

FLEX-PRO[®] M-2

Feed Rates to 17.2 GPH (65.1 LPH)
Pressures to 125 PSI
4-20mA, Pulse Input and Manual Speed Control
200:1 Turndown ratio
Tube Failure Detection System
Tube life hour counter
Variable Speed DC Motor
NEMA 4X (IP 66) Washdown Duty
NSF Listed Std. 61
5 Year Warranty



Sold and serviced exclusively by highly skilled, factory authorized technicians.



NEMA 4X

Patents: 4,496,295 7,001,153 and other patents pending

Applications:

- Municipal Water Treatment
- Municipal Wastewater Treatment
- Chemical Metering
- Chlorination
- Chloramination
- Fluoridation
- Polymer Injection
- Acid Injection
- Alum Injection
- PAC Injection
- Caustic Injection

Features:

- Peristaltic pump design does not have valves that can clog requiring maintenance.
- Self priming - even against maximum line pressure. By-pass valves are not required. Cannot vapor lock, or lose prime. Does not permit syphoning.
- Output rates to: 17.2 GPH (65.1 LPH) and pressures to 125 PSI (8.6 Bar).
- Variable speed DC motor.
- Specially engineered tubing for long life at high pressures. Meets FDA 21 CFR requirements for food contact applications.
- Patented Tube Failure Detection (TFD) system. Senses tube failure by detecting chemical in the pump head. No false triggering.
- 200:1 turndown ratio.
- Inputs: 4-20mA and pulse inputs for remote external speed control and either powered 6-24 VDC or non-powered dry contact closure for remote start/stop.
- Backlit LCD displays motor speed, input signal values, tube life timer, service and alarm status.
- Three Outputs: one 250V/3A relay to monitor TFD (Tube Failure System) and FVS (Flow Verification System), one 4-20mA analog signal scalable to the motor speed and one relay output for run status.
- Two molded squeeze rollers and two alignment rollers for optimum squeeze, unparallelled accuracy, and tube life.
- Heavy duty rotor - single piece plastic rotor means no flexing and increased accuracy with no metal springs or hinges to corrode.
- Inject at maximum pressure in either direction (clockwise and counter clockwise).
- Compatible with Blue-White's output Flow Verification Sensor (FVS) system. Sensor is sold separately.

Engineering Specifications:

Maximum working pressure (excluding pump tubes):

125 psig (8.6 bar)

Note: see individual pump tube assembly maximum pressure ratings.

Maximum Fluid temperature (excluding pump tubes):

3/8" OD x 1/4" ID tubing connections: 130° F (54° C)

M/NPT connections: 185° F (85° C)

Note: see individual pump tube assembly maximum temperature ratings.

Maximum fluid viscosity:

12,000 Centipoise

Maximum suction lift:

30 ft. of water at sea level (14.7 atm psi)

Ambient Operating Temperature

14°F to 115°F (-10°C to 46°C)

Ambient Storage Temperature

-40°F to 158°F (-40°C to 70°C)

Operating Voltage:

115VAC/60Hz, 1ph (1.5 Amp Maximum)

230VAC/60Hz, 1ph (0.7 Amp Maximum)

220VAC/50Hz, 1ph (1.0 Amp Maximum)

240VAC/50Hz, 1ph (1.0 Amp Maximum)

Power Cord Options:

115V60Hz = NEMA 5/15 (USA)

230V60Hz = NEMA 6/15 (USA)

220V50Hz = CEE 7/II (EU)

240V50Hz = AS 3112 (Australia/New Zealand)

Motor:

Brushed DC, 1/8 H.P.

Duty cycle:

Continuous

Motor speed adjustment range 200:1:

0.5% - 100% motor speed (0.7 to 130 RPM)

Motor speed adjustment resolution:

0.1% increments

Display

Backlit LCD, UV resistant.

Keypad

Eight button positive action tactile switch keypad.

Enclosure:

NEMA 4X (IP66), Polyester powder coated aluminum.

