

DME

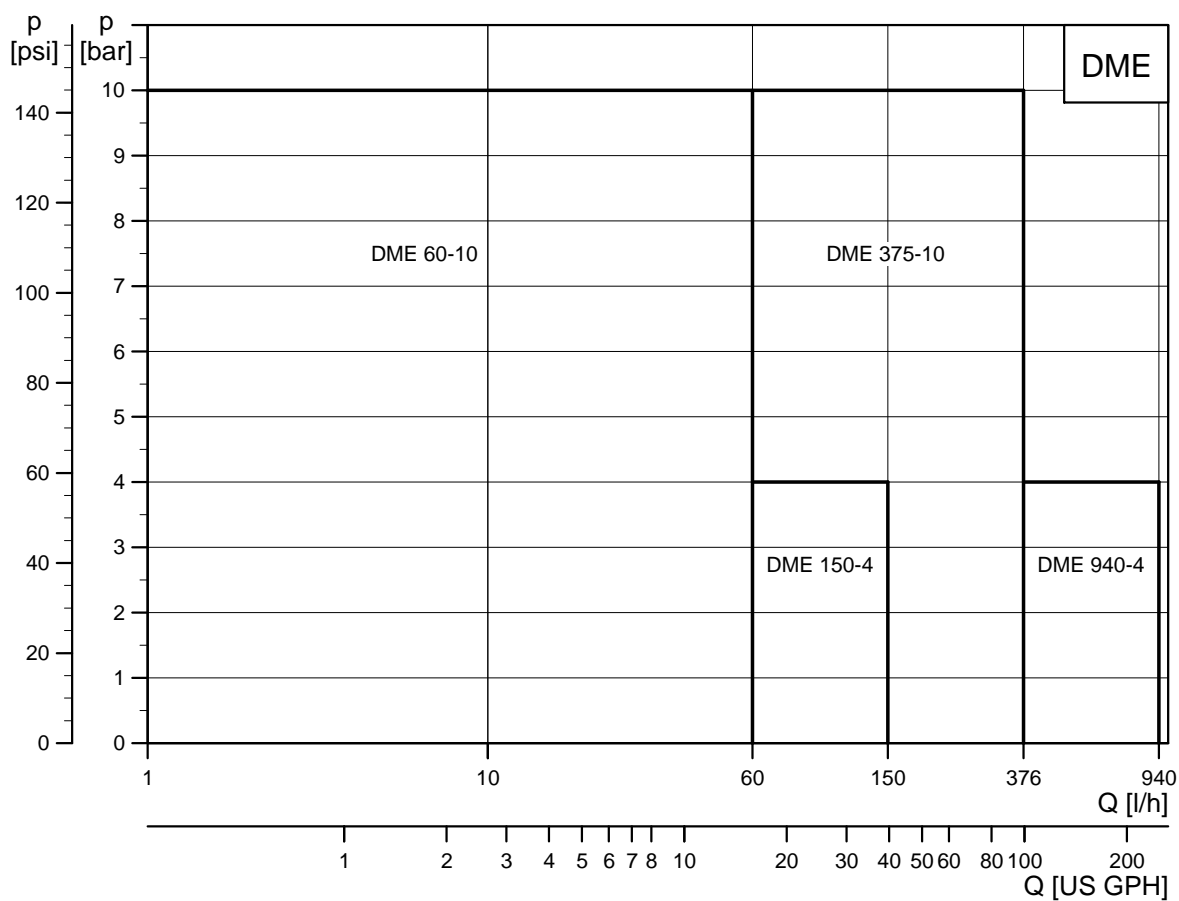
Digital Dosing



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1. General data

Performance range, DME



TM05 8179 2013

Fig. 1 Performance range, DME

DME



TM05 8015 0413

Fig. 2 DME

Digital Dosing™

The DME is the original Digital Dosing™ pump that represents a major step forward in metering pump technology.

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 microprocessor controlled variable speed brushless DC motor provides precise control of the suction and discharge strokes. This improves handling of viscous fluids and chemicals that off-gas.

Rather than traditional stroke length adjustments, the DME always runs at 100 % stroke length. Feed rates are adjusted by controlling the speed of the discharge stroke with a fixed suction stroke speed, resulting in near continuous output as the pump is turned down.

Few variants for many needs

The DME can be turned down to 1/800 of full speed, with ± 1 % repeatable accuracy through the entire adjustable range. In addition to local manual control, remote automatic control options include:

- Pulse/contact control or flow pacing/proportional control
- Timer or pulse based batch control
- Analog 0/4 - 20 mA control
- Dual level control
- Profibus DP control.

Four models handle the range from 0.0198 to 248.3 gallons per hour, up to 145 PSI. All DME pumps are designed to operate at 100-240 V AC, 50/60 Hz while the standard models for North America are supplied with a power cable and mains plug that connect to a standard 120 V, 60 Hz power supply.

The wetted parts in the pump head include a diaphragm, check valves, and manual bleed valve to facilitate priming.

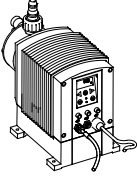
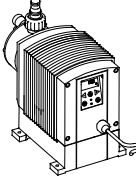
2. Identification

Type key

Example	DME	60-	10	AR-	PP/	E/	C-	F-	3	1	A3	B
Type range												
Maximum capacity [l/h]												
Maximum pressure [bar]												
Control variant												
AP	Standard + Profibus											
AR	Standard											
B	Basic											
Dosing head material												
PP	Polypropylene											
PV	PVDF											
SS	Stainless steel 1.4401											
Gasket material												
E	EPDM											
T	PTFE											
V	FKM											
Valve ball material												
C	Ceramic											
G	Glass											
SS	Stainless steel, 1.4401											
T	PTFE											
Y	Hastelloy C											
Control panel												
F	Front-fitted											
S	Side-fitted											
Voltage												
2	1 x 120 V, 60 Hz											
3	1 x 100-240 V, 50/60 Hz											
Valve type												
1	Standard											
2	Spring-loaded											
Connection, suction/discharge												
A1	Threaded, Rp 3/4"											
A2	Threaded, Rp 1 1/4"											
A3	Threaded, NPT 3/4"											
A4	Threaded, NPT 1 1/4"											
Q	Hose 19/27 and 25/34											
Mains plug												
B	USA, Canada (120 V)											
E	Switzerland											
F	EU (Schuko)											
G	UK											
I	Australia											
J	Japan											

3. Functions

Overview of functions

DME		
	60 to 940 AR/AP	60 to 940 B
		
	TM02 8337 4903	TM02 8338 4903
Capacity control, see page 7		
Internal stroke frequency control	•	•
Internal stroke speed control	•	•
Control panel, see page 8		
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	•	•
Operating modes, see page 11		
Manual control	•	•
Pulse control	•	
Analog 0/4 - 20 mA control	•	
Timer-based batch control	•	
Pulse-based batch control	•	
Functions, see page 6		
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 (DME AP)	•	
Overload protection	•	•
Error message in display	•	•
Leakage sensor	•	
Dosing signal output	•	
Power supply, see page 14		
Switch-mode power supply	•	•
Inputs/outputs, see page 7		
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 (pump running)	•	

Capacity control

The microprocessor determines the motor speed to deliver the required feed rate. As shown in the figure below, the suction stroke speed remains constant and independent of the discharge stroke. At 100 % capacity both suction and discharge stroke are equal. As the pump is turned down, the discharge stroke speed varies per the required feed rate.

This creates several advantages:

- Stroke length is always 100 % for improved priming and accuracy through the entire adjustable range.
- 1:800 turndown, ± 1 % repeatable accuracy.
- More continuous flow and improved mixing.
- Significant drop in pulsating flow that reduces mechanical stress and diaphragm wear.
- Ideal handling of viscous fluids and chemicals that off-gas.

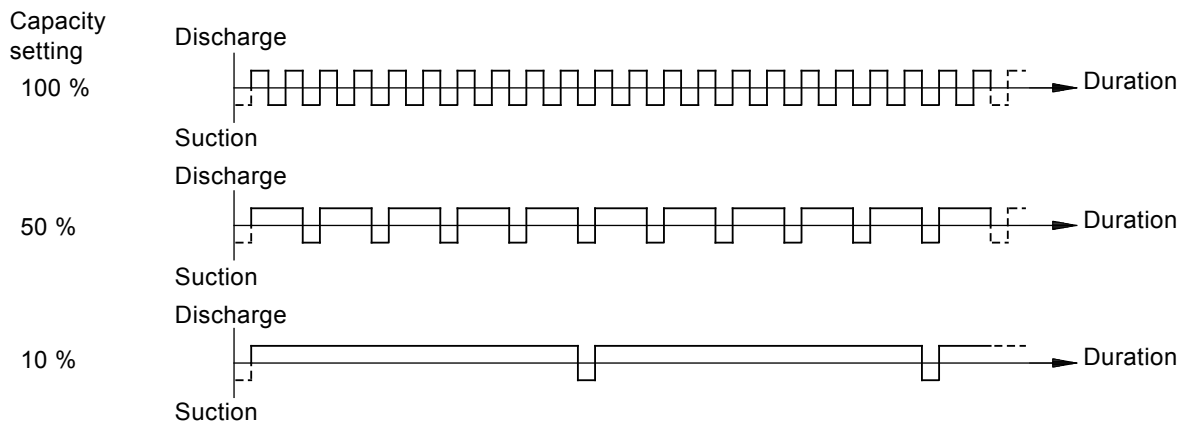


Fig. 3 Capacity control

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Control panel

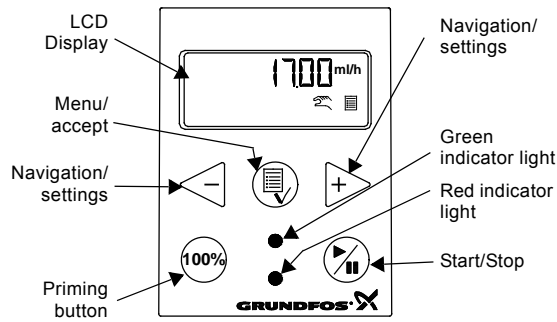


Fig. 4 Control panel

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Priming button

The pump control panel features 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 number 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.



