

FLEX-PRO A2

Feed Rates to 17.2 GPH (65.1 LPH)
Pressures to 125 PSI
4-20mA, Pulse Input and Manual Speed Control
100:1 Turndown ratio
Tube Failure Detection System
Variable Speed DC Motor
NEMA 4X (IP 66) Washdown Duty
2 Year Warranty



NEMA 4X



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

Applications:

- Chemical Metering
- Wastewater Treatment
- Chlorination
- Chloramination
- Fluoridation
- Polymer Injection
- Pulp & Paper Slurries
- Printing Inks
- Oil Based Fluids
- Gaseous Fluids
- Shear Sensitive Fluids
- Caustics
- Chemical Slurries
- Food and Beverage

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.
- 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 and 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.
- 100:1 turndown ratio.
- SCADA Inputs include: 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.
- Operator friendly digital touch pad.
- Backlit LCD displays motor speed, input signal values, service and alarm status.
- Outputs include: one 250V/3A relay to monitor TFD (Tube Failure System) and FVS (Flow Verification System). A 4-20mA analog output signal scaled to the motor speed is optional.
- Two molded squeeze rollers and two alignment rollers for optimum squeeze, unparalleled 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/VII (EU)

240V50Hz = AS 3112 (Australia/New Zealand)

Motor:

Brushed DC, 1/8 H.P.

Duty cycle:

Continuous

Motor speed adjustment range 100:1:

1.0% - 100% motor speed (1.3 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® or Flex-A-Thane®

Adapter fittings: .PVDF

Injection / Back-flow Check valve:

Body & insert: PVDF

Check Ball: Ceramic

Spring: Hastelloy C-276

Ball Seat O-ring: TFE/P (optional EPDM)

Static Seal O-ring: TFE/P (optional EPDM)

Ancillary Items provided**With "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: PVDF

With "B" tubing and "M" M/NPT connections only:**Suction Strainer:**

Body: PVDF

Check Ball: Ceramic

Ball Seat O-ring: TFE/P (optional EPDM)

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

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

Suction Strainer: PVDF

*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:PVDF/Nylon

Roller Bearings:SS Ball Bearings

Motor Shaft:

Chrome plated steel

TFD System Sensor pins:

Hastelloy C-276

Power Cord:

3 conductor, SJTW-A Water-resistant

Tube Installation Tool:

GF Nylon

Mounting Brackets and Hardware:

316 Stainless Steel

FLEX-PRO® Peristaltic Metering Pump

Engineering and Technical Data

Output Specifications:

Feed Rate			Max Speed	Max Pressure	Max Temperature	A2 Model Numbers		
Flex-A-Prene® A2 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
.02 - 1.7	.07 - 6.5	1 - 108	130	125 (8.6)	185 (85)	A2V24-*ND	A2V25-*ND	A2V26-*ND
Flex-A-Prene® A2 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
.044 - 4.44	.168 - 16.8	2.80 - 280	130	110 (7.6)	185 (85)	A2V24-*NEE	A2V25-*NEE	A2V26-*NEE
.172 - 17.2	.651 - 65.1	10.85 - 1085	130	110 (7.6)	185 (85)	A2V24-*NGG	A2V25-*NGG	A2V26-*NGG
Flex-A-Chem® A2 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
.14 - 14.3	.54 - 54	9.0 - 900	130	50 (3.4)	130 (54)	A2V24-*TH	A2V25-*TH	A2V26-*TH
Flex-A-Thane® A2 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
.04 - 4.0	.15 - 15.2	3 - 253	130	65 (4.5)	130 (54)	A2V24-*GE	A2V25-*GE	A2V26-*GE
.09 - 9.3	.35 - 35.2	6 - 587	130	65 (4.5)	130 (54)	A2V24-*GG	A2V25-*GG	A2V26-*GG
.15 - 14.98	.567 - 56.7	9.45 - 945	130	65 (4.5)	130 (54)	A2V24-*G2G	A2V25-*G2G	A2V26-*G2G
* Inlet/outlet connection type S = 3/8" OD x 1/4" ID tubing compressions type connections M = 1/2" male NPT 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) MB = 1/2" male BSPT								

NOTE: Replace "V" in model number for "F" when ordering manual output control. Feed output not affected. See page 5 for model number matrix.

