Blue-White®

MD1

CHEM-FEED® Multi-Diaphragm Metering Pump

MD1C Model

Video link:

Features

> Enhanced Multi-diaphragm technology delivers smooth, nearly pulse-less chemical feed
> Double ball checks increase pumping reliability
> Unique pump head ensures correct ball check direction
> Leak detection (DFD) senses diaphragm failure and stops pump
> Exclusive DiaFlex® Diaphragm minimizes maintenance
> "C" Control Model includes multiple Input/Output options
> "B" Base Model includes manual speed control

NSF Certified to NSF / ANSI Standard 61 · ETL c us · CE · NEMA 4X

Highlights

Flow range
0.0007 - 7.0 GPH
0.0026 - 26.46 LPH

Pressures
Up to 180 PSI*
(12.4 bar)

Turndown ratio
10,000 : 1

Suction lift
20 ft. (at 0 PSI)

Motor
Brushless DC

Warranty
5 Years

Control Methods

Control Methods	Manual Speed Control	4-20mA Input	Remote Start/Stop	4-20mA Output	Alarm Output	FVS	Motor Status Output	Prime Button	Lockout Feature
MD1C	•	•	•	•	•	•	•	•	•
MD1B	•							•	•

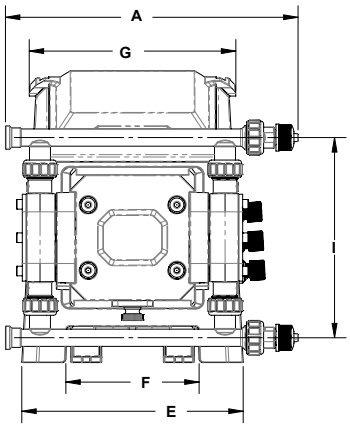
For more help and information regarding **MD1**, please visit www.blue-white.com or scan this QR code.

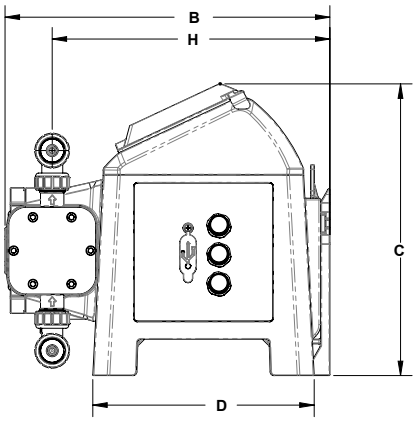
Engineering Specifications

Maximum Working Pressure	Up to 180 psig (12.4 bar) * Maximum pressure when using compression fittings: 150 psig (10.3 bar)
Maximum Fluid Temperature	Up to 185 °F (85 °C)
Maximum Ambient Temperature	14 to 115 °F/ -10 to 46 °C
Maximum Viscosity	1,000 Centipoise
Maximum Suction Lift	20 ft. at 0 PSI
Operating Voltage	115V60Hz 1 PH (0.6A max., 80W max.)
	220V50Hz 1 PH (0.3A max., 80W max.)
	230V60Hz 1 PH (0.3A max., 80W max.)
	230V50Hz 1 PH (0.3A max., 80W max.)
	240V50Hz 1 PH (0.3A max., 80W max.)
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)
	230V 50/60Hz = BS 1363/A (United Kingdom)
Signal Connectors	M12 - 5 pin (IP67 rated) (“C” model only)
Motor	Brushless DC, 42W
Duty Cycle	Continuous
Motor Speed Adjustment Range	10,000:1 (0.01% – 100%) Max. rpm = 100 (200 strokes/min)
Maximum Overall Dimensions	9.49”W x 9.46”H x 10.53”D (24.10 W x 24.02 H x 26.75 D cm)
Product Weight	10.7 lb. (4.85 Kg)
Approximate Shipping Dimensions	10.5” W x 11.75” H x 13” D (26.7 W x 29.8 H x 33 D cm)
Approximate Shipping Weight	20.0 lb. (9.1 Kg)
Enclosure	NEMA 4X, Valox® (PBT)
RoHS Compliant	Yes
Standards	NSF 61, cETLus, CE, BABA Compliant

Dim	Inch	cm
A	9.49”	24.10
B	10.53”	26.75
C	9.46”	24.02
D	7.18”	18.23
E	7.18”	18.23

