



1. Main technical characteristics

- Flow Rate up to 500 l/h
- Pressure up to 16 bar
- Mechanically return actuated by Spring
- Turn-down ratio 1:100
- Stroke Rate up to 116 strokes/minute
- Stroke Length: 2 / 4 / 6 mm
- Diaphragm diameter: from 6 to 165 mm
- Motor up to 0.37 kW – B14 – 3ph - 50/60 Hz
- Temperature of the working environment: 5 ÷ 40°C
- Maximum dosed liquid temperature:

SS 316L	40 °C
PVC	40 °C
PVDF	40 °C
PP	40 °C
- Connection up to Gf 1"
- Enclosure Protection Class: IP55
- Material of Pump Head: SS316/PVC/PVDF/PP

2. Electronic Motor Driver features

- WiFi connection with a built-in Web Server user friendly through a Web browser
- Intelligent Graphic LCD display with multicolor backlights
- Multiple operating modes (Manual | Batch | Timed | ppm | Analogue mA and V)
- Analogic Current 0/4-20 and 20-4/0 mA Input for proportional speed
- Analogic Voltage 0-10 V Input
- Digital Pulse Input 1 kHz for proportional dosing for water-meter pulse-sender
- Liquid Level Control Input (NO/NC)
- Remote Control pause/stop Input
- Analogic Current 4-20 mA Output
- Relay for remote alarm Output
- ModBus RS485 Protocol integrated on the main board

Technical data can be changed without notice.
MS1 Spring pump with Elektra rev 2.0

3. General features

- Spring Motor Pump with Elektra is the latest range of electric motor-driven pumps with mechanical diaphragm and piston liquid ends, using a spring mechanical return aimed at delivering exceptional performance across a wide range of flow and pressure.
- The Elektra controller is an optional device that can be currently applied to Spring pumps to bring connectivity to mechanical dosing with modern benefits of remote management and data on demand to operators.
- Spring motor pump with Elektra provide remote management and data on demand providing optimal technical and operating cost management.
- Spring motor pump with Elektra are reciprocating membrane or piston pumps; they use an asynchronous three phase motor with four poles. This type of motor can be speed controlled in order to regulate the strokes rate from 100% down to 0% using a variable speed drives for AC motors.
- A compact, lightweight, robust and simple pump series specifically designed for low discharge pressures, durability and cost effectiveness.
- Used in water treatment and industrial applications where a proportional dosing is requested, the mechanically-actuated PTFE diaphragm design extends diaphragm life by eliminating the stresses, thus the piston pump can be used for high-pressure applications.



