Spring Motor Driven Pumps with Elektra
MS1A / MS1B / MS1C



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 ± 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 ÷ 40°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.

Technical data can be changed without notice.

- 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'		Ratio
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	
MS1A0644A	64	58	5.5	1.45	16	10	232	145	1/4" Gf	1/4" Gf	0,18 (AE)
MS1A0644B		78	8	2.12							
MS1A0644C		116	11	2.91							
MS1A0944A	94	58	20	5.59	16	10	232	145	3/8" Gf	3/8" Gf	0,25 (BE)
MS1A0944B		78	26	6.88							
MS1A0944C		116	40	10.58							
MS1B1088A	108	58	60	15.87	10	10	145	145	3/8" Gf	3/8" Gf	0,25 (BE)
MS1B1088B		78	80	21.16							
MS1B1088C		116	120	31.75							
MS1C1388A	138	58	155	41	7	7	101	101	3/4" Gf	3/4" Gf	0,37 (CE)
MS1C1388B		78	220	58.2							
MS1C1388C		116	310	82					1" Gf	1" Gf	
MS1C1658A	165	58	230	60.85	5	5	72.5	72.5	1" Gf	1" Gf	0,37 (CE)
MS1C1658B		78	330	87.30			72.5	72.5			
MS1C1658C		116	500	132.3	3	3	43.5	43.5			

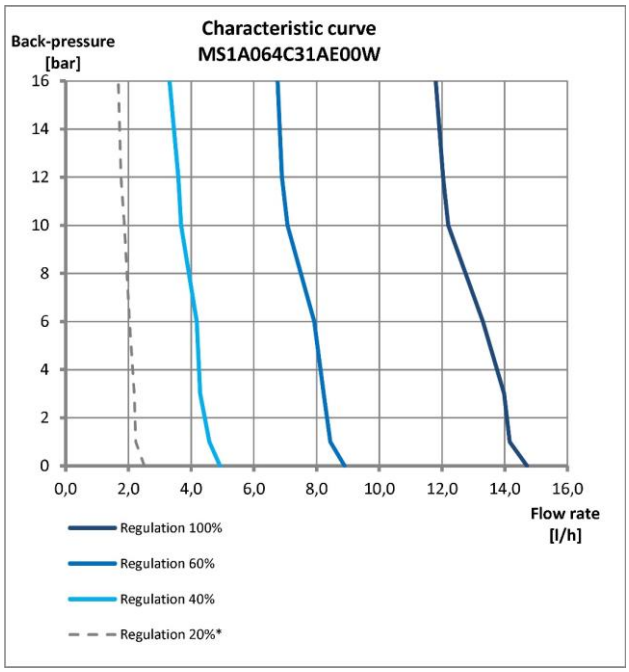
6. Liquid End Material

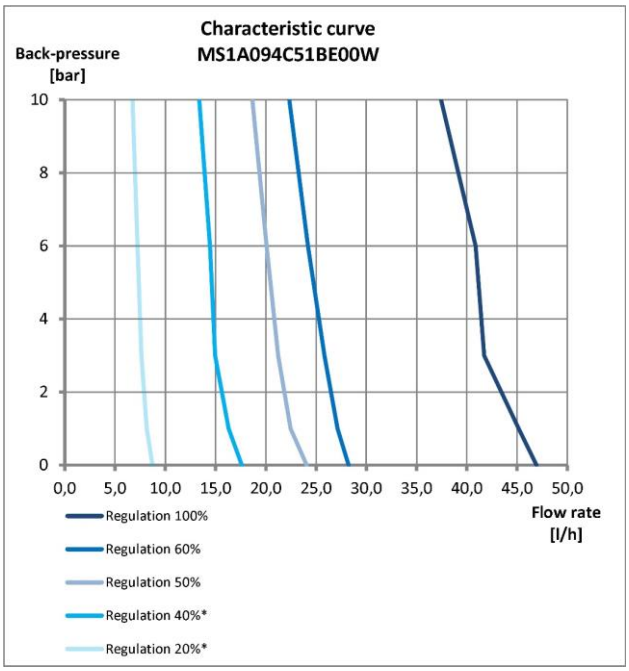
Material	Liquid End Body							
	21	31	41	51	24	34	44	54
Pump Head	SS 316L	PVC	PVDF	PP	SS 316L	PVC	PVDF	PP
Diaphragm	PTFE				PTFE			
Seal	FPM				EPDM			
Ball	SS 316L	Ceramic			SS 316L	Ceramic		
Ball Seat		PTFE				PTFE		

