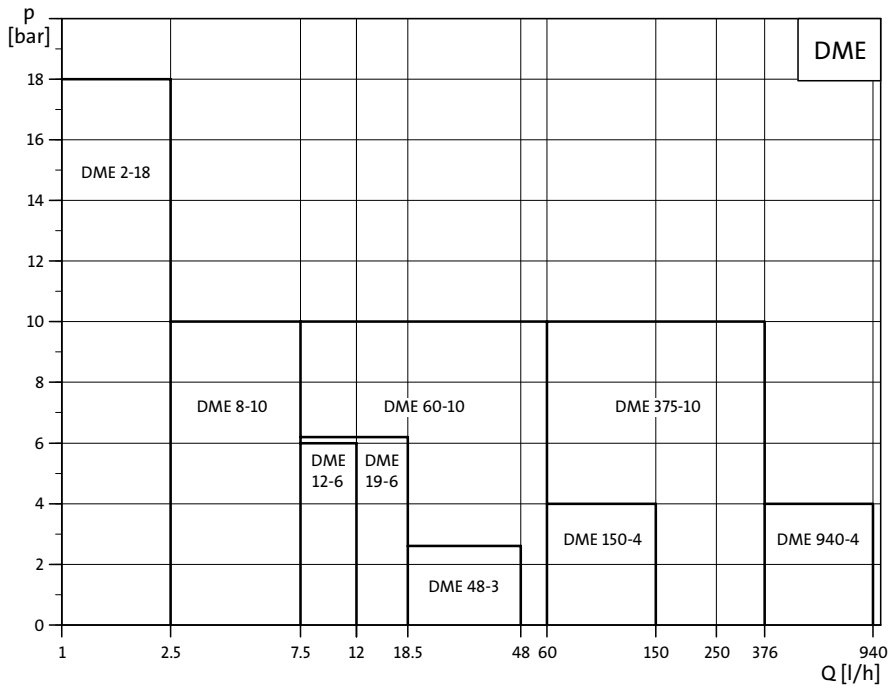
Contents

Performance range, DME



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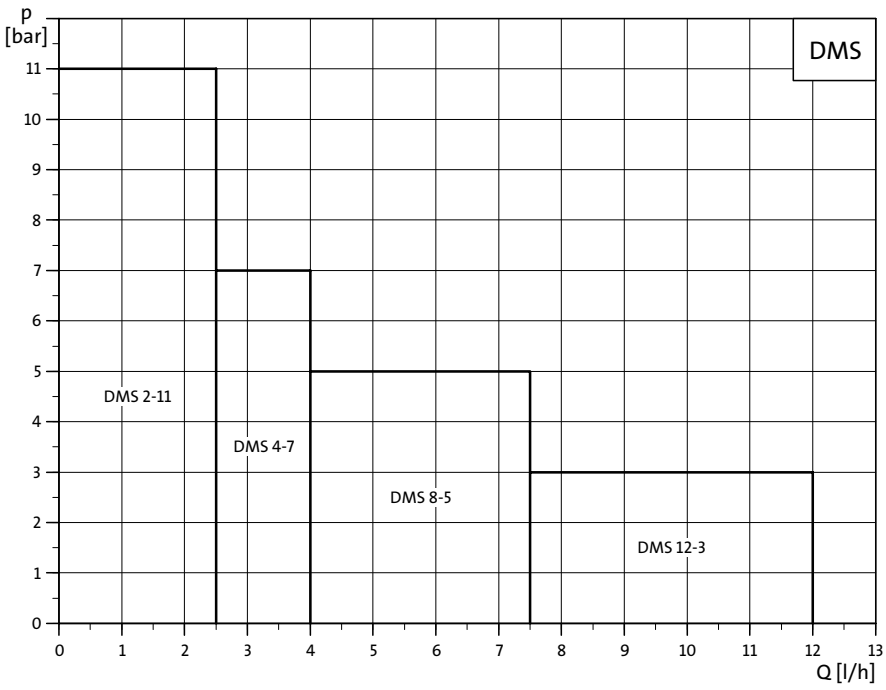
Performance range, DMS



TM027810

DME and DMS

GR7777r

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. In the display, the setting of the pump is read out directly in ml/h or l/h, pulse or batch, and the operation mode is easily identified by means of icons.

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 ajustment 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 to 940 litres per hour up to 18 bar. The switch mode power supply ensures that the same pump is working precisely, irrespective of the mains 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 to 12 l/h. 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 fitted with power cable and plug.
See page 5 and onwards for further information.

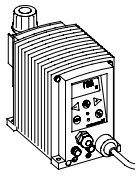
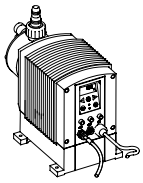
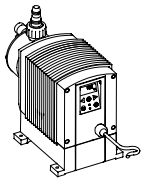
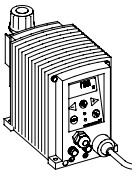
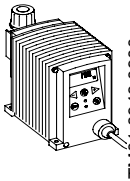
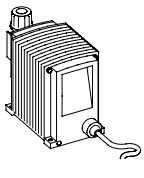
Type key

Example	DME	2	-	18	A	-	PP	/	E	/	C	-	F	-	1	1	1G	F
Type range																		
Maximum capacity [l/h]																		
Maximum pressure [bar]																		
Code for control variant																		
Code for dosing head material																		
Code for gasket material																		
Code for valve ball material																		
Code for control panel position																		
Code for supply voltage																		
Code for valves																		
Code for connection suction/discharge																		
Code for mains plug																		

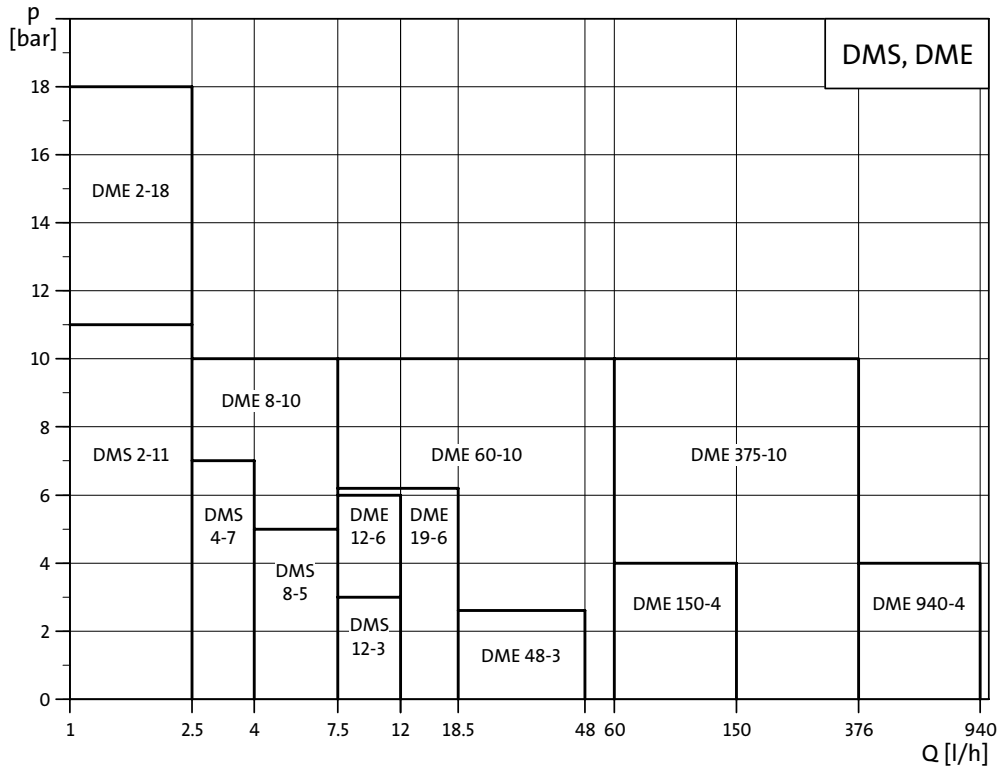
Codes

Example	A	-	PP	/	E	/	C	-	F	-	1	1	1	F
Control variant														
A														
AR A + alarm relay														
AP A + Profibus														
AG A + GENIbus														
B Basic														
D Only on/off														
Dosing head material														
PP Polypropylene														
PV PVDF														
SS Stainless steel														
Gasket material														
E EPDM														
T PTFE														
V FKM														
Valve ball material														
C Ceramic														
SS Stainless steel 1.4401														
G Glass														
T PTFE														
Y Hastelloy C-22														
Control panel position														
F Front-fitted														
S Side-fitted														
X No control panel														
Supply voltage														
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														
Valves														
1 Standard valve														
2 Spring-loaded valve														
Connection suction/discharge														
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"														
Mains plug														
F EU (Schuko)														
B USA, Canada (120 V)														
G UK														
I Australia														
E Switzerland														
J Japan														

Overview of functions

	DME			DMS		
	0-48 l/h	60-940 l/h AR	60-940 l/h 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
Capacity control, see page 7						
Internal stroke frequency control	●	●	●	●	●	
Internal stroke speed control	●	●	●			
Control panel, see page 9						
Capacity setting in litres, millilitres 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	●	●	●	●		
Operating modes, see page 12						
Manual control	●	●	●	●	●	
Pulse control	●	●		●		
Analog 0/4-20 mA control	●	●		●		
Timer-based batch control	●	●				
Pulse-based batch control	●	●				
Functions, see page 15						
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	●	●				
Overload protection		●	●			
Error message in display		●	●			
Leakage sensor		●				
Dosing signal output		●				
Power supply, page 15						
Switch-mode power supply	●	●	●			
Inputs/outputs, see page 18						
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	●	●		●		

Performance range



The maximum capacity is available at any counter-pressure if the pump has been calibrated to the actual installation.

TM02 7812 4103

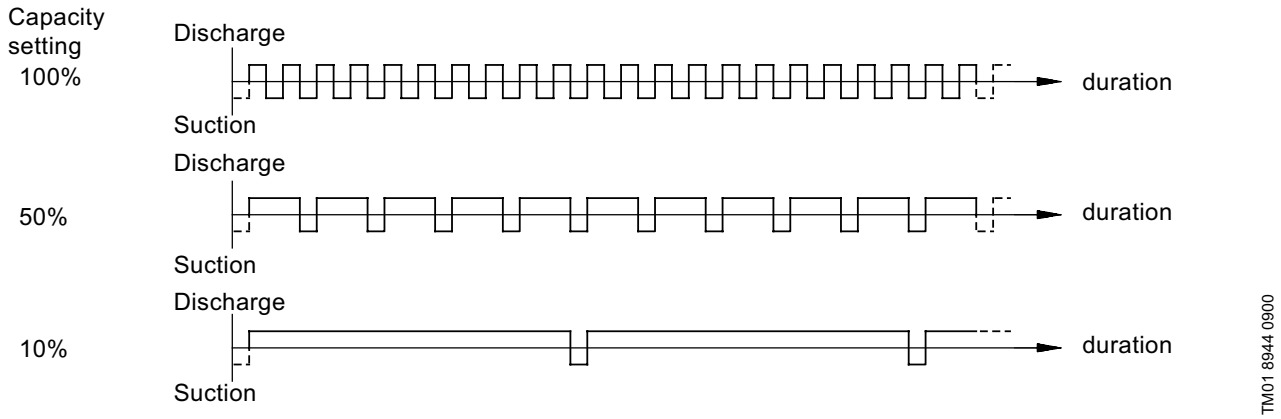
Functional description, DME

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 (0-48 l/h) for each pump size.
- A capacity range of 1:800 (60-940 l/h) 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.

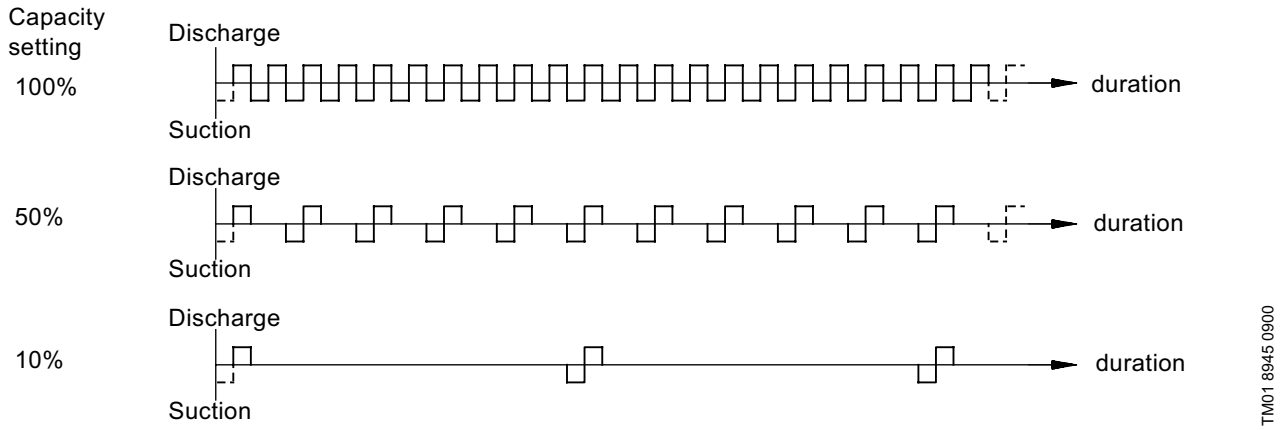
The optimum dosing control shown below takes place in any operating mode.