4. Codification

ELEKTRA - KEY TO MODEL NUMBER											
		Field 1	Field 2	Field 3	Field 4	Field 5	Field 6	Field 7	Field 8	Field 9	Field 10
		M	S1	A	064	C	31	AE	0	0	W
Field 1	model										
Field 2	mechanism type										
Field 3	stroke lenght										
Field 4	diameter										
Field 5	stroke/min										
Field 6	pump head										
Field 7	motor power										
Field 8	customization										
Field 9	optional										
Field 10	optional										
Field 1	model										
model	P	Piston									
	M	Membrane									
Field 2	mechanism type										
type	S1	S1 Piston / Membrane									
	S2	S2 Piston									
Field 3	stroke lenght	Stroke lenght [mm]									
stroke lenght	A	2		MS1A							
	B	4		MS1B							
	C	6		MS1C							
	D	15		PS1D							
	E	25		PS2E							
Field 4	diameter	Diaphragm [mm]									
Diaphragm	006	6		PS1							
	011	11		PS1							
	017	17		PS1							
	025	25		PS1 / PS2							
	030	30		PS1 / PS2							
	038	38		PS1 / PS2							
	048	48		PS1 / PS2							
	054	54		PS1 / PS2							
	064	64		MS1 /PS1 / PS2							
	076	76		PS2							
	089	89		PS2							
	094	94		MS1							
	108	108		MS1							
	138	138		MS1							
165	165		MS1								
Field 5	stroke/min	Strokes / minute									
stroke/min	A	24:1	58	MS1 /PS1 / PS2							
	B	18:1	78	MS1							
	C	12:1	116	MS1 /PS1 / PS2							
Field 6	pump head	DIAPHRAGM - Standard Execution									
Diaphragm	21 / 24	SS316L	PTFE	SS316L	SS316L	FPM/ EPDM					
	31 / 34	PVC	PTFE	CERAMIC	PTFE	FPM/ EPDM					
	41 / 44	PVDF	PTFE	CERAMIC	PTFE	FPM/ EPDM					
	51 / 54	PP	PTFE	CERAMIC	PTFE	FPM/ EPDM					
Piston	21 / 24	SS316L	SS316L	SS316L	SS316L	FPM/ EPDM					
	31 / 34	PVC	CERAMIC	CERAMIC	PTFE	FPM/ EPDM					
Field 7	motor power	kW supply phase size									
motor power	0	Without motor									
	AE	0.18	230/400 Vac		3		63-B14				
	BE	0.25	230/400 Vac		3		71-B14				
	CE	0.37	230/400 Vac		3		71-B14				
	DE	0.55	230/400 Vac		3		80-B14				
	EE	0.75	230/400 Vac		3		80-B14				
	TE	0.25	230/400 Vac		3		71-B5				
	UE	0.37	230/400 Vac		3		71-B5				
Field 8	customization										
customization	0										
	6										
	7										
	8										
Field 9	optional										
opt.	0										
	A										
Field 10	optional										
opt.	0										
	W	WiFi Connection									

5. Specification

Hydraulic Characteristics

Pump Model								Diaphragm Diameter [mm]	Stroke/min	Flow rate		Max back pressure				Suction/Discharge Connection		Electric Motor 50 Hz 3 phases [kW]
												bar		p.s.i.		SS 316	PP/PVC /PVDF	
										l/h	gl/h	SS 316	PP/PVC /PVDF	SS 316	PP/PVC /PVDF	SS 316	PP/PVC /PVDF	
M S 1 A 0 6 4 A	64	58	5.5	1.45	16	10	232	145	1/4" Gf	1/4" Gf	0,18 (AE)							
M S 1 A 0 6 4 B		78	8	2.12														
M S 1 A 0 6 4 C		116	11	2.91														
M S 1 A 0 9 4 A	94	58	20	5.59	16	10	232	145	3/8" Gf	1/4" Gf	0,25 (BE)							
M S 1 A 0 9 4 B		78	26	6.88														
M S 1 A 0 9 4 C		116	40	10.58														
M S 1 B 1 0 8 A	108	58	60	15.87	10	10	145	145	3/8" Gf	3/8" Gf	0,25 (BE)							
M S 1 B 1 0 8 B		78	80	21.16														
M S 1 B 1 0 8 C		116	120	31.75														
M S 1 C 1 3 8 A	138	58	155	41	7	7	101	101	3/4" Gf	3/4" Gf	0,37 (CE)							
M S 1 C 1 3 8 B		78	220	58.2														
M S 1 C 1 3 8 C		116	310	82														
M S 1 C 1 6 5 A	165	58	230	60.85	5	5	72.5	72.5	1" Gf	1" Gf	0,37 (CE)							
M S 1 C 1 6 5 B		78	330	87.30														
M S 1 C 1 6 5 C		116	500	132.3														