Fig. 5 Control panel fitted to the front

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Fig. 6 Control panel fitted to the side
















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Indicator lights and alarm output

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 an internal alarm relay. The alarm signal is activated by means of an internal potential-free contact.

The pump display will show why the alarm relay changed states.


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★ ²	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	On	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★ ²⁶	On	OVERLOAD	
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 center.

★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.

Operating modes

Manual control

The feed rate of the DME B can only be adjusted locally at the pump in manual control. The DME AR/AP can be controlled in both manual and remote operating modes. The pump is dosing constantly according to the displayed feed rate by means of the buttons  and .

Metric units will automatically change between l/hr and ml/hr.

DME	Adjustable Flow Range					
	GPH	to	GPH	[ml/h]	to	[l/h]
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

Pulse control

Applies to DME-AR and DME-AP

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 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.

Analog 4-20 mA control

Applies to DME-AR and DME-AP

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

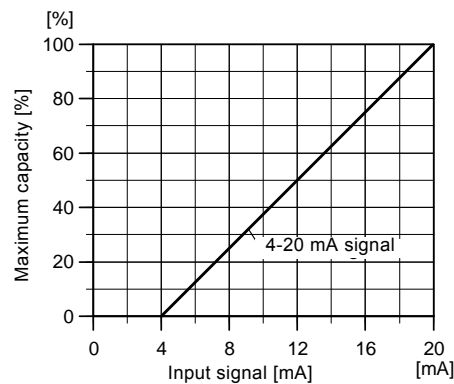


Fig. 8 4-20 mA control

TM01 8218 0100

Timer-based batch control

Applies to DME-AR and DME-AP

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.

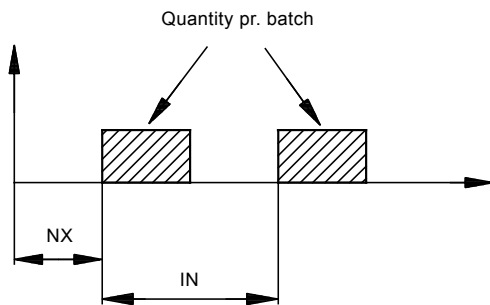


Fig. 9 Timer-based batch control

TM01 8942 0900

Pulse-based batch control

Applies to DME-AR and DME-AP

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 (applies to DME only)

Timer-based and pulse-based batch control			
DME 60:	6.25 ml/batch	to	120 l/batch
	0.0017 gal/batch	to	31.7 gal/batch
DME 150:	15.6 ml/batch	to	300 l/batch
	0.0041 gal/batch	to	79.3 gal/batch
DME 375:	39.1 ml/batch	to	750 l/batch
	0.01 gal/batch	to	198.1 gal/batch
DME 940:	97.9 ml/batch	to	1880 l/batch
	0.025 gal/batch	to	496.7 gal/batch

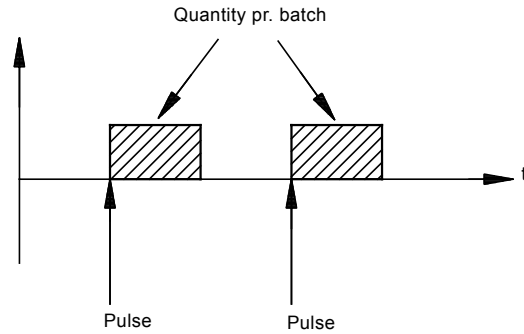


Fig. 10 Pulse-based batch control

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Anti-cavitation

Enable the anti-cavitation mode to slow down the suction stroke speed and reduce friction losses from:

- viscous fluids
- suction line length
- suction line height.

Suction stroke speed can be reduced to 75 %, 50 %, or 25 % of full speed. However this will impact the maximum available capacity as shown in the chart below.

Capacity change with ANTI-CAV enabled

DME	Max cap.	75 %	50 %	25 %
60 gph (l/h)	15.8 (60)	11.9 (45)	8.8 (33.4)	4.2 (16.1)
150 gph (l/h)	39.6 (150)	29.6 (112)	22.0 (83.5)	10.7 (40.4)
375 gph (l/h)	99.2 (376)	74.2 (282)	55.4 (210)	26.6 (101)
940 gph (l/h)	248.0 (940)	186.0 (705)	138.5 (525)	66.5 (252)

Maximum capacity limitation

The maximum allowable feed rate can be reduced using the MAX. CAP function. This will not limit performance when using the priming button.

Because the DME can be turned down to 1/800 of full speed, the MAX. CAP allows operators to program the pump to a smaller size. This is especially useful to change the feed rate at 20 mA in analog mode (see page 11) or define the maximum flow rate when automatically controlling the pump.

Unlike traditional technology, DME performance is improved the more it's turned down. When running at low feed rates the flow is smooth and continuous with a brief interruption during the suction stroke.

This allows for standardization in many facilities where one pump model can be used to cover a wide variety of applications, greatly simplifying inventory requirements while lowering stock and maintenance costs.

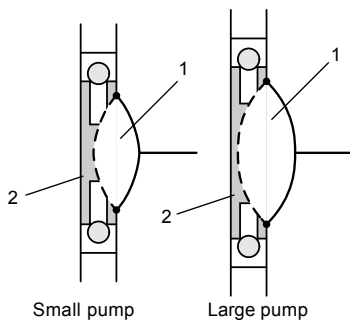


Fig. 11 Anti-cavitation

TM02 0158 3301

Calibration

Enable the calibration mode to start a 100 stroke test run. Upon completion the pumped volume will be displayed, which can be changed to match the measured volume. To measure the pumped volume the following calibration column sizes are suggested:

- DME 60: 1.5 liters
- DME 150: 2.5 liters
- DME 375: 6 liters
- DME 940: 14 liters.

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 vent valve

All pumps feature an integrated bleed valve to facilitate priming. Connect a 5/8" ID hose to the hose barb fitting.

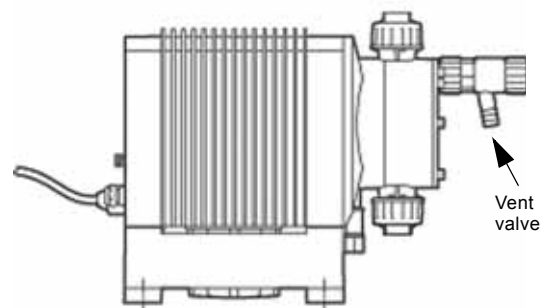


Fig. 12 Integrated vent valve

TM06 0334 1213

Switch-mode power supply

The DME's switch mode power supply is designed to operate at 1x100-240 V, 50/60 Hz.

Level control

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"> • Red indicator light is on. • Pump running. • Alarm relay activated. ★
Lower sensor activated	<ul style="list-style-type: none"> • Red indicator light is on. • Pump stopped. • Alarm relay activated. ★

★ Applies to control variant AR.

Bus communication

The pump is available with an optional built-in module for bus communication with 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 the Grundfos Product Center at us.grundfos.com.

Diaphragm leakage sensor

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



TM06 0336 1213

Fig. 13 Dosing monitor mounted on pump discharge side

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.

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

The dosing monitor should be connected to the input for dosing monitoring (pins 4 and 5). This input must be configured for dosing monitoring.

Once the input has been set to 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 a number of 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 will be activated (variant AR). When a correct dosing stroke is detected, the red indicator light is turned off and the alarm output is deactivated.

Control panel lock

Turn on the electronic lock to prevent unauthorized setting changes and allow access to only the start/stop function.

The user will be prompted to create and enter a four digit code the first time it's enabled. Future setting changes will not be allowed until the code has been entered, granting temporary access. If forgotten a universal code is available from the factory.

Units

The displayed feed rate can be set in either metric units (liter/milliliters per hour) or US gallons per hour.