Quick-Disconnect Valve Kits (Sold Separately)

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

3/8" OD, 1/4" Tubing		1/2" Hose Barb		1/2" M/NPT	
					
Part #	O-ring	Part #	O-ring	Part #	O-ring
KIT-QSV	FKM	KIT-QBV	FKM	KIT-QMV	FKM
KIT-QSE	EP	KIT-QBE	EP	KIT-QME	EP

Chemical Resistance of Tubing:**Flex-A-Prene® Tubing****Meets FDA criteria for food | Excellent chemical resistance**

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

Ferrous Chloride (up to 40%) Fluoboric Acid (up to 48%) Fluosilicic Acid (up to 25%) Hydrofluoric Acid (up to 48%) Nitric Acid (up to 71%)	Phosphoric Acid (up to 85%) Potassium Hypochlorite (up to 70%) Potassium permanganate (up to 6%) Sodium Phosphate (up to 30%) Sulfuric Acid (up to 98%)	Bases Salts Ketones Alcohols Isobutyl Alcohol	Applications: Ink and solvent production Battery acid filling Specialty chemical production / processing Sensitive fluid transfer
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Flex-A-Thane® Tubing**Meets FDA criteria for food | Resistant to oils, greases and fuels**

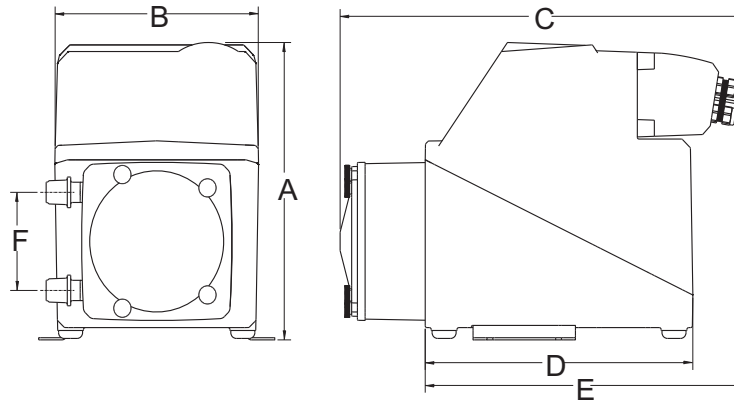
Cyclohexane Diesel Fuel Fatty acids Gasoline Heptane Hexane	Kerosene Lard Mineral spirits Soap solutions Turpentine Polymer	Oils: ASTM reference No.1,2,3 Castor Coconut Fuel	Oils: Linseed Lubricating Mineral
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Note: Data shown at 72 degrees F.

FLEX-PRO® Peristaltic Metering Pump

Engineering and Technical Data

Dimensions:



Dim	A2 Series	
	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:

Flex-Pro Model Number									
A2	Flex-Pro Peristaltic Metering Pump								
Series Control Options									
F	Single manual output control (manual/local control only)								
V	Multiple automatic input output control and alarm modes (remote control)								
Maximum Motor Speed									
2	130 RPM (maximum rotor rotation speed)								
Power Cord (operating voltage requirement 96VAC to 264VAC)									
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 seperately)								
MB	1/2" Male BSPT Fitting, Natural PVDF (Kynar)								
Pump Tube Material, Pump Tube Size, operating flow range									
	ND	Flex-A-Prene® .075 ID, 0.02 to 1.7 GPH	TH	Flex-A-Chem® .250 ID, 0.15 to 14.9 GPH					
	NEE	Flex-A-Prene® .093 ID, 0.044 to 4.44 GPH	GE	Flex-A-Thane® .125 ID, 0.04 to 4.0 GPH					
	NGG	Flex-A-Prene® .187 ID, 0.172 to 17.2 GPH	GG	Flex-A-Thane® .187 ID, 0.09 to 9.3 GPH					
	G2G	Flex-A-Thane® .187 ID, 0.15 to 14.98 GPH							
Options (leave this blank for standard model with left facing pump head inlet/outlet)									
1	TI40-6V Threadless injection check valve, replaces A-014NK-6A threaded check valve								
2	C340A Foot valve, replaces standard C-342 inlet strainer (no check valve)								
3	4-20 mA analog output (requires "V" series control)								
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)								
A2	V	2	4	-	S	NH	-	R	Sample Model Number

Features

	Available in Model:	F	V
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 (optional)			✓
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 Failure Detection (TFD) system and Flow Verification System (FVS) alarm status		✓	✓

* Requires Micro-Flo Sensor sold separately

Available Operating Modes

	Available in Model:	F	V
Manual (local): speed adjustment		✓	✓
Remote input: 4-20mA			✓
Remote input: high speed frequency (pulse) input			✓
Remote input: pulse triggered batch dispensing			✓

