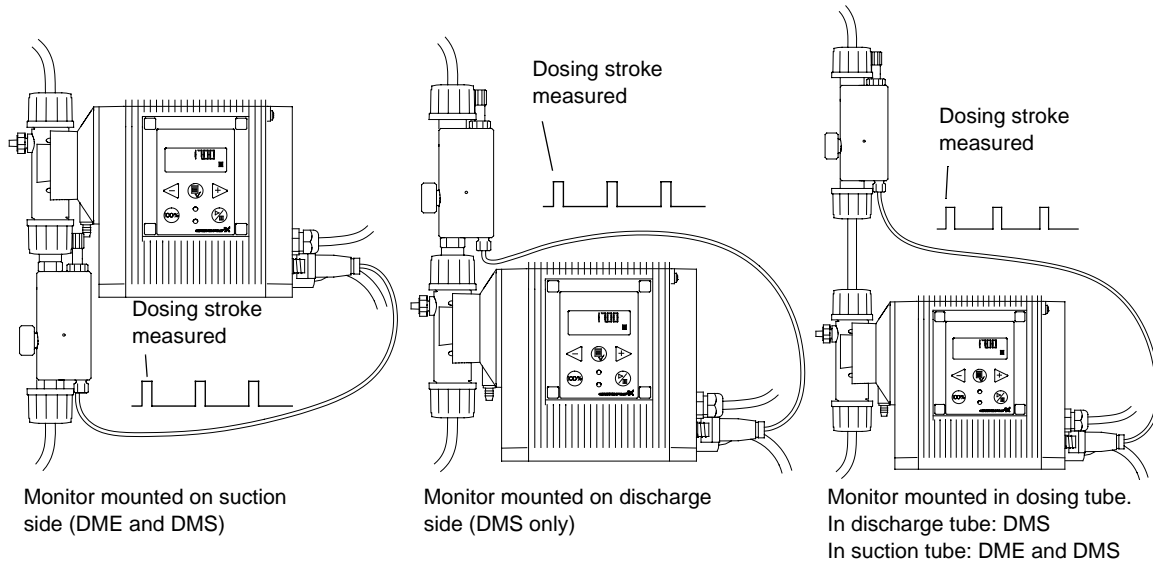
As the DME pump will often operate without pulsation on the discharge side, the monitor must always be installed on the suction side.

The monitor for a DMS pump can be installed on both suction and discharge side.

- Maximum pressure: 145 psi (10 bar)
- Maximum volume: 13 GPH (50 l/h)
- Maximum liquid temperature: 95 F (35 °C)
- Maximum liquid viscosity: 20 cps
- Maximum load of pulse transmitter (reed contact): 48 VAC/VDC, 0.5 A
- Materials in contact with liquid: PMMA/PVC/FKM.



TM02 2472 4401



TM02 2029 3201 - TM02 2030 3201 - TM02 2031 3201

### Selection table

Mounting	Pump head	Gasket	Material	Connection kit	Product number
Inline	PP, PVDF	FKM	PVDF	Includes 1/4", 3/8" and 1/2" tubing connections	96470726
		FKM	PP		96470725
		EPDM	PVDF		96493010
Pump discharge*	PP, PVDF	FKM		Not needed	96470723
		EPDM		Pump connection is used on inlet of monitor	96492899
Pump inlet	PP, PVDF	FKM		Not needed	96470724
		EPDM		Pump connection is used on inlet of monitor	96493011

\*Not suitable for DME pumps  
Not suitable for SS pump heads

## Flow indicator

The flow indicator is used for discharge monitoring.

When the dosing pump is discharging liquid, the white ball will jump in the transparent pipe. Each dosing stroke causes a ball jump. The design of the flow indicator allows ball movements to be seen at flow rates from 0.026 to 11.9 GPH.

At a steady flow, the ball will always be in the top position.

The flow indicator installs and retrofits easily.

Material: PVC grey, PVC transparent, PVDF, FKM, ceramic  $Al_2O_3$ .

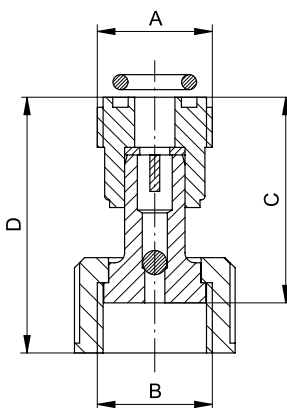
Maximum pressure: 145 psi (10 bar)

Maximum pulsed flow: 11.9 GPH (45 l/h).