Metric units: up to 999 ml/hr, then l/hr

US units: US gal/hr

In PULSE mode the feed rate is always set in ml/pulse. However the actual feed rate will display in US or metric units.

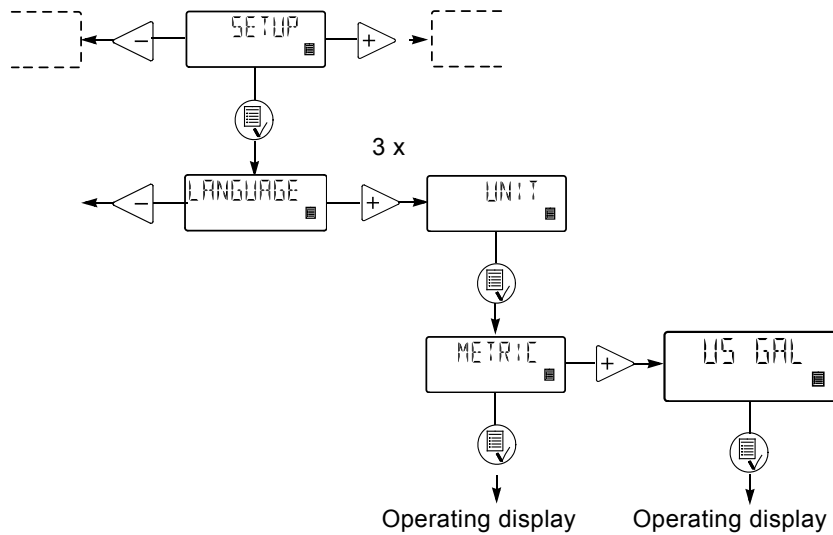
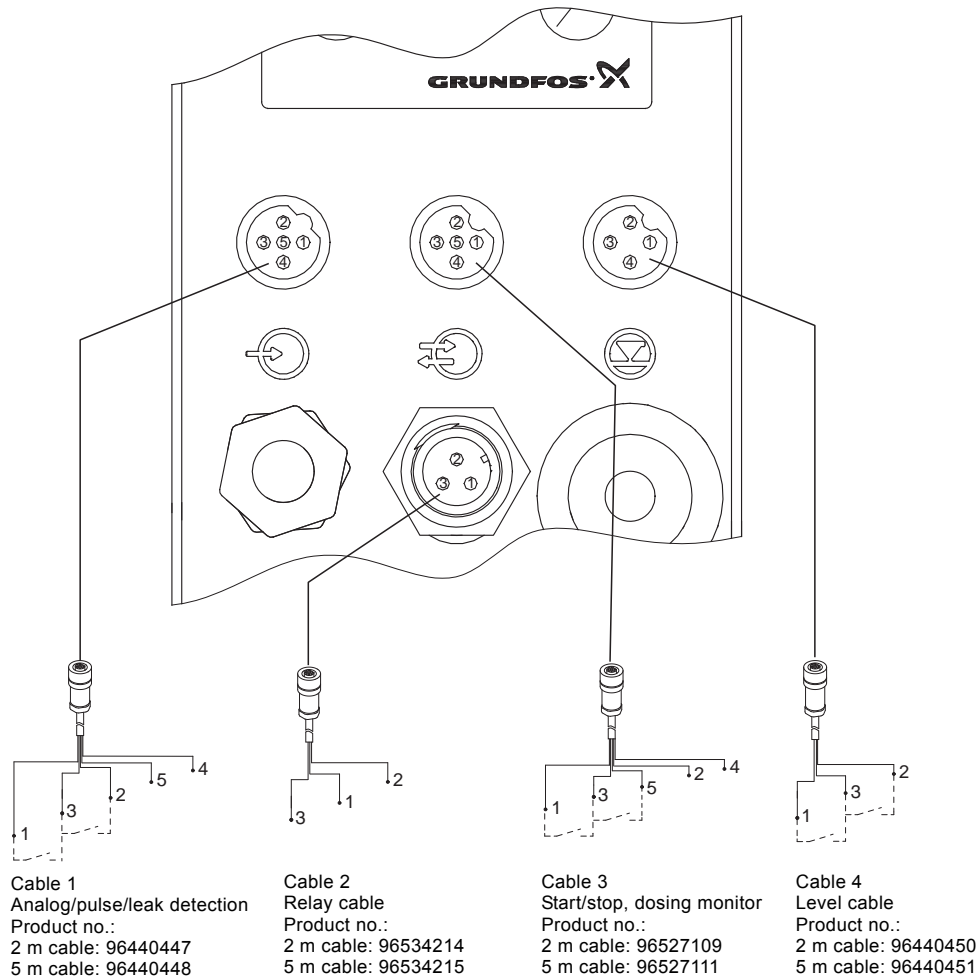


Fig. 14 Possible units settings

Wiring diagram



TMO 27069 2503

Cable 1: Analog, pulse and leak detection

Pin holes						Plug type
Number/color	1/brown	2/white	3/blue, +5 V	4/black, GND	5/grey	
Function						
Pulse	X		X			Contact
Pulse	5 V			GND		Supply 5 VDC
Analog				(-) mA input	(+) mA input	mA signal
Batch	X		X			Contact
Batch	5 V			GND		Supply 5 VDC
Leakage		X	X			Contact
Leakage		5 V		GND		Supply 5 VDC

Cable 2: Output for alarm relay

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

Cable 3: Remote start/stop, dosing monitor, Run output

Pin holes						Plug type
Number/color	1/brown	2/white	3/blue, +5 V	4/black, GND	5/grey	
Function						
Stop input	X		X			Contact
Stop input	5 V			GND		Supply 5 VDC
Dosing monitor			X		X	Contact
Dosing monitor				GND	5 V	Supply 5 VDC
Dosing output (pump running)		Open collector★	X	GND		NPN

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

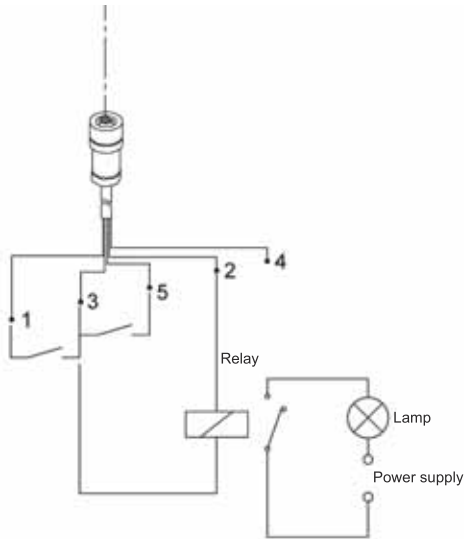


Fig. 15 With internal 5 VDC power supply: max 100 mA

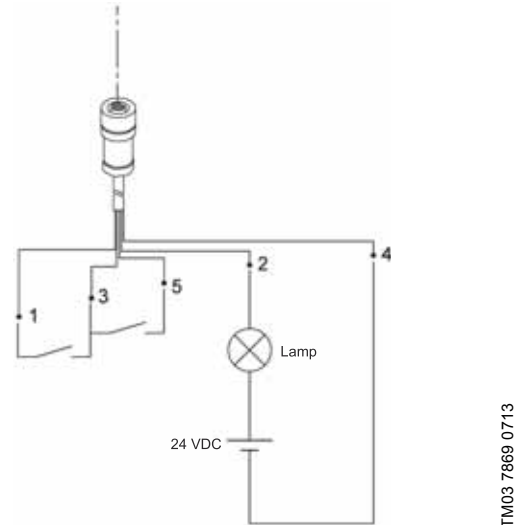


Fig. 16 With external power supply: max 24 VDC, 100 mA

Cable 4: Level input

Pin holes						Plug type
Number/color	1/brown	2/white	3/blue, +5 V	4/black, GND	5/grey	
Function						
Low level	X★		X★			Contact
Low level	5 V			GND		Supply 5 VDC
Empty tank		X★	X★			Contact
Empty tank		5 V		GND		Supply 5 VDC

