



motor driven metering pumps
DIAPHRAGM ACTUATED TYPE

Welcome to FWT Dosing Systems

FWT (Fluid and Water Technology) is a company formed with specialised experts with over twenty years of experience in liquid handling dosing systems and measuring systems. All the staff has been operating in these fields covering all key positions concerning technical and customer service, research and development, trading and production activities. FWT offers a wide range of accessories and sensors to guarantee a complete service.

MECHANICAL ACTUATED DIAPHRAGM METERING PUMP

⇒ **FWT Diaphragm** mechanical actuated motor driven metering pumps feature two series:

DS series: flow rates from 7 to 116 l/h with pressures up to 16 bar

DM series: flow rates from 49 to 490 l/h with pressures up to 13 bar

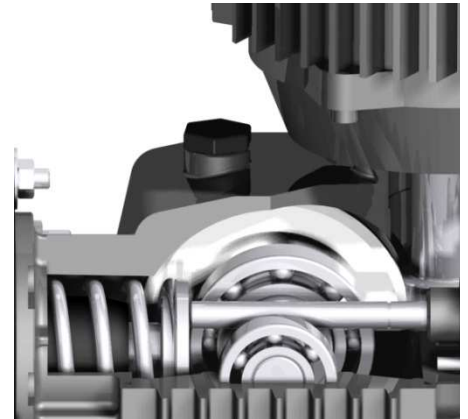
USEFUL information selecting of dosing pumps: Max flow rate, Max working pressure, chemical viscosity, specific gravity (S.G.), temperature, area classification, suspended solids in chemical.

Mechanical diaphragm type metering pumps are suitable when:

- ✓ Zero leakage is essential;
- ✓ Pumped liquid contains suspended solids particles

• MAIN FEATURES •

- ⇒ **Gearbox** in cast aluminium protected with Epoxy paint. The gearbox mechanism is operated by an eccentric cam, which provides a positive displacement delivery stroke, whilst the suction stroke is **spring** assisted.
- ⇒ **Adjustable capacity** from 0-100% whilst in operation or at rest. Flow rate is adjusted by a micrometer screw to control stroke length (10:1 ratio).



- ⇒ **Maximum suction lift** 4 metres with water.
- ⇒ **Motor and gearbox** coupled by means of a **flexible motor coupling**, thus increasing transmission life.
- ⇒ **Strokes per minutes in five versions: 37, 60, 74, 100 or 103, 120**

Each pump is individually tested and all units are **CE certified**

MOTORS FEATURES



- ✓ Standard **MULTIFREQUENCY/VOLTAGE:** 230-400Vac 50Hz • 275-480Vac 60Hz/3phase/±10%
- ✓ Standard motors are vertical mounting "TEFC, B14 type, flanges IEC 60072, ~ 1400 rpm
- ✓ Conform with IP55 protection. Isolation class F, others available upon request.

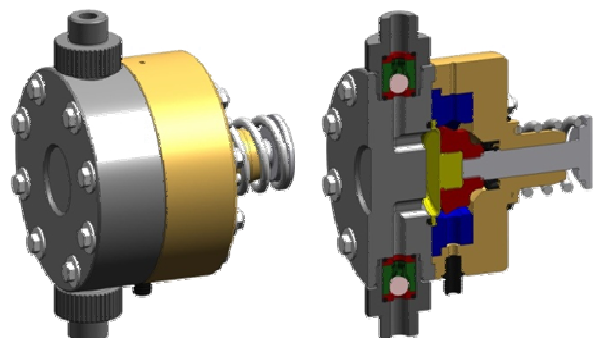
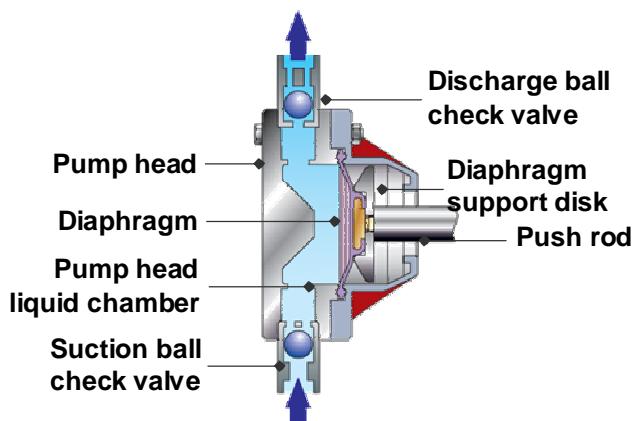
Other power supply upon request:

- 230 Vac 1 phase 50 Hz or 60 Hz (*) • 110 Vac 1 phase 50 Hz or 60 Hz (*)

(*) **NOTE:** at 60 Hz frequency, motor speed and thus stroke rates and flow rates increase by approx. 20%. 60 Hz are only available for pumps with 60 and 103 strokes per minute.

