

# MD3

## CHEM-FEED® Multi-Diaphragm Metering Pump



### Features

- > 5" touchscreen color LCD display
- > Exclusive DiaFlex® Diaphragm guaranteed to last the life of the pump
- > 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:



### 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

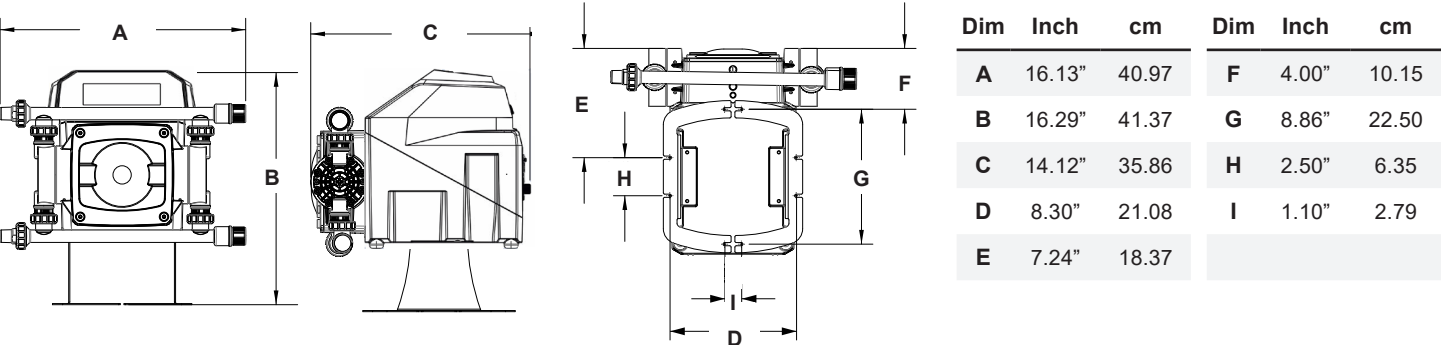
### Control Methods

| 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             | •              | •            | •                 | •           | •               | •           | •             | •        | •             | •                 |



|                                   |                                                             |
|-----------------------------------|-------------------------------------------------------------|
| 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              | 23 ft. Water, 0 psig (7 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



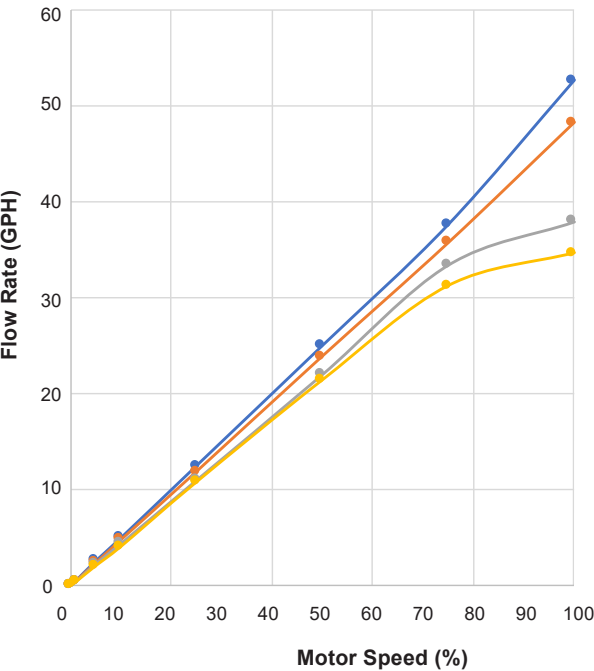
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|-----------------------------------------------------------------|--------------------------------------------------------|
| Non-wetted Components:                                          | Wetted Components:                                     |
| Enclosure: 413 Aluminum (Polyester powder coated) & Noryl       | Pump Head: PVDF                                        |
| Drive Enclosure: Valox (PBT) thermoplastic                      | Adapter Connections: PVDF                              |
| Permanently lubricated sealed motor shaft support ball bearing. | Valve Cartridges: PVDF                                 |
| Drive Enclosure Cover: Polycarbonate                            | Pump Head Assembly: Valve Balls: Ceramic               |
| Cover Screws: 300 Series stainless steel                        | Elastomers: TFE/P                                      |
| Pump Head Cover: 316 Stainless Steel                            | Static Seals: TFE/P (optional EP)                      |
| Motor Shaft: Chrome plated steel                                | Diaphragm: DiaFlex® (optional Flex-A-Prene®) *         |
| DFD System Sensor pins: Hastelloy C-276                         | Body & Adapter: PVDF                                   |
| Power Cord: 3 conductor, SJTW-A water-resistant                 | Check Ball: Ceramic                                    |
| Mounting Brackets and Hardware: 316 Stainless steel             | Foot Valve / Strainer: Spring: Hastelloy C-276, 6 lbs. |
|                                                                 | O-Ring Seals: TFE/P (optional EP)                      |
|                                                                 | Filter Screen: PVDF                                    |

Performance

CHEM-FEED® MD3 Multi-Diaphragm Metering Pump

0 PSI 40 PSI 90 PSI 140 PSI

MD3 Flow Rate vs Pressure



|                                             |                                   |
|---------------------------------------------|-----------------------------------|
| Recommended Ancillary Items Sold Separately | Body & Insert: PVDF               |
| Injection / Back-Flow Check Valve:          | Check Ball: Ceramic               |
|                                             | Spring: Hastelloy C-276, 6 lbs.   |
|                                             | O-Ring Seals: TFE/P (optional EP) |

\* Consult factory for chemical compatibility

| Motor Speed<br>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     |

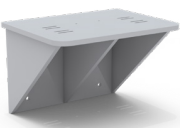
# Model Number Matrix

## CHEM-FEED® Model Number

MD3

|                                   |  |                                                                                                                          |   |   |   |   |   |                     |
|-----------------------------------|--|--------------------------------------------------------------------------------------------------------------------------|---|---|---|---|---|---------------------|
| 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

|                                                                                                                                        |                                                                                                                                                                                                 |                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                              |
|----------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  <p><b>KIT-PSM</b><br/>Wall Mount Bracket, HDPE</p> |  <p><b>71000-579</b><br/>PVDF INJECTOR, 1/2" Hose Barb<br/><b>71000-577</b><br/>PVDF INJECTOR, 1/2" MNPT</p> |  <p><b>76001-361</b><br/>Suction Tubing, Clear PVC, 1/2" ID, 8ft<br/><b>90008-437</b><br/>Discharge Tubing, Braided PVC, 1/2" ID</p>                 | <p><b>Ball Check Cartridge Options</b></p> <p><b>20000-229 (2 req.)</b><br/>Ball Check Cart. PTFE Balls<br/><b>20000-228 (2 req.)</b><br/>Ball Check Cart. Hastelloy Balls<br/><b>70001-409 (4 req.)</b><br/>Ball Check Cart., Single Ceramic Ball with Hastelloy Spring</p> |
|                                                                                                                                        |                                                                                                                                                                                                 |                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                              |
|  <p><b>KIT-M12</b><br/>Two M12 Cables - 9.8 ft.</p> |  <p><b>KIT-DP3</b><br/>Profibus Cable, 3 ft</p>                                                              | <p>90010-663 115V/60Hz NEMA 5/15<br/>90010-664 220V/50Hz CEE 7/V11<br/>90010-665 230V/50Hz BS 1363/A<br/>90010-666 240V/50Hz AS 3112<br/>90010-696 230V/60Hz NEMA 6/15<br/>90010-711 115V Lockable</p> <p><b>POWER CABLES - 6 ft</b></p> |                                                                                                                                                                                                                                                                              |