Blue-White®

MD3

CHEM-FEED® Multi-Diaphragm Metering Pump

Features

> 5” touchscreen color LCD display
> Exclusive DiaFlex® Diaphragm minimizes maintenance
> Smooth chemical dosing, no pulsation dampener needed
> Multi-diaphragm technology eliminates vapor locking
> Diaphragm Failure Detection (DFD) system senses diaphragm failure
> Signal inputs: 4-20mA, Pulse inputs, Industrial Protocols, Remote Start/Stop, Auto-Prime

Video link:

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

Highlights

Flow range
.03 - 52.6 GPH
.10 - 199 LPH

Pressures
up to 145 PSI*
(10 bar)

Turndown ratio
2,000 : 1

Exclusive
Diaphragm Failure Detection (DFD)

Motor
1/4 HP Brushless DC Motor

Warranty
5 Years

* Refer to pump curve for specific pressure and flow information

Control Methods

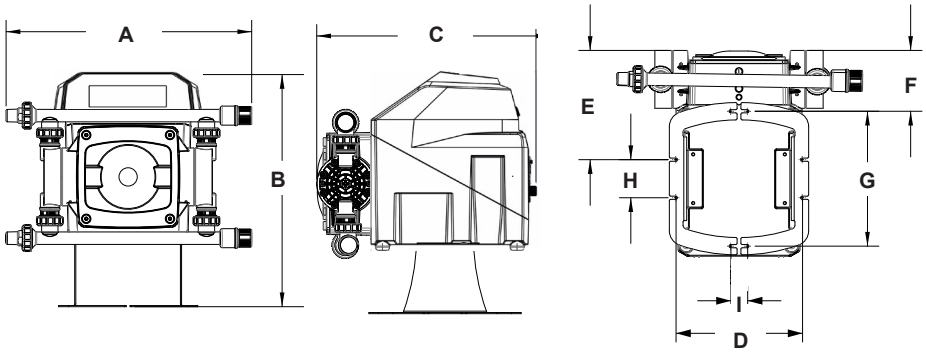
Control Methods	Manual Control	4-20mA Input	Remote Start/Stop	Pulse Input	Frequency Input	Ethernet/IP	Modbus TCP/IP	Profibus	4-20mA Output	(4) Alarm Outputs
MD3	•	•	•	•	•	•	•	•	•	•

For more help and information regarding **MD3**, please visit www.blue-white.com or scan this QR code.

Engineering Specifications

Maximum Working Pressure	145 psig (10 bar)
Maximum Fluid Temperature	PVDF connections: 185 °F (85 °C)
Maximum Ambient Temperature	14 °F to 115 °F (-10 °C to 46 °C)
Maximum Storage Temperature	-40 °F to 158 °F (-40 °C to 70 °C)
Maximum Viscosity	1,000 Centipoise
Maximum Suction Lift	19 ft. Water, 0 psig (6 m, 0 bar)
Operating Voltage	115VAC/60Hz, 1ph (2.0 Amp Maximum)
	230VAC/60Hz, 1ph (1.0 Amp Maximum)
	220VAC/50Hz, 1ph (1.0 Amp Maximum)
	240VAC/50Hz, 1ph (1.0 Amp Maximum)
	230VAC/50Hz, 1ph (2.0 Amp Maximum)
Power Cord Options	115V60Hz = NEMA 5/15 (USA)
	230V60Hz = NEMA 6/15 (USA)
	220V50Hz = CEE 7/VII (EU)
	240V50Hz = AS 3112 (Australia/New Zealand)
	230V50Hz = BS 1363/A plug (United Kingdom)
Motor	1/4 HP Brushless DC motor
Motor Speed Adjustment Range	2,000:1 (0.05% - 100% motor speed) Max. rpm = 190
Motor Speed Adjustment Resolution	0.1% increments > 10% motor speed
	0.01% increments > 1% motor speed and < 10%
	0.001% increments < 1% motor speed
Display / User Interface	5” touchscreen color LCD, UV resistant.
Display Languages	English, Spanish, French, German, and Portuguese selectable
Security	Programmable 6-digit password
Maximum Overall Dimensions	16-1/8”W x 15-1/4”H x 15-5/16”D (40.9W x 38.7H x 38.9D cm)
Approximate Shipping Weight	50lb. (22.7 Kg)
Enclosure	NEMA 4X (IP66), Polyester powder coated aluminum & Noryl
RoHS Compliant	Yes
Standards	cETLus, CE, NSF61

Dimensions



Dim	Inch	cm	Dim	Inch	cm
A	16.13”	40.97	**F**	4.00”	10.15
B	16.29”	41.37	**G**	8.86”	22.50
C	14.12”	35.86	**H**	2.50”	6.35
D	8.30”	21.08	**I**	1.10”	2.79
E	7.24”	18.37			