MOTORS CONFIGURATION • 0,18 KW • 0,25 KW • 0,37 KW • 0,55 KW • 0,75 KW

DIAPHRAGM HEAD SECTIONED VIEWS



diaphragm actuated motor dosing pump DS series

DS series

DS series is a mechanical actuated diaphragm motor driven metering pumps with small gearbox designed to cover smaller flow rates with high quality performance and cost effective.

DS AA (AISI 316)



DS CA (PP) or BA (PVC)



DS SA (PVDF)



DS LIQUID ENDS CONFIGURATIONS

WETTED PARTS	AA	CA	BA upon request	SA upon request
Pump head	AISI 316L	PP	PVC	PVDF
Head connections	AISI 316L	PVC	PVC	PVDF
Diaphragm	PTFE / NBR	PTFE / NBR	PTFE / NBR	PTFE / NBR
Ball check valve	AISI 316L	CERAMIC	CERAMIC	CERAMIC
Valve o-rings	NBR (avail.FPM)	FPM (avail.EPDM)	FPM (avail.EPDM)	FPM (avail.EPDM)
Valve seat	PVDF	PVC	PVC	PVDF

AVAILABLE OTHER CONFIGURATIONS: configuration **AI-CI-BI** (o-rings EPDM) • configuration **AP** (o-rings FPM)

DS technical characteristics

Pump Code*	Flow rate l/h		Pressure BAR				Power	Ø diaphragm	Stroke per minute		Stroke length	Valves type		Connections		
	50Hz	60Hz	AA (AISI)		CA (PP) BA-SA				50Hz	60Hz		AA AI AP	CA BA SA			
			50Hz	60Hz	50Hz	60Hz										
DS0010	10	12	14	14	14	14	0,18 Kw	50 mm	60	72	2,6 mm	A ² SV ³	P ⁴ SV ³	1/2" BSPm ¹		
DS0016	16	19		14					14	60	72				4 mm	
DS0027	27	32		12					12	120	144				3,1 mm	
DS0033	33	40		12					12	120	144				4 mm	
DS0019	19	23	11	11	11	0,18 Kw		67 mm	60	72	2,6 mm	A ² SV ³	P ⁴ SV ³	1/2" BSPm ¹		
DS0039	39	47		10					10	120	144				4 mm	
DS0051	51	61		10					10	120	144				3,1 mm	
DS0060	60	72		10					10	120	144				4 mm	
DS0061	61	73	7	6,5	7			0,18 Kw	85 mm	60	72	2,6 mm	A ² SV ³	P ⁴ SV ³	1/2" BSPm ¹	
DS0084	84	101		6,5						6,5	120	144				4 mm
DS0104	104	125		6						6	120	144				3,1 mm
DS0123	123	148		5						5	120	144				4 mm

- BSPm¹ = GAS male connections
- A² = AISI 316 ball check (AA configuration)
- SV³ = single ball check valve
- P⁴ = CERAMIC ball check (CA, BA and SA configurations)
- DV⁵ = double ball checks valve

REMINDER: motor standard power supply: 230/400Vac, 50Hz; 275/480Vac, 60Hz • 3 phase; Class F, IP55, ~1400 rpm

MOTOR power code: 1 = 0,18kW *NOTE (add the three underlined digits 001 after liquid ends configuration code)

Code configuration example: DS0010CA0010 features PP liquid ends, 0.18 kW motor, max flow 10 l/h against max 14 bar working pressure, 60 strokes/min

USEFUL information when selecting dosing pumps:
Max flow rate, Max working pressure, chemical viscosity, temperature, area classification, suspended solids.

diaphragm actuated motor dosing pump DM series

DM AA (AISI 316)



DM BA (PVC)



DM SA (PVDF)