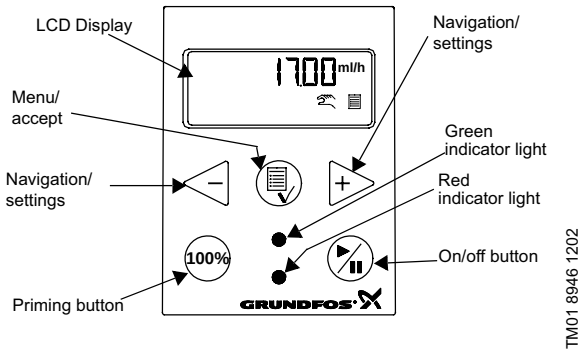
Functional description, DMS

The electronically controlled synchronous motor of the DMS pumps offers almost the same advantages as those of 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.



Control panel



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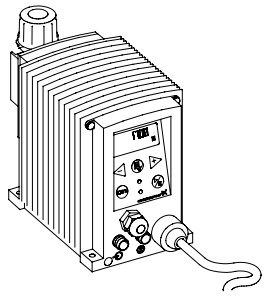

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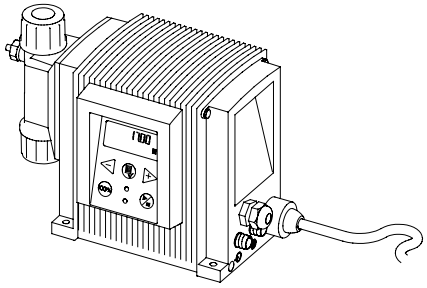
Control panel fitted to the front.



TM01 8949 0900

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

Priming button

The pump control panel incorporates a 100% 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 100% 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 (0-48 l/h)

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★1
Pump running	On	Off	Normal indication	1 2 3 NC NO C
Set to stop	Flashing	Off	Normal indication	1 2 3 NC NO C
Pump fault	Off	On	EEPROM	1 2 3 NC NO C
Supply failure	Off	Off	Off	1 2 3 NC NO C
Pump running, low chemical level★1	On	On	Normal indication	1 2 3 NC NO C
Empty tank★2	Off	On	Normal indication	1 2 3 NC NO C
Analog signal < 2 mA	Off	On	Normal indication	1 2 3 NC NO C
The pump is not dosing enough according to the signal from the dosing monitor★3	On	On	Normal indication	1 2 3 NC NO C
More pulses than capacity	On	On	Normal indication	1 2 3 NC NO C
Overheated	Off	On	MAX TEMP	1 2 3 NC NO C

★1 Control variant AR, only.

★2 Requires connection to level sensors.

★3 Requires dosing monitor function activated and a dosing monitor device connected to the pump.

Indicator lights and alarm output (60-940 l/h)

Condition	Green LED	Red LED	Display	Alarm output★1
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	On	On	LOW	
Empty tank★2	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★3	On	Off	NO FLOW	
Overheating	Off	On	MAX TEMP	
Internal communication failure	Off	On	INT COM	
Internal Hall Failure★4	Off	On	HALL	
Diaphragm failure (leakage)★5	Off	On	LEAKAGE	
Max. pressure exceeded★5	Off★6	On	OVER-LOAD	
More pulses than capacity	On	On	MAX FLOW	
No detection of motor rotation★4	On	On	ORIGO	

★1 Control variant AR, only.

★2 Requires connection to level sensors.

★3 Requires activation of the dosing monitoring function and connection to a dosing monitor.

★4 Please contact a Grundfos service centre.

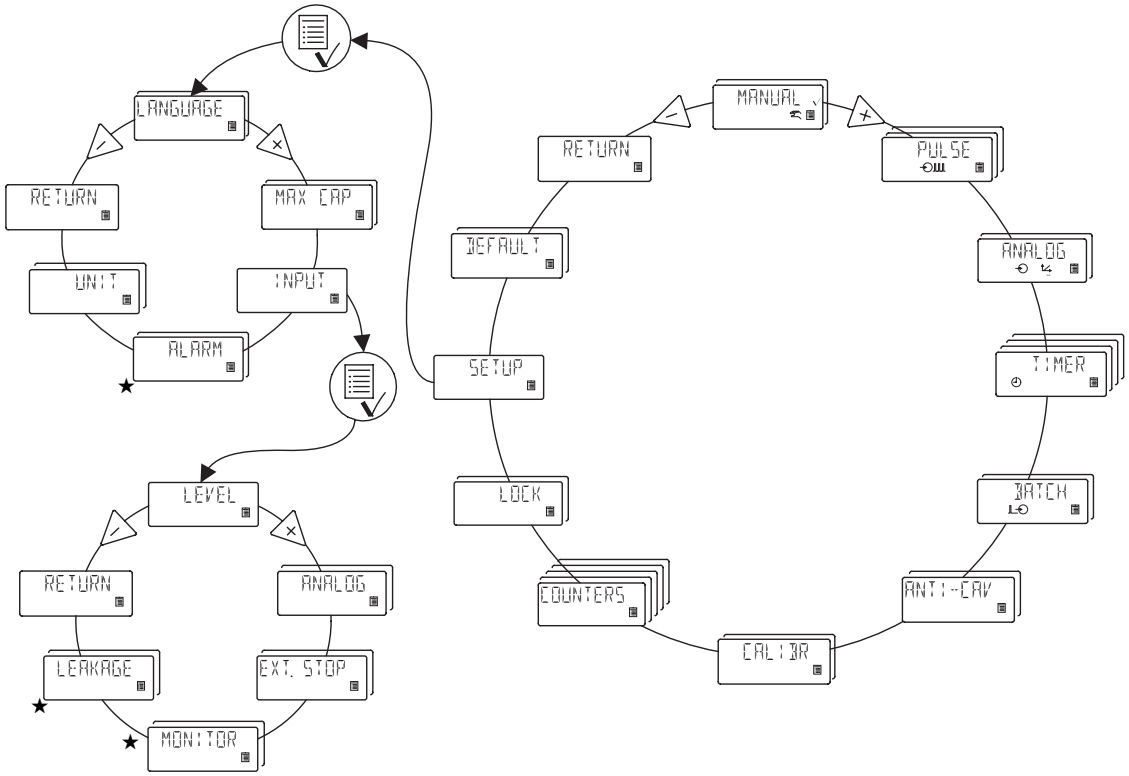
★5 Alarms can be reset after fault conditions are back to normal.

★6 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 chosen, see page 14.

The example shown below applies to DME pumps.



★ Applies only to DME, 60-940 l/h pumps.

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 2:	2.5 ml/h -	2.5 (1.8★) l/h
DME 8:	7.5 ml/h -	7.5 (5.6★) l/h
DME 12:	12 ml/h -	12 (9★) l/h
DME 19:	18,5 ml/h -	18.5 (14.5★) l/h
DME 48:	48 ml/h -	48 (37★) l/h
DME 60:	75 ml/h -	60 l/h
DME 150:	200 ml/h -	150 l/h
DME 375:	500 ml/h -	376 l/h
DME 940:	1200 ml/h -	940 l/h.

★The figures in brackets indicate the maximum capacity when the anti-cavitation function is activated.

Setting range, DMS:

DMS 2:	25 ml/h -	2.5 l/h
DMS 4:	40 ml/h -	4 l/h
DMS 8:	75 ml/h -	7.5 l/h
DMS 12:	120 ml/h -	12 l/h.

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

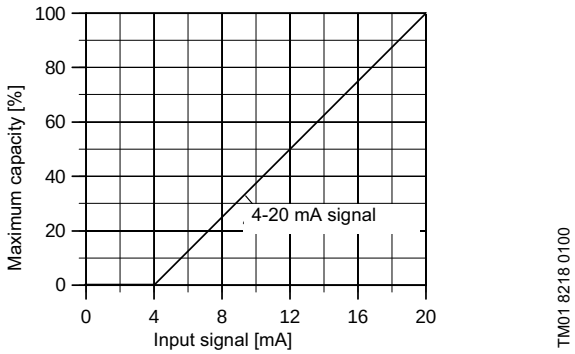
Analog 4-20 mA control

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 13, will influence the capacity. 100% (20 mA) corresponds to the maximum capacity or the set capacity limitation.



Timer-based batch control

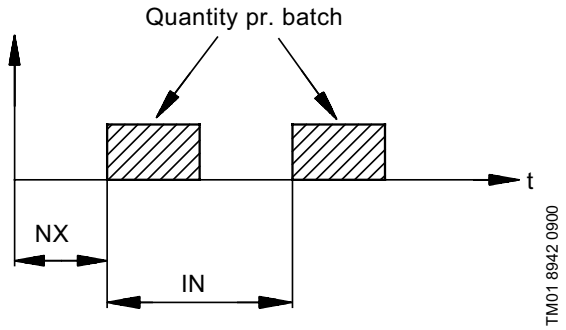
Applies to DME

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.



Setting range:

DME 2:	0.23 ml/batch -	5 l/batch
DME 8:	0.69 ml/batch -	15 l/batch
DME 12:	1.11 ml/batch -	24 l/batch
DME 19:	2.04 ml/batch -	37 l/batch
DME 48:	5.3 ml/batch -	96 l/batch
DME 60:	6.25 ml/batch -	120 l/batch
DME 150:	15.6 ml/batch -	300 l/batch
DME 375:	39.1 ml/batch -	750 l/batch
DME 940:	97.9 ml/batch -	1880 l/batch.

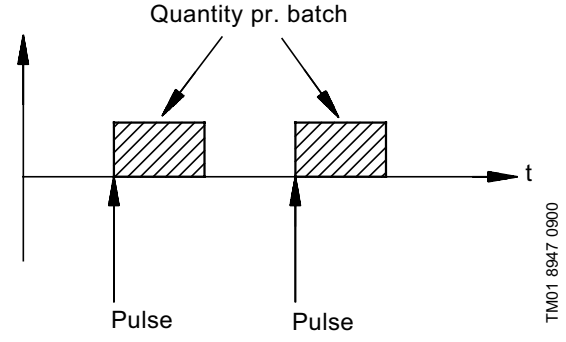
Pulse-based batch control

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.

Setting range:

DME 2:	0.23 ml/batch -	5 l/batch
DME 8:	0.69 ml/batch -	15 l/batch
DME 12:	1.11 ml/batch -	24 l/batch
DME 19:	2.04 ml/batch -	37 l/batch
DME 48:	5.3 ml/batch -	96 l/batch
DME 60:	6.25 ml/batch -	120 l/batch
DME 150:	15.6 ml/batch -	300 l/batch
DME 375:	39.1 ml/batch -	750 l/batch
DME 940:	97.9 ml/batch -	1880 l/batch.



Anti-cavitation (0-48 l/h)

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 below.

DME 2:	1.8 l/h
DME 8:	5.6 l/h
DME 12:	9 l/h
DME 19:	14.5 l/h
DME 48:	37 l/h.

Anti-cavitation (60-940 l/h)

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.

Maximum capacity limitation

Applies to DME

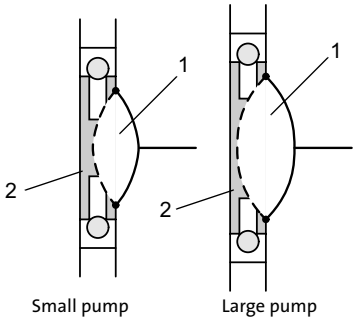
This function offers the possibility of reducing the maximum capacity (MAX. CAP). It influences the functions in which the pump is normally operating at maximum capacity. Under normal operating conditions, the pump cannot operate at a capacity higher than the one stated in the display. This does not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



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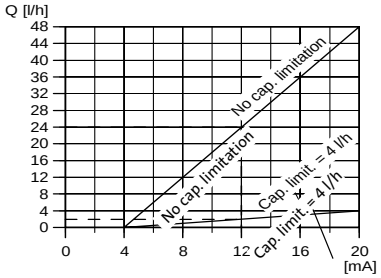
3. To cover several needs with just one pump size.
4. To adapt the pump to a 4-20 mA signal control with 4 mA corresponding to 0% and 20 mA to the set maximum capacity.

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 12) 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.



TM01 9638 2700

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 for the actual installation to ensure that the displayed value (millilitres or litres) is correct. A calibration program in the set-up menu facilitates calibration.

Counters

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

- **"Quantity"**
  Accumulated dosed quantity in litres 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

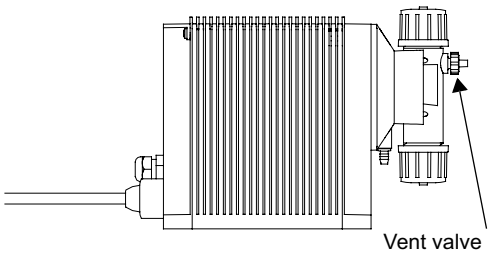
The display text can be displayed in one of the following languages chosen in the set-up menu:

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

Integrated venting valve

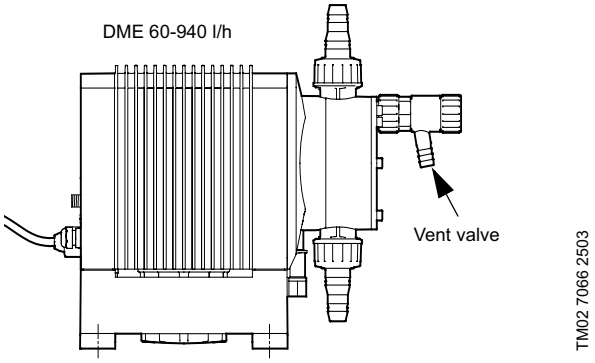
The DME and DMS dosing pumps are provided with an integrated vent valve. The valve makes it very easy to prime the pump during start-up:

The vent valve must be connected to the tank by means of a 4/6 mm PVC tubing.