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

4. Construction

Sectional drawing

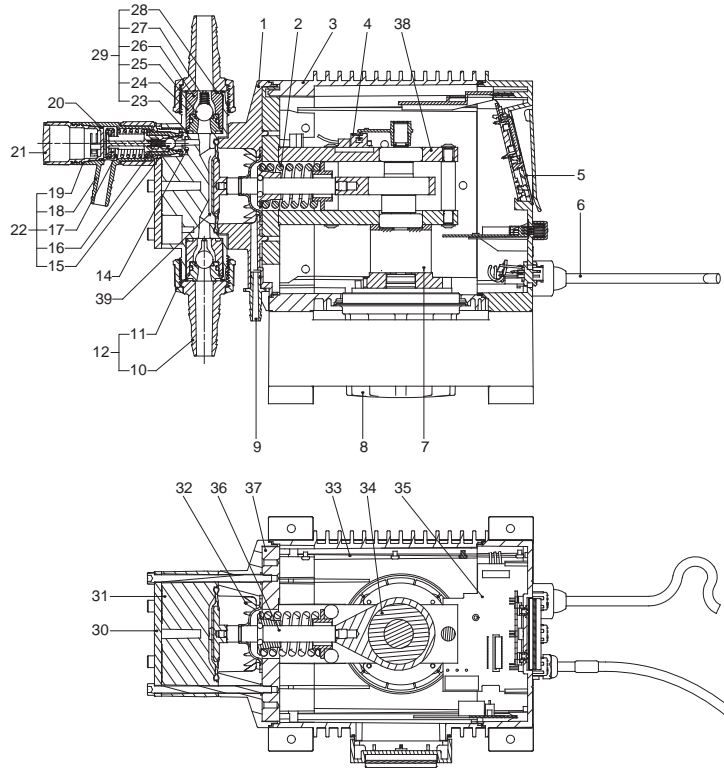


Fig. 17 Sectional drawing

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	Hall sensor	
5	Operation PCB (printed circuit board)	
6	Power cable	Rubber
7	Gear	
8	Brushless DC motor	
9	Drain hole or leakage sensor	
10	FNPT connection (not pictured)	PP/PVDF/SS
11	Union nut	PP/PVDF/SS
12	Connection assembly	
13	O-ring	EPDM/FKM
14	O-ring	EPDM/FKM/PTFE
15	Venting valve ball	Ceramic
16	Spring	Alloy C-4, 2.4610 (NiMo16CrTi)
17	Spring	Alloy C-4, 2.4610 (NiMo16CrTi)
18	Venting valve house	PP/PVDF
19	Venting valve tap	PP/PVDF
20	O-ring	EPDM/FKM/PTFE
21	End cover	Steel
22	Venting valve complete	

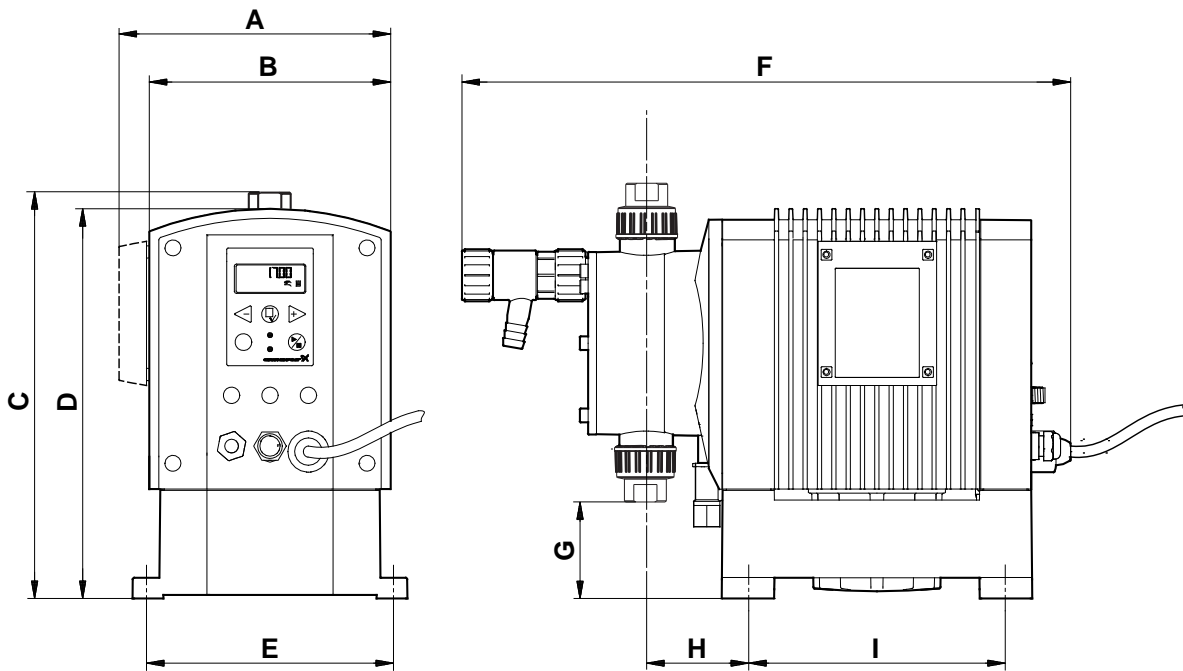
23	O-ring	EPDM/FKM/PTFE
24	Valve seat	PP/PVDF/SS/PTFE
25	Valve ball	Ceramic/Glass/SS/Hastelloy C
26	Valve casing	PP/PVDF/SS
27★	Spring	Alloy C-4, 2.4610 (NiMo16CrTi)
28	O-ring	EPDM/FKM/PTFE
29	Valve assembly	
30	Dosing head cover**	Steel
31	Dosing head	PP/PVDF/SS
32	Safety membrane	
33	Power PCB (printed 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	Fabric-reinforced EPDM, PTFE-coated

★ The pump is available with spring-loaded valves.
Spring material: Alloy C-4, 2.4160 (NiMo16CrTi).
The spring is not shown in the sectional drawing.

** The steel plate is not included with stainless steel pumps.

TMO 28599 0604

5. Dimensions



TM03 0589 0305

Fig. 18 DME Dimensions

Dimensions are in inches [mm]

	DME 60		DME 150		DME 375		DME 940	
A	7.8	(198)	7.8	(198)	9.37	(238)	9.37	(238)
B	6.93	(176)	6.93	(176)	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)

6. Technical Data

Pump		DME 60	DME 150	DME 375	DME 940	
Mechanical data	Maximum capacity ★ ¹	[GPH (l/h)]	15.8 (60)	39.6 (150)	99.2 (376)	248.0 (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 % ★ ¹	[GPH (l/h)]	11.9 (45)	29.6 (112)	74.2 (282)	186.0 (705)
	Maximum capacity with anti-cavitation 50 % ★ ¹	[GPH (l/h)]	8.8 (33.4)	22.0 (83.5)	55.4 (210)	138.5 (525)
	Maximum capacity with anti-cavitation 25 % ★ ¹	[GPH (l/h)]	4.2 (16.1)	10.7 (40.4)	26.6 (101)	66.5 (252)
	Maximum pressure	[psi (bar)]	145 (10)	58 (4)	145 (10)	58 (4)
	Maximum stroke frequency [stroke/min]		160			
	Maximum suction lift during operating [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 ★ ² [cps]		3000 cps at 50 % capacity			
	Maximum viscosity without spring-loaded valves ★ ² [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]		32 (0)			
	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)	
Supply voltage [V]		1 x 100-240 V, 50-60 Hz				
Electrical data	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	IP65				
Insulation class	B					
Cable data	Power supply cable [ft, (m)]	4.9, (1.5)				
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]	250				
Signal output	Maximum load of alarm relay output, at ohmic load [A]	2				
	Maximum voltage, alarm relay output [V]	42				
Approvals	cCSAus, CE, GOST ★ ³					
Sound pressure level	[dB (A)]	< 70				

★¹ Irrespective of backpressure.

★² Maximum suction lift: 3 ft.

★³ DME pumps assembled in USA do not have CSA approval.

7. Pump selection

DME 60 to 150 - standard range

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

Pump Head Material	Control Variant	Valve Ball Material	Connections, Suction/Discharge	Gasket Material	Control Position	Model	Product Number	Ship Weight [lbs]
DME 60-10 15.85 GPH (60 l/h) up to 145 psi (10 bar)								
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	
	B				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	
	B				Front	DME60-10 B-PP/V/C-F-21A3A3B	96528975	
					Side	DME60-10 B-PP/V/C-S-21A3A3B	96528976	
PVDF	AR	Ceramic	3/4" FNPT	FKM	Front	DME60-10 AR-PV/V/C-F-21A3A3B	96528929	25
					Side	DME60-10 AR-PV/V/C-S-21A3A3B	96528970	
	B				Front	DME60-10 B-PV/V/C-F-21A3A3B	96528977	
					Side	DME60-10 B-PV/V/C-S-21A3A3B	96528978	
	B				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	
DME 150-4 39.6 GPH (150 l/h) up to 58 psi (4 bar)								
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	
	B				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	
	B				Front	DME150-4 B-PP/V/C-F-21A3A3B	96528994	
					Side	DME150-4 B-PP/V/C-S-21A3A3B	96528996	
PVDF	AR	Ceramic	3/4" FNPT	FKM	Front	DME150-4 AR-PV/V/C-F-21A3A3B	96528986	26
					Side	DME150-4 AR-PV/V/C-S-21A3A3B	96528987	
	B				Front	DME150-4 B-PV/V/C-F-21A3A3B	96528998	
					Side	DME150-4 B-PV/V/C-S-21A3A3B	96528999	
	B				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, 100-240 V with US 120 V Plug

Pump Head Material	Control Variant	Valve Ball Material	Connections, Suction/Discharge	Gasket Material	Control Position	Model	Product Number	Ship Weight [lbs]
DME 375-10 99.06 GPH (375 l/h) up to 145 psi (10 bar)								
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	
	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	
	FKM				Front	DME375-10 B-PV/V/G-F-21A4A4B	96529128	
					Side	DME375-10 B-PV/V/G-S-21A4A4B	96529130	
	EPDM				Front	DME375-10 AR-SS/V/SS-F-21A4A4B	96529120	
					Side	DME375-10 AR-SS/V/SS-S-21A4A4B	96529121	
FKM	Front	DME375-10 B-SS/V/SS-F-21A4A4B	96529132					
	Side	DME375-10 B-SS/V/SS-S-21A4A4B	96529135					
DME 940-4 248.3 GPH (940 l/h) up to 58 psi (4 bar)								
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	DMR940-4 AR-PP/V/G-F-21A4A4B	96529151	
					Side	DME940-4 AR-PP/V/G-S-21A4A4B	96529155	
	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	
	FKM				Front	DME940-4 B-PV/V/G-F-21A4A4B	96529167	
					Side	DME940-4 B-PV/V/G-S-21A4A4B	96529168	
	EPDM				Front	DME940-4 AR-SS/V/SS-F-21A4A4B	96529161	
					Side	DME940-4 AR-SS/V/SS-S-21A4A4B	96529162	
FKM	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.