DM LIQUID ENDS CONFIGURATIONS

WETTED PARTS	AA	BA	SA upon request
Pump head	AISI 316L	PVC	PVDF
Head connections	AISI 316L	PVC	PVDF
Diaphragm	PTFE / NBR	PTFE / NBR	PTFE / NBR
Ball check valve	AISI 316L	CERAMIC	CERAMIC
Valve o-rings	NBR (avail.FPM)	FPM (avail.EPDM)	FPM (avail.EPDM)
Valve seat	PVDF	PVC	PVDF

AVAILABLE OTHER CONFIGURATIONS: configuration **AI-CI-BI** (o-rings EPDM) • configuration **AP** (o-rings FPM,

DM technical characteristics

Pump Code*	Flow rate l/h		Pressure BAR				Power	Ø diaphragm	Stroke per minute		Stroke length	Valves type		Connections
			AA (AISI)		BA (PVC) SA (PVDF)				50Hz	60Hz		AA AI AP	BA BI SA	
	50Hz	60Hz	50Hz	60Hz	50Hz	60Hz								
DM0056	56	67	12	11	10	10	0,25 Kw	75 mm	60	72	7,9 mm	A ² S ³	P ⁴ DV ⁵	3/4"BSPm ¹
DM0079	79	95	12	11	10	10			60	72	10 mm			
DM0135	135	162	10	8	10	8			103	122	10 mm			
DM0158	158	---	8	---	8	---			120	---	10 mm			
DM0104	104	125	7,5	6	7,5	6		95 mm	60	72	7,9 mm	A ² SV ³	P ⁴ DV ⁵	1"BSPm ¹
DM0150	150	180	7,5	6	7,5	6			60	72	10 mm			
DM0257	257	308	6	5	6	5			103	122	10 mm			
DM0300	300	---	5	---	5	---			120	---	10 mm			
DM0188	188	226	3,5	3	3,5	3		115 mm	60	72	7,9 mm	A ² SV ³	P ⁴ DV ⁵	1"BSPm ¹
DM0278	278	334	3,5	3	3,5	3			60	72	10 mm			
DM0478	478	574	2,5	2	2,5	2			103	122	10 mm			
DM0535	535	---	2	---	2	---			120	---	10 mm			
DM0188	188	226	4	3,5	4	3,5	0,37 Kw	115 mm	60	72	7,9 mm	A ² SV ³	P ⁴ DV ⁵	1"BSPm ¹
DM0278	278	334	4	3,5	4	3,5			60	72	10 mm			
DM0420	420	504	3	2,5	3	2,5			103	122	8,5 mm			
DM0478	478	574	3	2,5	3	2,5			103	122	10 mm			
DM0535	535	---	2,5	---	2,5	---			120	---	10 mm			

- BSPm¹ = GAS male connections
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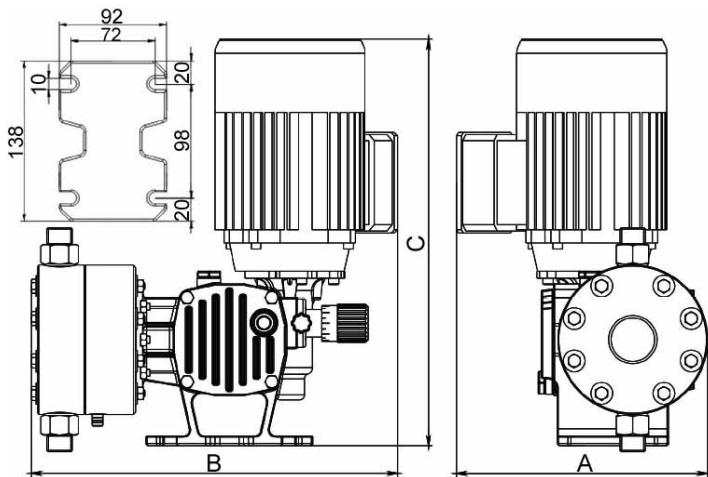
REMINDER: motor standard power supply: 230/400Vac, 50Hz; 275/480Vac, 60Hz • 3 phase; Class F, IP55, ~1400 rpm

MOTOR power code: 0 = 0,25Kw • 6 = 0,37kW *NOTE (add the three underlined digits 000 or 006 after liquid ends code)

Code configuration example: DM0535BA0060 features PVC liquid ends, 0.37 kW motor, max flow 535 l/h against max 2,5 bar working pressure, 120 strokes/min

USEFUL information when selecting dosing pumps:
Max flow rate, Max working pressure, chemical viscosity, temperature, area classification, suspended solids.