TM01 9791 3100

## Dimensions



TM01 9800 3200

Pump type	Dimensions				Product number
	A	B	C [mm]	D [mm]	
DME 2 to 48 DMS	M30 x 3.5	M30 x 3.5	44	55	96446763

### Adaptor

The adaptors are used for the connection of DME and DMS pumps to suction and discharge tubing sizes other than Grundfos standard sizes.

The product number comprises two sets.



TM02 2470 4401

### Tubing connections (without union nut)

Pump type	Size		Material	Product Number
	ID	OD		
DME 2 to 48 DMS	0.17"	1/4"	PP	91128441
			PVDF	91128442
	1/4"	3/8"	PP	91128437
			PVDF	91128438
	3/8"	1/2"	PP	91128439
			PVDF	91128440

### Male threaded connection (with union nut)

Pump type	Connection		Material	Product Number
	Union nut	Male NPT		
PP or PVDF DME 2 to 48, DMS	M30 x 3.5	1/2"	PP	96560564
			PVDF	96560570

### Female threaded connection (with union nut)

Pump type	Size	Material	Product Number
	ID		
DME 60, DME 150	3/4" NPT	PVC	96537892
		SS	96537894
DME 375, DME 940	1 1/4" NPT	PVC	96537893
		SS	96537895

### Level control unit

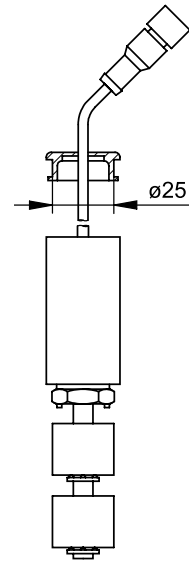
For dosing pumps with level control input (variant A), complete with level sensors (NO-contacts), ceramic weight, cable and plug for pump connection.

Material:	PVC
Level cable length:	8.2 ft
Level plug type:	M12, 4-pole
Maximum load of level contacts:	50 V, 0.5 A
Function of level contacts:	
Low level/empty tank =	closed contact
Product number:	96440539.



TM01 9567 2100

### Dimensions



TM01 9567 1600

### Rigid suction line

The pre-assembled rigid suction line features an adjustable length for use with a tank. It consists of foot valve with strainer, rigid suction pipe, tank connection thread, and suction tube.

For control variant A pumps, the suction line is available with level sensors (NO-contacts) for warning and empty-tank signals, supplied complete with cable and plug for pump connection.

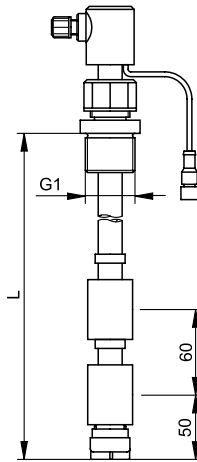
Material:	PVC
Material, wetted parts:	PVC, glass
Suction tubing length:	4.9 ft, PVC-tube
Level cable length:	4.9 ft
Level plug type:	M12, 4-pole
Maximum flow:	13 GPH (50 l/h)
Maximum load of level contacts:	50 V, 0.5 A
Function of level contacts:	
Low level/empty tank =	closed contact
PE screw cap:	15/16 in (33.5 mm)
Product Number:	96483418.



TM02 4551 1102/TM01 9288 1600

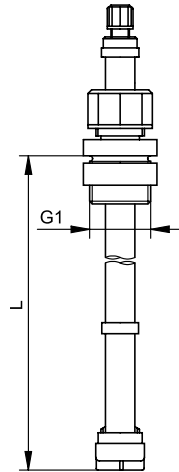
### Dimensions [mm]

With level sensors



TM01 2202 4701

Without level sensors



TM01 2377 1498

Maximum Length (in)	Grundfos tank size (l, US Gal)	Suction Tubing (in)		Product Number	
		ID	OD	with level sensors	without level sensors
21	60 (16)	0.17	1/4	96480729	96480710
		1/4	3/8	96479974	96480716
		3/8	1/2	96480737	96480723
29	100 (26)	0.17	1/4	96480730	96480711
		1/4	3/8	96480734	96480717
		3/8	1/2	96480738	96480724
31	200 (53)	0.17	1/4	96480731	96480712
		1/4	3/8	96479975	96480718
		3/8	1/2	96480739	96480725
35	300 (79)	0.17	1/4	96480732	96480713
		1/4	3/8	96480735	96480719
		3/8	1/2	96480000	96480726
44	500 (132)	0.17	1/4	96480727	96480707
		1/4	3/8	96479973	96480714
		3/8	1/2	96479999	96480720
49	1000 (264)	0.17	1/4	96480728	96480709
		1/4	3/8	96480733	96480715
		3/8	1/2	96480736	96480721

### Back-pressure or relief valve

Adjustable valve for installation in the discharge tube.

