

FWT[®]

fluid and water technology



motor driven metering pumps
DIAPHRAGM ACTUATED TYPE

www.fwtsystems.it

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.

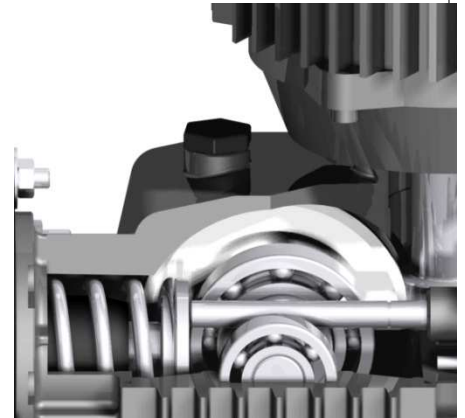
Mechanical diaphragm type metering pumps are suitable when:

- ✓ 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 **MULTI FREQUENCY/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.

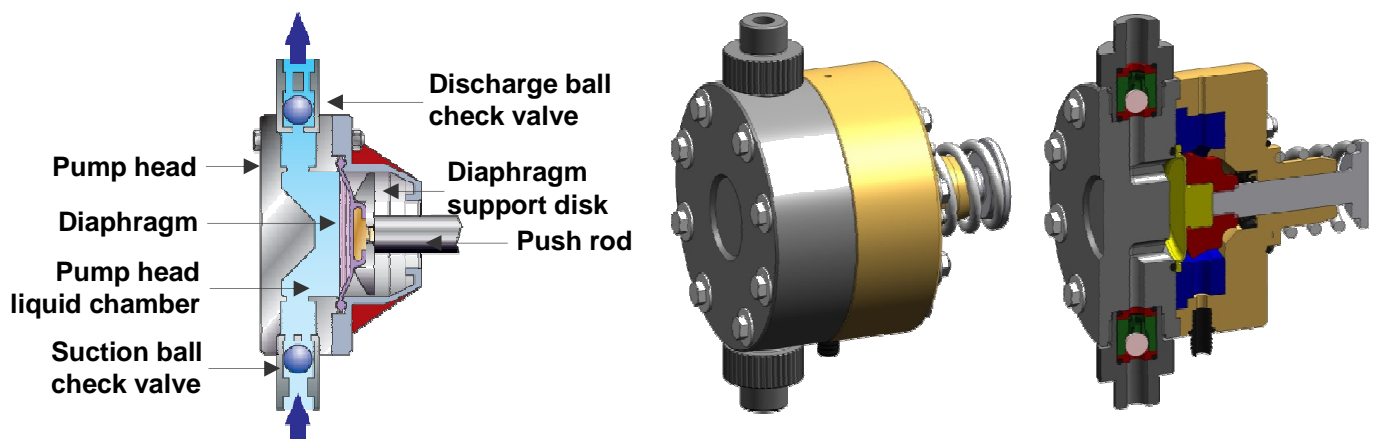
Other power supply upon request:

- 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 BA (PVC)



DS SA (PVDF)



LIQUID ENDS

WETTED PARTS

Pump head
Diaphragm
Pump head connection
Ball check valve
Valve o-rings
Valve seat

AA configuration

AISI 316L
PTFE / NBR
AISI 316L
AISI 316L
NBR (on request FPM)
PVDF

BA configuration

PVC
PTFE / NBR
PVC
CERAMIC
FPM (on request EPDM)
PVC

SA configuration

PVDF
PTFE / NBR
PVDF
CERAMIC
FPM (on request EPDM)
PVDF

AVAILABLE OTHER CONFIGURATIONS: Configuration AI – BI (o-rings EPDM) • Configuration AP (o-rings FPM)