TM01 8420 5099

The vent valve must be connected to the tank by means of a 15/20 mm PVC 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 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	• Red indicator light is on. • Pump **running**. • Alarm relay activated.★
Lower sensor activated	• Red indicator light is on. • Pump **stopped**. • Alarm relay activated.★

★ Applies to control variant AR

Bus communication

Applies to DME

The pump is available with a built-in module for bus communication with GENIbus (variant AG, up to 48 l/h only) or PROFIBUS DP (variant AP) systems. These modules enable remote monitoring and setting via the fieldbus system.

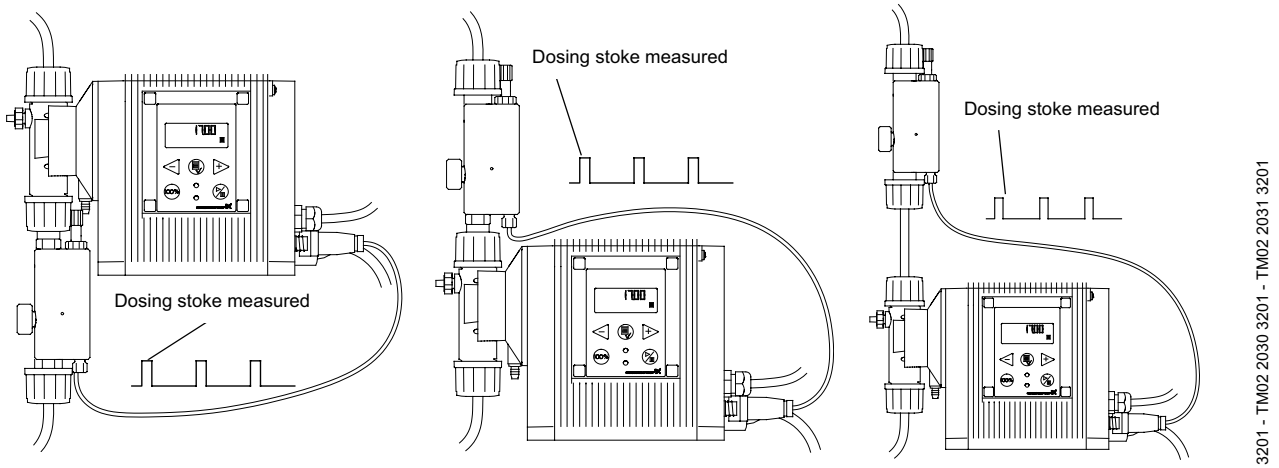
All DME features are available via bus communication. The PROFIBUS GDS-file can be downloaded from www.grundfos.com/dosing.

Diaphragm leakage sensor (60-940 l/h)

The pump can be fitted with a diaphragm leakage sensor. The sensor will detect leakage of the diaphragm. The sensor should be connected to the drain hole of the pump head. In case of leakage of the diaphragm, the signal from the sensor generates an alarm in the pump and the alarm relay will be activated. See page 41.

Dosing monitoring

Applies to all DME and DMS-A(R) (0-48 l/h)



Monitor mounted on suction side (DME and DMS)

Monitor mounted on discharge side (DMS only)

Monitor mounted in dosing tube.
In discharge tube: DMS (in-line)
In suction tube: DME and DMS (in-line)

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 dosing 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 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 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. 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:

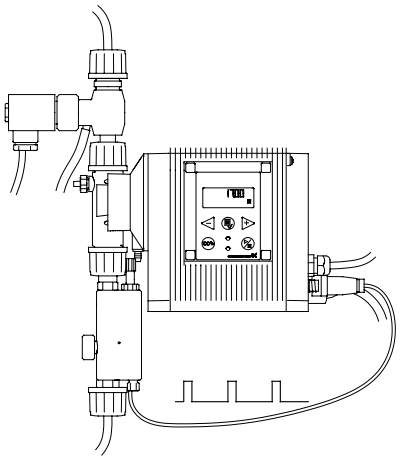
- **Correct dosing stroke:** A pulse from the dosing monitor corresponds to the internal stroke signal within acceptable time.
- **Incorrect dosing stroke:** There is no pulse from the dosing monitor corresponding to the internal stroke signal within the acceptable time (the pump is not pumping).

Logic:

If two incorrect dosing strokes are performed, the pump will continue operating, but it will change over to alarm mode. 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

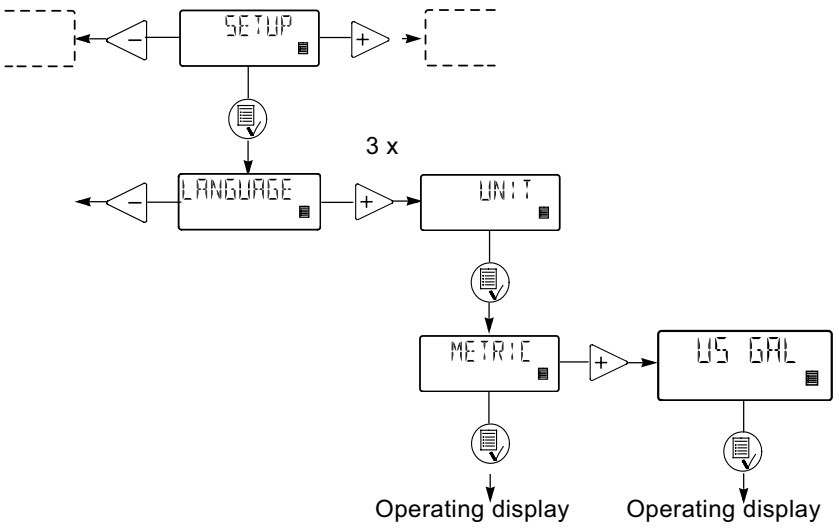
It is possible to select metric units (litre/millilitre) and US units (gallons/millilitre).

Metric measuring units:

- **In manual and analog modes**, set the quantity to be dosed in litres per hour (l/h) or millilitres per hour (ml/h).
- **In pulse mode**, set the quantity to be dosed in ml/pulse. The actual capacity is indicated in litres per hour (l/h) or millilitres 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 litres (l) or millilitres (ml).
- Under the "QUANTITY" menu item in the "COUNTERS" menu, the dosed quantity is indicated in litres.

US measuring units:

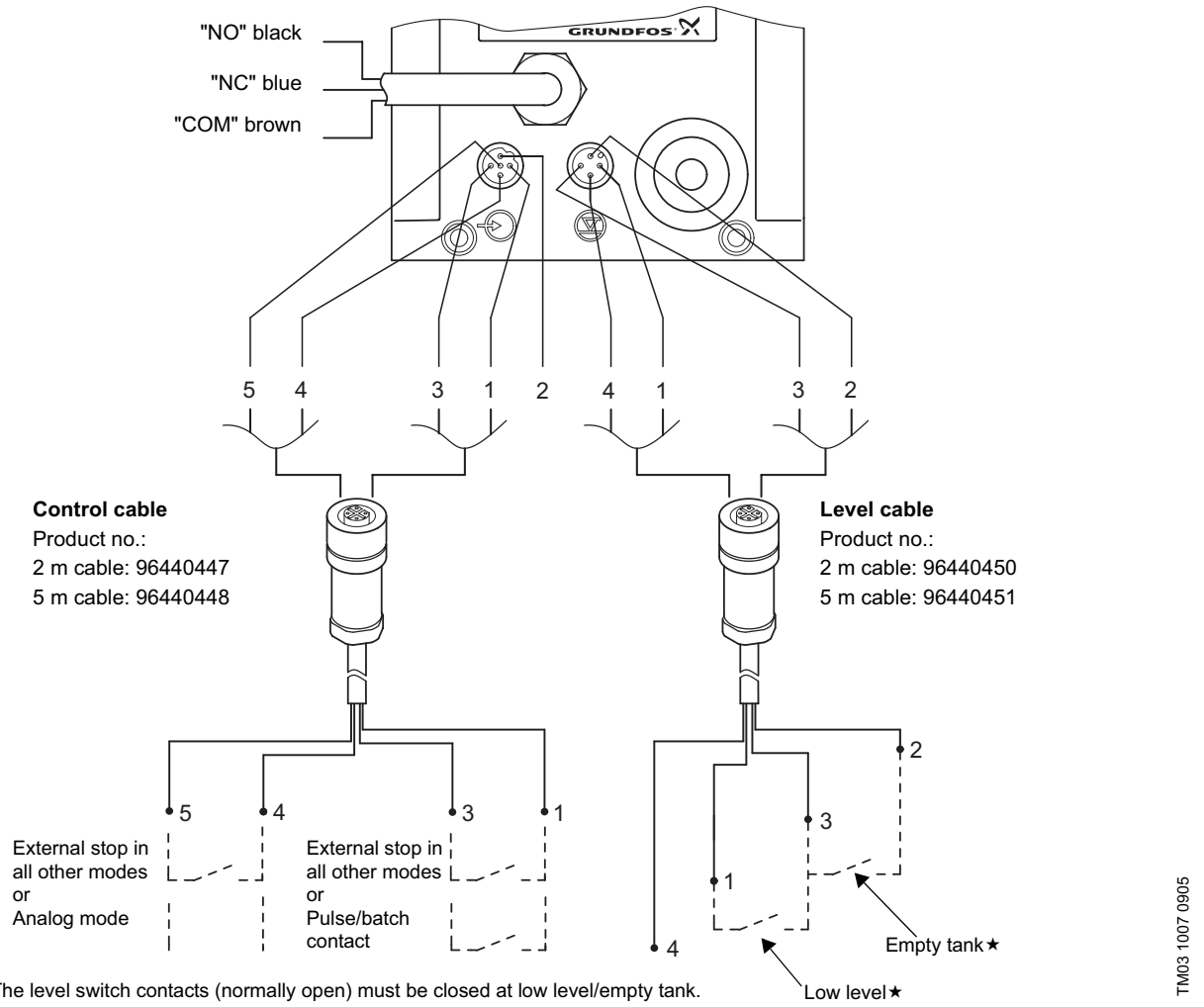
- **In manual and analog modes**, set the quantity to be dosed in gallons per hour (gph).
- **In pulse mode**, set the quantity to be dosed in ml/pulse. The actual capacity is shown in gallons per hour (gph).
- **For calibration**, set the quantity to be dosed in ml per 100 strokes.
- **In timer and 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 above shows all possible settings.

Wiring diagram, DME and DMS-A (0-48 l/h)

See pages 26 and 28 for input/output data.



★The level switch contacts (normally open) must be closed at low level/empty tank.

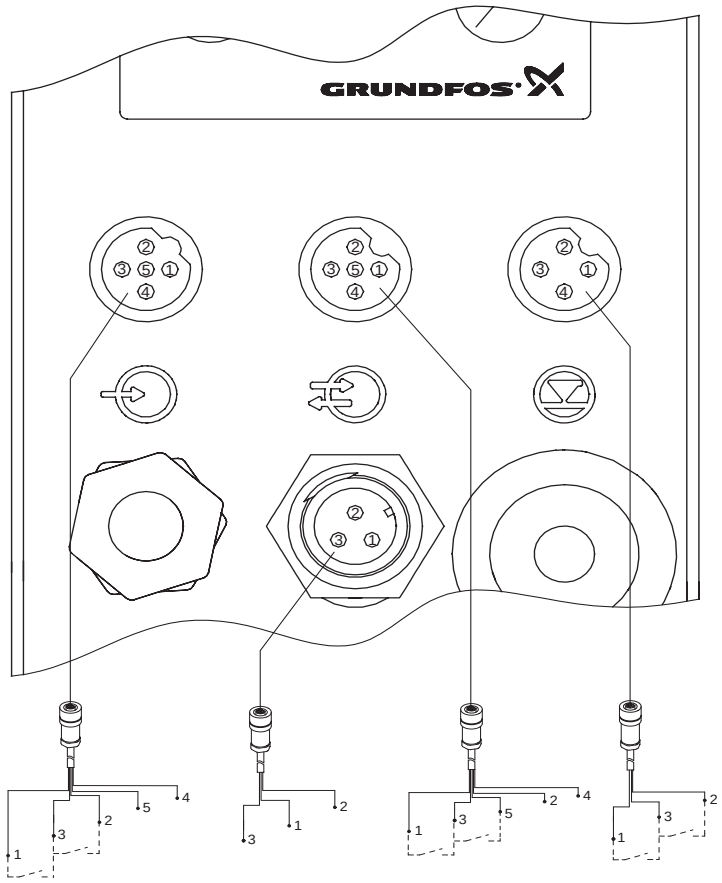
Control input

Number/colour Function	Plug					Type
	1/brown	2/white	3/blue, +5V	4/black, GND	5/grey	
Pulse	X		X			Contact
Pulse	5V			GND		Supply 5V DC
Analog				(-) mA input	(+) mA input	mA signal
Batch	X		X			Contact
Batch	5V			GND		Supply 5V DC
External start/stop						
Only Pulse/batch mode				X	X	Contact
Only Pulse/batch mode	5V			GND		Supply 5V DC
All other modes	X		X			Contact
All other modes	5V			GND		Supply 5V DC