- Installed in-line, the valve functions as a counter-pressure valve optimising dosing accuracy into systems with fluctuating pressure or as anti-siphoning valve when dosing into pressureless systems.
- Installed in a T-connection with the valve outlet connected to the tank, the valve functions as a pressure relief valve or a safety valve, protecting the pump and the discharge tube against excessive pressures.

Pressure range: 0-145 psi (0-10 bar)

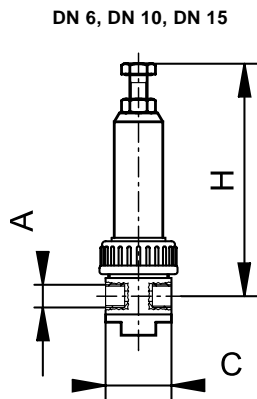
Diaphragm material: PTFE.



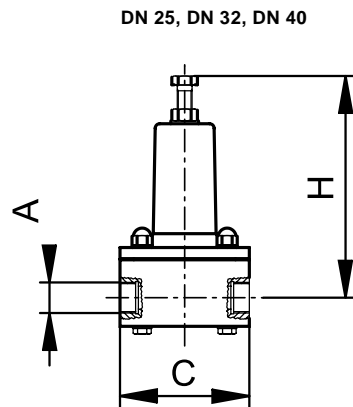
TM01 9289 1600



### Back-pressure or relief valve



TM01 9290 1600



TM01 9291 1600

Size	Maximum Flow GPH (l/h)	A	Dimensions		Housing material	Connections		Product Number		
			C (mm)	H (mm)		Type	Size (ID/OD)			
DN 6	6.6 (25)	1/4"	40	42	PVC	Tubing	0.17" / 1/4"	96487951		
							1/4" / 3/8"	96487906		
							3/8" / 1/2"	96487905		
					PVDF	NPT	1/4"	96487950		
							Tubing	0.17" / 1/4"	96487908	
								1/4" / 3/8"	96487972	
316 SS	NPT	3/8" / 1/2"	96487970							
		1/4"	96487907							
		1/4"	96487973							
DN 10	19.8 (75)	3/8"	55	147	PVC	Tubing	1/4" / 3/8"	96487899		
							3/8"	96487898		
							1/4" / 3/8"	96487941		
					PVDF	NPT	3/8"	96487940		
							316 SS	3/8"	96487942	
								3/8"	96487943	
DN 15	55.5 (210)	1/2"	75	152	PVC	NPT	3/8"	96487944		
							PVDF	NPT	3/8"	96487945
									316 SS	NPT
DN 25	103 (390)	1"	140	240	PP	NPT	1/2"	96487897		
							1"	96487946		
							316 SS	NPT	1"	96487947
DN 32	169 (640)	1 1/4"	140	242	PP	NPT	1 1/4"	96487948		
DN 40	260 (940)	1 1/2"	152	252	PP	NPT	1 1/2"	96487949		

### Valve assembly

Complete assembly of:

- counter-pressure and relief valve

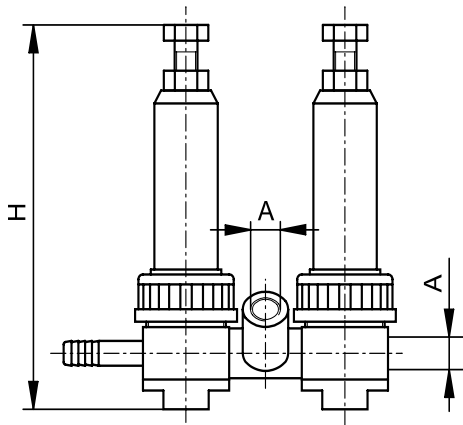
Valve diaphragm material: PTFE

Pressure range of counter-pressure and relief valve:  
0 to 145 psi (0 to 10 bar).