DS technical characteristics

Pump Code*	Flow rate l/h		Pressure BAR				Power	Ø diaphragm	Strokes per minute		Stroke length	Valves type		Connections		
	50Hz	60Hz	AA (AISI)		BA (PVC) SA (PVDF)				50Hz	60Hz		AA	BA SA			
			50Hz	60Hz	50Hz	60Hz										
DS 0007	7	8,4	16	16	16	16	0,18 kW	50 mm	37	44	3mm	A ² S ³	P ⁴ S ³	1/2" BSPm ¹		
DS 0009	9	10,8								37		44				
DS 0015	15	18								60		72				
DS 0018	18	21,6	14	14	14	14			50 mm	74	88	4 mm	A ² S ³	P ⁴ S ³	1/2" BSPm ¹	
DS 0025	25	30								100	120					
DS 0029	29	35								120	144					
DS 0036	36	43,2	7,5	6,5	7,5	6,5				37	44					
DS 0058	58	69,6	7	6,5	7	6,5				60	72					
DS 0072	72	86,4	7	6,5	7	6,5			85 mm	74	88		A ² S ³	P ⁴ S ³	1/2" BSPm ¹	
DS 0096	96	115	7	6	7	6				100	120					
DS 0116	116	139	6	5	6	5				120	144					

- BSPm¹ = GAS male connections
- A² = AISI 316 ball check (AA configuration)
- S³ = single ball check
- P⁴ = CERAMIC ball check (BA and SA configurations)
- DV⁵ = double ball checks

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

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

Code configuration example: DS0007SA001 features PVDF liquid ends, 0.18 kW motor, max flow 7 l/h against max 16 bar working pressure, 37 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)



LIQUID ENDS

WETTED PARTS

	AA configuration	BA configuration	SA configuration
Pump head	AISI 316L	PVC	PVDF
Diaphragm	PTFE / NBR	PTFE / NBR	PTFE / NBR
Pump head connection	AISI 316L	PVC	PVDF
Ball check valve	AISI 316L	CERAMIC	CERAMIC
Valve o-rings	NBR (on request FPM)	FPM (on request EPDM)	FPM (on request EPDM)
Valve seat	PVDF	PVC	PVDF

AVAILABLE OTHER CONFIGURATIONS: Configuration AI – BI (o-rings EPDM) • Configuration AP (o-rings FPM)

DM technical characteristics

Pump Code*	Flow rate l/h		Pressure BAR				Power	Ø diaphragm	Strokes per minute		Stroke length	Valves type		Connections
			AA (AISI)		BA (PVC) SA (PVDF)				50Hz	60Hz		AA	BA SA	
	50Hz	60Hz	50Hz	60Hz	50Hz	60Hz								
DM 0049	49	58,8	13	11	10	10	75 mm	37	44	10 mm	A ² S ³	P ⁴ DV ⁵	3/4" BSPm ¹	
DM 0072	72	86,4	12	11	10	10		60	72					
DM 0098	98	117,6	11	9	10	9		74	88					
DM 0135	135	162	10	8	10	8		103	122					
DM 0158	158	---	8	---	8	---		120	---					
DM 0096	96	115,2	8	6	8	6	95 mm	37	44	10 mm	A ² S ³	P ⁴ DV ⁵	1" BSPm ¹	
DM 0156	156	187,2	7,5	7	7,5	7		60	72					
DM 0192	192	230,4	6,5	5	6,5	5		74	88					
DM 0267	267	320,4	6	5	6	5		103	122					
DM 0311	311	---	5	---	5	---		120	---					
DM 0152	152	182,4	4	3	4	3	115 mm	37	44	10 mm	A ² S ³	P ⁴ DV ⁵	1" BSPm ¹	
DM 0245	245	294	3,5	3	3,5	3		60	72					
DM 0304	304	364,8	3	2	3	2		74	88					
DM 0421	421	505,2	2,5	2	2,5	2		103	122					
DM 0490	490	---	2	---	2	---		120	---					
DM 0152	152	182,4	5	4	5	4	115 mm	37	44	10 mm	A ² S ³	P ⁴ DV ⁵	1" BSPm ¹	
DM 0245	245	294	4	3,5	4	3,5		60	72					
DM 0304	304	364,8	3,5	3	3,5	3		74	88					
DM 0421	421	505,2	3	2,5	3	2,5		103	122					
DM 0490	490	---	2,5	---	2,5	---		120	---					

- BSPm¹ = GAS male connections
- A² = AISI 316 ball check (AA configuration)
- S³ = single ball check
- P⁴ = CERAMIC ball check (BA and SA configurations)
- DV⁵ = double ball checks

