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
- 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

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				
		head	diaphragm/piston	valve	seat	O-Ring
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.				
			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	1/4" 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	
MS1C1655A	165	58	230	60.85	5	5	72.5	72.5	1" Gf	1" Gf	0,37 (CE)
MS1C1655B		78	330	87.30			72.5	72.5			
MS1C1655C		116	500	132.3	3	3	43.5	43.5			

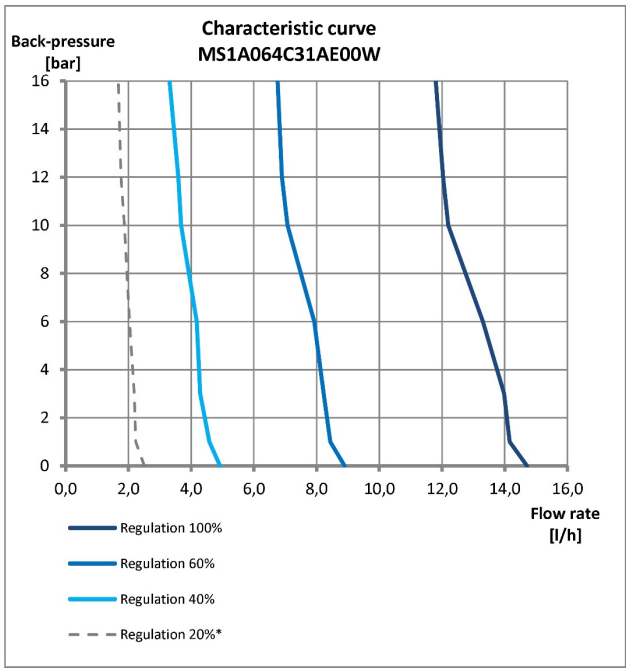
6. Liquid End Material

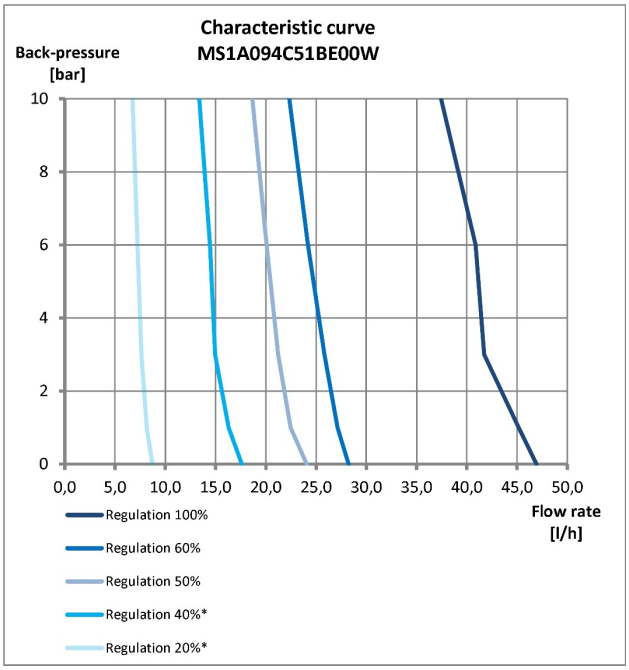
Material	Liquid End Body							
	21	31	41	51	24	34	44	54
Pump Head	SS 316L	PVC	PVDF	PP	SS 316L	PVC	PVDF	PP
Diaphragm	PTFE				PTFE			
Seal	FPM				EPDM			
Ball	SS 316L	Ceramic			SS 316L	Ceramic		
Ball Seat		PTFE				PTFE		