Dim	Inch	cm
F	4.32”	10.98
G	6.70”	17.02
H	9.01”	22.89
I	6.49”	16.48



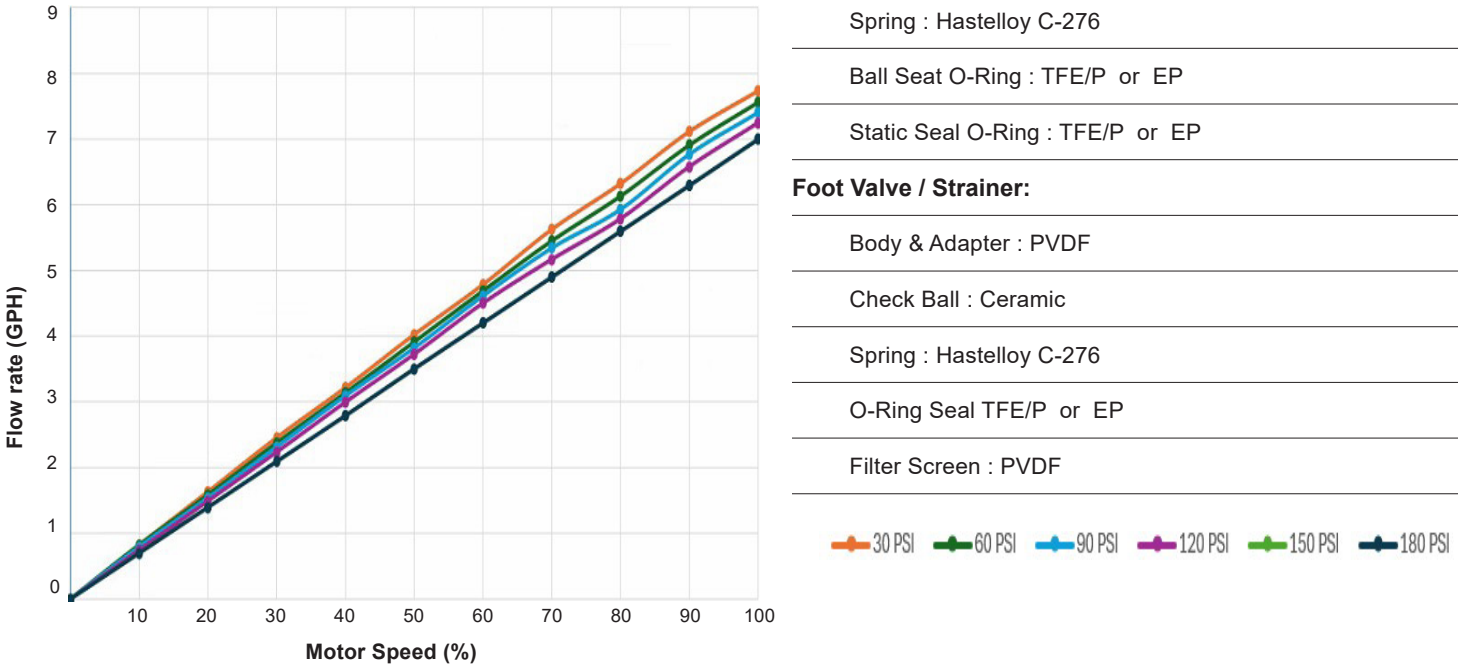


Materials of Construction

Non-wetted Components:
Enclosure: Valox® (PBT)
Drive Enclosure: PA12
Control Panel Cover: Polycarbonate
Pump Head Cover: Polycarbonate
Cover Screws: Stainless steel
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
O-Ring Seals : TFE/P or EP
Diaphragm : DiaFlex® or Flex-A-Prene®
Injection/Back-Flow Check Valve:
Body & Insert : PVDF
Check Ball : Ceramic
Spring : Hastelloy C-276
Ball Seat O-Ring : TFE/P or EP
Static Seal O-Ring : TFE/P or EP
Foot Valve / Strainer:
Body & Adapter : PVDF
Check Ball : Ceramic
Spring : Hastelloy C-276
O-Ring Seal TFE/P or EP
Filter Screen : PVDF

