

# MD1

## CHEM-FEED® Multi-Diaphragm Metering Pump



### Features

- > Multi-diaphragm technology for smooth, nearly pulseless chemical feed
- > Automatic Degassing Valve (ADV) reduces the risk of vapor lock
- > Leak detection (DFD) senses diaphragm failure and shuts off the pump
- > Exclusive DiaFlex® Diaphragm guaranteed to last the life of the pump
- > Display shield protects pump controls in harsh environments
- > SCADA Inputs include: 4-20mA, Remote Start/Stop
- > SCADA Outputs: 4-20mA, single 250V/3A Relay (DFD/FVS), and single solid state (Motor On)

Video link: 



**NEMA 4X**

### Highlights

#### Flow range

0.0008 - 8.50 GPH, 0 PSI  
0.0007 - 7.50 GPH, 150 PSI

#### Pressures

Up to 150 PSI  
(10.3 bar)

#### Turndown ratio

10,000 : 1

#### Suction lift

20 ft. (at 0 PSI)

#### Motor

Brushless DC

#### Warranty

5 Years

### Control Methods

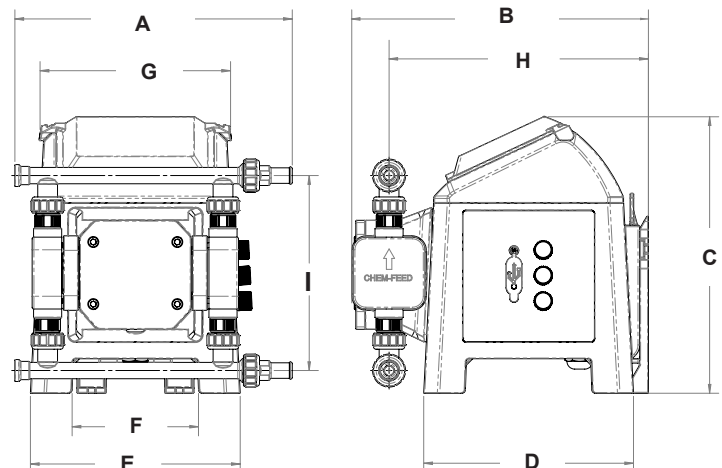
Control Methods	Manual Control	4-20mA Input	Remote Start/Stop	4-20mA Output	Alarm Output	FVS	Motor Status Output
MD1	•	•	•	•	•	•	•



<b>Maximum Working Pressure</b>	Up to 150 psig (10.3 bar)
<b>Maximum Fluid Temperature</b>	Up to 185 °F (85 °C)
<b>Maximum Ambient Temperature</b>	14 to 115 °F/ -10 to 46 °C
<b>Maximum Viscosity</b>	1,000 Centipoise
<b>Maximum Suction Lift</b>	20 ft. at 0 PSI
<b>Operating Voltage</b>	115V60Hz 1 PH (0.6A max.)
	220V50Hz 1 PH (0.3A max.)
	230V60Hz 1 PH (0.3A max.)
	230V50Hz 1 PH (0.3A max.)
	240V50Hz 1 PH (0.3A max.)
<b>Power Cord Options</b>	115V/60Hz = NEMA 5/15 (USA)
	230V/60Hz = NEMA 6/15 (USA)
	220V/60Hz = CEE 7/VII (EU)
	240V/60Hz = AS 3112 (Australia/New Zealand)
	230V 50/60Hz = BS 1363/A (United Kingdom)
<b>Signal Connectors</b>	M12 - 5 pin (IP67 rated)
<b>Motor</b>	Brushless DC, 50W
<b>Duty Cycle</b>	Continuous
<b>Motor Speed Adjustment Range</b>	10,000:1 (0.01% – 100%) Max. rpm = 100 (200 strokes/min)
<b>Maximum Overall Dimensions</b>	9.5"W x 9.5"H x 10.4"D (24.1 W x 24.1 H x 26.4 D cm)
<b>Product Weight</b>	8.5 lb. (3.8 Kg)
<b>Approximate Shipping Dimensions</b>	10.5" W x 11.75" H x 13" D (26.7 W x 29.8 H x 33 D cm)
<b>Approximate Shipping Weight</b>	15.5 lb. (7.0 Kg)
<b>Enclosure</b>	NEMA 4X (IP66), Valox® (PBT)
<b>RoHS Compliant</b>	Yes
<b>Standards</b>	NSF 61, cETLus, CE