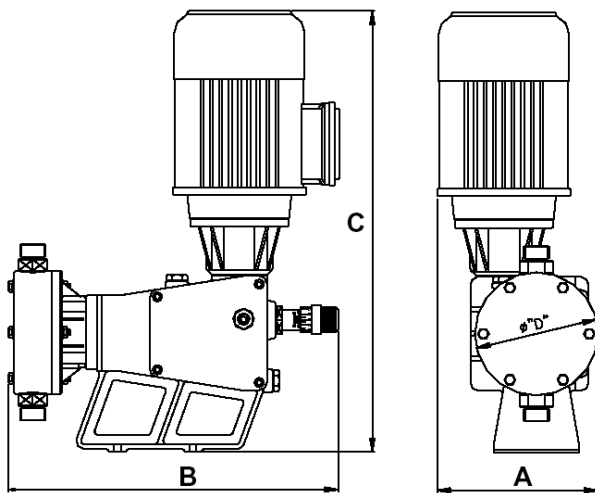
overall dimensions



overall dimensions DS series

OVERALL DIMENSIONS			NET WEIGHT*	
A	B	C	AISI	PVC
208 mm	303 mm	337 mm	9÷11 kg	12÷16 Kg

Packing weight ca 2 kg - *Approximate weight



overall dimensions DM series

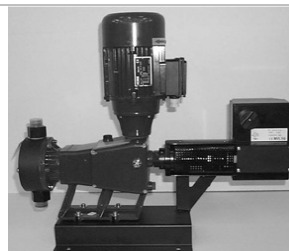
OVERALL DIMENSIONS mm			NET WEIGHT*	
A	B	C	AISI	PVC
170÷195	390÷400	465	11÷20 kg	14÷25 kg

Packing weight ca 2 kg - *Approximate weight

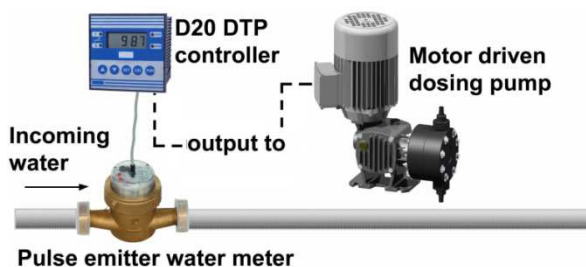
PUMP ADJUSTMENT REMOTE CONTROL



INVERTER to control pump flow rate via remote control from external input signal 4÷20 mA:
Available two versions: for wall or panel mounting IP20 or IP65 with keyboard controls.



SERVOMOTOR
4÷20mA or 0÷10Vdc for flow automatic control via stroke length control (read note below*)



D20 DTP controller with timer to manage external contacts (eg. water meter) synchronising the activation time of output relay: recommended for proportional dosing (dividing mode) with motor driven dosing pumps.

***NOTE** for dosing pumps with servomotor: this feature is NOT available for DS series with stroke length rate 3 mm

MOTOR EXTRA CONFIGURATIONS

SINGLE PHASE motor

LEVEL SWITCH

TROPICALIZED motor

Explosion proof motor ATEX EEX (D) zone 1/21 IIBT4 (only 3 phase)

SERVO-VENTILATED motor - recommended to use with inverter

Pump supplied WITHOUT motor (ask for motor flanges details)

FWT plunger actuated motor metering pump



FWT includes a range of **PLUNGER** motor driven metering pumps (piston type), featuring two series:
“PS” series: flow rates 5÷185 l/h with pressures up to 20 bar
“PM” series: flow rates 33÷1027 l/h with pressures up to 20 bar

motor dosing pumps accessories

FWT offers also a wide range of accessories and sensors to guarantee a complete service such as:

AIR RELIEF / BACK-PRESSURE VALVES

INSTALLATION KITS

SAFETY PRESSURE VALVES



PULSATION DAMPERS

INJECTION VALVES

FOOT VALVES / FILTERS



other FWT products

SOLENOID DRIVEN DOSING PUMPS

CONTROLLERS, PROBES AND SENSORS



PERISTALTICS

PULSE WATER METERS

DOSING TANKS

MIXERS



FWT
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rev.01_0312

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