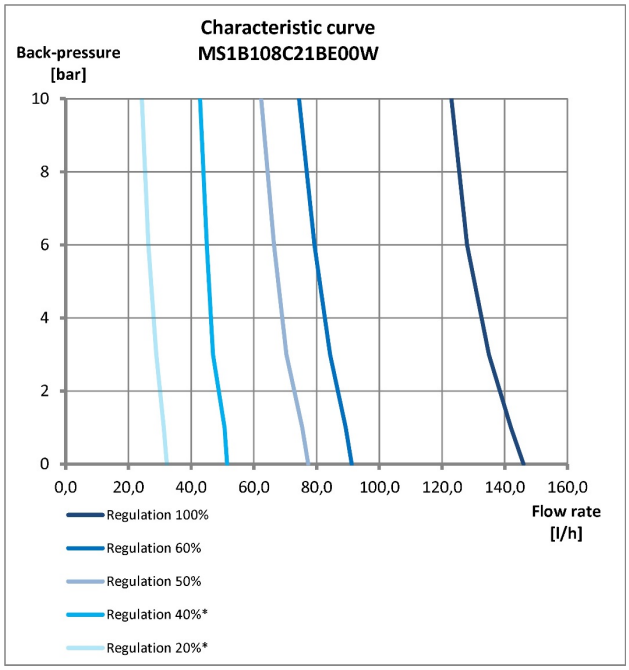
7. Painting requirements

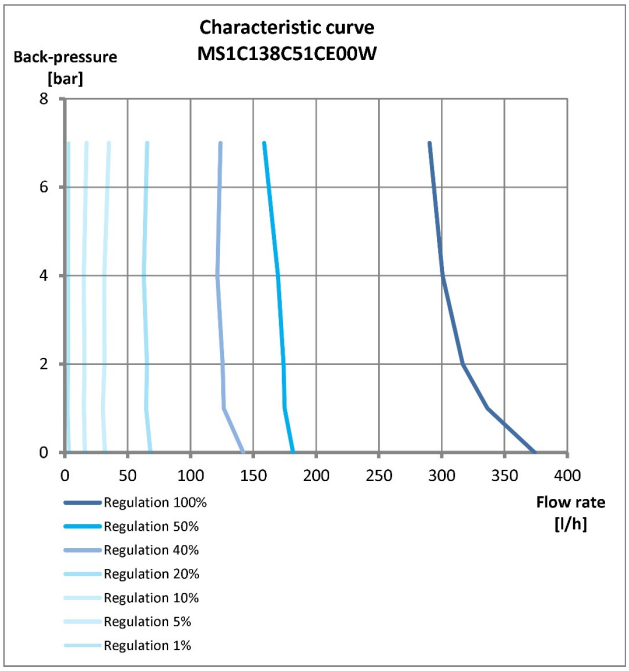
The anti-corrosion painting process for dosing pump applications requires an entire coating thickness of between 0.06mm and 0.20mm.

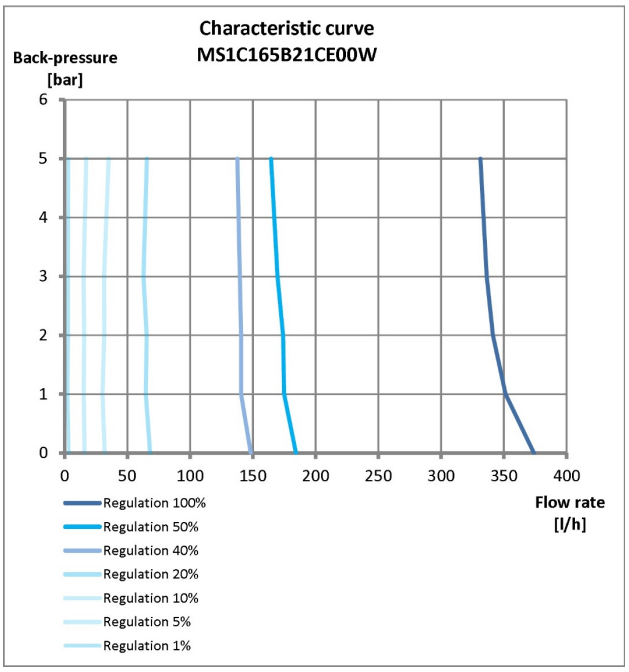
8. Performance curve P [bar] - Q [l/h]