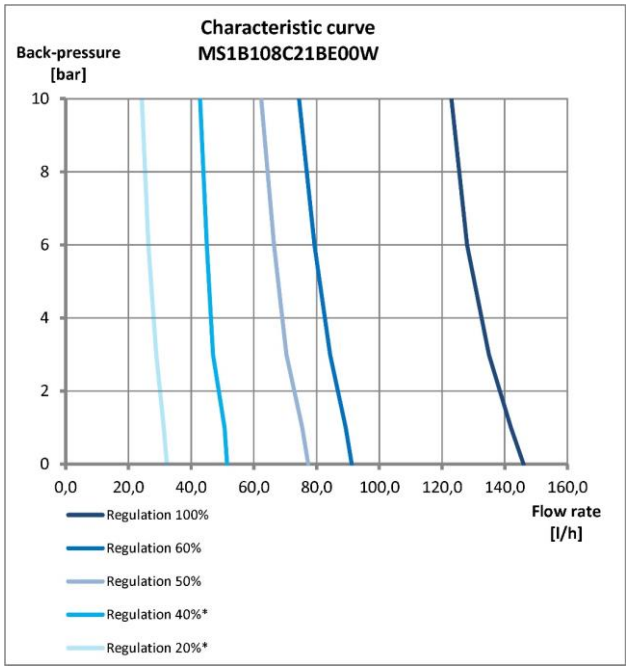
7. Painting requirements

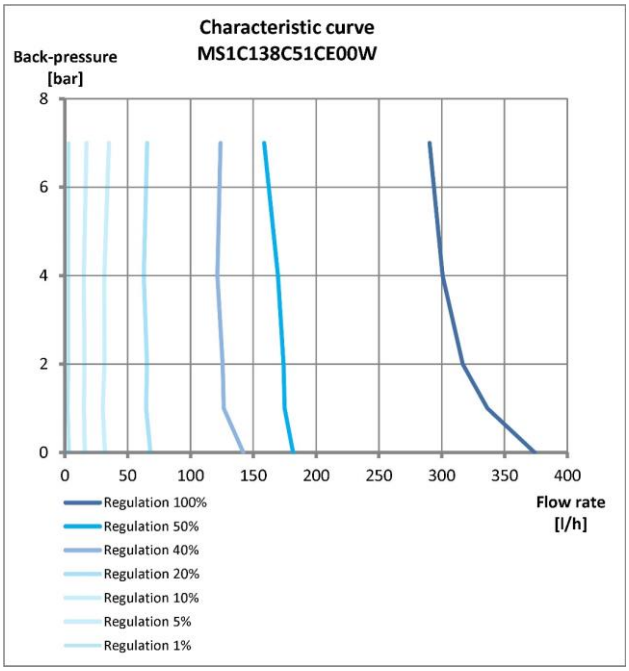
The anti-corrosion painting process for dosing pump applications requires an entire coating thickness of between 0.06mm and 0.20mm.