Maximum Overall Dimensions:

7-1/2" W x 10-1/4" H x 14" D (19 W x 26 H x 35.6 D cm)

Product weight:

28.4lb. (12.9 Kg)

Approximate shipping wt:

35 lb. (15.9 Kg)

Materials of Construction:

Wetted components:**Pump Tube Assembly (Model Specific - 2 provided):**

Tubing: Flex-A-Prene® or Flex-A-Chem® Flex-A-Thane®

Adapter fittings: .PVDF

Recommended Ancillary Items Sold Separately:**Injection / Back-flow Check valve:**

Body & insert: PVDF

Check Ball: Ceramic

Spring: Hastelloy C-276

Ball Seat O-ring: FKM (optional EP)

Static Seal O-ring: FKM (optional EP)

For "S" tubing type connections only:

Suction Tubing: 3/8" OD x 1/4" ID x 10' Clear PVC

Discharge Tubing: 3/8" OD x 1/4" ID x 10' Polyethylene (LLDPE)

Suction Strainer: Polypropylene

For "M" M/NPT connections only:**Suction Strainer:**

Body: PVDF

Check Ball: Ceramic

Ball Seat O-ring: FKM (optional EP)

For "C" Tri-clamp and "Q" Quick Disconnect connections* only:

(Available for ND, NEE, NGG, and G2G only)

Suction Strainer: Polypropylene

*Quick Disconnect Valves sold separately

Non-Wetted components:**Enclosure:**

413 Aluminum (Polyester powder coated)

Pump Head:

Valox® (PBT) thermoplastic

Pump Head Cover:

Polycarbonate for added strength and chemical resistance.

Permanently lubricated sealed motor shaft support ball bearing.

Cover Screws:

Stainless Steel

Roller Assembly:

Rotor:.....Valox® (PBT)

Rollers:.....Molded Nylon

Roller Bearings:.....SS Ball Bearings

Roller Shaft:.....316 Stainless Steel

Motor Shaft:

Chrome plated steel

TFD System Sensor pins:

Hastelloy C-276

Power Cord:

3 conductor, SJTW-A Water-resistant

Tube Installation Tool:

Glass Filled Nylon

Mounting Brackets and Hardware:

316 Stainless Steel

Output Specifications:

Feed Rate			Max Speed	Max Pressure	Max Temperature	M-2 Model Numbers		
Flex-A-Prene® M-2 Tube Pumps								
Meets FDA criteria for food Excellent chemical resistance CIP SIP								
GPH	LPH	ML/Min	RPM	PSI (bar)	F (C)	115V AC	230V AC	220V AC
.01 - 1.7	.03 - 6.5	.54 - 108	130	125 (8.6)	185 (85)	M-224-*ND	M-225-*ND	M-226-*ND
Flex-A-Prene® M-2 Tube Pumps								
Meets FDA criteria for food Excellent chemical resistance CIP SIP								
GPH	LPH	ML/Min	RPM	PSI (bar)	F(C)	115V AC	230V AC	220V AC
.022 - 4.44	.084 - 16.8	1.4 - 280	130	110 (7.6)	185 (85)	M-224-*NEE	M-225-*NEE	M-226-*NEE
.086 - 17.2	.325 - 65.1	5.4 - 1085	130	110 (7.6)	185 (85)	M-224-*NGG	M-225-*NGG	M-226-*NGG
Flex-A-Chem® M-2 Tube Pumps								
Meets FDA criteria for food Superb chemical resistance								
GPH	LPH	ML/Min	RPM	PSI (bar)	F (C)	115V AC	230V AC	220V AC
.07 - 14.3	.27 - 54	4.5 - 900	130	50 (3.4)	130 (54)	M-224-*TH	M-225-*TH	M-226-*TH
Flex-A-Thane® M-2 Tube Pumps								
Meets FDA criteria for food Resistant to oils, greases and fuels								
GPH	LPH	ML/Min	RPM	PSI (bar)	F (C)	115V AC	230V AC	220V AC
.02 - 4.0	.08 - 15.2	1 - 253	130	65 (4.5)	130 (54)	M-224-*GE	M-225-*GE	M-226-*GE
.05 - 9.3	.17 - 35.2	3 - 587	130	65 (4.5)	130 (54)	M-224-*GG	M-225-*GG	M-226-*GG
.07 - 14.98	.03 - 56.7	4.7 - 945	130	65 (4.5)	130 (54)	M-224-*G2G	M-225-*G2G	M-226-*G2G
* Inlet/outlet connection type S = 3/8" OD x 1/4" ID tubing compressions type connections M = 1/2" male NPT MB = 1/2" male BSPT B = 1/2" Hose barb, Natural PVDF (Kynar), (ND, NEE, NGG, and G2G only) C = 1/2" - 3/4" tri-clamp connections (ND, NEE, NGG, and G2G only) Q = Quick Disconnect (ND, NEE, NGG, and G2G only) (Valves sold separately)								
<ul style="list-style-type: none"> The Flex-Pro Pump's motor speed is linear over the entire 0.5% to 100% adjustment range. Output versus pressure is nearly linear in all models. Larger tubes exhibit greater losses. For optimum tube life, specify the pump to operate at the lowest possible RPM and pressure. 								