TM01 9590

### Back-pressure and relief valve



TM01 9293 1600

Valve functions Back-pressure and relief valve	Size	Maximum Flow GPH (l/h)	Dimensions		Housing material	Connections		Product Number	
			A	H (mm)		Type	Size (ID/OD)		
	DN 6	6.6 (25)	1/4"	155	PVC	Tubing	0.17" / 1/4"	96524665	
							1/4" / 3/8"	96524666	
							3/8" / 1/2"	96524667	
						316 SS	NPT	1/4"	96524668
							NPT	1/4"	96524669
							Tubing	1/4" / 3/8"	96524670
	DN 10	19.8 (75)	3/8"	174	PVC	NPT	3/8"	96524671	
							3/8"	96524672	
						PVC	NPT	1/2"	96524673
	DN 15	55.5 (210)	1/2"	180	316 SS	NPT	1/2"	96524674	

## Vent valve

Manual vent valve for direct fitting into the DME 2 to 48 and DMS pumps.



GR 8210

Pump type	Valve materials			Vent connection	Product number
	Housing	Gasket	Ball		
DME 2 to 48 DMS	PP	EPDM		1/4"	96534792
	PP	FKM	Ceramic		96534794
	PV	FKM			96534796

### Automatic vent valve

Automatic vent valve for direct fitting on the pump discharge connection.

Valve housing material: PMMA/PVC  
 O-ring material: FKM  
 Valve ball material: Glass  
 Valve seat material: PVDF  
 Pump head material: PP/PVDF  
 Power cable length: 5 ft  
 Opening pressure: 145 psi (10 bar)  
 Maximum flow: 11.9 GPH (45 l/h)  
 Supply voltage: 1 x 120V, 50-60 Hz  
 Plug type: US.



TM01 9591 2100/TM01 9592 2100

The valve is available with and without timer.

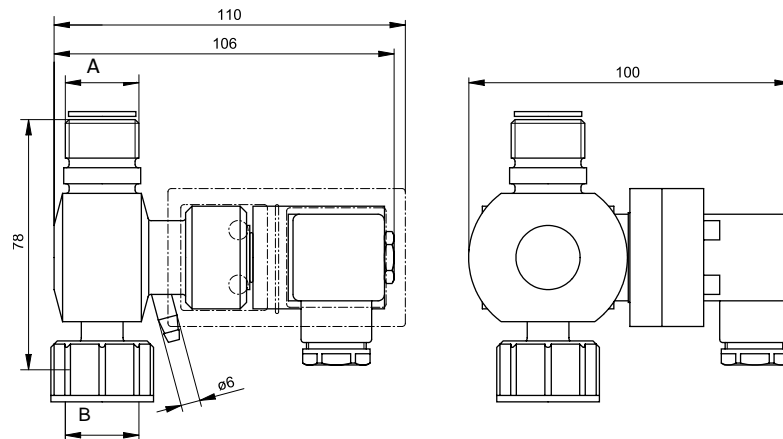
#### With timer:

The valve is continuously connected to the power supply. The opening time and opening intervals are set on the timer.

#### Without timer:

The valve will open when power is supplied to the valve. This version is ideal for operation in connection with a dosing monitor.

### Automatic vent valve with timer (mm)



TM01 2218 1498

Pump type	Dimensions A + B	Voltage	Plug	Product number	
				With timer	Without timer
DME 2 to 48 DMS	M30 x 3.5	1 x 120 V, 50-60 Hz	US	96441084	96471086

### Pulsation dampener

The pulsation dampener can be installed both in the suction or discharge line for reducing pressure surges, thereby ensuring a steady flow. The dampener is particularly suitable for long discharge lines and/or lines with a small diameter.

Installed in the discharge line, the dampener can be used to optimize dosing accuracy and to protect the pump and discharge line against pressure surges. Depending on the system pressure, it may be necessary to install a back-pressure valve after the dampener to optimize its function.

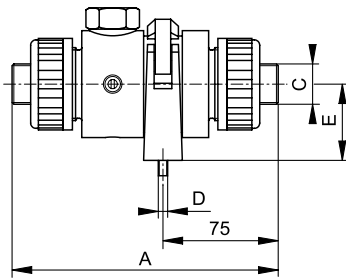
Maximum pressure: 145 psi (10 bar).