Level input

Number/colour Function	Plug					Type
	1/brown	2/white	3/blue, +5V	4/black, GND	5/grey	
Low level	X		X			Contact
Low level	5V			GND		Supply 5V DC
Empty tank		X	X		(+) mA input	Contact
Empty tank	5V			GND		Supply 5V DC
Dosing monitoring		X	X			Contact
Dosing monitoring	5V			GND		Supply 5V DC

Wiring diagram, DME (60-940 l/h)



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

TM0 27069 2503

Cable 1: Analog, pulse and leakage input

Number/colour Function	Plug					Type
	1/brown	2/white	3/blue, +5V	4/black, GND	5/grey	
Pulse	X		X			Contact
Pulse	5V			GND		Supply 5V DC
Analog				(-) mA input	(+) mA input	mA signal
Batch	X		X			Contact
Batch	5V			GND		Supply 5V DC
Leakage		X	X			Contact
Leakage		5V		GND		Supply 5V DC

Cable 2: Output for alarm relay

Number/colour	1/brown	2/white	3/blue
Function			
Alarm relay output	Common	Normally open	Normally closed

Cable 3: Stop dosing input and dosing monitor or dosing output

Number/colour Function	Plug					Type
	1/brown	2/white	3/blue, +5V	4/black, GND	5/grey	
Stop input	X		X			Contact
Stop input	5V			GND		Supply 5V DC
Dosing monitoring			X		X	Contact
Dosing monitoring				GND	5V	Supply 5V DC
Dosing output (pump running)		Open collector *				NPN

* Open collector 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.

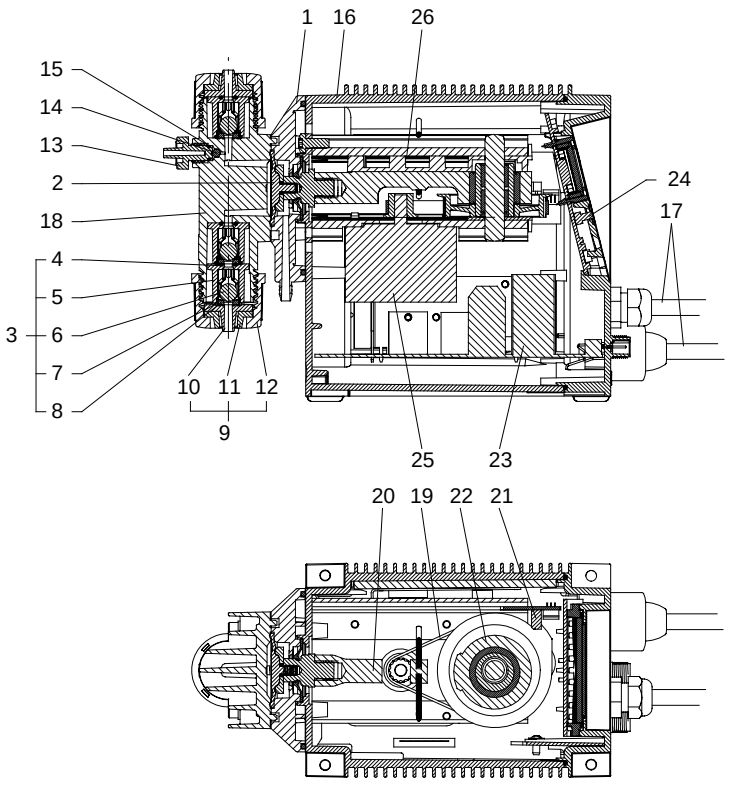
Max. current: 100 mA.

Cable 4: Level input

Number/colour Function	Plug					Type
	1/brown	2/white	3/blue, +5V	4/black, GND	5/grey	
Low level	X*		X*			Contact
Low level	5V			GND		Supply 5V DC
Empty tank		X*	X*			Contact
Empty tank		5V		GND		Supply 5V DC

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

Sectional drawing, DME (0-48 l/h)



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 4/6 mm 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.

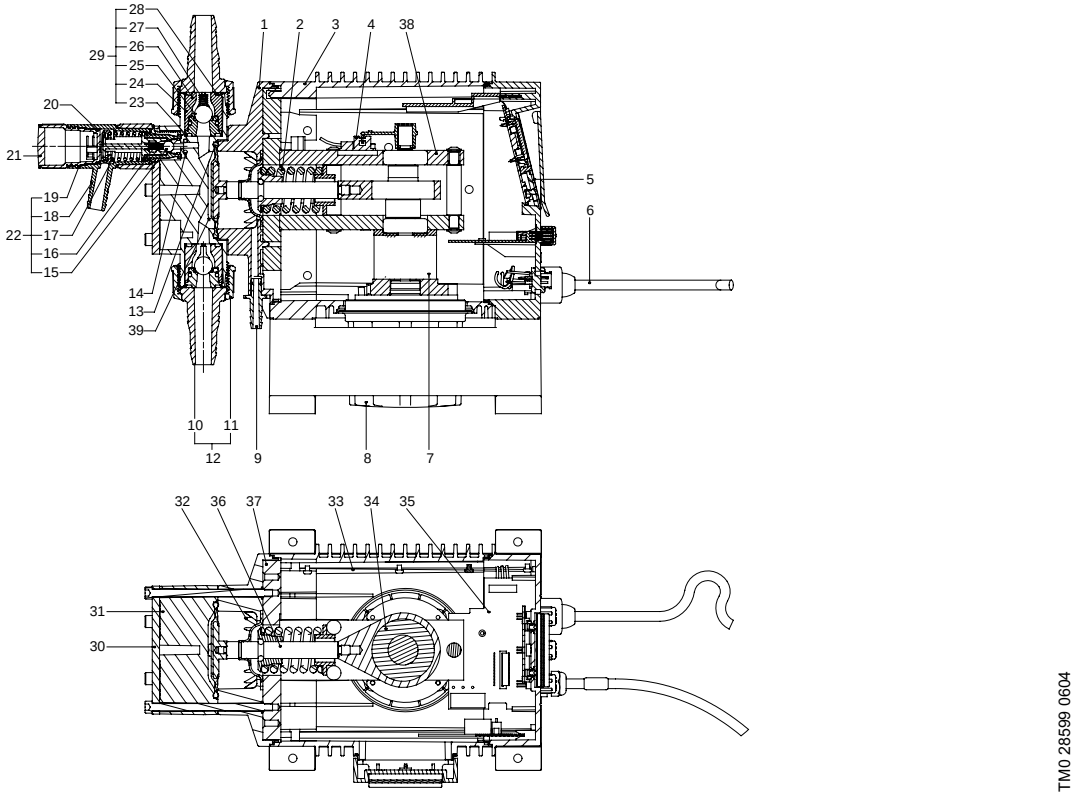
Cabinet: Containing drive unit, electronics, control panel and various electrical connections.

★ 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	PPE/PS 20% glass fibre
2	Diaphragm	Textile-reinforced EPDM, PTFE-coated
3	Valve complete	-
4	O-ring	EPDM/FKM
5★	Valve casing	PP/PVDF/Stainless steel 1.4401
6	Valve ball	Ceramic/Stainless steel 1.4401
7	Valve seat disk	EPDM/FKM
8	Valve seat ring	PP/PVDF/Stainless steel 1.4401
9	Connection complete	-
10	Cone/thread piece/ cementing piece	PP/PVDF/Stainless steel 1.4401/PVC
11	Clamping ring	PP/PVDF
12	Union nut	PP/PVDF/Stainless steel 1.4401
13	Vent valve screw	PP/PVDF
14	Vent valve ball	Ceramic/Stainless steel 1.4401
15	Vent valve O-ring	EPDM/FKM
16	Cabinet	PPE/PS 20% glass fibre
17	Power/alarm cable	Rubber
18	Dosing head	PP/PVDF/Stainless steel 1.4401
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 (60-940 l/h)



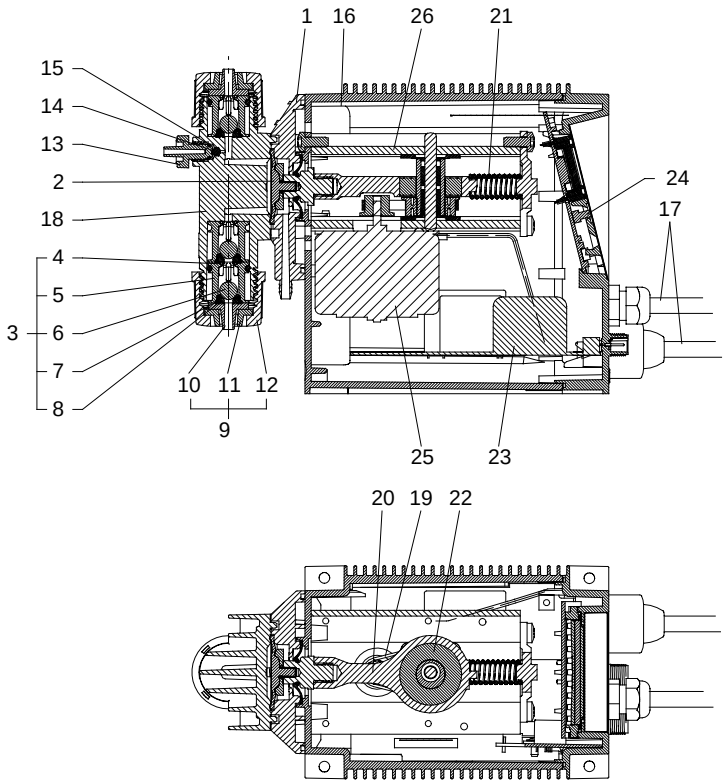
Material specification

Pos.	Description	Material options
1	Backplate	PPE/PS 20% glass fibre
2	Spring	DIN 17223 TYPE C
3	Cabinet	PPE/PS 20% glass fibre
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	Hose nozzle	PP/PVDF
11	Union nut	PP/PVDF
12	Connection complete	
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 1.4401
25	Valve ball	Ceramic/Glass/SS 1.4401/ Hastelloy C/PTFE
26	Valve casing	PP/PVDF/SS 1.4401
27★	Spring	Hastelloy C
28	O-ring	EPDM/FKM
29	Valve complete	
30	Steel plate	Steel
31	Dosing head	PP/PVDF/SS 1.4401
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.

Construction

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 4/6 mm 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).

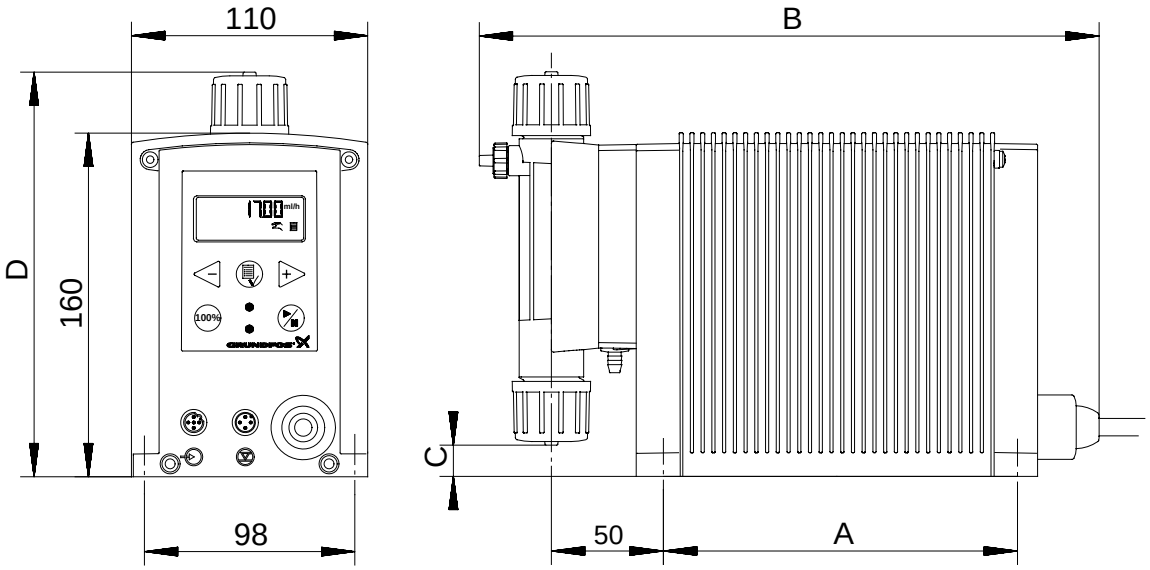
★ The pump is available with spring-loaded valves.
Spring material: Hastelloy.
The spring is not shown in the sectional drawing.

