



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
- Stroke length adjustment: manually using rotary dial in 1% increments
- Average repeatability is $\pm 2\%$ in the 20 - 100% adjustment range under defined conditions and with correct installation
- Diaphragm diameter: from 64 to 165 mm
- **Pump power supply voltage 230VAC, 50/60Hz**
- External quick connectors (for signal/communication cables) for improved operation safety
- Temperature of the working environment: $5 \div 40^\circ\text{C}$
- Maximum dosed liquid temperature:

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

2. Elektra controller 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 | Multiply 1: N | Divide N:1)
- 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

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 a digital device currently applied to Spring pump series, 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 series equipped with Elektra is a range of reciprocating membrane or piston pumps that use as drive an asynchronous three phase motor with four poles. Thanks to the ELEKTRA controller this type of motor can be speed controlled in order to regulate the strokes rate from 100% down to 0% using a variable speed drive for AC motors.

- For short this series can be described as compact, lightweight, robust and simple pump range specifically designed for low discharge pressures, durability and cost effectiveness.
- Used in water treatment and industrial applications where a proportional dosing is a must, 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

Model										
M	Spring-return diaphragm pump									
Mechanism type										
S1	S1 - membrane									
Stroke length [mm]										
A	2									
B	4									
C	6									
Diaphragm diameter [Ømm]										
064	64									
094	94									
108	108									
138	138									
165	165									
Stroke/1'										
A	58	24:1								
B	78	18:1								
C	116	12:1								
Pump head										
	Body	Balls	Diaphragm	Seat	O-Ring					
21	SS316L	SS316L	PTFE	SS316L	FPM					
24	SS316L	SS316L	PTFE	SS316L	EPDM					
31	PVC	Ceramic	PTFE	PTFE	FPM					
34	PVC	Ceramic	PTFE	PTFE	EPDM					
41	PVDF	Ceramic	PTFE	PTFE	FPM					
44	PVDF	Ceramic	PTFE	PTFE	EPDM					
51	PP	Ceramic	PTFE	PTFE	FPM					
54	PP	Ceramic	PTFE	PTFE	EPDM					
Motor type										
	kW							Size		
AE	0.18 - 3ph							63-B14		
BE	0.25 - 3ph							71-B14		
CE	0.37 - 3ph							71-B14		
DE	0.55 - 3ph							80-B14		
EE	0.75 - 3ph							80-B14		
TE	0.25 - 3ph							71-B5		
UE	0.37 - 3ph							71-B5		
Stroke regulation										
0	Manual with adjustment knob									
Customization										
0	Standard									
Optional										
N	Elektra - Wi-Fi connection									
M	S1	B	094	A	51	CE	0	0	N	

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.				
			l/h	gl/h	SS 316	PP/PVC /PVDF	SS 316	PP/PVC /PVDF	SS 316	PP/PVC /PVDF	
MS 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)
MS 1 A 0 6 4 B		78	8	2.12							
MS 1 A 0 6 4 C		116	11	2.91							
MS 1 A 0 9 4 A	94	58	20	5.59	16	10	232	145	3/8" Gf	3/8" Gf	0,25 (BE)
MS 1 A 0 9 4 B		78	26	6.88							
MS 1 A 0 9 4 C		116	40	10.58							
MS 1 B 1 0 8 A	108	58	60	15.87	10	10	145	145	3/8" Gf	3/8" Gf	0,25 (BE)
MS 1 B 1 0 8 B		78	80	21.16							
MS 1 B 1 0 8 C		116	120	31.75							
MS 1 C 1 3 8 A	138	58	155	41	7	7	101	101	3/4" Gf	3/4" Gf	0,37 (CE)
MS 1 C 1 3 8 B		78	220	58.2							
MS 1 C 1 3 8 C		116	310	82					1" Gf	1" Gf	
MS 1 C 1 6 5 A	165	58	230	60.85	5	5	72.5	72.5	1" Gf	1" Gf	0,37 (CE)
MS 1 C 1 6 5 B		78	330	87.30			72.5	72.5			
MS 1 C 1 6 5 C		116	500	132.3			3	3			