Performance



Motor Speed %	Flowrate (Gal/hr), Pressure						Flowrate (mL/min), Pressure					
	30 PSI	60 PSI	90 PSI	120 PSI	150 PSI	180 psi	30 PSI	60 PSI	90 PSI	120 PSI	150 PSI	180 PSI
	2.1 Bar	4.2 Bar	6.2 Bar	8.3 Bar	10.3 Bar	12.4 Bar	2.1 Bar	4.2 Bar	6.2 Bar	8.3 Bar	10.3 Bar	12.4 Bar
10	0.82	0.82	0.79	0.74	0.73	0.70	52	52	50	47	46	44
20	1.63	1.59	1.54	1.49	1.46	1.39	103	100	97	94	92	88
30	2.46	2.38	2.31	2.23	2.19	2.09	155	150	146	141	138	132
40	3.22	3.14	3.09	3.00	2.92	2.79	203	198	195	189	184	176
50	4.03	3.92	3.82	3.72	3.60	3.50	254	247	241	235	227	221
60	4.79	4.69	4.61	4.50	4.36	4.20	302	296	291	284	275	265
70	5.63	5.45	5.34	5.17	5.01	4.90	355	344	337	326	316	309
80	6.32	6.13	5.93	5.79	5.66	5.60	399	387	374	365	357	353
90	7.12	6.91	6.77	6.58	6.45	6.29	449	436	427	415	407	397
100	7.73	7.56	7.40	7.24	7.13	7.00	488	477	467	457	450	441

Model Number Matrix

CHEM-FEED® Model Number

MD1	CHEM-FEED® Diaphragm Metering Pump

Control

B	Base = Manual Speed Control (No I/O)
C	Control = 4-20mA Input, 4-20mA Output, Manual Speed Control, Remote Start/Stop Input, Outputs (TFD, FVS, Motor)

Diaphragm and O-Rings Material

V	DiaFlex® Diaphragms and TFE/P O-Rings
W	Flex-A-Prene® Diaphragms and TFE/P O-Rings
D	DiaFlex® Diaphragms and EP O-Rings
E	Flex-A-Prene® Diaphragms and EP O-Rings

Pump Fittings (Inlet / Outlet)

B	1/2” ID Barb Straight Fittings
C	1/2” ID Barb Elbow Fittings
S	1/4” x 3/8” Compression Straight Fittings (maximum pressure rating is 150 psi (10.3 bar) when using compresion fittings)
T	1/4” x 3/8” Compression Elbow Fittings (maximum pressure rating is 150 psi (10.3 bar) when using compresion fittings)
M	1/2” M/NPT Straight Fittings
X	1/2” M/NPT Elbow Fittings

Power Cord - Removable (Operating voltage requirement 96VAC to 264VAC)

4	115V 50/60Hz, power cord NEMA 5/15 plug (US)
6	220V 50/60Hz, power cord CEE 7/V11 plug (EU)
X	No Power Cord Provided (Power cord is required - See accessories for power cord options)

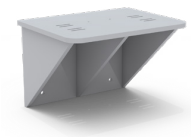
MD1	B	V	B	4	**Sample Model Number**

Accessories

KIT-S07
KIT-S15
KIT-S30

*** Includes cover and foot valve**

KIT-S07 (7 Gallon), KIT-S15 (15 Gallon), KIT-S30 (30 Gallon)
STAR III TANKS, PP



KIT-PSM (Lg), KIT-PSS (Sm)
WALL MOUNT PUMP SHELF

KIT-C*1TZZ Elbow, 1/4x3/8 tubing
KIT-C*1XZZ Elbow, 1/2” MNPT
KIT-C*1CZZ Elbow, 1/2” Hose Barb
KIT-C*1SZZ Straight, 1/4x3/8 tubing
KIT-C*1MZZ Straight, 1/2” MNPT
KIT-C*1BZZ Straight, 1/2” HoseBarb
* A = Aflas O-rings, E = EP O-rings

FITTING KITS
2 fittings, 2 union nuts, 2 O-rings

POWER CABLES - 6 ft
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

POWER CABLES

KIT-M12
TWO M12 CABLES - 9.8 ft

KIT-CQA (Aflas) / KIT-CQE (EP)
QUICK CONNECT KIT MD1

Teflon Ball Check Cartridge Valve Kit (PVDF body, TFE/P O-rings, PTFE balls) 4 cartridges included.

PTFE Ball Check Cart. Kit

Visit Accessory Pages for More Options

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

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