Material specification

Pos.	Description	Material options
1	Backplate	PPE/PS 20% glass fibre
2	Diaphragm	Textile-reinforced EPDM, PTFE-coated
3	Valve complete	-
4	O-ring	EPDM/FKM
5★	Valve casing	PP/PVDF/Stainless steel
6	Valve ball	Ceramic/Stainless steel 1.4401
7	Valve seat disk	EPDM/FKM
8	Valve seat O-ring	PP/PVDF/Stainless steel 1.4401
9	Connection complete	-
10	Cone/thread piece/ cementing piece	PP/PVDF/Stainless steel 1.4401/PVC
11	Clamping ring	PP/PVDF
12	Union nut	PP/PVDF/Stainless steel 1.4401
13	Vent valve screw	PP/PVDF
14	Vent valve ball	Ceramic/Stainless steel 1.4401
15	Vent valve O-ring	EPDM/FKM
16	Cabinet	PPE/PS 20% glass fibre
17	Power/alarm cable	Rubber
18	Dosing head	PP/PVDF/Stainless steel 1.4401
19	Drive belt	Rubber, polyamide-reinforced
20	Connecting rod	Steel
21	Dosing stoke auxiliary spring	-
22	Crank shaft	Steel
23	Power PCB	-
24	Operation PCB	-
25	Synchronous motor	-
26	Drive frame	Aluminium

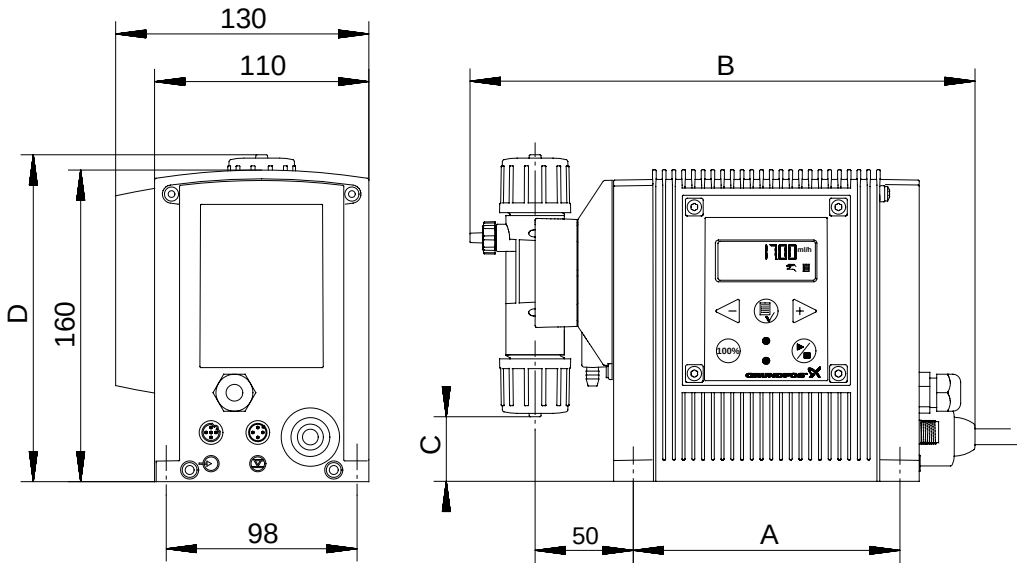
Dimensions

Front-fitted control panel (0-48 l/h)



TM01 8953 1202

Side-fitted control panel (0-48 l/h)



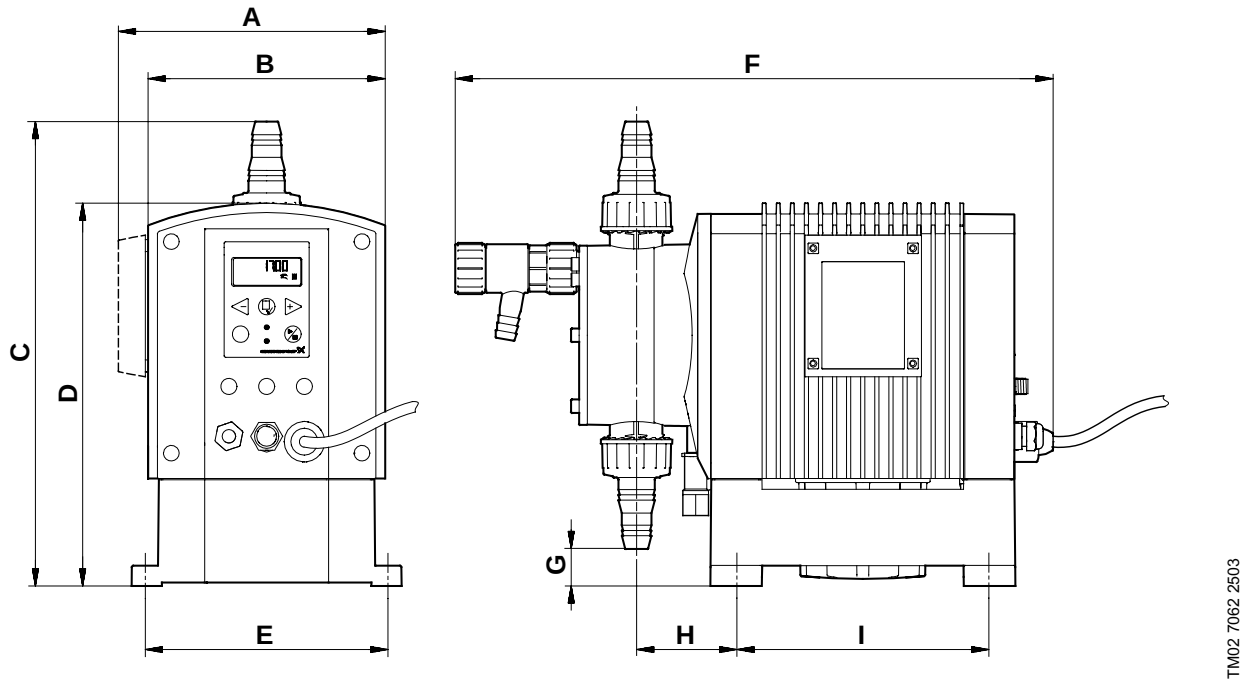
TM01 8954 1202

Dimensions are i mm.

Pump type	DME 2 DMS 2	DMS 4	DME 8 DMS 8	DME 12 DMS 12	DME 19	DME 48
A	137				192	
B	239				294	
C	36				15	
D	168				188	

Dimensions

Front-fitted control panel, DME (60-940 l/h)



Dimensions are i mm.

	DME 60	DME 150	DME 375	DME 940
A	198	198	238	238
B	176	176	218	218
C	331	345	471	496
D	284	284	364	364
E	180	180	230	230
F	444	444	540	539
G	41	28	31	6
H	74	74	95	95
I	187	187	246	246

DME (0-48 l/h)

Pump			DME 2	DME 8	DME 12	DME 19	DME 48
Mechanical data	Maximum capacity without anti-cavitation ★1	[l/h]	2.5	7.5	12	18.5	48
		[gph]	0.66	1.98	3.71	4.88	12.68
	Maximum capacity with anti-cavitation ★1	[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 ★2 [stroke/min]		180	180	180	151	151
	Maximum suction lift during operation [m]		6				
	Maximum suction lift when priming with wet valves [m]		1.8	3	3	3	3
	Maximum viscosity with spring-loaded valves ★3 [mPas] (= cP)		500	500	500	500	100
	Maximum viscosity without spring-loaded valves ★3 [mPas] (= cP)		200	200	200	200	100
	Maximum liquid temperature [°C]		50				
	Minimum liquid temperature [°C]		0				
	Maximum ambient temperature [°C]		45				
	Minimum ambient temperature [°C]		0				
	Accuracy of repeatability		±1%				
Weight and size	Weight [kg]		2.3	2.3	2.3	3.4	3.4
	Diaphragm diameter [mm]		28	38	43.5	55	77
Electrical data	Supply voltage [V]		1 x 100-240 V, 50-60 Hz				
	Maximum current consumption [A]	at 100 V	0.27			0.35	
		at 230 V	0.16			0.26	
	Maximum power consumption P_1 [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				

★1 At any counter-pressure if the pump is calibrated to the actual installation.

★2 The maximum stroke frequency varies according to calibration.

★3 Maximum suction lift: 1 metre.

DME (60-940 l/h)

Pump			DME 60	DME 150	DME 375	DME 940
Mechanical data	Maximum capacity	[l/h]	60	150	376	940
	Maximum capacity with anti-cavitation 75% [l/h]	[l/h]	45	112	282	705
	Maximum capacity with anti-cavitation 50% [l/h]	[l/h]	33.4	83.5	210	525
	Maximum capacity with anti-cavitation 25% [l/h]	[l/h]	16.1	40.4	101	252
	Maximum pressure	[bar]	10	4	10	4
	Maximum stroke frequency [stroke/min]		160			
	Maximum suction lift during operation [m]		6			
	Maximum suction lift when priming with wet valves [m]		1.5			
	Maximum viscosity with spring-loaded valves ★[1] [mPas] (= cP)		3000 mPas at 50% capacity			
	Maximum viscosity without spring-loaded valves ★[1][mPas] (= cP)		200			
	Maximum liquid temperature [°C]		50			
	Minimum liquid temperature [°C]		0			
	Maximum ambient temperature [°C]		45			
	Minimum ambient temperature [°C]		-10			
	Accuracy of repeatability		±1%			
Weight and size	Weight [kg]		11.4	11.8	21	22.5
	Diaphragm diameter [mm]		79	106	124	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_1 [W]		67.1		240	
	Enclosure class		IP 65			
	Insulation class		B			
Cable data	Supply cable		1.5 metre			
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]		42			
Approvals			CE, VDE, CSA			
Sound pressure level	The sound pressure level of the pump is lower than 70 dB (A).					

★[1] Maximum suction lift: 1 metre.

DMS

Pump				DMS 2	DMS 4	DMS 8	DMS 12
Mechanical data	Maximum capacity ★1	DMS-A and AR, B	[l/h]	2.5	4	7.5	12
			[gph]	0.66	1.05	1.98	3.71
		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 ★2 [stroke/min]	DMS-A and AR, B		180			
		DMS-D (50 Hz) DMS-D (60 Hz)		187.5 225			
	Maximum suction lift during operation [m]			6			
	Maximum suction lift when priming with wet valves [m]			1.8	2	3	3
	Maximum viscosity with spring-loaded valves ★3 [mPas] (= cP)			500			
	Maximum viscosity without spring-loaded valves ★3 [mPas] (= cP)			200			
	Maximum liquid temperature [°C]			50			
	Minimum liquid temperature [°C]			0			
	Maximum ambient temperature [°C]			45			
	Minimum ambient temperature [°C]			0			
	Accuracy of repeatability			±1%			
Weight and size	Weight [kg]			2.3			
	Diaphragm diameter [mm]			28	32	38	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_1 [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 ★4			

★1 Irrespective of counter-pressure if the pump is calibrated to the actual installation.

★2 The maximum stroke frequency varies according to calibration.

★3 Maximum suction lift: 1 metre.

★4 DMS-D: only CE and VDE.

Standard range, DME (0-48 l/h)

Power supply: 1 x 100-240 V, 50-60 Hz (Switch-mode).
Mains plug: EU (Schuko).
Valves: Double-ball on suction side, single-ball on discharge side.