TM01 9593 2100

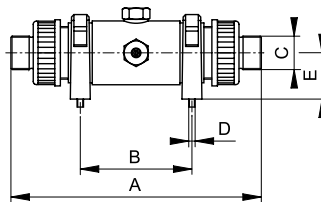
### Pulsation dampener

Size 80



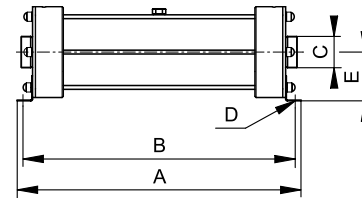
TM01 2206 1498

Size 250



TM01 2207 1498

Sizes 750



TM01 2208 1498

Size	Maximum flow rate [l/h]	Materials		Connections		Dimensions [mm]					Product number
		Housing	Diaphragm	Type	Inner/outer tubing or pipe diameters/ thread	A	B	C	D	E	
80	15.9 (60)	PP	CSM	Tubing	1/4" / 3/8"	172	G 3/4"	M6	50	96479971	
		PVC	CSM							96480706	
		PVC	FKM							96479972	
250	39.6 (150)	PP	CSM	NPT	1/2"	314	140	G 1 1/4"	M8	96480694	
			FKM							96480693	
		PVC	CSM							96480696	
			FKM							96480695	
750	99 (375)	PP	CSM	NPT	1/2"	363	347	G 1 1/4"	Ø9	96480700	
			FKM							96480698	
		PVC	CSM							96480704	
			FKM							96480703	

### Priming aid

The priming aid is a transparent, air-tight collector with a screw cap on top. It is mounted between the tank and the pump. The inlet from the tank and the outlet to the pump are both at the bottom of the collector.

The priming aid is supplied with a bracket for wall mounting and a rod for mounting on top of the tank.

The priming aid has the following functions:

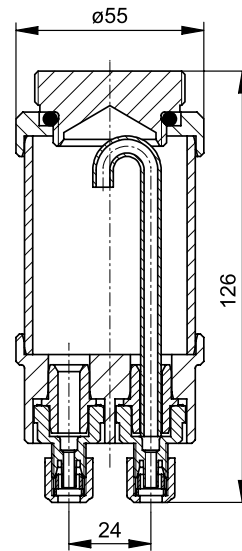
- Priming.**  
 The priming aid facilitates priming in case of frequent stops and/or high suction lifts by eliminating or reducing the dry-suction phase.
- Gas trap.**  
 Gas occurring in the suction tube is trapped in the top of the priming aid to prevent it from entering the dosing head.
- Pulsation dampening.**  
 The dampening gas cushion in the top of the priming aid reduces pressure surges, resulting in optimum dosing accuracy and reduced risk of cavitation.

Material: PVC.



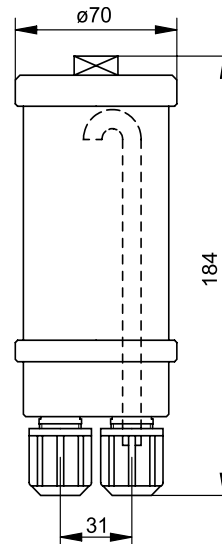
TM01 9597 2100

Size 95



TM01 2214 1498

Size 250



TM01 2216 1498

Priming capacity size [ml]	Type	Connection		Product Number
		ID	OD	
95	Tubing	0.17"	1/4"	96480692
		1/4"	3/8"	96479970
250		1/4"	3/8"	96480690

### Tank

Closed cylindrical tank with screw cap and threaded connection for rigid suction line.

Material: PE

Liquid temperature: Minimum: -4 F (-20 °C)  
Maximum: 113 F (45 °C).

Pump mounting plate:

The DME 2 to 48 and DMS pumps can be mounted direct on the tank top by means of adapter plates.

Material: PP.

DME 2 to DME 12 and DMS: 96446765

DME 19 and DME 48: 96446766.