Non-standard options

Option

Spring-loaded check valves
Profibus
PTFE balls in PP or PVDF check valves (only DME 375 to 940)
SS balls in PP or PVDF check valves
Metric inlet/discharge connection
International plug types
PTFE gaskets
Hastelloy C balls

Please contact the factory for ordering information.

8. 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			Materials										
			Pump housing				Gasket					Ball	
			Concentration %	PP	PVDF	316 SS	PVC	FKM	EPDM	CSM	PTFE	Centellen C	Ceramic
Acetic acid	CH ₃ COOH	25	●	●	●	●	-	●	○	●	●	●	●
		60	●	●	●	●	-	○	-	●	○	●	●
		85	●	●	●	-	-	-	-	●	○	●	●
Aluminium chloride	AlCl ₃	40	●	●	-	●	●	●	●	●	●	●	
Aluminium sulphate	Al ₂ (SO ₄) ₃	60	●	●	●	●	●	●	●	●	●	●	
Ammonia, aqueous	NH ₄ OH	28	●	●	●	●	-	●	●	○	●	-	
Calcium hydroxide ★ ⁷	Ca(OH) ₂		●	●	●	●	●	●	●	●	●	-	
Calcium hypochlorite	Ca(OCl) ₂	20	○	●	-	●	●	●	●	●	●	●	
		10	●	●	●	●	●	●	●	●	●	●	
		30	-	●	-	●	●	○	●	●	○	●	
		40	-	●	-	●	●	-	●	●	○	●	
Chromic acid ★ ⁵	H ₂ CrO ₄	50	●	●	-	●	-	●	●	○	●	●	
		30	●	●	-	●	●	●	●	○	●	●	
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 ₂ O ₂	30	●	●	●	●	●	●	●	●	●	●	
		10	●	●	●	●	●	●	●	●	●	●	
Nitric acid	HNO ₃	30	●	●	●	●	●	●	●	-	●	●	
		40	○	●	●	●	●	●	-	-	●	●	
		70	-	●	●	-	-	-	-	-	●	●	
Peracetic acid	CH ₃ COOOH	5	●	●	-	●	-	●	●	●	●		
Potassium hydroxide	KOH	50	●	-	●	●	-	●	●	○	●		
Potassium permanganate	KMnO ₄	10	●	●	●	●	-	●	●	●	●		
Sodium chlorate	NaClO ₃	30	●	●	●	●	○	●	●	-	●		
Sodium chloride	NaCl	30	●	●	-	●	●	●	●	●	●		
Sodium chlorite	NaClO ₂	20	●	○	-	-	●	●	●	●	●	●	
		20	●	○	●	●	●	●	●	○	●	-	
		30	●	-	●	●	●	●	●	○	●	-	
Sodium hydroxide	NaOH	50	●	-	●	●	●	●	●	○	●		
Sodium hypochlorite	NaOCl	20	○	●	-	●	●	●	●	●	●		
Sodium sulphide	Na ₂ S	30	●	●	●	●	●	●	●	●	-		
Sodium sulphite ★ ⁶	Na ₂ SO ₃	20	●	●	●	●	●	●	●	●	-		
Sulphurous acid	H ₂ SO ₃	6	●	●	●	●	●	●	●	●	○		
Sulphuric acid ★ ⁴	H ₂ SO ₄	< 80	●	●	-	○	●	○	●	○	●	○	
		80-98	○	●	-	-	●	-	-	●	●	-	

● Suitable.

○ Limited.

- Not suitable.

★³ Risk of crystallization.

★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 %.

9. Accessories

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

Overview

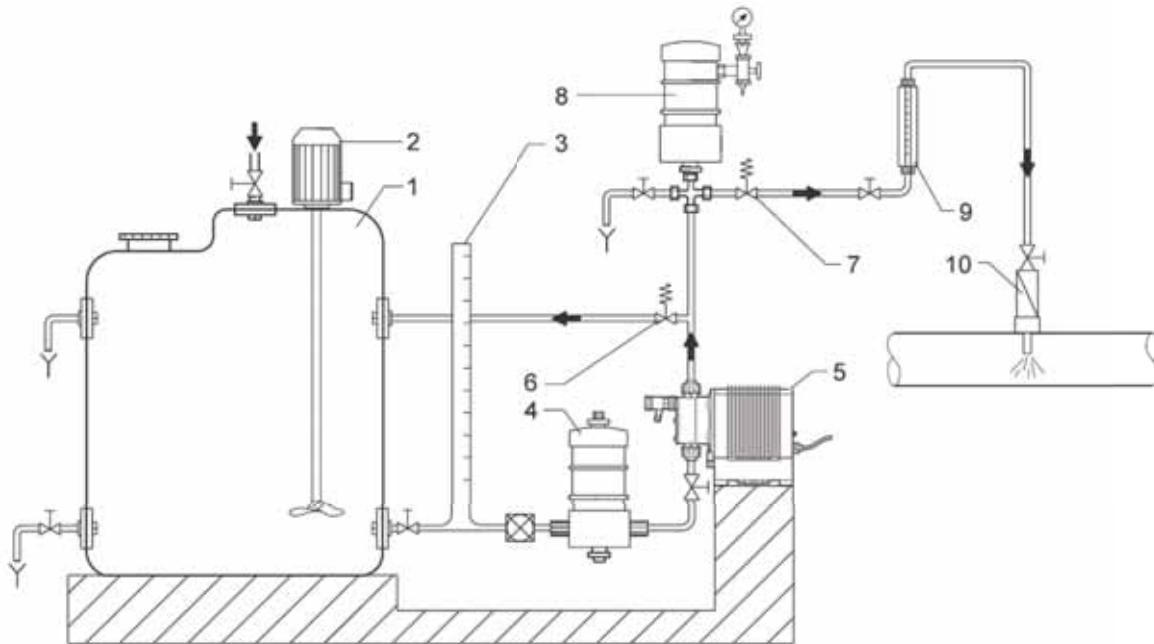


Fig. 19 Overview

Legend

Pos.	Component	Page
1	Tank	
2	Electric agitator	
3	Calibration column	31
4	Inlet stabilizer	
5	Pump	
6	Pressure relief valve	32
7	Back pressure valve	32
8	Pulsation dampener	
9	Measuring glass	
10	Injection valve	27

Additional Accessories

Accessory	Page
Control cables	25
Diaphragm leak sensor	14
Foot valve	26
Level control unit	29
Hand mixer	
Pump connectors	28
Service kits / parts	

TM05 9672 1013

Control cables

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, type DME.

Cable material: PUR (0.34 mm²)

Plug type: M12

Relay plug: MINI-CON-X.



TM01 8955 0900

Signal	Number of poles	Type	Cable length [ft]	Product number
Pulse, 0/4 - 20 mA	5	Control cable with plug	6.5	96440447
		Control cable with plug	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

Leak detention

Optoelectronic leak sensor inserts in the drain hole behind the diaphragm.

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 changes the state of the pump's alarm relay.



GR 8211p

Pump type	Size	Type	Cable length [m]	Product number
DME 60 to 940(l/h)	M12	Leakage sensor M12	0.5 m	96528620

Foot valve

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



TM05 9063 0813

Dimensions



TM01 9285 1600

Fig. 20 Foot valves

Max flow rate GPH (l/h)	Size	Materials			Connection		Dimensions		Product Number
		Housing	Gasket	Ball	Type	ID/OD or NPT	Ø [in]	L [in]	
105.7 (400)	NPT 3/4"	PP	EPDM	Ceramic	NPT	3/4"	3/4"	4.5	96566136
			FKM						96566138
		PVDF	FKM						96566139
		SS	FKM						SS
303.8 (1150)	NPT 1 1/4"	PP	EPDM	Glass	NPT	1 1/4"	1 1/4"	6.6	96566145
			FKM						96566146
		PVDF	FKM						96566147
		SS	FKM						SS

Injection valve

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

Spring material: Hastelloy

Opening pressure: 16 psi (1.1 bar).