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

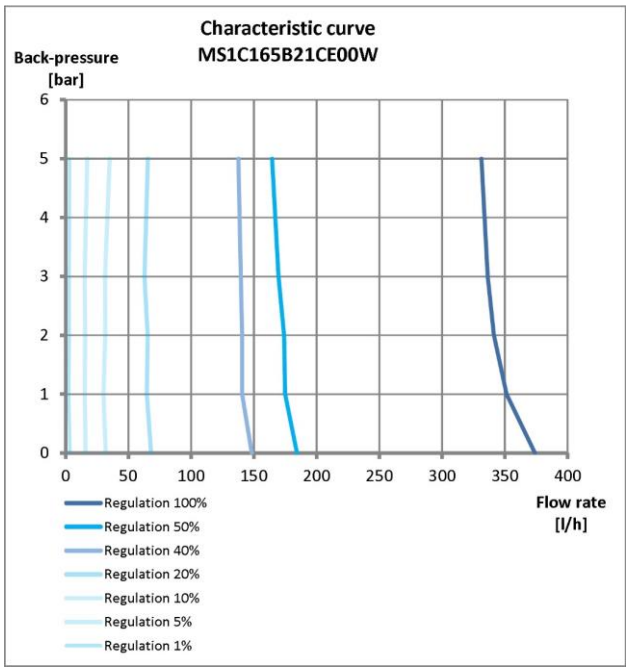


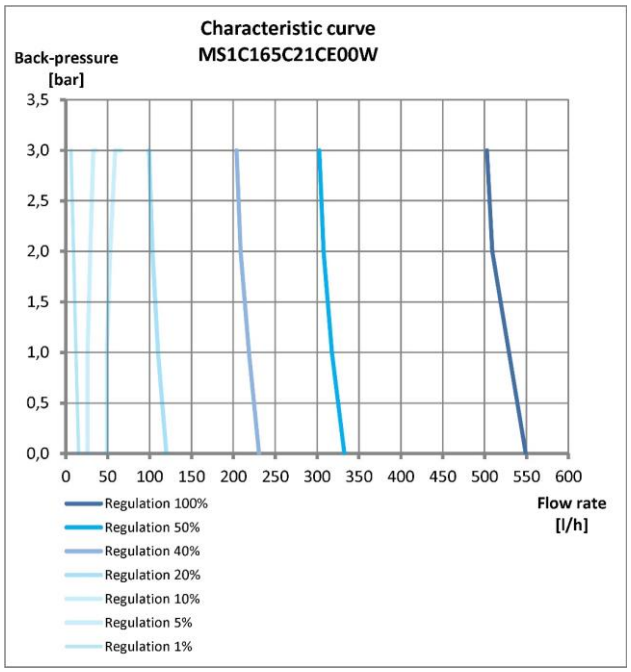






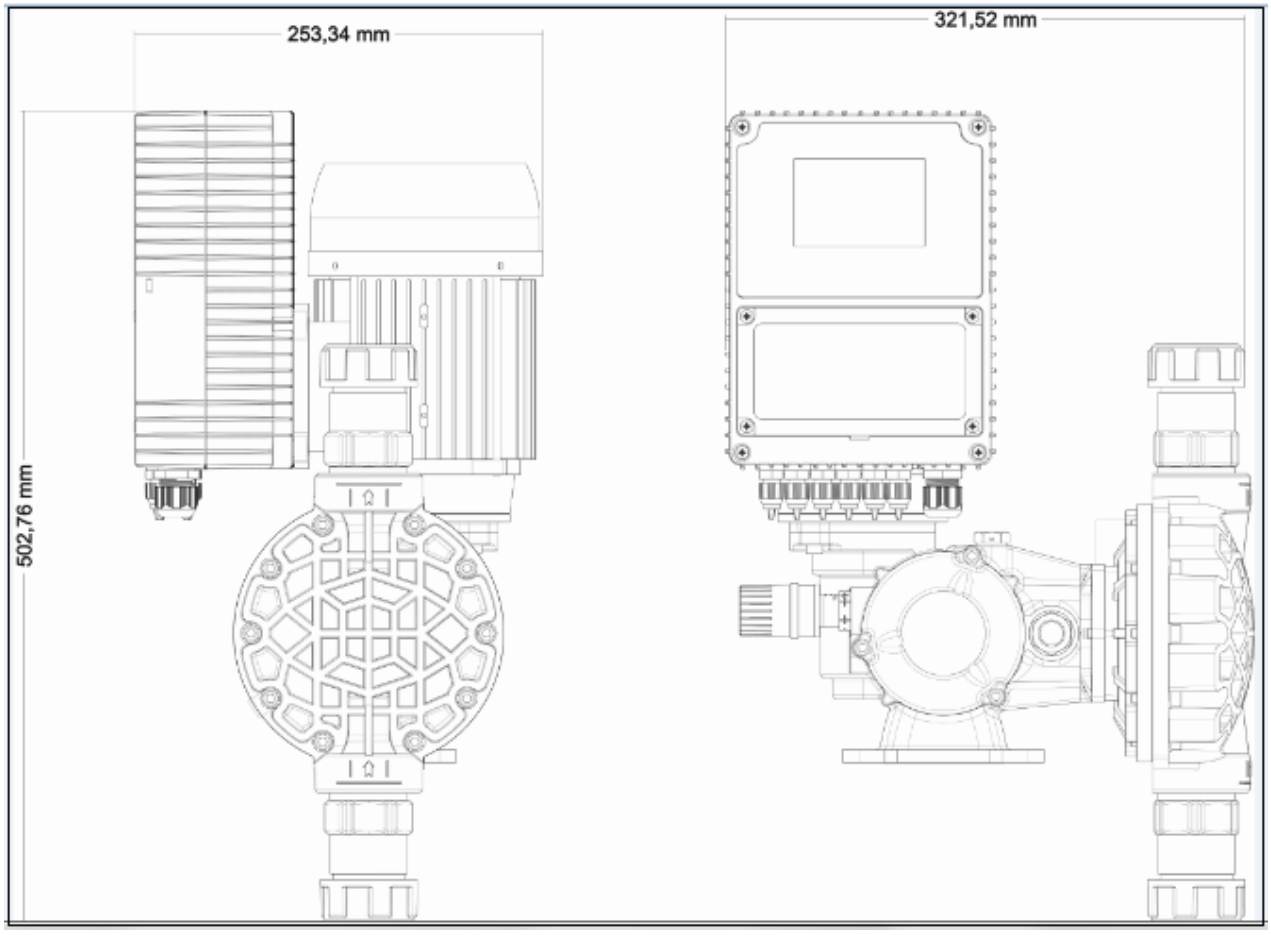
Technical data can be changed without notice.
MS1 Spring pump with Elektra rev 5.0





9. Installation Drawing

All dimensions are in mm.



Technical data can be changed without notice.
MS1 Spring pump with Elektra rev 5.0