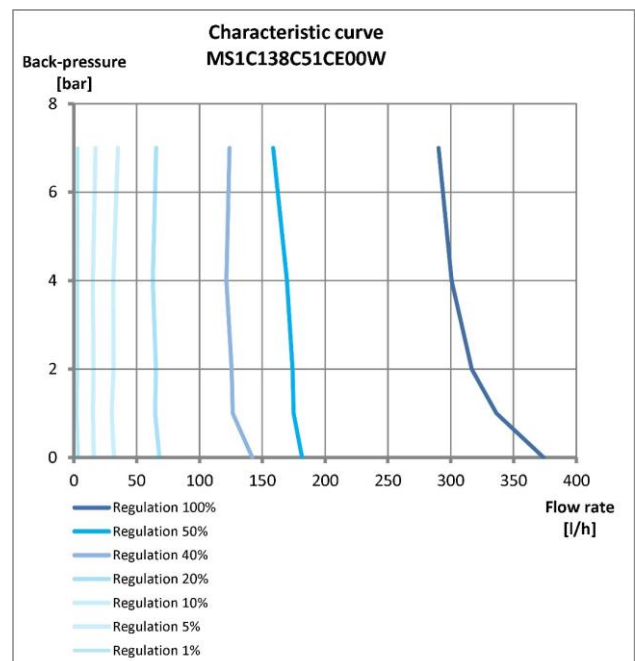
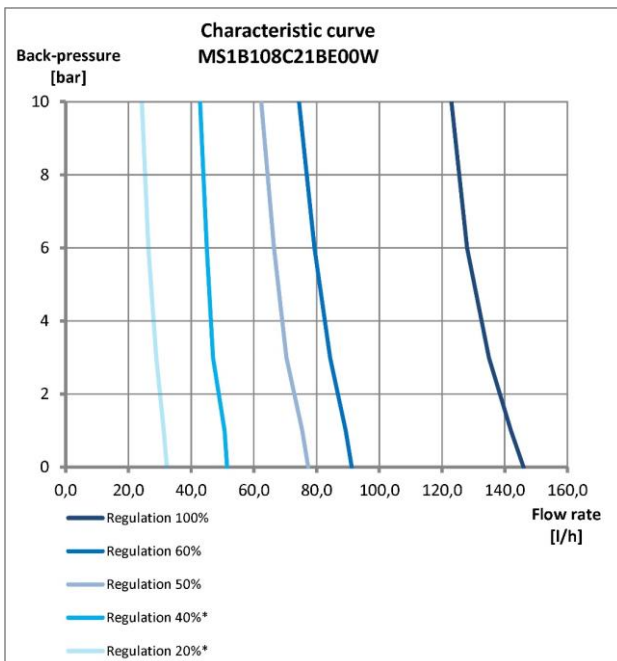
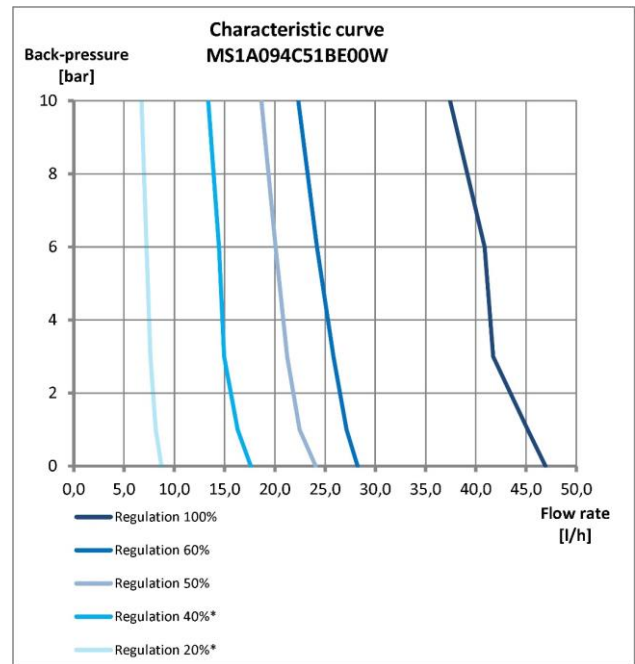
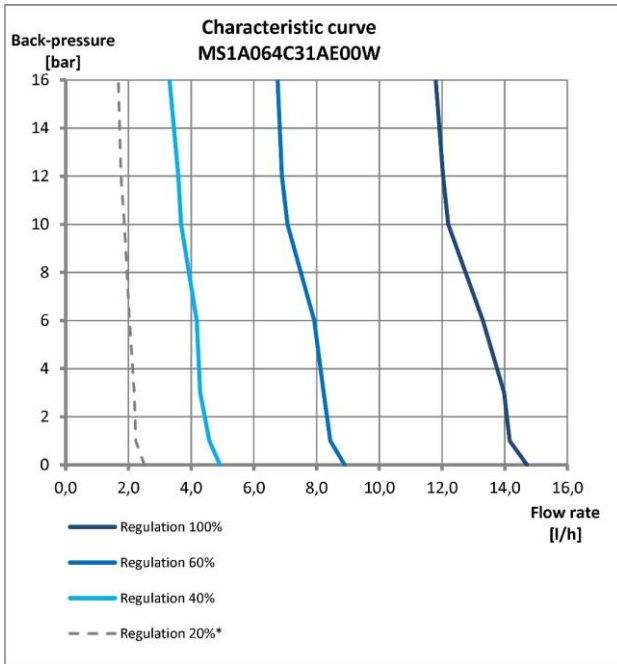
6. Liquid End Material