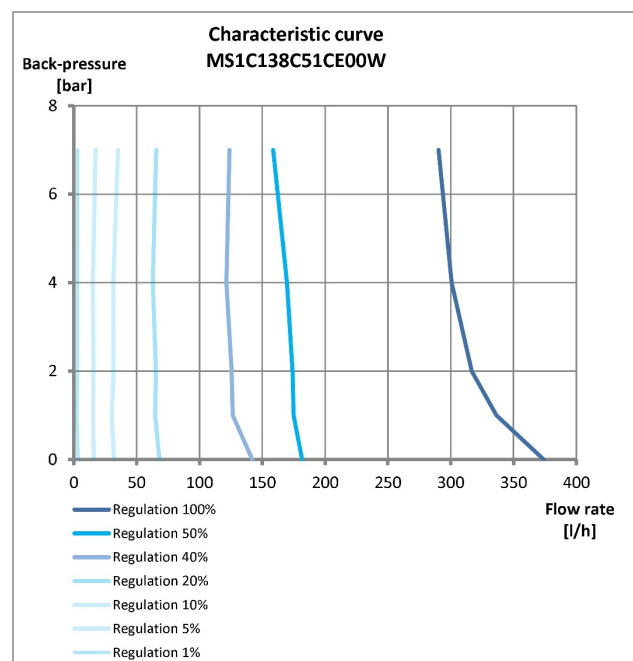
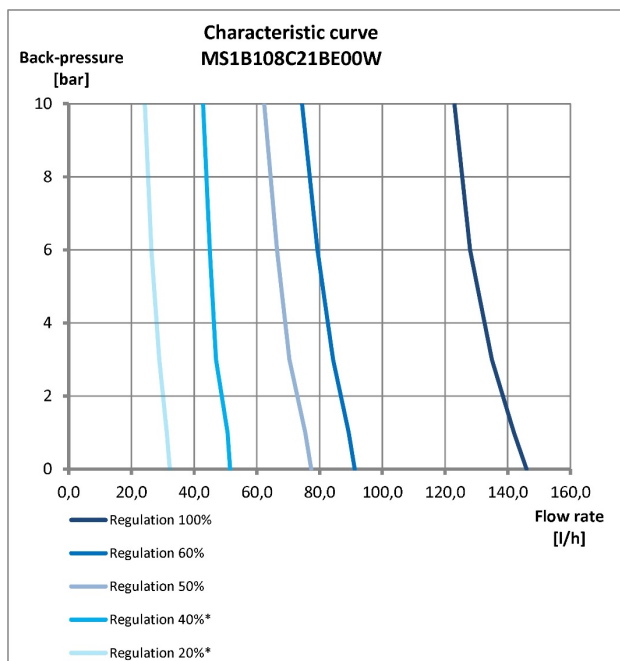
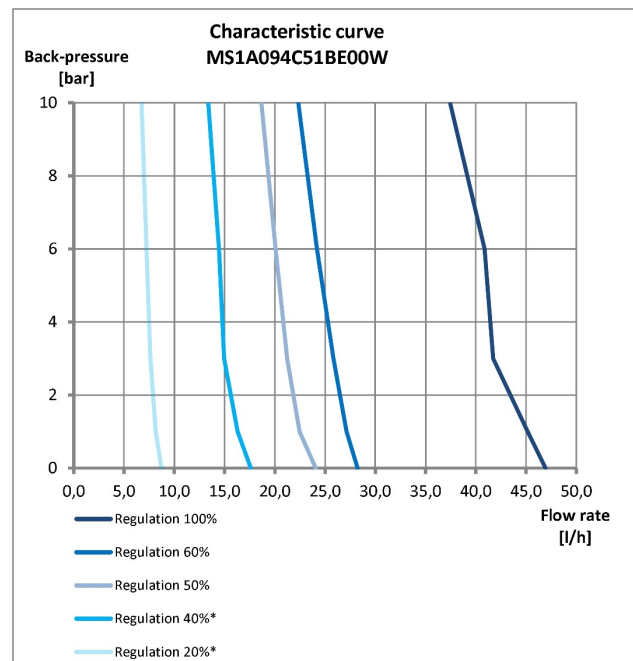
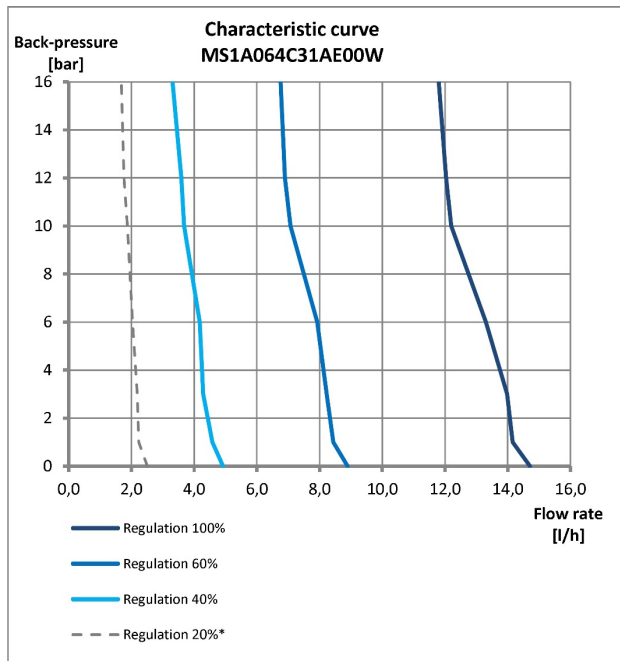
6. Liquid End Material