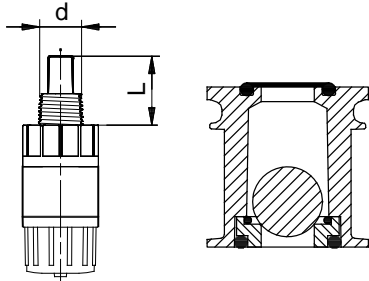
Maximum temperature:

PP, PVDF: 122 °F (50 °C)

PVC: 104 °F (40 °C)

Stainless steel: 176 °F (80 °C).

Dimensions



TM01 9278 3100 - TM02 6433 3100



TM06 0337 1213

Fig. 21 Injection valve

Max flow rate GPH. (l/h)	Size	Materials			Connection		Dimensions		Product Number
		Housing	Gasket	Ball	Type	NPT	d (in)	L (in)	
105.7 (400)	NPT 3/4"	PP	EPDM	Ceramic	NPT	3/4"	3/4" NPT	4.8	96566142
			FKM						96566143
		PVDF	FKM	96566144					
			SS	FKM					SS
303.8 (1150)	NPT 1 1/4"	PP	EPDM	Glass	NPT	1 1/4"	1 1/4" NPT	4.73	96566148
			FKM						96566149
		PVDF	FKM	96566152					
			SS	FKM					SS

Connectors



TM06 0338 1213

Fig. 22 Connector

NPT Connection kits (2 connectors per kit)

Pump type	Size (ID)	Material	Product Number
DME 60, DME 150	3/4" FNPT	PVC	96537892
		PP	96608415
		PVDF	96608417
		SS	96537894
DME 375, DME 940	1 1/4" FNPT	PVC	96537893
		PP	96731912
		PVDF	96731901
		SS	96537895

Union Nut kits (2 unions per kit)

Pump type	Material	Product Number
DME 60, DME 150	PP	96633937
	PVDF	96633938
	SS	96731917
DME 375, DME 940	PP	96731916
	PVDF	96731915
	SS	96731914

Level-control

Dual reed switch level sensor is preset to NO (normally open) but can be set to NC (normally closed) by turning the floater(s).

Electrical data

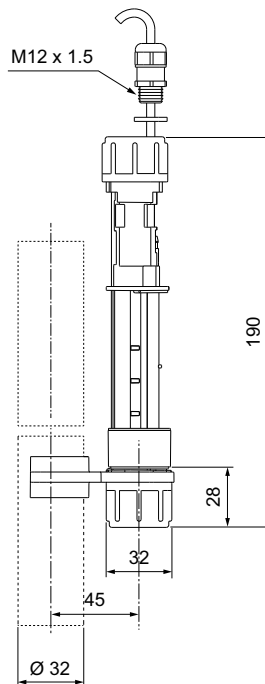
- Max. voltage: 48 V
- Max. current: 0.5 A
- Max. load: 10 VA.

Level-control unit for mixer protection

Level-control units for mixer protection are used for suction lances for pumps up to 60 l/h. They are clipped to the suction lances at the required switch-off height above the mixer propeller.

Level-control units can also be used for overflow protection or as an additional tank level indication.

- A level-control unit for mixer protection includes:
 - Reed switch unit with 1 floater
 - 5 m cable with PE jacket and open wire ends
 - Clip for suction lance
 - Cable gland for mounting at the tank top.



TM04 8819 1413

Fig. 23 Level switch for mixer protection

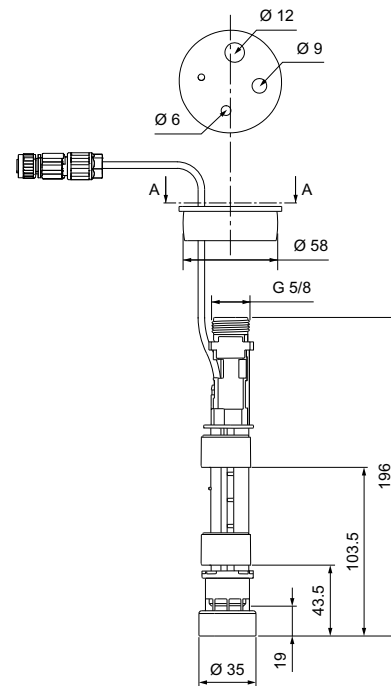
Description	Material	Product No.
Level switch for mixer protection	PE	98306210

Flexible level-control unit

Unit includes:

- Reed switch unit with 2 floaters.
- 5 m of cable with PE jacket and M12 plug.
- Weight that keeps the level-control unit in an upright position at the tank bottom.
- PE cap, Ø58 mm, for assembly in Grundfos cylindrical tanks, or for use with tank adaptors.

Dimensions



TM04 8820 1413

Fig. 24 Flexible level-control unit

Description	Material	Product No.
Flexible level-control unit	PE	98375695

Dosing monitor

Flow verification sensor with alarm output

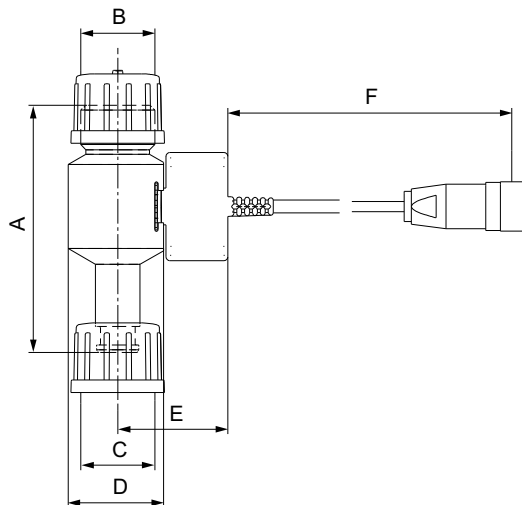


TM06 0193_1213

Fig. 25 Dosing monitor

Materials in contact with the dosing liquid	Product number	
	DME 60-150	DME 375-940
PP (body), EPDM (gasket)	96655230	96655232
PP (body), FKM (gasket)	96655231	96655233

Dimensions



TM04 1536 1010

Fig. 26 Dosing monitor

Pump Type	A [mm]	B	C	D [mm]	E [mm]	F [mm]
DME 60-150	110	5/4"	5/4"	39.5	45.5	950
DME 375-940	140	2"	2"	56.5	62.5	950

Technical Data

Maximum pressure [psi, bar]	145, 10
Maximum liquid temperature [°F, °C]	122, 50
Maximum liquid viscosity [mPa s]	500*

* Field testing is recommended for fluids that exceed noted viscosity above.

Calibration columns

- Graduated cylinders in ml
- NPT connections
- Glass column protected by outer acrylic shield.



Fig. 27 Glass

TM06 0215 1213



Fig. 28 PVC

TM06 0214 1213

Suggested column size for DME pumps.

DME	60-10	150-4	375-10	940-4
ml	2000	4000	6000	20000

Wetted Materials						
Tube	End Cap	O-ring	Volume [ml]	Connection NPT	Model	Material Number
PVC	PVC	Viton	2000	1"	PV# 2-2000	97918770
			4000	1"	PV# 2-4000	97918771
			10000	2"	PV# 2-10000	97918772
			20000	2"	PV# 2-20000	97918773
Glass	PVDF	Viton	2000	1"	ACS# 2-2000 GKV	97918778
			4000	1"	ACS# 2-4000 GKV	97918779
			6000	2"	ACS# 2-6000 GKV	97918780
			20000	2"	ACS# 2-20000 GKV	TBD

Back-pressure or relief valve selection

Valves can be used for either back pressure or pressure relief.

Back pressure: Two port valve installed inline on the pump discharge line provides continuous pressure to facilitate proper pump check valve operation to maintain accuracy and prevent siphoning.

Pressure relief: Two port offline valve installed on the pump discharge is designed to protect the pump and discharge line from overpressure due to blocked discharge piping or closed valves downstream.

Back pressure installation: Inline

Pressure relief installation: T-connection offline

- Setting range: 7 to 150 psi
- Factory set opening pressure: 50 psig
- Diaphragm: PTFE, or PVC on PVC valve body.