## Dimensions

Dim	Inch	cm	Dim	Inch	cm
A	9.49"	24.10	F	4.32"	10.98
B	10.40"	26.41	G	6.52"	16.55
C	9.46"	24.02	H	8.87"	22.54
D	7.18"	18.23	I	6.67"	16.94
E	7.18"	18.23			



## Non-wetted Components:

**Enclosure:** Valox® (PBT)

**Drive Enclosure:** PA12

**Control Panel Cover:** Polycarbonate

**Pump Head Cover:** Polycarbonate

**Cover Screws:** Stainless steel, polypropylene cap

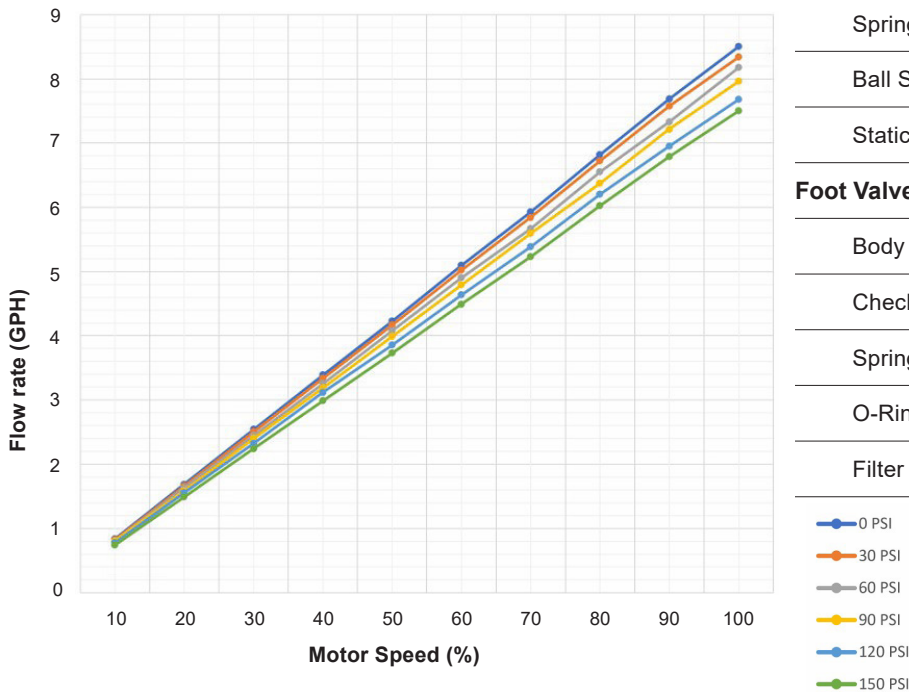
**DFD System Sensor Pins:** Hastelloy C-276

**Power Cord:** 3 Conductor, SJTW-A water-resistant

**Hardware:** 316 Stainless steel screws

**Mounting Brackets:** Nylon

## Performance



## Wetted Components:

### Pump Head Assembly:

Pump Head : PVDF

Adapter Connections : PVDF

Valve Cartridge : PVDF

Valve Balls : Ceramic

O-Ring Seals : TFE/P (optional EP)

Diaphragm : DiaFlex® (optional Flex-A-Prene®)

### Injection/Back-Flow Check Valve:

Body & Insert : PVDF

Check Ball : Ceramic

Spring : Hastelloy C-276

Ball Seat O-Ring : TFE/P (optional EP)

Static Seal O-Ring : TFE/P (optional EP)

### Foot Valve / Strainer:

Body & Adapter : PVDF

Check Ball : Ceramic

Spring : Hastelloy C-276

O-Ring Seal TFE/P (optional EP)