Quick-Disconnect Valve Kits (Sold Separately)

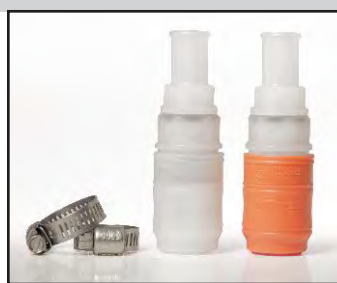
For use with the Quick-Disconnect Flex-A-Prene Tube Assembly

3/8" OD, 1/4" Tubing



Part #	O-ring
KIT-QSV	FKM
KIT-QSE	EP

1/2" Hose Barb



Part #	O-ring
KIT-QBV	FKM
KIT-QBE	EP

1/2" M/NPT



Part #	O-ring
KIT-QMV	FKM
KIT-QME	EP

Chemical Resistance of Tubing:

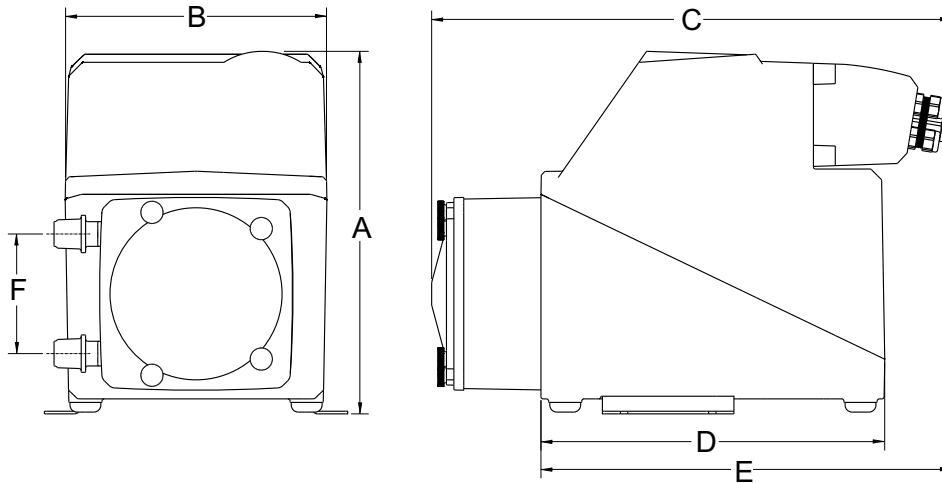
Flex-A-Prene® Tubing			
Meets FDA criteria for food Excellent chemical resistance CIP SIP			
Alcohol general	Ethylene glycol	Hydrochloric acid 33%	Potassium hydroxide
Aluminum Sulfate (Alum)	Ferric chloride	Hydrocyanic acid	Propylene glycol
Ammonium chloride	Ferric nitrate	Hydrogen peroxide	Sodium hydroxide 50%
Ammonium hydroxide	Ferric sulfate	Hypochlorous acid	Sodium Bisulfite
Ammonium Sulfate (LAS)	Ferrous chloride - 43% in water	Iodine	Sodium Hypochlorite 12.5%
Benzyl alcohol	Ferrous sulfate	Magnesium chloride	Sodium sulfide
Bleach	Fluosilicic Acid (up to 25%)	Magnesium sulfate	Sulfuric acid up to 50%
Brine solutions	Formic acid	Phosphoric acid	Tannic acid
Calcium hypochlorite 20%	Glucose	Plating solutions	