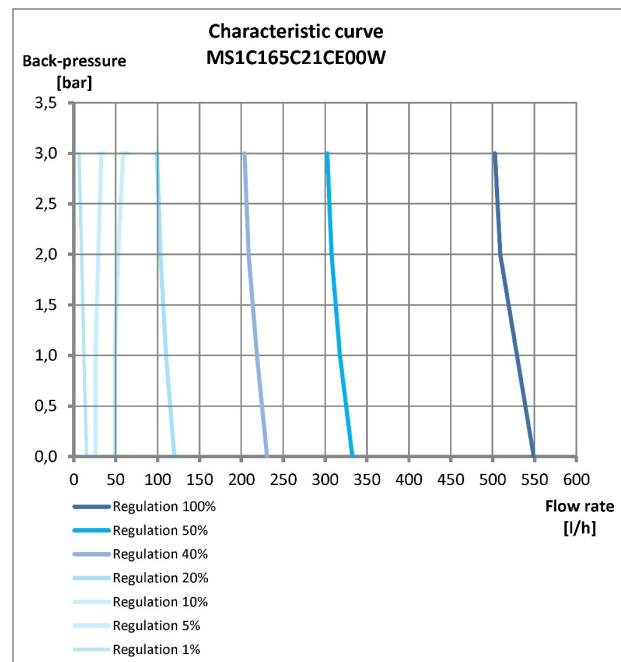
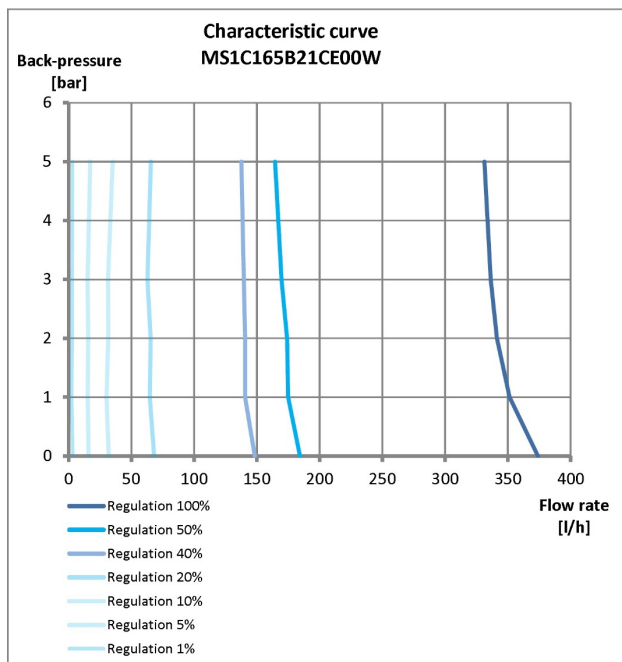
Material	Liquid End Body							
	21	31	41	51	24	34	44	54
Pump Head	SS 316L	PVC	PVDF	PP	SS 316L	PVC	PVDF	PP
Diaphragm	PTFE				PTFE			
Seal	FPM				EPDM			
Ball	SS 316L	Ceramic			SS 316L	Ceramic		
Ball Seat		PTFE				PTFE		

7. Painting requirements

The anti-corrosion painting process for dosing pump applications requires an entire coating thickness of between 0.06mm and 0.20mm.