Floor mounting bracket:

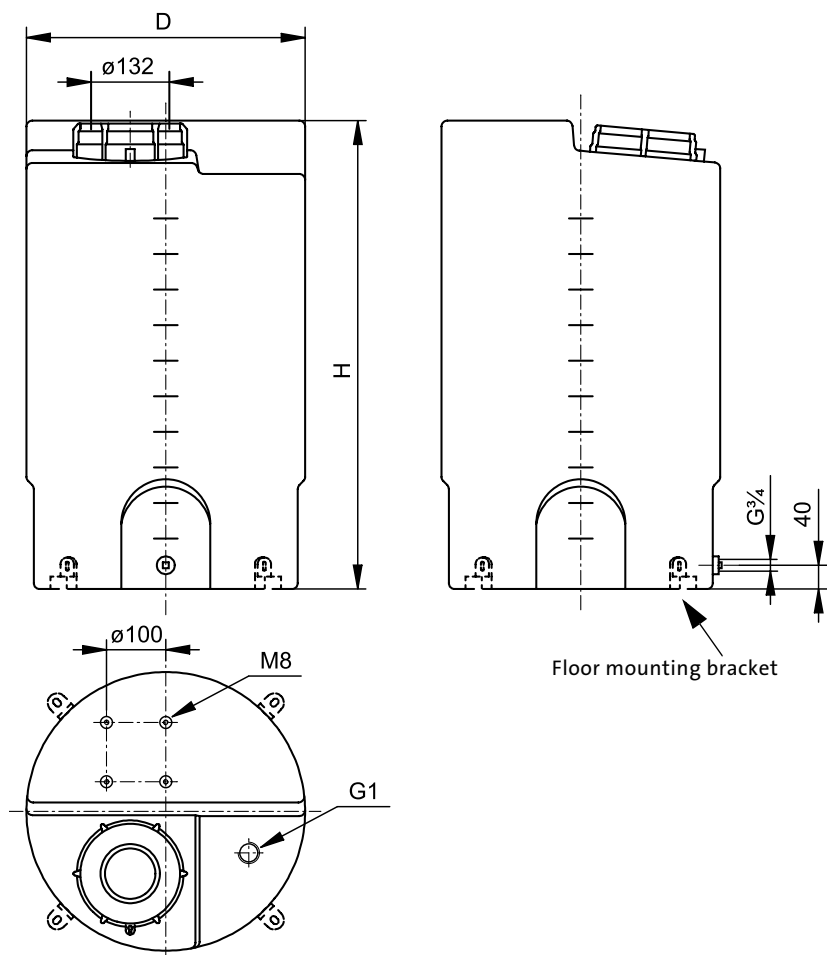
Material: PE

Set of four: 96446767.



TM01 9598 2100

## Dimensions



TM01 2219 1498

Tank size		Dimensions [mm]		Weight		Product number
Litres	Gallons	D	H	kg	lbs	
60	16	415	575	4.5	10	96417362
100	26	470	790	7.0	16	96417363
200	53	600	845	13.0	29	96417364
300★	79★	675	950	15.0	34	96441296
500★	132★	815	1080	17.0	60	96417365
1000★	264★	1080	1358	39.0	86	96417366

★ Without pump mounting holes.



## 100-liter tank

Closed square tank with screw cap and mounting platform for single or parallel pump mounting.

The pump mounting platform is raised above the screw cap to protect pumps and connections when filling chemical into the tank.

The height difference also allows for direct mounting of the dosing monitor on the suction side.

- Material: MDPE
- Weight: 15 kg
- Max. material temperature: 122 F (50 °C)
- Liquid temperature: Minimum -4 F (-20 °C)  
Maximum 113 F (45 °C).



GR7309

## Mounting platform

DME and DMS pumps can be fitted direct on the platform by means of brass inserts moulded into the platform.

## Mounting combination

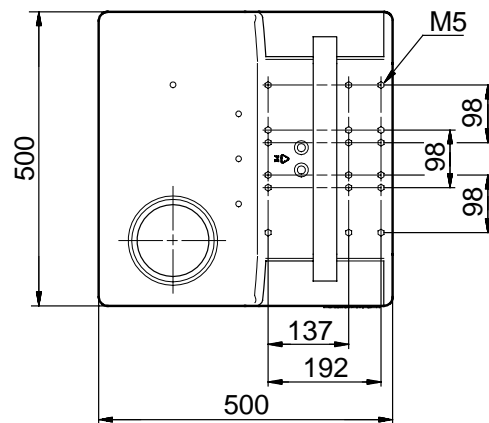
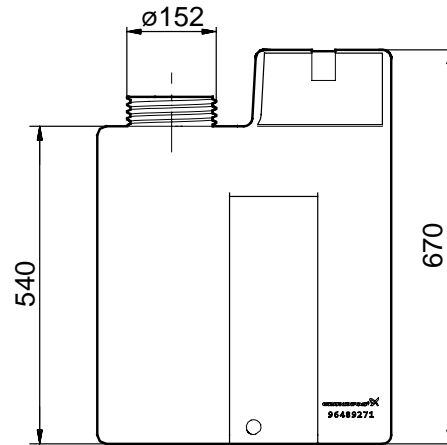
Single or parallel mounting of DME 2 to 48 and DMS.