Filter Screen : PVDF

Motor Speed %	Flowrate (Gal/hr), Pressure						Flowrate (mL/min), Pressure					
	0 PSI	30 PSI	60 PSI	90 PSI	120 PSI	150 PSI	0 PSI	30 PSI	60 PSI	90 PSI	120 PSI	150 PSI
	0 Bar	2.1 Bar	4.2 Bar	6.2 Bar	8.3 Bar	10.3 Bar	0 Bar	2.1 Bar	4.2 Bar	6.2 Bar	8.3 Bar	10.3 Bar
10	0.83	0.82	0.81	0.80	0.78	0.74	52.7	51.9	51.0	50.7	48.9	46.5
20	1.68	1.66	1.63	1.58	1.55	1.49	106.3	104.7	102.8	100.0	98.0	93.8
30	2.54	2.50	2.44	2.40	2.32	2.24	160.3	157.9	154.2	151.3	146.6	141.4
40	3.39	3.34	3.26	3.19	3.12	2.99	213.7	210.6	205.4	201.3	196.6	188.6
50	4.23	4.17	4.08	3.99	3.86	3.73	266.8	262.9	257.5	251.9	243.3	235.4
60	5.10	5.02	4.90	4.79	4.63	4.49	321.6	316.9	309.1	302.2	292.4	283.3
70	5.93	5.84	5.67	5.59	5.38	5.23	373.9	368.5	357.6	352.7	339.6	330.0
80	6.82	6.72	6.55	6.37	6.20	6.02	430.2	424.0	413.1	402.1	391.1	379.9
90	7.69	7.58	7.33	7.21	6.95	6.79	485.1	478.0	462.6	455.2	438.4	428.1
100	8.50	8.34	8.18	7.96	7.68	7.50	536.3	526.0	516.0	502.0	484.4	473.3

# Model Number Matrix

MD1

## CHEM-FEED® Model Number

<b>MD1</b>	CHEM-FEED® Diaphragm Metering Pump			
<b>Diaphragm and O-Rings Material</b>				
<b>V</b>	DiaFlex® Diaphragms and TFE/P O-Rings (For all chemicals excluding caustic soda and aqueous ammonia)			
<b>E</b>	Flex-A-Prene® Diaphragms and EP O-Rings (For caustic soda and aqueous ammonia)			
<b>Pump Fittings (Inlet / Outlet)</b>				
<b>B</b>	1/2" ID Barb Straight Fittings			
<b>C</b>	1/2" ID Barb Elbow Fittings			
<b>S</b>	1/4" x 3/8" Compression Straight Fittings			
<b>T</b>	1/4" x 3/8" Compression Elbow Fittings			
<b>M</b>	1/2" M/NPT Straight Fittings			
<b>X</b>	1/2" M/NPT Elbow Fittings			
<b>Power Cord - Removable (Operating voltage requirement 96VAC to 264VAC)</b>				
<b>4</b>	115V 50/60Hz, power cord NEMA 5/15 plug (US)			
<b>6</b>	220V 50/60Hz, power cord CEE 7/V11 plug (EU)			
<b>X</b>	No Power Cord Provided (Power cord is required - See accessories for power cord options)			
<b>MD1</b>	<b>V</b>	<b>B</b>	<b>4</b>	<b>Sample Model Number</b>

## Accessories

 <p><b>KIT-S07</b> <b>KIT-S15</b> <b>KIT-S30</b></p> <p>* Includes cover and foot valve</p> <p>KIT-S07 (7 Gallon), KIT-S15 (15 Gallon), KIT-S30 (30 Gallon) STAR III TANKS, PP</p>	 <p><b>KIT-PSM</b> WALL MOUNT BRACKET, HDPE</p>	 <p><b>CABLE-UAC</b> USB A-C CABLE - 3 ft</p>	
<p><b>POWER CABLES - 6 ft</b> 90010-663 115V/60Hz NEMA 5/15 90010-664 220V/50Hz CEE 7/V11 90010-665 230V/50Hz BS 1363/A 90010-666 240V/50Hz AS 3112 90010-696 230V/60Hz NEMA 6/15 90010-821 115V Lockable</p> <p><b>POWER CABLES</b></p>	 <p><b>KIT-M12</b> TWO M12 CABLES - 9.8 ft</p>	 <p><b>KIT-CQA (Aflas) / KIT-CQE (EP)</b> QUICK CONNECT KIT MD1</p>	<p><b>Teflon Ball Check Cartridge Valve Kit (PVDF body, TFE/P O-rings, PTFE balls)</b> 4 cartridges included. (3 Double-Ball, 1 De-Gas)</p> <p><b>KIT-DVA1-P PTFE Ball Check</b></p>

Visit Accessory Pages for More Options

P.N. # 85000-155 REV 14 20240312

MD1 is sold and serviced exclusively by highly skilled, factory authorized technicians.

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