Materials of Construction

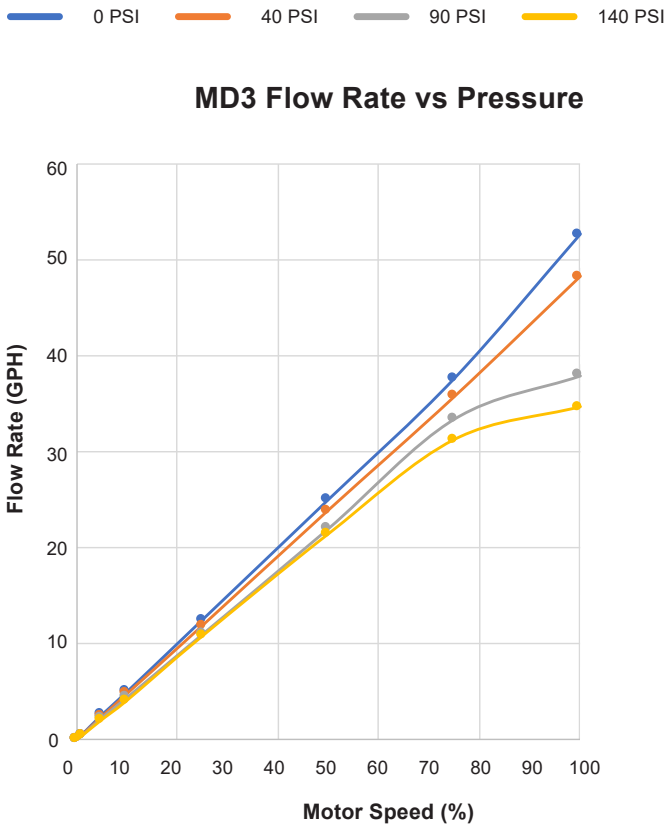
Non-wetted Components:	
Enclosure: 413 Aluminum (Polyester powder coated) & Noryl	
Drive Enclosure: Valox (PBT) thermoplastic	
Permanently lubricated sealed motor shaft support ball bearing.	
Drive Enclosure Cover: Polycarbonate	
Cover Screws: 300 Series stainless steel	
Pump Head Cover: 316 Stainless Steel	
Motor Shaft: Chrome plated steel	
DFD System Sensor pins: Hastelloy C-276	
Power Cord: 3 conductor, SJTW-A water-resistant	
Mounting Brackets and Hardware: 316 Stainless steel	

Wetted Components:	
Pump Head Assembly:	Pump Head: PVDF
	Adapter Connections: PVDF
	Valve Cartridges: PVDF
	Valve Balls: Ceramic
	Elastomers: TFE/P
	Static Seals: TFE/P (optional EP)
	Diaphragm: DiaFlex® (optional Flex-A-Prene®) *
Foot Valve / Strainer:	Body & Adapter: PVDF
	Check Ball: Ceramic
	Spring: Hastelloy C-276, 6 lbs.
	O-Ring Seals: TFE/P (optional EP)
	Filter Screen: PVDF
Recommended Ancillary Items Sold Separately	
Injection / Back-Flow Check Valve:	Body & Insert: PVDF
	Check Ball: Ceramic
	Spring: Hastelloy C-276, 6 lbs.
	O-Ring Seals: TFE/P (optional EP)

* Consult factory for chemical compatibility

Performance

CHEM-FEED® MD3 Multi-Diaphragm Metering Pump



Motor Speed 380 Strokes/min	Flow Rate GPH Pressure				
	RPM	0 PSIg	40 PSIg	90 PSIg	140 PSIg
0%	0	0	0	0	0
1%	1.3	0.5	0.5	0.4	0.4
5%	10	2.6	2.4	2.3	2.1
10%	19	5.0	4.8	4.4	4.1
25%	48	12.5	11.9	11.0	10.8
50%	95	25.0	23.9	22.0	21.4
75%	142	37.6	35.7	33.4	31.2
100%	190	52.6	48.2	37.9	34.6

Model Number Matrix

CHEM-FEED® Model Number

MD3S	CHEM-FEED® Multi-Diaphragm Metering Pump

Maximum Strokes per Minute

2	380 SPM (190 RPM)

Input Voltage / Power Cord

4	115V / 60Hz, power cord NEMA 5/15 plug (US)
5	230V / 60Hz, power cord NEMA 6/15 plug (US)
6	220V / 50HZ, power cord CEE 7/VII plug (EU)
8	240V / 50HZ, power cord AS 3112 plug (Australia/New Zealand)
9	230V / 50HZ, power cord BS 1363/A plug (United Kingdom)
X	No Power Cord (Pump requires power cord. See accessories for other power cord options)

Stroke Length / Diaphragm Size

4	.090” Stroke - Large Diaphragm

Electrical

X	Standard Equipment - C13 power cord connector, six M12 signal connectors, Ethernet/Modbus port & Profibus M12 connector.

Elastomer Material (O-Rings)

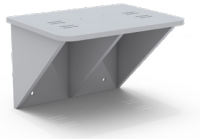
V	DiaFlex® Diaphragms and TFE/P O-rings (For most chemicals. Not compatible with Sodium Hydroxide and Aqueous Ammonia)
E	Flex-A-Prene® Diaphragms and EPDM O-rings (for Sodium Hydroxide and Aqueous Ammonia)

Pump Head Fittings and Foot Valve

X	1/2” M/NPT Elbow Fittings & 1/2” M/NPT Footvalve
M	1/2” M/NPT Straight Fittings & 1/2” M/NPT Footvalve
B	1/2” Barb Straight Fittings & 1/2” Barb Footvalve
C	1/2” Barb Elbow Fittings & 1/2” Barb Footvalve

MD3S	2	4	4	X	V	X	**Sample Model Number**

Accessories



KIT-PSM
Wall Mount Bracket, HDPE

71000-579
PVDF INJECTOR,1/2” Hose Barb
71000-577
PVDF INJECTOR,1/2” MNPT

76001-361
Suction Tubing, Clear PVC, 1/2” ID, 8ft
90008-437
Discharge Tubing, Braided PVC, 1/2” ID

Ball Check Cartridge Options

20000-229 (2 req.)
Ball Check Cart. PTFE Balls
20000-228 (2 req.)
Ball Check Cart. Hastelloy Balls
70001-409 (4 req.)
Ball Check Cart., Single Ceramic Ball with Hastelloy Spring

KIT-M12
Two M12 Cables - 9.8 ft.

KIT-DP3
Profibus Cable, 3 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
90010-711 115V Lockable

POWER CABLES - 6 ft

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