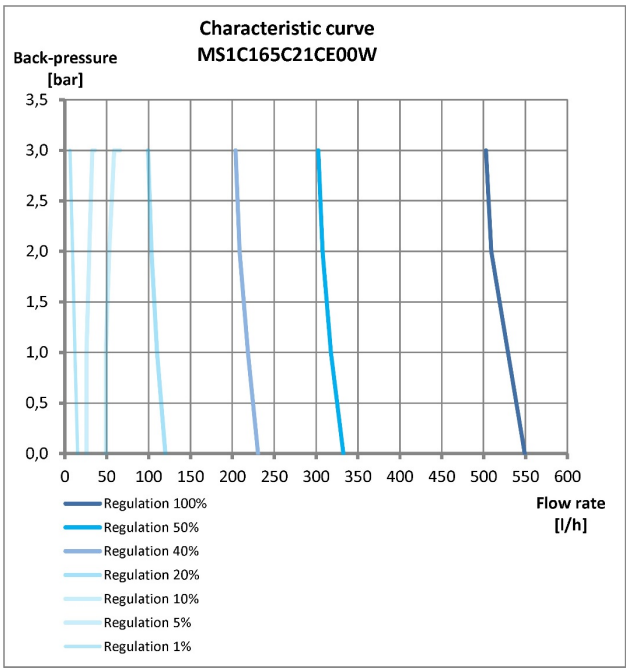


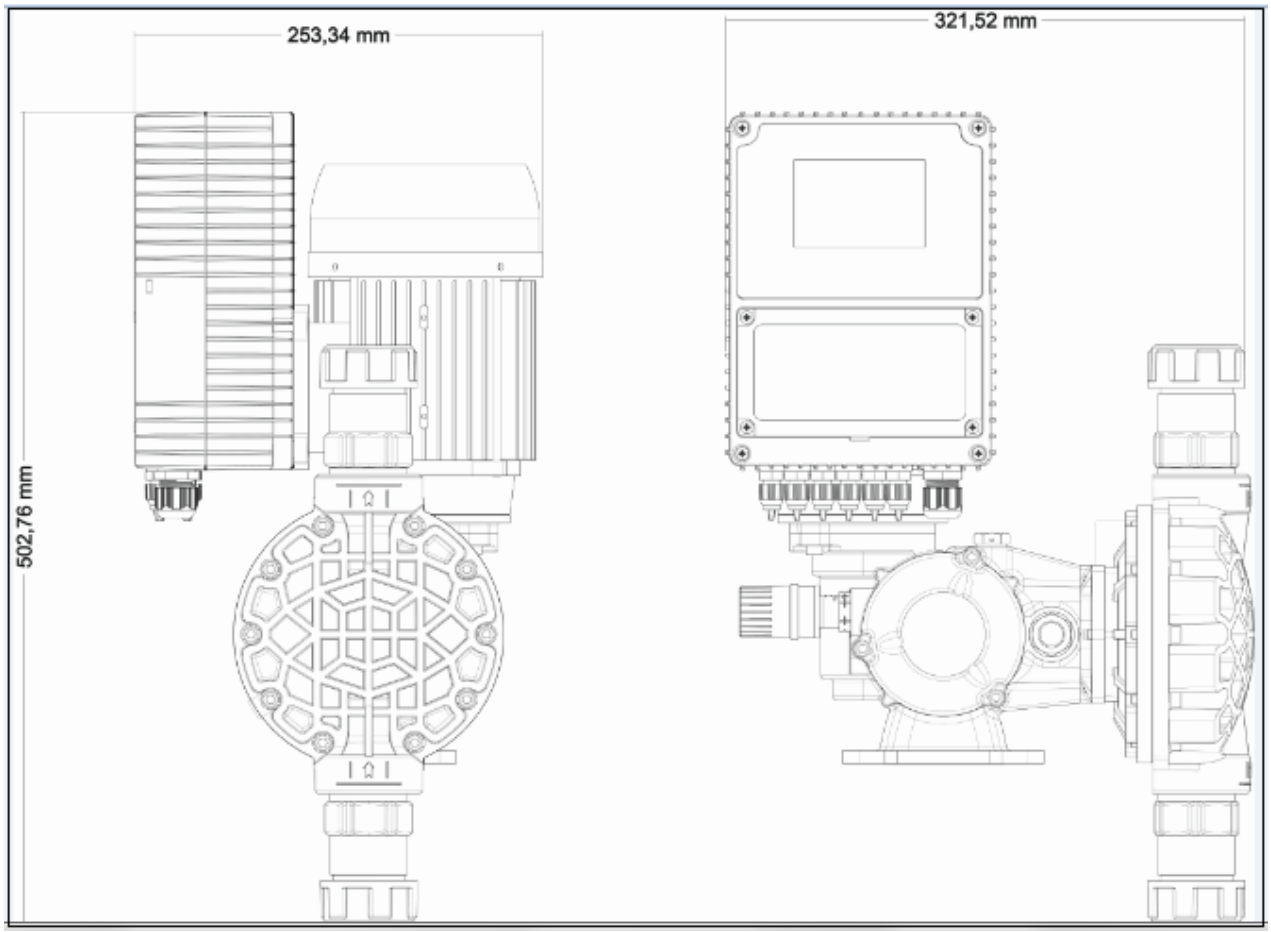










9. Installation Drawing

All dimensions are in mm.