



MD1

Multi-Diaphragm Metering Pump

Features

- > Multi-diaphragm technology for smooth, nearly pulseless chemical feed
- > Built-in leak detection (DFD) senses diaphragm failure, and shuts off the pump. No false triggering.
- > DiaFlex diaphragm offers zero breakdown, reducing field maintenance and downtime.
- > 4-20mA SCADA input
- > Heavy duty display shield protects pump controls in harsh industrial environments.
- > Remote Start/Stop, non-powered dry contact closure.
- > Relay outputs; one 250V/3A and one solid state.

Watch the video:



NEMA 4X



Highlights

Flow range

.0007 – 7.70 GPH
.0029 – 29.15 LPH

Pressures

150 PSI
(10.3 bar)

Turndown ratio

10,000 : 1

Suction lift

20 ft.
(at 0 PSI)

Motor

Brushless
DC

Warranty

3 Years

Control methods

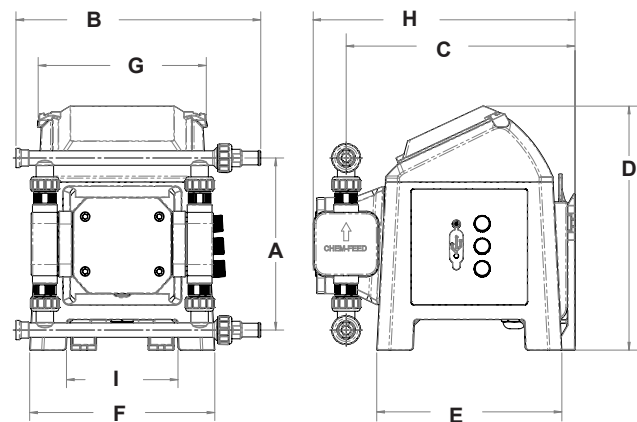
Control Methods	Manual Control	4-20mA Input	Remote Start/Stop	Alarm Output	FVS	Motor Status Output
Manual	X					
Remote		X	X	X	X	X



Maximum Working Pressure:	150 psig (10.3 bar)
Maximum Fluid Temperature:	185 °F (85 °C)
Maximum Ambient Temperature:	14 to 115 °F/ -10 to 42 °C
Maximum Viscosity:	5,000 Centipoise
Maximum Suction Lift:	20 ft. at 0 PSI
Operating Voltage Range:	100 to 240VAC-50/60Hz
Power Cord Options:	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)
Motor:	Brushless DC, 50W
Duty Cycle:	Continuous
Turndown Ratio:	10,000:1 (0.01% – 100%)
Enclosure:	NEMA 4X (IP66), Valox® (PBT) thermoplastic
Maximum Overall Dimensions:	8.17"W x 9.46"H x 10.38"D (20.74cm W x 24.02cm H x 26.36cm D)
Product Weight:	8.5 lb. (3.8 Kg)
Approximate Shipping Dimensions:	10.5" W x 13.75" H x 11" D (26.7 W x 35 H x 28 D cm)
Approximate Shipping Weight:	15.5 lb. (7.0 Kg)

Dimensions

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



Output Specifications

Flow Range		Max Speed	Max Pressure	Max Temperature	MD1V Model Numbers		
GPH	LPH	RPM	PSI(bar)	°F(°C)	115V AC	230V AC	220V AC
0.00077 - 7.70	0.0029 - 29.15	100	150 (10.3)	185 (85)	MD1V14	MD1V15	MD1V16

NOTE: For optimum tube life, specify the pump to operate at the lowest possible RPM and pressure.

Non-wetted Components:

- Enclosure:** Valox® (PBT) & PA12 thermoplastic

- Control Panel Cover:** Polycarbonate, to prevent accidental tampering.

- Pump Head:** Valox® (PBT) & PA12 thermoplastic

- Pump Head Cover:**
 - Polycarbonate for added strength and chemical resistance.
 - Permanently lubricated sealed motor shaft support motor shaft support ball bearing.