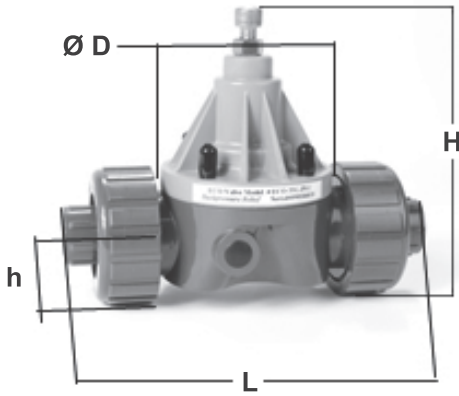


TM05 9673 1013

Fig. 29 Valves

Maximum Pressure vs. Temperature

Temperature		Valve Material				
		PVC	CPVC	PP	PVDF	SS
°F	°C	PSI [Bar]	PSI [Bar]	PSI [Bar]	PSI [Bar]	PSI [Bar]
68	20	150 (10.3)	150 (10.3)	150 (10.3)	150 (10.3)	150 (10.3)
86	30	110 (7.6)		100 (6.9)		
104	70	70 (4.8)	65 (4.5)			
122	30	30 (2.1)	140 (9.6)	65 (4.5)		



TM059674 1013

Fig. 30 Dimensions

Dimensions: inches [mm]			PVC, CPVC, PP, PVDF					
Size	DN	ØD	h	H	L	L	L	L
Connection Type:					Thread	Socket	Union	Flange
1/4"	8	2.5 (63.5)	.66 (16.7)	4.48 (113.9)	3.4 (86.4)	3.4 (86.4)	6 (152.4)	N/A
3/8"	10							5.4 (137.2)
1/2"	15							7.37 (187.1)
3/4"	20	3.5 (88.9)	.88 (22.4)	4.8 (121.9)	4.85 (123.2)	4.85 (123.2)	6.96 (176)	7.48 (190)
1"	25							7.8 (198.1)
1 1/4"	32	4 (101.6)	1.47 (37.3)	5.75 (146.1)	4.9 (124.5)	4.9 (124.5)	9.4 (237.7)	9.2 (234.7)
1 1/2"	40							9.54 (242.3)
2"	50							

Dimensions: inches (mm)			316L Stainless Steel							
Size	DN	ØD	h	H	L	L	L	L		
Connection Type:					Thread	Socket	Union	Flange		
1/4"	8	2.5 (63.5)	.66 (16.7)	4.47 (113.5)	2.5 (63.5)	2.5 (63.5)	N/A	N/A		
3/8"	10							.49 (12.4)	4.58 (116.3)	6.25 (158.8)
1/2"	15							.66 (16.7)	4.72 (119.9)	
3/4"	20	3.5 (88.9)	.73 (18.5)	4.8 (121.9)	3.5 (88.9)	3.5 (88.9)	N/A	7.48 (190.1)		
1"	25							.86 (21.8)	5.1 (129.5)	7.63 (193.9)
1 1/4"	32	4 (101.6)	1.05 (26.7)	5.77 (146.6)	4 (101.6)	4 (101.6)	N/A	8.29 (210.6)		
1 1/2"	40							9.59 (243.6)		
2"	50							1.45 (36.8)	5.82 (147.8)	4.72 (119.9)

Type key

Example:	BPV/PRV ECO - 50A - PVC - P - NL
Back Pressure/Relief Valve 2 port design	
Size: 25 = 1/4", DN8 38 = 3/8", DN 10 50 = 1/2", DN 15 75 = 3/4", DN 20 100 = 1", DN 25 125 = 1 1/4", DN 32 150 = 1 1/2", DN 40 200 = 2", DN 50	
Connections: A = NPT B = BSPT C = Socket (ANSI) D = Socket (DIN) E = Flanged (ANSI) F = Flanged (DIN) G = Union x NPT (plastic only) H = Union x BSPT (plastic only) I = Union x Socket (ANSI, plastic only) J = Union x Socket (DIN, plastic only)	
	<p>Options: NL = Gauge port - NPT, left to right flow BL = Gauge port - BSP, left to right flow NR = Gauge port, NPT, right to left flow BR = Gauge port, BSP, right to left flow</p> <p>Diaphragms: P = PVC (standard on PVC valves) T = PTFE backed EPDM (standard except PVC valves) E = EPDM V = Viton</p> <p>Body Material: PVC = Polyvinylchloride CPVC = Chlorinated PVC (Corzan) PP = Polypropylene PVDF = Polyvinylidene Flouride SS = 316L Stainless Steel</p>

Note:

Viton o-ring seals are standard on all union style valves. EPDM and PTFE encapsulated o-rings are available as an option.

TM05 9675 1013

Size	Connection	Valve Type	Description	Material Number	
1/2"	NPT	PVC	BPV/PRV ECO-50A-PVC-P	98533515	
		CPVC	BPV/PRV ECO-50A-CPVC-T	98533516	
		PP	BPV/PRV ECO-50A-PP-T	98533517	
		PVDF	BPV/PRV ECO-50A-PVDF-T	98533518	
		SS	BPV/PRV ECO-50A-SS-T	98533519	
	Socketweld ASTM	PVC	BPV/PRV ECO-50C-PVC-P	98533984	
		CPVC	BPV/PRV ECO-50C-CPVC-T	98533986	
		PP	BPV/PRV ECO-50C-PP-T	98533987	
		PVDF	BPV/PRV ECO-50C-PVDF-T	98533988	
		SS	BPV/PRV ECO-50C-SS-T	98533989	
	Union NPT Socket inserts	PVC	BPV/PRV ECO-50G-PVC-P	98533996	
		CPVC	BPV/PRV ECO-50G-CPVC-T	98533997	
		PP	BPV/PRV ECO-50G-PP-T	98533999	
	Union ASMT Socket inserts	PVDF	BPV/PRV ECO-50G-PVDF-T	98534000	
		PVC	BPV/PRV ECO-50I-PVC-P	98534011	
		CPVC	BPV/PRV ECO-50I-CPVC-T	98534013	
		PP	BPV/PRV ECO-50I-PP-T	98534014	
	Flanged ANSI	PVDF	BPV/PRV ECO-50I-PVDF-T	98534016	
		PVC	BPV/PRV ECO-50E-PVC-P	98534021	
		CPVC	BPV/PRV ECO-50E-CPVC-T	98534022	
		PP	BPV/PRV ECO-50E-PP-T	98534023	
	3/4"	NPT	PVDF	BPV/PRV ECO-50E-PVDF-T	98534024
			SS	BPV/PRV ECO-50E-SS-T	98534025
			PVC	BPV/PRV ECO-75A-PVC-P	98538293
			CPVC	BPV/PRV ECO-75A-CPVC-T	98538296
			PP	BPV/PRV ECO-75A-PP-T	98538297
		Socketweld ASTM	PVDF	BPV/PRV ECO-75A-PVDF-T	98538298
			SS	BPV/PRV ECO-75A-SS-T	98538299
			PVC	BPV/PRV ECO-75C-PVC-P	98538308
			CPVC	BPV/PRV ECO-75C-CPVC-T	98538309
PP			BPV/PRV ECO-75C-PP-T	98538310	
Union NPT Socket inserts		PVDF	BPV/PRV ECO-75C-PVDF-T	98538311	
		SS	BPV/PRV ECO-75C-SS-T	98538312	
		PVC	BPV/PRV ECO-75G-PVC-P	98538321	
		CPVC	BPV/PRV ECO-75G-CPVC-T	98538322	
		PP	BPV/PRV ECO-75G-PP-T	98538323	
	PVDF	BPV/PRV ECO-75G-PVDF-T	98538324		
	PVC	BPV/PRV ECO-75I-PVC-P	98538330		
Union ASMT Socket inserts	CPVC	BPV/PRV ECO-75I-CPVC-T	98538331		
	PP	BPV/PRV ECO-75I-PP-T	98538332		
	PVDF	BPV/PRV ECO-75I-PVDF-T	98538333		
Flanged ANSI	PVC	BPV/PRV ECO-75E-PVC-P	98538338		
	CPVC	BPV/PRV ECO-75E-CPVC-T	98538339		
	PP	BPV/PRV ECO-75E-PP-T	98538340		
	PVDF	BPV/PRV ECO-75E-PVDF-T	98538341		
	SS	BPV/PRV ECO-75E-SS-T	98538342		