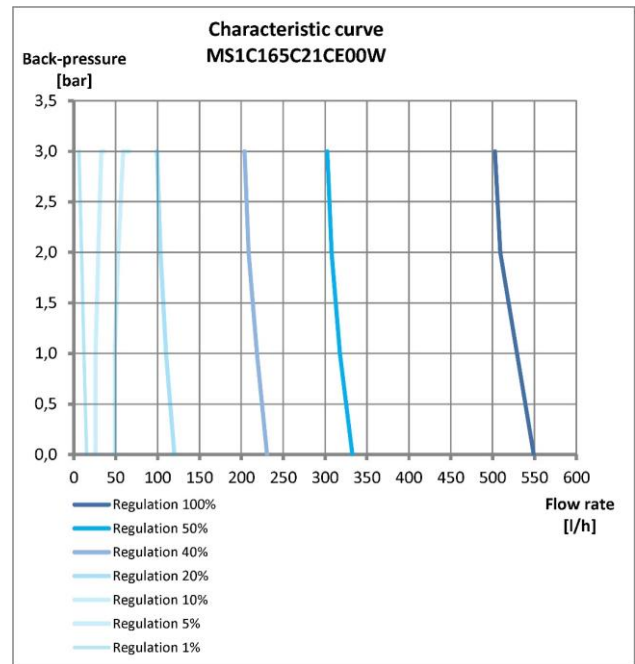
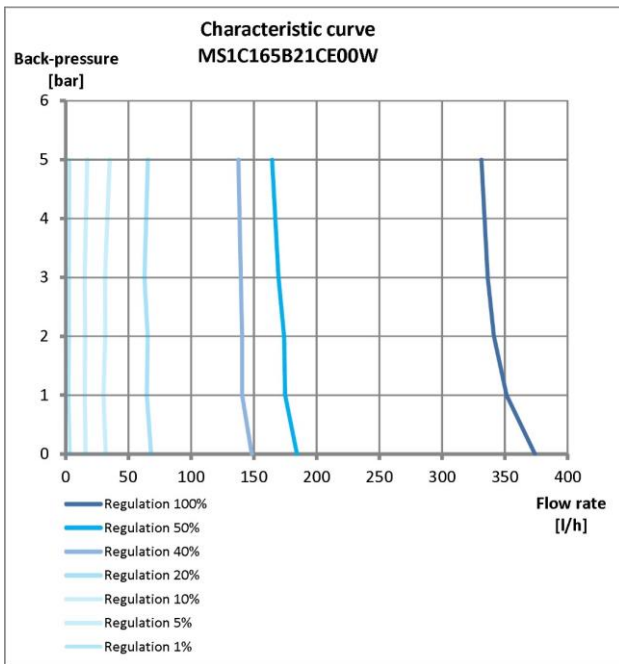
Material	Liquid End Body							
	21	31	41	51	24	34	44	54
Pump Head	SS 316L	PVC	PVDF	PP	SS 316L	PVC	PVDF	PP
Diaphragm	PTFE				PTFE			
Seal	FPM				EPDM			
Ball	SS 316L	Ceramic			SS 316L	Ceramic		
Ball Seat		PTFE				PTFE		

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.