Max. capacity [l/h] ★1	Max. pressure [bar]	Materials ★2			Connection ★3	Control panel position	Type designation (variant A)★4	Product number	
		Pump head	Gaskets	Valve balls				Without alarm relay (variant A)	With alarm relay (variant AR)
2.5 (1.8)	18	PP	EPDM	Ceramic	4/6, 6/9	Front-fitted	DME 2-18 **A**-PP/E/C-F-3111F	96434879	96434885
						Side-fitted	DME 2-18 **A**-PP/E/C-S-3111F	96434882	96434888
		PP	FKM	Ceramic	4/6, 6/9	Front-fitted	DME 2-18 **A**-PP/V/C-F-3111F	96443981	96443987
						Side-fitted	DME 2-18 **A**-PP/V/C-S-3111F	96443984	96443990
		PVDF	FKM	Ceramic	4/6, 6/9	Front-fitted	DME 2-18 **A**-PV/V/C-F-3111F	96434899	96434905
						Side-fitted	DME 2-18 **A**-PV/V/C-S-3111F	96434902	96434908
		Stainl. steel 1.4401	FKM	Stainl. steel 1.4401	Rp 1/4	Front-fitted	DME 2-18 **A**-SS/V/SS-F-31AAF	96437423	96437429
						Side-fitted	DME 2-18 **A**-SS/V/SS-S-31AAF	96437426	96437432
7.5 (5.6)	10	PP	EPDM	Ceramic	4/6, 6/9	Front-fitted	DME 8-10 **A**-PP/E/C-F-3111F	96434880	96434886
						Side-fitted	DME 8-10 **A**-PP/E/C-S-3111F	96434883	96434889
		PP	FKM	Ceramic	4/6, 6/9	Front-fitted	DME 8-10 **A**-PP/V/C-F-3111F	96443982	96443988
						Side-fitted	DME 8-10 **A**-PP/V/C-S-3111F	96443985	96443991
		PVDF	FKM	Ceramic	4/6, 6/9	Front-fitted	DME 8-10 **A**-PV/V/C-F-3111F	96434900	96434906
						Side-fitted	DME 8-10 **A**-PV/V/C-S-3111F	96434903	96434909
		Stainl. steel 1.4401	FKM	Stainl. steel 1.4401	Rp 1/4	Front-fitted	DME 8-10 **A**-SS/V/SS-F-31AAF	96437424	96437430
						Side-fitted	DME 8-10 **A**-SS/V/SS-S-31AAF	96437427	96437433
12 (9)	6	PP	EPDM	Ceramic	4/6, 6/9	Front-fitted	DME 12-6 **A**-PP/E/C-F-3111F	96434881	96434887
						Side-fitted	DME 12-6 **A**-PP/E/C-S-3111F	96434884	96434890
		PP	FKM	Ceramic	4/6, 6/9	Front-fitted	DME 12-6 **A**-PP/V/C-F-3111F	96443983	96443989
						Side-fitted	DME 12-6 **A**-PP/V/C-S-3111F	96443986	96443992
		PVDF	FKM	Ceramic	4/6, 6/9	Front-fitted	DME 12-6 **A**-PV/V/C-F-3111F	96434901	96434907
						Side-fitted	DME 12-6 **A**-PV/V/C-S-3111F	96434904	96434910
		Stainl. steel 1.4401	FKM	Stainl. steel 1.4401	Rp 1/4	Front-fitted	DME 12-6 **A**-SS/V/SS-F-31AAF	96437425	96437431
						Side-fitted	DME 12-6 **A**-SS/V/SS-S-31AAF	96437428	96437434
18.5 (14.5)	6.2	PP	EPDM	Ceramic	6/9, 9/12	Front-fitted	DME 19-6 **A**-PP/E/C-F-3122F	96434891	96434895
						Side-fitted	DME 19-6 **A**-PP/E/C-S-3122F	96434893	96434897
		PP	FKM	Ceramic	6/9, 9/12	Front-fitted	DME 19-6 **A**-PP/V/C-F-3122F	96443993	96443997
						Side-fitted	DME 19-6 **A**-PP/V/C-S-3122F	96443995	96443999
		PVDF	FKM	Ceramic	6/9, 9/12	Front-fitted	DME 19-6 **A**-PV/V/C-F-3122F	96434911	96434915
						Side-fitted	DME 19-6 **A**-PV/V/C-S-3122F	96434913	96434917
		Stainl. steel 1.4401	FKM	Stainl. steel 1.4401	Rp 3/8	Front-fitted	DME 19-6 **A**-SS/V/SS-F-31BBF	96437435	96437439
						Side-fitted	DME 19-6 **A**-SS/V/SS-S-31BBF	96437437	96437441
48 (37)	2.6	PP	EPDM	Ceramic	6/9, 9/12	Front-fitted	DME 48-3 **A**-PP/E/C-F-3122F	96434892	96434896
						Side-fitted	DME 48-3 **A**-PP/E/C-S-3122F	96434894	96434898
		PP	FKM	Ceramic	6/9, 9/12	Front-fitted	DME 48-3 **A**-PP/V/C-F-3122F	96443994	96443998
						Side-fitted	DME 48-3 **A**-PP/V/C-S-3122F	96443996	96444000
		PVDF	FKM	Ceramic	6/9, 9/12	Front-fitted	DME 48-3 **A**-PV/V/C-F-3122F	96434912	96434916
						Side-fitted	DME 48-3 **A**-PV/V/C-S-3122F	96434914	96434918
		Stainl. steel 1.4401	FKM	Stainl. steel 1.4401	Rp 3/8	Front-fitted	DME 48-3 **A**-SS/V/SS-F-31BBF	96437436	96437440
						Side-fitted	DME 48-3 **A**-SS/V/SS-S-31BBF	96437438	96437442

★1 Values in brackets are maximum capacity if the anti-cavitation function has been selected.

★2 See list of pumped liquids on page 37.

★3 Underlined sizes are factory-fitted connections; others are supplied with the pump as standard.
4/6, 6/9 and 9/12 are compression fittings for inner/outer tubing diameters stated in mm.
Rp 1/4 and Rp 3/8 connections have inner thread for pipe connection.

★4 Also available in **AR** version.

Non-standard range, DME (0-48 l/h)

Example in bold: DME 2-18 A-SS/V/SS-F-32AAF

Maximum capacity and pressure★2	Control variant	Materials of pump head, gaskets and valve balls	Control panel position	Motor voltage	Valves	Suction/discharge connection		Mains plug
[l/h] - [bar]	See page 6	Dosing head: PP = Polypropylene PV = PVDF SS = Stainl. steel 1.4401 Gaskets: E = EPDM V = FKMP T = PTFE Valve balls: C = Ceramic SS = Stainl. steel 1.4401 T = PTFE	F = Front-fitted S = Side-fitted	2 = 1 x 120 V, 60 Hz 3 = 1 x 100-240 V, 50-60 Hz	1 = Standard 2 = Spring-loaded	1 = Tubing 4/6+6/9 2 = Tubing 6/9+6/12+9/12 3 = Tubing 4/6 4 = Tubing 6/9 5 = Tubing 6/12 6 = Tubing 9/12 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 F = Cementing d.12		F = EU B = USA+CAN G = UK I = AU E = CH J = JP

DME		Pump head	Gasket	Ball						
2-18 8-10 12-6	**A** AR AP★1 AG★1	PP PV	E V T	C SS T	-F- -S-	2 3	1 2	1 2 3 4 5 6 T R S A (PVC) E (PVC) F (PVC)	1 2 3 4 5 6 T R S A (PVC) E (PVC) F (PVC)	F B G I E J
		SS	E T **V**	**SS**	**-F-** -S-	2 **3**	1 **2**	**A** B V Y	**A** B V Y	**F** B G I E J
19-6 48-3	A AR AP★1 AG★1	PP PV	E T V	C SS T	-F- -S-	2 3	1 2	2 4 5 6 A E F	2 4 5 6 A E F	F B G I E J
		SS	E T V	SS	-F- -S-	2 3	1 2	A B V Y	A B V Y	F B G I E J

★1 Pumps equipped with bus communication module, see page 15.

★2
2-18: 2.5 l/h, 18 bar
8-10: 7.5 l/h, 10 bar
12-6: 12 l/h, 6 bar
19-6: 18.5 l/h, 6.2 bar
48-3: 48 l/h, 2.6 bar

Standard range, DME (60-940 l/h)

Power supply: 1 x 100-240 V, 50-60 Hz (switch-mode).
Mains plug: EU (Schuko).
Valves: Single-ball on suction side; single-ball on discharge side.

Max. capacity [l/h]	Max. pressure [bar]	Control variant	Materials			Connection ★	Control panel position	Type designation	Product number
			Pump head	Gaskets	Valve balls				
60	10	AR	PP	EPDM	Ceramic	19/27 25/34	Front-fitted	DME 60-10 AR-PP/E/C-F-31QQF	96524874
							Side-fitted	DME 60-10 AR-PP/E/C-S-31QQF	96524879
			PP	FKM	Ceramic	19/27 25/34	Front-fitted	DME 60-10 AR-PP/V/C-F-31QQF	96524910
							Side-fitted	DME 60-10 AR-PP/V/C-S-31QQF	96524911
			PVDF	FKM	Ceramic	19/27 25/34	Front-fitted	DME 60-10 AR-PV/V/C-F-31QQF	96524912
							Side-fitted	DME 60-10 AR-PV/V/C-S-31QQF	96524913
			SS	FKM	St. steel 1.4401	Rp 3/4”	Front-fitted	DME 60-10 AR-SS/V/SS-F-31A1A1F	96524914
							Side-fitted	DME 60-10 AR-SS/V/SS-S-31A1A1F	96524915
60	10	B	PP	EPDM	Ceramic	19/27 25/34	Front-fitted	DME 60-10 B-PP/E/C-F-31QQF	96524916
							Side-fitted	DME 60-10 B-PP/E/C-S-31QQF	96524917
			PP	FKM	Ceramic	19/27 25/34	Front-fitted	DME 60-10 B-PP/V/C-F-31QQF	96524918
							Side-fitted	DME 60-10 B-PP/V/C-S-31QQF	96524919
			PVDF	FKM	Ceramic	19/27 25/34	Front-fitted	DME 60-10 B-PV/V/C-F-31QQF	96524920
							Side-fitted	DME 60-10 B-PV/V/C-S-31QQF	96524921
			SS	FKM	St. steel 1.4401	Rp 3/4”	Front-fitted	DME 60-10 B-SS/V/SS-F-31A1A1F	96524923
							Side-fitted	DME 60-10 B-SS/V/SS-S-31A1A1F	96524924
150	4	AR	PP	EPDM	Ceramic	19/27 25/34	Front-fitted	DME 150-4 AR-PP/E/C-F-31QQF	96524925
							Side-fitted	DME 150-4 AR-PP/E/C-S-31QQF	96524926
			PP	FKM	Ceramic	19/27 25/34	Front-fitted	DME150-4 AR-PP/V/C-F-31QQF	96524927
							Side-fitted	DME 150-4 AR-PP/V/C-S-31QQF	96524928
			PVDF	FKM	Ceramic	19/27 25/34	Front-fitted	DME 150-4 AR-PV/V/C-F-31QQF	96524929
							Side-fitted	DME 150-4 AR-PV/V/C-S-31QQF	96524930
			SS	FKM	St. steel 1.4401	Rp 3/4”	Front-fitted	DME 150-4 AR-SS/V/SS-F-31A1A1F	96524931
							Side-fitted	DME 150-4 AR-SS/V/SS-S-31A1A1F	96524932
150	4	B	PP	EPDM	Ceramic	19/27 25/34	Front-fitted	DME 150-4 B-PP/E/C-F-31QQF	96524933
							Side-fitted	DME 150-4 B-PP/E/C-S-31QQF	96524934
			PP	FKM	Ceramic	19/27 25/34	Front-fitted	DME 150-4 B-PP/V/C-F-31QQF	96524935
							Side-fitted	DME 150-4 B-PP/V/C-S-31QQF	96524936
			PVDF	FKM	Ceramic	19/27 25/34	Front-fitted	DME 150-4 B-PV/V/C-F-31QQF	96524937
							Side-fitted	DME 150-4 B-PV/V/C-S-31QQF	96524938
			SS	FKM	St. steel 1.4401	Rp 3/4”	Front-fitted	DME 150-4 B-SS/V/SS-F-31A1A1F	96524939
							Side-fitted	DME 150-4 B-SS/V/SS-S-31A1A1F	96524940
376	10	AR	PP	EPDM	Glass	32/41 38/48	Front-fitted	DME 375-10 AR-PP/E/G-F-31WWF	96524941
							Side-fitted	DME 375-10 AR-PP/E/G-S-31WWF	96524942
			PP	FKM	Glass	32/41 38/48	Front-fitted	DME 375-10 AR-PP/V/G-F-31WWF	96524943
							Side-fitted	DME 375-10 AR-PP/V/G-S-31WWF	96524944
			PVDF	FKM	Glass	32/41 38/48	Front-fitted	DME 375-10 AR-PV/V/G-F-31WWF	96524945
							Side-fitted	DME 375-10 AR-PV/V/G-S-31WWF	96524946
			SS	FKM	St. steel 1.4401	Rp 1 1/4”	Front-fitted	DME 375-10 AR-SS/V/SS-F-31A2A2F	96524947
							Side-fitted	DME 375-10 AR-SS/V/SS-S-31A2A2F	96524948
376	10	B	PP	EPDM	Glass	32/41 38/48	Front-fitted	DME 375-10 B-PP/E/G-F-31WWF	96524949
							Side-fitted	DME 375-10 B-PP/E/G-S-31WWF	96524950
			PP	FKM	Glass	32/41 38/48	Front-fitted	DME 375-10 B-PP/V/G-F-31WWF	96524951
							Side-fitted	DME 375-10 B-PP/V/G-S-31WWF	96524952
			PVDF	FKM	Glass	32/41 38/48	Front-fitted	DME 375-10 B-PV/V/G-F-31WWF	96524953
							Side-fitted	DME 375-10 B-PV/V/G-S-31WWF	96524954
			SS	FKM	St. steel 1.4401	Rp 1 1/4”	Front-fitted	DME 375-10 B-SS/V/SS-F-31A2A2F	96524956
							Side-fitted	DME 375-10 B-SS/V/SS-S-31A2A2F	96524957

940	4	AR	PP	EPDM	Glass	32/41 38/48	Front-fitted	DME 940-4 AR-PP/E/G-F-31WWF	96524958
							Side-fitted	DME 940-4 AR-PP/E/G-S-31WWF	96524959
			PP	FKM	Glass	32/41 38/48	Front-fitted	DME940-4 AR-PP/V/G-F-31WWF	96524960
							Side-fitted	DME 940-4 AR-PP/V/G-S-31WWF	96524961
			PVDF	FKM	Glass	32/41 38/48	Front-fitted	DME 940-4 AR-PV/V/G-F-31WWF	96524962
							Side-fitted	DME 940-4 AR-PV/V/G-S-31WWF	96524963
			SS	FKM	St. steel 1.4401	Rp 1 1/4”	Front-fitted	DME 940-4 AR-SS/V/SS-F-31A2A2F	96524964
							Side-fitted	DME 940-4 AR-SS/V/SS-S-31A2A2F	96524965
940	4	B	PP	EPDM	Glass	32/41 38/48	Front-fitted	DME 940-4 B-PP/E/G-F-31WWF	96524966
							Side-fitted	DME 940-4 B-PP/E/G-S-31WWF	96524967
			PP	FKM	Glass	32/41 38/48	Front-fitted	DME 940-4 B-PP/V/G-F-31WWF	96524968
							Side-fitted	DME 940-4 B-PP/V/G-S-31WWF	96524969
			PVDF	FKM	Glass	32/41 38/48	Front-fitted	DME 940-4 B-PV/V/G-F-31WWF	96524980
							Side-fitted	DME 940-4 B-PV/V/G-S-31WWF	96524981
			SS	FKM	St. steel 1.4401	Rp 1 1/4”	Front-fitted	DME 940-4 B-SS/V/SS-F-31A2A2F	96524982
							Side-fitted	DME 940-4 B-SS/V/SS-S-31A2A2F	96524983

★ 19/27, 25/34, 32/41 and 38/48 are inner/outer tubing diameters in mm for hose clamp connectors.
Rp 3/4” and Rp 1 1/4” connections have inner thread for pipe connection.