The tank includes a raised 3/4" RG boss for a drain.

Material thickness: 4 mm.

Tank size	Product number
26 g (100 l)	96489271

## Dimensions [mm]



TM02 6616 1103

### Hand mixer

Hand mixer with adjustable length for mixing of chemicals in a tank. The mixer is designed for Grundfos chemical tanks.

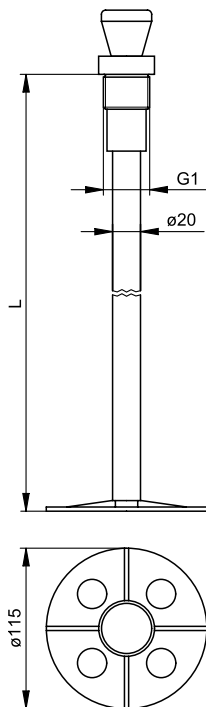
Material: PVC.



TM01 9599 2100

Tank size [l]	Maximum length, L [mm]	Product number
60	450	96417377
100	600	96417378
200	750	96417379
300	850	96446784
500	950	96417380
1000	1200	96417381

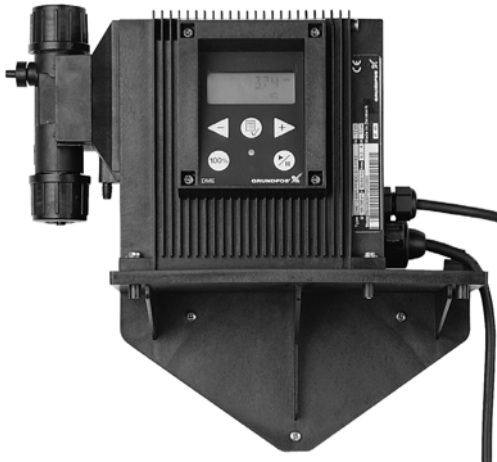
### Dimensions



TM01 2222 1498

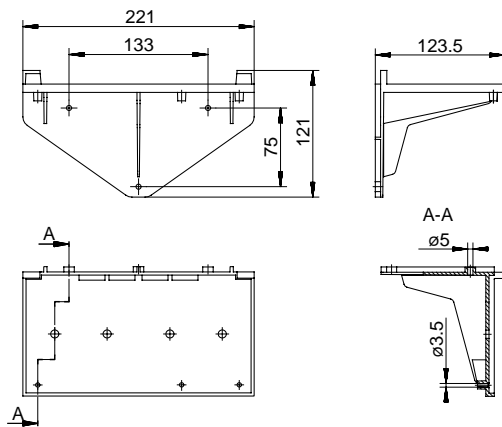
### Wall bracket

Wall bracket for easy installation of the dosing pump on a wall.



TM02 4360 0602

### Dimensions



TM02 4306 0402

Pump type	Material	Product number
DME 2 to 48 DMS	PP	96441202

---

L-DD-PG-001 Rev.07/09

US

Rep. 02/05

---

© 2005 - 08, 2009 Grundfos Pumps Corp.

Subject to alterations.

GRUNDFOS Pumps Corporation  
17100 West 118th Terrace  
Olathe, Kansas 66061  
Phone: +1-913-227-3400  
Telefax: +1-913-227-3500

[www.grundfos.com](http://www.grundfos.com)

GRUNDFOS Canada Inc.  
2941 Brighton Road  
Oakville, Ontario L6H 6C9 Canada  
Phone: +1-905 829 9533  
Telefax: +1-905 829 9512

Bombas GRUNDFOS de México S.A. de C.V.  
Boulevard TLC No. 15  
Parque Industrial Stiva Aeropuerto  
Apodaca, N.L. Mexico 66600  
Phone: +52-81-8144 4000  
Telefax: +52-81-8144 4010

GRUNDFOS® 