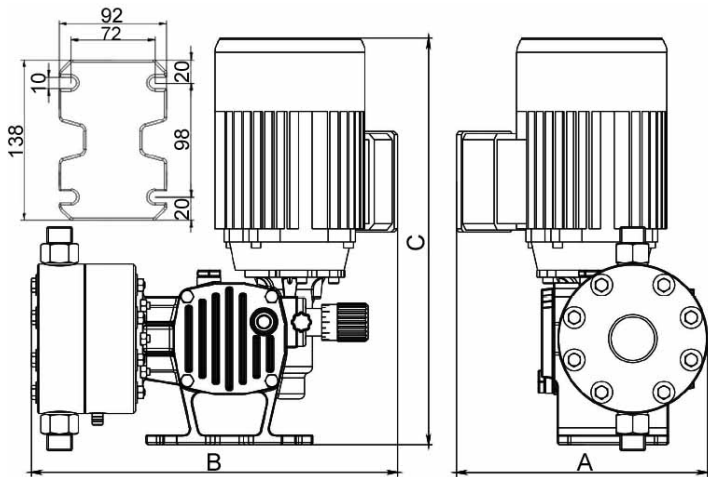
REMINDER: motor standard power supply: 230/400Vac, 50Hz; 275/480Vac, 60Hz • 3 phase; Class F, IP55, ~1400 rpm

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

Code configuration example: DS0152BA006 features PVC liquid ends, 0.37 kW motor, max flow 152 l/h against max 4 bar working pressure, 37 strokes/min

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

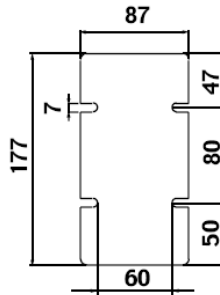
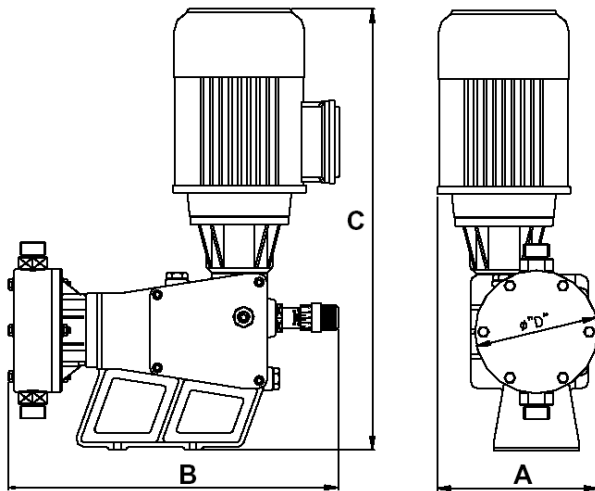
overall dimensions



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

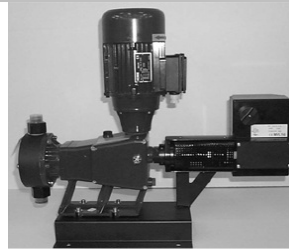
OVERALL DIMENSIONS mm			NET WEIGHT*	
A	B	C	AISI	PVC
170÷195	390÷400	465	11÷20 kg	14÷25 kg

Packing weight ca 2 kg - *Approximate weight

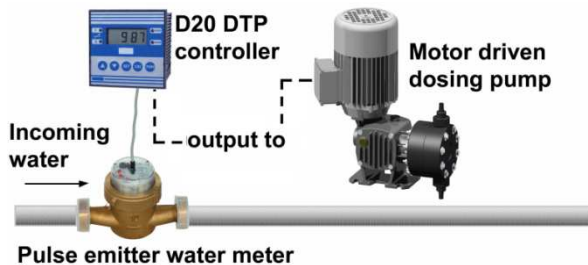
PUMP ADJUSTMENT REMOTE CONTROL



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 also another range of motor driven metering pumps "PLUNGER" (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



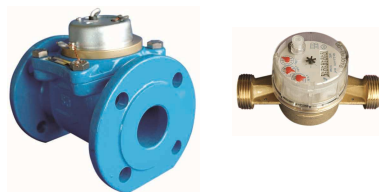
CONTROLLERS, PROBES AND SENSORS



PERISTALTICS



PULSE WATER METERS



DOSING TANKS



MIXERS



FWT
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