Non-standard range, DME (60-940 l/h)

Example in bold: DME 150-4 AR SS/V/SS-F-32A1A1F

Maximum capacity and pressure★2	Control variant	Materials of dosing head, gaskets and valve balls	Control panel position	Motor voltage	Valves	Connection suction/ discharge	Mains plug
[l/h] - [bar]	See page 5	Dosing head: PP = Polypropylene PV = PVDF SS = Stainl. stee 1.4401 Gaskets: E = EPDM V = FKM T = PTFE Valve balls: C = Ceramic SS = Stainl. steel 1.4401 Y = Hastelloy C G = Glass	F = Front-fitted S = Side-fitted	2 =1 x 120 V, 60 Hz 3 = 1 x 100-240 V, 50-60 Hz	1 = Standard 2 = Springloaded	Q= 19/27 + 25/34 W= 32/41 + 38/48 A1= Threaded RP 3/4" A2= Threaded RP 1 1/4"	F = EU (DIN) B = USA+CAN G = UK I = AU E = CH J = JP

DME		Pump head	Gasket	Ball					
60-10 **150-4**	B **AR** AP★1	PP PV	E V T	C SS Y	-F- -S-	2 3	1 2	Q	F B G I E J
		SS	E T **V**	**SS**	**-F-** -S-	2 **3**	1 **2**	**A1**	**F** B G I E J
375-10 940-4	B AR AP★1	PP PV	E V T	G SS Y	-F- -S-	2 3	1 2	W	F B G I E J
		SS	E T V	SS	-F- -S-	2 3	1 2	A2	F B G I E J

★1Pumps equipped with bus communication module, see page 15.

★2
60-10: 60l/h, 10 bar
150-4: 150 l/h, 4bar
375-10: 375 l/h, 10 bar
940-4: 940 l/h, 4 bar

Standard range, DMS

Power supply: 1 x 230 V, 50 Hz.
Mains plug: EU (Schuko).
Valves: Double-ball on suction side, single-ball on discharge side.

Max. capacity [l/h]	Max. pressure [bar]	Control variant ★1	Materials ★2			Connection ★3	Control panel position	Type designation (variants A★4 and B)	Product number		
			Pump head	Gaskets	Valve balls				Without alarm relay (variant A)	With alarm relay (variant AR)	Variant D
2.5	11	A AR	PP	EPDM	Ceramic	4/6, 6/9	Front-fitted	DMS 2-11 **A**-PP/E/C-F-1111F	96437450	96446959	
							Side-fitted	DMS 2-11 **A**-PP/E/C-S-1111F	96437451	96446960	
			PP	FKM	Ceramic	4/6, 6/9	Front-fitted	DMS 2-11 **A**-PP/V/C-F-1111F	96443969	96446961	
							Side-fitted	DMS 2-11 **A**-PP/V/C-S-1111F	96443970	96446962	
			PVDF	FKM	Ceramic	4/6, 6/9	Front-fitted	DMS 2-11 **A**-PV/V/C-F-1111F	96437458	96446963	
							Side-fitted	DMS 2-11 **A**-PV/V/C-S-1111F	96437459	96446964	
			Stainl. steel 1.4401	FKM	Stainl. steel 1.4401	Rp 1/4	Front-fitted	DMS 2-11 **A**-SS/V/SS-F-11AAF	96437466	96446965	
							Side-fitted	DMS 2-11 **A**-SS/V/SS-S-11AAF	96437467	96446966	
		B	PP	EPDM	Ceramic	4/6, 6/9	Front-fitted	DMS 2-11 B-PP/E/C-F-1111F	96437474	-	
			PP	FKM	Ceramic	4/6, 6/9	Front-fitted	DMS 2-11 B-PP/V/C-F-1111F	96443977	-	
			PVDF	FKM	Ceramic	4/6, 6/9	Front-fitted	DMS 2-11 B-PV/V/C-F-1111F	96437478	-	
			Stainl. steel 1.4401	FKM	Stainl. steel 1.4401	Rp 1/4	Front-fitted	DMS 2-11 B-SS/V/SS-F-11AAF	96437482	-	
3.3		D	PP	EPDM	Ceramic	4/6, 6/9	x	DMS2-11 D-PP/E/C-X-1111F			96476529
			PP	FKM	Ceramic	4/6, 6/9	x	DMS2-11 D-PP/V/C-X-1111F			96476532
			PVDF	FKM	Ceramic	4/6, 6/9	x	DMS2-11 D-PV/V/C-X-1111F			96476533
			Stainl. steel 1.4401	FKM	Stainl. steel 1.4401	Rp 1/4	x	DMS2-11 D-SS/V/SS-X-11AAF			96476534
4	7	A AR	PP	EPDM	Ceramic	4/6, 6/9	Front-fitted	DMS 4-7 **A**-PP/E/C-F-1111F	96437452	96446967	
							Side-fitted	DMS 4-7 **A**-PP/E/C-S-1111F	96437453	96446968	
			PP	FKM	Ceramic	4/6, 6/9	Front-fitted	DMS 4-7 **A**-PP/V/C-F-1111F	96443971	96446969	
							Side-fitted	DMS 4-7 **A**-PP/V/C-S-1111F	96443972	96446970	
			PVDF	FKM	Ceramic	4/6, 6/9	Front-fitted	DMS 4-7 **A**-PV/V/C-F-1111F	96437460	96446971	
							Side-fitted	DMS 4-7 **A**-PV/V/C-S-1111F	96437461	96446972	
			Stainl. steel 1.4401	FKM	Stainl. steel 1.4401	Rp 1/4	Front-fitted	DMS 4-7 **A**-SS/V/SS-F-11AAF	96437468	96446973	
							Side-fitted	DMS 4-7 **A**-SS/V/SS-S-11AAF	96437469	96446974	
		B	PP	EPDM	Ceramic	4/6, 6/9	Front-fitted	DMS 4-7 B-PP/E/C-F-1111F	96437475	-	
			PP	FKM	Ceramic	4/6, 6/9	Front-fitted	DMS 4-7 B-PP/V/C-F-1111F	96443978	-	
			PVDF	FKM	Ceramic	4/6, 6/9	Front-fitted	DMS 4-7 B-PV/V/C-F-1111F	96437479	-	
			Stainl. steel 1.4401	FKM	Stainl. steel 1.4401	Rp 1/4	Front-fitted	DMS 4-7 B-SS/V/SS-F-11AAF	96437483	-	
5.7		D	PP	EPDM	Ceramic	4/6, 6/9	x	DMS4-7 D-PP/E/C-X-1111F			96476535
			PP	FKM	Ceramic	4/6, 6/9	x	DMS4-7 D-PP/V/C-X-1111F			96476536
			PVDF	FKM	Ceramic	4/6, 6/9	x	DMS4-7 D-PV/V/C-X-1111F			96476537
			Stainl. steel 1.4401	FKM	Stainl. steel 1.4401	Rp 1/4	x	DMS4-7 D-SS/V/SS-X-11AAF			96476538

Max. capacity [l/h]	Max. pressure [bar]	Control variant ★1	Materials ★2			Connection ★3	Control panel position	Type designation (variants A★4 and B)	Product number		
			Pump head	Gaskets	Valve balls				Without alarm relay (variant A)	With alarm relay (variant AR)	Variant D
7.5	5.4	A AR	PP	EPDM	Ceramic	4/6, 6/9	Front-fitted	DMS 8-5 **A**-PP/E/C-F-1111F	96437454	96446975	
							Side-fitted	DMS 8-5 **A**-PP/E/C-S-1111F	96437455	96446976	
			PP	FKM	Ceramic	4/6, 6/9	Front-fitted	DMS 8-5 **A**-PP/V/C-F-1111F	96443973	96446977	
							Side-fitted	DMS 8-5 **A**-PP/V/C-S-1111F	96443974	96446978	
			PVDF	FKM	Ceramic	4/6, 6/9	Front-fitted	DMS 8-5 **A**-PV/V/C-F-1111F	96437462	96446979	
							Side-fitted	DMS 8-5 **A**-PV/V/C-S-1111F	96437463	96446980	
			Stainl. steel 1.4401	FKM	Stainl. steel 1.4401	Rp 1/4	Front-fitted	DMS 8-5 **A**-SS/V/SS-F-11AAF	96437470	96446981	
							Side-fitted	DMS 8-5 **A**-SS/V/SS-S-11AAF	96437471	96446982	
		B	PP	EPDM	Ceramic	4/6, 6/9	Front-fitted	DMS 8-5 B-PP/E/C-F-1111F	96437476	-	
			PP	FKM	Ceramic	4/6, 6/9	Front-fitted	DMS 8-5 B-PP/V/C-F-1111F	96443979	-	
			PVDF	FKM	Ceramic	4/6, 6/9	Front-fitted	DMS 8-5 B-PV/V/C-F-1111F	96437 80	-	
			Stainl. steel 1.4401	FKM	Stainl. steel 1.4401	Rp 1/4	Front-fitted	DMS 8-5 B-SS/V/SS-F-11AAF	96437484	-	
8.7		D	PP	EPDM	Ceramic	4/6, 6/9	x	DMS8-5 D-PP/E/C-X-1111F			96476540
			PP	FKM	Ceramic	4/6, 6/9	x	DMS8-5 D-PP/V/C-X-1111F			96476541
			PVDF	FKM	Ceramic	4/6, 6/9	x	DMS8-5 D-PV/V/C-X-1111F			96476542
			Stainl. steel 1.4401	FKM	Stainl. steel 1.4401	Rp 1/4	x	DMS8- 5 D-SS/V/SS-X-11AAF			96476543
12	3.4	A AR	PP	EPDM	Ceramic	4/6, 6/9	Front-fitted	DMS 12-3 **A**-PP/E/C-F-1111F	96437456	96446951	
							Side-fitted	DMS 12-3 **A**-PP/E/C-S-1111F	96437457	96446952	
			PP	FKM	Ceramic	4/6, 6/9	Front-fitted	DMS 12-3 **A**-PP/V/C-F-1111F	96443975	96446953	
							Side-fitted	DMS 12-3 **A**-PP/V/C-S-1111F	96443976	96446954	
			PVDF	FKM	Ceramic	4/6, 6/9	Front-fitted	DMS 12-3 **A**-PV/V/C-F-1111F	96437464	96446955	
							Side-fitted	DMS 12-3 **A**-PV/V/C-S-1111F	96437465	96446956	
			Stainl. steel 1.4401	FKM	Stainl. steel 1.4401	Rp 1/4	Front-fitted	DMS 12-3 **A**-SS/V/SS-F-11AAF	96437472	96446957	
							Side-fitted	DMS 12-3 **A**-SS/V/SS-S-11AAF	96437473	96446958	
		B	PP	EPDM	Ceramic	4/6, 6/9	Front-fitted	DMS 12-3 B-PP/E/C-F-1111F	96437477	-	
			PP	FKM	Ceramic	4/6, 6/9	Front-fitted	DMS 12-3 B-PP/V/C-F-1111F	96443980	-	
			PVDF	FKM	Ceramic	4/6, 6/9	Front-fitted	DMS 12-3 B-PV/V/C-F-1111F	96437481	-	
			Stainl. steel 1.4401	FKM	Stainl. steel 1.4401	Rp 1/4	Front-fitted	DMS 12-3 B-SS/V/SS-F-11AAF	96437485	-	
13.7		D	PP	EPDM	Ceramic	4/6, 6/9	x	DMS 12-3 D-PP/E/C-X-1111F			96473184
			PP	FKM	Ceramic	4/6, 6/9	x	DMS 12-3 D-PP/V/C-X-1111F			96476544
			PVDF	FKM	Ceramic	4/6, 6/9	x	DMS 12-3 D-PV/V/C-X-1111F			96476545
			Stainl. steel 1.4401	FKM	Stainl. steel 1.4401	Rp 1/4	x	DMS 12-3 D-SS/V/SS-X-11AAF			96476546

★1 See description of control variants on page 5.

★2 See list of pumped liquids on page 37.