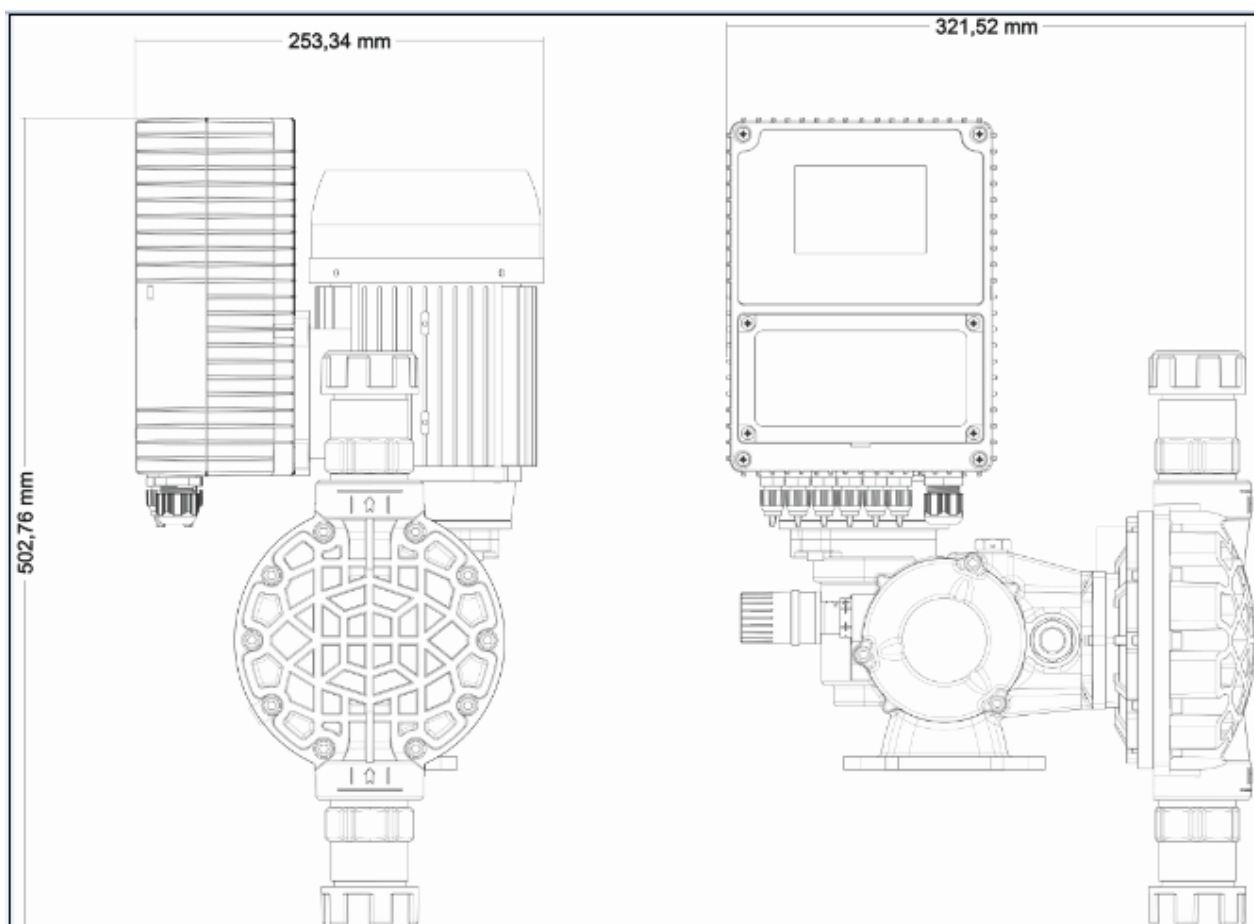
8. Performance curve P [bar] - Q [l/h]





9. Installation Drawing

All dimensions are in mm.



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