Size	Connection	Valve Type	Description	Material Number	
1"	NPT	PVC	BPV/PRV ECO-100A-PVC-P	98538353	
		CPVC	BPV/PRV ECO-100A-CPVC-T	98538354	
		PP	BPV/PRV ECO-100A-PP-T	98538355	
		PVDF	BPV/PRV ECO-100A-PVDF-T	98538356	
		SS	BPV/PRV ECO-100A-SS-T	98538357	
	Socketweld ASTM	PVC	BPV/PRV ECO-100C-PVC-P	98538373	
		CPVC	BPV/PRV ECO-100C-CPVC-T	98538374	
		PP	BPV/PRV ECO-100C-PP-T	98538375	
		PVDF	BPV/PRV ECO-100C-PVDF-T	98538376	
		SS	BPV/PRV ECO-100C-SS-T	98538377	
	Union NPT Socket inserts	PVC	BPV/PRV ECO-100G-PVC-P	98538394	
		CPVC	BPV/PRV ECO-100G-CPVC-T	98538396	
		PP	BPV/PRV ECO-100G-PP-T	98538397	
	Union ASMT Socket inserts	PVDF	BPV/PRV ECO-100G-PVDF-T	98538398	
		PVC	BPV/PRV ECO-100I-PVC-P	98538403	
		CPVC	BPV/PRV ECO-100I-CPVC-T	98538404	
		PP	BPV/PRV ECO-100I-PP-T	98538405	
	Flanged ANSI	PVDF	BPV/PRV ECO-100I-PVDF-T	98538406	
		PVC	BPV/PRV ECO-100E-PVC-P	98538412	
		CPVC	BPV/PRV ECO-100E-CPVC-T	98538413	
		PP	BPV/PRV ECO-100E-PP-T	98538414	
	1 1/4"	NPT	PVDF	BPV/PRV ECO-100E-PVDF-T	98538416
			PVC	BPV/PRV ECO-125A-PVC-P	98538905
			CPVC	BPV/PRV ECO-125A-CPVC-T	98538906
			PP	BPV/PRV ECO-125A-PP-T	98538907
			PVDF	BPV/PRV ECO-125A-PVDF-T	98538908
		Socketweld ASTM	SS	BPV/PRV ECO-125A-SS-T	98538909
			PVC	BPV/PRV ECO-125C-PVC-P	98538925
CPVC			BPV/PRV ECO-125C-CPVC-T	98538926	
PP			BPV/PRV ECO-125C-PP-T	98538927	
Union NPT Socket inserts		PVDF	BPV/PRV ECO-125C-PVDF-T	98538928	
		SS	BPV/PRV ECO-125C-SS-T	98538929	
		PVC	BPV/PRV ECO-125G-PVC-P	98539629	
		CPVC	BPV/PRV ECO-125G-CPVC-T	98539630	
		PP	BPV/PRV ECO-125G-PP-T	98539642	
		PVDF	BPV/PRV ECO-125G-PVDF-T	98539643	
Union ASMT Socket inserts		PVC	BPV/PRV ECO-125I-PVC-P	98539648	
	CPVC	BPV/PRV ECO-125I-CPVC-T	98539649		
	PP	BPV/PRV ECO-125I-PP-T	98539650		
Flanged ANSI	PVDF	BPV/PRV ECO-125I-PVDF-T	98539651		
	PVC	BPV/PRV ECO-125E-PVC-P	98539656		
	CPVC	BPV/PRV ECO-125E-CPVC-T	98539657		
	PP	BPV/PRV ECO-125E-PP-T	98539658		
		PVDF	BPV/PRV ECO-125E-PVDF-T	98539659	
		SS	BPV/PRV ECO-125E-SS-T	98539660	

Size	Connection	Valve Type	Description	Material Number	
1 1/2"	NPT	PVC	BPV/PRV ECO-150A-PVC-P	98539670	
		CPVC	BPV/PRV ECO-150A-CPVC-T	98539671	
		PP	BPV/PRV ECO-150A-PP-T	98539672	
		PVDF	BPV/PRV ECO-150A-PVDF-T	98539673	
		SS	BPV/PRV ECO-150A-SS-T	98539674	
	Socketweld ASTM	PVC	BPV/PRV ECO-150C-PVC-P	98539680	
		CPVC	BPV/PRV ECO-150C-CPVC-T	98539681	
		PP	BPV/PRV ECO-150C-PP-T	98539682	
		PVDF	BPV/PRV ECO-150C-PVDF-T	98539683	
		SS	BPV/PRV ECO-150C-SS-T	98539684	
	Union NPT Socket inserts	PVC	BPV/PRV ECO-150G-PVC-P	98539690	
		CPVC	BPV/PRV ECO-150G-CPVC-T	98539691	
		PP	BPV/PRV ECO-150G-PP-T	98539692	
	Union ASMT Socket inserts	PVDF	BPV/PRV ECO-150G-PVDF-T	98539693	
		PVC	BPV/PRV ECO-150I-PVC-P	98539698	
		CPVC	BPV/PRV ECO-150I-CPVC-T	98539699	
		PP	BPV/PRV ECO-150I-PP-T	98539700	
	Flanged ANSI	PVDF	BPV/PRV ECO-150I-PVDF-T	98539701	
		PVC	BPV/PRV ECO-150E-PVC-P	98539706	
		CPVC	BPV/PRV ECO-150E-CPVC-T	98539707	
		PP	BPV/PRV ECO-150E-PP-T	98539708	
		PVDF	BPV/PRV ECO-150E-PVDF-T	98539709	
	2"	NPT	SS	BPV/PRV ECO-150E-SS-T	98539710
			PVC	BPV/PRV ECO-200A-PVC-P	98539771
			CPVC	BPV/PRV ECO-200A-CPVC-T	98539772
			PP	BPV/PRV ECO-200A-PP-T	98539773
			PVDF	BPV/PRV ECO-200A-PVDF-T	98539774
		Socketweld ASTM	SS	BPV/PRV ECO-200A-SS-T	98539775
PVC			BPV/PRV ECO-200C-PVC-P	98539781	
CPVC			BPV/PRV ECO-200C-CPVC-T	98539782	
PP			BPV/PRV ECO-200C-PP-T	98539783	
PVDF			BPV/PRV ECO-200C-PVDF-T	98539784	
Union NPT Socket inserts		SS	BPV/PRV ECO-200C-SS-T	98539786	
		PVC	BPV/PRV ECO-200G-PVC-P	98540404	
		CPVC	BPV/PRV ECO-200G-CPVC-T	98540405	
		PP	BPV/PRV ECO-200G-PP-T	98540407	
		PVDF	BPV/PRV ECO-200G-PVDF-T	98540409	
Union ASMT Socket inserts		PVC	BPV/PRV ECO-200I-PVC-P	98540415	
		CPVC	BPV/PRV ECO-200I-CPVC-T	98540416	
		PP	BPV/PRV ECO-200I-PP-T	98540417	
Flanged ANSI		PVDF	BPV/PRV ECO-200I-PVDF-T	98540418	
		PVC	BPV/PRV ECO-200E-PVC-P	98540434	
	CPVC	BPV/PRV ECO-200E-CPVC-T	98540435		
	PP	BPV/PRV ECO-200E-PP-T	98540436		
	PVDF	BPV/PRV ECO-200E-PVDF-T	98540437		
		SS	BPV/PRV ECO-200E-SS-T	98540438	

10. Grundfos Product Center

Online search and sizing tool to help you make the right choice.

<http://product-selection.grundfos.com>



"SIZING" enables you to size a pump based on entered data and selection choices.

"REPLACEMENT" enables you to find a replacement product. Search results will include information on

- the lowest purchase price
- the lowest energy consumption
- the lowest total life cycle cost.

The screenshot shows the Grundfos Product Center website. At the top, there is a navigation bar with the Grundfos logo and 'PRODUCT CENTER'. Below this is a search bar with a 'SEARCH' button. The main content area features four large buttons: 'SIZING' (with a subtext 'Enter pump sizing'), 'CATALOG' (with a subtext 'Product and services'), 'REPLACEMENT' (with a subtext 'Replace an old pump with a new'), and 'LIQUIDS' (with a subtext 'Find liquid pump'). Below these buttons is a 'QUICK SIZING' section with input fields for 'Flow (Q)*' and 'Head (H)*', and a 'Select what to size by:' section with radio buttons for 'Size by application', 'Size by pump design', and 'Size by pump family'. A 'START SIZING' button is located to the right of the 'QUICK SIZING' section. At the bottom of the 'QUICK SIZING' section, there are links for 'ADVANCED SIZING' with options for 'Advanced sizing by application' and 'Guided selection'.

"CATALOG" gives you access to the Grundfos product catalog.

"LIQUIDS" enables you to find pumps designed for aggressive, flammable or other special liquids.

All the information you need in one place

Performance curves, technical specifications, pictures, dimensional drawings, motor curves, wiring diagrams, spare parts, service kits, 3D drawings, documents, system parts. The Product Center displays any recent and saved items — including complete projects — right on the main page.

Downloads

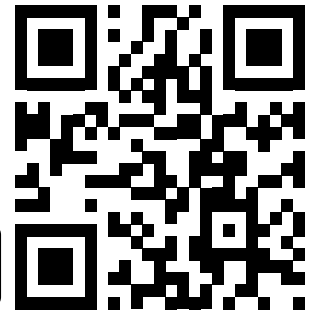
On the product pages, you can download Installation and Operating Instructions, Data Booklets, Service Instructions, etc. in PDF format.

Subject to alterations.

Grundfos GO

Mobile solution for professionals on the GO!

Grundfos GO is the mobile tool box for professional users on the go. It is the most comprehensive platform for mobile pump control and pump selection including sizing, replacement and documentation. It offers intuitive, handheld assistance and access to Grundfos online tools, and it saves valuable time for reporting and data collection.



98472234 0615

ECM: 1161195

Grundfos Kansas City

17100 West 118th Terrace
Olathe, Kansas 66061
Phone: 913-227-3400
Fax: 913-227-3500
www.grundfos.us

Grundfos Canada

2941 Brighton Road
Oakville, Ontario L6H 6C9 Canada
Phone: +1-905-829-9533
Fax: +1-905-829-9512
www.grundfos.ca

Grundfos México

Boulevard TLC No. 15
Parque Industrial Stiva Aeropuerto
C.P. 66600 Apodaca, N.L. Mexico
Phone: 011-52-81-8144 4000
Fax: 011-52-81-8144 4010
www.grundfos.mx