★3 Underlined sizes are factory-fitted connections; others are supplied with the pump as standard.
4/6 and 6/9 are compression fittings for inner/outer tubing diameters stated in mm.
Rp 1/4 connection have inner thread for pipe connection.

★4 Also available in **AR** version.

Non-standard range, DMS

Example in bold: DMS 4-7 A-PP/V/C-S-1244F

Max. capacity and pressure★2	Control variant	Materials of pump head, gaskets and valve balls	Control panel position	Motor voltage	Valves	Suction/discharge connection	Mains plug
[l/h] - [bar]	See page 6	Dosing head: PP = Polypropylene PV = PVDF SS = Stainl. steel 1.4401 Gaskets: E = EPDM V = FKM T = PTFE Valve balls: C = Ceramic SS = Stainl. steel 1.4401 T = PTFE	F = Front-fitted S = Side-fitted	1 = 1 x 230 V, 50 Hz 2 = 1 x 120 V, 60 Hz	1 = Standard 2 = Spring-loaded	1 = Tubing 4/6+6/9 2 = Tubing 6/9+6/12+9/12 3 = Tubing 4/6 4 = Tubing 6/9 5 = Tubing 6/12 6 = Tubing 9/12 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 E = Cementing d.10 F = Cementing d.12	F = EU B = USA+CAN G = UK I = AU E = CH J= JP

DMS		Pump head	Gasket	Ball						
2-11 **4-7** 8-5 12-3	**A-** AR	**PP** PV	E **V** T	**C** SS T	-F- **-S-**	**1** 2	1 **2**	1 2 3 **4** 5 6 T R S A (PVC) E (PVC) F (PVC)	1 2 3 **4** 5 6 T R S A (PVC) E (PVC) F (PVC)	**F** B G I E J
		SS	V E	SS	-F- -S-	1 2	1 2	A B V Y	A B V Y	F B G I E J
	B	PP PV	E V T	C SS T	-F-	1 2	1 2	1 2 3 4 5 6 T R S A (PVC) E (PVC) F (PVC)	1 2 3 4 5 6 T R S A (PVC) E (PVC) F (PVC)	F B G I E J
		SS	V E	SS	-F-	1 2	1 2	A B V Y	A B V Y	F B G I E J
	D	PP PV	E V T	C SS T	-X-	1 2	1 2	1 2 3 4 5 6 T R S A (PVC) E (PVC) F (PVC)	1 2 3 4 5 6 T R S A (PVC) E (PVC) F (PVC)	F J
		SS	V E	SS	-X-	1 2	1 2	A B V Y	A B V Y	F J

★2 2-11: 2.5 l/h, 11 bar
4-7: 4 l/h, 7 bar
8-5: 7.5 l/h, 5.4 bar
12-3: 12 l/h, 3.4 bar

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	Stainl. steel 1.4401	PVC	FKM	EPDM	CSM	PTFE	Centellen C	Ceramic	Glass
Acetic acid	CH_3COOH	25	●	●	●	●	–	●	❍	●	●	●	●
		60	●	●	●	●	–	❍	–	●	❍	●	●
		85	●	●	●	–	–	–	–	●	❍	●	●
Aluminium chloride	$AlCl_3$	40	●	●	–	●	●	●	●	●	●	●	●
Aluminium sulphate	$Al_2(SO_4)_3$	60	●	●	●	●	●	●	●	●	●	●	●
Ammonia, aqueous	NH_4OH	28	●	●	●	●	–	●	●	●	❍	●	–
Calcium hydroxide★7	$Ca(OH)_2$		●	●	●	●	●	●	●	●	●	●	–
Calcium hypochlorite	$Ca(OCl)_2$	20	❍	●	–	●	●	●	●	●	●	●	●
Chromic acid★5	H_2CrO_4	10	●	●	●	●	●	●	●	●	●	●	●
		30	–	●	–	●	●	❍	●	●	❍	●	●
		40	–	●	–	●	●	–	●	●	❍	●	●
		50	–	●	–	●	●	–	●	●	❍	●	●
Copper sulphate	$CuSO_4$	30	●	●	●	●	●	●	●	●	●	●	●
Ferric chloride★3	$FeCl_3$	100	●	●	–	●	●	●	●	●	●	●	●
Ferric sulphate★3	$Fe_2(SO_4)_3$	100	●	●	●	●	●	●	●	●	●	●	●
Ferrous chloride	$FeCl_2$	100	●	●	–	●	●	●	●	●	●	●	●
Ferrous sulphate	$FeSO_4$	50	●	●	●	●	●	●	●	●	●	●	●
Hydrochloric acid	HCl	< 25	●	●	–	●	❍	●	●	●	●	●	●
		25-37	●	●	–	●	–	●	–	●	❍	●	●
Hydrogen peroxide	H_2O_2	30	●	●	●	●	●	●	●	●	●	●	●
Nitric acid	HNO_3	10	●	●	●	●	●	●	●	●	●	●	●
		30	●	●	●	●	●	●	●	●	–	●	●
		40	❍	●	●	●	●	●	–	●	–	●	●
		70	–	●	●	–	●	–	–	●	–	●	●
Peracetic acid	CH_3COOOH	5	●	●	–	●	–	●	●	●	●	●	●
Potassium hydroxide	KOH	50	●	–	●	●	–	●	●	●	❍	●	–
Potassium permanganate	$KMnO_4$	10	●	●	●	●	–	●	●	●	●	●	●
Sodium chlorate	$NaClO_3$	30	●	●	●	●	❍	●	●	●		●	●
Sodium chloride	NaCl	30	●	●	–	●	●	●	●	●	●	●	●
Sodium chlorite	$NaClO_2$	20	●	❍	–	–	●	●	●	●	●	●	●
Sodium hydroxide	NaOH	20	●	❍	●	●	●	●	●	●	❍	●	–
		30	●	–	●	●	●	●	●	●	❍	●	–
		50	●	–	●	●	●	●	●	●	❍	●	–
Sodium hypochlorite	NaOCl	20	❍	●	–	●	●	●	●	●	●	●	●
Sodium sulphide	Na_2S	30	●	●	●	●	●	●	●	●	●	●	–
Sodium sulphite★6	Na_2SO_3	20	●	●	●	●	●	●	●	●	●	●	–
Sulphurous acid	H_2SO_3	6	●	●	●	●	●	●	●	●	●	●	❍
Sulphuric acid★4	H_2SO_4	< 80	●	●	–	❍	●	❍	●	●	❍	●	❍
		80-98	❍	●	–	–	●	–	–	●	●	●	–

● Suitable.

❍ Limited.

– Not suitable.

★3 Risk of crystallisation.

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

★5 Must be fluoride-free when glass balls are used.

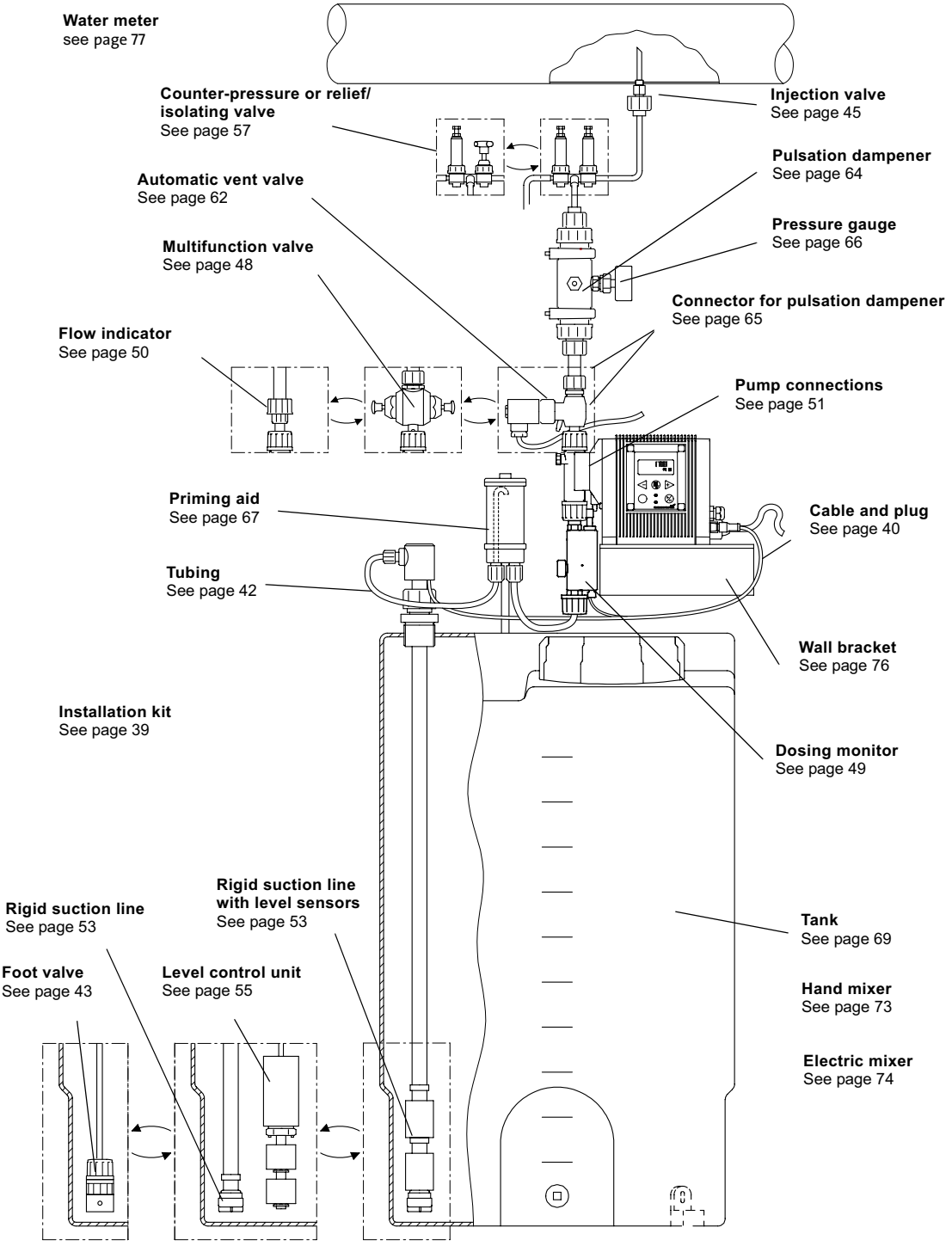
★6 In neutral solutions.

★7 Saturated solution 0.1%.

Accessories

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

Overview

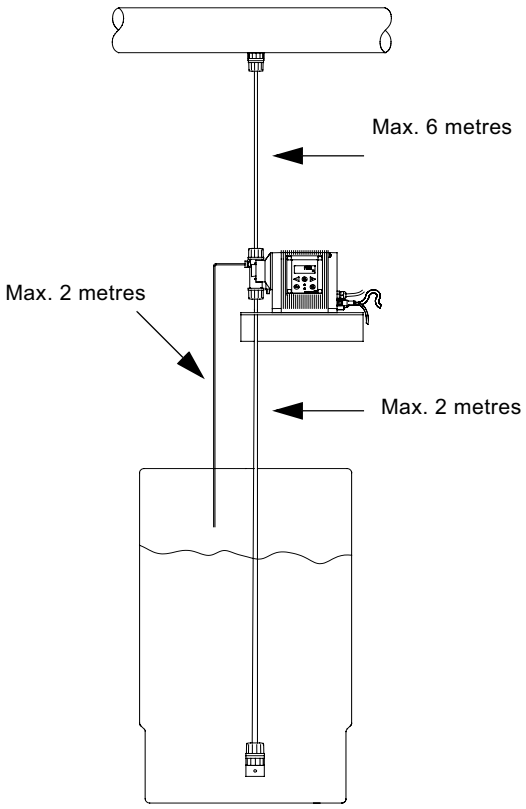


Installation kit

The installation kit includes:

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

TM01 8956 0900



TM02 21083401

For pump types	Size	Valve materials			Inner/outer tubing diameters			Product number
		Housing	Gasket	Ball	Suction	Discharge	Vent	
DME 2 DME 8 DME 12 DMS 2 DMS 4 DMS 8 DMS 12	DN 4	PP	EPDM	Ceramic	4/6	4/6	4/6	96457109
					6/9	6/9	4/6	96434858
					0.17"/1/4"	0.17"/1/4"		96480670
		PP	FKM	Ceramic	1/4"/3/8"	1/4"/3/8"		96479881
					6/9	6/9	4/6	96446723
					4/6	4/6	4/6	96457110
					0.17"/1/4"	0.17"/1/4"		96480674
		PVDF	FKM	Ceramic	1/4"/3/8"	1/4"/3/8"		96479898
					6/9	6/9	4/6	96434859
					4/6	4/6	4/6	96457111
					0.17"/1/4"	0.17"/1/4"		96480675
					1/4"/3/8"	1/4"/3/8"		96479899
DME 19 DME 48	DN 8	PP	EPDM	Ceramic	9/12	9/12	4/6	96440445
					3/8"/1/2"	3/8"/1/2"		96479947
		PP	FKM	Ceramic	9/12	9/12	4/6	96446724
					3/8"/1/2"	3/8"/1/2"		96479949
		PVDF	FKM	Ceramic	9/12	9/12	4/6	96440446
					3/8"/1/2"	3/8"/1/2"		96479948