- 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

Wetted Components:

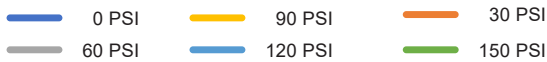
- Pump Head Assembly:**
 - Pump Head : PVDF
 - Adapter Connections : PVDF
 - Valve Cartridge : PVDF
 - Valve Balls : Ceramic
 - Elastomers : TFE/P (optional EP)
 - Static Seals : TFE/P (optional EP)
 - Diaphragm : PVDF (optional Flex-A-Prene®)

- Injection/Back-Flow Check Valve:**
 - Body & Insert : Polypropylene (optional PVDF)
 - Check Ball : Ceramic
 - Spring : Hastelloy C-276
 - Ball Seat O-Ring : TFE/P (optional EP)
 - Static Seal O-Ring : FKM (optional EPDM)

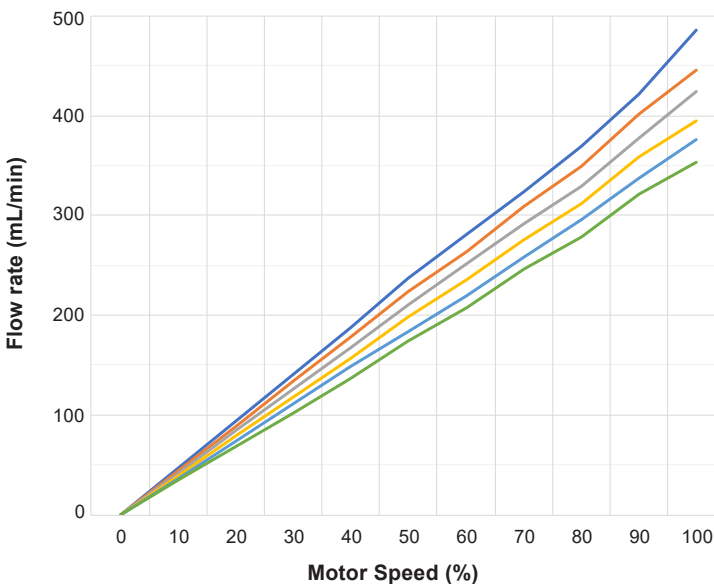
- Ancillary Items Provided:**
 - Suction Tubing : 3/8" OD x 1/4" ID x 5' Clear PVC
 - Discharge Tubing : 3/8" OD x 1/4" ID x 5' Polyethylene
 - Suction Strainer : Polypropylene
 - Weight : Ceramic

Performance

Chem-Feed® MD1 Metering Pump



Flow rate vs Pressure



Motor Speed Flow Rate mL/min Pressure

Motor Speed	0 PSI	30 PSI	60 PSI	90 PSI	120 PSI	150 PSI
0%	0	0	0	0	0	0
10%	47	45	42	39	37	35
20%	94	89	84	80	74	69
30%	140	134	125	118	111	102
40%	187	178	167	157	148	136
50%	236	223	210	198	184	175
60%	281	264	252	235	220	208
70%	324	309	292	276	258	246
80%	370	350	330	312	296	279
90%	422	401	378	358	337	321
100%	486	446	424	395	375	354

Chem-Feed® Model Number

MD1	Chem-Feed® Diaphragm Metering Pump			
Diaphragm and O-Rings Material				
V	DiaFlex® Diaphragms and TFE/P O-Rings (For all chemicals excluding caustic soda and aqueous ammonia)			
E	Flex-A-Prene® Diaphragms and EP O-Rings (For caustic soda and aqueous ammonia)			
Power Cord (Operating voltage requirement 96VAC to 264VAC)				
4	115V 50/60Hz, power cord NEMA 5/15 plug (US)			
5	230V 50/60Hz, power cord NEMA 6/15 plug (US)			
6	220V 50/60Hz, power cord CEE 7/V11 plug (EU)			
8	240V 50/60Hz, power cord AS 3112 plug (Australia/New Zealand)			
9	230V 50/60Hz, power cord BS 1363/A plug (United Kingdom)			
MD1	V	1	4	Sample Model Number

Accessories

 <p>KIT-S07 STAR III 7 GALLON TANK</p>	 <p>KIT-S15 STAR III 15 GALLON TANK</p>	 <p>KIT-S30 STAR III 30 GALLON TANK</p>	 <p>KIT-C5B CD 1/2" HOSE BARB</p>
 <p>KIT-MB FLOOR MOUNTING BRACKETS</p>	 <p>CABLE-UAC USB A-C CABLE</p>	 <p>KIT-M12 TWO M12 CABLES</p>	 <p>KIT-CQA QUICK CONNECT MD1 AFLAS</p>

NOTE: Accessories sold separately.

*KIT-CQE EP O-RINGS