Flex-A-Chem® Tubing - Ultra smooth plasticizer-free bore (inner liner)			
Meets FDA criteria for food Superb chemical resistance			
Ferrous Chloride (up to 40%)	Phosphoric Acid (up to 85%)	Bases	Applications:
Fluoboric Acid (up to 48%)	Potassium Hypochlorite (up to 70%)	Salts	Ink and solvent production
Fluosilicic Acid (up to 25%)	Potassium permanganate (up to 6%)	Ketones	Battery acid filling
Hydrofluoric Acid (up to 48%)	Sodium Phosphate (up to 30%)	Alcohols	Specialty chemical production / processing
Nitric Acid (up to 71%)	Sulfuric Acid (up to 98%)	Isobutyl Alcohol	Sensitive fluid transfer

Flex-A-Thane® Tubing			
Meets FDA criteria for food Resistant to oils, greases and fuels			
Cyclohexane	Kerosene	Oils:	Oils:
Diesel Fuel	Lard	ASTM reference No. 1,2,3	Linseed
Fatty acids	Mineral spirits	Castor	Lubricating
Gasoline	Soap solutions	Coconut	Mineral
Heptane	Turpentine	Fuel	
Hexane	Polymers		

Note: Data shown at 72 degrees F.

Dimensions:



M-2 Series		
Dim	Inches	cm
A	10-1/4"	26
B	7-1/2"	19
C	14"	35.6
D	9-1/2"	24.1
E	11"	27.9
F	3-3/8"	8.6

Model Number Matrix:

M	Flex-Pro ProSeries-M Model Number									
	Maximum Output Range									
	2	Flex-Pro M-2								
	Maximum Motor Speed									
	2	130 RPM (maximum rotor rotation speed)								
	Power Cord (operating voltage user selectable 115V/240 Vac 50/60Hz)									
	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 plug (UK)								
	X	No Power Cord								
	Inlet/Outlet Connection Size, Connection Type, Connection Material									
	S	3/8" OD x 1/4" ID Tube Compression Fitting, Natural PVDF (Kynar)								
	M	1/2" Male NPT Fitting, Natural PVDF (Kynar)								
	B	1/2" Hose Barb, Natural PVDF (Kynar), available for ND, NEE, NGG, and G2G only								
	C	1/2" - 3/4" Tri-clamp connections, Natural PVDF (Kynar), available for ND, NEE, NGG, and G2G only								
	Q	Quick Disconnect, Natural PVDF (Kynar), available for NDD, NEE, NGG, and G2G only (valves sold separately)								
	MB	1/2" Male BSPT Fitting, Natural PVDF (Kynar)								
	Pump Tube Material, Pump Tube Size, Output Range									
	ND	Flex-A-Prene® .078 ID, 0.01 to 1.7 GPH	GE	Flex-A-Thane® .125 ID, 0.02 to 4.0 GPH						
	NEE	Flex-A-Prene® .093 ID, 0.022 to 4.44 GPH	GG	Flex-A-Thane® .187 ID, 0.05 to 9.3 GPH						
	NGG	Flex-A-Prene® .187 ID, 0.086 to 17.2 GPH	TH	Flex-A-Chem® .250 ID, 0.08 to 14.9 GPH						
	G2G	Flex-A-Thane® .187 ID, 0.07 - 14.98 GPH								
	Options (leave this blank for standard model with left facing pump head inlet/outlet)									
	R	Right facing pump head, input / output (Left facing fluid input / output is standard)								
	D	Down facing pump head, input / output (Left facing fluid input / output is standard)								
M	-	2	2	4	-	S	NH	-	R	Sample Model Number

Features list:

Features:

TFD (Tube Failure Detection) System Alarm
FVS (Flow Verification System) Alarm *
Motor reverse (rotor reversible)
Three position pump head rotation
Output: One, 3 amp alarm relay, 1 amp motor run status
Output: Analog 4-20mA
Input: One, dry contact closure 6-24 Vdc powered loop for remote start / stop
Input: Remote speed control via 4-20mA, 0-10VDC, high speed digital pulse, contact closure pulse
Display: Motor speed, Input signal values, Tube life timer, Tube Failure Detection (TFD) system and Flow Verification System (FVS) alarm status

* Requires Micro-Flo Sensor sold separately

Available Operating Modes:

Manual (local): speed adjustment
Remote input: 4-20mA
Remote input: high speed frequency (pulse) input
Remote input: pulse triggered batch dispensing

Factory Authorized Representative: